

Catalogue-price list **Europair 08**

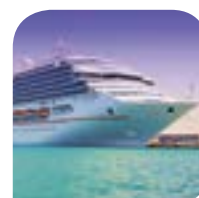
Building service



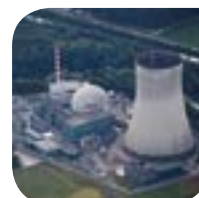
Hospital



Off-Shore / Marine



Power Generation



ATEX



Air handling products

Summary

DIFFUSION



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FIRE DAMPER
SMOKE CONTROL
DAMPER



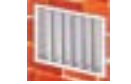
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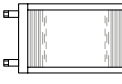
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Circular VAV units
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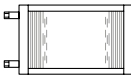
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Heat Recovery units 90% efficiency
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ON REQUEST



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High induction effect
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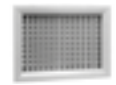
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Insulated aluminium MO/MS
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Afonic Insulated aluminium MO/MS
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Smoke damper single compartment
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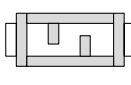
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Beam-diffuser for operating theatres
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Architectural diffusers with deflectors
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with adjustable cones
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DCRQ
Diffuser with
adjustable cones on plate
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DC
Diffuser with single
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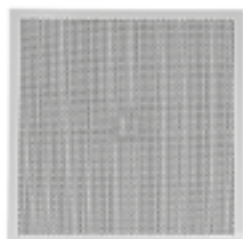
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DQB4
Multi-directional
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DQB4-T
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Perforated circular flat panel
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RSRO
Non-perforated circular flat
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DV 11-12-21-22
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DEQR
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DEQR/Q
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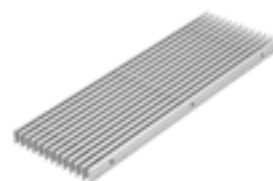
DDR 12
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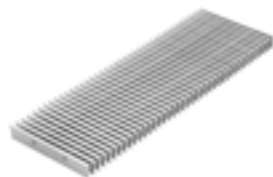
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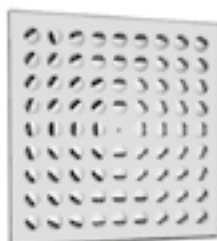
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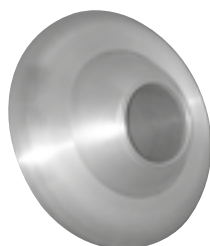
DMUC
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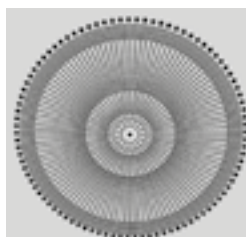
DMUR
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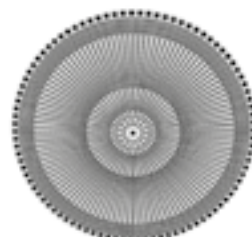
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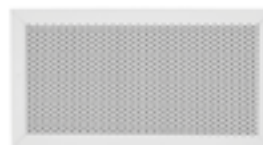
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GT
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GRF
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Return grilles
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GRQ PF PP
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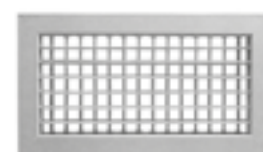
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GHR 100
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All prices are list prices for local market, for a quotation please contact us.

Price list

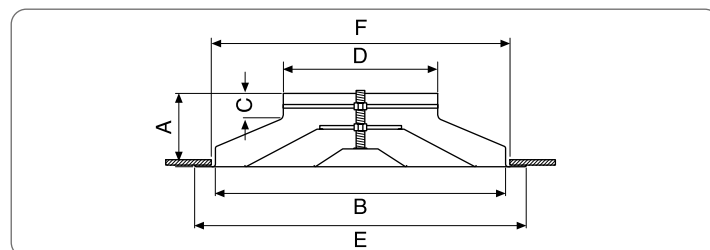
Type/DN	100	160	200	250	315	355	400	450	500	630
DCR	48	53	62	77	96	118	142	148	179	271
DCRQ	65	67	75	92	113	-	-	-	-	-
SF	17	20	21	24	29	37	51	62	66	133
DCR-ATS	-	148	160	180	240	-	-	-	-	-
DCRT-ATS	-	164	176	196	260	-	-	-	-	-
SK	OR	OR	OR	OR	OR	OR	OR	OR	OR	-

Delivery: - material with prices in bold in stock
- other material 2 weeks

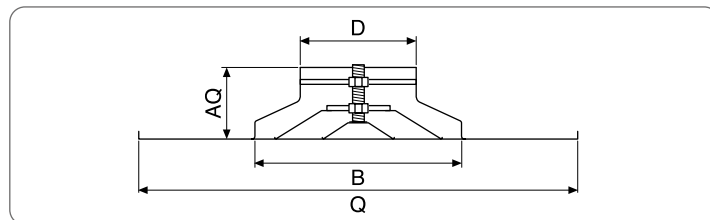
Dimensions

DN	100	160	200	250	315	355	400	450	500	630
D	98	158	198	248	313	353	398	448	498	628
B	194	280	360	445	560	640	680	735	805	943
E	230	335	423	517	640	730	776	825	917	1045
A	75	105	118	130	146	185	185	185	185	185
C	30	45	48	48	48	65	65	65	65	65
F	198	288	370	461	576	656	700	755	825	963
Q	596	596	596	596	596	-	-	-	-	-
AQ	70	100	110	120	126	-	-	-	-	-

DCR



DCRQ



DCRQ



DCR



Description

DCR: diffuser with adjustable cones

- adjustment with micrometric screw
- removable central cones for easy assembly
- made of aluminium with RAL 9010 finish
- mounting height between 2.8 and 6 m

DCRQ: like DCR but with 596x596 panel

Accessories

SF: butterfly damper

- 2 blades up to 315 diameter (not for thermostatic actuators)
- 4 blades for bigger diameters (not for thermostatic actuators)

E: equaliser

SK: deflector flap damper + equaliser (on request)

KD: plasterboard false ceiling fastening kit (list price €25)

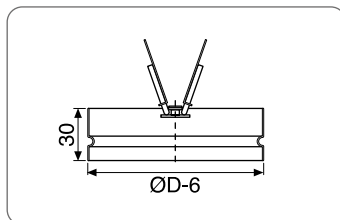
DCRQ-ATS / DCR-ATS: thermostatic actuator

Special version

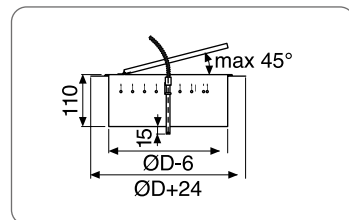
VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

Other RAL colours on request

SF



SK



Selection table for DCR and DCRQ with Vt = 0.25 m/s

AK	DN	Flow rate (m³/h)																											
(dm²)	(mm)	200		250		300		400		500		600		800		1000		1250		1500		1750		2000		2500			
1.5	160	25	1.4	30	1.7	36	2.1	45	2.8																				
		3.7	14.0	4.4	20	5.6	33	7.2	54																				
2.7	200			18	1.3	23	1.5	30	2.1	36	2.6	42	3.2																
				2.5	6.6	3	10	4	17	5	26	6	38																
4.0	250					15	1.3	22	1.7	27	2.1	33	2.6	41	3.5	50	4.5												
						2	4.2	2.7	7.7	3.4	12	4	17	5.6	33	7	52												
5.6	315							15	1.5	20	1.8	25	2.2	34	3	40	3.7	47	4.6										
								2.0	4.2	2.4	6	3	10	4	17	5	26	6.2	40										
7.4	355											20	1.9	25	2.6	34	3.3	42	4.1	47	5								
												2.3	5	3	9	3.8	16	4.8	23	5.5	32								
9.0	400													20	2.3	28	3.0	35	3.8	41	4.5								
														2.5	6.5	3	9	3.8	16	4.6	22								
1.1	450															22	2.7	26	3.3	35	4.0	40	4.8						
																2.5	6.5	3	9	3.8	16	4.4	20						
1.3	500																			24	3.0	29	3.6	34	4.3	38	4.9	45	6
2.6	6.9																			3.1	10	3.6	14	4.1	19	5	29		
1.9	630	NR	Lt																			25	3.5	30	4.1	37	5.1		
		Vk	Pa																			2.6	6.9	2.9	8	3.6	14		

The NR values do not take into account room attenuation

K factor for vertical throw

Δt(K)	-10	0	+ 10	+ 20	v _k	Δp _t	NR
L _t	x2	x1.15	x0.80	x0.50	x1.15	x1.30	+ 4

K factors for other Vt

Vt	0.2	0.25	0.375	0.5
L _t	1.25	1	0.75	0.5

Diffuser with single adjustable cone

DC



Description

- DC:** diffuser with single adjustable cone
- adjustment with micrometric screw
 - made of aluminium with RAL 9010 finish

DCQ: like DC but with 596x596 panel

Accessories

SF: butterfly damper

KD: plasterboard false ceiling fastening kit (list price €25)

Special version

VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

Other RAL colours on request

All prices are list prices for local market, for a quotation please contact us.

Price list

Type\DN	100	160	200	250
DC	65	71	81	98
DCQ	82	86	94	113
SF	17	20	21	24

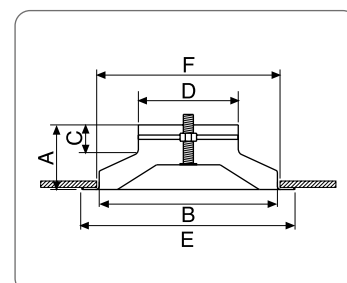
Delivery: 4 weeks

DC/DCQ dimensions

DN	100	160	200	250
D	98	158	198	248
B	194	280	360	445
E	230	335	423	517
A	75	105	118	130
C	30	45	48	48
F	198	288	370	461
Q*	596	596	596	596
AQ*	70	100	110	120

*: for DCQ

DC



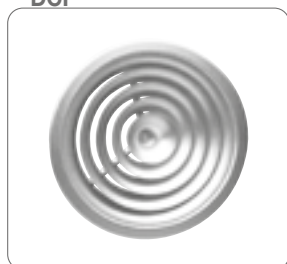
DC selection table

AK	DN	Flow rate (m³/h)																			
(dm²)	(mm)	100		200		300		400		500		600		700		800		900		1000	
1.60	160	20.0	1.0	25.0	1.8	36.0	2.3	40.0	2.6												
		2.2	5.0	3.5	14.0	5.2	28.0	6.0	37.0												
2.23	200			20.0	1.3	30.0	2.1	35.0	2.5	40.0	3.2	45.0	3.7								
				2.5	6.0	4.0	18.0	5.0	25.0	6.0	35.0	7.0	50.0								
3.63	250	NR	Lt			22.0	1.7	30.0	2.2	33.0	2.6	40.0	3.0	42.0	3.4	44.0	3.4	46.0	4.0	50.0	4.5
		Vk	Pa			2.7	8.0	3.5	15.0	4.0	18.0	5.0	25.0	5.3	28.0	5.7	32.0	6.0	35.0	7.0	50.0

The NR values do not take into account room attenuation

Diffusers with fixed cones

DCF



Description

- DCF:** diffuser with fixed cones including butterfly damper and bracket
- made of aluminium with RAL 9016 finish

Special version

VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

Other RAL colours on request

All prices are list prices for local market, for a quotation please contact us.

Price list

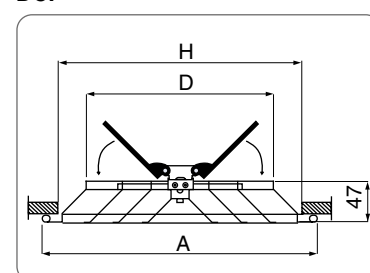
Type\DN	150	200	250	300	350
DCF	25	34	44	55	72

Delivery: 2 weeks

DCF dimensions

DN	A	D	H
150	258	149	238
200	308	199	285
250	358	249	335
300	408	299	385
350	458	249	435

DCF

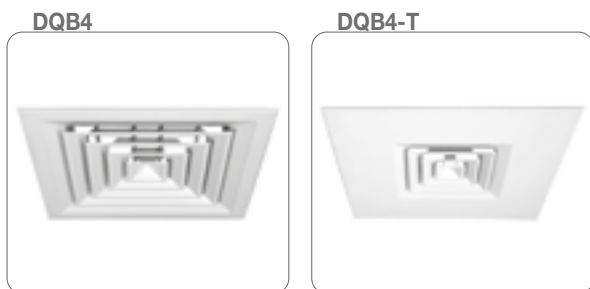


DCF selection table

AK	DN	Flow rate (m³/h)																					
(dm²)	(mm)	150		200		300		400		500		600		800		1000		1200		1400		1600	
1.1	150	-	1.8	27	2.3	41	3.4																
		3.9	1	5.0	22	7.5	50																
2.0	200	-	1.3	-	1.8	23	2.6	33	3.4	41	4.3												
		2.1	6.0	2.8	7.8	4.1	15	5.7	28	7.0	45												
3.1	250			-	1.4	-	2.1	20	2.7	27	3.5	34	4.1	45	5.5								
				1.9	-	2.7	7.2	3.6	12	4.5	18	5.5	26	7.5	50								
4.6	300					-	1.7	-	2.3	15	2.8	22	3.3	32	4.6	40	5.7	46	6.7				
						1.9	-	2.5	5.5	3.1	8.0	3.7	14	5.0	22	6.2	35	7.5	50				
4.7	350	NR	Lt					7	1.9	10	2	20	2.8	30	3.5	37	4.5	40	5.4	50	7.1	57	7.8
		Vk	Pa					28	3.2	2.8	4.8	3.5	7	4.8	12	6	20	7	28	10.2	39.2	11.6	50.3

The NR values do not take into account room attenuation

All prices are list prices for local market, for a quotation please contact us.



Description

DQB: multidirectional diffusers

- square or rectangular diffusers with 1-2-3-4 throw directions
- removable central cone
- made of aluminium with RAL 9010 finish

DQB4: multidirectional 4-way diffusers

- removable central cone
- made of aluminium with RAL 9010 finish

DQB-T: like DQB but with 596x596 panel (LxH from 150 to 375)

Accessories

SC: control damper

PL: side entry plenum

PT: upper entry plenum - H1 = 200 mm

S: damper for plenum (list price €20)

I: external insulation reaction to fire class B-s2-dO (list price €30)

PPLIS: pyramid plenum only for dim. 450x450 or for DQB-T with double bracket (list price €100 - for details see page 8)

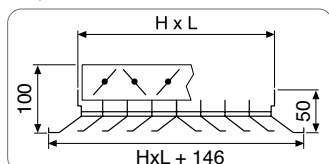
Special version

DQ-R: with adjustable blades (on request)

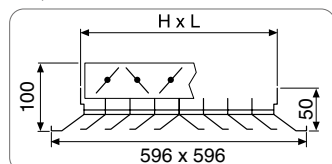
VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

Other RAL colours on request

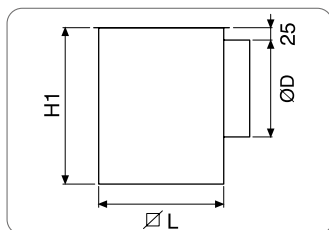
DQB



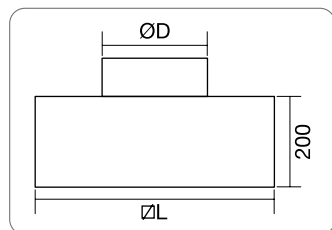
DQB - T



PL



PT



Selection table for DQB with Vt = 0.50 m/s

AK (dm²)	HxL (mm)	ØD (mm)	Flow rate (m³/h)													
			100		150		200		250		300		400		500	
1.0	150x150	125	20	0.7	29	1.0	34	1.4								
			2.8	4.6	4.2	10	5.6	19								
2.0	225x225	150			17.0	0.8	23	1.0	28	1.2	32	1.5	37	2.0		
					2.1	2.6	2.8	4.6	3.5	7.2	4.2	10	5.6	19		
3.6	300x300	200							18.0	0.9	22	1.1	28	1.5	32	1.8
									1.9	2.2	2.3	3.2	3.1	5.7	3.9	9.0
5.6	375x375	200											21	1.2	25	1.5
													1.9	2.4	2.5	3.7
8.2	450x450	250													23	1.5
															2.1	2.5
11.0	525x525	300														
			NR	L _v												
			V _a	Pa												

The NR values do not take into account room attenuation

	4 direzioni	3 direzioni	2 direzioni	1 direzione
Diff. quadrato				
	DQ4	DQ3	DQ2	DQ5
				DQ1

DQ price list

GR\Type	DQB1	DQB3	DQB4	DQB-T	SC	PL/PT
	DQB2	DQB5				
150x150	66	82	19	65	10	44
225x225	73	89	25	70	13	44
300x300	79	106	33	75	14	44
375x375	93	133	45	80	19	44
450x450*	115	154	50	-	29	60
525x525	139	188	-	-	34	80
600x600	183	216	135	-	68	90

Delivery: - material with prices in bold in stock

- other material 2 weeks

* LxH all out 596x596

DQ11-12-13-14-22-23-45-21 price list

H/L	225	300	375	450	525
150	OR	OR	OR	OR	OR
225	-	OR	OR	OR	OR
300	-	-	OR	OR	OR
375	-	-	-	OR	OR
450	-	-	-	-	OR

SC price list for DQ 11-12...

H/L	225	300	375	450	525
150	OR	OR	OR	OR	OR
225	-	OR	OR	OR	OR
300	-	-	OR	OR	OR
375	-	-	-	OR	OR
450	-	-	-	-	OR

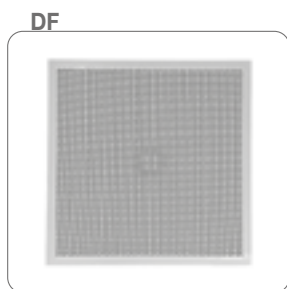
PL overall dimensions

HxL	ØD	ØL	H1
150x150	125	155	260
225x225	150	230	260
300x300	200	305	310
375x375	200	380	310
450x450	250	455	360
525x525	300	532	410
600x600	300	607	410

	4 directions	3 directions	2 directions	1 direction
Rectangular diffuser				
	DQ14	DQ13	DQ12	DQ15
		DQ23	DQ22	DQ45
				DQ21

V _t (m/s)	L _t (m) x
0.25	2
0.375	1.33
0.50	1
0.625	0.8
0.75	0.67

K factors for other Vt



Description

DF: perforated supply diffuser with 4 throw directions (3/2/1 on request)

- internal flow divider
- made of aluminium with RAL 9010 white finish
- fastening with 4 white screws
- suitable for ceilings measuring 600x600

DFT-R: like DF without internal flow divider (list price -€10)

PF: 596x596 drilled plate with RAL 9010 white finish

Accessories

PPLIS: pyramid plenum with side entry (150 / 160 / 200 / 250) + damper + external insulation reaction to fire class B-s2-dO + CT-PPLIS (frame)

PT: upper entry plenum

SF: butterfly damper for PT

I: external insulation (list price +€30)

Special versions

DFTX: AISI 304/316 stainless steel finish (on request)

DFTA: anodised aluminium finish (on request)

VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

Other RAL colours on request

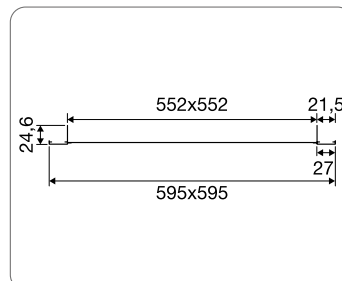
All prices are list prices for local market, for a quotation please contact us.

Price list

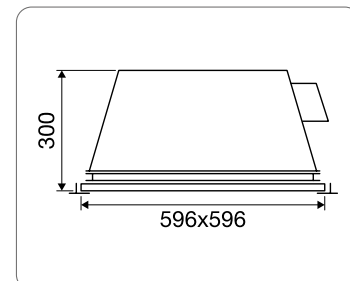
GR/Type	DFT	PPLIS	PT	SF	PF
600	115	110	50	24	67

Delivery: - material with prices in bold in stock
- other material 3 weeks

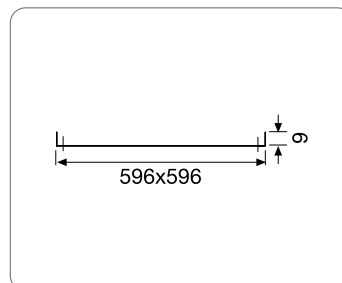
DFT



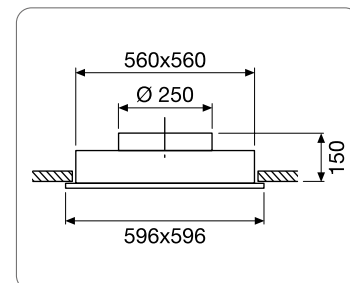
DFT + PPLIS



PF



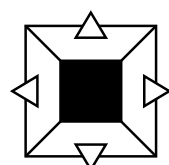
DFT + PT



Selection table (4 directions)

AK	LxH	Ø D	Flow rate (m³/h)																	
(dm²)	(mm)	(mm)	125		150		200		250		300		400		600		800		1000	
1.8	300x300	160	-	0.8	-	1.0	21	1.3	28	1.7	34	2								
			1.9	3.2	2.3	4.6	3.1	8.1	3.9	13	4.6	18								
3.4	400x400	200					-	1.0	-	1.2	19	1.5	27	2.0						
							1.6	2.7	2.0	4.3	2.5	6.2	3.3	11						
5.6	500x500	250									-	1.2	-	1.5	27	2.3	37	3.8		
											1.5	2.3	2.0	4.0	3.0	9.1	4.0	16		
8.0	600x600	315	NR	L ₁									-	1.3	16	1.9	25	2.5	32	3.2
			V _k	Pa									1.4	1.7	2.1	3.9	2.8	6.9	3.5	11

The NR values do not take into account room attenuation



4 directions vt=0.5 m/s

300x300 / 400x400 / 500x500 sizes on request

All prices are list prices for local market, for a quotation please contact us.

Price list

Type/ DN	125	160	200	250	315	400
RSKP	106	123	130	138	150	183
RSKO	106	123	130	138	150	183
RSRP	112	115	142	164	190	224
RSRO	106	112	134	145	169	202
PL	42	44	48	58	84	104

Rapid selection

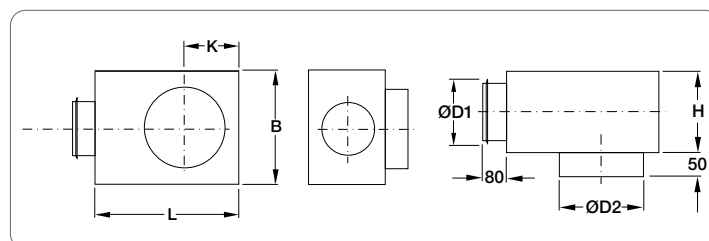
Diffuser with slot S 25 mm, pressure drop 50 Pa

RSRO, RSRP with uninsulated plenum

Size RSR(Ø,P)	PL Ø D1	Flow rate m³/h corresponding to sound pressure level		
		25 dB	30 dB	35 dB
125	100	100	150	200
160	125	200	250	300
200	160	250	350	400
250	200	400	500	550
315	250	500	600	650
400	315	600	700	800

RSRO, RSRP with plenum insulated internally with soundproof material:
flow rates in m³/h + 10%

PL dimensions



ØD1	ØD2	H	L	B	K
99	125	170	320	320	123
124	160	170	470	320	140
159	200	205	500	440	170
199	250	245	650	520	195
249	315	295	700	570	228
314	400	360	700	570	255

RSRP / RSRO

Ø size	DN A	DN E	H	S	CLICKS	
					S1	S2
125	210	160	58	15	25	35
160	250	200	60	15	25	35
200	350	300	63	15	25	35
250	450	400	80	15	25	35
315	550	500	80	15	25	35
400	550	500	100	15	25	35

RSKP / RSKO

Ø size	C	E	H1	S	CLICKS	
					S1	S2
125	230	160	58	15	25	35
160	280	200	60	15	25	35
200	370	300	63	15	25	35
250	480	400	80	15	25	35
315	595	500	80	15	25	35
400	595	500	100	15	25	35

RSKP



RSKO



RSRP



RSRO



Description

RSKP: diffuser with square flat perforated panel

- 3 adjustment options of outer air outlet slot
- made of aluminium with RAL 9010 white finish

RSKO: like RSKP but with non-perforated flat panel (solid)

RSRP: like RSKP but circular version with perforated panel

RSRO: like RSKP but circular version with non-perforated panel (solid)

Accessories

PL: lowered side entry plenum

I: external insulation reaction to fire class B-s2-d0 (list price €30)

S: damper on intake (list price €20)

Special versions

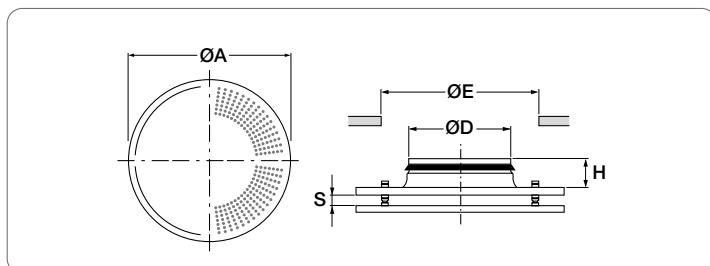
- made of AISI 304 stainless steel

VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

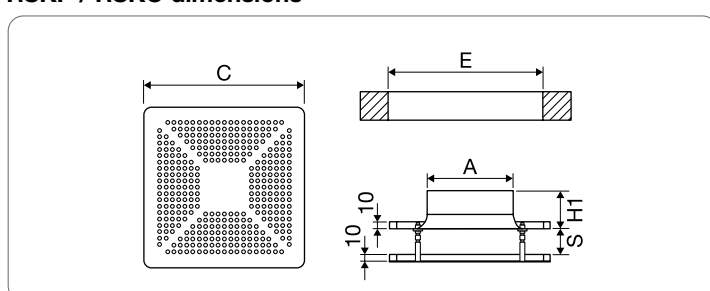
Other RAL colours on request

Special version for false ceilings on request (see page 10)

RSRP / RSRO dimensions



RSKP / RSKO dimensions



Multidirectional diffusers with curved blades

DV



Description

DV: multidirectional diffuser

- square diffuser with curved blades adjustable from 1 to 4 throw directions
- made of natural anodised aluminium
- fastening with screws (not included), other fastenings available on request

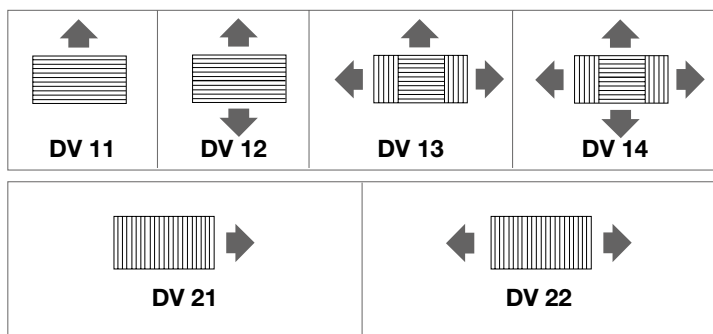
Accessories

SC: control damper

Special versions

- latch fastening (list price €6 each)
- W:** RAL 9010 coating (list price +20%)
- VR:** coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

Other RAL colours on request



All prices are list prices for local market, for a quotation please contact us.

DV 11 - 12 - 21 - 22 price list

H/L	200	300	400	500	600	800	1000
100	27	30	33	35	37	48	58
150	33	42	45	47	48	60	70
200	38	44	48	53	58	69	79
300	-	62	66	72	78	87	95
400	-	-	-	-	-	120	118
500	-	-	-	-	-	147	170

Delivery: 2 weeks

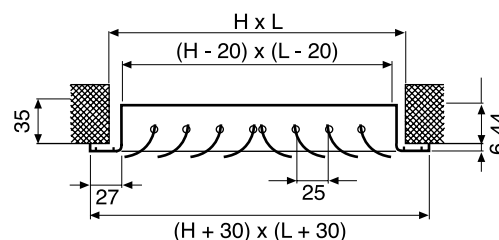
DV 13 - 14 price list

H/L	200	300	400	500	600	800	1000
200	43	48	55	63	67	83	99
300	-	71	80	89	98	117	139
400	-	-	100	112	119	135	155
500	-	-	-	132	143	166	188

SC price list

H/L	200	300	400	500	600	800	1000	1200
100	8	11	14	17	20	-	-	-
150	9	13	16	19	23	-	-	-
200	10	14	18	22	26	-	-	-
300	-	17	22	26	31	-	-	-
400	-	-	26	32	38	-	-	-

Dimensions



Selection table (with ceiling effect A) Vt = 0.5 m/s

AK (dm²)	L x H (mm)	Flow rate (m³/h)																									
		100		150		200		300		400		500		600		800		1000	1200	1400	1800	2000	2500				
0.60	200x100	-	1.9	20	2.7																						
		4.9	1.7	7.1	3.9																						
0.90	300x100	-	1.6	-	2.4	24	3.1																				
		3.1	0.7	4.8	1.6	6	2.6																				
1.20	400x100 200x200			-	2	19	2.7	28	4																		
				3.5	0.9	4.5	1.6	7	3.5																		
1.50	500x100			-	1.8	-	2.4	24	3.6	32	4.9																
				2.6	0.5	3.6	1.0	5.5	2.1	7.5	4																
1.90	600x300 800x200			-	1.6	-	2.2	20	3.1	26	4.1	32	5.2														
				2.3	0.4	2.8	0.5	4.4	1.6	5.8	2.3	7.5	4														
2.60	800x100 400x200					-	1.8	-	2.6	19	3.5	25	4.2	30	5.5												
						2.2	3.9	3.1	0.7	4.1	1.2	5.2	2	6.5	3.1												
3.20	1000x100							-	2.4	-	3.3	21	4	25	4.9	33	6.8										
	500x200 300x300							2.6	0.5	3.5	0.9	4.1	2.1	5.1	2	7.1	3.6										
4.00	1200x100							-	2.2	-	2.9	-	3.5	22	4.2	28	6	33	7.8								
	600x200 400x300							2.1	0.3	2.8	0.5	3.4	0.8	4.2	1.2	5.6	2.3	7.2	3.7								
5.50	800x200									-	2.5	-	3	3.6	3.7	22	5	27	6.3	31	7.5	35	8.6				
	500x400 400x400									2	0.3	2.4	0.4	3.1	0.7	4	1.1	5.1	6	2.6	2.6	7.2	3.9				
7.00	1000x200											-	2.7	-	3.3	-	4.5	22	5.5	26	6.5	29	7.5	36	10	38	11.9
	600x300 500x400											2	0.3	2.4	0.4	0.7	0.7	4	1.1	4.8	1.7	5.5	2.2	7.2	3.6	8	4.6
9.00	1200x200 800x300	NR	Lt											-	4	-	4.9	21	5.7	24	6.7	31	9	33	9.8	38	12
	600x400 500x500	vk	Pa											2.5	0.5	3	0.6	3.6	1.0	4.2	1.3	5.3	2	6.1	2.8	7.9	4.3

The NR values do not take into account room attenuation

Corrections for other V_t

Vt (m/s)	0.250	0.375	0.500	0.625	0.750
Lt (m)	x2	x1.33	x1	x0.8	x0.67

K factor for deflection

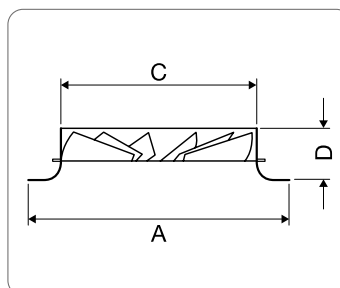
	DV11	DV12
Lt	x1	x0.7

All prices are list prices for local market, for a quotation please contact us.

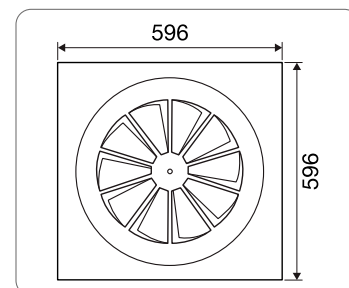
Price list

TYPE/DN	125	160	200	250	315	355	400
DQER	31	38	49	59	74	87	96
DQER/Q	80	89	102	114	130	133	140
PL	42	44	48	58	84	92	104

DQER dimensions



DQER/Q dimensions



SIZE	A	C	D
125	225	122	82
160	250	157	82
200	300	197	82
250	350	247	85
315	415	312	85
355	455	353	105
400	520	398	107

ØD1	ØD2	H	L	B	K
99	125	170	320	320	123
124	160	170	470	320	140
159	200	205	500	440	170
199	250	245	650	520	195
249	315	295	700	570	228
314	400	360	700	570	255

DQER



DQER/Q



Description

DQER: circular high induction diffuser with fixed blades

- installation height between 2.7 - 4.0 m
- operating range with $\Delta t \pm 10^\circ\text{C}$
- suitable for systems with variable flow
- suitable for assembly with or without false ceiling
- made of aluminium with RAL 9010 finish

DQER/Q: like DQER but with 596x596 panel for assembly on false ceiling measuring 600x600

Accessories

PL: galvanised steel side entry plenum

R: equaliser wire (list price €35)

S: volume control damper on plenum (list price €20)

I: external insulation reaction to fire class B-s2-d0 (list price €30)

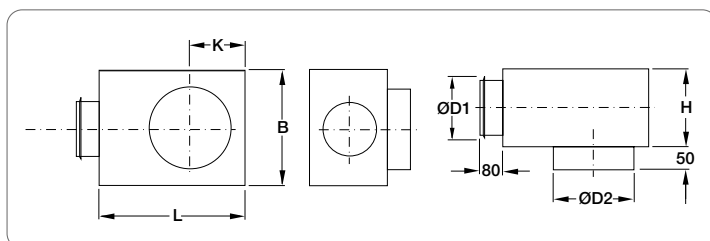
TCC: spigot with equaliser and special brackets for connection to flexible pipe in plasterboard false ceiling (consider a smaller size than the diffuser for the flexible pipe Ø [e.g. Diffuser Ø 200 > TCC Intake Ø 160]).

Special versions

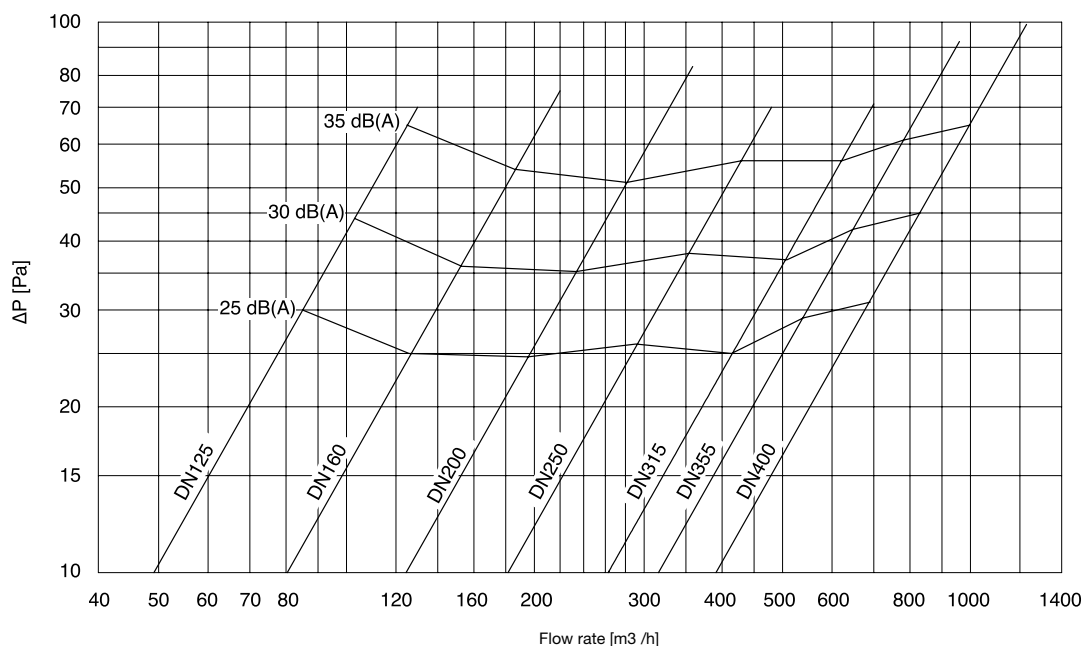
VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

Other RAL colours on request

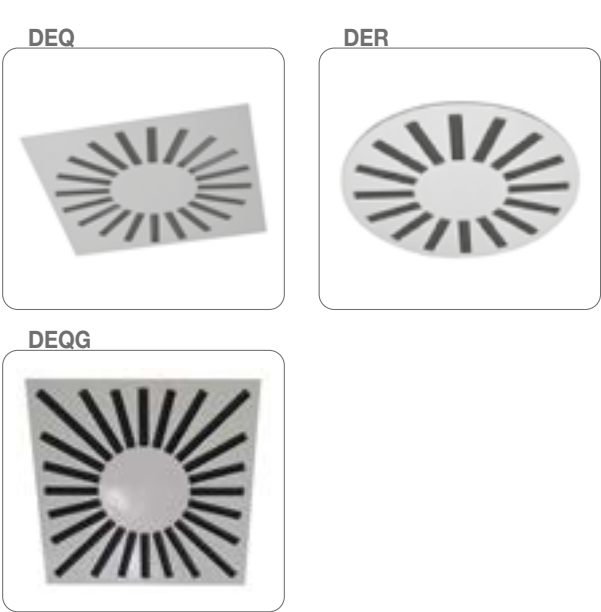
PL dimensions



Selection diagram



Sound level pressure with 4dB of room attenuation.



Description

- DEQ: supply and return swirl diffuser RAL9010 white finish
- square diffuser with swirl throw and adjustable wing deflectors in black plastic
 - installation height between 2.7 and 4.0 m
 - suitable for systems with variable air flow rate
 - fastening with 4 screws + cover

DEQG24-60: like DEQ24-60 but with 20% greater surface area
DER: like DEQ but in circular version (30% increase)

Accessories

- PL: side entry plenum
PPLIS: pyramid plenum with side entry + damper, including external insulation reaction to fire class B-s2-dO (DN oval inlets 150/160-200-250)
PT: upper entry plenum
R: cylindrical equaliser wire
S: volume control damper plenum intake, adjustable by diffuser
I: external insulation reaction to fire class B-s2-dO

Special versions

- DEQ-CG: ceiling application (on request)
DEQ-M: application on metal false ceilings (on request)
VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece
Other RAL colours on request
Special version for false ceilings on request (see page 10)

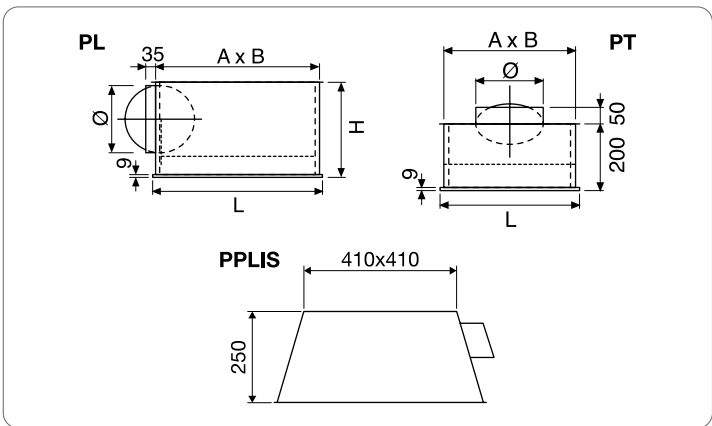
All prices are list prices for local market, for a quotation please contact us.

Price list

GR/Type	DEQ	DEQG	PL	PT	R	S	I	PP LIS
8-30	43	-	50	39	15	10	14	-
8-60	60	-	53	45	20	10	20	83
16-40	55	-	53	53	17	10	15	-
16-60	70	-	53	53	20	10	20	83
20-50	74	-	58	50	19	10	17	-
20-60	82	-	53	53	20	10	20	83
24-60	87	127	53	53	20	10	20	83
24-62	95	-	68	58	23	10	23	-
24-80	142	-	96	75	32	10	32	-

Delivery: -material with prices in bold in stock
-other material 3 weeks

DEQ dimensions

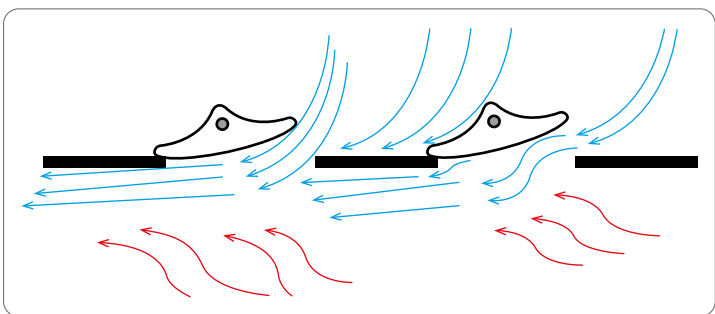


GR	L	DER	A x B	H	Ø
8-30	296	-	260	250	158
8-60	596	-	560	250	198
16-40	396	-	360	250	198
16-60	596	-	560	250	198
20-50	496	-	460	250	198
20-60	596	-	560	250	198
24-60	596	596	560	300	248
24-62	621	-	580	300	248
24-80	796	-	760	400	313

Selection table

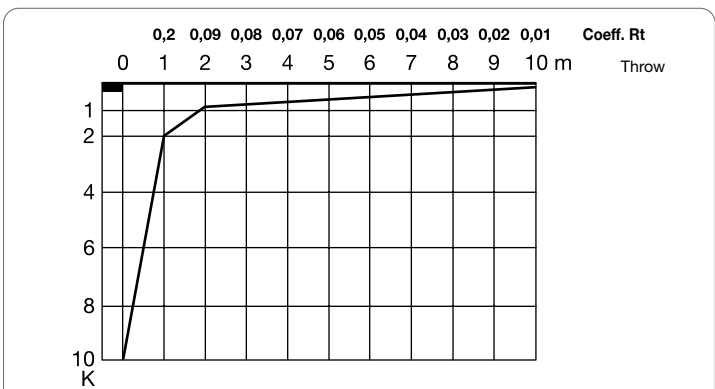
Flow rate (m³/h)	Type																	
	8-30 8-60			16-40 16-60			20-50 20-60			24-60 24-62			DEQG 24-60			24-80		
	L _{0.25}	Δpt	L _{WA}	L _{0.25}	Δpt	L _{WA}	L _{0.25}	Δpt	L _{WA}	L _{0.25}	Δpt	L _{WA}	L _{0.25}	Δpt	L _{WA}	L _{0.25}	Δpt	L _{WA}
54	0.9	4	>20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
72	1.1	5	>20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	1.3	8	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
108	1.5	10	24	0.9	7	>20	-	-	-	-	-	-	-	-	-	-	-	-
144	1.8	18	26	1.0	11	>20	0.9	4	>20	-	-	-	-	-	-	-	-	-
180	2.2	23	30	1.3	15	21	1.0	5	>20	-	-	-	-	-	-	-	-	-
216	2.6	28	32	1.5	20	25	1.2	7	>20	1.0	3	>20	-	-	-	-	-	-
252	3.0	35	36	1.8	30	29	1.4	9	>20	1.2	5	>20	-	-	-	-	-	-
288	3.6	48	40	2.0	40	32	1.6	12	20	1.4	7	>20	-	-	-	-	-	-
360	-	-	-	2.5	60	36	2.0	20	25	1.8	10	>20	1.5	10	>20	-	-	-
450	-	-	-	3.2	85	42	2.6	28	31	2.0	15	23	1.7	15	20	-	-	-
540	-	-	-	-	-	-	3.0	42	36	2.5	25	28	2.1	20	25	2.0	6	>20
720	-	-	-	-	-	-	4.0	80	47	3.4	38	36	2.8	30	32	2.4	10	23
900	-	-	-	-	-	-	-	-	-	4.0	65	43	3.4	45	38	2.8	16	30
1080	-	-	-	-	-	-	-	-	-	-	-	-	4.2	65	44	3.2	21	36
1260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.6	27	40
1440	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.0	42	44

Deflector position



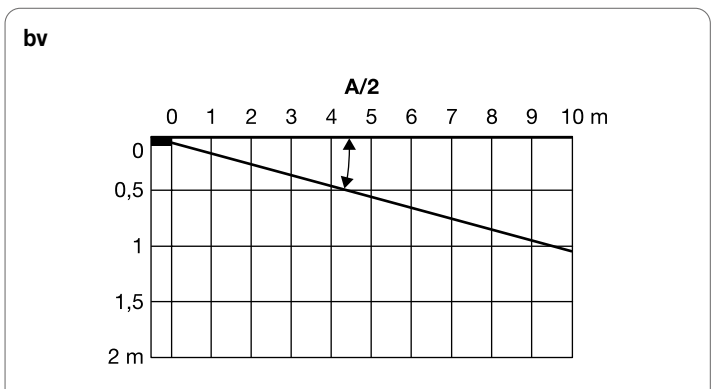
Deflectors: with special profile capable of generating air flows to obtain ultra-high mixing, reduced pressure drop and reduced noise level.

Temperature difference

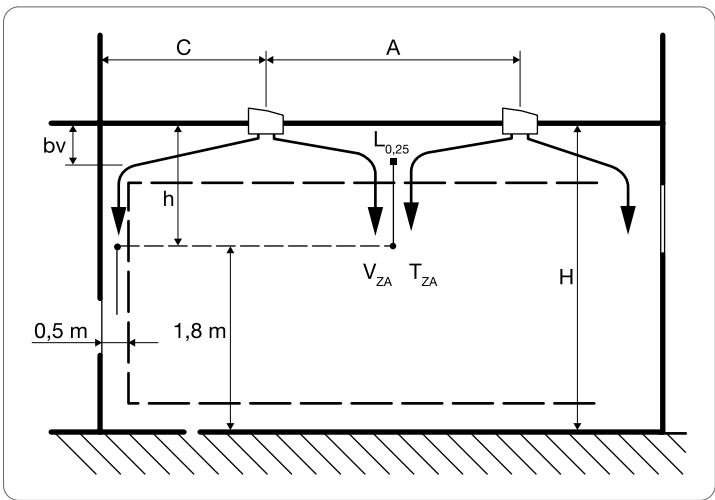


Curve valid for Δt equal to 10°C.
Temperature difference between ambient temp. and throw temp.

Throw fall



Value for throw fall, at a specific distance.



Example

- Room dim. 10x10xH 2.8 m (volume 280 m³)
- Air flow: 2100 m³/h (exchanges 7.5)
- Occupied zone: 1.8 m
- Room temperature: 25°C (project)
- Supply air temperature: 15°C

- Assuming the installation of 4 diffusers
Flow 2100 m³/h: 4 diffusers = 525 m³/h

- From selection table
DEQ24/60 - 540 m³/h
as a result: throw of 2.5 m with end-of-throw velocity of 0.25 m/s
Δpt: 25 Pa - L_{WA}: 28 dB(A)
V_{ZA}: velocity in occupied zone between 0.10-0.15 m/s

Temperature difference

- You can obtain the air temperature at the end of the throw
- T_{ZA}: 25°C (room temperature)
 - T: 15°C (supply air temperature)

Key

- L_{0.25}: throw which corresponds to an end-of-throw velocity of 0.25 m/s; with this value the V_{ZA} = velocity in the occupied zone is between 0.15 m/s for rooms with a height of 2.7 m and 0.10 m/s for rooms with a height of 3.6 m.
- Δpt: total pressure drop (Pa)
- L_{WA}: sound pressure level [dB(A)]
- R_t: ratio between the Δt_t (difference in room temperature and throw temperature) and Δt_m (temperature difference between supply and room)
- V_{ZA}: velocity in occupied zone (m/s)
- T_{ZA}: temperature in the occupied zone (°C)
- bv: throw fall (m)
- H: room height (m)
- h: vertical throw over the occupied zone (m)
- A: distance between diffusers
- C: distance between diffuser and wall

R_t value

- Considering an overall throw of:
[L_{0.25} (2.5m) + (H 2.8 - 1.8 occupied zone)] = 3.5 m
from the Temperature difference table, you can establish that with Δt 10 and a throw of 3.5 m, the ratio is: 0.075

- Multiplying the value R_t x Δt (0.075 x . -10°C) = 0.75 so the temperature at the end of the throw will be: 25 - 0.75 = 24.25°C

Throw fall

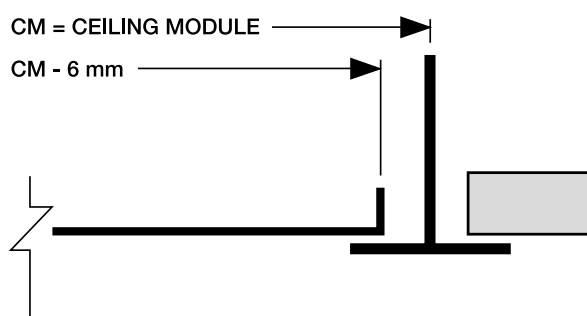
- A: distance between diffusers
- A/2: 5/2 = 2.5 m
- with A/2 = 2.5 m the throw fall is: 0.3 m

Profiles for false ceilings

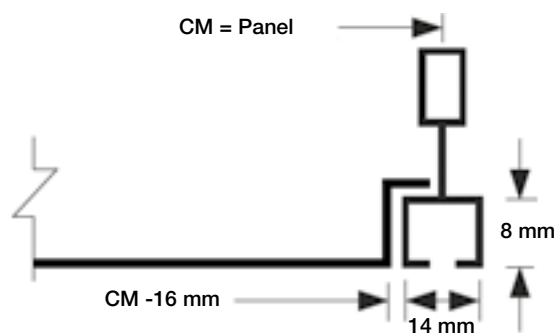
IT IS possible to produce some of our products with panel edges suitable for various types of false ceilings:

- DCRQ
- DEQ
- DQER/Q
- DMFQ
- DMUQ
- DQB4
- RSKP
- RSKO

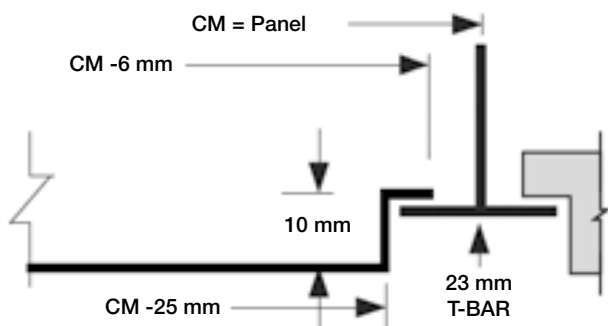
L: Installation recommended for inspection panel



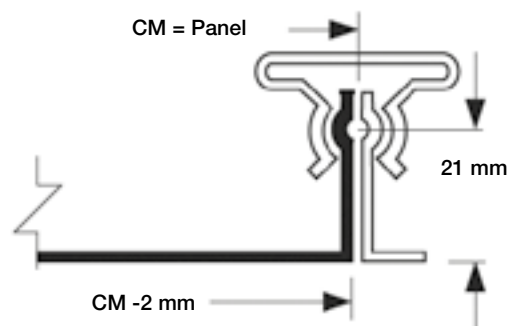
F: Fineline



TL: tile (LAY-IN)



M (SNAP-IN)



All prices are list prices for local market, for a quotation please contact us.

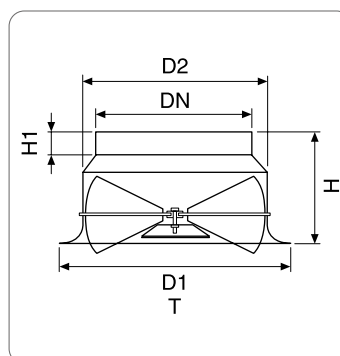
Price list

DN/Type	DGV	DGVA	DGVA-ATS	T	R1	R2	R3	PL	I
160	131	-	OR	48	278	206	206	37	7
200	152	184	OR	54	278	206	206	50	13
250	163	193	OR	54	278	206	206	71	16
315	186	234	OR	54	278	206	206	88	19
400	238	266	OR	109	362	249	249	137	25
500	287	351	OR	-	362	249	249	176	32
630	400	417	OR	-	362	249	249	257	39

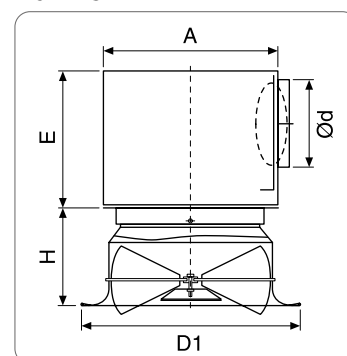
Dimensions

DN	D1	D2	H	H1	T	d	A	E
160	300	198	155	40	596	158	250	250
200	350	248	180	40	596	198	300	300
250	400	298	205	40	596	248	350	350
315	500	398	230	40	596	313	400	400
400	615	465	270	60	596	398	500	500
500	780	565	320	60		498	600	600
630	935	665	390	80		600	730	730

DGV



DGVPLS



Description

DGV: high induction diffuser

- installation height between 3 and 7 m
- individually adjustable blades
- external aluminium body, steel blades + equaliser
- RAL 9010 finish

DGVA: like DGV but with synchronised movement of the blades

DGV...T: including 596x596 panel for installation on false ceiling

Accessories

R1: with proportional actuator 0÷10V, 24V

R2: with on-off actuator, 24V

R3: with on-off actuator, 230V

PL: side entry plenum

I: external insulation reaction to fire class B-s2-d0

S: damper on entry 160/315 €20 - 400/630 €45

DGVA-ATS: thermostatic actuator

Special versions

VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

Other RAL colours on request

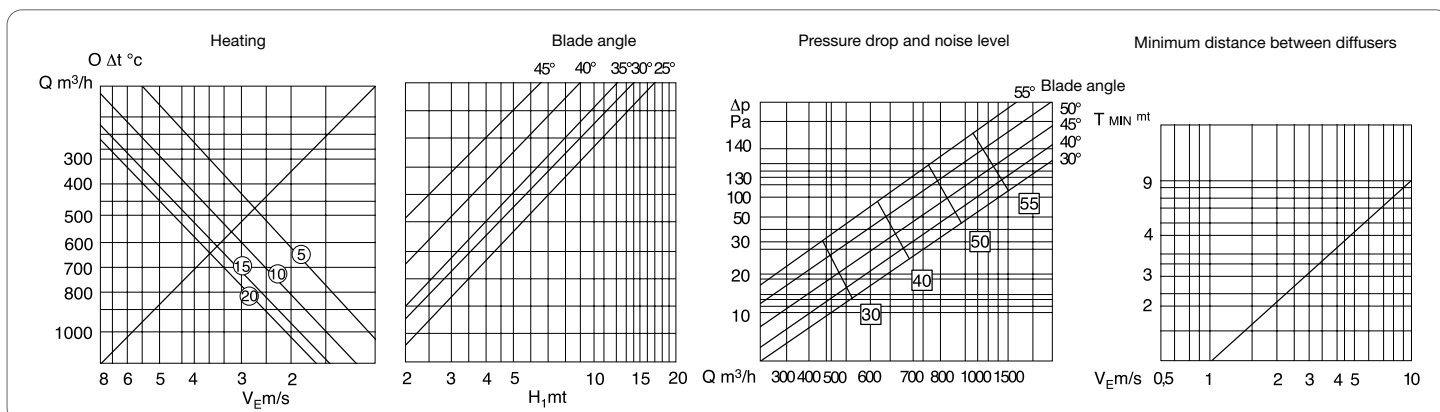
Rapid selection

DN	160	200	250	315	400	500	630
Flow rate (m³/h)	150 - 400	200 - 700	350 - 1000	500 - 1800	800 - 2500	1400 - 4000	2000 - 6000
Δp^* (Pa)	10 - 60	12 - 100	14 - 130	10 - 100	13 - 100	15 - 120	12 - 100
Lw(A)* dB(A)	32 - 55	30 - 56	26 - 48	29 - 55	32 - 55	31 - 56	30 - 55
Min. installation H (m)	3	3	3	3	3	4	5

* The pressure drop and noise level data are calculated with a 45° blade inclination
During the cooling phase, consider a blade inclination of between 45° and 55°

Selection diagrams

DN250



Key

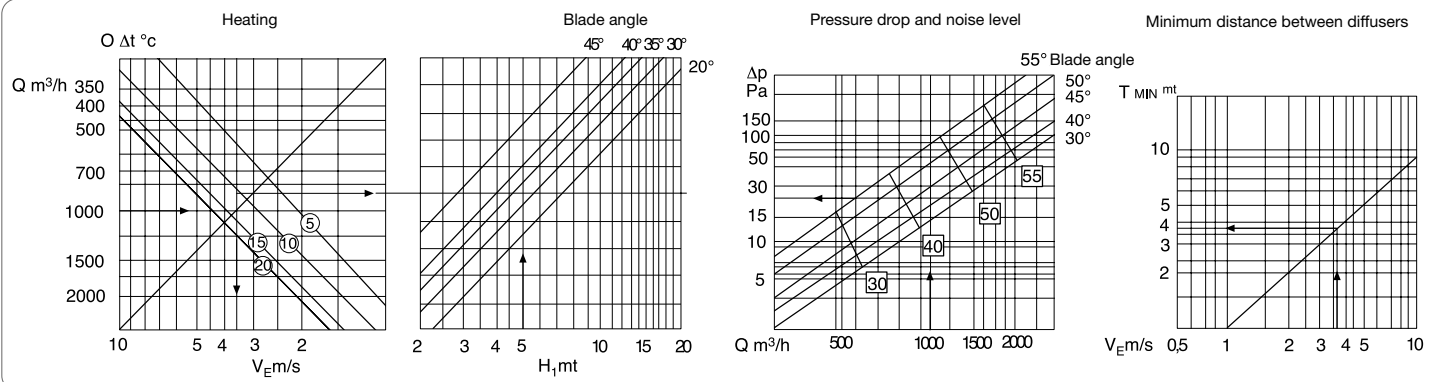
Q (m³/h): air flow
H1 (m): throw depth
VE (m/s): diffuser outlet velocity

Tmin (m): minimum distance between diffusers
 Δp (Pa): pressure drop
Lw(A) dB(A): sound power level

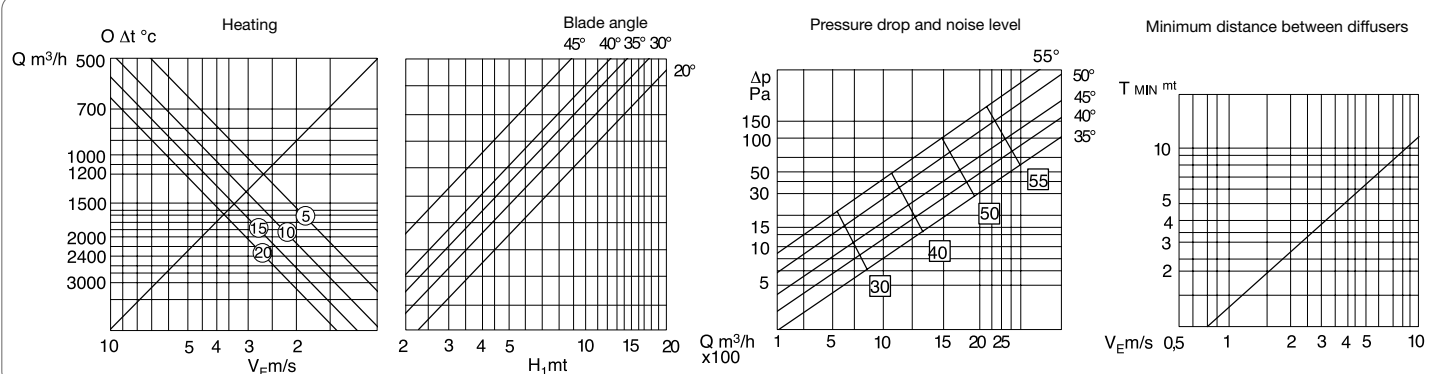
Variable throw diffusers with adjustable blades

Selection diagrams

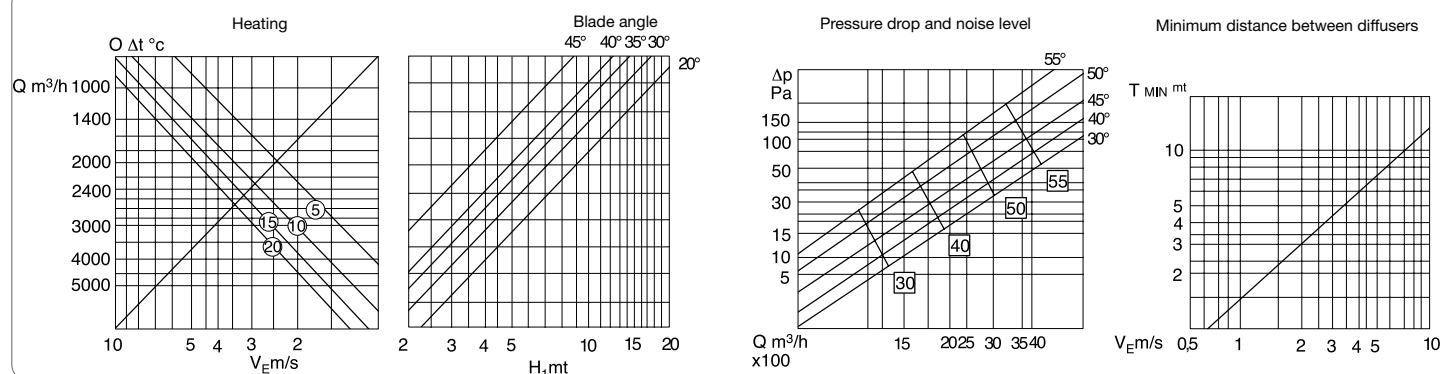
DN315



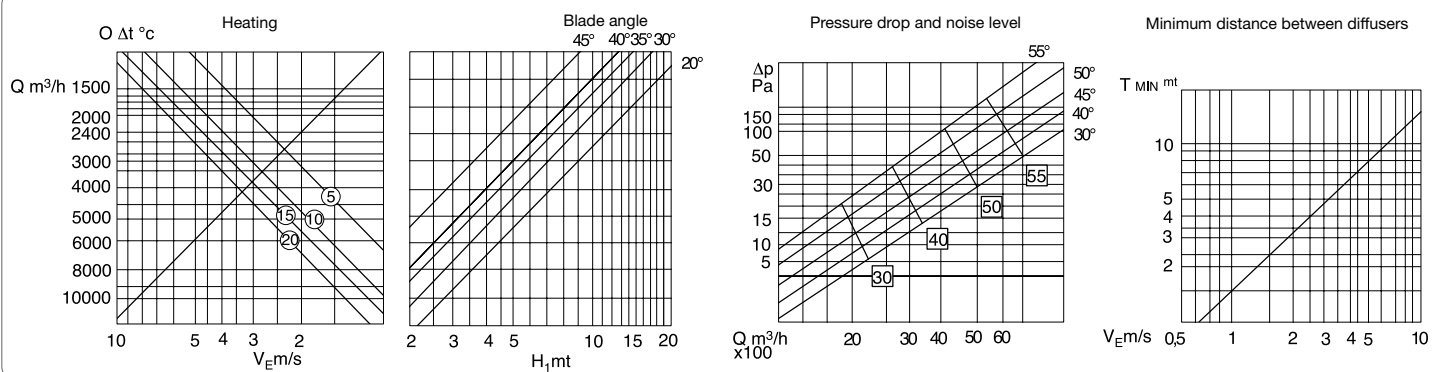
DN400



DN500



DN630



During the cooling phase, consider a blade inclination of between 45° and 55°

DVZ



► **PRODUCT WITH DECLARATION OF CONFORMITY UNI 9494/2 - 2017 FOR TEMPERATURES UP TO 200 °C**

Description

DVZ: high induction diffuser

- installation height between 3 and 8 m
- variable throw due to the combined action between the fixed blades (1), central jet (2) and flow regulator (3) which can be manually controlled from the room or via an electric or thermostatic actuator
- equaliser
- made of aluminium with RAL 9010 finish

Accessories

R1: proportional actuator 0÷10V, 24V

R2: on/off actuator - 24V

PL: side entry plenum

I: external insulation reaction to fire class B-s2-d0

S: damper on entry 160/315 €20 - 400/630 €45

DVZ-ATS: thermostatic actuator

Special versions

DGV...T: including 596x596 panel for installation on false ceiling

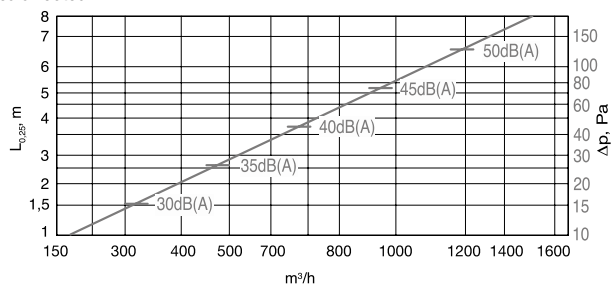
VR: coating according to RAL 9005 / 9006 table

fixed surcharge €30 + 20% per piece

Other RAL colours on request

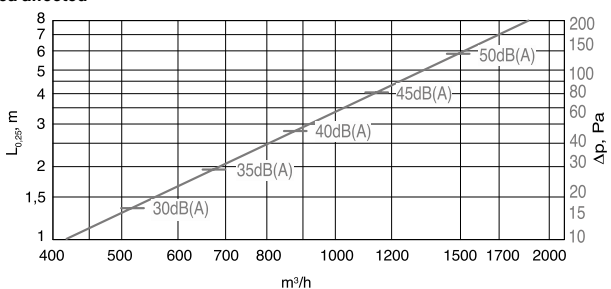
DVZ - 250

Area affected



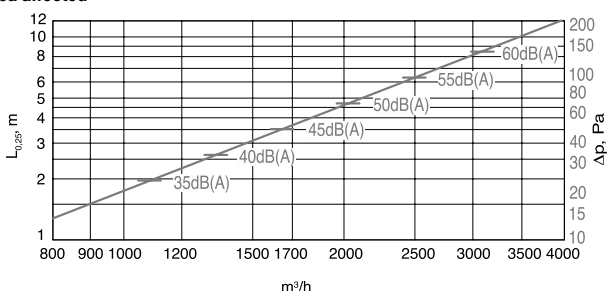
DVZ - 315

Area affected



DVZ - 400

Area affected



All prices are list prices for local market, for a quotation please contact us.

Price list

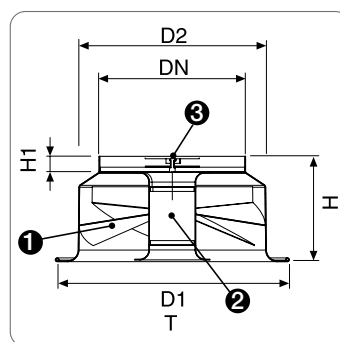
DN/Type	DVZ	DVZ-ATS	T	R1	R2	PL	I
250	195	297	58	278	206	71	16
315	234	336	58	278	206	88	19
400	267	369	-	278	206	137	25
500	334	470	-	362	249	176	32
630	418	554	-	362	249	257	39
800	668	1103	-	362	249	OR	OR

Delivery: prices in bold in stock

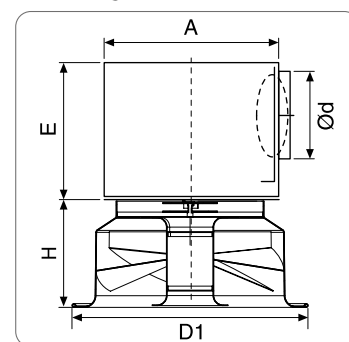
Dimensions

DN	D1	D2	H	H1	T	d	A	E
250	400	298	205	40	596	248	350	350
315	500	398	230	40	596	313	400	400
400	615	465	270	60	596	398	500	500
500	780	565	320	60	-	498	600	600
630	935	665	390	80	-	600	730	730
800	1130	900	557	75	-	600	900	900

DVZ - DVZ-T

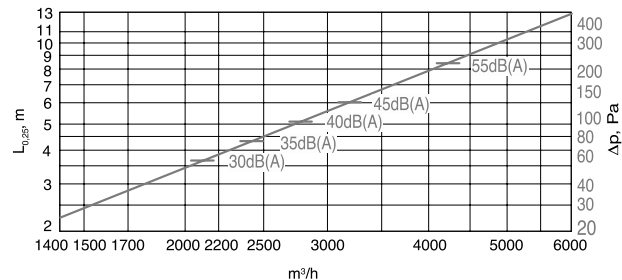


DVZ - PLS



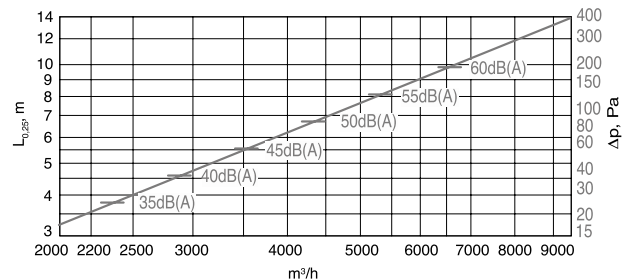
DVZ - 500

Area affected



DVZ - 630

Area affected



Flow, pressure drop and sound level pressure.

Max Δt in heating + 15K.

L 0.25= vertical throw with terminal velocity 0.25 m/s.

Sound level pressure with 4 dB(A) of room attenuation during cooling with central section closed, increase the noise by 4dB(A).

FLH



FLV



Description

FLH...BBC: slot diffuser with special flush-fit profile, suitable for installation in plasterboard false ceilings so only the slot is visible

- made of sturdy extruded aluminium profiles with double deflectors coated in black RAL 9005 to direct and balance the air flow
- optional wall installation
- maximum length for individual piece 2000 mm with ends
- continuous version with joint and terminal profiles at the ends
- various profiles and types of fastening to meet architectural needs

FLCMB: fastening bracket from the room

- optional rounded version

FLH 05 slot 15 mm

FLH 10 slot 25 mm

FLH 15 slot 38 mm

FLH 20 slot 51 mm

FLH 30 slot 76 mm

FLV...BBC: like FLH but for long throws both wall and ceiling

Accessories

PL: side entry plenum

PT: plenum with rear entry

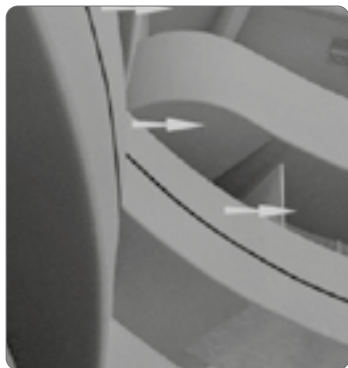
I: external anti-condensate insulation reaction to fire class B-s2-d0

S: damper on plenum entry

TA: acoustic louver

- corner pieces
- suspension and closure systems

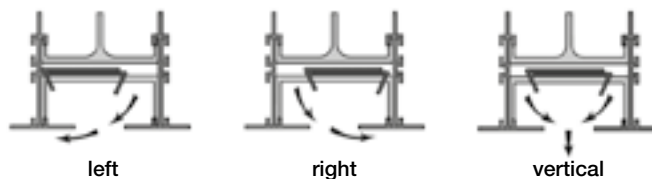
Option to customise the fastenings and plenum heights



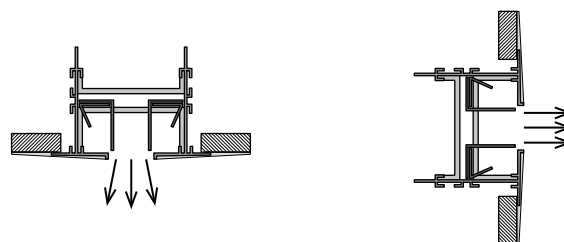
Flush-fit installation layout



FLH: possibility of throw from ceiling



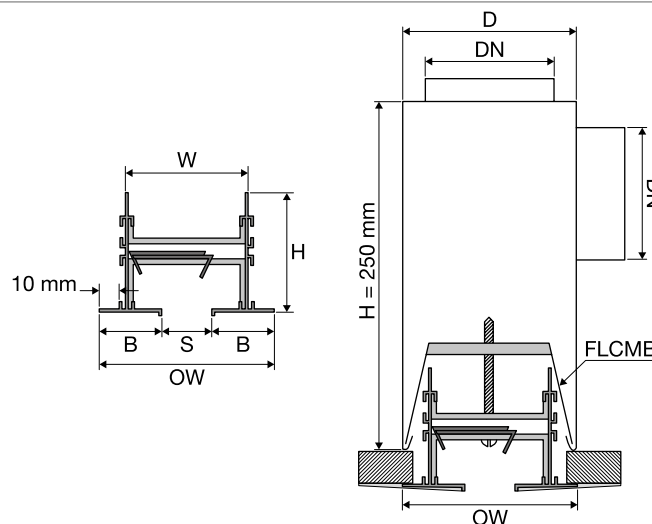
FLV: vertical throw version - wall



Dimensions

TYPE	S	B	OW	W	H	D
FLH 05	15	39	93	66	67	91
FLH 10	25	39	103	76	67	101
FLH 15	38	39	116	89	67	114
FLH 20	51	39	129	102	67	127
FLH 30	76	39	154	127	67	152

BBC flush-fit profile



Flow rate table for L=1000 mm

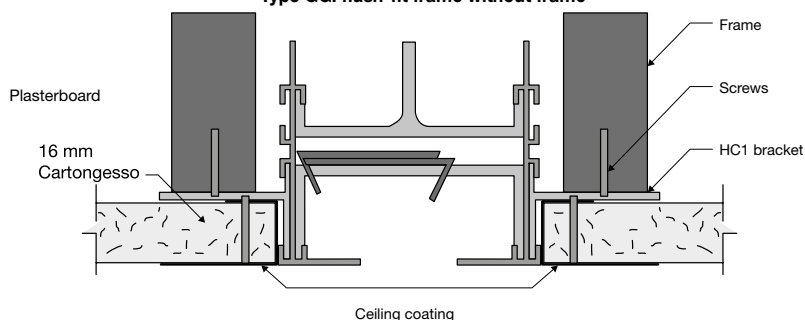
FLH 05	Slot 15 mm Connection DN 125 mm	1000 mm	Flow rate m³/h	35		70		105		140		170		205		240	
			Pt (Pa)	2		7		12		25		42		63		85	
			Pst (Pa)	1		5		8		16		27		41		55	
			NC	<15		<15		<15		15		23		31		35	
			Throw (m) Vt 0.5/0.25 m/s	0,6	1,5	1,5	3,4	2,3	4,2	3,2	4,8	3,2	5,1	4	5,6	4,3	6,2
FLH 10	Slot 25 mm Connection DN 150 mm	1000 mm	Flow rate m³/h	57		115		170		230		280		340		400	
			Pt (Pa)	2		8		16		29		45		65		87	
			Pst (Pa)	1		5		10		19		29		42		56	
			NC	<15		<15		<15		17		25		32		38	
			Throw (m) Vt 0.5/0.25 m/s	0.6	1.5	1.8	3.7	2.7	4.6	3.7	5.2	3.7	5.5	4.6	6.1	4.9	6.7
FLH 15	Slot 38 mm Connection DN 200 mm	1000 mm	Flow rate m³/h	100		170		240		310		360		450		520	
			Pt (Pa)	4		9		19		31		51		67		94	
			Pst (Pa)	3		7		15		25		42		55		77	
			NC	<15		<15		<15		22		30		36		44	
			Throw (m) Vt 0.5/0.25 m/s	1.5	3.4	2.7	4.6	4	5.5	4.6	6.4	5.2	7	5.8	7.6	6.1	7.9
FLH 20	Slot 51 mm Connection DN 200 mm	1000 mm	Flow rate m³/h	140		210		280		350		420		500		560	
			Pt (Pa)	4		8		10		23		34		46		60	
			Pst (Pa)	2		5		10		15		22		30		39	
			NC	<15		<15		<15		15		22		30		37	
			Throw (m) Vt 0.5/0.25 m/s	1.2	3.4	2.7	4.3	3.7	5.2	4	5.8	4.3	7	7.6	8.2	5.2	8.5
FLH 30	Slot 76 mm Fittings 2 x DN 150 mm	1000 mm	Flow rate m³/h	280		390		500		650		700		800		900	
			Pt (Pa)	7		12		20		30		41		55		70	
			Pst (Pa)	4		8		13		19		26		35		44	
			NC	<15		<15		18		22		28		34		40	
			Throw (m) Vt 0.5/0.25 m/s	4	6.1	4.6	7.3	5.8	8.2	6.4	9.1	7	9.8	7.3	10.7	7.9	11.3

Key:

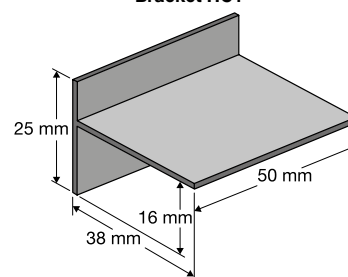
- 1) data with uninsulated plenum
- 2) throw with terminal isothermal velocity 0.5 or 0.25 m/s
- 3) NC with ambient attenuation 10 dB
- 4) 1-way throw, for 2-way throw consider half the flow
- 5) data taken from tests performed in accordance with the ANSI/ASHRAE standard 70-191
- 6) the pressure drop values to consider are: Pst (Pa)

Suspension systems

Type GG: flush-fit frame without frame

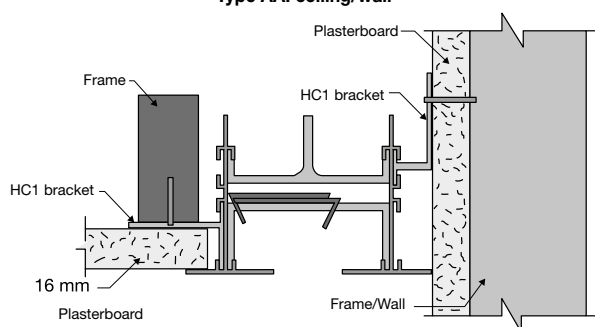


Bracket HC1

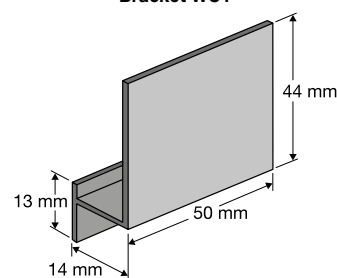


The HC1 bracket can be used for "Flow Line" installation with "GG" profile

Type AA: ceiling/wall

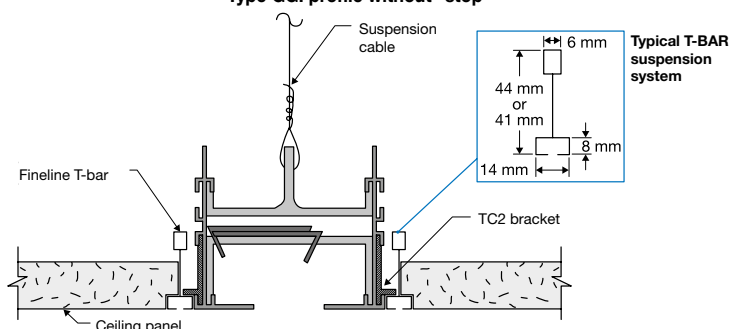


Bracket WC1



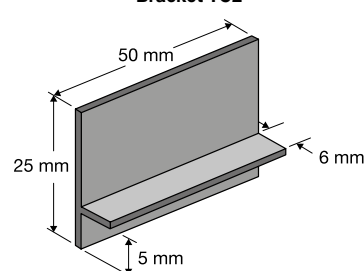
The WC1 bracket can be used for "Flow Line" system with "AA" edge

Type GG: profile without "stop"



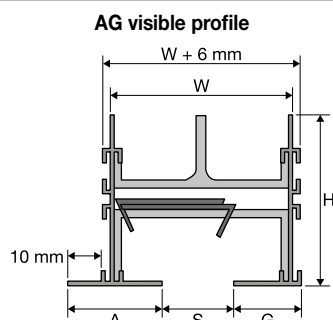
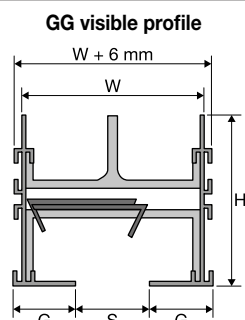
Typical T-BAR suspension system

Bracket TC2



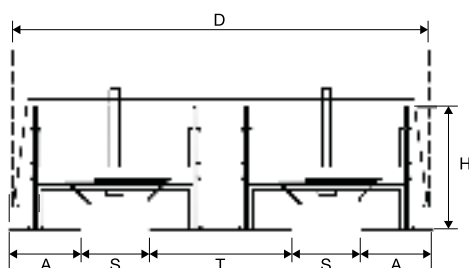
TC2 bracket for "threadline" / "Fineline T-BAR" suspension systems

Other profiles

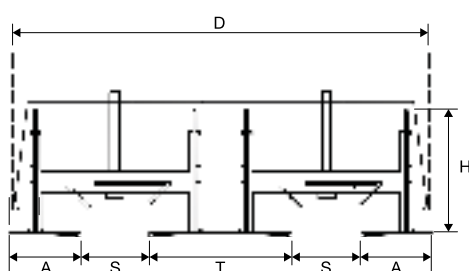


TYPE	S	W	A	G	H
FLH 10	25	64	33	22	60
FLH 15	38	89	39	29	67
FLH 20	51	114	45	35	73
FLH 30	76	165	58	48	86

Two slots AAC profile



Two slots BBC profile



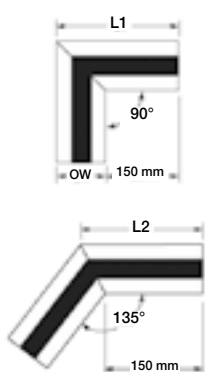
TYPE	S	D	A	T	H
FLH 05	15	174	39	78	67
FLH 10	25	194	39	78	67
FLH 15	38	220	39	78	67
FLH 20	51	246	39	78	67
FLH 30	76	296	39	78	67

Accessories

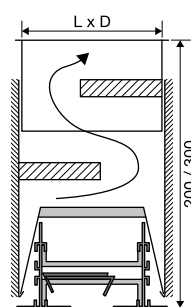
Angles:
FLMC05 = 15 mm
FLMC10 = 25 mm
FLMC15 = 38 mm
FLMC20 = 51 mm
FLMC30 = 76 mm

No. slots	Slot	Edge AA, BB	
		L1	L2
1	15	400	300
	25	400	300
	38	400	300
	51	400	300
	76	400	300

OTHER ANGLES ON REQUEST



Acoustic louver

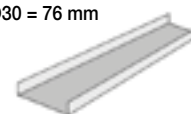


SOUND ATTENUATION								
Hz	63	125	250	500	1K	2K	4K	8K
dB	4	8	15	20	22	21	17	11

Closures:

FLBO05 = 15 mm
FLBO10 = 25 mm
FLBO15 = 38 mm
FLBO20 = 51 mm
FLBO30 = 76 mm

Type O



Standard end



DL 35



Description

DL35: linear diffuser with slot in natural anodised aluminium

- air flow adjustable to 180° in 100mm sectors
- deflectors in antistatic plastic (black, white, grey)
- 1 to 4 slots available
- max length per element L=2000
- $\Delta T = \pm 10^\circ\text{C}$
- installation height between 2.7 / 4.5 m

DL35B: like DL35, without deflectors (list price -10%)

LT360: version with narrower edges (DL 35 price list +15%)

Accessories

PL: galvanised steel side entry plenum

S: damper on plenum entry (list price €20/each)

AF: acoustic insulation

I: external anti-condensate insulation fire-resistance class B-s2-d0

- standard fastening, plenum diffusers with brackets and screws

Special versions

- plenum in other sizes and entries

W: RAL 9010 coating (list price +20%)

VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

Other RAL colours on request

All prices are list prices for local market, for a quotation please contact us.

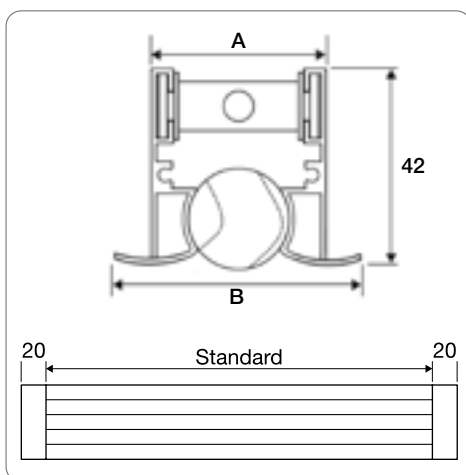
DL 35 price list

No. slots	DL 35 (€/m)	PL (€/m)	PLI (€/m)
1	62	54	82
2	102	56	84
3	134	58	86
4	168	62	88

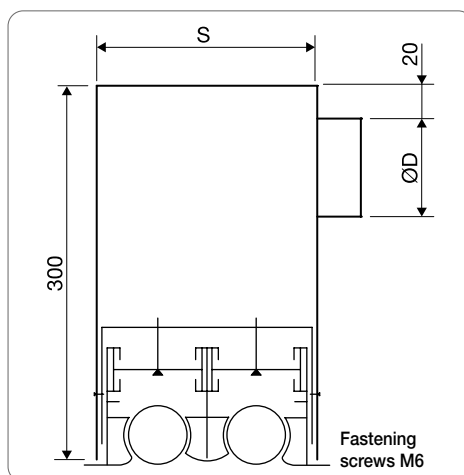
DL 35 / LT 360 dimensions

No. slots	Length	Ø and no. of fittings	A	B	S	A1	B1
1	1000	100-1	39	56	43	23	33
	1500	100-2					
	2000	100-2					
2	1000	160-1	77	94	81	56	66
	1500	160-2					
	2000	160-2					
3	1000	200-1	115	132	119	89	99
	1500	200-2					
	2000	200-2					
4	1000	200-1	153	170	157	122	132
	1500	200-2					
	2000	200-2					

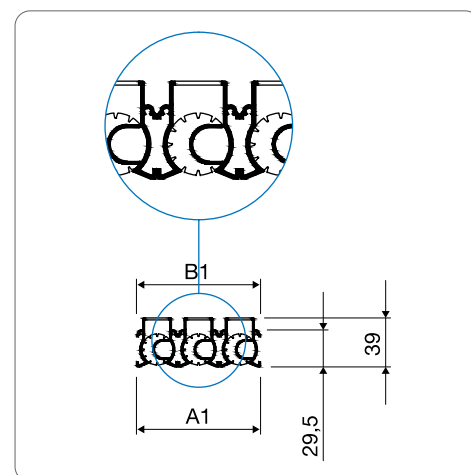
DL 35



PL



LT 360



Selection table for L = 1000 mm - Vt 0.2 m/s

No. slots	AK m²	Flow rate (m³/h)															
		60		80		100		150		200		250		300		400	
1	0.0062	18	3.1	26	4.4	32	5.9										
		2.2	8	3.6	18	4.5	25										
2	0.0124			11	3	18	4.1	28	7	38	9						
				1.8	5.5	2.2	7	3.3	17	4.5	30						
3	0.0186					9	3.5	20	6	30	8.5	36	11	40	13.5		
						1.5	5	2.2	7	3	13	3.7	21	4.5	30		
4	0.0248	LwA	LT					10	5.5	20	7.6	28	10	32	12	42	17
		Vk	Δp Pa					1.7	6	2.25	8	2.8	13	3.3	20	4.5	35

LwA = sound pressure level dB(A)

LT = 0.2 m/s, unidirectional Vt

Correction factor for bidirectional throw = L x 0.64

Vk = velocity in m/s

Δp Pa = pressure drop in Pascal

Adjustable high induction diffusers

DL 55



Description

DL55: linear diffuser with slot in natural anodised aluminium

- air flow adjustable to 180° in 100 mm sectors
- deflectors in antistatic plastic (black, white, grey)
- 1 to 4 slots available
- max length per element L=2000
- $\Delta T = \pm 10^\circ\text{C}$
- installation height between 2.7 / 4.5 m

DL55B: like DL55, without deflectors (list price -10%)

Accessories

PL: galvanised steel plenum with side entry

S: damper on plenum entry (list price €20/each)

AF: acoustic insulation

I: external anti-condensate insulation fire-resistance class B-s2-d0

- standard fastening, diffuser/plenum with brackets and screws

Special versions

- plenum in other sizes and entries

W: RAL 9010 coating (list price +20%)

VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

Other RAL colours on request

All prices are list prices for local market, for a quotation please contact us.

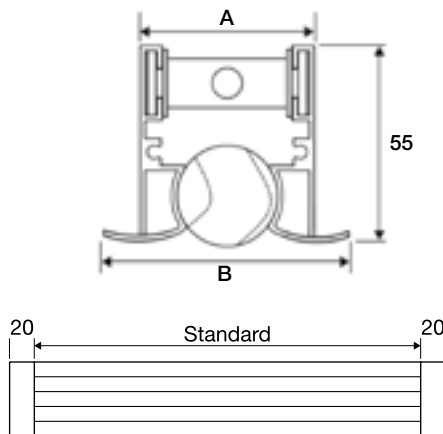
DL 55 price list

No. slots	DL 55 (€/m)	PL (€/m)	PLI (€/m)
1	86	57	86
2	139	59	88
3	177	61	90
4	227	64	92

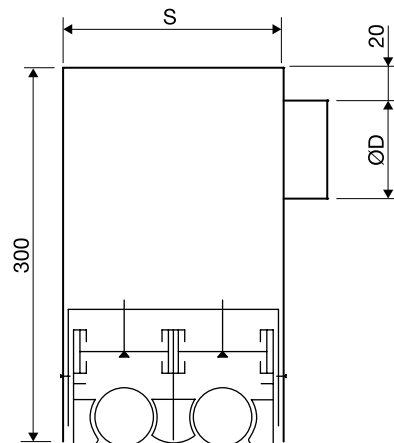
DL 55 dimensions

No. slots	Length	Ø and no. of fittings	A	B	S
1	1000	100-1	51	73	56
	1500	100-2			
	2000	100-3			
2	1000	160-2	102	124	107
	1500	160-3			
	2000	160-4			
3	1000	200-2	153	175	158
	1500	200-3			
	2000	200-4			
4	1000	200-2	204	226	209
	1500	200-3			
	2000	200-4			

DL 55



PL



Selection table for L = 1000 - Vt 0.2 m/s

No. slots	AK m²	Flow rate (m³/h)																
		80		100		150		200		250		300		400		500		600
1	0.013	12		18		30		38		44								
		1.7	10	2.1	15	3.2	30	4.2	49	5.3	70							
2	0.026			5		16		24		30		35		43		49		
				1	5	1.3	6	2.1	11	2.7	16	3.2	23	4.2	40	5.3	60	
3	0.039							14		20		25		33		39		44
								1.4	6	1.8	9	2.1	12	2.8	24	3.5	35	3.6
4	0.052	LwA	LT					8		14		20		28		34		40
		Vk	Δp Pa					1	4	1.4	5	1.6	6	2.1	12	2.7	18	3.2

LwA = sound pressure level dB(A)

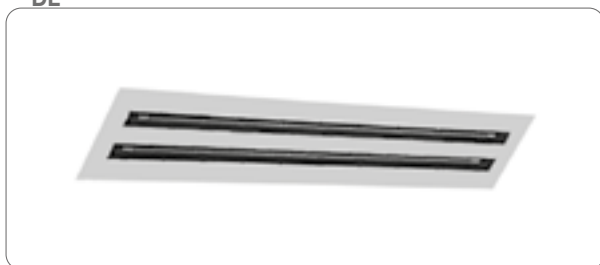
LT = 0.2 m/s, Vt, unidirectional

Correction factor for bidirectional throw = L x 0.64

Vk = velocity in m/s

Δp Pa = pressure drop in Pascal

DL



Description

- DL:** linear aluminium diffuser with slot and adjustable deflectors with high induction, slot width 20 mm
- optional supply of 1 to 8 slots and continuous assembly with multiple elements
 - suitable for operation with $\Delta t \pm 10^\circ$
 - maximum length per element $L = 2000$ mm
 - standard fastening with adjustable bracket
 - made of natural anodised aluminium

A90: 90° blank diffuser - 300x300

Accessories

- D:** diffuser standard black - white (price list +20%)
T: pair of end elements
PL: side entry plenum
PLI: like PL but with external insulation and reaction to fire class B-s2-d0
 Circular/oval entries instead of standard (price list €30/each)
S: damper on plenum entry (list price €20/each)

Special versions

- 25 mm slot with 25% increase in air flow (list price +20%)
 - narrower edges 18mm - 14mm (list price +20%)
- DL ... DTPF:** linear return diffuser with G3 filter which can be inspected in the room with 4 slots.
W: RAL 9010 coating (list price +20%)
VR: coating according to RAL 9005 / 9006 table
 fixed surcharge €30 + 20% per piece

All prices are list prices for local market, for a quotation please contact us.

DL..D price list

No. slots/GR	600	1000	1500	2000	T	A90
1	39	49	63	76	6	72
2	55	69	90	111	6	95
3	70	89	117	146	6	117
4	85	109	144	180	6	140
5	106	136	180	224	6	175
6	127	163	216	269	6	210

Delivery: 2 weeks

Plenum price list

No. slots/GR	PL			PLI		
	1000	1500	2000	1000	1500	2000
1	49	74	98	74	110	146
2	51	76	100	76	112	148
3	53	78	102	78	114	150
4	55	80	104	80	116	152
5	57	82	106	82	118	154
6	59	84	106	86	120	156

1 x intake up to $L = 1600$

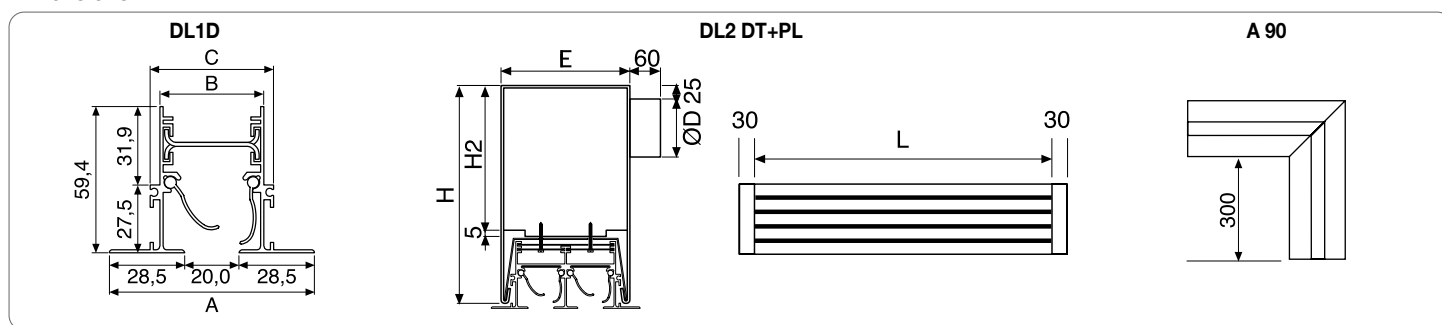
2 intakes $> L = 1600$

Overall dimensions

No. slots	A	B	C	D Ø	H	H2	E
1	77	39.4	46.4	158	300	240	60
2	115.5	78.5	85.2	198	300	240	98
3	154	117	123.7	198	300	240	137
4	192.5	155.5	162.2	248	300	240	175
5	231	193.4	200.4	248	300	240	213
6	269.5	231.9	238.9	313	365	305	252

Dimensions with head frame (end elements) $L+20$ mm / $C+10$ mm

Dimensions



Selection table for $L = 1000$ - $V_t = 0.375$ m/s

No. slots	Flow rate (m³/h)															
	60		100		150		200		250		300		400		500	
1	-	1.9	24	3.1	35	4.7										
	2.4	5.1	4	14	6	32										
2			-	2.2	20	3.3	27	4.4	33	5.5	38	6.6				
			2	3.5	3	8	4	14	5	22	6	32				
3					-	2.7	18	3.6	24	4.5	29	5.4	37	7.2		
					2	3.5	2.6	6.3	3.3	10	4	14	5.3	25		
4	NR	L_t					-	3.1	18	3.9	23	4.7	30	6.2	36	7.8
	v_k	Δp_t					2	3.5	2.5	5.5	3	8	4	14	5	22

The NR values do not take into account room attenuation

K factors for other v_t

v_t (m/s)	0.25	0.375	0.50	0.625
L_t (m) x	1.50	1	0.75	0.60

A = With ceiling effect
B = Without ceiling effect

K factor for vertical throw

Δt (K)		-10	0	+15	v_k	Δp_t	NR
L_t	Ax	x0.8	x0.5	x0.3			
	B	x0.55	x0.35	x0.2	x0.45	x0.8	-3

BF



Description

BF: Linear aluminium diffusers with slot

- slot width 20.5 mm
- optional supply of 1 to 5 slots and continuous assembly with multiple elements
- suitable for operation with $\Delta t \pm 10^\circ$
- outer edge reduced to 14.8 mm
- maximum length per element $L = 2000$ mm
- standard fastening with concealed M6 screws and c-bracket
- made of natural anodised aluminium
- 2 x adjustable deflectors per natural anodised aluminium slot

Accessories

S: volume control damper on plenum (list price €20/each)

T: pair of end elements

PL: side entry plenum

PLI: but with external insulation and reaction to fire class B-s2-d0

Circular/oval entries instead of standard (price list €30/each)

Special versions

- Borderless B1=A (list price +30% per m)

W: RAL 9010 coating (same price as BF)

VR: RAL 9005/9006 coating (same price as BF)

1 x INTAKE UP TO L=1600

All prices are list prices for local market, for a quotation please contact us.

BF price list

No. slots/GR	600	1000	1500	2000	T	A90
1	23	37	50	63	5	30
2	33	51	71	91	6	44
3	45	68	97	124	6	61
4	57	86	122	158	7	83
5	69	103	164	223	7	103

PLENUM price list

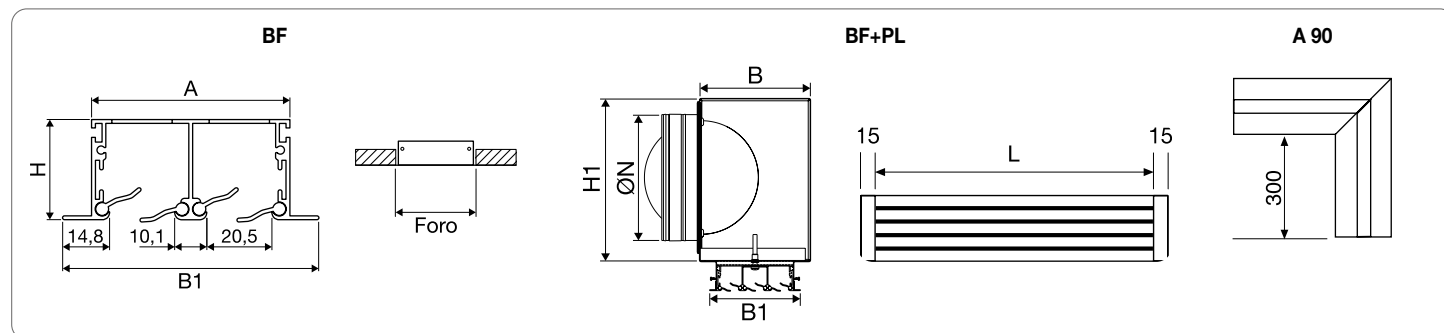
No. slots/GR	PL			PLI		
	1000	1500	2000	1000	1500	2000
1	49	74	98	74	110	146
2	51	76	100	76	112	148
3	53	78	102	78	114	150
4	55	80	104	80	116	152
5	57	82	106	82	118	154
6	59	84	106	86	120	156

BF dimensions

No. slots	A	B1	H	HOLE
1	31.8	50.1	31.5	38
2	62.4	80.7	31.5	68
3	93.0	111.3	31.5	99
4	123.6	141.9	31.5	130
5	154.2	172.5	31.5	160

No. slots	H1	B	Ø N
1	200	40	125
2	200	71	125
3	235	101.5	160
4	235	132	160
5	275	163	200

Dimensions



Selection table for L = 1000 - Vt = 0.375 m/s

No. slots	Flow rate (m³/h)													
	40		80		120		160		200		250		300	
1	-	1.9	24	3.1	35	4.7								
	2.4	5.1	4	14	6	32								
2			-	2.2	20	3.3	27	4.4	33	5.5	38	6.6		
			2	3.5	3	8	4	14	5	22	6	32		
3					-	2.7	18	3.6	24	4.5	29	5.4	37	7.2
					2	3.5	2.6	6.3	3.3	10	4	14	5.3	25
4	NR	L _t					-	3.1	18	3.9	23	4.7	30	6.2
	v _k	Δp _t					2	3.5	2.5	5.5	3	8	4	14

The NR values do not take into account room attenuation

K factors for other v_t

v _t (m/s)	0.25	0.375	0.50	0.625
L _t (m) x	1.50	1	0.75	0.60

A = With ceiling effect
B = Without ceiling effect

K factor for vertical throw

Δt (K)	-10	0	+15	v _k	Δp _t	NR
L _t	Ax	x0.8	x0.5	x0.3	x0.45	x0.8
	B	x0.55	x0.35	x0.2		

All prices are list prices for local market, for a quotation please contact us.

DDR12-C



Description

DDR12: high induction diffuser for ceiling or wall

- rectangular throw diffuser with adjustable wing deflectors
- installation height between 2.7 and 4.0 m
- application on duct or plenum
- made of steel coated with RAL 9010, black plastic wing deflectors
- fastening with visible screws + cover

DDR12-C: like DDR but in version for circular duct (20% increase)

Accessories

PL: side entry plenum

PT: upper entry plenum

I: external insulation reaction to fire class B-s2-dO

S: damper on plenum

R: equaliser wire

SS: sliding damper on diffusion (on request)

Special versions

VR: coating according to RAL 9005 / 9006 table

fixed surcharge €30 + 20% per piece

Other RAL colours on request

Selection table

GR	Flow rate (m³/h)		Lw(A) dB(A)		Δpt (Pa)	
	min	max	min	max	min	max
425x115	70	140	20	40	20	60
625x115	110	200	20	40	20	50
425x215	130	250	20	40	20	60
625x215	190	350	20	40	20	50
825x215	250	450	20	40	15	40
1025x215	300	530	20	40	15	40
625x315	260	500	20	40	15	40
825x315	350	650	20	40	15	40
1025x315	420	800	20	40	15	40

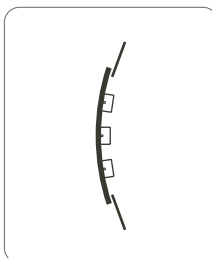
Lw (A): sound level power without room attenuation

Δ Pt(Pa): pressure drop in Pascal

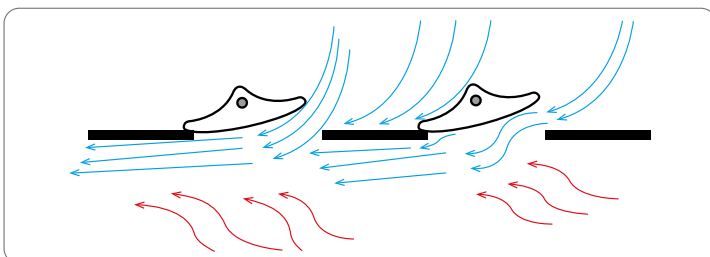
DDR12-C

Diameter duct mm	Height mm
250 - 800	115
600 - 1800	215
900 - 2400	315

Detail



Deflector position



Deflectors: with special profile capable of generating air flows to obtain ultra-high mixing, reduced pressure drop and reduced noise level.

Price list

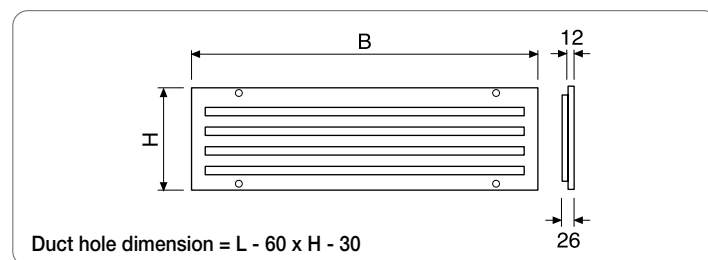
GR/Type	DDR12	PL	PT	S	R	I
425x115	62	55	55	18	17	44
625x115	77	63	63	18	18	48
425x215	79	61	61	18	20	48
625x215	106	68	68	18	23	64
825x215	129	81	81	18	25	66
1025x215	169	86	86	19	30	68
625x315	146	84	84	18	28	66
825x315	163	86	86	19	34	68
1025x315	191	94	94	19	40	75

Delivery: 3 weeks

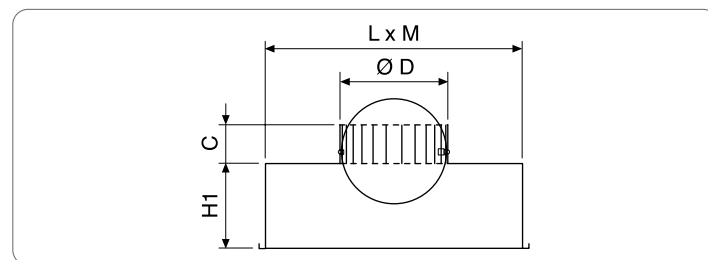
Dimensions

GR	B	H	M	L	H1	H2	ØD	C
425x115	425	115	414	114	200	300	98	50
625x115	625	115	614	114	200	300	98	50
425x215	425	215	414	214	200	350	123	50
625x215	625	215	614	214	200	350	158	50
825x215	825	215	814	214	200	350	198	50
1025x215	1025	215	1014	214	200	350	198	50
625x315	625	315	614	314	200	350	198	50
825x315	825	315	814	314	250	350	248	50
1025x315	1025	315	1014	314	250	350	248	50

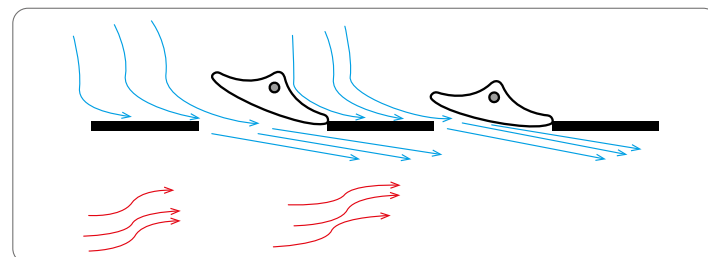
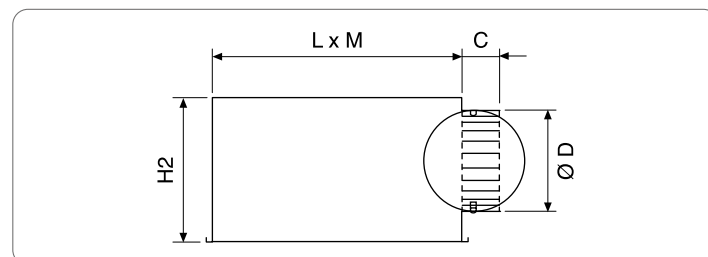
DDR12



PTS



PLS

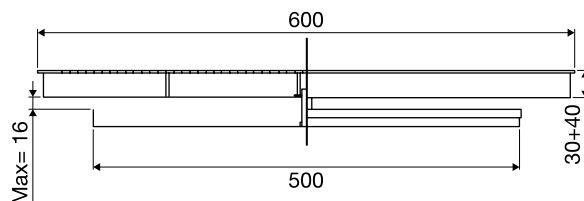


Walkable perforated panel

PFZ



PFZ dimensions



Description

PFZ: walkable perforated panel 600x600

- made of galvanised steel
- drilling: 1296 holes Ø 8 mm
- made of sturdy perforated sheet metal plate th. 2 mm, frame and reinforced ribbing

Accessories

SRZ: control damper

Special versions

The panels can be laminated in plastic, PVC or needle-punched (pending feasibility assessment)

VR: powder coating (polyester)

- other type of drilling can be made on request

PRICE LIST:

- Galvanised diffuser € 290 each
- Control damper € 40

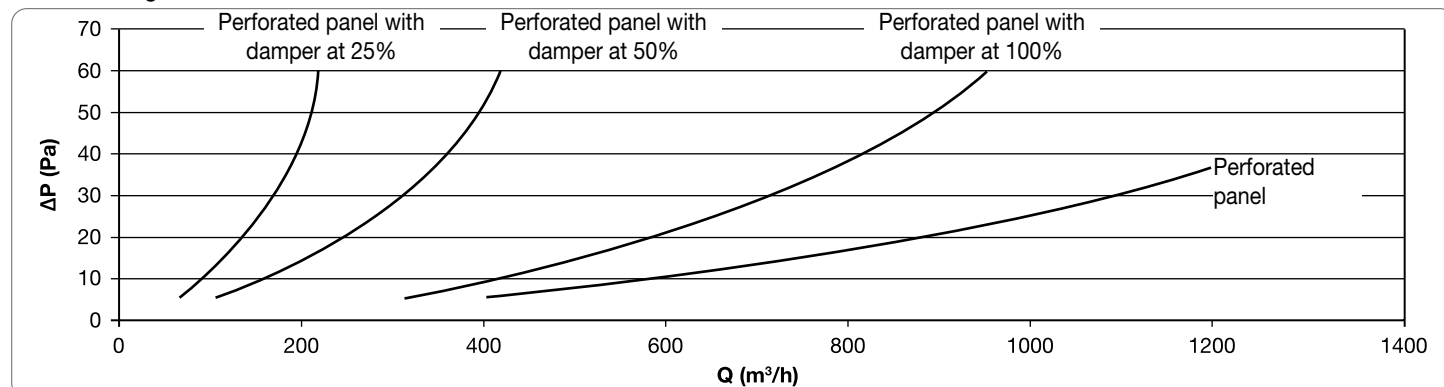
Load-bearing capacity

The load class of the ventilation panel was determined by the Giordano Institute, according to UNI EN 12825, and produced the following results:

Nominal load:	200 daN
Corresponding deformation (in the centre of the panel):	1.4 mm
Collapse load (measured in the centre of the side):	10086 N

According to the standard, the ventilation panel meets the criteria for the attribution of load class V.

Selection diagram



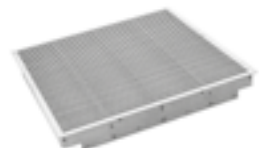
Key

Q = air flow

ΔP = pressure drop

Heavy duty floor grilles

GF-EHD



Description

GF-EHD: heavy duty floor grilles in accordance with BS EN 13264-2001 PSA

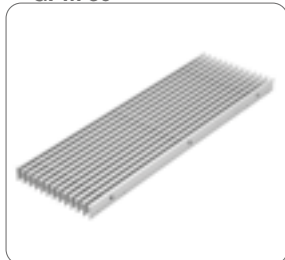
- aluminium heavy duty floor grilles
- suitable for heavy-duty use
- manufactured with extra-thick frame and blades
- available in different configurations for installations in a wide variety of floors

PRICE ON REQUEST

Example

Load of 4.5 KgN - equal to 458 Kg on 25x25 mm surface, or 4 loads spread out over a surface of 200x200 mm for a total of 11 KgN = 1122 Kg in accordance with BS EN 13264-2001 PSA.

GPM 30



Description

GPM 30: anodised aluminium floor grille, blades parallel to "L" side, th. 30 mm

Accessories

SC: volume control damper

B: galvanised steel dust collection basket, depth 200 mm (list price €72)

CT: L-shaped galvanised steel counterframe, of suitable thickness (on request)

Special versions

GPM30 R: like GPM 30 but with adjustable thickness between 30 and 50 mm (list price +20%)

GPMX: made of AISI 304/316 stainless steel

VR: coating according to the RAL table (on request)

All prices are list prices for local market, for a quotation please contact us.

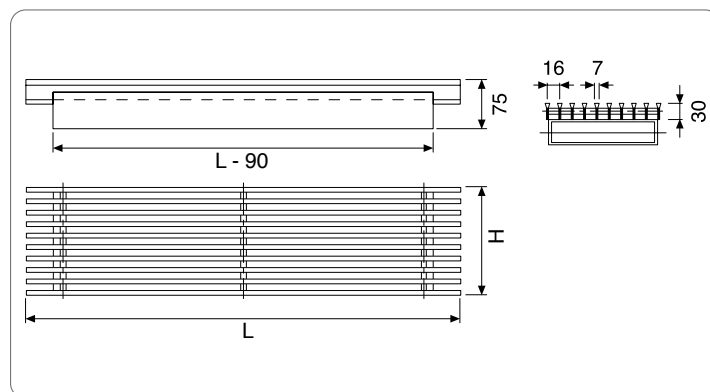
GPM30 price list

LxH	150	200	300	400	500	600
600	51	72	135	-	-	243

SC price list

LxH	150	200	300	400	500	600
600	22	33	50	-	-	73

GPMSC



Technical data

Nominal dimensions (BxL) in mm	Vk	0.5	1	1.5	2	2.5	3	3.5	4	p* (daN)
	ΔP	0.4	1	2.5	4	5.5	7	8.5	10	
600x150	Q	80	160	240	320	400	480	560	620	200/300
	NR	< 25	< 25	< 25	< 25	27	31	33	35	
600x200	Q	110	220	330	440	550	660	770	880	200/300
	NR	< 25	< 25	< 25	< 25	27	31	34	36	
600x300	Q	160	320	480	640	800	960	1120	1280	200/300
	NR	< 25	< 25	< 25	< 25	28	32	35	38	
600x600	Q	320	640	960	1280	1600	1920	2240	2560	200/300
	NR	< 25	< 25	< 25	< 25	29	33	36	40	

Key

Q: Air flow rate m³/h

ΔP: Pressure drop (Pa)

Vk: Flow velocity (m/s)

***p:** Walkable load (daN)

NR: noise level

*: the walkable loads indicated for grilles without counterframes resting on T0038 cross-pieces.

The grilles can be classified as K3 grilles (walkable grilles suitable for installation in areas with no vehicle traffic, such as buildings for commercial or public use) according to the UNI EN1253-2 standard and support a load of 200 daN remaining in the elastic range and of 300 daN without breaking.

Floor grilles

LBDF



Description

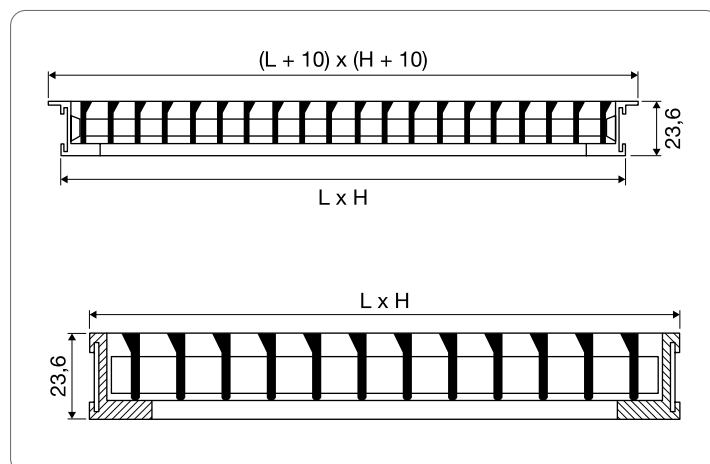
LBDF: anodised aluminium floor grille, removable blades parallel to the "H" side with 15° deflection, frame with cornice dimensions +10mm and th. 23.6 mm

LBDF: like LBDF but with frame with external cornice dimensions

LBD: like LBDF but with only roll-up blade pack with th. 19 mm

PRICE ON REQUEST

Dimensions



DM



Description

- DM:** diffuser with multiple jet nozzles, individually adjustable
- flow between 200 and 2500 m³/h
 - application on duct or plenum
 - made of a combination of steel and coated aluminium RAL 9010
 - fastening with visible screws

Accessories

- PL:** side entry plenum (on request)
PT: upper entry plenum (on request)
I: external anti-condensate insulation fire-resistance class B-s2-d0

Special versions

- FS:** fastening with concealed bracket (list price + €20)
 • calendered version for direct application on circular duct +10%
VR: coating according to RAL 9005 / 9006 table
 fixed surcharge €30 + 20% per piece

Other RAL colours on request

Example of order: **DM 800-2**
 Flow 950 m³/h - L0.6 15 m - Δp 85 Pa

All prices are list prices for local market, for a quotation please contact us.

Price list

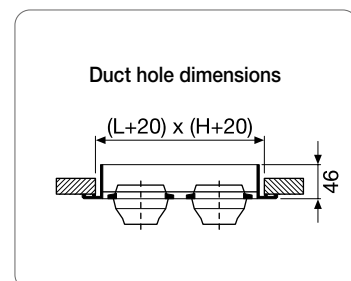
Nozzle rows	Height	L					
		300	400	500	600	800	1000
1	100	93	117	140	163	211	258
2	200	161	206	252	297	389	480
3	300	228	296	364	431	567	703

Delivery: 3 weeks

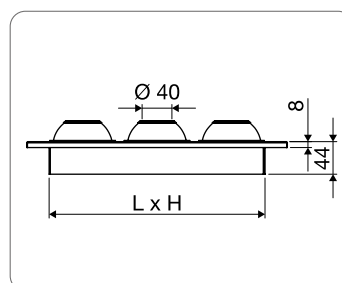
Dimensions table

Base	Height		
	Nozzle rows		
	1	2	3
300	100	200	300
400			
500			
600			
800			
1000			

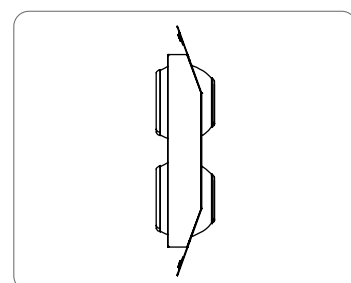
Duct installation



Front dimensions



Calendered



Dimensions all out
 (L+50xH+50)

Rapid selection

L	Rows	Flow rate m³/h			L0.6 (m)			Δp (Pa)			LwA[dB(A)]			Rt			ΔL0.6 (m)		
		min	medium	max	min	medium	max	min	medium	max	min	medium	max	min	medium	max	min	medium	max
300	1	120	180	230	5.0	7.0	8.5	40	80	130	25	34	40	0.100	0.06	0.040	0.9	1.0	1.1
400		150	230	310	5.0	8.0	10.0	30	70	130	23	32	40	0.070	0.04	0.030	1.1	1.3	1.5
500		210	340	400	6.0	9.0	11.0	40	80	130	25	34	40	0.080	0.05	0.040	1.3	1.7	2.1
600		250	360	460	7.0	10.5	13.0	40	80	130	25	34	40	0.055	0.04	0.030	1.7	2.3	2.7
800		320	460	600	8.0	11.5	15.0	40	80	130	24	34	40	0.060	0.04	0.030	2.5	2.9	3.3
1000		400	580	750	9.0	13	16.0	40	75	130	25	33	40	0.070	0.05	0.040	2.5	4.1	5.5
300	2	250	360	470	6.5	9.5	12.0	40	80	130	25	34	40	0.070	0.05	0.035	1.6	2.1	2.5
400		330	460	600	8.0	12	15.0	40	75	130	25	33	40	0.055	0.04	0.030	2.0	2.3	3.8
500		400	600	780	8.0	13	16.0	40	80	130	25	34	40	0.070	0.04	0.025	2.2	3.3	4.3
600		500	710	920	10.0	15	18.0	40	75	140	25	33	41	0.050	0.04	0.030	2.8	4.0	5.0
800		650	950	1250	9.0	15	18.0	40	85	130	25	35	40	0.070	0.045	0.030	3.2	4.3	5.3
1000		800	1150	1500	12.5	19	23.0	40	70	120	23	32	39	0.055	0.04	0.030	4.0	5.1	6.0
300	3	380	550	700	8.5	13	16.0	40	85	130	25	35	40	0.070	0.05	0.035	2.4	5.8	5.0
400		500	700	900	10.0	14	17.0	40	75	130	25	33	40	0.070	0.05	0.035	2.0	3.7	5.0
500		620	930	1200	11.0	17	20.0	40	90	130	25	36	40	0.070	0.055	0.040	3.8	4.8	6.0
600		750	1100	1450	12.5	19	23.0	40	80	140	25	34	41	0.055	0.04	0.030	3.5	4.9	6.0
800		1000	1400	1800	13.5	20	25.0	40	75	140	25	33	40	0.070	0.05	0.035	5.0	5.5	>6
1000		1300	1850	2400	16.5	23	27.0	50	85	150	25	35	42	0.055	0.045	0.035	>6	>6	>6

Key

LwA: sound pressure level dB(A)

Δp: total pressure drop (Pa)

L0.6: front throw length with maximum end velocity of 0.6 m/s in isothermal conditions, corresponding to an average velocity in the occupied area of 0.2 m/s for installation height between 3 and 4 m

Rt: ratio between ΔtL (difference in room temperature and temperature L0.6) and ΔtM (temperature difference between supply and room)

example: Rt 0.1; ΔtM -8K; ΔtL = 0.1 x (-8K) = -0.8K

ΔL0.6: throw deviation upwards or downwards with ΔL at a distance L0.6

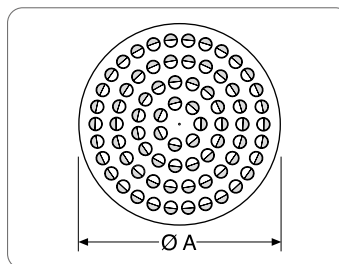
All prices are list prices for local market, for a quotation please contact us.

Price list

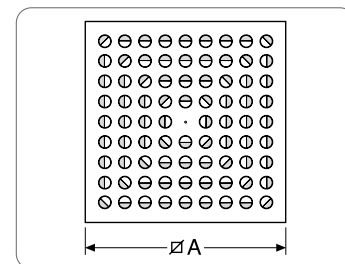
GR\Type	DMUC	DMUQ	DMUR	PL	PT	S	R	I
400	83	82	-	62	62	17	15	46
500	107	104	-	69	69	17	19	55
600	133	129	-	79	79	17	25	70
625 x 115	-	-	88	57	57	17	16	44
625 x 215	-	-	120	62	62	17	21	58
825 x 215	-	-	146	74	74	17	23	60
825 x 315	-	-	185	78	78	17	31	62
1025 x 315	-	-	218	89	89	17	40	68

Delivery: 3 weeks

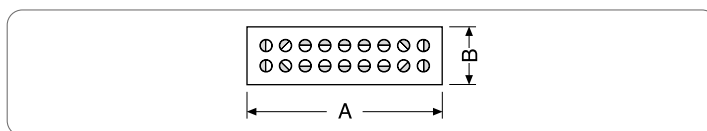
DMUC



DMUQ

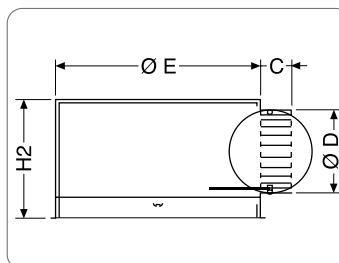


DMUR

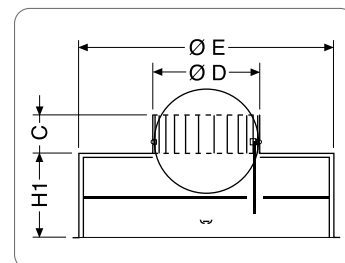


Circular

PLS

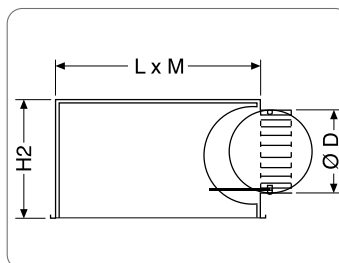


PTS

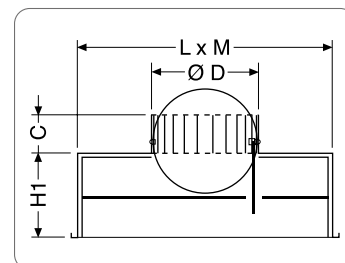


Square/Rectangular

PLS



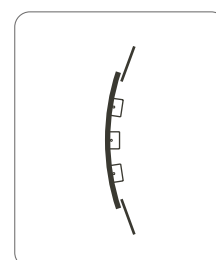
PTS



DMURC

Diameter duct mm	Height mm
250 - 800	115
600 - 1800	215
900 - 2400	315

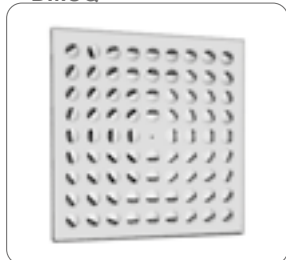
Detail



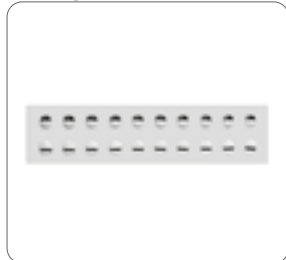
DMUC



DMUQ



DMUR



Description

DMU: diffusers with adjustable micro nozzles in circular, square or rectangular version for ceiling or wall

- installation height between 2.7 and 4.0 m
- application on duct or plenum
- made of aluminium with RAL 9010 white finish, micro nozzles in ABS + white polycarbonate
- fastening with central screw (not for DMUR)

DMUC: circular version

DMUQ: square version

DMUR: rectangular version

DMURC: like DMUR but in version for circular duct (20% increase)

Accessories

PL: side entry plenum

PT: upper entry plenum

I: external insulation reaction to fire class B-s2-d0

R: equaliser wire

S: damper on plenum

Special versions

- Black or grey micro nozzles

VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

Other RAL colours on request

For 600 size, use the pyramid plenum (see page 28)

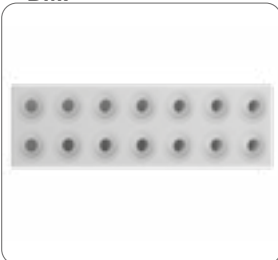
Dimensions

GR	A	B	E	M	L	H1	H2	D	C
400	396	-	360	360	360	200	350	198	50
500	496	-	460	460	460	200	350	198	50
600	596	-	560	560	560	200	350	248	50
625 x 115	650	150	-	614	114	200	300	123	50
625 x 215	650	250	-	614	214	200	350	158	50
825 x 215	850	250	-	814	214	200	350	198	50
825 x 315	850	350	-	814	314	250	350	248	50
1025 x 315	1050	350	-	1014	314	250	350	248	50

Selection table

GR	Flow rate (m³/h)		Lw(A) dB(A)		Δpt (Pa)	
	min	max	min	max	min	max
400	60	180	20	40	7	70
500	100	350	20	40	7	70
600	150	600	20	40	7	70
625 x 115	60	160	20	40	15	70
625 x 215	90	240	20	40	15	70
825 x 215	120	330	20	40	15	70
825 x 315	200	550	20	40	15	70
1025 x 315	260	700	20	40	15	70

DMP



Description

- DMP:** diffuser with multiple jet nozzles, individually adjustable
- flow between 20 and 500 m³/h
 - application on duct or plenum
 - made of combination or steel structure and nylon nozzles
 - RAL 9010 finish
 - fastening with concealed clips

Accessories

- PT:** upper entry plenum (on request)
PL: side entry plenum
I: external insulation reaction to fire class B-s2-d0 (list price + €30)
E: equaliser
FS: fastening with concealed bracket (list price + €20)

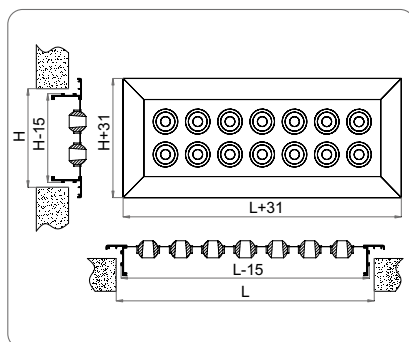
Special versions

- calendered version + 20%
- combined supply and return diffusers (on request)
- nozzles RAL 9005

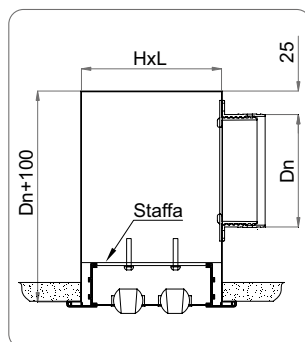
VR: coating according to RAL 9005 / 9006 table
 fixed surcharge €30 + 20% per piece

Other RAL colours on request

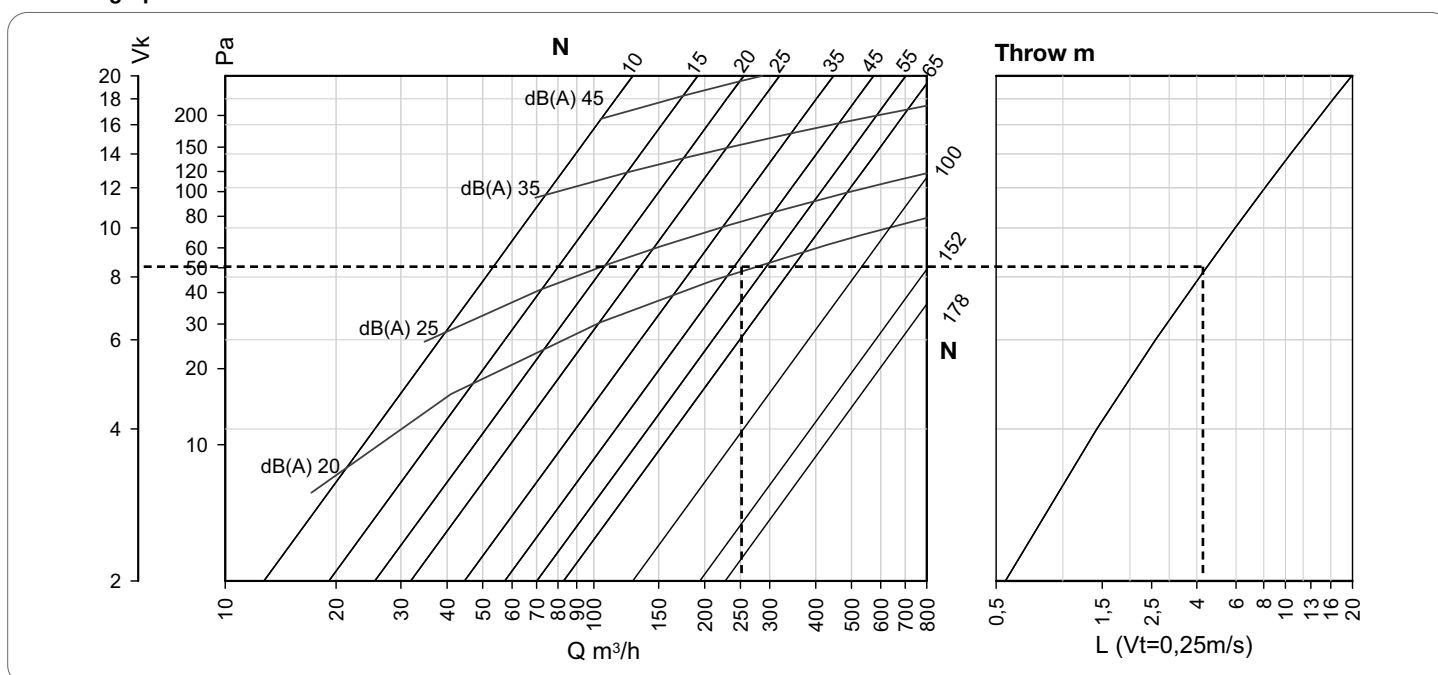
Overall dimensions



Plenum



Selection graph



All prices are list prices for local market, for a quotation please contact us.

DMP price list

H \ L	300	400	500	600	800	1000	1200	1500
100	109	115	122	128	141	154	-	-
150	125	138	151	164	190	216	-	-
200	141	161	180	200	239	278	-	-
250	-	184	210	236	288	340	392	-
300	-	-	239	272	337	402	467	-
350	-	-	-	-	385	463	467	659

Delivery: 3 weeks

Plenum PL price list

H \ L	300	400	500	600	800	1000	1200	1500
100	50		70		80		100	
150								
200								
250								
300	70				120			
350								

NR nozzles

H \ L	rows	300	400	500	600	800	1000	1200	1500
100	1	5	7	9	11	13	19	-	-
150	2	10	14	18	22	30	38	-	-
200	3	15	21	27	33	45	57	-	-
250	4	-	28	36	44	60	76	92	-
300	5	-	-	45	55	75	95	115	-
350	6	-	-	-	-	92	116	140	178

DN dimensions PL intakes

H \ L	300	400	500	600	800	1000	1200	1500
100	125	125	125	125	125	125	-	-
150	125	125	125	125	160	200	-	-
200	125	125	160	160	200	200	-	-
250	-	160	160	200	250	250	250	-
300	-	-	-	200	250	2x250	2x250	-
350	-	-	-	-	250	2x250	2x250	2x250

DK



DK-O



Description

DKO: diffusers with adjustable nozzle with long throws and reduced noise level

- made of natural aluminium
- direction for throw varying from 0 to $\pm 30^\circ$
- maximum operating $\Delta t \pm 12^\circ\text{C}$
- direct application on rectangular duct with flange
- aesthetic ring to cover flange

Accessories

C: aesthetic ring to cover flange fastening (for DK)

DR: fitting for circular duct

DF: fitting for flexible pipe

R1: with proportional actuator 0-10V, 24V (on request)

R2: with on-off actuator, 24V (on request)

R3: with on-off actuator, 220V (on request)

RL: throw reducer (about 30% reduction)

DKO-ATS: thermostatic actuator

Special versions

DK: version with inner tapered body, without covering ring

W: RAL 9010 coating (list price +20%)

VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

Other RAL colours on request

LpA: sound level pressure with 4 dB(A) of room attenuation

Throw: throw length corresponding to an ambient velocity of 0.2 m/s in isothermal function.

All prices are list prices for local market, for a quotation please contact us.

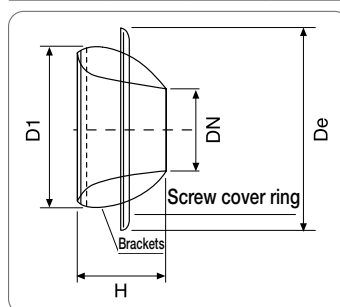
Price list

DN \ Type	DKO	DKO-ATS	DK	C	RL	DR	DF
40	-	-	78	-	-	48	22
50	-	-	83	-	-	49	23
80	-	-	93	40	-	50	25
120	On request						
150	180	550	172	41	70	76	43
200	256	620	251	50	70	104	56
250	290	750	-	-	70	110	59

Delivery: 2 weeks

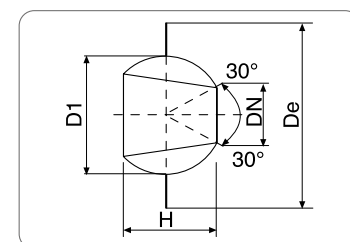
DKO dimensions

DN	De	D1	H
150	410	330	161
200	510	412	194
250	610	532	250



DK dimensions

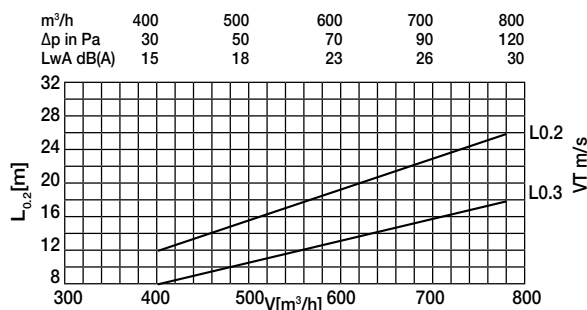
DN	De	D1	H
40	135	80	56
50	166	102	78
80	254	180	131
120	334	260	221
150	387	300	233
200	485	400	308



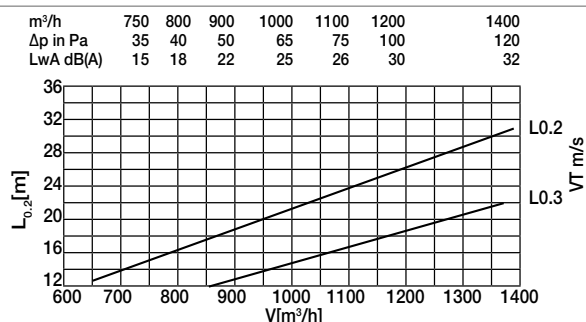
DK rapid selection

DN	m³/h	Pa	Noise Lp(A) dB(A)	Throw (m)
40	20-50	15-120	18-28	5-12
50	30-90	15-130	15-30	5-12
80	70-220	10-100	16-38	6-20
120	200-480	15-105	18-40	8-24

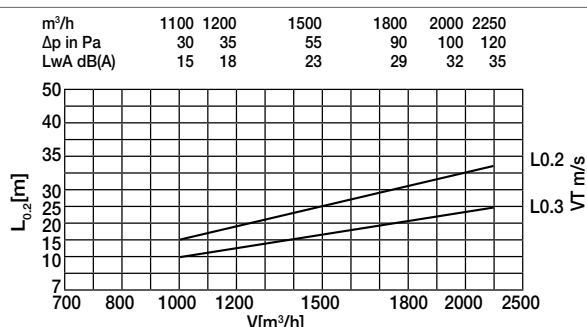
DKO 150



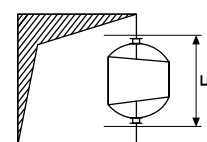
DKO 200



DKO 250



Duct assembly

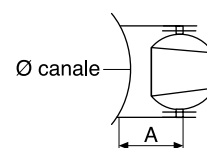


Duct hole dimensions (F)

Type \ DN	150	200	250
DK	354	452	-
DKO - DKE	338	420	540

DR

Duct assembly circular

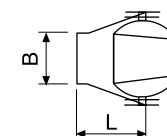


Dimensions of circular duct assembly

DN	150	200	250
A	300	350	350
Ø duct	500-800	500-1000	500-1000

DF

Flexible pipe assembly

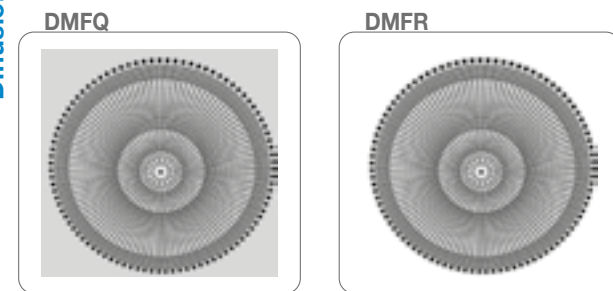


Fitting dimensions for flexible pipe

DN	150	200	250
B	298	398	398
L	350	350	350

Noise correction factor for throw with angle $\alpha = 30^\circ$

DN	40	50	80	120	150	200	250
correction	+2	+2	+4	+4	+4	+3	+3



Description

DMFQ: high induction diffusers, via combination of differentiated section perforations and internal deflectors; with 596 x 596 panels

- installation height between 2.7– 4 m
- made of aluminium with RAL 9010 finish
- Plenum application
- fastening with central screw + cover

Accessories

PPLIS: pyramid plenum with side entry + damper, including external insulation reaction to fire class B-s2-d0 (DN oval inlets 150/160-200-250)

PT: upper entry plenum

I: external anti-condensate insulation fire-resistance class B-s2-d0

R: equaliser

S: damper entry

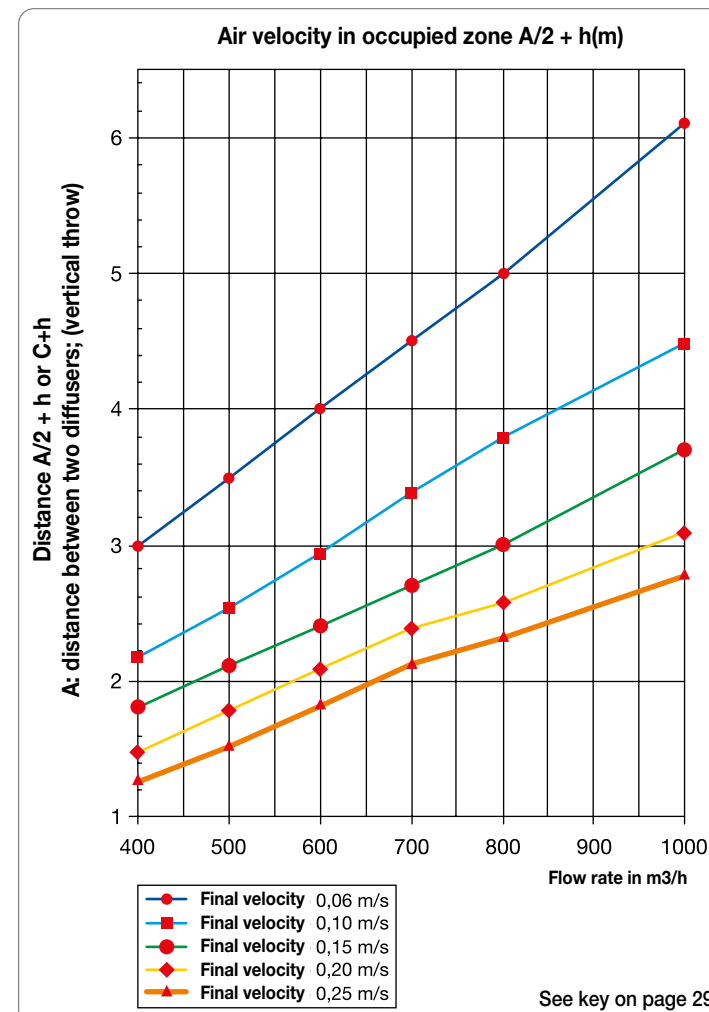
Special versions

DMFR: like DMFQ but in circular version + 30%

VR: coating according to RAL 9005 / 9006 table fixed surcharge €30 + 20% per piece

Other RAL colours on request

DMFQ 600 - Selection diagram



All prices are list prices for local market, for a quotation please contact us.

Price list

DN / Type	DMFQ	PPLIS	S	I	R
600	170	83	OR	OR	OR

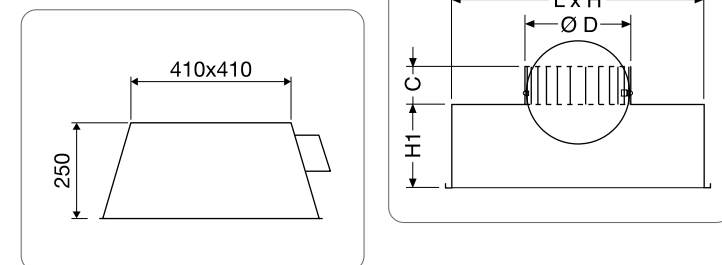
Delivery:

- material with prices in bold in stock
- other material 2 weeks

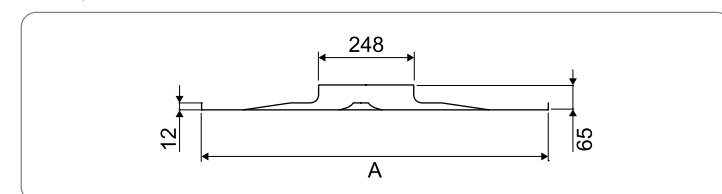
Dimensions

DN	A	L x H	H1	H2	ØD	C
600	596	560x560	200	350	248	50

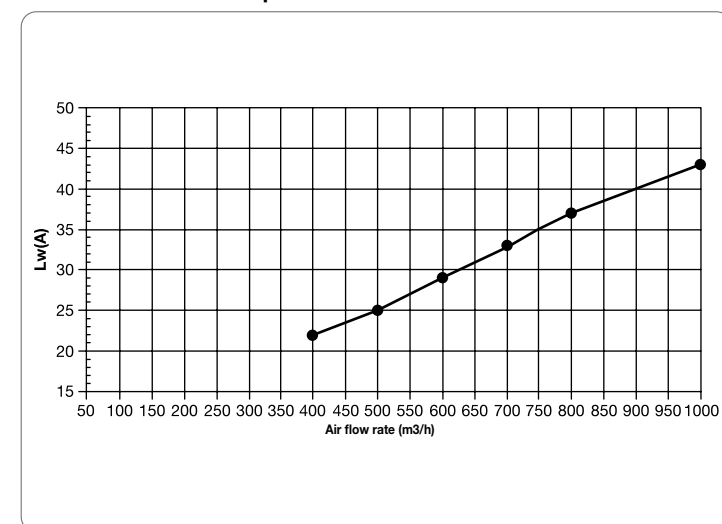
PPLIS



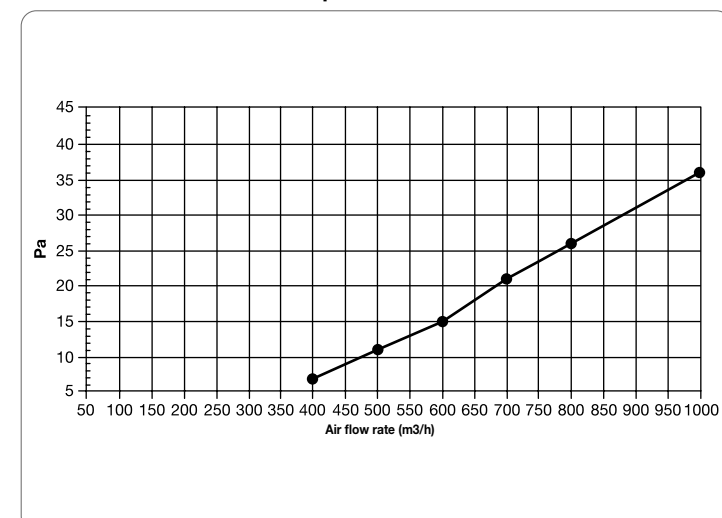
DMFQ 600



DMFQ / DMFR - Sound power level

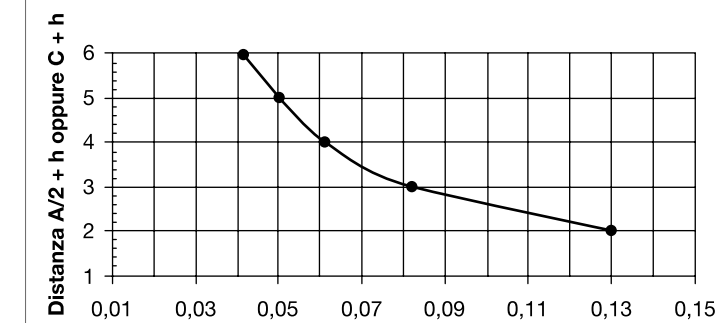


DMFQ / DMFR - Pressure drop in Pa



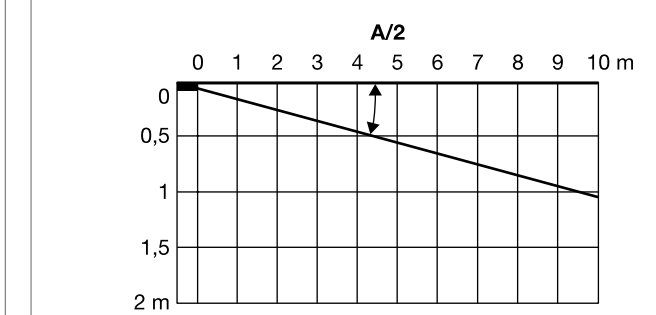
DMFQ / DMFR - Temperature ratio (Rt)

Rt coefficient

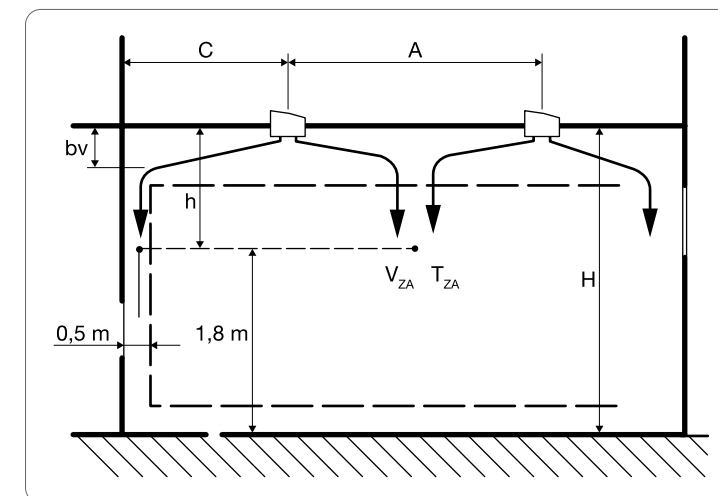


Throw fall (m)

bv



Value for throw fall, at a specific distance.



Key

Δp_t : total pressure drop (Pa)

L_{wa} : sound pressure level [dB(A)]

R_t : ratio between the Δt_L [temperature difference between the room (project temperature) and the throw temperature at a distance $A/2+h$] and Δt_m (temperature difference between the supply air and room)

V_{za} : velocity in occupied zone (m/s)

T_{za} : temperature in the occupied zone (°C)

bv : throw fall (m)

H : room height (m)

h : vertical throw (m)

A : distance between diffusers

C : distance between diffuser and wall

Example

- Room dim. 8x8xH 3 m (volume 192 m³)
- Air flow: 2400 m³/h (exchanges 12.5)
- Occupied zone: 1.8 m
- Room temperature: 25°C (project)
- Supply air temperature: 15°C

- Assuming the installation of 4 diffusers
Flow 2400 m³/h: 4 diffusers = 600 m³/h
Distance between diffusers: $A = 4$ m
 $h = H$ 3 m - 1.8 occupied zone = 1.2 m
 $A/2 + h = 4/2 + 1.2 = 3.2$ m

- From Diagram 1 (Selection)
 $Q = 600$ m³/h - with $A/2 + h = 3.2$ m = 0.10 m/s velocity in the occupied zone
- From Diagram 2 (Noise level)
with $Q = 600$ m³/h - L_{wa} 28 dB(A)
- From Diagram 3 (Pressure drop)
with $Q = 600$ m³/h - Pa 15

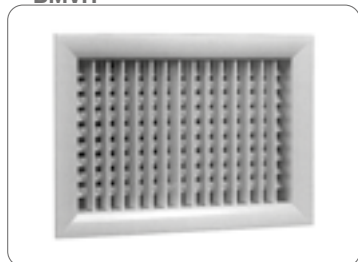
Temperature ratio (Diagram 4)

- We can obtain the air temperature at the end of the throw
 T_{za} : 25°C (room temperature)
 T : 15°C (supply air temperature)
 A : 4 m
 h : 1.8 m
with $A/2 + h = 3.2$ a temperature ratio of 0.077 is obtained with Δt -10°C (25 - 15)
the temperature ratio is then multiplied by Δt ($0.077 \times -10^\circ\text{C}$) = 0.77
to obtain the temperature at the end of the throw which will be:
Room temperature = 25°C - 0.77 = 24.23°C

Throw fall (Diagram 5)

- With $A/2$: 4/2 = 2 m
you obtain a fall of 0.3 m

BMVH



Description

BMVH: supply grilles with double deflection blades (1° vertical)

- made of natural anodised aluminium
- fastening with snap-on clips

BMVH-W: like BMVH but RAL 9010 (list price +10%)

BMHV: like BMVH but with 1st row of adjustable blades +10%

BMV: single row of BMVH horizontal adjustable blades -5%

BMH: single row of BMVH horizontal adjustable blades -10%

Accessories

SC: control damper (sizes over B=600 and H=300 supplied in multiple parts)

PL: side entry plenum on long side

PT: plenum with rear entry

I: external insulation reaction to fire class B-s2-d0 (list price +30%)

CT: counterframe for fastening with snap-on clips to wall or duct

Special versions

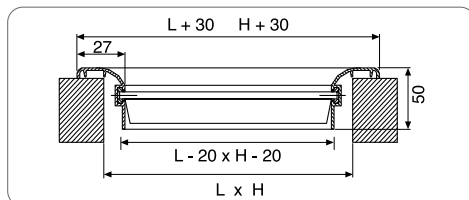
BM....FV: fastening with visible screws (not included)

- fastening: magnets or latch, on request
- non-standard dimensions on request

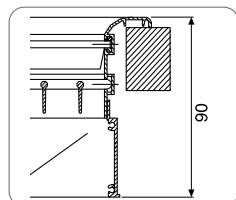
VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

Other RAL colours on request

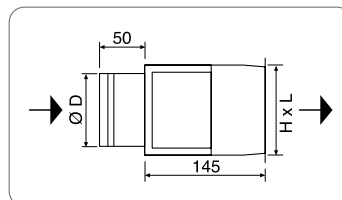
BMVH / BMV / BMH



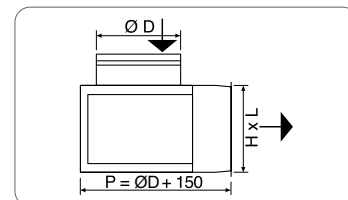
BMVH/BMH/V/SC



PT



PL



Selection table for BMVH-BMHV-BMV-BMH (with ceiling effect A) Vt= 0.375 m/s

AK (dm²)	L x H (mm)	Flow rate (m³/h)																	
		150		200		300		400		500		700		900		1200		1500	
1.1	200x100	-	4.1	19	5.5	28	8.2												
		3.8	10	5	18	7.6	40												
1.6	300x100	-	3.4	-	4.5	21	6.8	28	9.1										
		2.6	5	3.5	8	5.2	19	6.9	3.4										
2.4	400x100 300x150			-	3.7	-	5.6	20	7.4	25	9.3								
				2.3	4	3.5	8	4.6	15	5.8	23								
3.0	500x100					-	5	16	6	21	8.3	29	12						
						2.8	5	3.7	10	4.6	15	6.5	29						
4.0	600x100 400x150 300x200					-	4.3	-	5.7	-	7.2	23	10	29	13				
						2.1	3	2.8	5	3.5	8	4.9	17	6.2	27				
4.9	800x100 500x150 400x200							-	5.2	-	6.5	19	9.1	25	12	32	16		
								2.3	4	2.8	6	4	11	5.1	18	6.8	32		
6.0	600x150 500x200									-	5.9	15	8.2	21	11	22	14	34	18
										2.3	4	3.2	7	4.2	12	5.5	22	6.9	34
7.8	800x150 600x200											-	7.2	16	9.2	23	12	29	15
												2.5	4	3.2	7	4.3	13	5.3	20
10.5	800x200 500x300													-	8	17	11	23	13
														2.4	4	3.2	7	4	11
13.2	600x300															-	9.5	18	12
																2.5	4	3.2	7
16.0	800x300															-	8.6	-	11
																2.1	3	2.6	5
21.0	1000x300	NR	Lt															-	9.4
		Vk	Δnt															2	3

The NR values do not take into account room attenuation

K factors for other Vt

V _t (m/s)		0.25	0.375	0.50
L _t (m)	Ax	1.50	1.00	0.75
	Bx	1.05	0.70	0.53

B = without ceiling effect

α = angle of blades
β = angle of air jet

K factor for deflection

α	β	L _t	V _k	Δpt	NR
22°	35°	x0.77	x1.15	x1.30	+3
45°	60°	x0.55	x1.25	x1.60	+6

All prices are list prices for local market, for a quotation please contact us.

BMVH price list

H/L	200	300	400	500	600	800	1000	1200
100	18	20	23	26	36	42	48	55
150	20	25	28	30	45	53	60	67
200	22	27	29	34	50	60	67	75
300		35	40	45	59	73	84	94
400			47	53	71	87	103	115

Delivery: prices in bold in stock

Same availability for the coated version (BMVH-W)

SC price list

H/L	200	300	400	500	600	800	1000	1200
100	10	11	12	14	17	21	26	32
150	11	12	14	17	20	26	29	33
200	14	16	17	20	24	29	32	35
300	16	20	24	26	28	35	41	48
400	17	24	27	33	35	42	49	59

Delivery: prices in bold in stock / other material 2 weeks

CT price list

H/L	200	300	400	500	600	800	1000	1200
100 150 200	9			12			19	
300 400	12		12					

PL-PT price list

LxH	ΦD	€	LxH	ΦD	€
200 x 100	80	38	300 x 150	125	41
300 x 100	100	41	400 x 150	150	46
400 x 100	100	42	500 x 150	150	53
500 x 100	100	48	600 x 150	150	58

LxH	ΦD	€	LxH	ΦD	€
400 x 200	200	49	400 x 300	250	60
500 x 200	200	56	500 x 300	300	69
600 x 200	200	62	600 x 300	300	72

Circular/oval entries instead of standard +€30 each list price

All prices are list prices for local market, for a quotation please contact us.

GR20 price list

H/L	200	300	400	500	600	800	1000	1200
100	17	19	21	23	26	30	35	39
150	19	22	25	28	31	37	43	50
200	20	24	27	31	35	42	49	57
300	24	29	34	39	44	55	65	76
400	28	34	41	48	55	68	80	94
500	32	40	48	56	64	80	96	115
600	36	46	55	65	74	93	115	136
800	58	71	82	109	124	155	183	212
1000	83	98	104	124	144	188	225	266
1200	100	120	130	140	165	216	267	319

Delivery: prices in bold in stock

Same availability for the coated version RAL 9010 (GR20W)

SC price list

H/L	200	300	400	500	600	800	1000	1200
100	10	11	12	14	17	21	26	32
150	11	12	14	17	20	26	29	33
200	14	16	17	20	24	29	32	35
300	16	20	24	26	28	35	41	48
400	17	24	27	33	35	42	49	59
500	21	26	32	40	42	49	62	72
600	24	29	35	42	48	58	72	86

Delivery: prices in bold in stock

GRQ price list

H/L	200	300	400	500	600	800	1000	1200
100	19	25	30	35	40	51	68	82
150	23	31	37	44	50	64	81	97
200	26	35	43	51	59	75	90	108
300	-	38	57	66	78	99	120	144
400	-	-	69	82	96	123	149	179
500	-	-	-	97	115	147	186	223
600	-	-	-	-	134	171	198	268

GR15 price list

H/L	200	300	400	500	600	800	1000	1200
100	16	18	23	26	29	36	46	54
150	18	22	25	31	37	43	50	60
200	21	25	27	35	45	51	60	69
300	25	31	38	46	56	68	82	97
400	29	40	51	60	69	88	105	122
500	37	49	63	70	82	105	82	152
600	40	59	72	84	97	122	152	172

Dimensions for 600x600 false ceiling

Mod.	LxH dimension	False ceiling panel	€
GR 20	567x567	600x600	72
GR 20 W	567x567	600x600	72
GRQI	567x567	600x600	92
GRQI W	567x567	600x600	92

Delivery: prices in bold in stock



Description

GR20: return grille with fixed inclined blades, pitch 20 mm

- made of natural anodised aluminium
- fastening with snap-on clips

GR20W: like GR20 but RAL 9010 (list price +10%)

GRQ: return grille with square mesh 12.5 x 12.5 mm

- made of natural anodised aluminium
- fastening with snap-on clips

GRQ-W: like GRQ but coated with RAL 9010

GRQ-I / GRQ-I W: like GRQ (list price +20%)

GR15: like GR20 but pitch 15 mm

SC: control damper for larger sizes or not in table, consisting of multiple pieces with +30% per piece

CT: counterframe for fastening with snap-on clips (page 30)

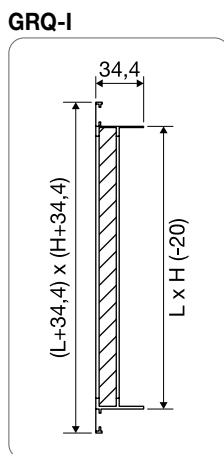
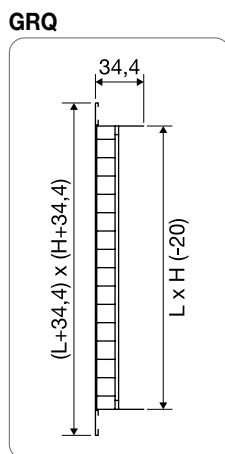
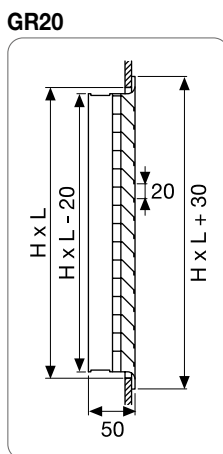
Special versions

GR...FV: fastening with visible screws (not included)

GR...R: with mouse-proof wire mesh (30% increase)

VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

Other RAL colours on request



GR20 Selection table

AK (dm²)	L x H (mm)	Flow rate (m³/h)											
		150	200	300	400	500	600	800	1000	1200	1500	2000	2500
1.3	200x100	15	25										
		3.2	11	4.2	19								
2.0	300x100	-	15										
	200x150	2.1	5	2.7	8	4	17						
3.0	400x100		-	15		25	30						
	300x150		1.9	4	2.7	8	3.6	14	4.6	22			
3.5	500x100			15		22	28						
				2.3	5.5	3.2	11	4	17	4.7	23		
4.5	600x100					15	25			34			
	400x150					2.5	6.6	5.1	10	3.7	14	4.8	24
6.0	800x100					15		21		28		34	
	500x150					2.4	6	2.7	8	3.7	14	4.6	22
7.5	1000x100							15		24		29	
	500x200							2.2	5	3	10	3.7	14
9.3	800x150							18		25		28	
	600x200							2.4	6	3	10	3.5	13
12.5	1000x150									15		22	
	800x200									2.2	5	2.6	7.1
17.5	1000x200											3.3	11
	500x400											15	22
22.0	1000x300	NR	Lt									24	6
	500x500	Vk	Δpt									1.9	3.8

The NR values do not take into account room attenuation

Δpt	1.15
NR	+3

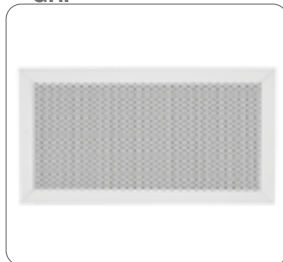
Correction for GR15

Δpt	x0.3
NR	-9

Correction for GRQ

GT

GRF



Description

GT: transfer grilles with Λ blades, light shield profile

- including adjustable counterframe
- made of natural anodised aluminium
- fastening with visible screws (not included)

GRF: return grille with perforated panel

- fastening with snap-on clips
- made of galvanised steel with RAL 9010 finish
- fastening with clips

Accessories

SC: control damper (GRF only) - (SC page 30 +20%)

CT: counterframe

PL/PT: plenum

Special versions

GRF - FV: fastening with visible screws

GRF - X: made of 304/316 stainless steel

GRF - A: made of anodised aluminium

VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

Other RAL colours on request

All prices are list prices for local market, for a quotation please contact us.

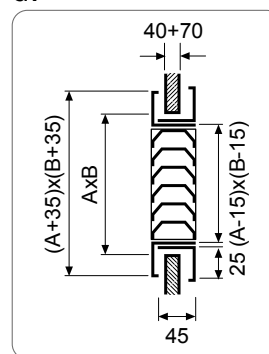
GT price list

HxL	200	300	400	500	600
100	28	32	37	42	47
150	33	41	46	52	56
200	37	47	52	58	65
300	-	57	65	77	83
400	-	-	104	123	144

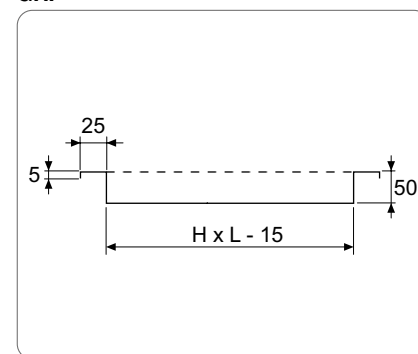
GRF price list

HxL	200	400	600	800	1000
200	49	54	63	72	85
300	52	56	69	82	94
400	54	64	84	94	110
500	60	74	92	108	125
600	63	84	102	122	140
560x560	600X600 panel				102

GT



GRF



GT selection table

AK (dm²)	L x H (mm)	Flow rate (m³/h)																									
		50		60		100		150		200		300		400		500		600		800		1000					
1.0	200x100	15		22																							
		1.4	9	1.9	17																						
1.6	300x100	-		15		23																					
		0.9	3.5	1.2	7	1.7	14																				
2.4	300x150	-		-		18		25																			
		0.6	1.5	0.8	3	1.2	6	1.7	14																		
3.3	400x150			-		-		20		26																	
				0.6	1.5	0.8	3	1.3	7	1.7	13																
5.6	400x200					-		-		18		25		31													
						0.5	1.1	0.7	2.5	1.0	4.5	1.5	10	2.0	18												
7.0	300x300 500x200							-		-		22		27		32											
								0.6	1.6	0.8	3	1.2	6.5	1.6	11	2.0	18										
9.0	400x300									-		16		23		27		32									
										0.6	1.7	0.9	4	1.2	7	1.5	11	1.9	15								
12.0	500x300											-		20		23		27		33							
												0.7	2	0.9	4	1.2	6	1.4	9	1.9	15						
19.0	600x400	NR												-		15		20		25		30					
		Vk	Δpt											0.6	1.5	0.7	2.5	0.9	3.5	1.1	6.0	1.5	10				

The NR values do not take into account room attenuation

GRF: GT data x 0.7

GR20PF PP



All prices are list prices for local market, for a quotation please contact us.

GR20PF PP price list

H/L	200	250	300	400	500	600	800	1000	1200
150	43	55	65	69	76	81	100	113	131
200	47	59	69	76	81	88	107	119	145
300	50	73	88	95	100	107	131	150	176
400	56	83	100	108	113	119	139	176	188
500	62	95	113	124	131	139	164	188	207
600	67	99	119	139	158	170	182	201	226

Description

GR20PF PP: return grille with fixed inclined blades like GR20, complete with filter holder frame, hinges on the long side, with pressure opening system (Push / Pull) with filter (G3 efficiency)

GR20PF W PP: like GR20PF PP but RAL 9010 (list price +20%)

GRQ PF PP: as above but with 12x12 square mesh, aluminium finish

GRQ PF W PP: as above but with RAL 9010 white coating (GRQ PF PP price list +20%)

GRQI PF PP: as above but with 45° inclined mesh, aluminium finish (GRQ PF PP price list +10%)

GRQI PF W PP: as above but with RAL 9010 white coating (GRQ PF PP price list +20%)

GRF PF W PP: as above but with perforated mesh and RAL 9010 white finish

Special versions

C: fastening with magnets +10%

W: RAL 9010 coating (list price +20%)

VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

Other RAL colours on request

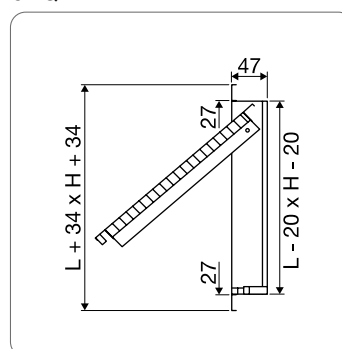
GRQ PF PP price list

H/L	200	250	300	400	500	600	800	1000	1200
150	70	86	104	117	124	136	154	164	184
200	77	97	115	131	140	151	175	182	201
300	86	108	129	161	174	187	224	245	276
400	108	135	161	178	192	213	253	320	374
500	115	144	174	192	229	248	301	353	431
600	125	155	187	213	248	275	339	368	472

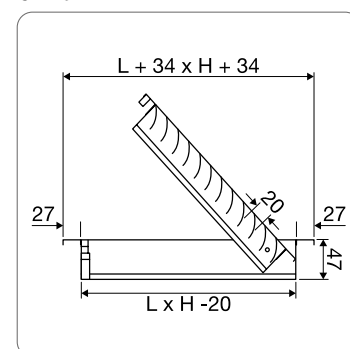
GRF PF W PP price list

H/L	200	250	300	400	500	600	800	1000	1200
150	48	61	72	77	84	90	111	125	145
200	52	65	77	84	90	98	119	132	161
300	55	81	98	105	111	119	146	167	196
400	62	92	111	120	125	132	154	196	209
500	69	105	125	138	146	154	182	209	230
600	74	110	132	154	175	189	202	223	251

GRQ PF PP



GR20PF PP



Dimensions for 600 x 600 false ceiling

Type	L x H	False ceiling panel	€
GR20PF PP	545x545	600x600	125
GR20PF W PP	545x545	600x600	125
GRQI PF PP	545x545	600x600	135
GRQI PF W PP	545x545	600x600	135
GRF PF W PP	545x545	600x600	145

Delivery: prices in bold in stock / other material 2 weeks

GR20PF PP selection table

AK (dm²)	L x H (mm)	Flow rate (m³/h)											
		150	200	300	400	500	600	800	1000	1200	1500	2000	2500
1.3	200x100	15 3.2	25 4.2	19									
2.0	300x100 200x150	- 2.1	15 5	25 8	17								
3.0	400x100 300x150 200x200	-	15 1.9	25 4	30 8	22							
3.5	500x100			15 2.3	22 5.5	28 11	32 17	23					
4.5	600x100 400x150 300x200				15 2.5	25 6.6	27 10	34 14	24				
6.0	800x100 500x150 400x200					15 2.4	21 6	28 8	34 14	22			
7.5	1000x100 500x200 300x300						15 2.2	24 5	29 10	33 14	20		
9.3	800x150 600x200 400x300							18 2.4	25 6	28 10	35 13	22	
12.5	1000x150 800x200 400x400								15 2.2	22 5	28 7.1	35 11	20
17.5	1000x200 500x400									15 1.9	22 3.8	28 6	34 11
22.0	1000x300 500x500	NR Vk	Lt Δpt								15 1.9	24 3.8	29 2.5

The NR values do not take into account room attenuation

Δpt	x0.3
NR	-9

Correction for GRQPF PP

Δpt	x1.2
NR	=

Correction for GRFPF PP

GL



Description

GL: supply and return grilles with fixed bars

- made of natural anodised aluminium
- fastening with snap-on clips
- optional continuous series supply
- maximum length in 1 piece = 2000 mm

GL200: 0° bar inclination, frame 25 mm

GL215: like GL200, 15° bar inclination

GL100: 0° bar inclination, frame 15 mm

GL115: like GL100, 15° bar inclination

GL00: 0° inclination, without frame

GL15: like GL00, 15° inclination

Accessories

SC: control damper for 200 series (for 100 SC series +20%)

CT: counterframe for fastening with snap-on clips

FS: fastening with bracket (list price + €20)

PL: plenum with entry side on long side

PT: plenum with rear entry

Special versions

GL200/215: with 20 mm frame

GL...DD: second adjustable row **GL...** price list x2

GL...GD/CD: grille/blank door

W: RAL 9010 coating (list price +20%)

VR: coating according to RAL 9005 / 9006 table

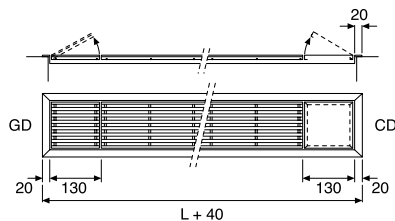
fixed surcharge €30 + 20% per piece

Other RAL colours on request

For continuous version grille > L = 2000.

Consider price L = 1000 +10%. L(m)

GL200 GD/CD



GL100 / GL200 selection table - Vt 0.375 m/s

AK (dm²)	L x H (mm)	Flow rate (m³/h)									
		150		200		300		400		500	
1.0	200x100	<20	5	20	8	33	12				
		3.3	8	5.2	20	7.5	40				
1.5	300x100	<20	4	<20	7	20	10	31	13		
		2	4	3.4	9	5	19	6.5	32		
2.0	400x100 300x150	<20	6	<20	6	21	9	26	12	32	15
		2.8	6	4.2	14	5.2	20	6.5	32		
2.6	500x100	<20	8	<20	8	20	10	27	13	32	15
		3.3	8	4	13	5	19	6	28		
3.5	600x100 400x150	<20	7	<20	7	<20	9	23	11	28	13
	300x200	2.5	5	3.2	7	4	13	4.8	18	5.5	23
4.5	800x100 500x150	<20	8	<20	8	20	10	23	15	28	15
	400x200	2.5	5	3.3	8	4	13	4.7	17	5.5	23
5.4	600x150 600x200	<20	9	<20	9	20	11	22	13	26	17
		2.7	5	3.4	9	3.8	11	4.5	15	5.3	21
6.2	800x150 600x200	<20	10	<20	10	23	12	23	16	31	22
		2.6	5	3.1	7	4	13	4.7	17	5.5	23
8.0	800x200 500x300	<20	11	<20	11	26	13	26	17	35	25
		2.5	5	3.2	7	4.2	13	4.8	18	5.5	23
9.6	600x300	<20	12	<20	12	20	17	20	17	23	18
		2.2	4	3	7	4	13	4.7	17	5.5	23
11.2	800x300	<20	12	<20	12	20	17	20	17	23	18
		2.2	4	3	7	4	13	4.7	17	5.5	23
14.8	1000x300	NR	Lt								
		Vk	Δpt								

The NR values do not take into account room attenuation

All prices are list prices for local market, for a quotation please contact us.

GL100/115 - GL200/215 price list

H/L	300	600	800	1000	1500
76	22	43	46	58	74
100	25	49	53	67	86
124	29	56	62	78	100
148	32	64	68	85	110
196	40	81	85	107	139
292	56	110	117	147	192

Delivery: 2 weeks

SC price list

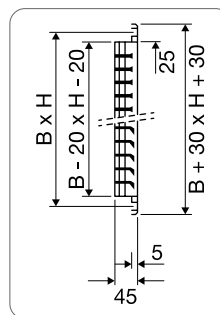
H/L	200	300	400	500	600	800	1000	1200
100	10	11	12	14	17	21	26	32
150	11	12	14	17	20	26	29	33
200	14	16	17	20	24	29	32	35
300	16	20	24	26	28	35	41	48
400	17	24	27	33	35	42	49	59

Delivery: prices in bold in stock / other material 2 weeks

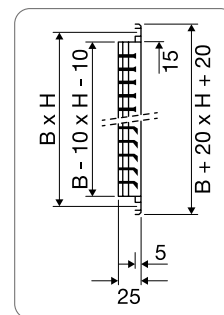
GD-CD door price list

Type/H	76	100	124	148	196	292
GD-CD	OR	OR	OR	OR	OR	OR

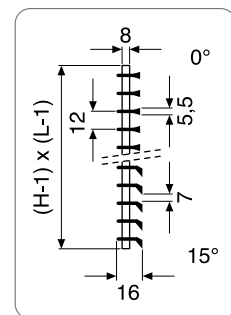
GL200/215



GL100/115

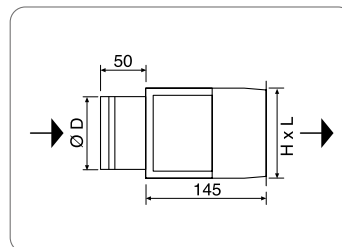


GL00/15

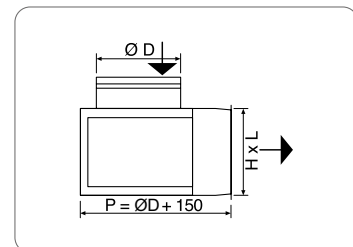


Attention: the HxL dimensions refer to the hole

PT



PL



K factors for other Vt

v _t (m/s)	0.25	0.375	0.50
L _t (m)	1.50	1	0.75
B _x	1.05	0.7	0.53

B = without ceiling effect

WTHB



Description

WTHB: wall-mounted supply grilles with special profile suitable for large air input volumes up to 16 exchanges/h with operating Δt from -10K to +15K maintaining correct room comfort ($v \sim 0.2$ m/sec)

- frame in 6 mm extruded aluminium
- air diffusion component with special removable blade profile in steel, RAL 9010 finish
- fastening with visible screws

WTHBV: like WTHB but with volume control damper

Special versions

WTHA: with 25 mm frame

FS: fastening with brackets, concealed screws (list price €+30)

Configurations

By simply changing the position of the diffusion element, you can obtain 4 different types of throw for the same vent:

- 5° high (standard): for installation with max distance from ceiling of 0.3 m
- 15° high: for installation with distance from ceiling from 0.3 to 0.6 m
- 5° low: for installation with distance from ceiling over 0.6 m
- 15° low: for installation without ceiling

All prices are list prices for local market, for a quotation please contact us.

WTHB price list

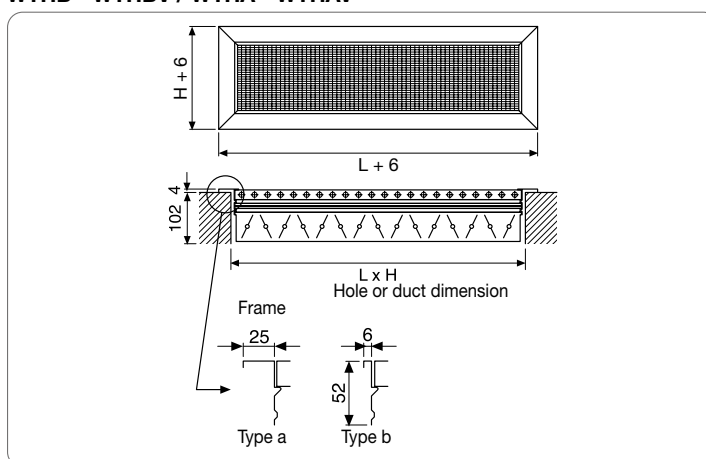
H/L	225	325	425	525	625	825	1025	1225
75	123	154	186	214	245	273	333	406
125	137	172	210	245	280	354	427	494
225	182	228	280	333	382	483	585	686
325	-	273	343	406	473	606	739	868

Delivery: 4 weeks

WTHBV price list

H/L	225	325	425	525	625	825	1025	1225
75	203	245	284	326	368	417	497	595
125	221	270	315	364	406	508	616	721
225	270	340	403	469	536	672	819	959
325	-	385	469	553	634	812	987	1148

WTHB - WTHBV / WTHA - WTHAV



Selection table

Flow rate (m³/h)	H	L = 225			325			425			525			625			825			1025			1225		
		T	Ps	Lp	T	Ps	Lp	T	Ps	Lp	T	Ps	Lp	T	Ps	Lp	T	Ps	Lp	T	Ps	Lp	T	Ps	Lp
54	75	2.3	2	-																					
72	75	3.1	4	-																					
90	75	3.8	6	-	2.6	3	-																		
108	75	4.6	9	10	3.2	4	-	2.4	2	-															
	125	3.6	2	-	-	-	-	-	-	-															
144	75	6.1	15	18	4.2	7	-	3.2	4	-	2.6	2	-												
	125	4.8	4	-	-	-	-	-	-	-	-	-	-												
180	75	-	-	-	5.3	10	15	4.0	6	-	3.2	4	-	2.7	3	-									
	125	6.0	6	-	4.1	2	-	-	-	-	-	-	-	-	-	-									
216	75	-	-	-	6.3	15	19	4.8	8	13	3.9	5	-	3.2	4	-									
	125	7.2	8	12	4.9	4	-	3.8	2	-	-	-	-	-	-	-									
252	75	-	-	-	-	-	-	5.6	11	17	4.5	7	12	3.8	5	-									
	125	8.4	11	16	5.8	5	-	4.4	3	-	-	-	-	-	-	-									
288	75	-	-	-	-	-	-	6.4	15	21	5.1	10	16	4.3	7	12									
	125	9.6	14	20	6.6	6	22	5.0	3	-	4.0	2	-	-	-	-									
360	75	-	-	-	-	-	-	-	-	-	6.4	15	22	5.3	10	18									
	125	-	-	-	8.2	10	17	6.3	5	11	5.0	3	-	4.2	2	-									
450	75	-	-	-	-	-	-	-	-	-	-	-	-	6.7	16	23									
	125	-	-	-	10	15	23	7.8	9	17	6.3	5	12	5.3	4	-	3.9	2	-						
540	125	-	-	-	-	-	-	5.9	2	-	-	-	-	-	-	-									
	225	-	-	-	-	-	-	9.4	12	21	7.5	8	16	6.3	5	12	4.7	3	-	3.8	2	-			
720	125	-	-	-	-	-	-	7.1	3	-	5.7	2	-	-	-	-	-	-	-	-	-	-			
	225	-	-	-	-	-	-	-	-	-	10	14	24	8.4	10	19	6.3	5	14	5	3	-			
1080	125	-	-	-	-	-	-	9.5	5	13	7.6	3	-	6.4	2	-	-	-	-	-	-	-			
	225	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.5	12	24	7.6	8	19			
1440	125	-	-	-	-	-	-	14.0	12	24	11	8	19	9.5	5	15	7.1	3	-	5.7	2	-			
	225	-	-	-	-	-	-	-	-	-	-	-	-	8.0	2	-	-	-	-	-	-	-			
1800	125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	14	27			
	225	-	-	-	-	-	-	15	14	26	13	9	23	9.6	5	14	7.6	3	11	6.4	2	-			
2160	125	-	-	-	-	-	-	-	-	-	11	4	14	-	-	-	-	-	-	-	-	-			
	225	-	-	-	-	-	-	16	15	28	12	8	22	9.5	5	17	7.9	4	13	7.9	4	13			
2520	125	-	-	-	-	-	-	13	6	20	10	4	13	8.0	2	-	-	-	-	-	-	-			
	225	-	-	-	-	-	-	-	-	-	-	-	-	14	12	27	11	8	22	9.5	5	18			
2880	125	-	-	-	-	-	-	16	9	24	12	5	18	9.6	3	13	8.0	2	-	8.0	2	-			
	225	-	-	-	-	-	-	-	-	-	17	16	31	13	10	26	11	7	22	11	7	22			
3600	125	-	-	-	-	-	-	19	13	28	14	7	22	11	5	17	9.3	3	13	9.3	3	13			
	225	-	-	-	-	-	-	-	-	-	-	-	-	15	13	30	13	9	26	13	9	26			
	125	-	-	-	-	-	-	21	16	32	16	9	25	13	6	21	11	4	17	11	4	17			
	225	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	15	31	16	15	31			
	325	-	-	-	-	-	-	-	-	-	20	14	31	16	9	26	13	6	22	13	6	22			

T (m): throw measured from centre of jet; for room comfort, consider T x 0.65

Ps (Pa): pressure drop

Lp (dB(A)): sound pressure level with room attenuation of 10 dB

SMRZ

► **PRODUCT WITH DECLARATION OF CONFORMITY UNI 9494/2 - 2017 FOR TEMPERATURES UP TO 722 °C**



Description

SMRZ: supply/return grille with double deflection blades, 1 vertical calendered to circular duct

- made of galvanised steel
- fastening with screws (not included)

SMRVZ: like SMR but single vertical row

SMRHZ: like SMR but single horizontal row

Accessories

SC: control damper

SK: deflector flap damper with equaliser with multiple adjustable blades

(price on request)

Special versions

- version in AISI 304/316 stainless steel

W: RAL 9010 coating (list price +20%)

VR: coating according to RAL 9005 / 9006 table fixed surcharge €30 + 20% per piece

Other RAL colours on request

All prices are list prices for local market, for a quotation please contact us.

SMRZ price list

H/L	225	325	425	525	625	825	1025
75	24	30	35	41	45	60	75
125	29	37	43	51	52	75	93
225	-	-	56	67	74	102	125

SMRVZ price list

H/L	225	325	425	525	625	825	1025
75	23	29	33	39	43	57	72
125	28	35	41	48	49	72	88
225	-	-	54	64	71	97	118

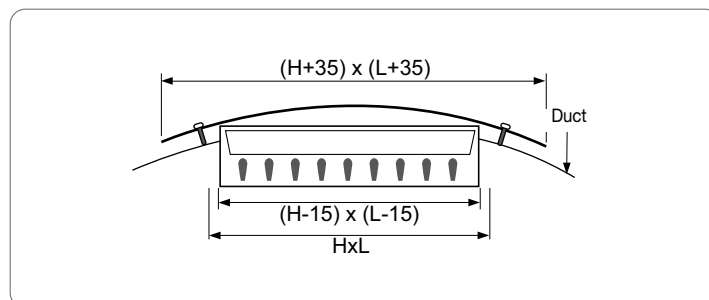
SMRHZ price list

H/L	225	325	425	525	625	825	1025
75	22	27	32	37	41	54	68
125	26	33	38	46	46	68	84
225	-	-	51	61	67	92	112

SC

H/L	225	325	425	525	625	825	1025
75	14	14	15	17	19	25	32
125	17	17	20	23	25	33	40
225	25	25	28	35	38	46	54

SMRZ



Selection table - Vt 0.375 m/s

AK (dm²)	L x H (mm)	Flow rate (m³/h)													
		100		150		200		300		400		500		600	
1.1	325x75	17	2.8	28	4.1	35	5.5	4.5	8.3						
		2.5	16	3.8	35	5.1	62	7.6	140						
1.5	425x75	-	2.4	20	3.6	28	4.7	38	7.1	46	9.5				
		1.9	8.4	2.8	19	3.7	33	5.5	75	7.4	134				
1.9	525x75			15	3.2	23	4.2	33	6.3	41	8.4	47	11		
				2.2	12	2.9	21	4.4	47	5.8	83	7.3	130		
2.3	625x75 325x125					18	3.8	29	5.7	37	7.6	42	9.6	47	11
						2.4	14	3.6	32	4.8	47	6.0	89	7.2	128
3.0	825x75 425x125							23	5	31	6.7	37	8.4	41	10
								2.8	19	3.7	33	4.6	52	5.5	75
3.7	1025x75 525x125							19	4.5	26	6	32	7.5	37	9.0
								2.2	12	3.0	22	3.7	34	4.5	49
4.5	625x125 325x225							22	5.5	28	6.8	32	8.2	40	11
								2.5	15	3.1	23	3.7	33	4.9	59
6.0	825x125 425x225									22	5.9	26	7.1	34	9.5
										23	13	2.8	19	3.7	33
7.5	1025x125 525x225									17	5.3	21	6.4	29	8.5
										1.9	8.4	2.2	12	3.0	22
9.0	1225x125 625x225									17	5.8	25	7.7	36	12
										1.9	8.4	2.5	15	3.6	33
12.0	825x225									19	6.7	29	10	37	13
										1.9	8.4	2.7	19	3.7	33
15.0	1025x225	NR	Lt									24	3.0	32	12
		Vk	Δpt									2.2	12	3	21

The NR values do not take into account room attenuation

SMVHZ



► **PRODUCT WITH DECLARATION OF CONFORMITY UNI 9494/2 - 2017 FOR TEMPERATURES UP TO 722 °C**

Description

SMVHZ: supply grilles with two rows of adjustable blades (1st vertical)

- made of galvanised steel
- fastening with snap-on clips

SMHVZ: like SMVHZ but with 1st row of adjustable blades +10%

SMVZ: single row of vertical adjustable blades -5%

SMHZ: single row of horizontal adjustable blades -10%

special terms and conditions: control damper

PL: side entry plenum

PT: plenum with rear entry

I: external anti-condensate insulation reaction to fire class B-s2-d0 (list price € 30)

CT: counterframe for fastening with snap-on clips

Special versions

SM....W: RAL 9010 finish (list price +20%)

SM....X: AISI 304/316 stainless steel finish (on request)

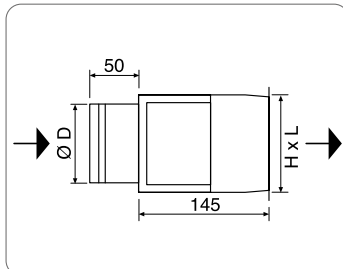
SM....FV: fastening with visible screws (not included)

VR: coating according to RAL 9005 / 9006 table

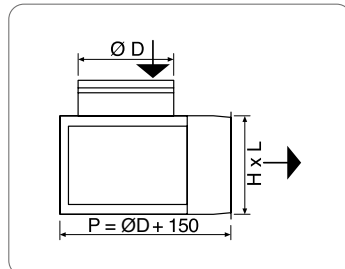
fixed surcharge €30 + 20% per piece

Other RAL colours on request

PT



PL



All prices are list prices for local market, for a quotation please contact us.

Price list

H/L	200	300	400	500	600	800	1000	1200
100	12	15	18	22	25	33	43	58
150	14	19	22	27	31	43	62	81
200	16	21	26	31	35	50	70	90
300	21	28	34	41	47	66	92	109
400	-	-	-	50	70	82	99	117

SC price list

H/L	200	300	400	500	600	800	1000	1200
100	10	11	12	14	17	21	26	32
150	11	12	14	17	20	26	29	33
200	14	16	17	20	24	29	32	35
300	16	20	24	26	28	35	41	48
400	17	24	27	33	35	42	49	59

Delivery: prices in bold in stock

CT price list

H/L	200	300	400	500	600	800	1000	1200
100 150 200	9			12			19	
300 400	-	12	12					

PL-PT price list

LxH	ΦD	€
200 x 100	80	38
300 x 100	100	41
400 x 100	100	42
500 x 100	100	48

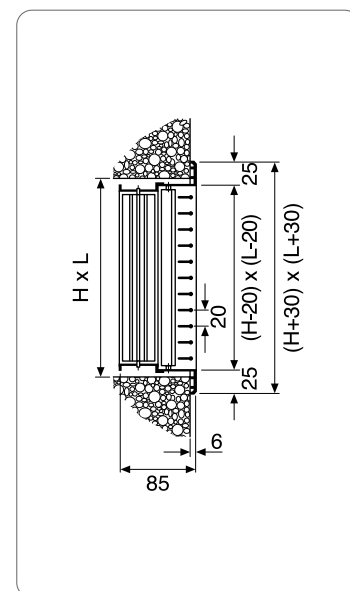
LxH	ΦD	€
300 x 150	125	41
400 x 150	150	46
500 x 150	150	53
600 x 150	150	58

LxH	ΦD	€
400 x 200	200	49
500 x 200	200	56
600 x 200	200	62

LxH	ΦD	€
400 x 300	250	60
500 x 300	300	69
600 x 300	300	72

Circular/oval entries instead of standard + € 30 each list price

SMVHZ/SMHVZ/SC



Selection table for SMVH-SMHV-SMV-SMH (with ceiling effect A) Vt 0.375 m/s

AK (dm²)	L x H (mm)	Flow rate (m³/h)													
		150		200		300		400		500		700		900	
1.1	200x100	-	4.1	19	5.5	28	8.2								
		3.8	10	5.0	18	7.6	40								
1.6	300x100	-	3.4	-	4.5	21	6.8	28	9.1						
		2.6	5	3.5	8	5.2	19	6.9	3.4						
2.4	400x100 300x150			-	3.7	-	5.6	20	7.4	25	9.3				
				2.3	4	3.5	8	4.6	15	5.8	23				
3.0	500x100					-	5.0	16	6.0	21	8.3	29	12		
						2.8	5	3.7	10	4.6	15	6.5	29		
4.0	600x100 400x150					-	4.3	-	5.7	-	7.2	23	10	29	13
	300x200					2.1	3	2.8	5	3.5	8	4.9	17	6.2	27
4.9	800x100 500x150							-	5.2	-	6.5	19	9.1	25	12
	400x200							2.3	4	2.8	6	4.0	11	5.1	18
6.0	600x150 500x200							-	5.9	15	8.2	21	11	22	14
								2.3	4	3.2	7	4.2	12	5.5	22
7.8	800x150 600x200									-	7.2	16	9.2	23	12
										2.5	4	3.2	7	4.3	13
10.5	800x200 500x300											-	8.0	17	11
												2.4	4	3.2	7
13.2	600x300													-	9.5
														2.5	4
16.0	800x300													-	8.6
														2.1	3
21.0	1000x300													-	9.4
														-	2.0

The NR values do not take into account room attenuation

K factors for other Vt

v _i (m/s)	0.25	0.375	0.50
Ax	1.50	1	0.75
Bx	1.05	0.7	0.53

B = without ceiling effect

α = angle of blades

β = angle of air jet

K factor for deflection

α	β	Lt	Vk	Δpt	NR
22°	35°	x0.77	x1.15	x1.30	+3
45°	60°	x0.55	x1.25	x1.60	+6

SR20Z



► **PRODUCT WITH DECLARATION OF CONFORMITY UNI 9494/2 - 2017 FOR TEMPERATURES UP TO 722 °C**

Description

SR20Z: return grille with fixed inclined blades, pitch 20 mm

- made of galvanised steel
- fastening with snap-on clips

SR10: return grilles in pressed steel

- RAL 9010 colour
- fastening with screws (not included)

SC: control damper (SR20 only)

CT: wall or duct counterframe

Special versions

SR20W: RAL9010 finish (list price +20%)

SR20X: AISI 304 stainless steel finish (list price x 2.5)

SR20XX: AISI 316 stainless steel finish (list price x 3)

SR20..R: including wire mesh (list price +40%)

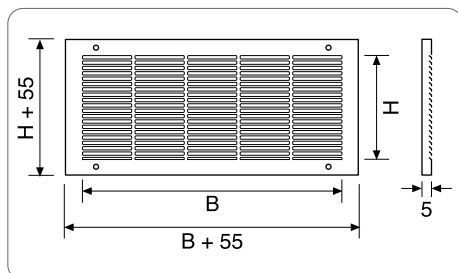
SR20..FV: fastening with visible screws (not included)

VR: coating according to RAL 9005 / 9006 table

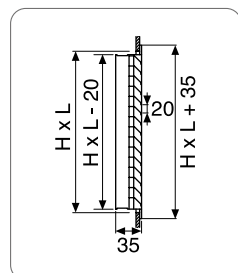
fixed surcharge €30 + 20% per piece

Other RAL colours on request

SR10



SR20



SR20 Selection table

AK (dm²)	L x H (mm)	Flow rate (m³/h)													
		150	200	300	400	500	600	800	1000	1200	1500	2000	2500		
1.3	200x100	15	25												
		3.2	11	4.2	19										
2.0	300x100 200x150	-	15	25											
		2.1	5	2.7	8	4	17								
3.0	400x100 300x150 200x200		-	15	25	30									
			1.9	4	2.7	8	3.6	14	4.6	22					
3.5	500x100			15	22	28	32								
				2.3	5.5	3.2	11	4	17	4.7	23				
4.5	600x100 400x150 300x200				15	25	27	34							
					2.5	6.6	5.1	10	3.7	14	4.8	24			
6.0	800x100 500x150 400x200					15	21	28	34						
						2.4	6	2.7	8	3.7	14	4.6	22		
7.5	1000x100 500x200 300x300						15	24	29	33					
							2.2	5	3	10	3.7	14	4.4	20	
9.3	800x150 600x200 400x300							18	25	28	35				
								2.4	6	3	10	3.5	13	4.6	22
12.5	1000x150 800x200 400x400								15	22	28	35			
									2.2	5	2.6	7.1	3.3	11	4.4
17.5	1000x200 500x400									15	22	28	34		
										1.9	3.8	24	6	3.2	11
22.0	1000x300 500x500	NR	Lt									15	24	29	
		Vk	Δpt									1.9	3.8	2.5	6.6

The NR values do not take into account room attenuation

All prices are list prices for local market, for a quotation please contact us.

SR20Z price list

H/L	200	300	400	500	600	800	1000	1200
100	26	28	30	33	35	37	44	55
150	32	34	39	42	44	46	52	65
200	38	40	43	46	48	55	65	75
300		53	56	60	68	72	78	82
400			70	74	79	90	97	105
500				88	99	108	115	130
600					107	118	129	144

Delivery: 2 weeks

SC price list

H/L	200	300	400	500	600	800	1000	1200
100	10	11	12	14	17	21	26	32
150	11	12	14	17	20	26	29	33
200	14	16	17	20	24	29	32	35
300	16	20	24	26	28	35	41	48
400	17	24	27	33	35	42	49	59

Delivery: prices in bold in stock / other material 2 weeks

CT price list

H/L	200	300	400	500	600	800	1000	1200
100 150 200	9			12			19	
300 400	-			12			12	

SR10 price list

H/L	200	300	400	500	600	800	1000	1200
100	11	12	14	16	17	19	24	29
150	14	17	20	26	31	36	40	47
200	16	22	26	34	36	47	52	62
300	22	34	42	48	58	78	102	120

GM52



Description

GM: supply grilles particularly suitable for industrial facilities

- galvanised steel frame and adjustable blades
- fastening with visible screws (not included)

GM41: simple row of vertical blades

GM42: double row of vertical front blades

GM51: simple row of horizontal blades

GM52: double row of horizontal front blades

Accessories

- DL50 damper up to dim. 700x700 mm
- DL101 damper for other sizes

Special versions

GMA: in aluminium (on request)

GMX: in AISI 304 stainless steel (on request)

GM....W: coating as per the RAL table (on request)

GM....ATS: with thermostatic element (on request)

All prices are list prices for local market, for a quotation please contact us.

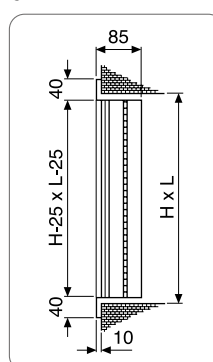
GM41- GM51 price list

H/L	600	800	1000	1200	1400	1600
200	31	36	42	69	74	80
300	39	46	53	80	88	95
400	47	55	64	92	101	111
500	55	65	74	103	115	127
600	64	74	85	114	128	142
700	72	84	95	126	142	158
800	80	93	106	137	156	174

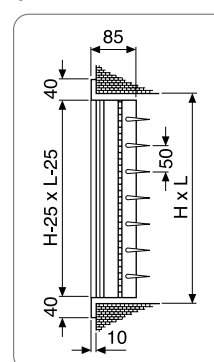
GM42- GM52 price list

H/L	600	800	1000	1200	1400	1600
200	54	68	81	114	121	128
300	66	83	99	133	145	156
400	78	98	117	153	169	185
500	91	113	134	172	193	213
600	103	128	152	192	217	241
700	115	143	170	211	240	269
800	128	158	187	231	264	298

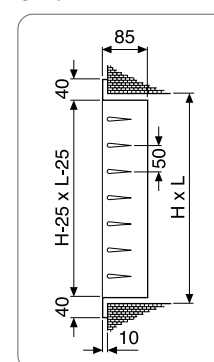
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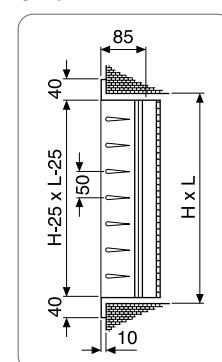
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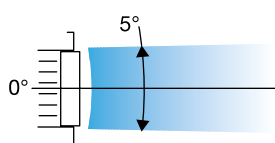
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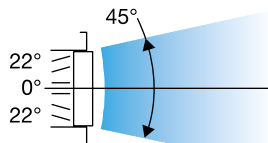
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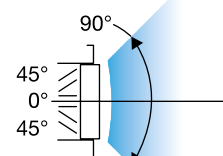
Blade deflection



1



2



3

Δp	Deflect.	Output velocity [V (m/s)]																		
		2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00	5.50	6.00	6.25	6.50	7.00	7.25	7.75	8.00	8.75
mm H.O	1-2-3	0.20	0.25	0.40	0.50	0.70	0.80	0.90	1.00	1.20	1.50	2.00	2.20	2.30	2.50	3.00	3.20	3.70	4.00	4.70

Selection table - Throw with Vt 0.5 m/s

Normal dimensions						Flow Q	Deflection			Flow Q	Deflection			Flow Q	Deflection			Flow Q	Deflection		
H							1	2	3		1	2	3		1	2	3		1	2	3
							V				V				V				V		
200	300	400	500	600	2.75		3.00	3.25	3.50		4.00	4.50	5.50		6.00	6.50	7.25		8.00	8.75	
Throw L - m							Throw L - m						Throw L - m								
L	500					800	5.7	5.0	4.0	1100	7.5	6.5	5.4	1600	11.0	9.4	8.3	2150	14.0	12.6	10.8
	600					940	6.1	5.1	4.7	1230	8.3	6.8	6.1	1850	11.5	10.0	8.5	2450	15.0	13.5	11.5
	700					1000	6.5	5.4	4.8	1360	8.6	7.2	6.5	2000	12.0	11.0	9.5	2700	16.0	13.8	12.0
	800	500				1200	7.0	6.0	5.1	1600	9.3	7.7	6.8	2200	13.0	12.0	10.5	3100	16.5	14.5	12.5
	900	600				1450	7.6	6.5	5.4	1900	10.0	8.3	7.2	2800	14.0	12.2	11.0	3800	17.5	16.0	13.5
	1000	700	500			1600	8.3	6.8	6.1	2150	10.5	9.4	7.2	3300	15.0	13.0	11.5	4250	19.0	17.0	14.5
	1200	800	600	500		1900	8.7	7.2	6.5	2450	11.6	9.7	8.0	3650	16.0	13.5	12.5	4650	20.5	18.0	15.0
		900	700	600		2100	9.4	8.0	6.9	2700	12.2	10.5	9.0	4100	16.5	15.0	13.0	5400	22.0	20.0	16.0
		1100	900	700	600	2550	9.8	8.3	7.2	3400	13.0	11.5	9.7	5100	18.0	16.0	14.5	6800	24.0	21.5	17.5
			1100	900	700	3250	11.0	9.0	8.3	4400	14.5	13.0	11.0	6500	20.5	17.5	16.3	8800	27.2	24.2	20.3
			1200	1000	800	3750	12.0	10.0	8.8	5000	15.5	13.7	11.7	7800	21.5	18.5	17.0	10200	29.0	26.0	21.5
				1100	900	4100	12.4	10.5	9.0	5400	16.0	14.0	12.0	8200	22.0	19.5	17.5	11000	30.0	27.0	22.5
				1200	1000	4600	13.0	10.8	9.7	6100	16.5	15.0	12.5	9200	23.5	20.5	18.0	12200	32.0	28.5	23.5
					1100	5100	13.8	12.0	10.8	6800	17.4	15.5	13.4	10200	24.5	21.0	19.0	13600	33.5	30.0	25.0
					1200	6100	15.0	12.3	11.0	8100	18.8	16.2	14.0	12000	26.5	23.0	21.0	16300	37.0	31.5	26.0

KKC

VEF

SF - S

All prices are list prices for local market, for a quotation please contact us.

Price list

DN/type	KKC	VEF
100	10	6
125	12	7
150	13	7
200	18	12

DN/type	SF-S
100	16
125	19
160	24
200	34

Delivery: in stock

VEF overall dimensions

DN	A	B	C	F
100	100	70	145	55
150	150	115	195	55
200	200	172	240	55

KKC overall dimensions

DN	A	B	C	F
100	138	75	40	97.5
150	202	119	50	147.5
200	248	157	63	197.5

SF-S overall dimensions

DN	ØD [mm]	Ød [mm]	A [mm]
100	135	100	15
160	191	160	15
200	238	200	18

Description

KKC: ventilation valves with adjustable disc and fastening collar
• made of aluminium with RAL 9010 finish

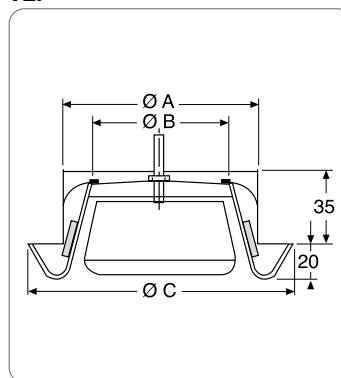
VEF: ventilation valves with adjustable disc and fastening collar
• made of PVC, white

SF-S: adjustable ventilation valves, suitable for air supply and return, including acoustic insert
• made of aluminium with RAL 9010 finish

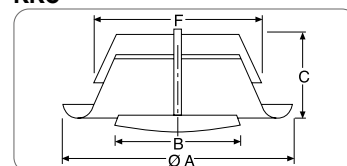
Special versions

- made of 304/316 stainless steel (on request)
- VR: coating according to the RAL table (on request)

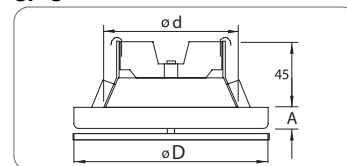
VEF



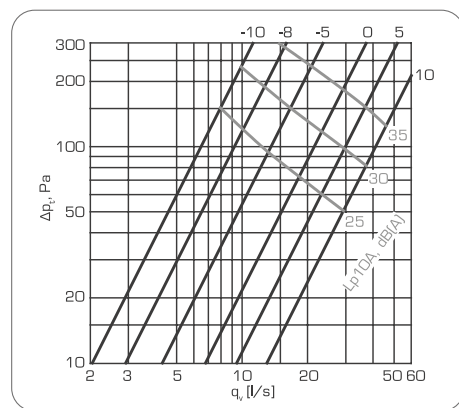
KKC



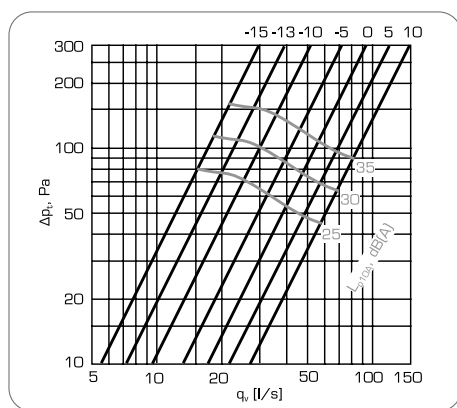
SF-S



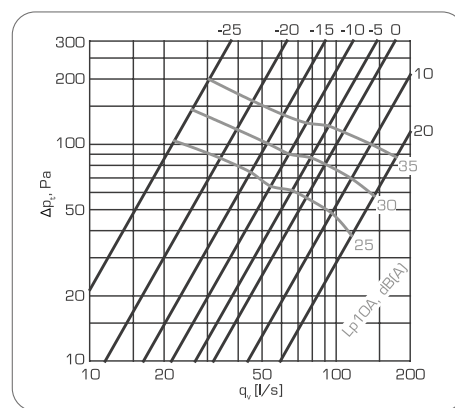
KKC / VEF selection diagrams DN 100



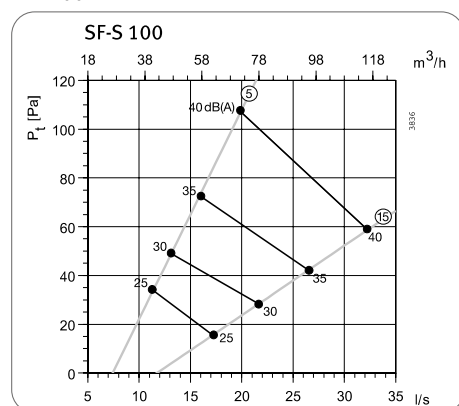
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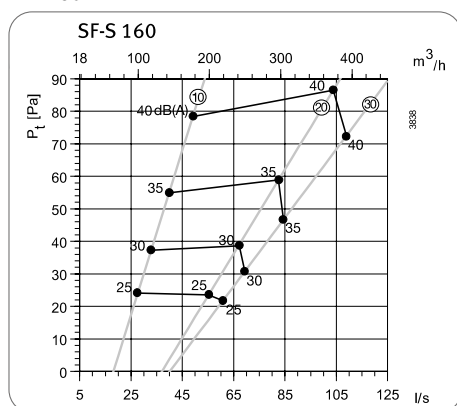
DN 200



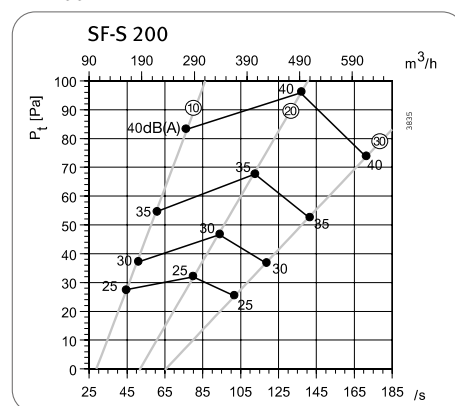
SF-S selection diagrams DN 100



DN 160



DN 200



All prices are list prices for local market, for a quotation please contact us.



Description

GLR50A: air intake/expulsion grille in natural anodised aluminium, blade pitch 50 mm with rainproof profile, including wire mesh

GL50ADL: including damper with front control

GL50ASPD: including gravity outlet damper

GL50ASPS: including gravity intake damper

CT: counterframe

WPLSR: air intake/expulsion grille in aluminium with RAL 9010 coating, circular, blade pitch 30 mm, including wire mesh, screw fastening (excluded)

SZ: galvanised steel grille pitch 50 mm

SZW: like SZ, RAL 9010 coated (list price +20%)

Special versions

GL50A: without wire mesh GLR50A price deduct 7%

GL50AN: natural aluminium. GL50A price deduct 12%

GLR50A: RAL 9005 / 9006 / 9010 coating (list price 100 €/sq m net + 30 € fixed, other RAL colours on request)

GLR50A selection table

V	ΔPt	LpA
1.0	7	> 20
1.5	16	27
2.0	28	35
2.5	46	43
3.0	66	47
3.5	90	51
4.0	115	54
4.5	150	57
5.0	180	60

V: velocity referring to front section (B-25) x (H-75) m/s

ΔPt: pressure drop in Pa

LpA: sound level pressure, measured in free field at a distance of 2 metres, hemispherical

GLR50A price list

H/L	200	400	600	800	1000	1200	1400	1600	1800
400	104	135	166	196	227	258	289	320	351
600	140	181	223	264	306	347	389	431	472
800	176	228	280	332	385	437	489	541	593
1000	211	274	337	400	463	526	589	652	715
1200	247	321	395	468	542	615	689	762	836
1400	283	367	452	536	620	705	789	873	957
1600	319	414	509	604	699	794	889	984	1079

GL50ADL price list

H/L	200	400	600	800	1000	1200	1400	1600
410	ON REQUEST							
610								
810								
1010								
1210								
1410								
1610								

GL50ASPD/S price list

H/L	400	600	800	1000	1200	1400	1600
400	ON REQUEST						
600							
800							
1000							
1200							
1400							
1600							

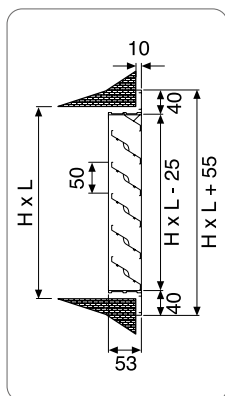
CT price list

H/L	400	600	800	1000	1200	1400	1600
400	28	34	39	44	49	54	59
600	31	36	41	46	51	56	62
800	33	38	43	48	54	59	64
1000	40	45	50	55	61	66	71
1200	48	53	57	62	66	71	76
1400	56	60	63	68	72	76	80
1600	64	68	70	74	77	81	85

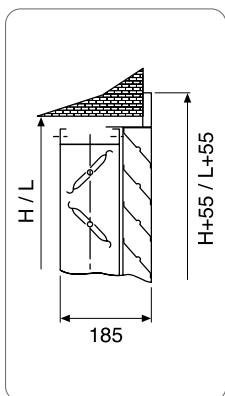
WPLSR / SZ price list

MODEL	SIZE				
WPLSR	125	160	200	250	315
€	44	44	57	67	69
SZ	400	500	630	800	1000
€	193	239	279	364	494

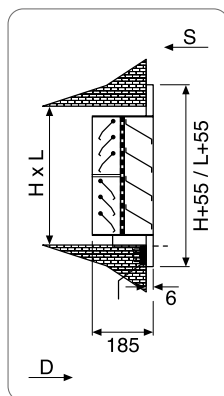
GL50A



GL50ADL



GL50ASPD/S



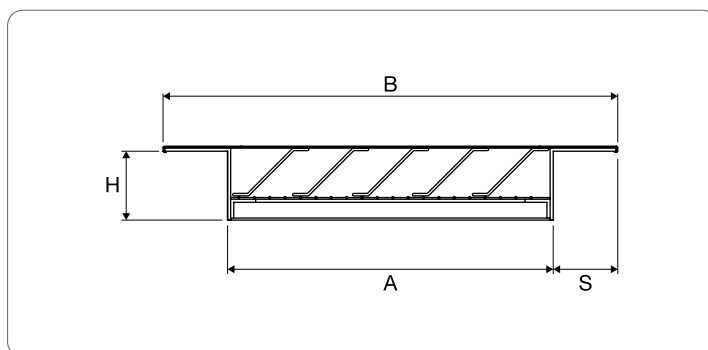
WPLSR dimensions

MODEL	SIZE	A	B	S	H	WIRE MESH
WPLSR	125	125	150	12.5	20	12 x 12
	160	160	185	12.5	20	
	200	200	225	12.5	20	
	250	250	275	12.5	20	
	315	315	350	17.5	20	

SZ dimensions

MODEL	SIZE	A	B	S	H	WIRE MESH
SZ	400	390	450	30	60	6.3 x 6.3
	500	490	550	30	60	
	630	620	680	30	60	
	800	790	870	40	60	
	1000	990	1070	40	60	

WPLSR / SZ



Aluminium grille blade pitch 30 mm

WPLS

WPL



Description

WPLS: air intake/expulsion grille in natural aluminium, blade pitch 30 mm with rainproof profile, including wire mesh

WPLS W: like WPLS but coated with RAL 9010

WPL: air intake/expulsion grille in natural aluminium, blade pitch 75 mm with rainproof profile, including wire mesh

WPL W: like WPL but coated with RAL 9010

Special versions

ELOX: natural anodised aluminium (on request)

VR: coating according to RAL 9005 / 9006 table
fixed surcharge €30 + 20% per piece

Other RAL colours on request

WPLS selection table

V	ΔPt	LpA
1.0	7	21
1.5	16	28
2.0	28	34
2.5	46	40
3.0	68	43
3.5	92	45
4.0	118	48
4.5	155	50
5.0	180	52

WPL selection table

V	ΔPt	LpA
1.0	7	21
1.5	16	28
2.0	28	34
2.5	46	40
3.0	63	43
3.5	89	45
4.0	114	48
4.5	148	50
5.0	180	52

V: velocity referring to front section (B-25) x (H-75) m/s

ΔPt: pressure drop in Pa

LpA: sound level pressure, measured in free field at a distance of 2 metres, hemispherical

All prices are list prices for local market, for a quotation please contact us.

WPLS price list

H/L	200	300	400	500	600	700	800	900	1000	1100	1200
200	43	61	68	75	82	89	96	103	110	117	124
300	67	76	85	95	104	113	122	131	140	149	158
400	81	92	103	114	126	137	148	159	170	181	192
500	95	108	121	134	148	161	174	187	200	213	226
600	109	124	139	154	169	185	200	215	230	245	260
800	136	156	175	194	213	232	252	271	290	309	328
1000	164	187	211	234	257	280	304	327	350	373	396
1200	192	219	246	274	301	328	355	383	410	437	464

WPLS W price list

H/L	200	300	400	500	600	700	800	900	1000	1100	1200
200	49	70	78	86	94	102	110	118	127	135	143
300	77	88	98	109	119	130	140	151	161	172	182
400	93	106	119	132	144	157	170	183	196	208	221
500	109	124	139	155	170	185	200	215	230	245	260
600	125	143	160	177	195	212	230	247	265	282	299
800	157	179	201	223	245	267	289	311	334	356	378
1000	189	216	242	269	296	322	349	376	403	429	456
1200	221	252	283	315	346	377	409	440	471	503	534

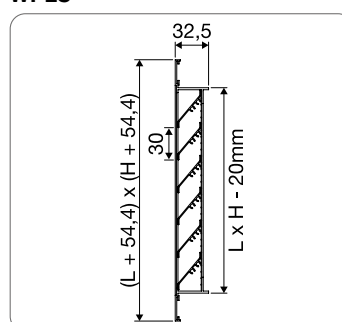
WPL price list

H/L	200	400	600	800	1000	1200	1400	1600	1800	2000
400	89	114	138	163	187	212	236	260	285	309
600	120	153	186	220	253	286	320	353	386	420
800	150	192	235	277	319	361	403	446	488	530
1000	181	232	283	334	385	436	487	538	589	641
1200	211	271	331	391	451	511	571	631	691	751
1400	242	310	379	448	517	586	655	724	792	861
1600	272	350	427	505	583	661	738	816	894	972
1800	302	389	476	562	649	736	822	909	995	1082
2000	333	428	524	619	715	810	906	1001	1097	1192

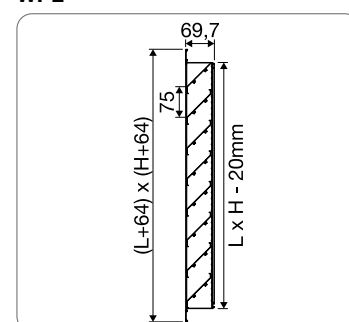
WPL W price list

H/L	200	400	600	800	1000	1200	1400	1600	1800	2000
400	103	131	159	187	215	243	271	300	328	356
600	138	176	214	253	291	329	368	406	444	483
800	173	221	270	318	367	415	464	513	561	610
1000	208	266	325	384	443	502	560	619	678	737
1200	243	312	381	450	519	588	657	726	795	863
1400	278	357	436	515	594	674	753	832	911	990
1600	313	402	492	581	670	760	849	939	1028	1117
1800	348	447	547	647	746	846	945	1045	1145	1244
2000	383	493	602	712	822	932	1042	1152	1261	1371

WPLS



WPL



GHR100A



Description

GHR100A: air intake/expulsion grille in natural anodised aluminium blades pitch 100 mm with rainproof profile, including wire mesh

GAO100: like GHR100A but with adjustable blades

GH100ADL: including damper with front control

GH100ASPD: including gravity outlet damper

GH100ASPS: including gravity intake damper

CT: counterframe

• non-perforated flanges

Special versions

GH100A: without wire mesh

GHR100A price decrease by 7%

GH100AN: natural aluminium

GH100A price decrease by 12%

GHR100A: RAL 9005 / 9006 / 9010 coating (list price 100 €/sqm net + 30 € fixed, other RAL colours on request)

Selection table

V	ΔPt	LpA
1.0	7	> 20
1.5	16	22
2.0	28	30
2.5	46	36
3.0	64	42
3.5	88	46
4.0	113	49
4.5	145	53
5.0	170	56

V: velocity referring to front section (B-25) x (H-125) m/s

ΔPt: pressure drop in Pa

LpA: sound level pressure, measured in free field at a distance of 2 metres, hemispherical

All prices are list prices for local market, for a quotation please contact us.

GHR100A price list

H/L	400	600	800	1000	1200	1400	1600	1800	2000
400	150	187	224	260	297	334	371	408	445
600	197	248	299	351	402	453	504	556	607
800	244	309	375	441	506	572	638	703	769
1000	291	371	451	531	611	691	771	851	931
1200	338	432	527	621	715	810	904	998	1093
1400	385	494	602	711	820	928	1037	1146	1254
1600	432	555	678	801	924	1047	1170	1293	1416
1800	479	616	754	891	1029	1166	1303	1441	1578
2000	526	678	830	981	1133	1285	1437	1588	1740

Delivery: 2 weeks

GAO100 price list

H/L	400	600	800	1000	1200	1400
400	ON REQUEST					
600						
800						
1000						
1200						
1400						
1600						

Delivery: 2 weeks

GH100ADL price list

H/L	400	600	800	1000	1200	1400	1600	1800	2000
400	ON REQUEST								
600									
800									
1000									
1200									
1400									
1600									
1800									

Delivery: 3 weeks

GH100ASPD/S price list

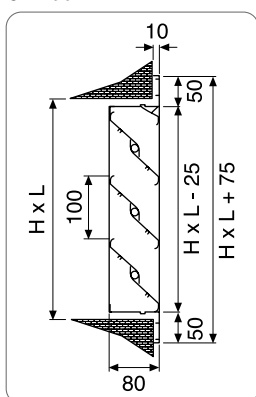
H/L	400	600	800	1000	1200	1400	1600	1800	2000
400	ON REQUEST								
600									
800									
1000									
1200									
1400									
1600									
1800									

Delivery: 3 weeks

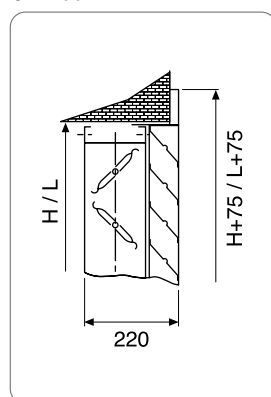
CT price list

H/L	400	600	800	1000	1200	1400	1600
400	28	34	39	44	49	54	59
600	31	36	41	46	51	56	62
800	33	38	43	48	54	59	64
1000	40	45	50	55	61	66	71
1200	48	53	57	62	66	71	76
1400	56	60	63	68	72	76	80
1600	64	68	70	74	77	81	85
1800	72	75	77	80	83	86	89
2000	80	83	84	87	88	91	94

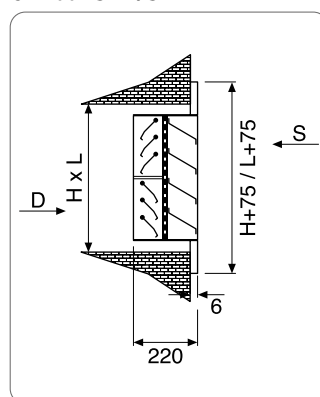
GH100A



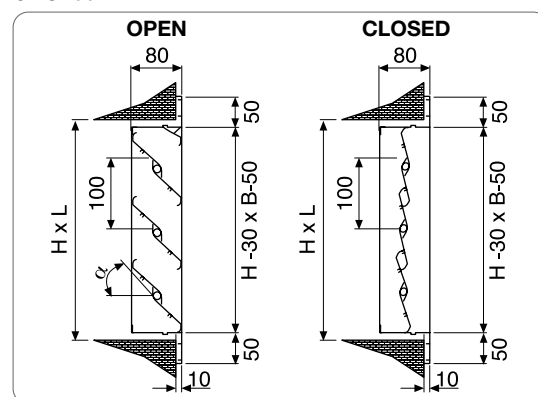
GH 100ADL



GH100ASPD/S



GAO100



Galvanised steel grilles blade pitch 50 mm

GLR50



► **PRODUCT WITH DECLARATION OF CONFORMITY UNI 9494/2 - 2017 FOR TEMPERATURES UP TO 722 °C**

Description

GLR50: galvanised steel air intake/expulsion grille, blades pitch 50 mm with rainproof profile, including wire mesh

GL50DL: including damper with front control

GL50SPD: including gravity outlet damper

GL50SPS: including gravity intake damper

CT: wall counterframe

Special versions

• frame holes pitch 600mm (list price +10%)

GL50: without wire mesh

GLR50 price (list price -4%)

GLX50: made of AISI 304 stainless steel (list price x 2.5)

GLXX50: made of AISI 316 stainless steel (list price x 3)

...EH: heating cables on wire mesh or frame

GLR50: RAL 9005 / 9006 / 9010 coating (list price 100 €/sq m net + 30 € fixed, other RAL colours on request)

Selection table

V	ΔPt	LpA
1.0	7	> 20
1.5	16	27
2.0	28	35
2.5	46	43
3.0	66	47
3.5	90	51
4.0	115	54
4.5	150	57
5.0	180	60

V: velocity referring to front section (B-25) x (H-75) m/s

ΔPt: pressure drop in Pa

LpA: sound level pressure, measured in free field at a distance of 2 metres, hemispherical

All prices are list prices for local market, for a quotation please contact us.

GLR50 price list

H/L	400	500	600	800	1000	1200	1400	1600	1800
200	49	61	72	94	116	138	161	183	205
300	63	75	88	112	137	161	186	210	234
400	76	90	104	130	157	184	211	237	264
500	90	105	119	148	178	206	236	265	293
600	104	119	135	166	198	229	261	292	323
700	117	134	151	185	219	252	286	319	352
800	130	149	167	202	239	274	311	347	382
900	144	164	183	221	260	297	336	374	411
1000	158	178	199	239	280	320	361	401	441
1100	171	193	215	257	301	343	387	428	470
1200	185	208	231	275	321	365	412	456	500
1300	198	223	247	293	342	388	437	483	529
1400	212	237	263	311	362	411	462	510	559
1500	225	252	279	329	383	433	487	538	588
1600	239	267	295	347	404	456	512	565	618

Delivery: 2 weeks

GL50DL price list

H/L	400	500	600	800	1000	1200	1400	1600
400	253	279	305	357	410	462	514	566
600	322	353	385	446	509	570	632	694
800	392	428	464	543	608	678	751	822
1000	461	502	544	624	707	787	869	949
1200	531	577	623	713	805	895	988	1078
1400	600	651	703	802	904	1003	1106	1205
1600	670	726	782	891	1003	1112	1224	1333

Delivery: 3 weeks

GL50SPD/S price list

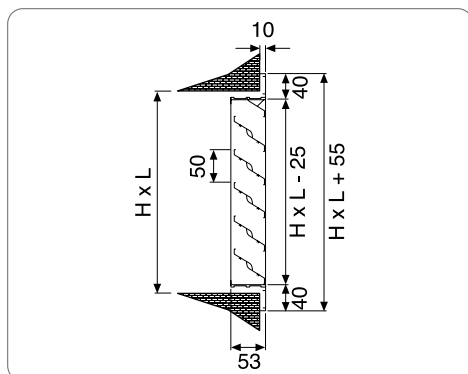
H/L	400	500	600	800	1000	1200	1400	1600
400	204	230	257	309	362	415	523	575
600	265	295	326	387	449	510	647	709
800	325	361	396	465	536	604	772	843
1000	386	426	465	543	622	699	896	976
1200	447	491	535	620	709	794	1021	1111
1400	508	556	605	698	796	889	1145	1244
1600	569	622	674	776	882	984	1269	1378

Delivery: 3 weeks

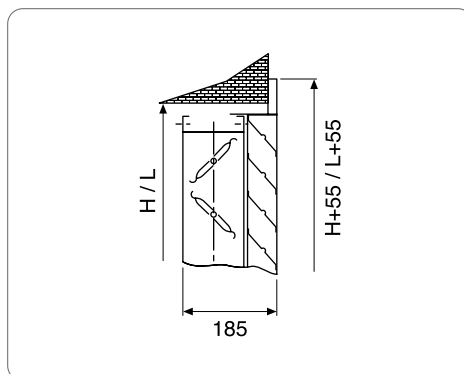
CT price list

H/L	400	500	600	800	1000	1200	1400	1600
400	28	31	34	39	44	49	54	59
500	30	32	35	40	45	50	55	60
600	31	33	36	41	46	51	56	62
800	33	36	38	43	48	54	59	64
1000	40	43	45	50	55	61	66	71
1200	48	50	53	57	62	66	71	76
1400	56	58	60	63	68	72	76	80
1600	64	65	68	70	74	77	81	85

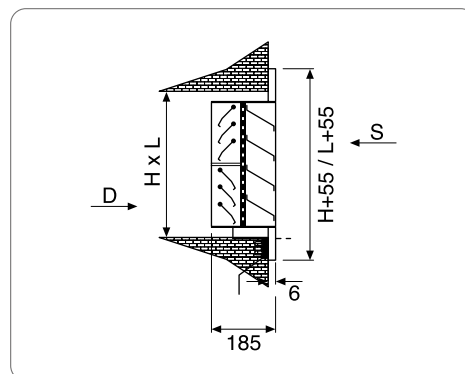
GL50



GL50DL



GL50SPD/S



GHR100



► **PRODUCT WITH DECLARATION OF CONFORMITY UNI 9494/2 - 2017 FOR TEMPERATURES UP TO 722 °C**

Description

GHR100: galvanised steel air intake/expulsion grille, blades pitch 100 mm with rainproof profile and wire mesh

GH100DL: including damper with front control

GH100SPD: including gravity outlet damper

GH100SPS: including gravity intake damper

CT: wall/duct counterframe

• perforated flanges Ø8 pitch 600 (list price +10%)

Special versions

GH100: without wire mesh

GHR100 price (list price -4%)

GHX100: made of AISI 304 stainless steel (list price x 2.5)

GHXX100: made of AISI 316 stainless steel (list price x 3)

...EH: heating cables on wire mesh or frame

GHR100: RAL 9005 / 9006 / 9010 coating (list price 100 €/sq m net + 30 € fixed, other RAL colours on request)

Selection table

V	ΔPt	LpA
1.0	7	17
1.5	16	25
2.0	28	30
2.5	46	35
3.0	64	39
3.5	88	42
4.0	113	44
4.5	145	47
5.0	170	50

V: velocity referring to front section (B-25) x (H-125) m/s

ΔPt: pressure drop in Pa

LpA: sound level pressure, measured in free field at a distance of 2 metres, hemispherical

All prices are list prices for local market, for a quotation please contact us.

GHR100 price list

H/L	400	600	800	1000	1200	1400	1600	1800	2000
400	77	105	133	161	188	216	244	272	300
600	105	138	170	202	234	266	299	331	363
800	133	170	207	243	280	317	354	390	427
1000	161	203	244	284	326	367	409	449	491
1200	189	235	281	326	372	417	463	509	555
1400	217	268	318	367	418	467	518	568	618
1600	245	300	355	409	463	518	573	627	682
1800	274	332	391	450	509	568	627	687	746
2000	302	365	428	491	555	618	682	746	809

Delivery: 2 weeks

GH100DL price list

H/L	400	600	800	1000	1200	1400	1600	1800	2000
400	273	329	384	440	495	551	607	748	805
600	343	409	474	539	604	669	735	910	979
800	414	489	563	638	713	788	863	1072	1152
1000	484	569	653	737	822	906	991	1234	1325
1200	555	649	743	836	931	1024	1119	1396	1499
1400	626	729	833	936	1040	1142	1247	1558	1672
1600	696	810	923	1035	1148	1261	1374	1720	1845
1800	767	890	1012	1134	1257	1379	1502	1882	2019
1900	800	928	1055	1182	1309	1436	1564	1965	2104

Delivery: 2 weeks

GH100SPD/S price list

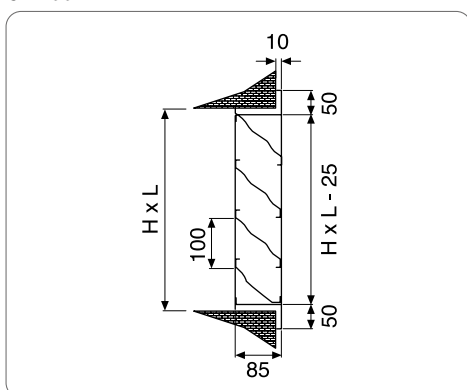
H/L	400	600	800	1000	1200	1400	1600	1800	2000
400	220	275	330	386	442	562	618	674	729
600	282	345	409	473	537	687	753	817	883
800	343	415	487	560	632	811	887	961	1036
1000	405	486	566	647	728	935	1021	1105	1189
1200	467	556	645	734	823	1060	1155	1248	1342
1400	529	627	723	821	918	1184	1289	1392	1495
1600	591	697	802	908	1013	1309	1423	1535	1648
1800	654	767	881	995	1108	1434	1557	1679	1801
1900	685	803	920	1038	1156	1496	1623	1750	1877

Delivery: 3 weeks

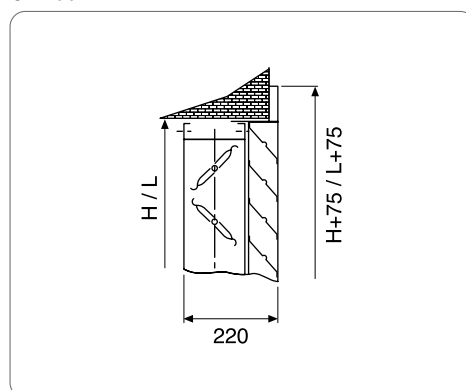
CT price list

H/L	400	600	800	1000	1200	1400	1600
400	28	34	39	44	49	54	59
600	31	36	41	46	51	56	62
800	33	38	43	48	54	59	64
1000	40	45	50	55	61	66	71
1200	48	53	57	62	66	71	76
1400	56	60	63	68	72	76	80
1600	64	68	70	74	77	81	85
1800	72	75	77	80	83	86	89
2000	80	83	84	87	88	91	94

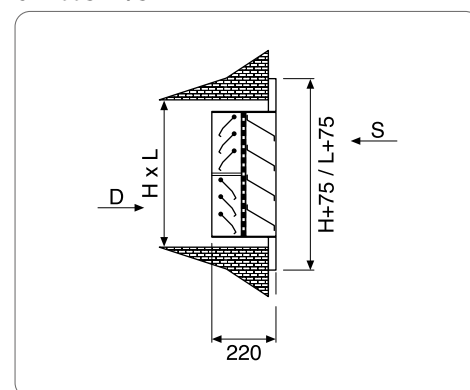
GHR100



GH100DL

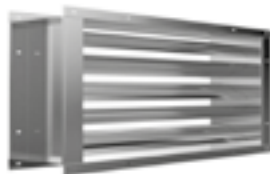


GH100SPD/S





DL50
Volume control
damper in galvanised steel pitch 50
PAGE 1



DL 102
Volume control
damper in galvanised steel pitch 100
PAGE 1



DL101
Volume control
damper in galvanised steel pitch 100
PAGE 2



DL 151
Volume control
damper in galvanised steel pitch 150
PAGE 2



DL101A
Aluminium volume control
damper pitch 100
PAGE 3



DL151A
Steel volume control
damper pitch 150
PAGE 3



DL 101 AT
Aluminium volume control damper
Class 4/C pitch 100
PAGE 4



DL 151 AT
Aluminium volume control damper
Class 4/C pitch 150
PAGE 4



DL 151 T
Volume control damper Class 4/C in
galvanised steel pitch 150
PAGE 5



DL 201 T
Volume control damper Class 4/C in
galvanised steel pitch 200
PAGE 5



SP 50/100
Gravity damper
pitch 50 / 100
PAGE 6



IRIS
Iris
damper
PAGE 7



DLC
Circular
volume control damper
PAGE 7



DS
Circular
volume control damper
PAGE 7



DLC-T-E
Circular volume control dampers
with leakage class 4/B
PAGE 8

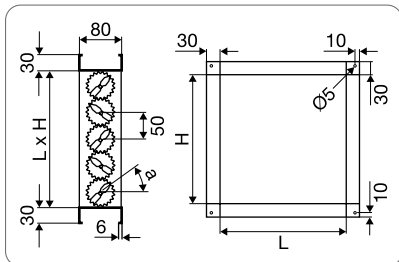


SRCZ
Reinforced circular volume
control damper
PAGE 8

Accessories

PAGE 10

DL 50



Description

- Galvanised steel frame th. 10/10 Z200 depth 80 mm riveted, 30 mm flange with Ø 5 mm holes on the corners
- "Double Skin" aerofoil blades in galvanised steel th. 0.4+0.4 Z200, pitch 50 mm
- Internal nylon gears, temp. -20°C / +70°C
- Drive shaft Ø 8 mm L = 45 mm
- Leakage class 1 according to EN 1751

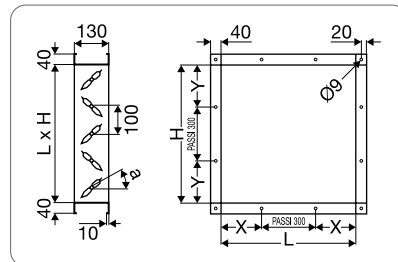
Available execution (see page 11)

- In 304 STAINLESS STEEL (list price x2)
- In 316L STAINLESS STEEL (list price x3)
- Special flanges (list price +52 €)

Accessories (see page 10)

- R9 galvanised manual drive (€5 each)
- Electric actuators / Pneumatic cylinder

DL 102



Description

- Galvanised steel frame th. 10/10 Z200 depth 130 mm, 40 mm flanges with Ø 8 mm holes in the middle, pitch 300 mm
- "Double Skin" aerofoil blades in galvanised steel th. 0.6+0.6 Z200, pitch 100 mm
- Nylon bearings, temp. -20°C / +70°C
- Drive shaft Ø 12 mm L = 100 mm

Available execution (see page 11)

- In 304 STAINLESS STEEL (list price x2.5)
- In 316L STAINLESS STEEL (list price x3)

Accessories (see page 10)

- R5 galvanised manual drive (€5 each)
- Electric actuators / Pneumatic cylinder

DL50 price list

H/L	110	160	210	260	310	360	410	460	510	560	610	660	710	760	810
110	24	24	25	26	27	27	28	29	30	30	31	32	33	33	34
160	31	32	32	33	34	35	36	36	37	38	39	39	40	41	42
210	39	40	40	41	42	43	44	45	46	47	47	48	49	50	51
260	46	47	48	49	50	51	51	52	53	54	55	56	57	58	58
310	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68
360	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
410	69	70	71	72	73	75	76	77	78	79	80	81	82	83	85
460	76	78	79	80	81	82	83	84	85	86	88	89	90	91	92
510	84	85	87	88	89	90	92	93	94	95	96	98	99	100	101
560	92	93	94	95	97	98	99	100	101	103	104	105	106	108	109
610	99	101	102	103	105	106	107	109	110	111	113	114	115	117	118
660	107	109	110	111	113	114	116	117	119	120	122	123	125	126	127
710	115	116	118	119	121	123	124	126	127	129	131	132	134	135	137

R9	5
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All prices are list prices for local market, for a quotation please contact us.

DL102 price list

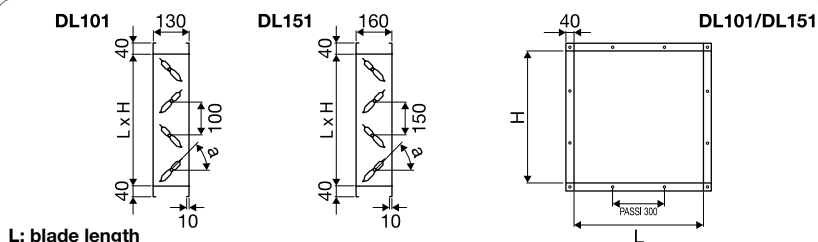
H/L	200	300	400	500	600	700	800	900	1000	1200	1300	1400	1500	1600	1700
210	51	58	64	70	74	80	86	90	96	108	114	120	126	131	137
310	64	71	78	85	90	96	103	107	114	127	134	141	147	154	161
410	76	84	92	100	105	112	120	125	132	147	154	162	169	177	184
510	88	97	106	114	120	128	137	142	150	167	175	183	191	199	207
610	98	108	117	126	135	145	154	159	168	186	195	204	213	222	231
710	110	121	131	141	151	161	171	176	186	206	215	225	235	245	254
810	119	130	141	151	162	172	188	193	204	225	235	246	257	267	278
910	130	143	154	165	177	188	199	211	222	245	256	267	278	290	301
1010	142	155	168	179	192	204	216	228	240	264	276	288	300	312	324
1110	153	168	181	194	207	219	232	245	258	284	296	309	322	335	348
1210	165	180	194	208	221	235	249	262	276	303	317	330	344	358	371
1310	177	193	207	222	236	251	265	279	294	323	337	351	366	380	395
1410	188	206	221	236	251	266	281	297	312	342	357	373	388	403	418
1510	200	218	234	250	266	282	298	314	330	362	378	394	409	426	441

R5	5
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Eseguibili sulla base "L" le mezze misure passo 50 mm, dimensioni in altezza fino a 2010.

Pressure drop test according to ISO 7244 - Self-generated noise test according to UNI EN 25135.

DL 101



DL 151



Description

- Galvanised steel frame th. 10/10 Z200, depth 130 mm, 40 mm flange with Ø 8 mm holes in the middle, pitch 300 mm
- "Double Skin" aerofoil blades in galvanised steel th. 0.6+0.6 Z200, pitch 100 mm
- External control linkages in galvanised steel
- Sprung side seal
- Drive shaft Ø 12 mm L = 100 mm
- Nylon bearings, temp. -20°C / +70°C
- Leakage class 1/A EN 1751

Available execution (see page 11)

- Intermediate dimensions (larger sizes price list +€52)
 - Execution with leakage class 3B EN 1751 (price list +€35 per blade)
 - Frame 15/10 (list price x1.5) / frame 20/10 (list price x1.5) / frame 30/10 (list price x2)
 - In 304 STAINLESS STEEL (list price x3)
 - In 316L STAINLESS STEEL (list price x3.5)
- ATEX execution: II 2G Ex h IIB/IIC T1...T6Gb
II 2D Ex h IIIC T 450°C...T 85°C Db (list price +40% +€120 each)

Accessories (see page 10)

- Galvanised manual drives (R11 up to 1 sqm €15) - (R12 over €21)
- Electric actuators / Pneumatic cylinder
- Atex actuators (see page 12)

Description

- Galvanised steel frame th. 15/10 Z200, prof. 160 mm, 40 mm flanges with Ø 8 mm holes in the middle, pitch 300 mm
- "Double Skin" aerofoil blades in galvanised steel th. 0.8+0.8 Z200, pitch 150 mm
- External control linkages in galvanised steel
- Sprung side seal
- Drive shaft Ø 12 mm L = 100 mm
- Nylon bearings, temp. -20°C / +70°C
- Leakage class 2/B EN 1751

Available execution (see page 11)

- Intermediate dimensions (larger sizes price list +€52)
 - Frame 20/10 (list price x1.5) / frame 30/10 (list price x2)
 - In 304 STAINLESS STEEL (list price x3)
 - In 316L STAINLESS STEEL (list price x3.5)
- ATEX execution: II 2G Ex h IIB/IIC T1...T6Gb
II 2D Ex h IIIC T 450°C...T 85°C Db (list price +40% +€120 each)

Accessories (see page 10)

- Galvanised manual drives (R11 up to 1 sqm €15) - (R12 over €21)
- Electric actuators/ Pneumatic cylinder
- Atex actuators (see page 12)

DL101 price list

H/L	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000
210	63	71	78	86	93	101	108	116	124	139	154	169	228	243
310	78	87	95	104	112	121	130	138	147	164	181	198	270	288
410	93	103	112	122	132	141	151	160	170	189	208	227	312	332
510	108	119	130	140	151	161	172	182	193	214	235	256	354	377
610	123	135	147	158	170	181	193	204	216	239	262	285	396	417
710	138	151	164	176	189	201	214	227	239	264	289	315	438	466
810	152	167	181	195	208	222	242	249	262	289	316	344	480	511
910	167	183	198	213	227	242	256	271	285	315	344	373	522	556
1010	182	200	215	231	246	262	277	293	309	340	371	402	564	601
1210	212	232	250	267	285	302	320	337	355	390	425	460	648	690
1410	242	264	284	303	323	342	362	381	401	440	479	518	732	780
1610	272	297	318	340	361	382	404	426	447	490	533	576	816	869
1810	302	329	352	376	399	423	446	470	493	540	587	634	900	959
2010	333	359	385	410	436	461	487	512	538	589	640	690	986	1048

R11 15

R12 21

DL151 price list

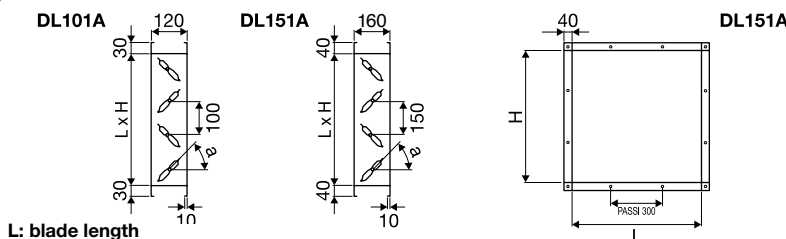
H/L	200	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000
310	74	92	101	110	119	127	136	145	154	163	180	198	216	233
460	96	117	127	137	147	156	167	176	186	196	216	236	255	275
610	119	141	153	163	175	185	197	207	219	229	251	273	295	317
760	142	166	178	190	203	214	227	239	251	263	287	311	335	359
910	164	191	204	217	231	243	257	270	283	296	322	349	375	402
1060	186	215	230	244	259	272	287	301	316	330	358	386	415	443
1210	209	240	256	271	287	301	318	332	348	363	393	424	455	486
1360	231	264	282	298	315	331	348	364	381	396	429	462	495	528
1510	254	289	307	324	343	360	378	395	413	430	465	500	535	570
1660	277	314	333	351	371	389	408	426	445	463	500	538	575	612
1810	299	339	359	378	399	418	438	457	477	497	536	575	615	654
1960	322	364	385	405	427	447	468	489	510	530	572	613	655	697
2110	344	388	410	432	454	476	498	520	542	564	607	651	695	738

R11 15

R12 21

Pressure drop test according to ISO 7244 - Self-generated noise test according to UNI EN 25135.

DL 101A



DL 151A



Description

- Natural extruded aluminium frame th. 1,5 mm, depth 120 mm, 30 mm non-perforated flanges
- Wing blades in natural extruded aluminium th. 1.1 mm, pitch 100 mm
- External control linkages in galvanised steel
- Side seal with AISI 301 stainless steel blades
- Elastomer sealing gasket on the blades
- Drive shaft Ø 12 mm L = 100 mm
- Nylon bearings, temp. -20°C / +70°C
- Leakage class 2 EN 1751

Available execution (see page 11)

- Intermediate dimensions (larger sizes price list +€52)
- ATEX execution: II 2G Ex h IIB/IIC T1...T6Gb
- II 2D Ex h IIIC T 450°C...T 85°C Db (list price +40% +€120 each)

Accessories (see page 10)

- Galvanised manual drives (R11 up to 1 sqm €15) - (R12 over €21)
- Electric actuators/ Pneumatic cylinder
- Atex actuators (see page 12)

Description

- Natural extruded aluminium frame th. 2 mm, depth 160 mm, 40 mm flanges with Ø 8 mm holes in the middle, pitch 300 mm
- Wing blades in natural extruded aluminium th. 1.5 mm, pitch 150 mm
- External control linkages in galvanised steel
- Side seal with AISI 301 stainless steel blades
- Elastomer sealing gasket on the blades
- Drive shaft Ø 12 mm L = 100 mm
- Nylon bearings, temp. -20°C / +70°C
- Leakage class 2 EN 1751

Available execution (see page 11)

- Intermediate dimensions (larger sizes price list +€52)
- Vertical operation (list price +10%)
- Drive shaft with special length (list price +€24)
- ATEX execution: II 2G Ex h IIB/IIC T1...T6Gb
- II 2D Ex h IIIC T 450°C...T 85°C Db (list price +40% +€120 each)

Accessories (see page 10)

- Galvanised manual drives (R11 up to 1 sqm €15) - (R12 over €21)
- Electric actuators/ Pneumatic cylinder
- Atex actuators (see page 12)

DL101A price list

H/L	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
210	100	112	124	124	147	159	171	183	195	207	219	231	243	254	266	278
310	119	134	148	148	178	192	207	222	237	251	266	281	295	310	325	339
410	138	156	173	173	208	226	243	261	278	296	313	331	348	366	383	401
510	157	178	198	198	239	259	279	299	320	340	360	381	401	421	442	462
610	177	200	223	223	269	292	315	338	361	384	408	431	454	477	500	523
710	196	222	248	248	299	325	351	377	403	429	455	481	506	532	558	584
810	215	244	272	272	330	358	387	416	445	473	502	531	559	588	617	645
910	234	266	297	297	360	392	423	455	486	518	549	581	612	644	675	706
1010	253	288	322	322	391	425	459	493	528	562	596	631	665	699	733	768
1110	273	310	347	347	421	458	495	532	569	606	643	681	718	755	792	829
1210	292	332	372	372	451	490	531	571	611	651	691	728	770	810	850	890
1310	311	354	396	396	482	524	567	610	652	695	738	781	823	866	909	951
1410	330	376	421	421	512	558	603	649	694	740	785	830	876	921	967	1012
1510	350	398	446	446	543	591	639	687	736	784	832	880	929	977	1025	1074

R11	15
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R12	21
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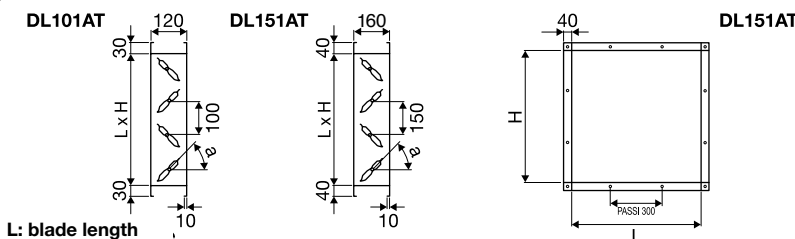
DL151A price list

H/L	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
310	131	149	168	186	204	223	241	260	278	296	315	333	352	370	389	407	425	444	462
460	163	185	208	230	253	276	298	321	344	366	389	412	434	457	479	502	525	547	570
610	194	221	248	275	302	329	356	382	409	436	463	490	517	544	570	597	624	651	678
760	226	257	288	320	351	382	413	444	475	506	537	568	599	630	661	693	724	755	786
910	258	293	329	364	399	435	470	505	541	576	611	647	682	717	752	788	823	858	894
1060	290	330	369	409	448	488	527	567	606	646	685	725	764	804	843	883	923	962	1002
1210	322	366	409	453	497	541	584	628	672	716	759	803	847	891	934	978	1022	1066	1109
1360	354	402	450	498	546	594	642	690	738	786	834	882	930	977	1025	1073	1121	1169	1217
1510	496	438	490	542	594	647	699	751	803	855	901	960	1012	1064	1116	1169	1221	1273	1325
1660	418	474	530	587	643	700	756	813	869	925	982	1038	1095	1151	1207	1264	1320	1377	1433
1810	449	510	571	631	692	753	813	874	935	995	1056	1117	1177	1238	1298	1359	1420	1480	1541
1960	481	546	611	676	741	806	871	935	1000	1065	1130	1195	1260	1325	1389	1454	1519	1584	1649
2110	513	582	651	720	790	859	928	997	1066	1135	1204	1273	1342	1411	1480	1550	1619	1688	1757

R11	15
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R12	21
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Pressure drop test according to ISO 7244 - Self-generated noise test according to UNI EN 25135.



- Natural extruded aluminium frame th. 1.5 mm continuous weld, depth 120 mm, 30 mm non-perforated flanges
- Wing blades in natural extruded aluminium th. 1.1 mm, pitch 100 mm
- External control linkages in galvanised steel
- Side seal with AISI 301 stainless steel
- Sealing gasket on the silicone blades (-50°C / +200°C)
- Drive shaft Ø 12 mm L = 100 mm
- Bronze bearings, temp. -50°C / +200°C
- Leakage class 4/C EN 1751 up to 2000 Pa
- **DIN 1946/4**

• Intermediate dimensions (larger sizes price list +€52)
ATEX execution: II 2G Ex h IIB/IIC T1...T6Gb
II 2D Ex h IIIC T 450°C...T 85°C Db (list price +40% +€120 each)

- Galvanised manual drives (R11 up to 1 sqm €15) - (R12 over €21)
- Electric actuators/ Pneumatic cylinder
- Atex actuators (see page 12)

H/L	200	400	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
210	115	142	169	183	197	210	224	238	252	265	279	293	306	320
310	137	171	204	221	238	255	272	289	306	323	340	357	373	390
410	159	199	239	259	280	300	320	340	360	380	400	420	441	461
510	181	228	274	298	321	344	368	391	414	438	461	484	508	531
610	203	256	309	336	362	389	416	442	469	495	522	548	575	601
710	225	285	344	374	404	434	463	493	523	553	582	612	642	672
810	247	313	379	412	445	478	511	544	577	610	643	676	709	742
910	269	342	414	450	487	523	559	595	631	668	704	740	776	812
1010	291	370	449	489	528	567	607	646	686	725	765	804	843	883
1110	314	399	484	527	569	612	655	697	740	783	825	868	911	953
1210	336	427	519	563	611	657	703	748	794	837	886	932	978	1024
1310	358	456	554	603	652	701	750	799	848	898	947	996	1045	1094
1410	380	484	589	641	694	746	798	850	903	955	1007	1060	1112	1164
1510	402	513	624	679	735	791	846	902	957	1013	1068	1124	1179	1235

R11	15
-----	----

R12	21
-----	----

H/L	200	400	600	800	1000	1200	1300	1400	1500	1600	1700	1800	1900	2000
310	150	193	235	277	320	362	383	404	426	447	468	489	510	531
460	187	239	291	343	395	447	473	499	525	551	577	604	630	656
610	224	285	347	409	471	532	563	594	625	656	687	718	749	780
760	260	332	403	475	546	618	653	689	725	761	796	832	868	904
910	297	378	459	541	622	703	744	784	825	865	906	947	987	1028
1060	334	424	515	606	697	788	834	879	925	970	1015	1061	1106	1152
1210	370	471	572	672	773	873	924	974	1024	1075	1125	1175	1226	1276
1360	407	517	628	738	848	959	1014	1069	1124	1179	1234	1290	1345	1400
1510	571	564	684	804	924	1036	1104	1164	1224	1284	1344	1404	1464	1524

R12P18	28
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Pressure drop test according to ISO 7244 - Self-generated noise test according to UNI EN 25135.

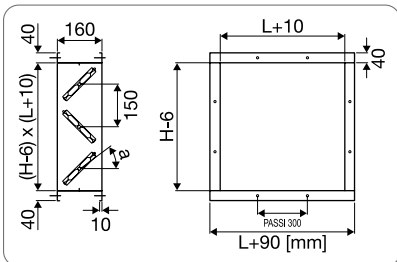
- Natural extruded aluminium frame th. 1.5 mm continuous weld, depth 160 mm, 40 mm flanges with Ø 8 mm holes in the middle, pitch 300 mm
- Wing blades in natural extruded aluminium th. 1.5 mm, pitch 150 mm
- External control linkages in galvanised steel
- Side seal with AISI 301 stainless steel
- Sealing gasket on the silicone blades (-50°C / +200°C)
- Drive shaft Ø 18 mm L = 100 mm
- Bronze bearings, temp. -50°C / +200°C
- Leakage class 4/C EN 1751 up to 2000 Pa
- DIN 1946/4

• Intermediate dimensions (larger sizes price list +€52)
ATEX execution: II 2G Ex h IIB/IIC T1...T6Gb
II 2D Ex h IIIC T 450°C...T 85°C Db (list price +40% +€120 each)

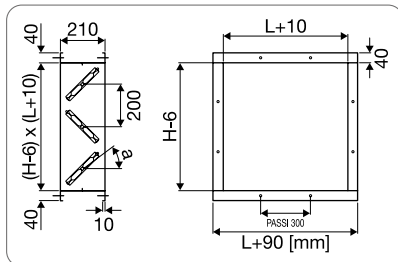
- R12P18 galvanised manual drive (list price €28)
- Electric actuators/ Pneumatic cylinder
- Atex actuators (see page 12)

All prices are list prices for local market, for a quotation please contact us.

DL 151T



DL 201T



Description

- Galvanised steel frame th. 1.5 mm Z200 spot welded with internal silicone seal, depth 160 mm, welded 40 mm flanges with Ø 8 holes pitch 300 mm
- Aerofoil blades in stainless steel th. 0.8+0.8, pitch 150 mm with side seal system.
- External control linkages in galvanised steel
- Side seal with AISI 301 stainless steel
- Sealing gasket on the silicone blades (-50°C / +200°C)
- Drive shaft Ø 18 mm, L=100 mm
- Bronze bearings, temp. -50°C / +200°C
- Leakage class 4/C EN 1751 up to 2000 Pa (see table)
- DIN 1946/4

Available execution (see page 11)

- Intermediate dimensions (larger sizes price list +€52)
 - In 304 STAINLESS STEEL (list price x3)
 - In 316L STAINLESS STEEL (list price x3.5)
 - Special flanges (list price +52 €)
- ATEX execution: II 2G Ex h IIB/IIC T1...T6Gb
II 2D Ex h IIC T 450°C...T 85°C Db (list price +40% +€120 each)

Accessories (see page 10)

- R12P18 galvanised manual drive (list price € 32)
- Electric actuators/ Pneumatic cylinder
- Atex actuators (see page 12)

ATTENTION: base dimensions + 10 mm x height -6 mm

Description

- Galvanised steel frame th. 1.5 mm Z200 spot welded with internal silicone seal, depth 210 mm, welded 40 mm flanges with Ø 8 holes pitch 300 mm
- Aerofoil blades in stainless steel th. 0.8+0.8, pitch 200 mm with side seal system.
- External control linkages in galvanised steel
- Side seal with AISI 301 stainless steel
- Sealing gasket on the silicone blades (-50°C / +200°C)
- Drive shaft Ø 18 mm, L=100 mm
- Bronze bearings, temp. -50°C / +200°C
- Leakage class 4/C EN 1751 up to 2000 Pa (see table)
- DIN 1946/4

Available execution (see page 11)

- Intermediate dimensions (larger sizes price list +€52)
 - Frame 20/10 (list price x1.5) / frame 30/10 (list price x2)
 - In 304 STAINLESS STEEL (list price x3)
 - In 316L STAINLESS STEEL (list price x3.5)
 - Special flanges (list price +52 €)
- ATEX execution: II 2G Ex h IIB/IIC T1...T6Gb
II 2D Ex h IIC T 450°C...T 85°C Db (list price +40% +€120 each)

Accessories (see page 10)

- R12P18 galvanised manual drive (list price € 32)
- Electric actuators/ Pneumatic cylinder
- Atex actuators (see page 12)

ATTENTION: base dimensions + 10 mm x height -6 mm

DL151T price list

H/L	200	400	600	800	1000	1200	1300	1400	1500	1600 ¹	1700 ²	1800 ²	1900 ²	2000 ³
310														
460														
610														
760														
910														
1060														
1210														
1360														
1510														

ON REQUEST

All prices are list prices for local market, for a quotation please contact us.

DL201T price list

H/L	200	400	600	800	1000	1200	1300	1400	1500	1600 ¹	1700 ²	1800 ²	1900 ²	2000 ³
210	210	231	252	273	295	316	327	337	348	358	369	379	390	400
410	253	282	311	340	369	398	412	427	441	456	470	485	499	514
610	297	333	370	406	443	480	498	517	535	553	572	590	608	627
810	340	384	428	473	517	562	584	606	629	651	673	695	718	740
1010	383	435	487	539	591	644	670	696	722	748	775	801	827	853
1210	426	486	546	606	666	726	756	786	816	846	876	906	936	966
1410	469	537	603	672	740	808	842	876	910	943	978	1011	1046	1079
1610	513	588	663	739	814	890	928	966	1004	1041	1079	1117	1155	1192
1810	556	639	722	806	889	972	1014	1055	1097	1139	1180	1222	1264	1306
2010	599	690	781	872	963	1054	1100	1145	1191	1236	1282	1327	1373	1419

1: 2000 Pa | 2: 1500 Pa | 3: 1000 Pa

DL I 201T: version with frame and blades with fibreglass insulation, coefficient of thermal conductivity 0.025 W/Mk (list price +25%).
Pressure drop test according to ISO 7244 - Self-generated noise test according to UNI EN 25135.

SP



Description

SP: galvanised steel frame th. 10/10, aluminium blade with gasket th. 7/10 mm, stub shaft Ø 6 mm, anti-tip nylon bearings. Suitable for speeds up to 5 m/s; for higher speeds, we recommend the version with conjugated blades.

SP50 D/S: pitch 50 mm

SP100 D/S: pitch 100 mm

SP...D: EXHAUST

SP...S: INLET

SP100K: like SP100 but with frame for duct assembly

Available execution (see page 11)

- Intermediate dimensions (larger sizes) or special flanges (list price +€52)
- In AISI 304 stainless steel (list price x2)
- In AISI 316 stainless steel (list price x3)
- Version entirely in aluminium (list price x1.5)
- Continuous solid shaft, Nylon, Teflon or Bronze bearings (see page 11)
- Anti-tip device (list price +15%)
- Circular lightweight or heavy version also available

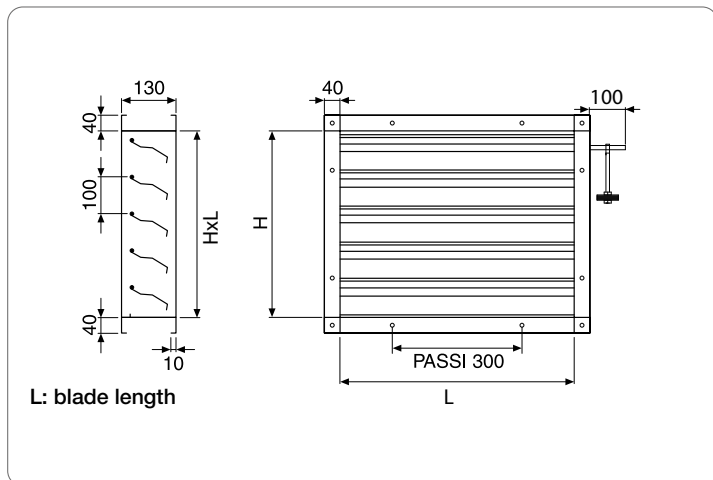
SP 100 KVH: like SPK100K but with Ø 12 shafts, conjugated blades + adjustable counterweight outside the flow, mounted on the height side (list price x3)

SP...SR: inlet version with mesh (list price +30%)

ATEX execution: II 2G Ex h IIB/IIC T1...T6Gb

II 2D Ex h IIC T 450°C...T 85°C Db (list price +40% +€120 each)

SP100K



All prices are list prices for local market, for a quotation please contact us.

SP50D/S price list

H/L	200	300	400	500	600	700	800	900	1000
150	50	55	59	64	69	73	78	123	128
250	60	66	72	78	84	91	97	150	156
350	69	77	84	92	100	108	116	176	185
450	78	88	97	107	116	125	134	203	213
550	88	99	110	121	131	143	153	230	241
650	97	110	122	135	147	160	172	256	269
750	107	121	135	149	163	177	191	283	297
850	116	132	147	163	178	194	210	309	325
950	125	143	160	177	194	212	229	336	354
1050	135	154	173	191	210	229	248	363	382

SP100D/S price list

H/L	500	600	800	1000	1200	1400	1600	1800
250	84	91	106	120	134	196	210	223
350	96	104	120	136	151	223	238	253
450	108	116	134	151	168	249	266	283
550	119	129	148	167	186	276	294	312
650	131	142	162	183	203	303	323	342
750	143	154	177	199	220	330	351	372
850	155	167	191	214	237	357	379	402
950	167	180	205	230	254	384	408	431
1050	179	192	219	246	272	410	436	461
1150	191	205	233	261	289	437	464	491
1250	202	217	247	277	306	464	492	521
1350	215	230	262	293	323	491	520	551
1450	226	243	275	308	340	518	549	581
1550	239	256	290	324	357	544	577	610

With conjugated blades H + 50 mm

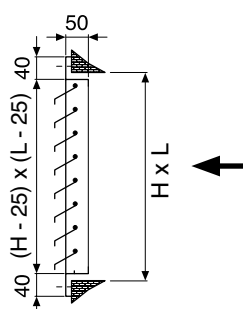
SP100K price list

H/L	400	600	800	1000	1200	1400	1600	1800	2000
210	75	91	107	124	140	186	201	215	230
310	88	105	123	141	158	215	231	248	265
410	101	120	139	158	177	244	263	281	300
510	114	134	154	175	196	273	293	314	335
610	127	148	170	192	214	302	324	347	369
710	140	162	186	209	233	331	355	380	404
810	153	177	202	226	251	360	386	413	439
910	166	191	217	244	270	389	417	445	474
1010	178	205	233	261	288	418	448	478	509
1110	191	220	249	278	307	447	479	511	543
1210	204	234	264	295	325	476	510	544	578
1310	217	249	280	312	344	505	541	577	613
1410	230	263	296	330	362	534	572	610	647
1510	243	277	312	347	381	563	603	642	682
1610	256	292	327	364	399	592	634	675	717
1710	269	306	343	381	418	621	665	708	751
1810	282	320	359	398	436	650	695	741	786

With conjugated blades H air gap = H not less than 50 mm

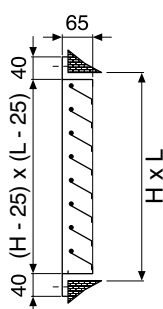
SP50D-SP100D

Exhaust



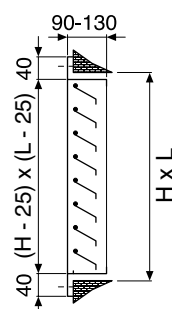
SP50S-SP100S

Inlet



SP50SR-SP100SR

Inlet



IRIS



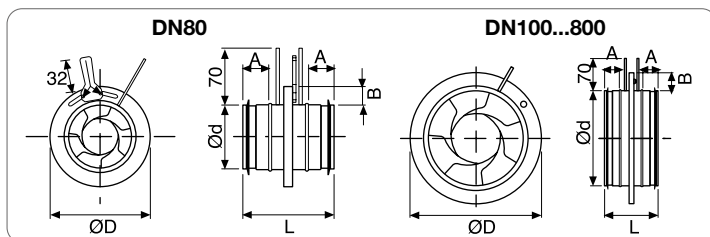
Description

IRIS: volume control damper

- option to read real-time flow value via Pressure plugs
- made of galvanised steel

Δp

IRIS



IRIS dimensions

DN	Ød	ØD	L	A	B	Weight
80	79	125	110	30	22	0.5
100	99	165	110	30	32	0.5
125	124	188	110	30	32	0.7
150	149	230	210	27	40	0.9
160	159	230	110	30	35	0.9
200	199	285	110	30	42	1.4

IRIS dimensions

DN	Ød	ØD	L	A	B	Weight
250	249	335	135	40	42	2.1
315	314	410	135	40	47	3.5
400	398	525	190	60	62	6.4
500	498	655	170	50	77	9.6
630	628	815	170	50	92	15.6
800	798	1015	270	100	107	25.0

All prices are list prices for local market, for a quotation please contact us.

Price list

TYPE/DN	80	100	125	160	200	250	315	400	500	630	800
GALVANISED STEEL IRIS	34	34	38	57	64	95	126	257	396	600	1285
STAINLESS STEEL IRIS	-	241	264	298	344	516	689	1262	1951	2433	3672
Flow rate m³/h	180	280	440	720	1130	1760	2800	6330	9890	15700	25320

Max flow for V = 10 m/s up to DN 315 and V = 14 m/s other DN

■: in AISI 304 stainless steel (except for DN 315/400 in AISI 316 L stainless steel)

NOTES: IRIS never closes completely

Tolerance with straight duct ± 5%

Assembly	Distance L	
	m² = ±7%	m² = ±10%
	≤ 1D	≤ 1D
	≤ 4D	≤ 2D
	≤ 2D	≤ 2D
	≤ 2D	≤ 12D

DLC



Description

- DLC:** single blade volume control damper
- made of galvanised steel
- Drive shaft Ø 8 mm up to DN 250
- Drive shaft Ø 12 mm up to DN 710

DLCX: like DLC but in AISI 304/316 stainless steel

Available execution

- In 304 stainless steel (list price x3)
- In 316L stainless steel (list price x4)
- Frame special dim. <500 mm (list price +30%)
- 8 mm casing return (list price +15%)

Accessories DLC (see page

- electric actuator/ pneumatic cylinder / etc.

DS



Description

- DS:** single blade volume control damper
- made of galvanised steel
- manual control
- pair of external outer gaskets
- gasket on blade
- leakage class 4 EN 1751

Accessories

- 24V or 230V actuators with 2 microswitches (list price €220)

All prices are list prices for local market, for a quotation please contact us.

Price list

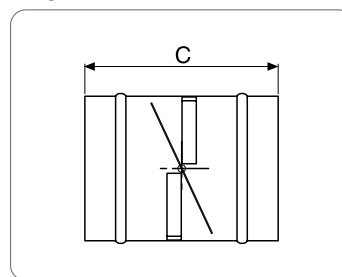
Type\DN	100	125	160	200	250	315	400	500	630	710
DLC	24	26	29	36	39	50	87	109	117	129
DS	20	22	24	26	30	35	45			

Delivery: Material with prices in bold in stock under text

Manual drives

Type	€	
R9	up to DN 250	5
R11	up to DN 710	15

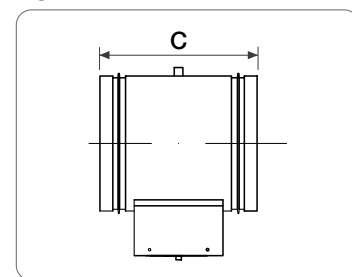
DLC



DLC

DN	C
100÷250	200
300÷355	300
400÷710	400

DS



DS

DN	C
80÷200	170
225÷400	255

Circular damper with leakage class 4/B EN 1751



DLC-T-E



Description

DLC-T: galvanised steel frame th. (see table)

- galvanised steel blade
- outer silicone seal applied on the blade
- Drive shaft Ø 8 / 12 mm (see table)
- bronze bearings for shafts Ø 8 mm (-50°C / +200°C)
- Nylon bearings for shafts Ø 12 mm (-20°C / +70°C)
- Leakage class 4/B EN 1751 up to 2000 Pa
- DIN 1946/4

Available execution (see page 11)

- Intermediate dimensions (larger sizes price list +€52)
- In AISI 304 stainless steel (list price x3)
- In AISI 316L stainless steel (list price x4)
- Frame special dim. <500 mm (list price +30%)
- 8 mm casing return (list price +15%)

DLCTE: like DLCT but with pair of external gaskets for duct assembly

ATEX execution: II 2G Ex h IIB/IIC T1...T6Gb

II 2D Ex h IIC T 450°C...T 85°C Db (on request)

Accessories (see page 10)

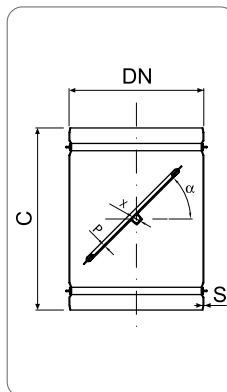
- Manual drive(R9 shaft Ø 8 mm list price €5)
(R11 shaft Ø 12 mm list price €15)
- Electric actuators/ Pneumatic cylinder
- Atex actuators (see page 12)

All prices are list prices for local market, for a quotation please contact us.

Price list

DN	DLCT	DLCTE	DLCTT ATEX	DLCTE ATEX
100	32	40	126	134
125	35	43	130	138
160	41	49	135	144
200	48	57	142	152
250	52	62	147	157
315	66	77	160	172
355	87	100	182	194
400	111	125	206	219
450	124	141	219	236
500	139	157	234	252

Dimensions



DN [mm]	C [mm]	S [mm]	ØX [mm]	P [mm]
100	200	0.8	8	0.8
125	200	0.8	8	0.8
160	200	0.8	8	0.8
200	200	0.8	8	0.8
250	200	0.8	8	0.8
300	300	1.0	12	1.2
315	300	1.0	12	1.2
355	300	1.0	12	1.2
400	400	1.2	12	1.5
450	400	1.2	12	1.5
500	400	1.2	12	1.5
560	400	1.5	12	2.0
630	400	1.5	12	2.0

Circular damper for “heavy-duty” use

SRCZ



Description

SRCZ: Galvanised steel frame th. 2 mm

- galvanised steel blade th. 2 mm
- metal perimeter seal
- for drive shaft diameter (see table)
- bronze bearings (-50°C / +200°C)
- flanges in black rustproof painted plate, not drilled

Available execution (see page 11)

- Intermediate dimensions (larger sizes price list +€52)
- Flange holes according to Eurovent (list price +€52)
- Special flanges (list price +52 €)
- Version with riveted and welded blade (list price +€52)
- Frame special dim. <500 mm (list price + 30%)
- Produced with th. 3/4/5 mm (on request)
- In AISI 304 stainless steel (list price x2)
- In AISI 316L stainless steel (list price x3)
- R12 galvanised manual drive Ø 12 mm (list price €20 each)
- R12 galvanised manual drive Ø 18 mm (list price € 28 each)
- Electric actuators/ Pneumatic cylinder
- Atex actuators (see page 12)

All prices are list prices for local market, for a quotation please contact us.

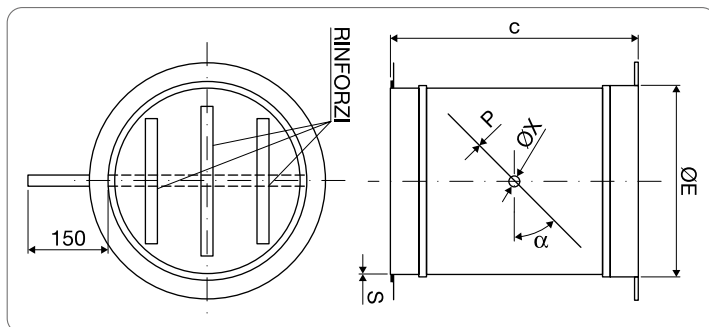
Price list

DN	SRCZ
200	428
250	461
315	588
355	713
400	745
500	810
630	908
800	1005
1000	1265

Dimensions SRCZ

DN	Ø Shaft	C	Flanges
200	12	200	30x3
250	12	200	30x3
315	18	300	40x4
355	18	300	40x4
400	18	400	50x5
500	18	400	50x5
630	18	400	50x5
800	18	500	50x5
1000	18	500	50x5

NB: available up to DN 2000



Selection table for accessories

R12 P18					Electric actuators	
Model damper	Surface (m²)	Ø Shaft	Manual drive	Pneumatic actuator	Torque required	
					On-Off (Nm)	Spring Return (Nm)*
DL 50	< 0.80	Ø 8	R9	Ø 27 stroke 100	5	5
DL 101	< 0.10	Ø 12	R11 or R12	Ø 20 stroke 50	5	10
	< 0.80	Ø 12	R11 or R12	Ø 27 stroke 100	5	10
	< 1.00	Ø 12	R11 or R12	Ø 35 stroke 150	10	20
	< 1.50	Ø 12	R12	Ø 35 stroke 150	10	20
	< 3.00	Ø 12	R12	Ø 35 stroke 150	20	30
	< 3.50	Ø 12	R12	Ø 50 stroke 200	20	30
DL151-201	< 0.10	Ø 12	R11 or R12	Ø 20 stroke 50	5	10
	< 0.80	Ø 12	R11 or R12	Ø 27 stroke 100	5	10
	< 1.00	Ø 12	R11 or R12	Ø 35 stroke 150	10	20
	< 1.50	Ø 12	R12	Ø 35 stroke 150	10	20
	< 3.00	Ø 12	R12	Ø 35 stroke 150	20	30
	< 3.50	Ø 12	R12	Ø 50 stroke 200	20	30
	< 6.00	Ø 12	R12	Ø 50 stroke 200	40	60
DL 151T / DL 201 T	< 0.20	Ø 18	R12 P18	Ø 27 stroke 100	See table	
	< 1.50	Ø 18	R12 P18	Ø 35 stroke 150		
	< 2.20	Ø 18	R12 P18	Ø 50 stroke 200		
	< 3.00	Ø 18	R12 P18	Ø 50 stroke 200		
	< 4.00	Ø 18	R12 P18	Ø 50 stroke 200		
DLC / DLC-T / SRCZ	100/250	Ø 8	R9	Ø 20 stroke 50	5	5
	315/450	Ø 12	R11 or R12	Ø 27 stroke 100	5	10
	500/710	Ø 12	R11 or R12	Ø 27 stroke 100	10	20
SRCZ	800/1050	Ø 18	R12 special	Ø 27 stroke 100	10	20
	1100/1500	Ø 25	R12 special	Ø 35 stroke 150	20	40
	1600/2000	Ø 30	R12 special	Ø 50 stroke 200	40	60

*NB: for spring return actuators - check during production stage.

DL 151 T / DL 201 T selection table Leakage Class 4 - EN 1751

		HEIGHT										
		No. of blades	1	2	3	4	5	6	7	8	9	10
		DL 151T	160	310	460	610	760	910	1060	1210	1360	1510
BASE		DL 201T	210	410	610	810	1010	1210	1410	1610	1810	2010
200			5 Nm									
400												
600			10 Nm									
800												
1000					20 Nm		30 Nm			40 Nm		
1200												
1400												
1600												
1800											50 Nm	
2000												

DL 151 T / DL 201 T selection table Leakage Class 3 - EN 1751

		HEIGHT										
		No. of blades	1	2	3	4	5	6	7	8	9	10
		DL 151T	160	310	460	610	760	910	1060	1210	1360	1510
BASE		DL 201T	210	410	610	810	1010	1210	1410	1610	1810	2010
200												
400												
600					7/10 Nm							
800												
1000												
1200							15 Nm					
1400												
1600										30 Nm		
1800												40 Nm
2000												

BELIMO ON-OFF price list - running time 150 sec.

Model	5 Nm
	Price list €
LM24A	183
LM24A-S	209
LM230A	183
LM230A-S	209
LM24A-SR	249
LM230A-SR	296

Model	10 Nm
	Price list €
NM24A	225
NM24A-S	270
NM230A	233
NM230A-S	278
NM24A-SR	325
NM230ASR	373

Model	20 Nm
	Price list €
SM24A	259
SM24A-S	323
SM230A	264
SM230A-S	329
SM24A-SR	369
SM230ASR	416

Model	40 Nm
	Price list €
GM24A	457
GM230A	465
GM24A-SR	551

All prices are list prices for local market, for a quotation please contact us.

BELIMO spring return price list (spring 20 sec. / motor 75 sec.)

Model	4 Nm
	Price list €
LF24	293
LF24-S	338
LF230	318
LF230-S	361
LF24-SR	395

Model	10 Nm
	Price list €
NFA	433
NFA-S2	493
NF24A	364
NF24A-S2	414
NF24A-SR	438
NF24A-SR-S2	487

Model	20 Nm
	Price list €
SFA	517
SFA-S2	564
SF24A	449
SF24A-S2	498
SF24A-SR	520
SF24A-SR-S2	555

Model	30 Nm
	Price list €
EF24A	908
EF24A-S2	972
EF230A	1043
EF230A-S2	1108
EF24A-SR	1026
EF24A-SR-S2	1089

BELIMO ON-OFF price list -fast running 35 sec.

Model	5 Nm
	Price list €
LMC24A	189
LMC230A	189
LMC24A-SR	256

Model	10 Nm
	Price list €
NMC24A-MP	379

Model	20 Nm
	Price list €
SMC24A-MP	427

Model	Micro
	Price list €
S1A 1 MICRO	76
S2A 2 MICRO	100
S2A-F (LF-NF-SF)	150

BELIMO ON-OFF price list - super fast running time 2.5 / 20 sec.

Model	4 Nm - 2.5 sec
	Price list €
LMQ24A	371
LMQ24A-SR	384
NMQ24A	409

Model	8 Nm - 4 sec
	Price list €
NMQ24A	409
NMQ24A-SR	460

Model	8 Nm - 20 sec
	Price list €
NMD230A	384

Model	16 Nm - 7 sec
	Price list €
SMQ24A	445
SMQ24A-SR	509

Model	16 Nm - 20 sec
	Price list €
SMD24A	358
SMD230A	419

WAIRCOM pneumatic cylinders price list

Dimensions	With support, shaft and linkage with double acting cylinder
	Price list €
D.20 L=50	138
D.27 L=100	173
D.35 L=150	230
D.50 L=200	374
D.70 L=200	501
D.85 L=200	645

Dimensions	Including solenoid valve, regulator and 24 or 230V coil to indicate when ordering
	Price list €
D.20 L=50	472
D.27 L=100	507
D.35 L=150	564
D.50 L=200	714
D.70 L=200	973
D.85 L=200	1112

MANUAL DRIVES price list

Model	Price list €
R9 GALVANISED	5
R9 304 STAINLESS STEEL	7
R9 316 STAINLESS STEEL	9
R10 GALVANISED	11
R10 304 STAINLESS STEEL	13
R10 316 STAINLESS STEEL	17
R11 GALVANISED	15
R11 304 STAINLESS STEEL	25
R11 316 STAINLESS STEEL	32
R12 GALVANISED	21
R12 304 STAINLESS STEEL	32
R12 316 STAINLESS STEEL	42
R12 P18 GALVANISED	28
R12 P18 X304	45
R12 P18 X316	58

Model	Price list €
Front manual drive	
R13 GALVANISED	38
R13 304 STAINLESS STEEL	50
R13 316 STAINLESS STEEL	64
Joint	
R14 GALVANISED	12
R14 304 STAINLESS STEEL	21
R14 316 STAINLESS STEEL	27
R20 GALVANISED	20
R20 304 STAINLESS STEEL	49
R20 316 STAINLESS STEEL	64
Assembly plate, internal flow control	
R21 ALUMINIUM	70
R21 GALVANISED	62
R21 304 STAINLESS STEEL	146
R21 316 STAINLESS STEEL	190

Actuator assembly

Brand	Price list €
BELIMO	35
SIEMENS	35
SCHISCHEK	200*
Others	

*: including FAT

FAT other motors €60

Accessory price list

BEARING OPTIONS	FIXED COST	PRICE LIST €	UNIT
GALVANISED BEARINGS D.12	0	31	€/ Blade
304 STAINLESS STEEL BEARINGS D.12	0	52	€/ Blade
316 STAINLESS STEEL BEARINGS D.12	0	69	€/ Blade
GALVANISED BEARINGS D.18	0	58	€/ Blade
304 STAINLESS STEEL BEARINGS D.18	0	86	€/ Blade
316 STAINLESS STEEL BEARINGS D.18	0	92	€/ Blade

BEARINGS OPTIONS	FIXED COST	PRICE LIST €	UNIT
TEFLON BEARINGS D.12	0	7	€/ Blade
TEFLON BEARINGS D.18	0	14	€/ Blade

BEARINGS OPTIONS	FIXED COST	PRICE LIST €	UNIT
BRONZE BEARINGS D.6	0	+ 5 %	EACH
BRONZE BEARINGS D.8	0	+ 5 %	EACH
BRONZE BEARINGS D.12	0	+ 5 %	EACH
BRONZE BEARINGS D.18	0	+ 5 %	EACH

SPOT WELDING OPTIONS	FIXED COST	PRICE LIST €	UNIT
SPOT WELDING ON LINKAGES	0	10	€/ Blade

NUT OPTIONS	FIXED COST	PRICE LIST €	UNIT
SELF-LOCKING NUTS ON LINKAGES	0	+ 5 %	EACH
SELF-LOCKING NUTS ON BLADES	0	+ 5 %	EACH

DRILLING OPTIONS	FIXED COST	PRICE LIST €	UNIT
FLANGE ON DEMAND	0	52	EACH

DRIVE SHAFTS OPTIONS	FIXED COST	PRICE LIST €	UNIT
SQUARE DRIVE SHAFT	0	52	EACH
DRIVE SHAFT >100	0	23	EACH

SHAFTS OPTIONS	FIXED COST	PRICE LIST €	UNIT
304 STAINLESS STEEL SHAFTS AND LINKAGES D.12	0	12	€/ Blade
316L STAINLESS STEEL SHAFTS AND LINKAGES D.12	0	17	€/ Blade
304 STAINLESS STEEL SHAFTS AND LINKAGES D.18	0	29	€/ Blade
316L STAINLESS STEEL SHAFTS AND LINKAGES D.18	0	38	€/ Blade

SHAFTS OPTIONS	FIXED COST	PRICE LIST €	UNIT
GALVANISED STUB SHAFT D.18	0	13	€/ Blade
304 STAINLESS STEEL STUB SHAFT D.18	0	20	€/ Blade
316L STAINLESS STEEL STUB SHAFT D.18	0	23	€/ Blade

SHAFTS OPTIONS	FIXED COST	PRICE LIST €	UNIT
GALVANISED STEEL CONTINUOUS SOLID SHAFTS D.6	13	3	€/ m
GALVANISED STEEL CONTINUOUS SOLID SHAFTS D.8	16	5	€/ m
GALVANISED STEEL CONTINUOUS SOLID SHAFTS D.12	20	10	€/ m
GALVANISED STEEL CONTINUOUS SOLID SHAFTS D.18	23	22	€/ m

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SHAFTS OPTIONS	FIXED COST	PRICE LIST €	UNIT
304 STAINLESS STEEL CONTINUOUS SOLID SHAFTS D.6	13	5	€/ m
304 STAINLESS STEEL CONTINUOUS SOLID SHAFTS D.8	16	7	€/ m
304 STAINLESS STEEL CONTINUOUS SOLID SHAFTS D.12	20	15	€/ m
304 STAINLESS STEEL CONTINUOUS SOLID SHAFTS D.18	23	33	€/ m

SHAFTS OPTIONS	FIXED COST	PRICE LIST €	UNIT
316L STAINLESS STEEL CONTINUOUS SOLID SHAFTS D.6	13	6	€/ m
316L STAINLESS STEEL CONTINUOUS SOLID SHAFTS D.8	16	10	€/ m
316L STAINLESS STEEL CONTINUOUS SOLID SHAFTS D.12	20	20	€/ m
316L STAINLESS STEEL CONTINUOUS SOLID SHAFTS D.18	23	46	€/ m

LINKAGE COVER PLATE OPTIONS	FIXED COST	PRICE LIST €	UNIT
GALVANISED LINKAGE COVER PLATE	0	58	€/ m
ALUMINIUM LINKAGE COVER PLATE	0	58	€/ m
304 STAINLESS STEEL LINKAGE COVER PLATE	0	92	€/ m
316L STAINLESS STEEL LINKAGE COVER PLATE	0	115	€/ m

LINKAGE OPTIONS	FIXED COST	PRICE LIST €	UNIT
GALVANISED DOUBLE LINKAGE	0	17	€/ Blade
304 STAINLESS STEEL DOUBLE LINKAGE	0	29	€/ Blade
316L DOUBLE LINKAGE	0	40	€/ Blade

GASKET OPTIONS	FIXED COST	PRICE LIST €	UNIT
SILICONE GASKET	0	35	€/ Blade

PACKAGED PRODUCT OPTIONS	FIXED COST	PRICE LIST €	UNIT
PACKAGED PRODUCT ASSEMBLY	0	+ 15 %	EACH

CASING OPTIONS	FIXED COST	PRICE LIST €	UNIT
SPECIAL CASING < 210 mm	0	52	EACH
SPECIAL CASING <300 mm	0	104	EACH

VERTICAL OPTIONS	FIXED COST	PRICE LIST €	UNIT
VERTICAL OPERATION	0	+ 10 %	EACH

WIRE MESH OPTIONS	FIXED COST	PRICE LIST €	UNIT
ALUMINIUM WIRE MESH	0	115	€/ sqm
304 STAINLESS STEEL WIRE MESH	0	144	€/ sqm
316L STAINLESS STEEL WIRE MESH	0	173	€/ sqm
304 STAINLESS STEEL WIRE MESH	0	184	€/ sqm
316L STAINLESS STEEL WIRE MESH	0	219	€/ sqm

SUPPORT OPTIONS	FIXED COST	PRICE LIST €	UNIT
GALVANISED STEEL HEAT INSULATED SUPPORT	0	161	EACH
304 STAINLESS STEEL HEAT INSULATED SUPPORT	0	213	EACH
316L STAINLESS STEEL HEAT INSULATED SUPPORT	0	230	EACH

FLANGE DRILLING OPTIONS AS PER ISO 15138 (list price +€52)

ZONE 1

Spring return 24-230V

All prices are list prices for local market, for a quotation please contact us.

	Zone 1		Opening	Closing	Price list €
	Model	Torque (Nm)	Motor running time (seconds)	Spring return (seconds)	
ON-OFF, 3 points, 2 micro switches	EX MAX 5.10 - SF	5-10	3/15/30/60/120	3 - 10	3055
ON-OFF, 3 points, 2 micro switches	EX MAX 15 - SF	15	3/15/30/60/120	3 - 10	3388
ON-OFF, 3 points, 2 micro switches	EX MAX 30 - SF	30	40/60/90/120/150	20	4746
ON-OFF, 3 points, 2 micro switches	EX MAX 50 - SF	50	40/60/90/120/150	20	5422

Modulating spring return 24-230V

	Zone 1		Opening	Closing	Price list €
	Model	Torque (Nm)	Motor running time (seconds)	Spring return (seconds)	
3 POINTS, 0...10 Volt 4...20 m	EX MAX 5.10 - YF	5-10	7.5/15/30/60/120	3 - 10	3263
3 POINTS, 0...10 Volt 4...20 m	EX MAX 15 - YF	15	7.5/15/30/60/120	3 - 10	3594
3 POINTS, 0...10 Volt 4...20 m	EX MAX 30 - YF	30	40/60/90/120/150	20	5287
3 POINTS, 0...10 Volt 4...20 m	EX MAX 50 - YF	50	40/60/90/120/150	20	5961

Spring return 24-230V - Offshore - Closure in 1 second

	Zone 1		Opening	Closing	Price list €
	Model	Torque (Nm)	Motor running time (seconds)	Spring return (seconds)	
ON-OFF, 2 micro switches	EX MAX 8 - SF1	8	3/15/30/60/120	1	3685
ON-OFF, 2 micro switches	EX MAX 15 - SF1	15	3/15/30/60/120	1	3855

Spring return 24-230V - Offshore - Closure in 3 seconds

	Zone 1		Opening	Closing	Price list €
	Model	Torque (Nm)	Motor running time (seconds)	Spring return (seconds)	
ON-OFF, 2 micro switches	EX MAX 30 - SF3	30	40/60/90/120/150	3	5863
ON-OFF, 2 micro switches	EX MAX 50 - SF3	50	40/60/90/120/150	3	6532

Accessories	Model	Price list €
MICRO	EX SWITCH	679
JUNCTION BOX	EXBOX Y/S	308
JUNCTION BOX WITH MICRO	EXBOX Y/S/SW	338
BRACKET FOR JUNCTION BOX 5/10/15 Nm	MKK-S	55
BRACKET FOR JUNCTION BOX 30/50 Nm	MKK-M	73
NICKEL PLATED CABLE GLAND KIT FOR ACTUATOR	KIT-S8-MAX	39
CABLE GLAND KIT FOR JUNCT. NICKEL PLATED JUNCTION BOX	KIT-S8-BOX	103

Actuators assembled, square drive shaft and FAT

ZONE 2

Spring return 24-230V

All prices are list prices for local market, for a quotation please contact us.

	Zone 2		Opening	Closing	Price list €
	Model	Torque (Nm)	Motor running time (seconds)	Spring return (seconds)	
ON-OFF, 3 points, 2 micro switches	RED MAX 5.10 - SF	5-10	3/15/30/60/120	3 - 10	2685
ON-OFF, 3 points, 2 micro switches	RED MAX 15 - SF	15	3/15/30/60/120	3 - 10	3066
ON-OFF, 3 points, 2 micro switches	RED MAX 30 - SF	30	40/60/90/120/150	20	4410
ON-OFF, 3 points, 2 micro switches	RED MAX 50 - SF	50	40/60/90/120/150	20	5084

Modulating spring return 24-230V

	Zone 2		Opening	Closing	Price list €
	Model	Torque (Nm)	Motor running time (seconds)	Spring return (seconds)	
3 POINTS, 0...10 Volt 4...20 m	RED MAX 5.10 - YF	5-10	7.5/15/30/60/120	3 - 10	2888
3 POINTS, 0...10 Volt 4...20 m	RED MAX 15 - YF	15	7.5/15/30/60/120	3 - 10	3224
3 POINTS, 0...10 Volt 4...20 m	RED MAX 30 - YF	30	40/60/90/120/150	20	4949
3 POINTS, 0...10 Volt 4...20 m	RED MAX 50 - YF	50	40/60/90/120/150	20	5623

Spring return 24-230V - Offshore - Closure in 1 second

	Zone 2		Opening	Closing	Price list €
	Model	Torque (Nm)	Motor running time (seconds)	Spring return (seconds)	
ON-OFF, 2 micro switches	RED MAX 8 - SF1	8	3/15/30/60/120	1	3347
ON-OFF, 2 micro switches	RED MAX 15 - SF1	15	3/15/30/60/120	1	3514

Spring return 24-230V - Offshore - Closure in 3 seconds

	Zone 2		Opening	Closing	Price list €
	Model	Torque (Nm)	Motor running time (seconds)	Spring return (seconds)	
ON-OFF, 2 micro switches	RED MAX 30 - SF3	30	40/60/90/120/150	3	5486
ON-OFF, 2 micro switches	RED MAX 50 - SF3	50	40/60/90/120/150	3	6162

Accessories	Model	Price list €
MICRO	RED SWITCH	635
JUNCTION BOX	REDBOX Y/S	276
JUNCTION BOX WITH MICRO	REDBOX Y/S/SW	308
BRACKET FOR JUNCTION BOX 5/10/15 Nm	MKK-S	55
BRACKET FOR JUNCTION BOX 30/50 Nm	MKK-M	73
NICKEL PLATED CABLE GLAND KIT FOR ACTUATOR	KIT-S8-MAX	39
NICKEL PLATED CABLE GLAND KIT FOR ACTUATOR	KIT-S8-BOX	103

Special executions	Model	Price list €
SURCHARGE FOR STAINLESS STEEL 5/10/15 Nm	MAX VAS	1691
SURCHARGE FOR STAINLESS STEEL 30/50 Nm	MAX VAM	3596
SURCHARGE FOR MARINE COATING 5/10/15 Nm	MAX CTS	676
SURCHARGE FOR MARINE COATING 30/50 Nm	MAX CTM	1014
SURCHARGE FOR STAINLESS STEEL JUNCTION BOX	BOX../VA	610
SURCHARGE FOR JUNCTION BOX MARINE COATING	BOX../CT	308
SURCHARGE FOR MICRO MARINE COATING	SWITCH../CT	308



P
Flexible duct
in PVC
PAGE 1



PIS
Flexible duct
in insulated PVC
PAGE 1



A
Flexible duct
in aluminium
PAGE 1



AIS
Flexible duct
in insulated aluminium
PAGE 1



AF
Flexible duct in aponic
insulated aluminium
PAGE 1



BF
Combined flexible duct
PAGE 1



P/A
Flexible duct
in antibacterial PVC
PAGE 2



PIS/A
Flexible duct
in antibacterial insulated PVC
PAGE 2



A/A
Flexible duct
in antibacterial aluminium
PAGE 2



AIS/A
Flexible duct in antibacterial
insulated aluminium
PAGE 2



A/MO
Flexible duct
in MO/MS aluminium
PAGE 2



AF/MO
Flexible duct in insulated
aluminium MO/MS
PAGE 2



AF/MO/AFO
Flexible duct in aponic insulat-
ed aluminium MO/MS
PAGE 2



Dust removal
PAGE 4









High temperatures
PAGE 4



**Very high
temperatures**
PAGE 4



**Industrial
ventilation**
PAGE 4

						
CODE	P	PIS	A	AIS	AF	BF
DESCRIPTION	PVC	Insulated PVC	Aluminium	Insulated aluminium	Afonic insulated aluminium	Combined
Material composition	<ul style="list-style-type: none"> Wall in polyester mesh fabric coated with PVC on both sides. Internal reinforcement consisting of a PVC-coated harmonic wire spiral. 	<ul style="list-style-type: none"> Internal duct type P. Insulating mat in polyester fibres th. 30 mm and 17 Kg/m³ density. External "vapor barrier" coating in polyolefin resin film. 	<ul style="list-style-type: none"> Walls in aluminium laminate. Reinforcement in harmonic steel spiral incorporated between two layers. 	<ul style="list-style-type: none"> Internal duct type A. Insulating mat in polyester fibres th. 30 mm and 17 Kg/m³ density. External "vapor barrier" coating in reinforced aluminium laminate. 	<ul style="list-style-type: none"> Identical to AIS but with a micro-perforated internal duct for attenuating the sound level. Versions without glass wool with polyester fibre insulation th. 30 mm, 17 Kg/m³ density. 	<ul style="list-style-type: none"> Wall in polyester mesh fabric coated with PVC on both sides. Internal reinforcement consisting of a PVC-coated harmonic steel wire spiral.
Standard length	10 m	10 m	10 m	10 m	10 m	10 m
Working temperature	From -10°C to +80°C	From -10°C to +80°C	From -30°C to +130°C	From -30°C to +130°C	From -30°C to +130°C	From -30°C to +130°C
Working pressure	Max 1500 Pa	Max 1500 Pa	Max 2500 Pa	Max 2500 Pa	Max 2500 Pa	Max 2500 Pa
Air velocity	Max 20 m/sec	Max 20 m/sec	Max 30 m/sec	Max 30 m/sec	Max 30 m/sec	Max 30 m/sec
Fire-resistance	B-s1 d0	B-s2 d0	B-s1 d0	C-s1 d0	B-s1 d0	Class M0/M1 (French) and Marine (Msc) Lloyd Registers
Radius of curvature	0.6 times the diameter	0.6 times the diameter	0.6 times the diameter	0.6 times the diameter	0.6 times the diameter	0.6 times the diameter
Colour	Black	Black	Grey-aluminium	Grey-aluminium	Grey-aluminium	Interior aluminium exterior anthracite

Price list

All prices are list prices for local market, for a quotation please contact us.

TYPE/DN	80	102	127	152	160	180	203	228	254	305	315	356	406	457	508	610
P	1.8	2.0	2.5	2.8	2.9	3.3	4.1	-	4.8	5.8	6.3	6.6	7.6	9.0	9.9	16.8
PIS	5.9	6.3	7.3	8.4	8.6	10.0	10.9	-	13.0	15.4	15.7	17.4	19.8	22.2	25.8	36.7
A	1.8	2.0	2.6	3.1	3.2	3.8	4.0	-	4.8	6.0	6.1	8.2	10.0	11.2	13.5	17.8
AF	6.1	6.5	7.2	8.3	8.6	10.1	10.2	11.2	12.6	14.4	15.0	18.6	23.6	26.5	29.1	34.8
AIS	6.1	6.5	7.2	8.3	8.6	10.1	10.2	11.2	12.6	14.4	15.0	18.6	23.6	26.5	29.1	34.8
BF	2.8	3.2	3.4	4.1	4.8	5.2	6.0	-	7.4	9.4	10.5	11.9	13.8	16.6	19.1	25.0
F203	1.4	1.4	1.4	1.4	1.4	1.4	1.4	-	-	-	-	-	-	-	-	-
F315	-	-	-	-	-	-	-	1.8	1.8	1.8	1.8	-	-	-	-	-
F406	-	-	-	-	-	-	-	-	-	-	-	2.2	2.2	-	-	-
FRF	-	-	-	-	-	-	-	87.7	-	-	-	-	-	-	-	-

F203/315/508: hose clamps with stainless steel worm screw (pack of 10 pcs)

FRF: pack, 30 m cable tie roll + 2 packs of clips (25 +25 pieces)

Delivery: prices in bold in stock

Rapid selection

	DN	80	102	127	152	160	180	203	225	254	315	355	406	457	508
Flow rate m³/h	min	55	85	125	180	210	260	320	400	500	800	1000	1350	1750	2200
	max	130	200	300	430	490	630	770	950	1250	1900	2400	3200	4200	5500
Pressure drop (Pa/m)	min	3.0	2.5	1.8	1.5	1.4	1.2	1.0	0.9	0.8	0.6	0.5	< 0.5	< 0.5	< 0.5
	max	17.0	13.0	9.0	7.5	7.0	6.0	5.5	5.0	4.0	3.2	2.8	2.4	2.0	1.8
Velocity m/s	min	3													
	max	7													

Pressure drops for extended piping.

Pressure drops with 90° bend equal to pressure drop of the "equivalent linear length".

The "equivalent linear length" depends on the ration between the radius of curvature R and the DN of the pipe.

R/DN	1.0	1.2	1.5	1.7	2.0	2.5	3.0	4.0
coeff	21	18	16	15	14	13	12	11

DN x coeff = equivalent length



CODE	P/A	PIS/A	A/A	AIS/A	A/MO	AIS/MO	AF/MO AFO
DESCRIPTION	Antibacterial	Antibacterial insulated	Antibacterial aluminium	Antibacterial insulation aluminium	Pal M0	Pal/insul M0	Pal/afonic insul
Material composition	<ul style="list-style-type: none"> Wall in polyester mesh fabric coated with special PVC. Internal reinforcement consisting of a harmonic steel wire spiral incorporated between two thermo-welded layers. Antibacterial, sanitized treatment, according to ISO 22196. 	<ul style="list-style-type: none"> Internal duct like antibacterial type tube. Insulating mat in polyester fibres th. 25 mm. External "vapor barrier" in polyolefin resin. Antibacterial, sanitized treatment, according to ISO 22196. 	<ul style="list-style-type: none"> Duct in aluminium plywood treated with permanent-effect nano particles of silver ions. Internal reinforcement consisting of a harmonic steel wire spiral. Antibacterial treatment according to ISO 22196. Fungi rating according to ASTM G21. 	<ul style="list-style-type: none"> Internal duct like A/A. Insulating mat in polyester fibres th. 25 mm. External "vapor barrier" coating in reinforced aluminium. Antibacterial treatment according to ISO 22196. Fungi rating according to ASTM G21. 	<ul style="list-style-type: none"> Duct in multi-layer aluminium. Internal reinforcement consisting of a harmonic steel wire spiral. 	<ul style="list-style-type: none"> Internal duct like Pal M0. Insulating mat in polyester fibres th. 25 mm. External "vapor barrier" coating in reinforced aluminium laminate. 	<ul style="list-style-type: none"> Internal micro-perforated and soundproof duct. Insulating mat in polyester fibres th. 25 mm. External "vapor barrier" coating in reinforced aluminium laminate.
Standard length	10 m	10 m	10 m	10 m	10 m	10 m	10 m
Working temperature	From -10°C to +80°C	From -10°C to +80°C	From -30°C to +130°C	From -30°C to +130°C	From -30°C to +250°C	From -30°C to +250°C	From -30°C to +250°C
Working pressure	Max 2500 Pa	Max 2500 Pa	Max 3000 Pa	Max 3000 Pa	Max 2500 Pa	Max 2500 Pa	Max 2500 Pa
Air velocity	Max 20 m/sec	Max 20 m/sec	Max 30 m/sec	Max 30 m/sec	Max 30 m/sec	Max 30 m/sec	Max 30 m/sec
Fire-resistance	B-s1 d0	B-s1 d0	Class 1 Class M1	Class 1 Class M1	Class M0 (French) and Marine (Msc) Lloyd Registers	Class M0/ M1 (French) and Marine (Msc) Lloyd Registers	Class M0/ M1 (French) and Marine (Msc) Lloyd Registers
Radius of curvature	0.6 times the diameter	0.6 times the diameter	0.6 times the diameter	0.6 times the diameter	0.6 times the diameter	0.6 times the diameter	0.6 times the diameter
Colour	Light blue	Light blue / grey	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium

Price list

All prices are list prices for local market, for a quotation please contact us.

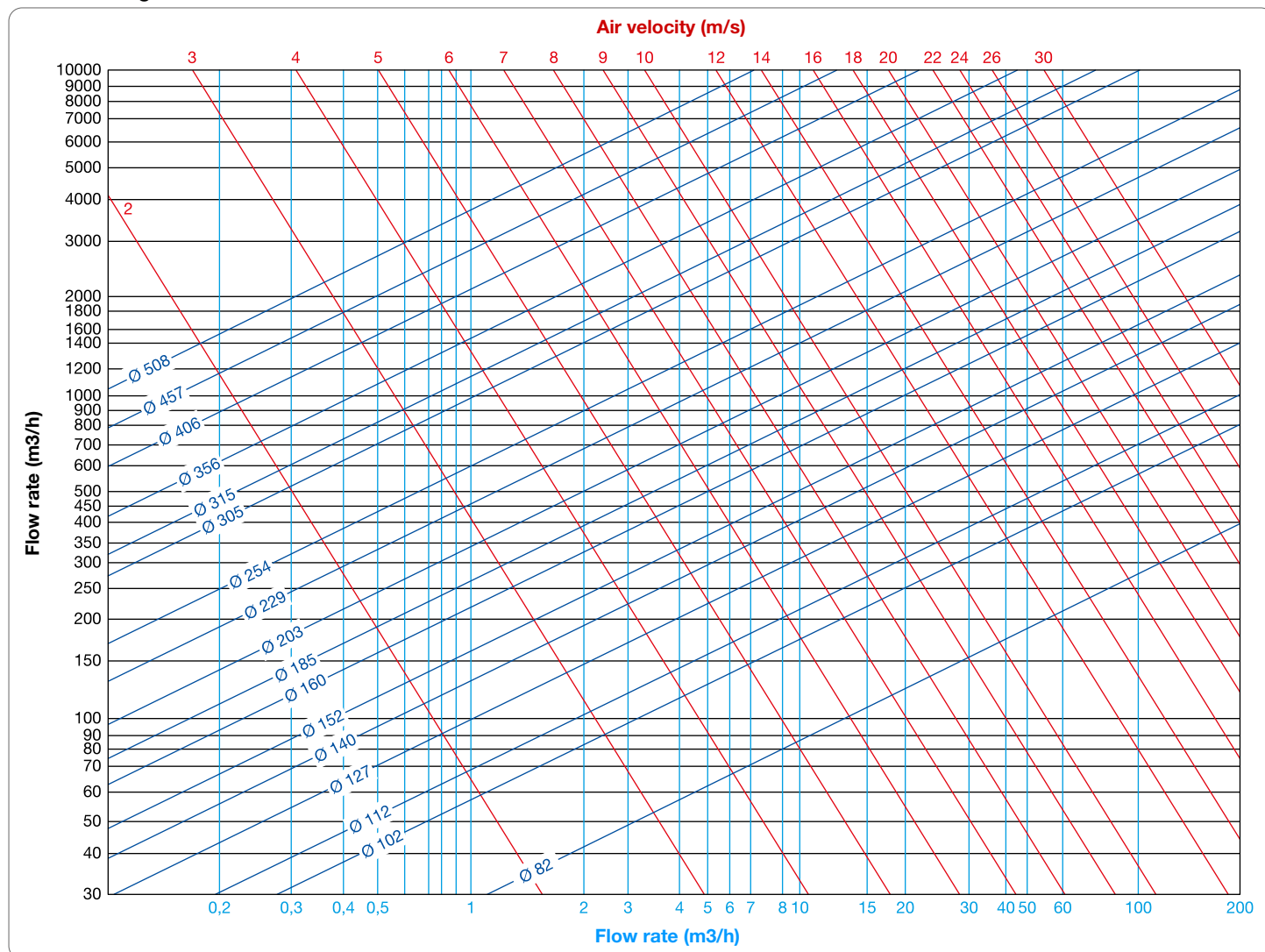
TYPE/DN	80	102	127	152	160	180	203	228	254	305	315	356	406	457	508
P/A	3.9	4.5	5.6	6.3	7.0	7.8	8.7	-	11.8	14.2	14.5	15.5	19.1	-	29.4
PIS/A	8.8	10.0	11.6	13.4	13.6	15.6	17.0	-	21.6	25.9	27.8	32.9	42.9	-	-
A/A	2.8	3.1	3.7	4.2	4.5	5.6	5.7	6.6	7.6	9.4	10.7	12.0	14.7	17.1	19.8
AIS/A	8.4	9.2	9.6	10.8	11.1	12.9	13.2	16.6	17.9	20.9	21.9	25.2	30.0	35.6	38.1
A/MO	2.3	2.5	3.1	3.8	4.0	4.6	4.9	5.7	6.5	8.0	8.2	10.1	12.4	14.4	16.6
AF/MO	7.0	7.2	8.1	9.6	9.9	10.4	11.4	12.9	14.0	16.6	17.0	22.8	27.1	32.2	34.5
AF/MO AFO	7.0	7.2	8.1	9.6	9.9	10.4	11.4	12.9	14.0	16.6	17.0	22.8	27.1	32.2	34.5
F203	1.4	1.4	1.4	1.4	1.4	1.4	1.4	-	-	-	-	-	-	-	-
F315	-	-	-	-	-	-	-	1.8	1.8	1.8	1.8	-	-	-	-
F406	-	-	-	-	-	-	-	-	-	-	-	2.2	2.2	-	-
FRF	-	-	-	-	-	-	-	87.7	-	-	-	-	-	-	-

F203/315/508: hose clamps with stainless steel worm screw (pack of 10 pcs)

FRF: pack, 30 m cable tie roll + 2 packs of clips (25 +25 pieces)

Delivery: prices in bold in stock

Selection diagram



The pressure loss data shown in the diagram above are valid for air temperatures of 20°C.

For different temperatures, use the following correction coefficients:

Temperature (°C)	-20	0	20	40	60	80	100
Correction coefficient	1.158	1.073	1.000	0.936	0.880	0.830	0.785

DUST REMOVAL



Description

- Fire retardant
- Antistatic
- Food use
- Non-toxic
- Pressure from 460000 - 1000 Pa
- Negative pressure from 90000 - 10000 Pa

HIGH TEMPERATURES



Description

- -50°C / +130°C
- -55°C / +260°C
- Pressure from 280000 - 50000 Pa
- Negative pressure from 71000 - 3000 Pa

VERY HIGH TEMPERATURES



Description

- -40°C / +175°C
- -60°C / +300°C
- -150°C / +250°C
- -20°C / +400°C
- -20°C / +650°C
- Pressure from 93000 - 1000 Pa
- Negative pressure from 47000 - 1000 Pa

INDUSTRIAL VENTILATION



Description

- Chemical vapours
- Welding fumes
- Toxic gases
- Vehicle exhaust fumes
- Temp. from -40°C to +150°C
- Pressure from 80000 - 1000 Pa
- Negative pressure from 20000 - 1000 Pa



KTM
Circular
fire dampers
PAGE 1



KTS
Circular
fire dampers
PAGE 2



KWP-L
Circular
fire dampers
PAGE 3



KWP-O
Rectangular
fire dampers
PAGE 4



GT
Ventilation grilles
EI 120
PAGE 5



WKP-O-E
Fire dampers
with multiple blades
PAGE 6



KWP-P-E
Rectangular smoke
control dampers
PAGE 7












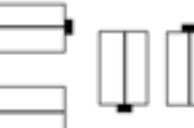
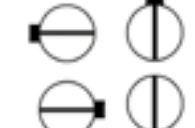
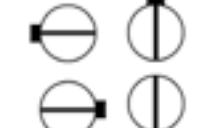

WKP-P-E-J
Smoke control dampers with multiple
blades single compartment
PAGE 9




















WKP-P-E-W
Smoke control dampers with multiple
blades multiple compartment
PAGE 9











Accessories

Actuators /
Controls / Communication
PAGE 10

	KWP-L		KWP-O		KWP-P		KTS		KTM		WKP-O		WKP-P	
														
Description	Fire damper		Fire damper		Smoke control damper		Fire damper		Fire damper		Fire damper		Smoke control damper	
Function	Fire damper		Fire damper		Fire and smoke control damper		Fire damper		Fire damper		Fire damper		Fire and smoke control damper	
Type of certificate	Performance declaration		Performance declaration		Performance declaration		Performance declaration		Performance declaration		Performance declaration		Performance declaration	
Dimensions	Min. 160x200		Min. 200x200		Min. 200x200		160; 200; 250; 315; 355; 400; 450; 500; 560; 630		100; 125; 160; 200; 250		Min. 200x200		Min. 200x200	
	Max. 800x500		Max. 1500x1000		Max. 1500x1000						Max. 1200x800		Max. 1200x800	
Frame depth	350		350 (optional 500 or 600)		350 (optional 500 or 600)		375		Fusible link only	Electric actuator	With frame	Without frame	With frame	Without frame
									Female 150	Female 262	One side 198	125	One side 178	125
									Male 195	Male 307	Both sides 270		Both sides 230	
Positioning allowed											For type of compartments			
Frame and blade leakage class according to EN 1751	3/C		3/C		2/C		2/C		2/B		2/C		2/C	
Type of frame construction material	Galvanised steel with option of AISI 304/316 stainless steel		Galvanised steel with option of AISI 304/316 stainless steel		Galvanised steel with option of AISI 304 stainless steel		Galvanised steel with option of AISI 304 stainless steel		Galvanised steel with option of AISI 304 stainless steel		Calcium silicate and galvanised steel flanges		Calcium silicate and galvanised steel flanges	
Drives	Electric actuator with thermal fuse (72°C or 95°C)	Spring return or fuse (70±5°C)	Electric actuator with thermal fuse (72°C or 95°C)	Spring return or fuse (70±5°C)	Dual position electric actuator (without spring return and without fuse)		Electric actuator with thermal fuse (72°C or 95°C)	Spring return or fuse (70±5°C)	Electric actuator with thermal fuse (72°C or 95°C)	Spring return or fuse (70±5°C)	Electric actuator with thermal fuse (72°C or 95°C)		Dual position electric actuator (without spring return and without fuse)	

	KWP-L		KWP-O		KWP-P		KTS		KTM		WKP-O		WKP-P	
														
Installation type	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness
VERTICAL INSTALLATION rigid walls 	EI120 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI120 wall) mortar installation	100	EI120 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI120 wall) mortar installation	115	EI120 (v _{ew} i→o) S 1500 C ₁₀₀₀₀ AA multi (concrete, solid bricks or cellular concrete blocks EI120 wall) mortar installation	115	EI120 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI120 wall) mortar installation	115	EI120 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI120 wall) mortar installation	115	EI120 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI120 wall) mortar installation, horizontal blades	120	EI120 (v _{ew} i→o) S 1000 C ₁₀₀₀₀ AA multi (concrete, solid bricks or cellular concrete blocks EI120 wall) mortar installation	120
	EI120 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI120 wall) dry installation	125					EI120 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI120 wall) dry installation	100	EI120 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI120 wall) dry installation	125	EI120 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI120 wall) dry installation, horizontal blades	125	EI120 (v _{ew} i→o) S 1000 C ₁₀₀₀₀ AA multi (concrete, solid bricks or cellular concrete blocks EI120 wall) dry installation	125
	EI90 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI90 wall) dry installation	100					EI60 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI60 wall) mortar installation	100	EI90 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI90 wall) dry installation	100	EI120 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI120 wall) mortar installation, horizontal or vertical blades	120	EI90 (v _{ew} i→o) S 1500 C ₁₀₀₀₀ AA multi (concrete, solid bricks or cellular concrete blocks EI90 wall) mortar installation	120
	EI60 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI60 wall) dry installation	75					EI60 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI60 wall) dry installation	75	EI60 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI60 wall) mortar installation	100	EI90 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI90 wall) mortar installation, horizontal or vertical blades	120	EI90 (v _{ew} i→o) S 1500 C ₁₀₀₀₀ AA multi (concrete, solid bricks or cellular concrete blocks EI90 wall) dry installation	125
	EI30 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI30 wall) dry installation	75					EI30 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI30 wall) dry installation	75	EI30 (v _e i→o) S (concrete, solid bricks or cellular concrete blocks EI30 wall) dry installation	75				

	KWP-L		KWP-O		KWP-P		KTS		KTM		WKP-O		WKP-P	
														
Installation type	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness
VERTICAL INSTALLATION flexible walls 	EI120 (v _e i→o) S (light plasterboard wall with steel frame EI120) dry installation	125	EI120 (v _e i→o) S (light plasterboard wall with steel frame EI120) dry installation	125	NO		EI120 (v _e i→o) S (light plasterboard wall with steel frame EI120) dry installation	100	EI120 (v _e i→o) S (light plasterboard wall with steel frame EI120) dry installation	125	EI120 (ve o→i) S (light plasterboard wall with steel frame EI120) dry installation, horizontal blades	125	EI120 (v _{ew} i→o) S 1000 C10000 AA multi (light plasterboard wall with steel frame EI120) dry installation	125
	EI90 (v _e i→o) S (light plasterboard wall with steel frame EI90) dry installation	100					EI60 (v _e i→o) S (light plasterboard wall with steel frame EI90) dry installation	75	EI90 (v _e i→o) S (light plasterboard wall with steel frame EI90) dry installation	100			EI120 (v _{ew} i→o) S 1500 C10000 AA multi (light plasterboard wall with steel frame EI90) dry installation	125
	EI60 (v _e i→o) S (light plasterboard wall with steel frame EI60) dry installation	75					EI30 (v _e i→o) S (light plasterboard wall with steel frame EI30) dry installation	75	EI30 (v _e i→o) S (light plasterboard wall with steel frame EI30) dry installation	75				
	EI30 (v _e i→o) S (light plasterboard wall with steel frame EI30) dry installation	75												
HORIZONTAL INSTALLATION ceiling / floor 	EI120 (h _o i→o) S (concrete EI120 ceiling) mortar installation	140	EI120 (h _o i→o) S (concrete or cellular concrete slabs EI120 ceiling) mortar installation	150	EI120 (h _{ow} i→o) S 1500 C ₁₀₀₀₀ AA multi (concrete EI120 ceiling) mortar installation	150	EI120 (h _o i→o) S (concrete EI120 ceiling) mortar installation	150	EI120 (h _o i→o) S (concrete EI120 ceiling) mortar installation	150	NO		NO	

	KWP-L		KWP-O		KWP-P		KTS		KTM		WKP-O		WKP-P	
														
Installation type	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness	Fire resistance class	Min partition thickness
VERTICAL INSTALLATION OUTSIDE THE WALL 	EI120 ($v_e i \rightarrow o$) S (concrete, solid bricks or cellular concrete blocks EI120 wall) dry installation <i>*axis of damper must be horizontal</i>	120	NO		NA = not applicable		EI90 ($v_e i \rightarrow o$) S (concrete, solid bricks or cellular concrete blocks EI90 wall) dry installation	120	EI90 ($v_e i \rightarrow o$) S (concrete, solid bricks or cellular concrete blocks EI90 wall) dry installation	120	NO		NA = not applicable	
INSTALLATION ON DUCT 	NA = not applicable		NA = not applicable		EI120 ($v_{ed} i \rightarrow o$) S 1000 C ₁₀₀₀ AA multi (in PromaductL500 smoke control duct) dry installation	Promatect L500 50 mm boards	NA = non applicabile		NA = not applicable		NA = not applicable		E ₆₀₀ 120 ($v_{ed} i \rightarrow o$) S1000 C ₃₀₀ AA single (in single compartment smoke control duct) dry installation	1 mm steel duct
INSTALLATION IN BATTERIES 	NO		EI120 ($v_e i \rightarrow o$) S (concrete, solid bricks or cellular concrete blocks EI120 wall) mortar installation 2-16 pieces (up to 8 pieces in a row) total area up to 6 m ²	150	Yes up to 10 m ² , but only after technical evaluation.		NO		can be installed with distance of 10 mm between dampers		NO		NO	

KTM



- ▶ **VDI 6022** HYGIENIC STANDARD
- ▶ **CERTIFICATION FOR ASSEMBLY OUTSIDE THE WALL UP TO 1 METRE**

Description

EI 120 S fire damper according to UNI EN 1366-2 classification UNI EN 13501-3 certificate no. 1438-CPR-0529

CE marking - VDI 6022 hygienic certificate

- Construction: Z275 galvanised steel frame th. 10/10 male coupling for direct insertion into the duct, offset blade in calcium silicate mounted on steel shafts and brass bearings, intumescent gasket and perimeter gasket for tightness against cold fumes
- Vertical or horizontal installation
- Leakage Class B of the frame according to EN 1751

Fitted with:

- **Manual version:** with 72°C thermal fuse, spring return and microswitch
- **Motorised version:** actuators with 72°C thermal fuse, spring return, 24V and 230V dual microswitch

- Installations in walls with fire resistance classes EI 120/90/60 with blade installed in the wall or outside
- Ceilings th. 150 mm
- Low density masonry walls with th. 115 mm
- Plasterboard walls th. 125 mm
- Outside the wall th. 120 mm up to 1 metre (EI 90S)
- Minimum distance wall or duct 10 mm

EI 120 (v e h o i ↔ o) S

KTM (male connection) **UP** (external gaskets), frame 195 mm, with fuse and spring return

KTM-UP - W: frame 195 mm, with fuse, spring return and micro switch (W1 - W2 - W12)

- **W1:** limit switch on closing
- **W2:** limit switch on opening
- **W12:** limit switch opening and closing

KTM-E24T: with actuator with spring return, thermal fuse and double opening and closing micro limit switch, 24V power supply, male connection, 307 mm frame

KTM-E230T: with servomotor with return spring, thermal fuse and double opening and closing micro limit switch, 230V power supply, male connection, 307 mm frame

Special executions

- Execution in AISI 304 stainless steel
- Execution in galvanised steel coated according to the RAL table
- Blade treated with solvent-free, silicate-based impregnating agent, for acidic or very humid environments
- 95°C thermal fuse for motorised version
- Special executions for "cabin/container" metal structures with installation outside the wall
- Additional communication systems (see page 10)

All prices are list prices for local market, for a quotation please contact us.

KTM price list

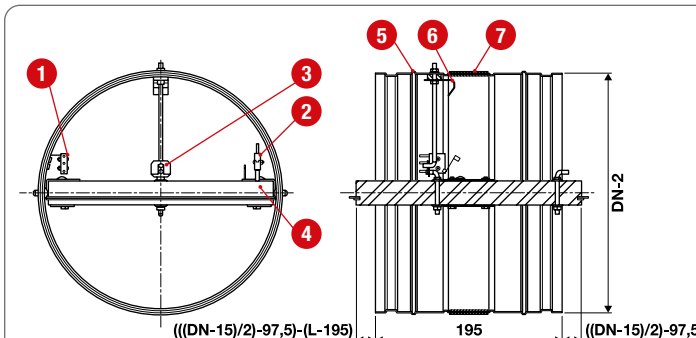
DN	100	125	160	200	250
WITHOUT GASKET	68	73	85	93	102
WITH UP GASKET	79	84	98	109	123
1 MICRO W1 - W2	97	101	114	122	131
2 MICRO W12	122	127	139	147	156
E24T	435	439	448	456	466
E24T + UP	441	445	455	465	478
E230T	467	471	480	487	497
E230T + UP	472	477	487	496	510

Spare FUSE 72°C

16

Delivery: prices in bold in stock

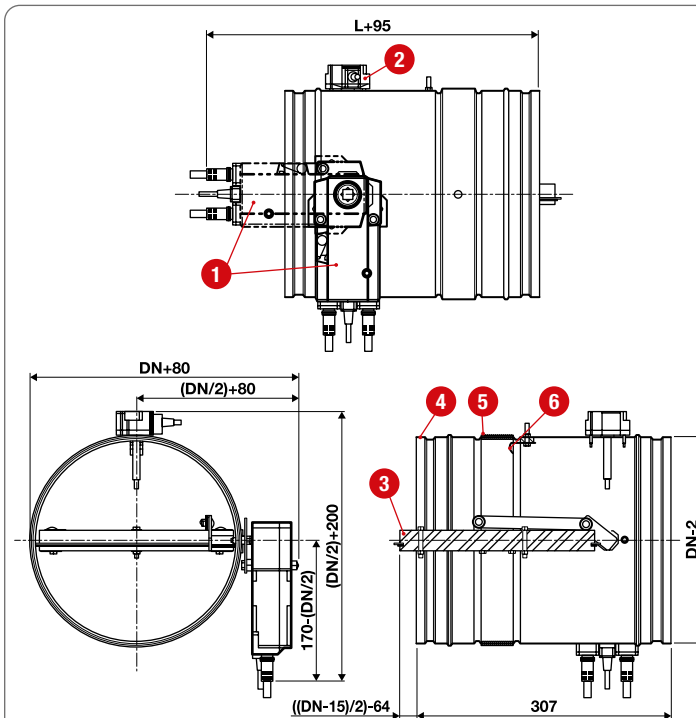
Dimensions KTM



Key:

1. Limit switch (closed blade position)
2. Limit switch (open blade position)
3. Thermal fuse
4. Blade
5. Frame
6. Blade stop
7. Internal and external intumescent gasket

KTM-E dimensions



Key:

1. Electric actuator - horizontal and vertical position
2. Thermo-electric fuse device
3. Blade
4. Frame
5. Internal and external intumescent gasket
6. Blade stop

KTS



- ▶ **VDI 6022 HYGIENIC STANDARD**
- ▶ **CERTIFICATION FOR ASSEMBLY OUTSIDE THE WALL UP TO 1 METRE**

Description

EI 120 S fire damper according to UNI EN 1366-2 classification UNI EN 13501-3 certificate no. 1438-CPR-0528

CE marking - VDI 6022 hygienic certificate

- Construction: Z275 galvanised steel frame th. 10/10 male coupling for direct insertion into the duct, offset blade in calcium silicate mounted on steel pins and brass bushings, intumescent gasket and perimeter gasket for tightness against cold fumes
- Vertical or horizontal installation
- Leakage class C of the frame according to EN 1751

Fitted with:

- **Manual version:** with 72°C thermal fuse, spring return and microswitch
- **Motorised version:** actuators with thermal fuse, spring return, 24V and 230V dual microswitch

- Installations in walls with fire resistance classes EI 120/90/60 with blade installed in the wall or outside
- Ceilings th. 150 mm
- Low density masonry walls with th. 115 mm
- Plasterboard walls th. 100 mm
- Outside the wall th. 120 mm up to 1 metre (EI 90S)

EI 120 (v_e h_o i ↔ o) S

KTS-O-S: with fuse and spring return

KTS-S-O W: with fuse, spring return and microswitch (W1 - W2 - W12)

- **W1:** limit switch on closing
- **W2:** limit switch on opening
- **W12:** limit switch opening and closing

KTS-O-E24T: with actuator with spring return, thermal fuse and double opening and closing micro limit switch, 24V power supply

KTS-O-E230T: with actuator with spring return, thermal fuse and double opening and closing micro limit switch, 230V power supply

Special executions

- Execution in AISI 304 stainless steel
- Execution in galvanised steel coated according to the RAL table
- Blade treated with solvent-free, silicate-based impregnating agent, for acidic or very humid environments
- 95°C thermal fuse for motorised version
- Special execution for "cabin/container" metal structures with installation outside the wall
- Additional communication systems (see page 10)

All prices are list prices for local market, for a quotation please contact us.

KTS.. price list

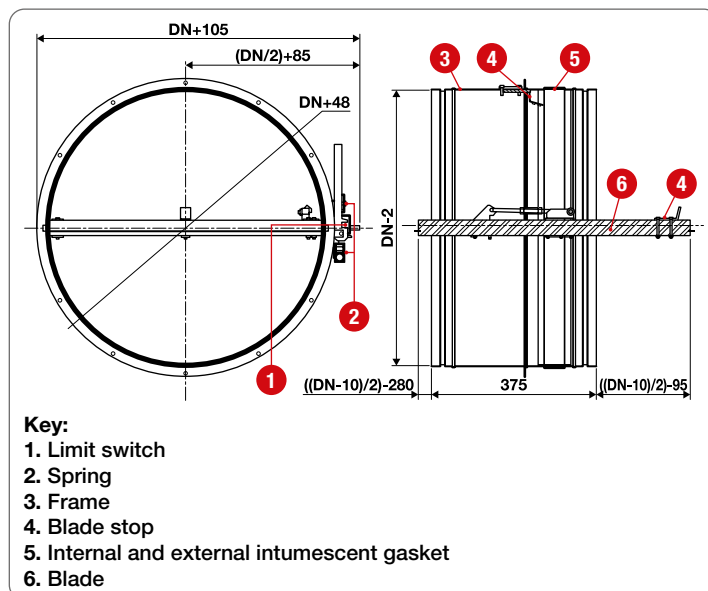
DN	160	200	250	315	355	400	450	500	630
WITHOUT GASKETS	209	220	237	270	289	306	336	358	426
WITH UP GASKET	223	237	259	296	318	336	368	393	468
1 MICRO W1 - W2	256	267	284	317	336	352	382	404	473
2 MICRO W12	303	314	331	364	383	399	429	451	520
E24T	478	486	498	520	533	544	-	-	-
E24T	-	-	-	-	-	-	694	709	756
24V ACTUATOR AND UP GASKETS	489	499	514	539	554	566	718	734	786
E230T	509	517	529	551	564	575	-	-	-
E230T	-	-	-	-	-	-	729	744	791
E230T ACTUATOR AND UP GASKETS	519	530	545	570	585	597	752	769	821

Spare FUSE 72°C

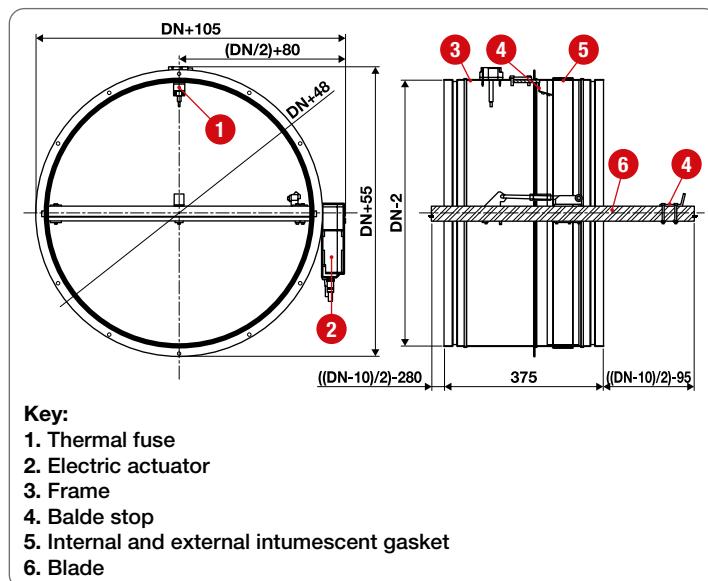
16

Delivery: prices in bold in stock

KTS-O-S dimensions



KTS-O-E dimensions



KWP-L



- ▶ **VDI 6022 HYGIENIC STANDARD**
- ▶ **CERTIFICATION FOR ASSEMBLY OUTSIDE THE WALL UP TO 1 METRE**

Description

EI 120 S fire damper according to UNI EN 1366-2 classification **UNI EN 13501-3** certificate no. 1438-CPR-0509

CE marking - VDI 6022 hygienic certificate

- Construction: Z275 galvanised steel frame th. 10/10 with flanges for connection to the ducting, intermediate thermal break, offset blade in calcium silicate mounted on steel pins and brass bushings, intumescent gasket and perimeter gasket for tightness against cold fumes. Reduced pressure drop
- Vertical or horizontal installation
- Leakage class C of the frame according to EN 1751
- Leakage "Class 3" tests on blade according to EN 1751

Fitted with:

- **Manual version:** with 72°C thermal fuse, spring return and microswitch
- **Motorised version:** actuators with thermal fuse, spring return, 24V and 230V dual microswitch

- Installations in walls with fire resistance classes EI 120/90/60 with blade installed in the wall or outside
- Ceilings th. 140 mm
- Low density masonry walls with th. 100 mm
- Plasterboard walls th. 125 mm
- **External to masonry walls with th. 120 mm up to 1 metre (EI 120S)**

EI 120 (v, h, i ↔ o) S

Max dimension 800x500

KWP-L-S: with thermal fuse and spring return

KWP-L-S W: with thermal fuse, spring return and microswitch (W1 - W2 - W12)

- **W1:** limit switch on closing
- **W2:** limit switch on opening
- **W12:** limit switch opening and closing

KWP-L-E24T: with actuator with spring return, thermal fuse and double opening and closing micro limit switch, 24V power supply

KWP-L-E230T: with actuator with return spring, thermal fuse and double opening and closing micro limit switch, 230V power supply

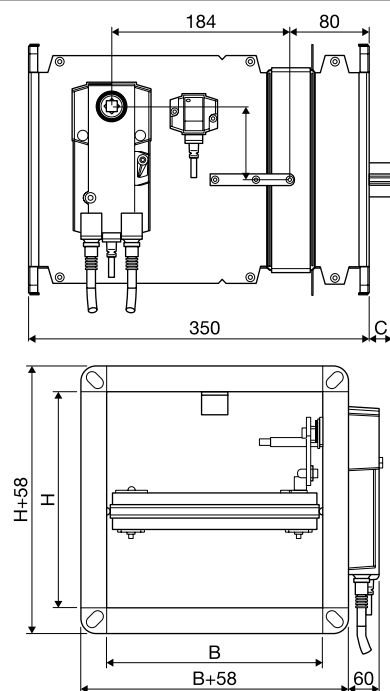
Special executions

- Execution in AISI 304/316 stainless steel
- Execution in galvanised steel coated according to the RAL table
- Blade treated with solvent-free, silicate-based impregnating agent, for acidic or very humid environments
- 95° thermal cut/off for motorised version
- Special execution for "cabin/container" metal structures with installation outside the wall
- Additional communication systems (see page 10)

Pressure drops

V (m/s)	Δp Pa
4	10
6	18
8	30

KWP-L dimensions



C < 250 = 225 mm C < 250 = ((H-10)/2)-80 Blade thickness: 35 mm

All prices are list prices for local market, for a quotation please contact us.

KWP-L price list

H/L	200	250	300	350	400	450	500	550	600	650	700	750	800
200	147	153	159	165	171	177	183	188	194	200	206	212	218
250	153	160	166	172	178	184	191	197	203	209	215	222	228
300	159	166	172	179	185	192	199	205	212	218	225	231	238
350	165	172	179	186	193	200	207	213	220	227	234	241	248
400	171	178	185	193	200	207	215	222	229	236	244	251	258
450	-	184	192	200	207	215	223	230	238	245	253	261	268
500	-	191	199	207	215	223	231	238	246	254	262	270	278

W1 MICRO	21	W2 MICRO	21	W12 MICRO	42	FUSE 72°C	16
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KWP-L-E24T price list

H/L	200	250	300	350	400	450	500	550	600	650	700	750	800
200	397	403	409	415	421	428	434	440	446	452	458	464	470
250	403	410	416	423	429	435	442	448	455	461	467	474	480
300	409	416	423	430	436	443	450	457	464	470	477	484	491
350	415	423	430	437	444	451	458	465	473	480	487	494	501
400	421	429	436	444	452	459	466	474	482	489	496	503	510
450	-	435	443	451	459	467	475	483	491	499	507	515	523
500	-	442	450	458	466	475	483	491	499	507	515	523	531

Delivery: prices in bold in stock

KWP-L-E230T price list

H/L	200	250	300	350	400	450	500	550	600	650	700	750	800
200	422	428	434	440	446	452	458	464	470	476	482	488	494
250	428	434	441	447	454	460	466	473	479	486	492	498	505
300	434	441	447	454	461	468	475	481	488	495	502	508	515
350	440	447	454	461	469	476	483	490	497	504	511	518	525
400	446	454	461	469	476	484	491	499	506	514	521	528	535
450	-	460	468	476	484	491	499	507	515	523	531	539	547
500	-	466	475	483	491	499	507	515	523	531	539	547	555

KWP-O



- ▶ **VDI 6022** HYGIENIC STANDARD
- ▶ **STABILISER BAR**

Description

El 120 S fire damper according to UNI EN 1366-2 classification UNI EN 13501-3 certificate no. 1488-CPR-0444/W

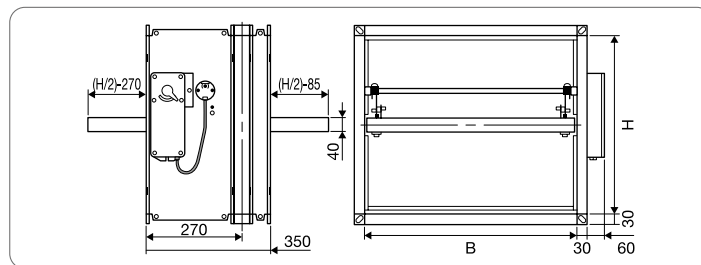
CE marking - VDI 6022 hygienic certificate

- Special stabiliser bar to prevent vibrations and increase damper rigidity
- Construction: Z275 galvanised steel frame th. 15/10- 20/10 with flanges for connection to the ducting, intermediate thermal break, offset blade in calcium silicate mounted on steel pins and brass bushings, intumescent gasket and perimeter gasket for tightness against cold
- Vertical or horizontal installation
- Leakage class C of the frame according to EN 1751
- Leakage "Class 3" tests on blade according to EN 1751

Fitted with:

- **Manual version:** with 72°C thermal fuse, spring return and microswitch
- **Motorised version:** motors with thermal fuse, return spring, 24V and 230V dual microswitch

- Installations in walls with fire resistance classes EI 120/90/60 with blade installed in the wall
- Ceilings th. 150 mm
- Masonry walls with th. 115 mm
- Plasterboard walls th. 125 mm



EI 120 (v, h, i ↔ o) S

Construction in single piece up to 1500x600 manual version and 1500x1000 motorised version

Installation in series 2-16 pieces (up to 8 pieces in a row) total area up to 6 m²

KWP-O-S: with thermal fuse and spring return

KWP-O-W: With thermal fuse, spring return and microswitch (W1 - W2 - W12)

- **W1:** limit switch on closing
- **W2:** limit switch on opening
- **W12:** limit switch opening and closing

KWP-O-E24T: with servomotor with return spring, thermal fuse and double opening and closing micro limit switch, 24V power supply

KWP-O-E230T: with servomotor with return spring, thermal fuse and double opening and closing micro limit switch, 230V power supply

Special constructions

- Execution in batteries
- Execution in AISI 304/316 stainless steel
- **ATEX execution:**
 - II 2G Ex h IIC T6...T5 Gb
 - II 2D Ex h IIIC T80°C...T95°C Db
- Made of galvanised steel coated according to the RAL table
- Blade treated with solvent-free, silicate-based impregnating agent, for acidic or very humid environments
- 95° thermal fuse for motorised version
- Additional communication systems (see page 10)

KWP-O price list

H/L	200	300	400	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
200	211	226	240	255	262	270	277	284	292	300	301	309	316	324	331	338	346	353	373	381	389	397	405	413
300	224	242	259	276	285	294	302	311	320	329	332	341	350	359	367	376	385	393	416	425	453	462	472	481
400	238	258	279	298	308	318	328	338	348	359	364	374	384	394	423	433	443	453	478	489	499	510	520	531
500	-	275	298	320	332	343	354	366	377	389	414	425	437	448	460	471	482	494	521	533	545	557	569	580
600	-	285	311	336	349	362	374	406	419	432	445	457	470	483	496	509	521	534	564	577	590	603	617	630
700	-	302	330	358	372	405	419	433	447	462	476	490	504	518	532	546	560	574	606	621	635	650	-	-
800	-	-	349	379	413	429	444	460	475	491	506	522	537	553	568	584	599	614	649	-	-	-	-	-
900	-	-	367	420	436	453	470	486	503	521	537	554	571	588	605	621	-	-	-	-	-	-	-	-
1000	-	-	387	441	460	478	496	514	532	551	569	587	605	623	-	-	-	-	-	-	-	-	-	-

W1 = MICRO 21

W2 = MICRO 21

W12 = MICRO 42

72°C THERMAL FUSE 16

KWP-O-E24T price list

H/L	200	300	400	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
200	441	456	471	485	492	500	507	514	522	530	537	544	552	559	567	574	581	589	609	710	718	726	734	742
300	454	472	489	506	515	524	532	541	550	559	661	670	678	688	696	705	714	722	745	754	763	772	782	791
400	468	488	509	529	539	549	652	662	672	683	693	703	713	723	733	743	753	763	788	799	809	820	830	841
500	-	505	528	550	655	666	678	689	700	713	724	735	747	758	770	781	792	804	831	843	855	867	879	891
600	-	521	547	665	678	691	703	716	729	742	755	767	780	793	806	819	831	844	874	916	930	943	956	969
700	-	537	659	687	701	715	729	743	757	772	786	800	814	828	842	855	869	899	914	946	960	975	989	1004
800	-	553	678	708	723	739	754	770	785	801	816	832	847	862	877	892	908	923	938	954	988	1004	1020	1036
900	-	663	696	730	746	763	780	796	813	831	877	893	910	927	944	961	977	994	1031	1048	1065	1083	1100	1117
1000	-	-	716	751	770	788	806	824	842	890	908	926	944	963	981	999	1017	1035	1074	1093	1111	1130	1148	1167

KWP-O-E230T price list

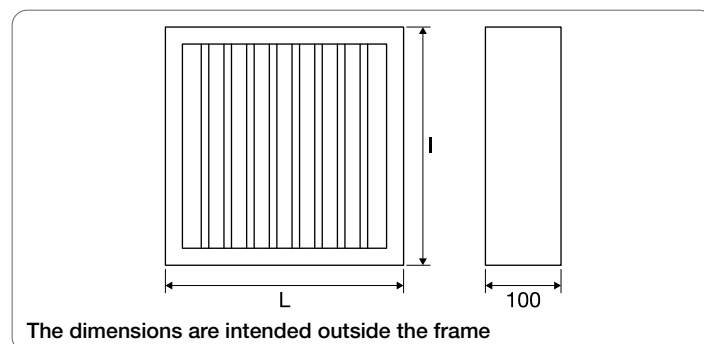
H/L	200	300	400	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
200	463	478	493	507	514	522	529	536	544	552	559	566	574	582	589	596	604	611	631	735	743	751	758	766
300	476	494	511	529	537	546	555	563	572	581	686	695	703	712	721	730	738	747	770	779	788	797	806	816
400	490	510	531	551	561	571	677	687	697	707	717	727	737	748	758	768	778	788	813	823	834	844	855	866
500	-	527	550	572	680	691	702	714	725	737	749	760	771	783	794	806	817	828	856	868	880	892	903	915
600	-	543	569	690	703	715	728	741	753	767	779	792	805	818	831	843	856	869	898	972	985	998	1011	1025
700	-	559	683	711	725	739	753	767	781	796	810	824	838	853	867	881	895	909	1001	1016	1030	1045	1059	1074
800	-	575	702	733	748	764	779	794	810	826	841	857	872	888	903	918	934	949	1009	1044	1060	1075	1091	1107
900	-	687	721	754	771	788	804	821	838	855	932	949	965	982	999	1016	1033	1049	1086	1104	1121	1138	1155	1172
1000	-	-	740	776	794	812	830	848	866	945	963	981	999	1018	1036	1054	1072	1090	1129	1148	1167	1185	1204	1222

All prices are list prices for local market, for a quotation please contact us.

Price list

H/L	100	150	200	300	400	500	600
100	55	88	107	154	195	228	257
150	81	118	154	213	257	294	327
200	107	154	195	257	301	360	419
300	154	213	257	327	419	507	610
400	195	257	301	419	540	676	812
500	228	290	360	507	676	845	1014
600	257	327	419	610	812	1014	1216

Dimensions



Selection table

V front (m/s)	Δpt (Pa)
1	30
1.5	45
2	73
2.5	105
3	184
3.5	240

INTUMESCENT GT



Description

EI 120 Class 0/A1 grilles according to UNI EN 1364-1

- Fire protection ventilation grille
- Vertical blades
- Construction in intumescent material
- Housing frame thickness 100 mm
- Blade width 34 mm
- Gap 15 mm
- Dimensions:
 - on plasterboard walls max 600x600
 - on masonry walls, with reinforced structure, max 1800x600
- Ratio of void on solid: approx. 30%

- Installation in walls with fire-resistance classes EI 120/90/60
- Low / high density masonry walls with th. min. 100 mm
- Plasterboard walls th. min. 100 mm
- Attention: Base x Height x Depth dimensions refer to the external dimension
- For widths over 600 mm, two or more grilles can be mounted side by side

EI 120 Class 0/A1

Certified: Applus-12/4805-1145 EI 120 according to EN 1364-1 and report no.089/2013/0716

Installation:

- insert the grilles directly into the hole made on the EI 120 certified wall in masonry or plasterboard, seal any small cracks with "High Temperature" sealants; for larger openings, use thermof foam sealants. Wall installation only
- blades always directed upwards

WKP-O-E



- ▶ **VDI 6022 HYGIENIC STANDARD**
- ▶ **MULTIPLE BLADES**

Description

Fire damper with multiple blades EI 120 S according to UNI EN 1366-2 classification UNI EN 13501-3 certificate no. 2434-CPR-0283

CE marking - VDI 6022 hygienic certificate

- Construction: Z275 galvanized steel frame with silicate fibre interposed, 30 mm flanges for ducting connection, counter blade movement, made of silicate fibre and fastened by bolts, intumescent gasket both on the blades and damper frame. Cold smoke sealing gasket
- Vertical installation on masonry wall
- Leakage class C of the frame according to EN 1751
- Max dimension 1200x800
- Frame depth 270 mm

Fitted with:

- electric actuators with thermal fuse at 72°C, spring return, double microswitch both 24V and 230V; housed in a special "box" to ensure continuity

- Installation in walls with fire-resistance classes EI 120/90
- Masonry walls min. th. 120 mm
- Plasterboard walls th. 125 mm

EI 120 (v_e i ↔ o) S - (horizontal blades)

EI120 (v_e o→i) S - (horizontal blades – plasterboard walls)

EI 90 (v_e i ↔ o) S - (vertical and horizontal blades)

E 120 (v_e i ↔ o) S - (vertical and horizontal blades)

WKP-O-E-K-24T: with actuator with spring return, thermal fuse and double opening and closing micro limit switch, 24V power supply

WKP-O-E-K-230T: with actuator with spring return, thermal fuse and double opening and closing micro limit switch, 230V power supply

Special constructions

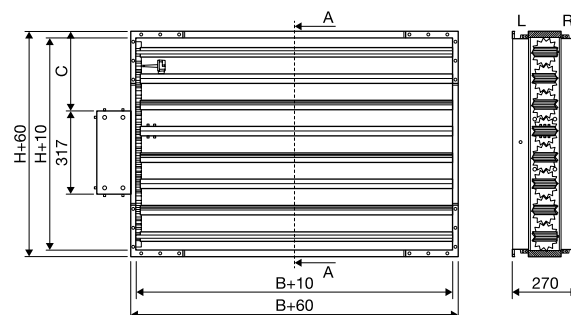
KL: left flange

KR: right flange

T: without flanges for air transit applications, frame th. 125 mm

- Additional communication systems (see page 10)

WKP-O-E dimensions



Overall actuator dimensions (317)x125

N	H	C
2	200	0
3	300	100
4	400	100
5	500	200
6	600	200
7	700	300
8	800	300

N: number of blades

H: damper height

All prices are list prices for local market, for a quotation please contact us.

WKP-O-E-K-24T price list

H/L	200	300	400	500	600	700	800	900	1000	1100	1200
200	795	817	839	862	885	909	932	955	977	1000	1022
300	828	854	880	905	931	958	984	1009	1035	1061	1086
400	856	885	918	947	975	1005	1034	1062	1090	1160	1188
500	888	920	956	987	1018	1051	1082	1154	1186	1217	1248
600	920	955	994	1028	1062	1138	1172	1206	1240	1274	1308
700	952	990	1031	1068	1146	1184	1221	1258	1295	1332	1369
800	984	1025	1069	1109	1189	1231	1270	1310	1350	1389	1429

WKP-O-E-K-230T price list

H/L	200	300	400	500	600	700	800	900	1000	1100	1200
200	829	851	874	896	919	943	966	989	1011	1034	1057
300	862	888	914	939	965	992	1018	1044	1069	1095	1120
400	890	919	952	981	1009	1039	1068	1096	1125	1236	1264
500	922	954	990	1021	1052	1085	1117	1231	1262	1293	1324
600	954	989	1028	1062	1096	1214	1248	1282	1316	1350	1384
700	986	1024	1066	1102	1222	1261	1297	1334	1371	1408	1445
800	1018	1059	1103	1143	1266	1307	1347	1386	1426	1465	1505

KWP-P-E



- ▶ **VDI 6022** HYGIENIC STANDARD
- ▶ **STABILISER BAR**

Description

EI 120 S smoke control damper according to UNI EN 1366-2 (classifications) and UNI EN 1366-10 (tests for smoke control), UNI EN 13501-4 and UNI EN 12101-8 classification, certificate no. 1488-CPR-0437/W CE marking - VDI 6022 hygienic certificate

- Special stabiliser bar to prevent vibrations and increase damper rigidity
- Construction: Z275 galvanised steel frame th. 15/10- 20/10 with flanges for connection to the ducting, intermediate thermal break, offset blade in calcium silicate mounted on steel shafts and brass bearings, intumescent gasket and perimeter gasket for tightness against cold
- Vertical and horizontal installation in multiple compartments
- Leakage class C of the frame according to EN 1751

Fitted with:

- with on-off actuator, dual microswitches both 24V and 230V

- Installation in walls with fire-resistance classes EI 120
- Ceilings th. 150 mm
- Masonry walls th. 115 mm
- Vertical installation on ducts

EI 120 ($V_{ew} - h_{ow} i \leftrightarrow o$) S 1500 C₁₀₀₀₀ AA MULTI

Construction in a single piece up to 1500x1000

EI 120 ($V_{ed} - i \leftrightarrow o$) S 1000 C₁₀₀₀₀ AA MULTI

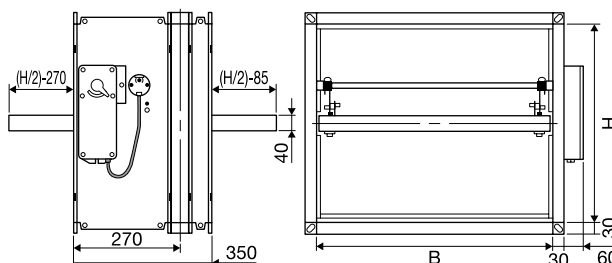
KWP-P-E24: smoke control damper with 24V on-off actuator and two micro limit switches

KWP-P-E230: smoke control damper with 230V on-off actuator and two micro limit switches

Special executions

- Execution in AISI 304 stainless steel
- Execution in galvanised steel coated according to the RAL table
- Blade treated with solvent-free, silicate-based impregnating agent, for acidic or very humid environments
- Additional communication systems (see page 10)

KWP-P-E dimensions



KWP-P-E24 price list

All prices are list prices for local market, for a quotation please contact us.

H/L	200	300	400	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
200	462	477	492	507	514	521	529	536	543	551	559	566	573	581	588	596	603	610	631	638	646	654	662	670
300	476	493	511	528	537	545	554	563	571	581	589	598	607	616	624	633	642	650	673	682	692	701	710	719
400	490	510	530	550	560	570	580	590	600	611	621	631	641	651	661	671	681	691	716	727	737	748	758	769
500	-	526	549	572	583	595	606	617	629	641	652	663	675	687	698	709	721	732	759	771	783	795	807	819
600	-	543	568	593	606	619	631	644	657	670	683	696	708	721	734	747	759	772	802	815	828	842	855	868
700	-	559	587	615	629	643	657	671	685	700	714	728	742	756	770	784	798	812	845	859	874	888	903	917
800	-	575	606	636	652	667	682	698	713	729	745	760	775	791	807	822	837	853	887	903	919	935	951	967
900	-	591	625	658	674	691	708	725	741	759	776	792	809	826	843	859	876	893	930	947	1046	1063	1080	1097
1000	-	-	644	680	698	716	734	752	770	789	807	825	843	861	879	898	916	934	1054	1073	1092	1110	1129	1147

KWP-P-E230 price list

H/L	200	300	400	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
200	507	522	537	551	558	566	573	580	588	596	603	610	618	625	633	640	647	655	675	683	691	699	706	714
300	520	538	555	573	581	590	599	607	616	625	634	643	651	660	669	678	686	695	718	727	736	745	754	764
400	534	554	575	595	605	615	625	635	645	655	665	675	685	696	706	716	726	736	761	771	782	792	803	814
500	-	571	594	616	628	639	651	662	673	685	697	708	719	731	742	754	765	777	804	816	828	840	851	863
600	-	587	613	638	651	663	676	689	701	715	728	740	753	766	779	791	804	817	847	860	873	886	899	913
700	-	603	632	659	673	687	701	716	730	744	758	772	786	801	815	829	843	857	889	904	918	933	947	962
800	-	619	650	681	696	712	727	742	758	774	789	805	820	836	851	866	882	897	932	948	964	980	995	1011
900	-	635	669	702	719	736	752	769	786	803	820	837	853	871	887	904	921	937	974	992	1267	1284	1301	1318
1000	-	-	688	724	742	760	778	796	815	833	851	869	887	906	924	942	960	978	1275	1294	1313	1331	1350	1368

Net air passage surface KWP-P-E

H/L	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
Air passage area (m²)																											
200	0,027	0,035	0,042	0,049	0,056	0,064	0,071	0,078	0,085	0,093	0,100	0,107	0,114	0,122	-	-	-	-	-	-	-	-	-	-	-	-	-
250	0,037	0,046	0,056	0,066	0,076	0,085	0,095	0,105	0,115	0,124	0,134	0,144	0,154	0,163	0,173	0,183	0,193	0,202	-	-	-	-	-	-	-	-	-
300	0,046	0,058	0,070	0,083	0,095	0,107	0,119	0,132	0,144	0,156	0,168	0,181	0,193	0,205	0,217	0,230	0,242	0,254	0,266	0,279	0,291	0,303	-	-	-	-	-
350	0,055	0,070	0,085	0,099	0,114	0,129	0,144	0,158	0,173	0,188	0,203	0,217	0,232	0,247	0,262	0,276	0,291	0,306	0,321	0,335	0,350	0,365	0,380	0,394	0,409	0,424	-
400	0,064	0,082	0,099	0,116	0,133	0,151	0,168	0,185	0,202	0,220	0,237	0,254	0,271	0,289	0,306	0,323	0,340	0,358	0,375	0,392	0,409	0,427	0,444	0,461	0,478	0,496	0,513
450	0,074	0,093	0,113	0,133	0,153	0,172	0,192	0,212	0,232	0,251	0,271	0,291	0,311	0,330	0,350	0,370	0,390	0,409	0,429	0,449	0,469	0,488	0,508	0,528	0,548	0,567	0,587
500	0,083	0,105	0,127	0,150	0,172	0,194	0,216	0,239	0,261	0,283	0,305	0,328	0,350	0,372	0,394	0,417	0,439	0,461	0,483	0,506	0,528	0,550	0,572	0,595	0,617	0,639	0,661
550	0,092	0,117	0,142	0,166	0,191	0,216	0,241	0,265	0,290	0,315	0,340	0,364	0,389	0,414	0,439	0,463	0,488	0,513	0,538	0,562	0,587	0,612	0,637	0,661	0,686	0,711	0,736
600	0,101	0,129	0,156	0,183	0,210	0,238	0,265	0,292	0,319	0,347	0,374	0,401	0,428	0,456	0,483	0,510	0,537	0,565	0,592	0,619	0,646	0,674	0,701	0,728	0,755	0,783	0,810
650	-	0,140	0,170	0,200	0,230	0,259	0,289	0,319	0,349	0,378	0,408	0,438	0,468	0,497	0,527	0,557	0,587	0,616	0,646	0,676	0,706	0,735	0,765	0,795	0,825	0,854	0,884
700	-	0,152	0,184	0,217	0,249	0,281	0,313	0,346	0,378	0,410	0,442	0,475	0,507	0,539	0,571	0,604	0,636	0,668	0,700	0,733	0,765	0,797	0,829	0,862	0,894	0,926	0,958
750	-	0,164	0,199	0,233	0,268	0,303	0,338	0,372	0,407	0,442	0,477	0,511	0,546	0,581	0,616	0,650	0,685	0,720	0,755	0,789	0,824	0,859	0,894	0,928	0,963	0,998	1,033
800	-	-	0,213	0,250	0,287	0,325	0,362	0,399	0,436	0,474	0,511	0,548	0,585	0,623	0,660	0,697	0,734	0,772	0,809	0,846	0,883	0,921	0,958	0,995	1,032	1,070	1,107
850	-	-	0,227	0,267	0,307	0,346	0,386	0,426	0,466	0,505	0,545	0,585	0,625	0,664	0,704	0,744	0,784	0,823	0,863	0,903	0,943	0,982	1,022	1,062	1,102	1,141	1,181
900	-	-	0,241	0,284	0,326	0,368	0,410	0,453	0,495	0,537	0,579	0,622	0,664	0,706	0,748	0,791	0,833	0,875	0,917	0,960	1,002	1,044	1,086	1,129	1,171	1,213	1,255
950	-	-	-	0,300	0,345	0,390	0,435	0,479	0,524	0,569	0,614	0,658	0,703	0,748	0,793	0,837	0,882	0,927	0,972	1,016	1,061	1,106	1,151	1,195	1,240	1,285	1,330
1000	-	-	-	0,317	0,364	0,412	0,459	0,506	0,553	0,601	0,648	0,695	0,742	0,790	0,837	0,884	0,931	0,979	1,026	1,073	1,120	1,168	1,215	1,262	1,309	1,357	1,404
1050	-	-	-	0,334	0,384	0,433	0,483	0,533	0,583	0,632	0,682	0,732	0,782	0,831	0,881	0,931	0,981	1,030	1,080	1,130	1,180	1,229	1,279	1,329	1,379	-	-
1100	-	-	-	-	0,403	0,455	0,507	0,560	0,612	0,664	0,716	0,769	0,821	0,873	0,925	0,978	1,030	1,082	1,134	1,187	1,239	1,291	1,343	1,396	-	-	-
1150	-	-	-	-	0,422	0,477	0,532	0,586	0,641	0,696	0,751	0,805	0,860	0,915	0,970	1,024	1,079	1,134	1,189	1,243	1,298	1,353	1,408	-	-	-	-
1200	-	-	-	-	0,441	0,499	0,556	0,613	0,670	0,728	0,785	0,842	0,899	0,957	1,014	1,071	1,128	1,186	1,243	1,300	1,357	1,415	-	-	-	-	-
1250	-	-	-	-	-	0,520	0,580	0,640	0,700	0,759	0,819	0,879	0,939	0,998	1,058	1,118	1,178	1,237	1,297	1,357	1,417	-	-	-	-	-	-
1300	-	-	-	-	-	0,542	0,604	0,667	0,729	0,791	0,853	0,916	0,978	1,040	1,102	1,165	1,227	1,289	1,351	1,414	-	-	-	-	-	-	-
1350	-	-	-	-	-	0,564	0,629	0,693	0,758	0,823	0,888	0,952	1,017	1,082	1,147	1,211	1,276	1,341	1,406	-	-	-	-	-	-	-	-
1400	-	-	-	-	-	-	0,653	0,720	0,787	0,855	0,922	0,989	1,056	1,124	1,191	1,258	1,325	1,393	-	-	-	-	-	-	-	-	-
1450	-	-	-	-	-	-	0,677	0,747	0,817	0,886	0,956	1,026	1,096	1,165	1,235	1,305	1,375	-	-	-	-	-	-	-	-	-	-
1500	-	-	-	-	-	-	0,701	0,774	0,846	0,918	0,990	1,063	1,135	1,207	1,279	1,352	1,424	-	-	-	-	-	-	-	-	-	-

actuator BEN
(BxH ≤ 1,21 m² e H ≤ 1100 mm)

actuator BEE
(1,21 m² < BxH ≤ 1,30 m² e H ≤ 1200 mm)

actuator BE
(BxH > 1,30 m² o H > 1200 mm)

Damper for smoke control single compartment

Standards:	EN 13501-4; EN 1363-1,3; EN 1366-9,10; EN 12101-8
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Classification

E300			30		60	90	120				
E600			30		60	90	120				

Notes:

The classification is completed with the word "single" to indicate suitability for use in a single compartment (single fire compartmentation). Temperature 400/30 (Maximum operating temperature) indicates that the damper can operate (open and close) for a period of 30 min. at temperatures below 400°C (caution: only for E600 classified dampers).

Symbols for installation:

Ved: vertical installation in duct

Vew: vertical installation on wall

Vedw: vertical installation both in duct and on wall

hod: horizontal installation in duct

how: horizontal installation in wall

hodw: horizontal installation both in duct and on wall

S: indicates the tightness, the leakage which must be less than 200 m³/h/m². For all dampers not classified "S", a leakage is allowed which must be less than 360 m³/h/m². The leakage is measured both at room temperature and high temperatures.

500 - 1000 - 1500: the value indicates the maximum pressure in Pa measured at room temperature.

AA: automatic activation.

AM: manual activation.

"i -> o" -"i<-o"- "i<->o": indicate the product performance, respectively, internal-external, external-internal or both internal-external sides.

C300: indicates that the damper can be used in smoke control only systems.

C10000: indicates that the damper can be used in combined smoke and room control systems.

Cmod: indicates that the modular dampers can be used in combined smoke and room control systems.

Damper for smoke control multiple compartment

Standards:	EN 13501-4; EN 1363-1,3; EN 1366-9,10; EN 12101-8
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Classification

EI			30		60	90	120				
E			30		60	90	120				

Notes:

The classification is completed by the word "Multi" to indicate suitability for use in a multiple compartment (where multiple compartments are combined in the same air duct).

WKP-P-E-J / WKP-P-E-W

► **VDI 6022 HYGIENIC STANDARD**



Description

El 120 S multiple blade smoke control dampers according to UNI EN 1366-2 e UNI EN 1366-10 (tests for smoke control), UNI EN 13501-4 and UNI EN 12101-8 classification

Performance certificate no. 2434-CPR-0285

CE marking - VDI 6022 hygienic certificate

- Construction: Z275 galvanized steel frame with silicate fibre interposed, 30 mm flanges for ducting connection, counter blade movement, made of silicate fibre and fastened by bolts, intumescent gasket both on the blades and damper frame. Cold smoke sealing gasket
- Vertical installation
- Leakage class C of the frame according to EN 1751
- Max dimension 1200x800
- Frame depth 230 mm

Fitted with:

- with electric on-off actuators, dual microswitches, 24V and 230V power supply

- Installations in ducts and masonry walls (120 mm or 125 mm plasterboard) with fire resistance classes EI 120 or EI 90

WKP-P-E-J

E₆₀₀ 120 (v_{ed} i ↔ o) S 1000 C₃₀₀ AA single – (Duct)

WKP-P-E-W

EI 90 (v_{ew} i ↔ o) S 1500 C_{10 000} AA multi

EI 120 (v_{ew} i ↔ o) S 1000 C_{10 000} AA multi

WKP-P-E-J-K 24: with on-off actuator and 2 opening and closing micro limit switches, 24V power supply

WKP-P-E-J-K 230: with on-off actuator and 2 opening and closing micro limit switches, 230V power supply

WKP-P-E-W-K 24: with on-off actuator and 2 opening and closing micro limit switches, 24V power supply

WKP-P-E-W-K 230: with on-off actuator and 2 opening and closing micro limit switches, 230V power supply

Special execution

KL: left side flange

KR: right side flange

T: without flanges only for version (WKP-P-E-W), frame th. 125 mm

- Additional communication systems (see page 10)

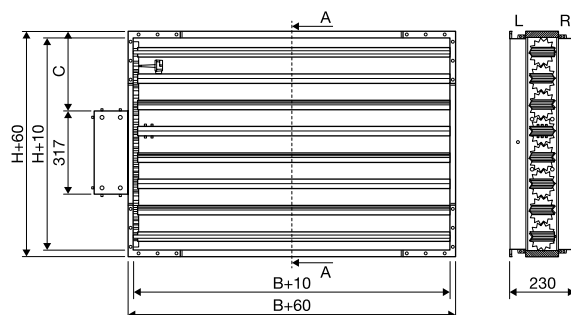
WKP-P-E-J Net area of air passage in m²

H/L	200	300	400	500	600	700	800	900	1000	1100	1200
200	0.03	0.04	0.05	0.07	0.08	0.09	0.10	0.12	0.13	0.14	0.16
300	0.04	0.06	0.08	0.10	0.12	0.14	0.16	0.18	0.20	0.31	0.23
400	0.05	0.08	0.10	0.13	0.16	0.18	0.21	0.23	0.26	0.29	0.31
500	0.07	0.10	0.13	0.16	0.20	0.23	0.26	0.29	0.33	0.36	0.39
600	0.08	0.12	0.16	0.20	0.23	0.27	0.31	0.35	0.39	0.43	0.47
700	0.09	0.14	0.18	0.23	0.27	0.32	0.36	0.41	0.46	0.50	0.55
800	0.10	0.16	0.21	0.26	0.31	0.36	0.42	0.47	0.52	0.57	0.62

WKP-P-E-W Net area of air passage in m²

H/L	200	300	400	500	600	700	800	900	1000	1100	1200
200	0.02	0.04	0.05	0.06	0.07	0.08	0.10	0.11	0.12	0.13	0.14
300	0.04	0.05	0.07	0.09	0.11	0.13	0.14	0.16	0.18	0.20	0.22
400	0.05	0.07	0.10	0.12	0.14	0.17	0.19	0.22	0.24	0.26	0.29
500	0.06	0.09	0.12	0.15	0.18	0.21	0.24	0.27	0.30	0.33	0.36
600	0.07	0.11	0.14	0.18	0.22	0.25	0.29	0.32	0.36	0.40	0.43
700	0.08	0.13	0.17	0.21	0.25	0.29	0.34	0.38	0.42	0.46	0.50
800	0.10	0.14	0.19	0.24	0.29	0.34	0.38	0.43	0.48	0.53	0.58

Dimensions



Overall actuator dimensions (317)x125

N	H	C
2	200	0
3	300	100
4	400	100
5	500	200
6	600	200
7	700	300
8	800	300

N: number of blades

H: damper height

WKP-P-E-J-K-24 price list

H/L	200	300	400	500	600	700	800	900	1000	1100	1200
200	693	715	737	759	782	806	828	850	872	895	917
300	726	752	777	802	827	854	879	905	930	955	980
400	753	782	815	843	871	901	929	957	985	1013	1041
500	785	816	852	883	914	946	977	1008	1152	1183	1214
600	816	851	889	923	957	992	1026	1172	1206	1240	1273
700	848	886	927	964	1000	1151	1188	1224	1260	1297	1333
800	880	920	965	1004	1043	1197	1236	1276	1315	1354	1393

WKP-P-E-J-K-230 price list

H/L	200	300	400	500	600	700	800	900	1000	1100	1200
200	754	776	798	821	843	867	889	912	934	956	978
300	787	813	838	864	889	916	941	966	991	1017	1042
400	815	844	877	905	933	962	990	1018	1046	1074	1102
500	846	878	914	944	975	1008	1039	1070	1457	1488	1519
600	878	912	951	985	1018	1054	1087	1477	1511	1545	1578
700	910	947	988	1025	1061	1456	1492	1529	1565	1602	1638
800	941	982	1026	1065	1105	1502	1541	1580	1620	1659	1698

WKP-P-E-W-K-24 price list

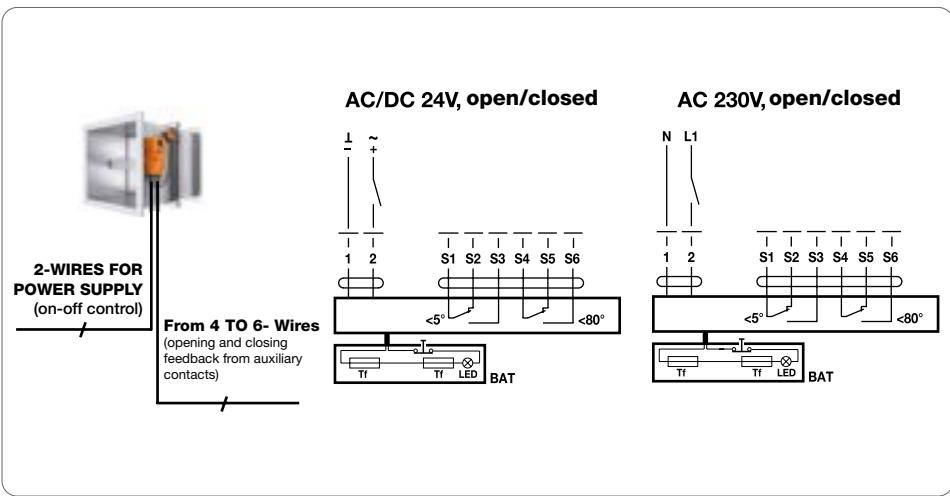
H/L	200	300	400	500	600	700	800	900	1000	1100	1200
200	693	716	738	761	783	808	830	853	875	898	921
300	727	753	779	805	830	858	884	909	935	961	987
400	755	784	818	847	876	906	935	964	992	1021	1050
500	787	819	856	888	920	953	985	1017	1162	1193	1225
600	819	854	894	929	964	1000	1035	1183	1218	1253	1288
700	851	890	933	970	1008	1161	1199	1237	1275	1312	1350
800	883	925	971	1012	1053	1208	1249	1290	1331	1372	1413

WKP-P-E-W-K-E230 price list

H/L	200	300	400	500	600	700	800	900	1000	1100	1200
200	755	777	800	822	845	869	892	914	937	960	982
300	788	815	840	866	892	919	945	971	997	1022	1048
400	816	846	879	908	937	967	996	1025	1054	1083	1111
500	848	881	917	949	981	1015	1046	1078	1466	1498	1530
600	880	916	956	990	1025	1062	1097	1488	1523	1558	1593
700	912	951	994	1032	1070	1466	1504	1542	1579	1617	1655
800	944	986	1032	1073	1114	1513	1554	1595	1636	1677	1718

Standard actuator

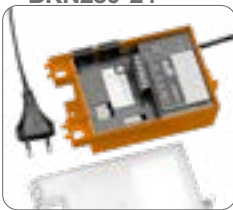
- BFL24-T
- BFN24-T
- BF24-T
- BFL230-T
- BFN230-T
- BF230-T



Control and warning

- Actuators:
- All 24V actuators with T-ST extension
 - BFL24-T-ST
 - BFN24-T-ST
 - BF24-T-ST

BKN230-24



- Description
- Power supply and communication unit for actuators for 24V fire damper with ST socket
 - Built-in status light
 - Possible connection to a smoke detector, without additional power supply
 - AC 230V power supply

BKS24-1B

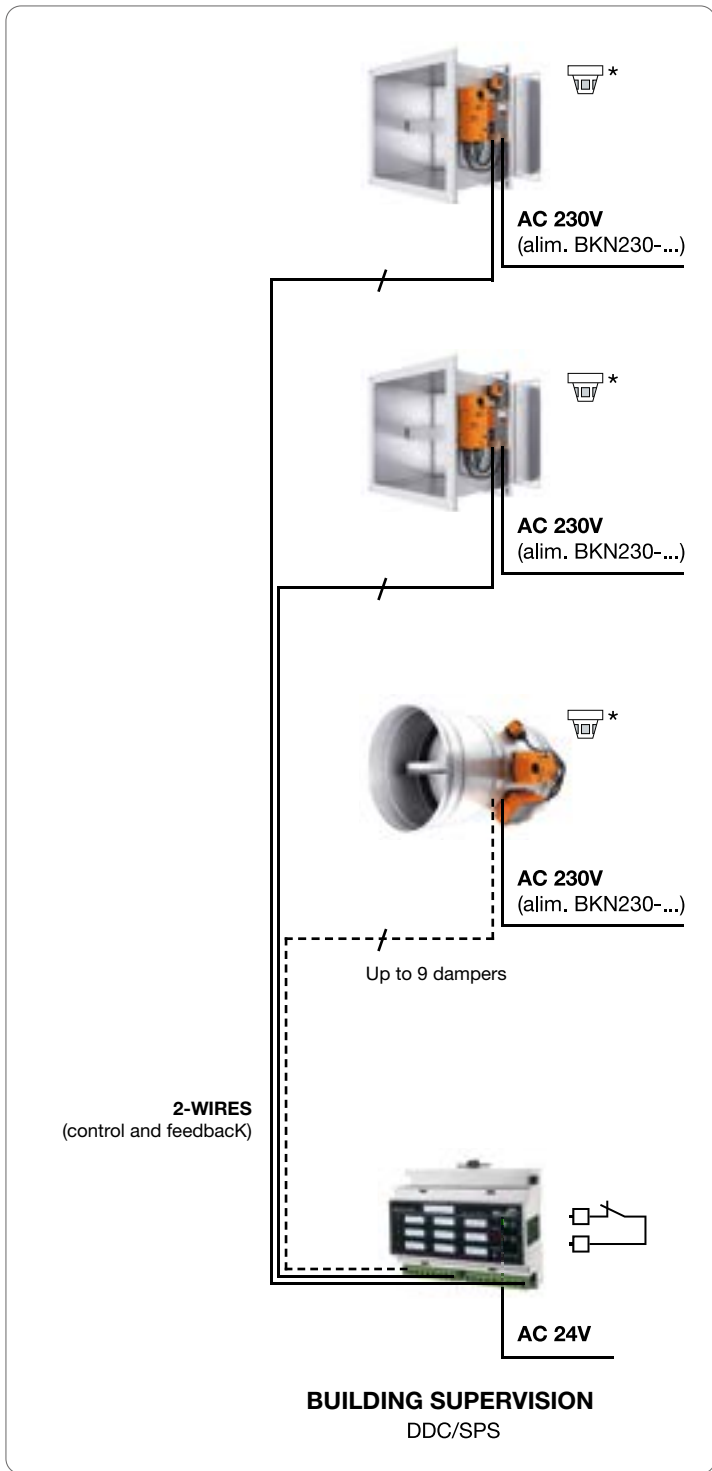


- Description
- Communication and control unit for fire damper
 - Control and monitoring of 1 damper
 - Built-in status light
 - ZSO-11 connection base required
 - AC 24V power supply

BKS24-9A



- Description
- Communication and control unit for fire damper
 - Control and monitoring of 9 dampers
 - Built-in status light
 - Connection plug terminals
 - AC 24V power supply



Modbus RTU and BACnet MS/TP

- Actuators:
- All 24V motors with T-ST extension

BKN230-24-MOD



- Description
- Power supply and communication unit for actuators for 24 V fire damper with ST socket
 - BACnet MS/TP, Modbus RTU communication
 - Built-in status light
 - Possible connection to a smoke detector, without additional power supply
 - AC 230V power supply

UK24MOD



- Description
- MP Gateway for Modbus RTU
 - AC/DC 24V
 - MP interface – Modbus RTU (RS-485)
 - Connection of max. 8 actuators
 - MP/MPL/MFT(2) incl. VAV and fire protection

MP-Bus and DDC-Controller

- Actuators:
- All 24V motors with T-ST extension

BKN230-24-C-MP

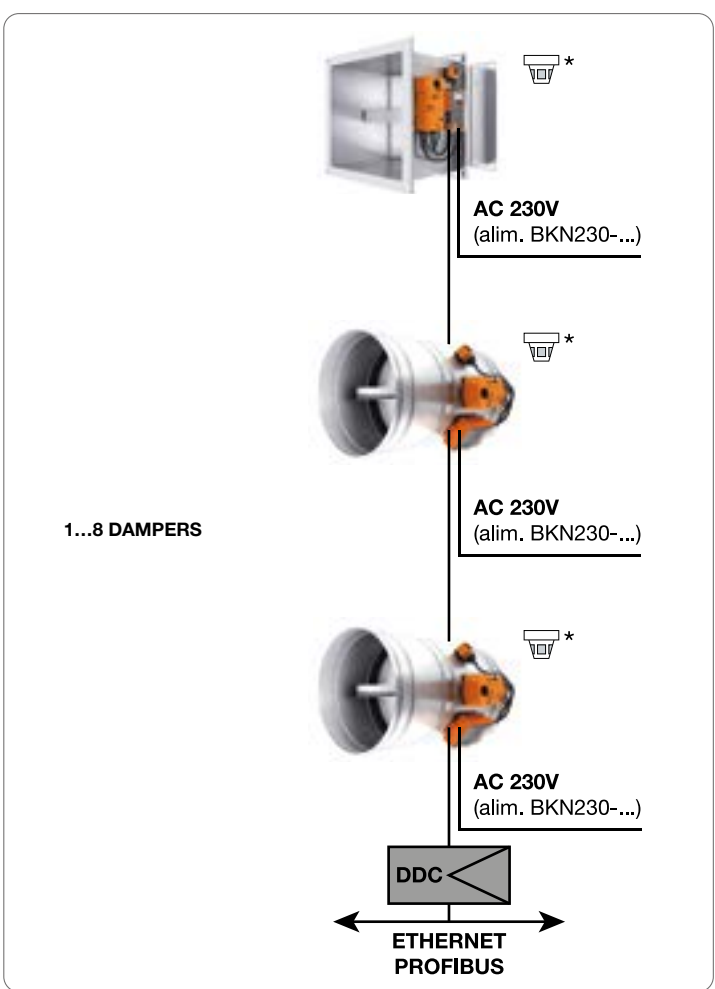
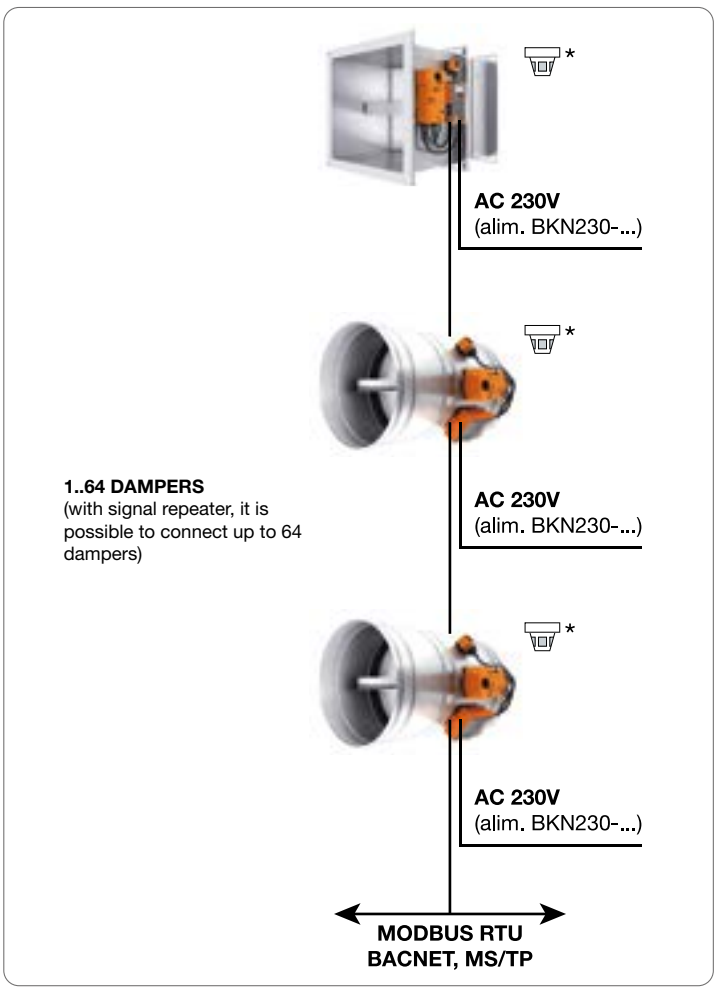


- Description
- Power supply and communication unit for actuators for 24 V fire damper with ST socket
 - MP-Bus communication
 - UK24MOD, UK24BAC and SBS control
 - Built-in status light
 - Possible connection to a smoke detector, without additional power supply
 - AC 230V power supply

UK24BAC



- Description
- MP Gateway for BACnet MS/TP
 - AC/DC 24V
 - MP interface – BACnet MS/TP (RS-485)
 - Connection of max. 8 actuators
 - MP/MPL/MFT(2) incl. VAV and fire protection



Fire damper systems

All prices are list prices for local market, for a quotation please contact us.

Price list - Fire damper systems

Cable / Socket for systems	€
T-ST	50

Power supply and communication systems	€
BKN 230-24	280
BKN 230-24 C - MP	400
BKN 230-24 MOD	400
BKN 230-24 LON	620

Monitoring and control system	€
BKS 24-1	530
24-9A BKS	710
UK 24 MOD	830
UK 24 BAC	940

Example:

Fire damper with 24V actuator and thermal fuse, take the list price for the motorised damper.

We combine the power supply and communication unit **BKN230-24** and to do so, we need to use the **T-ST** cable.

T-ST + BKN 230-24 we will get: € 50.00 + € 280.00 = € 330.00 to be added to the price of the 24V motorised damper.

We will then combine the monitoring and control system **BKS 24-1** or **BKS24-9A**.

Combine the components according to the "MOD-LON" communication system.

Smoke control damper systems

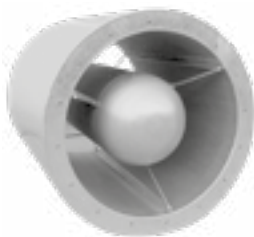
All prices are list prices for local market, for a quotation please contact us.

Price list - Smoke control damper systems

Cable / Socket for systems	€
T-ST	50

Power supply and communication systems	€
BKNE 230-24	380

Monitoring and control system	€
BKSE 24-6 UP TO 6 DAMPERS	530
BSIA24-48 PULSE, 24-48 V, NORM. OPEN	710
BSIA24-48 R FAIL SAFE / CUT-OFF, NORM. CLOSED	830



SCO

Circular sound attenuator
with acoustic pod
PAGE 1



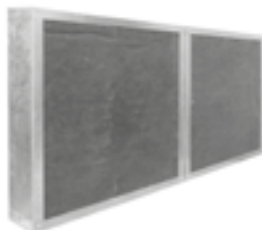
SC

Circular sound attenuator
without acoustic pod
PAGE 1



S

Rectangular sound
attenuators
PAGE 2



SF/SFO

Acoustic
baffles
PAGE 4



TAO S FLEX

Semi-rigid
circular silencer
PAGE 4



SCB

Circular sound attenuator
with dual connection
PAGE 5



WGZD / WGZC

Soundproof
transfer grilles
PAGE 5



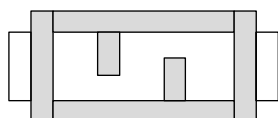
GF 14

Acoustic louvers
pitch 100
PAGE 6



GF 3

Acoustic louvers
pitch 150
PAGE 7



SK

Acoustic trap

PAGE 8

Acoustic
elements

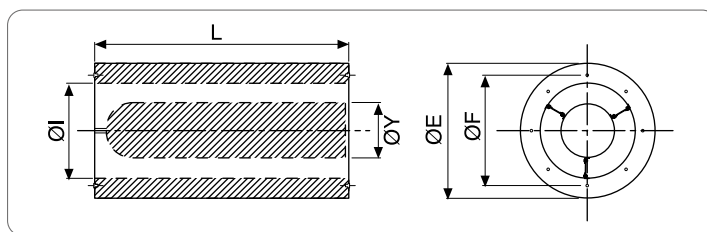
PAGE 9

All prices are list prices for local market, for a quotation please contact us.

Price list

DN/Type	SC010	SC015	SC020	SC10	SC15	SC20
250	205	208	210	124	125	126
315	331	359	395	204	232	257
355	373	418	457	230	266	300
400	457	519	581	286	339	387
450	541	622	704	342	410	474
500	628	732	830	398	482	561
560	712	881	953	454	552	648
630	838	990	1145	535	657	778
710	967	1150	1329	620	765	908
800	1138	1360	1578	729	908	1082
900	1330	1567	1828	841	1049	1256
1000	1478	1778	2075	951	1192	1430
1120	1648	1988	2321	1063	1335	1604
1250	1901	2851	3802	1231	1847	2462
1400	2159	3239	4318	1396	2094	2792
1600	3014	4521	6028	2097	3145	4193
1800	OR	OR	OR	OR	OR	OR
2000	OR	OR	OR	OR	OR	OR

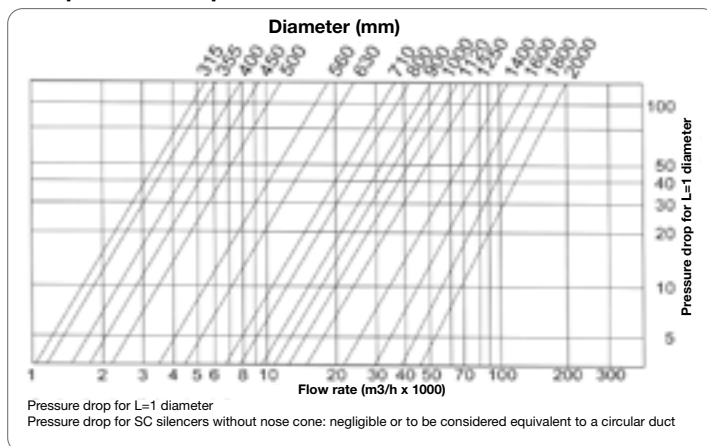
SCO



Dimensions

Ø nominal [mm]	Ø I [mm]	Ø E [mm]	Ø F [mm]	no. holes	Ø holes [mm]	Ø insert	Ø Y [mm]	L		
								10	15	20
250	250	390	280	4	11	10 MA	120	250	375	500
315	315	455	355	8	11	10 MA	140	315	472.5	630
355	355	495	395	8	11	10 MA	200	355	532.5	710
400	400	540	450	8	12	10 MA	200	400	600	800
450	450	610	500	8	12	10 MA	250	450	675	900
500	500	660	560	12	12	10 MA	250	500	750	1000
560	560	720	620	12	12	10 MA	300	560	840	1120
630	630	790	690	12	12	10 MA	300	630	945	1260
710	710	870	770	16	12	10 MA	380	710	1065	1420
800	800	1000	860	16	12	10 MA	380	800	1200	1600
900	900	1100	970	16	15	12 MA	380	900	1350	1800
1000	1000	1200	1070	16	15	12 MA	650	1000	1500	2000
1120	1120	1320	1190	20	15	12 MA	650	1120	1680	2240
1250	1250	1450	1320	20	15	12 MA	650	1250	1875	2500
1400	1400	1600	1470	20	15	12 MA	650	1400	2100	2800

SCO pressure drop



SCO



SC



Description

SCO: circular sound attenuator with acoustic pod

- casing in galvanised steel
- flange with threaded insert
- internal acoustic pod with aerodynamic profile
- rock wool acoustic material 70 kg/m³ coated with black glass veil and micro-expanded mesh
- fire-resistance class: wool A1 EN13501-1; glass veil A2 EN 13501-1
- acoustic data according to ISO 7235
- L 10 = 1 times the diameter
- L 15 = 1.5 times the diameter
- L 20 = 2 times the diameter

SC: like SCO but without internal acoustic pod

Special executions

SCTV: Acoustic material with coating in glass tissue (list price +10%)

SCXO: like SCO but in AISI 304/316 stainless steel

SCX: like SC but in AISI 304/316 stainless steel

S2C: thickness 20/10 for industrial applications

S3C: thickness 30/10 for marine and off-shore applications

SCO attenuation

DN	L	frequencies (Hz)						
		125	250	500	1 k	2 k	4 k	8 k
250*	10	1	4	7	13	15	11	8
	20	3	9	16	26	22	14	13
315	10	1	4	9	16	17	13	10
	20	6	7	17	32	33	22	17
355	10	0	4	11	22	21	15	12
	20	2	8	19	40	39	27	20
400	10	1	4	11	20	18	14	11
	20	2	9	20	37	35	23	16
450	10	1	6	14	21	19	13	9
	20	3	10	23	39	36	21	15
500	10	2	5	13	20	16	11	8
	20	3	10	24	38	32	18	12
560	10	1	6	15	21	17	11	8
	20	2	12	27	41	35	18	12
630	10	1	6	15	19	16	10	8
	20	3	11	27	37	29	15	12
710	10	2	7	15	20	18	12	10
	20	5	14	29	41	32	18	15
800	10	3	9	12	17	15	9	8
	20	6	16	29	35	26	15	12
900	10	4	8	15	16	11	8	7
	20	7	17	30	34	20	12	11
1000	10	8	14	20	24	21	14	10
	20	13	28	39	47	38	19	13
1120	10	6	13	20	21	14	8	7
	20	14	26	36	42	24	13	11
1250	10	7	12	18	19	10	6	6
	20	13	25	35	37	17	11	9
1400*	10	7	11	19	18	11	8	7
	20	9	14	25	24	16	10	9
1600*	10	7	12	18	17	11	8	7
	20	10	15	23	21	16	10	9

*: attenuation Gr 250, 1400 and 1600 calculated

Rectangular sound attenuators



Rectangular sound attenuators



Description

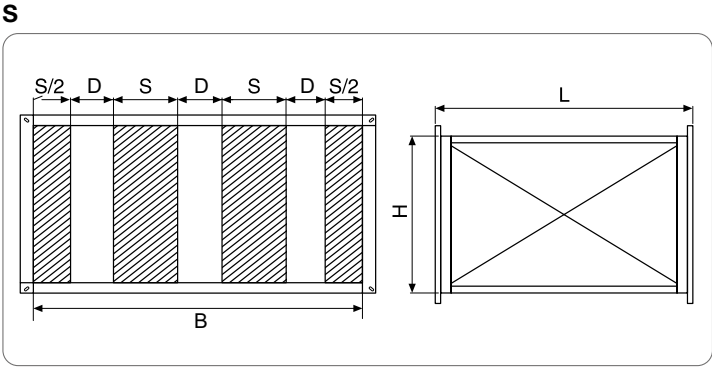
- S: rectangular sound attenuators
- casing and baffles in galvanised steel
- baffles thickness 200 mm
- half standard lateral baffles to stiffen the structure
- acoustic material in rock wool 50 kg/m³ coated with black glass veil
- fire-resistance class A1 according to EN 13501-1
- acoustic tests according to ISO EN 11691 standard
- suitable for attenuation from 250 to 8k Hz
- quick-fit flange from 30 mm up to 6 m of perimeter or max 2 m of depth or 40 mm for larger sizes

Modules

- S..A: baffle 200 mm, space 100 mm
- S..B: baffle 200 mm, space 150 mm
- S..C: baffle200 mm, space 200 mm

Special executions

- STV: acoustic material with certificate of hygiene according to VDI 6022 (glass tissue coating) (list price +10%)
- SR: like S but with baffles covered with micro-expanded mesh
- SO: like S but with baffles covered half in galvanised sheet metal with perforated bands specifically for 125 Hz
- SOR: like SO but with remaining half of the baffles coated with micro-expanded mesh
- ..N: baffles with aerodynamic profiles
- S100: with baffles measuring 100 mm



pressure drop and noise generated

V	200/100		200/150		200/200	
	Δp _t	LwA	Δp _t	LwA	Δp _t	LwA
1	5	<20	<5	<20	<5	<20
2	21	32	10	23	7	25
3	47	44	23	36	17	37
4	78	52	42	44	28	43
5	125*	57	63	51	45	50
6	-	-	88	57	64	54
7	-	-	120*	61	84	58
8	-	-	-	-	110*	61

*work point not recommended

- V: velocity referring to the section BxH [m/s]
- Δpt: total pressure drop [Pa] referring to L=1000mm (L= 2000 +25%)
- LwA: sound pressure level [dB(A)]

Data variation for baffles with aerodynamic profiles
Δpt: -25%
LwA: -10%

Type S attenuation table

Baffle Thickness [mm]	Distance baffles [mm]	Length [mm]	Frequencies (Hz)							
			63*	125	250	500	1k	2k	4k	8k
200	100	500	2	4	11	16	21	19	14	7
		1000	4	9	19	29	40	38	25	13
		1500	5	12	28	44	50	50	33	17
		2000	6	16	36	50	50	50	44	23
200	150	500	2	4	8	13	16	14	9	6
		1000	2	7	15	23	30	26	15	9
		1500	3	9	21	33	42	38	21	12
		2000	4	12	28	43	50	50	28	14
200	200	500	1	3	7	11	14	12	7	6
		1000	2	6	13	17	25	21	12	8
		1500	3	8	17	25	35	30	16	11
		2000	4	11	23	32	46	40	21	14

*calculated attenuation data

Unchanged attenuation for all frequencies with attenuators lined with micro-expanded mesh or perforated sheet or glass tissue

- Selection table and price list
- Parameters V= m/s Δpt= (Pa)
- Module A 4.2 80
- Module B 5.7 80
- Module C 6.8 80

Module C										Price list €							
No. baffles	mod. A 200/100			mod. B 200/150			mod. C 200/200			S				SR			
	B	H	Flow rate (m³/h)	B	H	Flow rate (m³/h)	B	H	Flow rate (m³/h)	L	L	L	L	L	L	L	L
										1000	1200	1500	2000	1000	1200	1500	2000
3	600	300	2720	700	300	4300	800	300	5870	327	377	470	664	345	399	496	700
4	900	300	4080	1050	300	6460	1200	300	8810	437	507	643	906	464	540	684	960
5	1200	300	5440	1400	300	8610	1600	300	11750	555	645	815	1146	591	688	869	1218
6	1500	300	6800	1750	300	10770	2000	300	14680	672	780	984	1381	717	834	1052	1471
7	1800	300	8160	2100	300	12920	2400	300	17620	788	915	1153	1617	842	980	1234	1725
8	2100	300	9520	2450	300	15080	2800	300	20560	-	-	-	-	-	-	-	-
9	2400	300	10880	2800	300	17230	3200	300	23500	-	-	-	-	-	-	-	-
3	600	500	4530	700	500	7180	800	500	9790	390	455	571	792	420	491	616	851
4	900	500	6800	1050	500	10770	1200	500	14680	532	617	771	1064	577	671	839	1154
5	1200	500	9070	1400	500	14360	1600	500	19580	669	776	966	1336	729	848	1056	1456
6	1500	500	11340	1750	500	17950	2000	500	24480	806	930	1162	1609	881	1020	1274	1759
7	1800	500	13600	2100	500	21540	2400	500	29370	939	1086	1356	1885	1028	1194	1491	2065
8	2100	500	15870	2450	500	25130	2800	500	34270	-	-	-	-	-	-	-	-
9	2400	500	18140	2800	500	28720	3200	500	39160	-	-	-	-	-	-	-	-
3	600	700	6350	700	700	10050	800	700	13700	475	544	674	919	513	594	737	1003
4	900	700	9520	1050	700	15080	1200	700	20560	630	728	899	1226	693	804	994	1352
5	1200	700	12700	1400	700	20100	1600	700	27410	787	907	1123	1540	871	1007	1249	1708
6	1500	700	15870	1750	700	25130	2000	700	34270	942	1086	1351	1853	1047	1212	1509	2062
7	1800	700	19050	2100	700	30160	2400	700	41120	1097	1270	1581	2165	1223	1421	1769	2417
8	2100	700	22220	2450	700	35190	2800	700	47980	-	-	-	-	-	-	-	-
9	2400	700	25400	2800	700	40210	3200	700	54830	-	-	-	-	-	-	-	-
3	600	900	8160	700	900	12920	800	900	17620	550	634	779	1049	604	699	860	1157
4	900	900	12240	1050	900	19390	1200	900	26430	732	840	1033	1400	813	937	1155	1562
5	1200	900	16320	1400	900	25850	1600	900	35250	910	1045	1293	1752	1018	1175	1455	1968
6	1500	900	20410	1750	900	32310	2000	900	44060	1087	1258	1552	2102	1222	1420	1755	2372
7	1800	900	24490	2100	900	38780	2400	900	52870	1272	1467	1811	2452	1434	1661	2054	2776
8	2100	900	28570	2450	900	45240	2800	900	61680	-	-	-	-	-	-	-	-
9	2400	900	32650	2800	900	51710	3200	900	70500	-	-	-	-	-	-	-	-
10	600	1000	9070	700	1000	14360	800	1000	19580	591	659	832	1116	651	753	922	1235
4	900	1000	13600	1050	1000	21540	1200	1000	29370	784	900	1103	1488	874	1008	1238	1668
5	1200	1000	18140	1400	1000	28720	1600	1000	39160	974	1122	1381	1860	1094	1266	1561	2100
6	1500	1000	22680	1750	1000	35910	2000	1000	48960	1168	1346	1657	2231	1318	1526	1881	2531
7	1800	1000	27210	2100	1000	43090	2400	1000	58750	1363	1571	1932	2601	1543	1787	2201	2961
8	2100	1000	31750	2450	1000	50270	2800	1000	68540	-	-	-	-	-	-	-	-
9	2400	1000	36280	2800	1000	57450	3200	1000	78330	-	-	-	-	-	-	-	-
3	600	1200	10880	700	1200	17230	800	1200	23500	675	772	940	1252	747	859	1048	1396
4	900	1200	16320	1050	1200	25850	1200	1200	35250	890	1018	1248	1667	998	1148	1410	1883
5	1200	1200	21770	1400	1200	34470	1600	1200	47000	1107	1274	1557	2078	1251	1447	1773	2366
6	1500	1200	27210	1750	1200	43090	2000	1200	58750	1327	1526	1865	2488	1507	1742	2135	2848
7	1800	1200	32650	2100	1200	51710	2400	1200	70500	1547	1778	2172	2912	1763	2037	2496	3344
8	2100	1200	38100	2450	1200	60320	2800	1200	82250	-	-	-	-	-	-	-	-
9	2400	1200	43540	2800	1200	68940	3200	1200	94000	-	-	-	-	-	-	-	-
3	600	1500	13600	700	1500	21540	800	1500	29370	796	910	1101	1459	886	1018	1236	1638
4	900	1500	20410	1050	1500	32310	1200	1500	44060	1048	1204	1462	1932	1183	1366	1665	2202
5	1200	1500	27210	1400	1500	43090	1600	1500	58750	1308	1499	1819	2403	1487	1715	2090	2763
6	1500	1500	34020	1750	1500	53860	2000	1500	73440	1565	1792	2175	2891	1790	2062	2513	3340
7	1800	1500	40820	2100	1500	64630	2400	1500	88120	1821	2085	2538	3383	2091	2409	2943	3923
8	2100	1500	47620	2450	1500	75410	2800	1500	102810	-	-	-	-	-	-	-	-
9	2400	1500	54430	2800	1500	86180	3200	1500	117500	-	-	-	-	-	-	-	-
3	600	1800	16320	700	1800	25850	800	1800	35250	927	1055	1278	1674	1035	1185	1440	1890
4	900	1800	24490	1050	1800	38780	1200	1800	52870	1224	1398	1688	2210	1386	1593	1931	2533
5	1200	1800	32650	1400	1800	51710	1600	1800	70500	1523	1739	2097	2758	1739	1998	2421	3189
6	1500	1800	40820	1750	1800	64630	2000	1800	88120	1820	2076	2511	3317	2089	2400	2916	3856
7	1800	1800	48980	2100	1800	77560	2400	1800	105750	2116	2418	2938	3883	2440	2806	3424	4531
8	2100	1800	57150	2450	1800	90490	2800	1800	123370	-	-	-	-	-	-	-	-
9	2400	1800	65310	2800	1800	103420	3200	1800	141000	-	-	-	-	-	-	-	-
3	600	2000	18140	700	2000	28720	800	2000	39160	1035	1177	1414	1837	1155	1321	1594	2077
4	900	2000	27210	1050	2000	43090	1200	2000	58750	1368	1557	1867	2422	1548	1773	2137	2782
5	1200	2000	36280	1400	2000	57450	1600	2000	78330	1700	1933	2317	3029	1940	2221	2676	3509
6	1500	2000	45360	1750	2000	71820	2000	2000	97920	2031	2308	2783	3645	2331	2667	3232	4245
7	1800	2000	54430	2100	2000	86180	2400	2000	117500	2361	2696	3254	-	2721	3128	3794	-
8	2100	2000	63500	2450	2000	100540	2800	2000	137080	-	-	-	-	-	-	-	-
9	2400	2000	72570	2800	2000	114910	3200	2000	156670	-	-	-	-	-	-	-	-

SF

SFO



Description

SF: Acoustic baffles

- frame in galvanised steel
- acoustic material in rock wool 50 kg/m³ lined with black glass tissue
- fire-resistance class A1 according to EN 13501-1
- acoustic tests according to ISO EN 11691 standard

Modules

SF1: baffle thickness 100 mm

SF2: baffle thickness 200 mm

SF3: baffle thickness 300 mm (on request)

Special executions

SFV: acoustic material with certificate of hygiene according to VDI 6022 (glass tissue) (list price +10%)

SFR: like SF but with baffles covered with micro-expanded mesh

SFO: like SF but with baffles covered half in galvanised sheet metal with perforated bands for attenuation specifically for 125 Hz

SFOR: like SFO but with baffles lined with micro-expanded mesh

..N: aerodynamic profiles

All prices are list prices for local market, for a quotation please contact us.

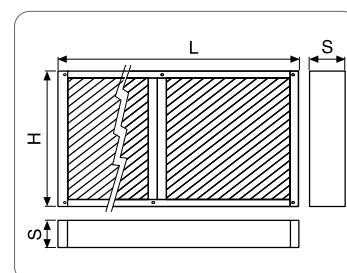
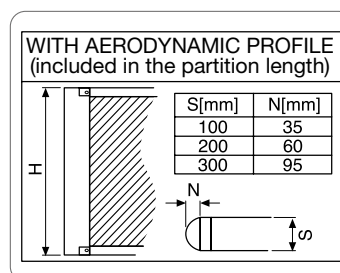
SF1 price list

HxL	400	600	800	1000	1200	1400	1600	1800	2000
200	25	30	38	46	53	64	81	97	114
400	31	39	48	58	68	80	99	118	136
600	40	50	62	73	85	100	121	141	162
800	50	62	75	89	103	119	142	165	188
1000	62	76	92	108	123	142	167	192	217
1200	75	91	108	126	144	165	192	219	246
1400	87	105	125	145	165	187	216	245	274
1600	100	120	142	163	185	210	241	272	303
1800	115	137	161	185	209	236	269	302	335
2000	137	161	187	213	239	268	303	338	373

SF2 price list

HxL	400	600	800	1000	1200	1400	1600	1800	2000
200	37	45	55	65	75	88	107	126	145
400	46	57	70	83	95	111	133	155	177
600	59	73	88	104	119	138	162	187	212
800	71	88	106	125	143	165	192	220	247
1000	87	106	128	149	170	194	225	255	285
1200	103	125	149	173	197	224	257	291	324
1400	118	143	170	197	224	254	290	326	362
1600	134	162	191	221	251	284	323	361	400
1800	152	183	216	248	281	317	358	400	442
2000	177	211	246	282	317	356	400	445	489

SF



Semi-rigid sound attenuator

TAO S-FLEX



Description

TAO S-FLEX: semi-rigid flexible sound attenuator

- the attenuation values indicated refer to L = 1000 with insulation thickness of 50 mm
- bayonet connection with gasket
- construction material: casing in aluminium
- acoustic fibreglass material

All prices are list prices for local market, for a quotation please contact us.

Price list

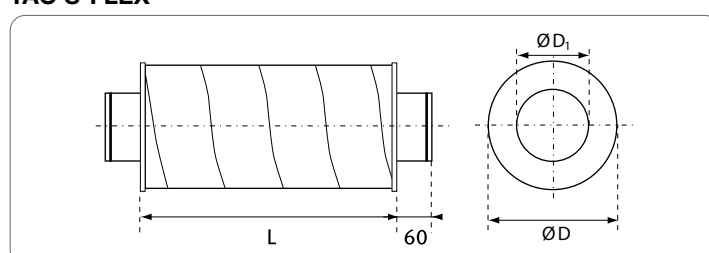
DN	80	100	125	160	200	250	315
€	63	69	75	82	100	119	150

Attenuation table

DN	63	125	250	500	1K	2K	4K	8K
80	5	10	18	32	48	50	50	30
100	3	7	15	26	45	50	45	22
125	3	6	12	20	37	43	29	13
160	2	4	10	18	32	33	21	11
200	1	3	8	17	27	22	14	7
250	1	2	6	19	22	7	9	5
315	1	2	6	17	23	7	10	6

Minimum order €100 net

TAO S-FLEX



SCB



Description

SCB: circular sound attenuator

- galvanised steel casing
- bayonet connection for quick connection to duct
- acoustic material in rock wool 70 Kg/m³ lined with black glass tissue + steel micro-expanded mesh
- fire-resistance: non-combustible
- standard length 600 – 1000 (other lengths on request)
- acoustic data according to ISO 7235
- DN100 / 315 sizes

SCB50: acoustic material th. 50 mm

SCB100: acoustic material th. 100 mm

Special executions:

- made of AISI 304/316 stainless steel

SCB50 Attenuation table

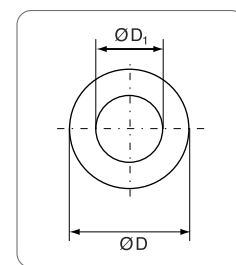
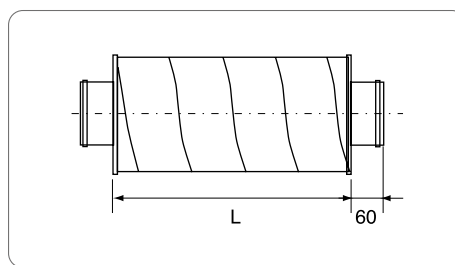
DN	L	Frequencies (Hz)							
		63	125	250	500	1k	2k	4k	8k
100	600	5	8	12	23	35	48	40	21
	1000	5	10	18	32	48	50	50	30
125	600	2	4	9	19	33	43	35	13
	1000	3	7	15	26	45	50	45	22
160	600	2	4	7	15	28	34	17	8
	1000	3	6	12	20	37	43	29	13
200	600	1	3	7	14	25	23	16	10
	1000	2	4	10	18	32	33	21	11
250	600	1	2	5	12	16	13	8	4
	1000	1	3	8	17	27	22	14	7
315	600	-	1	4	11	14	10	5	3
	1000	1	2	6	16	22	17	9	5

All prices are list prices for local market, for a quotation please contact us.

Price list

DN	L	SCB50	SCB100
100	600	87	Prices on request
	1000	102	
125	600	90	
	1000	107	
160	600	97	
	1000	117	
200	600	107	
	1000	131	
250	600	119	
	1000	149	
315	600	132	
	1000	173	

SCB



SCB100 Attenuation table

DN	L	Frequencies (Hz)							
		63	125	250	500	1k	2k	4k	8k
100	600	4	13	17	27	36	18	34	8
	1000	6	20	30	48	50	50	50	11
125	600	3	10	15	25	32	34	25	8
	1000	5	15	25	43	50	50	41	11
160	600	3	7	12	20	26	28	18	9
	1000	4	10	20	36	45	47	27	14
200	600	3	6	11	19	22	20	11	12
	1000	5	10	20	33	40	35	18	19
250	600	4	8	15	24	27	21	11	20
	1000	4	8	16	27	31	24	12	20
315	600	1	4	10	16	19	9	3	1
	1000	2	7	16	27	31	16	4	1

N.B.: versions up to DN500

Afonic transit grille

WGZD-WGZC



Description

WGZ: Afonic transit grille to decrease the noise transmitted between two rooms

WGZD...: double execution (depth from 40 to 110 mm)

WGZC...: single execution (depth from 52.5 to 122.5 mm)

- execution with aluminium frame and painted aluminium blades standard RAL 9010
- fastening with visible screws (not included)

WGZDDO and WGZCDO attenuation in dB

		FREQUENCIES (Hz)							
		65	125	250	500	1K	2K	4K	8K
DEPTH	40mm	8	9	6	6	12	22	23	21
	110mm	8	10	7	11	15	26	24	22

Pressure drop with front velocity of:

V= 0.5 m/s: 6 Pa | V= 0.8 m/s: 16 Pa | V= 1.0 m/s: 25 Pa

(V= referring to LxH)

All prices are list prices for local market, for a quotation please contact us.

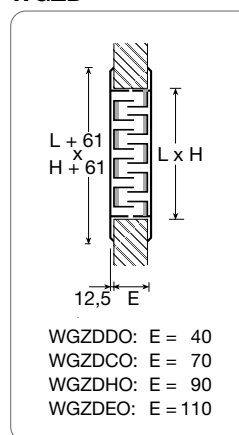
WGZDDO / WGZCDO price list

H/L	225	325	425	525	625	825	1025
110	156	207	266	275	323	411	502
190	202	244	293	315	356	447	537
270	235	284	317	341	396	484	570
350	286	323	345	385	491	592	697
430	328	361	372	411	530	634	737
510	378	385	444	455	576	682	779

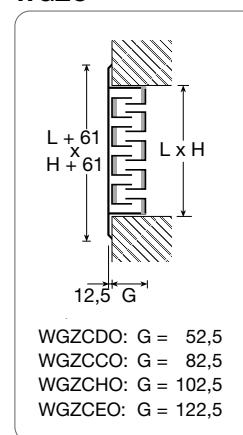
Delivery: 3 weeks / minimum billing amount €150 net

I Models not indicated +35%

WGZD



WGZC



GF14



Description

GF14: Acoustic louver, pitch 100

- galvanised steel frame, flange and blades
- acoustic material in rock wool 100 kg/m³ protected with black glass tissue micro-expanded mesh
- acoustic tests according to ISO EN 11691 standard

GF28: like GF14 but in double execution (GF14 multiplied x2)

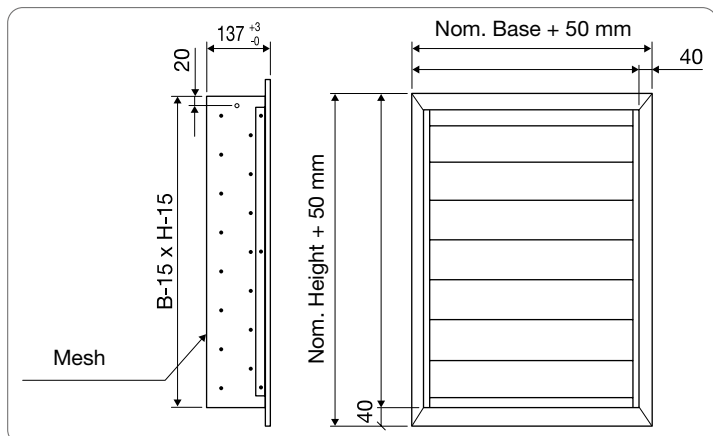
GF14A: like GF14 but in natural aluminium

GF28A: like GF14A but in double execution (GF14A multiplied x 2)

Special versions

- mesh (list price +5%)
- without flange
- in series with connection kit (module +5%)

Dimensions



All prices are list prices for local market, for a quotation please contact us.

GF14 price list

H/L	300	500	600	800	1000	1200	1400	1500	1600	1700
300	227	273	295	340	386	431	476	499	521	544
400	252	299	322	369	416	462	509	532	556	579
500	277	325	349	397	446	494	542	566	590	614
600	302	351	376	426	476	525	575	600	625	649
700	326	378	403	454	506	557	608	634	659	685
800	351	418	451	518	585	652	718	752	785	818
1000	401	483	525	607	690	772	855	896	937	979
1200	450	547	596	693	790	887	985	1033	1082	1130
1300	475	582	635	742	849	956	1063	1117	1170	1223
1400	499	616	675	792	910	1027	1145	1203	1262	1321
1500	525	651	714	841	967	1094	1220	1283	1346	1410

GF14A price list

H/L	300	500	600	800	1000	1200	1400	1500	1600	1700
300	296	354	384	443	501	560	619	648	677	707
400	328	389	419	480	540	601	662	692	722	753
500	360	423	454	517	579	642	705	736	767	798
600	392	457	489	554	618	683	747	780	812	844
700	424	491	524	591	657	724	790	824	857	890
800	456	543	587	673	760	847	934	977	1021	1064
1000	521	628	682	789	897	1004	1111	1165	1219	1272
1200	585	712	775	901	1027	1154	1280	1343	1406	1469
1300	618	757	826	965	1104	1243	1382	1451	1521	1590
1400	648	801	877	1030	1183	1335	1488	1564	1641	1717
1500	682	846	929	1093	1257	1422	1586	1668	1750	1833

Pressure drop

V (m/s)	Δpt (Pa)
1.0	4
1.5	10
2.0	18
2.5	26
3.0	34

Attenuation

Type	Frequencies (Hz)						
	125	250	500	1k	2k	4k	8k
GF14	4	6	7	11	14	12	12
GF28	6	10	12	19	25	21	20

V (m/s): velocity referring to section (B-15)x(H-115)

V= 3 m/s is the maximum acceptable velocity to have the rainproof feature of the grille.

Pressure drop double version= x2.2

GF3



Description

GF3: Acoustic louver

- galvanised steel frame, flange and blades
- acoustic material in rock wool 50 kg/m³ protected with black glass tissue micro-expanded mesh
- acoustic tests according to ISO EN 11691 standard

GF6: like GF3 but in double execution (GF3 multiplied x2)

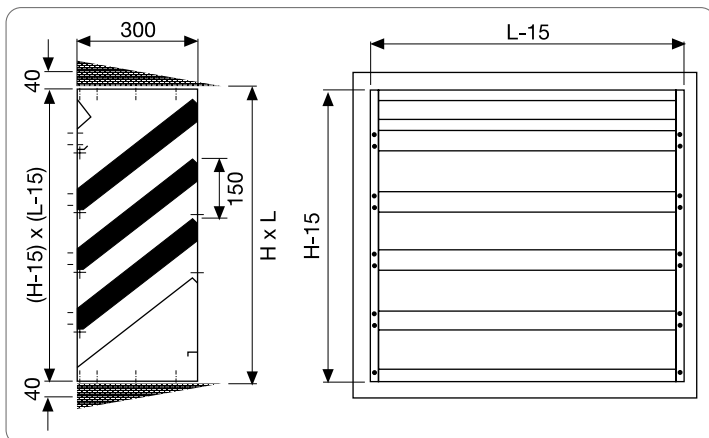
GF3A: like GF3 but in natural aluminium

GF6A: like GF3A but in double execution (GF3A multiplied x2)

Special versions

- mesh (list price +5%)
- without flange
- in series with connection kit (module +5%)

Dimensions



All prices are list prices for local market, for a quotation please contact us.

GF3 price list

H/L	300	600	900	1200	1500	1650	1800	1950	2100	2250
450	278	337	395	453	512	541	570	599	628	658
600	318	396	474	553	631	670	709	749	788	827
750	357	455	554	652	751	800	849	898	947	997
900	396	515	633	752	870	929	989	1048	1107	1166
1050	435	574	712	851	990	1059	1128	1198	1267	1337
1200	474	627	792	951	1109	1188	1268	1347	1426	1505
1350	513	693	871	1050	1229	1318	1407	1497	1586	1676
1500	552	752	950	1149	1348	1447	1547	1646	1746	1846
1650	592	811	1029	1249	1468	1577	1686	1796	1906	2016
1800	631	870	1109	1348	1587	1707	1826	1946	2065	2185
1950	670	929	1188	1447	1707	1836	1966	2095	2225	2355

GF3A price list

H/L	300	600	900	1200	1500	1650	1800	1950	2100	2250
450	359	431	502	573	645	670	717	752	788	823
600	407	507	606	705	804	839	903	953	1002	1052
750	457	583	710	837	963	1008	1090	1153	1217	1280
900	505	659	814	968	1122	1176	1276	1354	1431	1508
1050	554	736	918	1100	1281	1345	1464	1554	1645	1736
1200	603	812	1022	1231	1441	1514	1650	1755	1859	1964
1350	652	889	1126	1363	1600	1682	1837	1955	2074	2192
1500	701	965	1230	1495	1759	1851	2023	2156	2288	2420
1650	749	1041	1334	1626	1918	2019	2210	2356	2502	2649
1800	798	1118	1438	1758	2077	2188	2397	2557	2717	2877
1950	847	1195	1542	1889	2236	2357	2584	2757	2931	3087

Pressure drop

V (m/s)	Δpt (Pa)
1.0	7
1.5	16
2.0	28
2.5	46
3.0	66

Attenuation

Type	Frequencies (Hz)							
	63	125	250	500	1k	2k	4k	8k
GF3	3	6	8	10	14	18	16	16
GF6	5	8	14	16	26	33	30	30

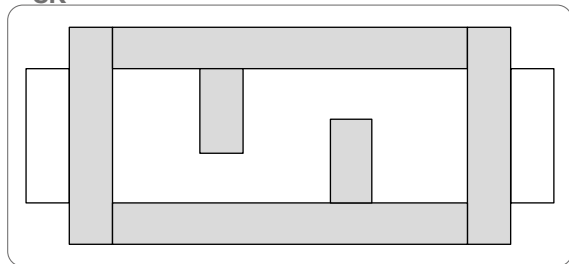
■ : assumed data

V (m/s): velocity referring to section (B-35)x(H-215)

V= 3 m/s is the maximum acceptable velocity to have the rainproof feature of the grille.

Pressure drop double version= x2.2

SK



Description

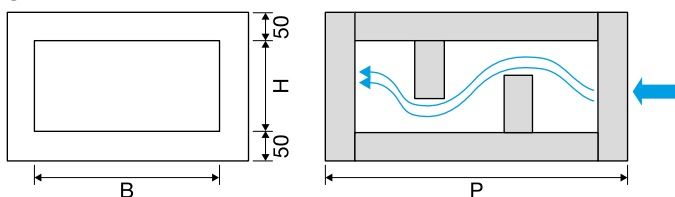
SK: highly efficient sound attenuator at low frequencies, consisting of galvanised steel casing

- inner lining with acoustic rock wool material
- inner lining and acoustic baffles th. 50 mm, in rock wool, 60 Kg/m³ density, lined with VDI 6022 glass tissue

SK-C: like SK but with circular input-output connections, (list price +€40)

Dimensions

SK



SK-C

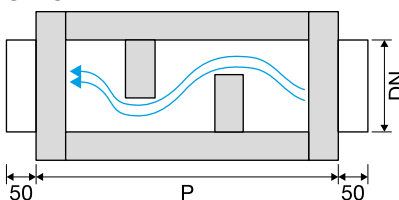


Table of depth attenuation 1000 SK series

B	x	H	Hz	63	125	250	500	1k	2k	4k	8k
400	x	250	dB	6	16	28	40	46	44	35	21
500	x	300	dB	5	14	27	39	44	42	33	21
600	x	300	dB	4	13	26	38	44	42	33	21
800	x	300	dB	4	13	26	38	44	42	33	21
1000	x	300	dB	3	12	25	37	44	42	33	21

Table of depth attenuation 1000 SK-C series

Inlet diameter		Hz	63	125	250	500	1k	2k	4k	8k
Ø	100	dB	7	21	35	50	50	50	46	26
Ø	125	dB	6	19	34	49	48	48	44	24
Ø	160	dB	6	18	33	48	48	48	44	24
Ø	200	dB	4	17	32	47	48	48	44	24

Table of depth attenuation 500 SK series

B	x	H	Hz	63	125	250	500	1k	2k	4k	8k
400	x	250	dB	4	8	15	20	22	21	17	11
500	x	300	dB	3	7	14	19	21	20	16	11
600	x	300	dB	3	7	13	18	21	20	16	11
800	x	300	dB	3	7	13	18	21	20	16	11
1000	x	300	dB	2	6	12	17	21	20	16	11

Table of depth attenuation 500 SK-C series

Inlet diameter		Hz	63	125	250	500	1k	2k	4k	8k
Ø	100	dB	4	8	15	20	22	21	17	11
Ø	125	dB	3	7	14	19	21	20	16	11
Ø	160	dB	3	7	13	18	21	20	16	11
Ø	200	dB	2	6	12	17	21	20	16	11

Dimensions, Selection table and price list

Base (mm)	Height (mm)	Depth (mm)	Flow rate (m ³ /h)	Δp (Pa)	€
400	250	500	1000	40	160
500	300		1600		170
600	300		1900		180
800	300		2500		200
1000	300		3200		250

N.B: the values indicated at front velocity of 3 m/s.

Δp (Pa): for lengths of 1000x1.5 mm

Introduzione

Uno degli aspetti fondamentali nella realizzazione degli impianti di condizionamento è il controllo del livello sonoro. Questo dato varia in funzione del locale considerato ed è influenzato da diverse variabili come la rumorosità della centrale di trattamento aria ed i vari componenti in campo.

La tabella sotto riportata indica alcuni valori raccomandati per diversi ambienti.

Tipi di ambiente	dB(A)
banca	30 – 40
libreria	25 – 35
cinema	30 – 35
auditorium	20 – 30
industrie	50 – 70
palestre e palazzi sport	35 – 50
hall	40 – 45
camere albergo	30 – 35
uffici privati	35 – 40
open space	40 – 50
laboratori	35 – 40
camere operatorie	35 – 40
uffici postali	40 – 45
studio radiofonico	20 – 25
ristorante	40 – 45

Terminologia

Ci sono in acustica alcuni termini comunemente usati.

Frequenza

È fisicamente il numero delle variazioni di pressione sonora in un secondo; l'unità di misura è l'hertz (Hz).

Decibel

In considerazione dell'enorme ampiezza dell'intensità sonora espressa in W (da 10⁻¹² a 10⁶), si è scelta un'unità logaritmica che riesce con sole 2 o 3 cifre a rappresentare un valore di riferimento: questa unità di misura si chiama decibel (dB).

È una parte di energia emessa dalla fonte sonora sotto forma di onde di pressione che si propagano nell'aria; il livello di potenza sonora è un dato assoluto che non può venire modificato da cause esterne ma non può essere percepito direttamente ed infatti al nostro orecchio o allo strumento di misura si manifesta attraverso il livello di pressione sonora. L'unità di misura del livello di potenza sonora è il decibel (dB).

Livello di pressione sonora (Lp)

È praticamente la scomposizione per frequenza del rumore che sente il nostro orecchio ed è la trasformazione del valore assoluto della potenza sonora dovuta a varie componenti come la distanza o gli ostacoli.

Partendo da un valore fisso di potenza sonora, è implicito che il livello di pressione sonora diminuisca all'aumentare della superficie che viene interessata dal fenomeno di propagazione e se questo avviene all'aperto esistono delle formule logaritmiche che ci permettono, in funzione del valore comunicato, di potere calcolare quello mancante.

La situazione cambia e diventa più complessa quando si deve capire che rumorosità residua ci sarà in ambiente visto che questo valore cambia in funzione di molti fattori.

Le principali variabili sono:

- la fonte di rumore (ventilatore);
- la geometria del circuito dei canali non dimenticando che il tratto rettilineo abbatte alle basse frequenze, le curve abbattano alle medio alte frequenze e le diramazioni abbattano in modo costante su tutto lo spettro;
- il tipo di terminale e il suo punto di installazione;
- il tipo di locale.

Per semplicità, dedicheremo la parte finale alle tabelle relative agli smorzamenti sopra descritti.

Occorre puntualizzare che le norme per la misura del rumore prevedono delle tolleranze che variano da 1 a 3 dB in funzione della frequenza e che normalmente i dati hanno una tolleranza accettata di 2/3 dB.

Decibel A

Questo valore è la sensazione reale del rumore ed è un valore che tiene conto della sensibilità del nostro orecchio alle varie frequenze.

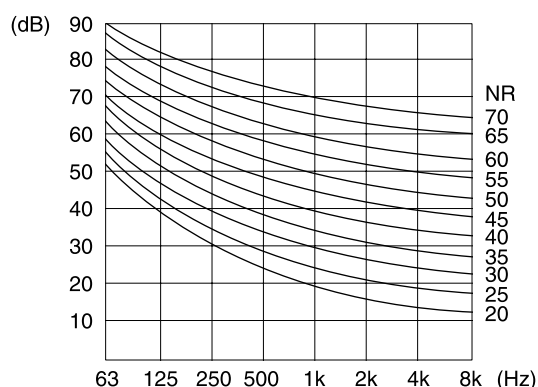
Per tenere conto di questa caratteristica sono state introdotte tre curve di correzione che modificano quindi il valore puro misurato dal fonometro rendendolo simile alla percezione umana.

Tra queste curve quella universalmente utilizzata è la curva A e il livello sonoro in questo caso è indicato come $L_w(A)$ o $L_p(A)$ e l'unità di misura diventa dB(A).

Curve NR (Noise Ratings)

Sono le curve elaborate dall'ISO e identificano i valori di rumore alle varie frequenze entro i quali viene attribuito un unico valore.

Il valore indicativo dalla curva è il corrispondente rumore a 1000 Hz.



Tempo di riverberazione

È il tempo necessario per il decadimento di 60 dB del rumore rispetto al valore misurato prima dello spegnimento della sorgente sonora.

Varia in funzione della geometria del locale e del tipo di costruzione più o meno assorbente o riverberante del locale.

Somma di rumori

In acustica i rumori non si sommano in modo aritmetico ma per differenza tra valori. Di seguito la tabella per la sommatoria di rumori.



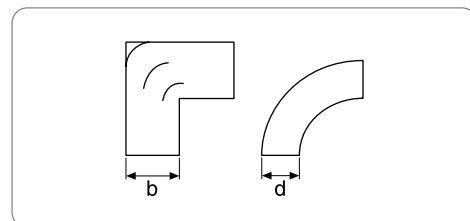
Geometria circuiti

Canale liscio rettangolare

Dim. Maggiore (mm)	63	125	250	500	oltre 500
75 - 200	0,6	0,6	0,4	0,3	0,3
200 - 400	0,6	0,6	0,4	0,3	0,2
400 - 800	0,6	0,6	0,3	0,15	0,15
800 - 1600	0,45	0,3	0,15	0,1	0,06

Curva arrotondata o con deflettori

b o d (m)	63	125	250	500	1000	2000	4000
0,1	-	-	-	-	1	2	3
0,25	-	-	-	1	2	3	3
0,5	-	-	1	2	3	3	3
1,0	-	1	2	3	3	3	3

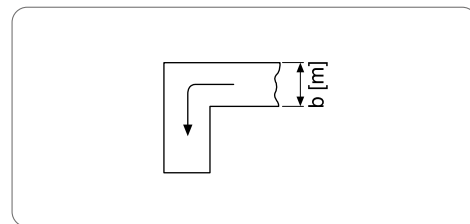


Smorzamento di uscita

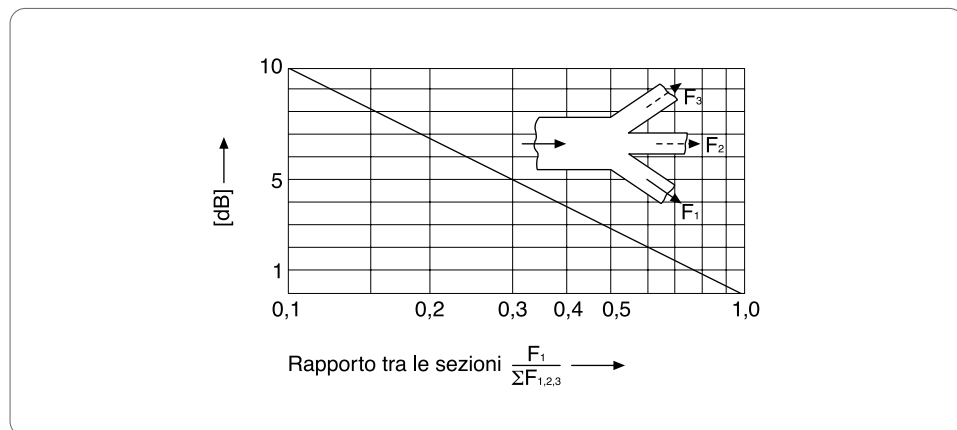
Sezione libera F (m²)	63	125	250	500	1000
0,01	19	15	10	6	2
0,015	18	13	9	5	
0,02	17	12	8	4	
0,03	16	11	7	3	
0,04	15	10	6	2	
0,05	14	9	5		
0,06	13	9	4		
0,08	12	8	4		
0,1	12	8	3		
0,15	11	7	2		
0,2	10	6	2		
0,3	9	5			
0,4	8	4			
0,5	7	3			
0,6	6	3			
0,8	5	2			
1,0	5	2			
1,5	4				
2,0	3				

Curva a 90°

b o d (m)	63	125	250	500	1000	2000	4000
0,1	-	-	-	-	1	2	3
0,25	-	-	-	1	2	3	3
0,5	-	-	1	2	3	3	3
1,0	-	1	2	3	3	3	3

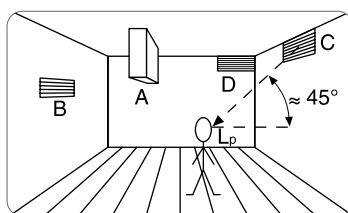


Diramazione



Tipo di terminale - punto di installazione - tipo di locale

Installazione



- A) Q = 1
B) Q = 4
C) Q = 2
D) Q = 8

Diagramma 2

Superficie di attenuazione ambiente equivalente A(m²)

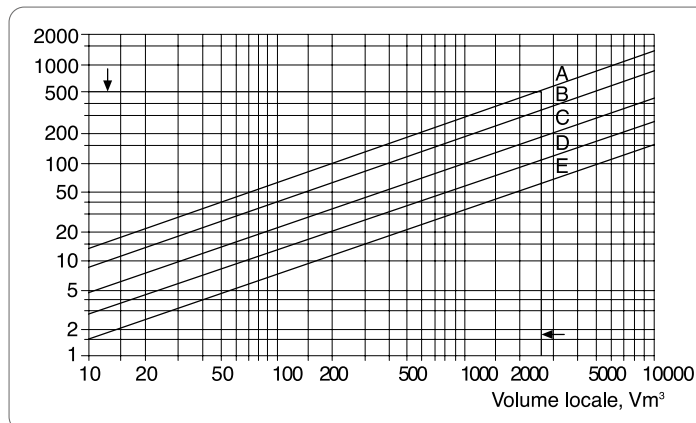
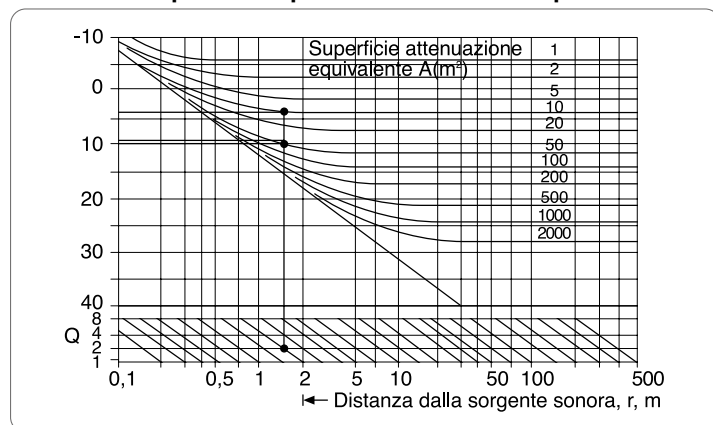


Diagramma 1

Differenza tra potenza e pressione sonora Lw-Lp in dB



- A) locale molto attenuante $\alpha m = 0,40$
B) locale attenuante $\alpha m = 0,25$
C) locale normale $\alpha m = 0,15$
D) locale duro $\alpha m = 0,10$
E) locale molto duro $\alpha m = 0,05$

- il diagramma 1 serve per valutare il rumore residuo in ambiente il Δ tra Lw e Lp rappresenta l'autosmorzamento ambiente
- il diagramma 2 serve per valutare la superficie di attenuazione equivalente

PORTATA				
	m³/s	l/s	m³/h	cfm
m³/s	1	10³	3600	2119
l/s	10 ⁻³	1	3,6	2,119
m³/h	0,2778 * 10 ⁻³	0,2778	1	0,5886
cfm	0,4720 * 10 ⁻³	0,472	1,699	1

PRESSIONE						
	Pa (N/m²)	bar	mbar	atm	mmH ₂ O	psi
Pa (N/m²)	1	1*10 ⁻⁵	1*10 ⁻²	9,87*10 ⁻⁶	0,102	1,45*10 ⁻⁴
bar	1*10 ⁵	1	1*10 ³	0,987	1,02*10 ⁴	14,5
mbar	100	1*10 ⁻³	1	9,87*10 ⁻⁴	10,2	1,45*10 ⁻²
atm	1,01*10 ⁵	1,013	1013	1	1,03*10 ⁴	14,7
mmH ₂ O	9,81	9,81*10 ⁻⁵	9,81*10 ⁻²	9,68*10 ⁻⁵	1	1,42*10 ⁻³
psi	6,89*10 ³	6,89*10 ⁻²	68,9	6,8*10 ⁻²	702	1

SCALA TERMOMETRICA "CELSIUS o CENTIGRADA / FAHRENAHEIT"																
°C = (°F - 32) / 1,8	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	
°F = (1,8 * °C) + 32	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	

TEMPERATURA
°C = (°F - 32) / 1,8
°F = (1,8 * °C) + 32

VELOCITÀ		
	m/s	fpm
m/s	1	196,9
fpm	5,080*10 ⁻³	1

POTENZA						
	W	kW	kcal/h	CV	hp	Btu/h
W	1	1*10 ⁻³	0,86	1,36*10 ⁻³	1,341*10 ⁻³	3,413
kW	1000	1	860	1,36	1,341	3413
kcal/h	1,163	1,163*10 ⁻³	1	1,581*10 ⁻³	1,56*10 ⁻³	3,968
CV	735,499	0,7355	632	1	0,9863	2512
hp	745,7	7,457*10 ⁻²	641	1,0139	1	2544
Btu/h	0,293	2,93*10 ⁻⁴	0,252	3,98*10 ⁻⁴	3,63*10 ⁻⁴	1

LUNGHEZZA					
	mm	m	in	ft	yd
mm	1	1*10 ⁻³	0,0397	3,281*10 ⁻³	1,094*10 ⁻³
m	1000	1	39037	3,281	1,0936
in	25,4	0,0254	1	0,0833	0,02778
ft	304,8	0,3048	12	1	0,333
yd	914,4	0,9144	36	3	1

SUPERFICIE				
	mm²	m²	in²	ft²
mm²	1	1*10 ⁻⁶	1,55*10 ⁻³	1,07*10 ⁻⁵
m²	1.000.000	1	1550	10,76
in²	645,16	6,45*10 ⁻⁴	1	6,944*10 ⁻³
ft²	92903	0,0929	144	1

VOLUME					
	m³	l	in³	ft³	gal (USA)
m³	1	1000	61023,4	35,314	264,2
l	1*10 ⁻³	1	61,023	0,03531	0,264
in³	1,63*10 ⁻⁵	0,01639	1	5,78*10 ⁻⁴	4,329*10 ⁻³
ft³	0,02832	28,3168	1728	1	7,481
gal (USA)	3,785*10 ⁻³	3,7854	231	0,13366	1

CAPACITÀ			
	l	gal (USA)	pint (USA)
l	1	0,264178	2,11342
gal (USA)	3,785332	1	8
pint (USA)	0,473167	0,125	1

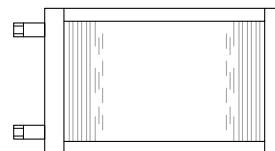
TABELLA DI FORATURA E FILETTATURA											
Vite passo MA (mm)	2	2,5	3	4	5	6	8	10	12	14	16
Foro per filettare (mm)	1,6	2,05	2,5	3,25	4,25	5	6,75	8,5	10,25	12	14



BMVK
Compact single duct VAV
boxes
PAGE 1



BMV
Single duct VAV
boxes
PAGE 2



BAC
Hot water coils
for BMV
PAGE 3



RPRT
Rectangular
VAV units
PAGE 4



RCV
Circular
VAV units
PAGE 4



RCC
Circular CAV units
PAGE 5



RCR
Rectangular CAV units
PAGE 6



RED
Circular CAV units
PAGE 7

Accessories

VAV
actuators
PAGE 8

BMVK



Description

- BMVK:** single duct box with variable flow in compact version
- casing in galvanised steel suitable for tie rod assembly
 - Leakage damper according to DIN 1946/4 - Class 4 EN 1751
 - Acoustic double-density rock wool material lined with black glass veil, fire-resistance M0; A1 according to EN 13501-1
 - dynamic Δp probe for measuring and maintaining the required flow rate
 - operating range from 20 to 1500 Pa
 - flow adjustment and control with dedicated compact VAV actuator
 - acoustic tests according to UNI EN 23741

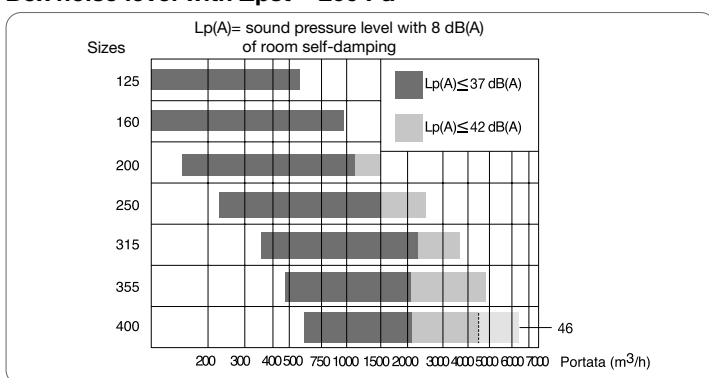
Accessories

- BAC2RR:** water post-heating coil (page 3)
BAE: electric post heating coil (on request)
SA: additional sound attenuator
SA-HY OSPEDALIERO: additional airtight sound attenuator with VDI 6022 glass tissue cover
RF: wire equaliser for assembly near curve or junction box (on request)

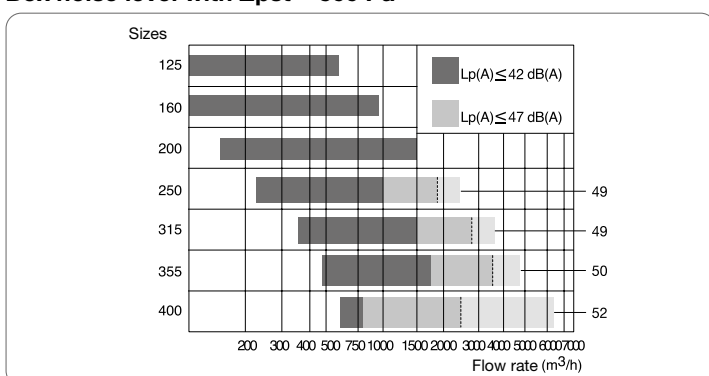
Executions

- BMVKB:** with Belimo actuator LMV-D3-MP
BMVKB LON: with Belimo actuator LMV-D3-LON
BMVKBMOD: with Belimo actuator LMV-D3-MOD
BMVKS M: with Siemens actuator GDB181.1E/3
BMVK...JH: with JOHNSON CONTROLS actuator with integrated DDC controller (BACnet MS/TP) - F4-CVM
BMVK...STE: with Sauter actuator
BMVK...LL: with HONEYWELL actuator with integrated controller
BMVK...HY: made with VDI 6022 certified hygienic standard acoustic material line with glass tissue
BMVK...CP: to check room or duct pressure (on request)
BMVK...I: double casing (B+100 x H+100)
BMVK...A: execution for return (price same as supply)
BMVK...R: with micro-expanded mesh (on request)
BMVK...: with fast actuator (on request)

Box noise level with $\Delta p_{st} = 200$ Pa



Box noise level with $\Delta p_{st} = 500$ Pa



All prices are list prices for local market, for a quotation please contact us.

Price list

DN TYPE	BMVK... B	BMVK... HY B	BMVK... I B	BMVK... SM	BMVK... HY SM	BMVK... I SM	SA	SA-HY HOSP.
125	559	573	695	573	587	710	207	248
160	599	615	751	613	629	765	207	248
200	675	695	867	689	709	881	266	319
250	739	763	965	753	777	979	266	319
315	821	849	1086	835	863	1100	321	385
355	896	928	1216	910	942	1230	321	385
400	979	1015	1341	993	1029	1355	389	467

Execution in 304 stainless steel = x 2

Execution in 316 stainless steel = x 2.5

N.B.: when ordering, indicate the signal type 0-10 (0=min / 10=max) or 2-10 (2=min / 10=max) minimum and maximum volume control

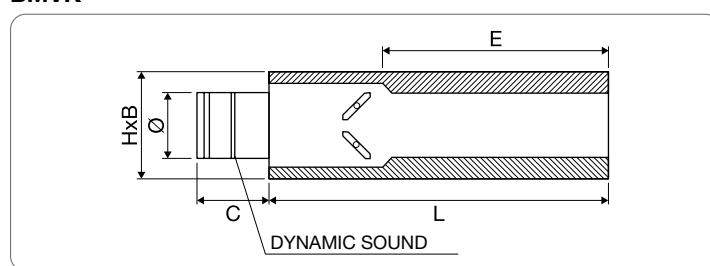
Rapid selection

DN	Flow rate m³/h		Δp_{st} min of operation	
	max	min	Pa	
125	570	60	80	20
160	950	100	80	20
200	1530	150	80	20
250	2300	230	80	20
315	3650	360	80	20
355	4800	480	80	20
400	6300	630	80	20

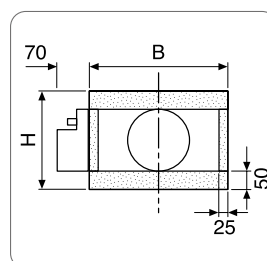
BMVK dimensions

\varnothing (mm)	B (mm)	H (mm)	L (mm)	E (mm)	C (mm)
125	250	260	750	470	160
160	350	260	750	470	175
200	530	260	850	520	185
250	530	360	900	570	225
315	750	360	900	570	285
355	750	460	1050	720	325
400	950	460	1050	720	375

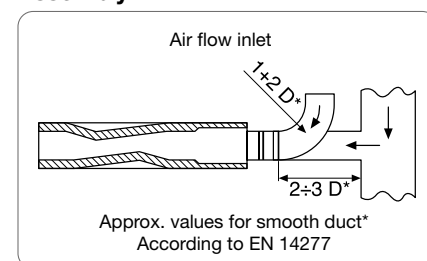
BMVK



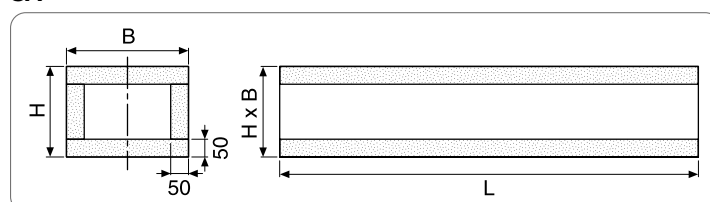
BMVK



Assembly



SA



Additional sound attenuator

L= 900 up to GR 200

L= 1200 from GR 250

Single duct VAV boxes

BMV



Description

BMV: single duct variable flow box

- casing in galvanised steel suitable for tie rod assembly
- Leakage damper according to DIN 1946/4 - Class 4 EN 1751
- Acoustic double-density rock wool material lined with black glass veil, fire-resistance M0; A1 according to EN 13501-1
- dynamic Δp probe for measuring and maintaining the required flow rate
- operating range from 20 to 1500 Pa
- flow adjustment and control with dedicated compact VAV actuator
- acoustic tests according to UNI EN 23741

Accessories

BAC2RR: water post-heating coil (page 3)

BAE: electric post heating coil (on request)

SA: additional sound attenuator

SA-HY OSPEDALIERO: additional airtight sound attenuator with VDI 6022 glass tissue cover

RF: wire equaliser for assembly near curve or junction box (on request)

Executions

BMVB: with Belimo actuator LMV-D3-MP

BMVLON: with Belimo actuator LMV-D3-LON

BMVBMOD: with Belimo actuator LMV-D3-MOD

BMVSM: with Siemens actuator GDB181.1E/3

BMV...JH: with JOHNSON CONTROLS actuator with integrated DDC controller (BACnet MS/TP) - F4-CVM

BMV...STE: with Sauter actuator

BMV...LL: with HONEYWELL actuator with integrated controller

BMV...HY: made with VDI 6022 certified hygienic standard acoustic material line with glass tissue

BMV...CP: to check room or duct pressure

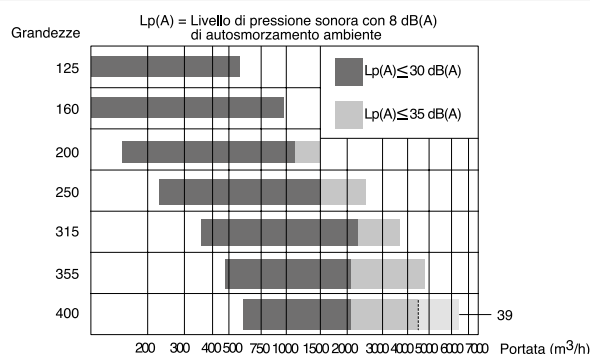
BMV...I: double casing (B+100 x H+100)

BMV...A: execution for return (price same as supply)

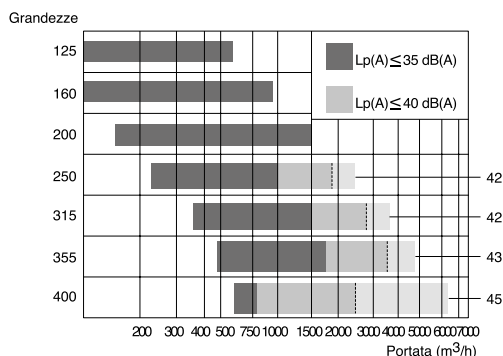
BMV...R: with micro-expanded mesh

BMV... : with fast actuator (on request)

Box noise level with $\Delta p_{st} = 200$ Pa



Box noise level with $\Delta p_{st} = 500$ Pa



All prices are list prices for local market, for a quotation please contact us.

Price list

DN TYPE	BMV... B	BMV... HY B	BMV... I B	BMV... SM	BMV... HY SM	BMV... I SM	SA	SA-HY HOSP.
125	676	696	871	690	711	885	207	248
160	733	756	950	747	770	965	207	248
200	841	870	1116	855	885	1130	266	319
250	933	967	1257	947	981	1271	266	319
315	1050	1090	1429	1064	1105	1443	321	385
355	1157	1203	1614	1171	1217	1629	321	385
400	1276	1328	1793	1290	1342	1808	389	467

Execution in 304 stainless steel = x 2

Execution in 316 stainless steel = x 2.5

N.B.: when ordering, indicate the signal type 0-10 (0=min / 10=max) or 2-10 (2=min / 10=max) minimum and maximum volume control

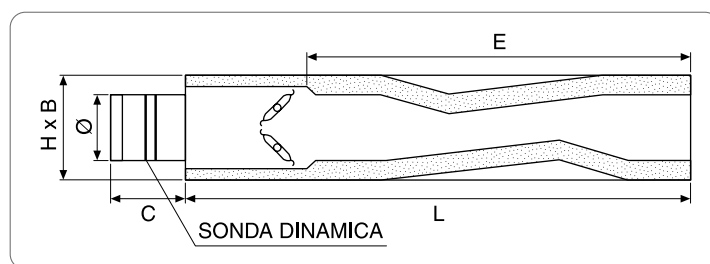
Rapid selection

DN	Flow rate m³/h		Δp_{st} min of operation	
	max	min	Pa	
125	570	60	80	20
160	950	100	80	20
200	1530	150	80	20
250	2300	230	80	20
315	3650	360	80	20
355	4800	480	80	20
400	6300	630	80	20

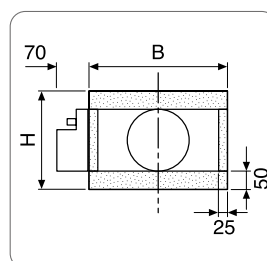
BMV dimensions

\emptyset (mm)	B (mm)	H (mm)	L (mm)	E (mm)	C (mm)
125	250	260	1200	920	150
160	350	260	1200	920	180
200	530	260	1400	1070	200
250	530	360	1500	1170	250
315	750	360	1500	1170	310
355	750	460	1800	1470	350
400	950	460	1800	1470	400

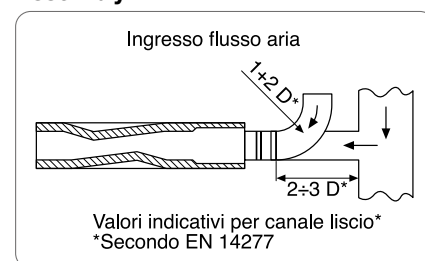
BMV



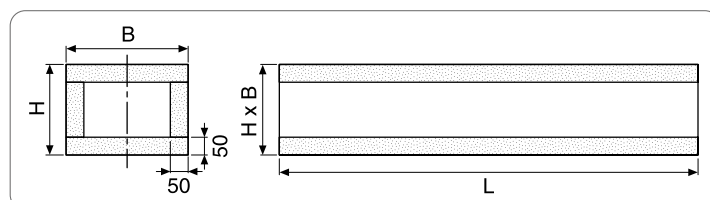
BMV



Assembly



SA



Additional sound attenuator

L= 900 up to GR 200

L= 1200 from GR 250

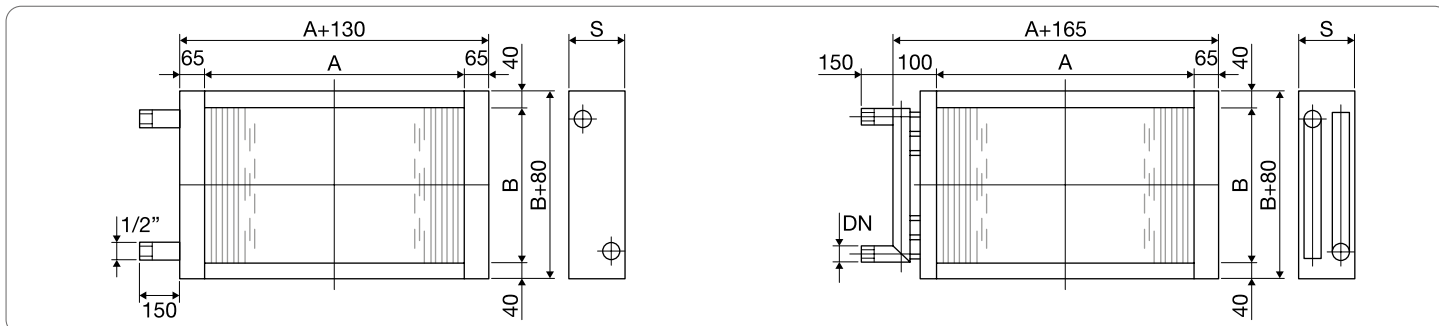
POST HEATING COIL FOR VAV

Description

Hot water coil

- casing in galvanised steel
- copper piping
- aluminium blades

Dimensions



Selection table and price list

All prices are list prices for local market, for a quotation please contact us.

Size VAV	40 % nominal				80 % nominal		Water flow rate (l/s)	Ti water (°C)	To water (°C)	Δp Water (kPa)	Power (kW)	Ø water	AxB (mm)	S (mm)	Dim. Outer flange	Type coil pitch	List price €
	Air flow rate (m³/h)	Air Ti (°C)	Air To (°C)	Δp 1 air (Pa)	Δp 2 air (Pa)	Air flow rate (m³/h)											
125	230	16	32	28	112	460	0.03	75	65	0.3	1.26	1/2"	200x160	130	330x240	P40 16 2R	365
			32	34	136		0.03	60	50	0.3	1.26	1/2"		130	330x240	P40 16 2R	294
			32	80	320		0.03	45	35	0.5	1.26	1/2"		220	330x240	P40 16 5R	489
160	380	16	32	23	92	760	0.05	75	65	0.5	2.08	1/2"	300x160	100	430x240	P40 16 1R	346
			32	40	160		0.05	60	50	0.8	2.08	1/2"		130	430x240	P40 16 2R	384
			32	77	308		0.05	45	35	1.3	2.08	1/2"		190	430x240	P40 16 4R	481
200	610	16	32	22	88	1230	0.08	75	65	1.3	3.34	1/2"	480x160	100	610x240	P40 16 1R	365
			32	34	136		0.08	60	50	2	3.34	1/2"		130	610x240	P40 16 2R	406
			32	78	312		0.08	45	35	3.5	3.34	1/2"		190	610x240	P40 16 4R	526
250	920	16	32	22	88	1850	0.12	75	65	4	5.03	1/2"	480x240	100	610x320	P60 16 2R	432
			32	27	108		0.12	60	50	5.6	5.03	1/2"		130	610x320	P60 16 3R	474
			32	51	204		0.12	45	35	8.7	5.03	1/2"		190	610x320	P60 16 5R	608
315	1460	16	32	25	100	2950	0.2	75	65	10.6	7.99	1/2"	700x240	100	830x320	P60 16 1R	485
			32	30	120		0.2	60	50	14.9	7.99	1/2"		130	830x320	P60 16 3R	533
			32	59	236		0.2	45	35	23.6	7.99	1/2"		190	830x320	P60 16 5R	702
355	1920	16	32	12	48	3850	0.26	75	65	30	10.5	1/2"	700x360	100	830x440	P60 16 2R	522
			32	18	72		0.26	60	50	30	10.5	1/2"		100	830x440	P60 16 2R	548
			32	48	192		0.26	45	35	30	10.5	1"		190	805x440	P60 16 5R	937
400	2520	16	32	17	68	5050	0.34	75	65	30	13.78	1"	900x360	100	1005x440	P60 16 2R	642
			32	19	76		0.34	60	50	30	13.78	1"		100	1005x440	P60 16 2R	657
			32	49	196		0.34	45	35	30	13.78	1"		190	1005x440	P60 16 5R	1038

Key:

Air Ti: air inlet temperature

Air To: air output temperature

Air Δp1: air side pressure drop at a flow rate of 40% of the nominal rate

Air Δp2: air side pressure drop at a flow rate of 80% of the nominal rate

Ti water: water inlet temperature

Water Tu: water outlet temperature

Power: power in kW

AxB: coil air passage

S: coil depth

RPRT



Description

- RPRT:** rectangular VAV units
- casing in galvanised steel
 - aluminium damper DIN 1946/4 and according to EN 1751 Class 4
 - dynamic Δp probe for measuring and maintaining the required flow rate
 - operating range from 20 to 1000 Pa
 - flow adjustment and control with dedicated compact VAV actuator
 - acoustic tests according to UNI EN 25135

Accessories

Additional rectangular sound attenuator with 100 mm thick baffles; in this case the length of the baffles will be L 1000 – 200 mm

Assembly:

- install a straight section of duct upstream with the same size as the VAV unit and a length equal to 2 ÷ 3 times the largest dimension

Executions

- RPRT-B:** with Belimo actuator LMV-D3-MP
RPRT-BLON: with Belimo actuator LMV-D3-LON
RPRT-BMOD: with Belimo actuator LMV-D3-MOD
RPRT-SM: with Siemens actuator GDB181.1E/3
RPRT...STE: with Sauter actuator
RPRT...LL: with HONEYWELL actuator with integrated controller
RPRT...JH: with JOHNSON CONTROLS actuator with integrated DDC controller (BACnet MS/TP)
RPRT...CP: to check room or duct pressure (on request)
RPRT...I: insulated casing
RPRT...: with fast actuator (on request)
ATEX execution (on request)
 • Execution in AISI 304 stainless steel (list price x2.5) / AISI 316 (list price x3)

All prices are list prices for local market, for a quotation please contact us.

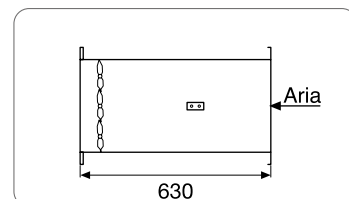
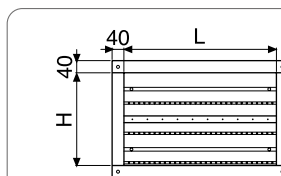
Price list

LxH	RPRT-B	RPRT-B INSULATED	RPRT-SM	RPRT-SM INSULATED	SILENC.
200 x 110	514	595	529	611	127
200 x 210	547	642	563	657	146
400 x 210	592	704	607	719	248
400 x 310	627	753	642	768	287
600 x 210	636	766	651	781	337
600 x 310	675	820	690	835	373
600 x 410	713	874	729	890	397
800 x 410	762	942	777	957	498
1000 x 410	821	1025	836	1040	599

Rapid selection

LxH	NOISE GENERATED					
	Flow rate m³/h		Lp(A) max	Lp(A) max	Lp(A) min	Lp(A) min
	max	min.	Δp_{st} 200 Pa	Δp_{st} 500 Pa	Δp_{st} 200 Pa	Δp_{st} 500 Pa
200 x 110	750	150	57	68	53	58
400 x 110	1500	300	59	70	55	60
600 x 110	2300	460	61	72	57	62
400 x 210	3000	600	61	69	52	61
600 x 210	4500	900	63	71	54	63
800 x 210	6000	1200	64	72	55	64
600 x 310	6600	1320	62	70	57	63
800 x 310	8900	1780	63	71	58	64
1000 x 310	11000	2200	64	72	59	65
600 x 410	8800	1760	64	72	55	66
800 x 410	11800	2360	65	73	56	67
1000 x 410	14500	2900	66	74	57	68

RPRT



RCV



RCV...I



Description

RCV: like RPRT in circular version

Accessories

SA: additional sound attenuator L = 900 mm

Executions

- RCVB:** with Belimo actuator LMV-D3-MP
RCVB-LON: with Belimo actuator LMV-D3-LON
RCVB-MOD: with BELIMO actuator LMV-D3-MOD
RCVSM: with Siemens actuator GDB181.1E/3
RCV...STE: with Sauter actuator
RCV...LL: with HONEYWELL actuator with integrated controller
RCV...JH: with JOHNSON CONTROLS actuator with integrated DDC controller (BACnet MS/TP)
RCV...CP: to check room or duct pressure
RCV...I: insulated closing
ATEX execution (on request)
 • Execution in AISI 304 stainless steel (list price x2.5) / AISI 316 (list price x3)

Price list

DN TYPE	RCV... B	RCV... I B	RCV... SM	RCV... I SM	SA L= 900
125	441	467	456	481	107
160	452	479	467	494	117
200	463	494	478	509	131
250	478	516	493	531	148
315	497	541	512	555	171
355	515	562	529	576	195
400	534	586	549	601	202

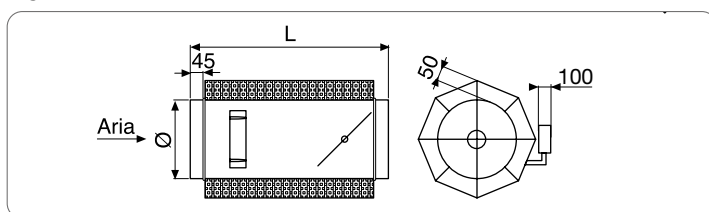
Dimensions

DN	P	S	L	C
125	8	0.6	370	0.8
160	8	0.6	415	0.8
200	12	1.2	470	0.8
250	12	1.2	540	0.8
315	12	1.2	630	0.8
355	12	1.2	685	0.8
400	12	1.2	750	0.8

Rapid selection

DN	NOISE GENERATED					
	Flow rate m³/h		Lp(A) max	Lp(A) max	Lp(A) min	Lp(A) min
	max	min.	Δp_{st} 200 Pa	Δp_{st} 500 Pa	Δp_{st} 200 Pa	Δp_{st} 500 Pa
125	570	60	50	59	35	44
160	950	100	53	61	36	45
200	1530	150	54	62	37	46
250	2300	230	55	63	39	48
315	3650	360	56	64	40	48
355	4800	480	57	65	40	48
400	6300	630	59	66	41	49

RCV I



RCV Type: like RCV I without external insulation

RCC



Description

RCC: circular CAV units

- casing in galvanised steel
- galvanised steel adjustment blades with system to control the oscillations, stainless steel rotation shafts on special bearings
- operating range from 50 to 500 Pa
- velocity working range from 2 to 10 m/s
- operating temperature between -20°C and +70°C
- tolerance $\pm 10\%$ (up to 100 m³/h: ± 10 m³/h fixed)
- horizontal or vertical assembly
- optional recalibration on worksite

RCC...230: like RCC but with 230V actuator for operation with two flows

RCC...24: like RCC but with 24V actuator for operation with two flows

RCC..I: with insulated casing

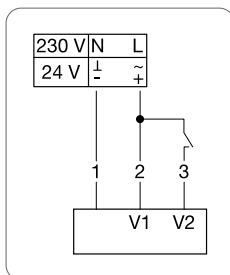
Accessories

- Plug-in sound attenuator L = 1000 mm

Assembly:

- install a straight duct section of at least 5xD upstream if connected with hammer release; if connected to rigid duct R min 1.5D

Electrical connections



Current		Connection no.			Func.
		1	2	3	
230V	Colour	Blue	Brown	White	
	Func.	N	L	L	V1 V2
24V	Colour	Black	Red	White	
	Func.	-	+	+	V1 V2

V1: minimum flow

V2: maximum flow

All prices are list prices for local market, for a quotation please contact us.

Price list

DN	RCC + UP	RCC I	RCC 24	RCC 230
100	93	212	297	304
125	91	212	294	301
160	93	218	297	304
200	103	239	308	315
250	117	267	336	331
315	126	290	346	342
400	133	312	354	350

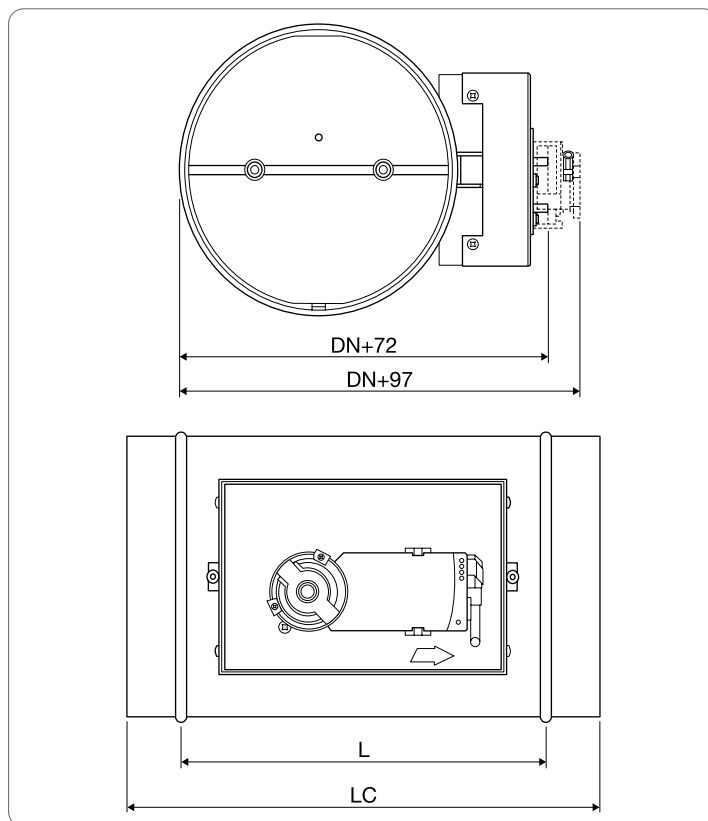
UP: external gasket

Dimensions

DN	FLOWS (m ³ /h)		Pst min (Pa)	Pst max (Pa)	Φ d (mm)	L (mm)	LC (mm)
	min	max					
100	57	283	50	90	98	270	350
125	88	442	30	70	123	270	350
160	145	723	30	70	158	270	350
200	226	1130	30	70	198	270	350
250	353	1766	50	70	248	270	350
315	561	2804	50	70	313	270	350
400	904	4520	50	70	398	270	350

Δp min: operation from 50 Pa

RCC



RCR



Description

- RCR:** rectangular CAV unit
- casing in galvanised steel
 - galvanised steel adjustment blades with system to control the oscillations, stainless steel rotation shafts on special bearings
 - operating range from 50 to 1000 Pa
 - working range from 2 to 8 m/s
 - operating temperatures between -20°C and +70°C
 - tolerance from $\pm 5\%$ up to $\pm 15\%$ for low flow rates
 - horizontal or vertical assembly
 - optional easy recalibration on worksite

RCR...I: with insulated casing

Executions

Assembly:

- install a straight section of duct upstream with the same size as the CAV unit and a length equal to $2 \div 4$ times the largest dimension

Selection table

Base	Height	V= 3 m/s Min. flow	V= 8 m/s Max flow
200	100	216	576
	200	432	1152
300	100	324	864
	200	648	1728
	300	972	2592
400	100	432	1152
	200	864	2304
	300	1296	3456
	400*	1728	4608
500	200	1080	2880
	300	1620	4320
	400*	2160	5760
600	200	1296	3456
	300	1944	5184
	400*	2592	6912
	500*	3240	8640
	600*	3888	10368

*: double blade / double control
 Δp min: operation from 70 Pa

All prices are list prices for local market, for a quotation please contact us.

RCR price list

HxL	200	300	400	500	600
100	200	205	254	-	-
200	215	227	253	270	285
300	-	275	282	292	458
400*	-	-	437	461	483
500*	-	-	-	-	603
600*	-	-	-	-	676

*: double blade

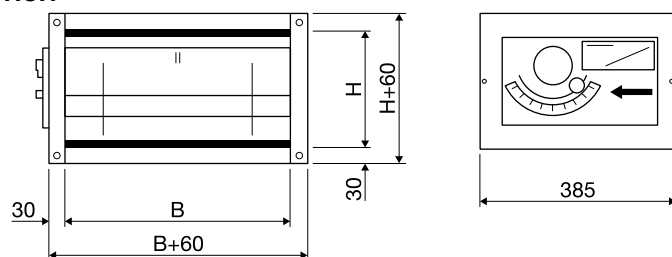
RCR...I price list

HxL	200	300	400	500	600
100	302	312	385	-	-
200	326	345	385	411	433
300	-	418	429	444	697
400*	-	-	664	700	733
500*	-	-	-	-	917
600*	-	-	-	-	1027

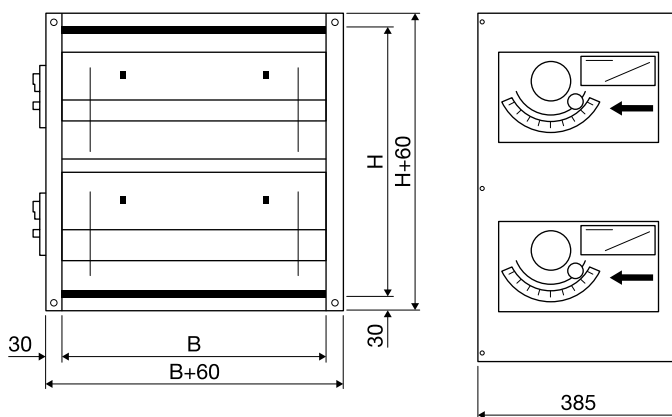
*: double blade

Dimensions

RCR



RCR...DOUBLE BLADE



Overall size control side:

- uninsulated: $B+60+30$
- insulated: $B+60+60$

RED



Description

RED: Circular CAV unit

- made of class M1 plastic
- control unit with spring and shock absorber piston
- maximum temperature up to 60°C
- operating range from 50 to 200 Pa
- tolerance $\pm 10\%$
- horizontal or vertical assembly
- sizes from 80 to 250 mm
- flow rates from 15 to 700 m³/h factory set

Special Executions

RED-AP: like RED but with operating range from 150 to 600 Pa

- flow rates from 50 to 1200 m³/h factory set

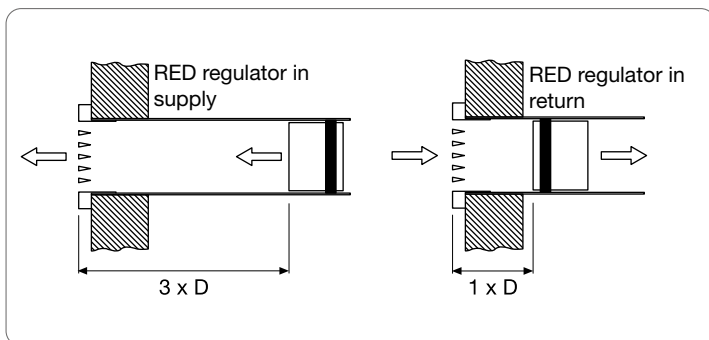
All prices are list prices for local market, for a quotation please contact us.

Price list

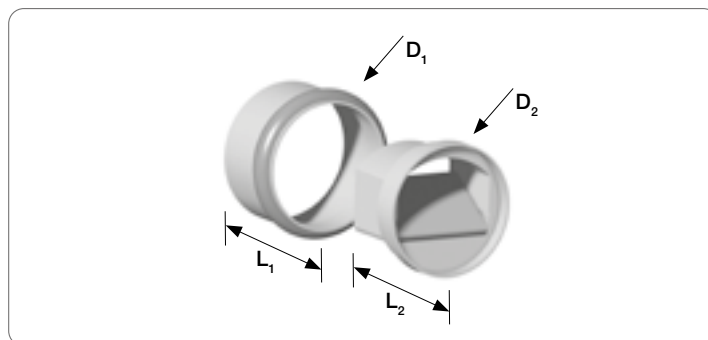
DN	Flow rates (m³/h)	RED	RED AP
80	15,25,30,45,50	22	
80	25,50,75		24
100	15,25,30,45,50. 50,60,75,90,100	26	
100	25,50,75,100. 100,125,150		30
125	15,25,30,45,50. 50,60,75,90,100. 100,120,150,180	30	
125	25,50,75,100. 100,125,150,200. 200,250,300		33
160	15,25,30,45,50. 50,60,75,90,100. 100,120,150,180. 180,210,240,250,270,300	44	
160	25,50,75,100,125,150. 150,200,250. 250,300,350,400. 300,350,400,450,500.		49
200	210,240,250,270,300. 300,350,400,450,500	66	
200	100,125,150. 200,250,300,350,400,450,500. 500,600,700,800		74
250	180,210,240,250,270,300. 300,350,400,450,500. 500,550,600,650,700.	85	
250	150,200,250,300. 300,350,400,450,500. 500,600,700,800.		95
250	800,900,1000,1100,1200		95

The flow rate fields are highlighted. In orange the standard volume flow. Material with prices in bold in stock

Technical data



Dimensions



Flow rate (m³/h)	Lw [dB(A)]			
	50 Pa	100 Pa	150 Pa	200 Pa
15	25	29	32	35
30	26	31	35	38
45	27	33	36	39
60	32	37	39	42
75	32	37	40	42
90	32	38	41	44
120	30	34	39	42
150	33	37	41	45
180	34	40	44	47
210	34	40	42	44
240	35	41	44	47
270	37	43	45	49
300	33	37	42	45
350	35	40	44	47
400	37	42	45	50
450	38	44	46	51
500	39	46	48	53

DN	80	100	125	160	200	250
D1 (mm)	76	95	120	146	196	544
L1 (mm)	55	60	60	120	120	120
D2 (mm)	73	93	117	146	192	242
L2 (mm)	50	55	56	82	82	82

LMV-D3-MP



Description

- LMV-D3-MP:** VAV-Compact actuator 5 Nm
- AC/DC 24V, modulating, communicating
 - MP-Bus communication
 - operating field 0/2...10V variable
 - feedback volume/position/diff. pressure 0/2...10V variable
 - IP54, manual control with button, fixed or temporary
 - 1 m PVC cable connection
 - mechanical interface, universal clamp 6...20 mm

LMV-D3-MOD



Description

- LMV-D3-MOD:** VAV-Compact actuator 5 Nm
- AC/DC 24 V, modulating, communicating, hybrid
 - BACnet MS/TP, Modbus RTU, MP-Bus communication
 - IP54, manual control with button, fixed or temporary
 - 1 m PVC cable connection
 - mechanical interface, universal clamp 6...20 mm

LMV-D3-LON



Description

- LMV-D3-LON:** VAV-Compact actuator 5 Nm
- AC/DC 24 V, communicating
 - LON communication (FTT-10A)
 - IP54, manual control with button, fixed or temporary
 - 1 m PVC cable connection
 - mechanical interface, universal clamp 6...20 mm

"KNX" VERSION AVAILABLE

CP



Description

CP: system for adjusting the pressure and flow rate. The system includes the pairing of differential pressure probes combined with actuators.

Pressure range:

- -75 / +75 Pa
- 0 / 500 Pa
- 0 / 600 Pa

MP-Bus functions:

- MP-Bus
- Modbus
- BACnet MS/TP

SIEMENS



Description

- GDB181. 1°/3:** compact VAV actuators for systems with variable or constant air flows
- integrated high-precision differential pressure sensor, actuator and configurable digital air volume regulator
 - AC 24V operating voltage for nominal torque of 5 or 10 Nm, angular rotation of the air damper mechanically adjustable between 0 and 90°
 - optional configuration as a compact VAV controller or combined actuator / differential pressure sensor
 - pre-cabled with 0.9 m connection cable
 - operating field 0/2...10V variable
 - feedback volume/position/diff. pressure 0/2...10V variable

JOHNSON CONTROLS®



Description

JOHNSON CONTROLS®: F4-CVM3050 the CVM03050 controllers work on RS-485 BACnet® MS / TP bus like an advanced BACnet (B-AAC) application controller are integrated in Johnson Controls® systems and third-party BACnet.

The CVM03050 controllers have an actuator for the integrated damper, a DPT (Differential Pressure Transmitter) digital sensor and a 32-bit microprocessor.

The CVM03050-0P model is fitted with an integrated potentiometer to detect the actual position of the VAV damper box.

SAUTER



Description

- SAUTER ASV 205 B...** compact system for measuring and controlling the flow in VAV systems
- BACnet MS/TP communication system

HONEYWELL



Description

- HONEYWELL W7751...Smart VAV:** compact system for measuring and controlling the flow in VAV systems
- Echelon - LonWorks communication system



QAD
compact
axial fans
PAGE 1



ADU F 300 - ADU F 400
Axial fans
F 300 e F400
PAGE 3



AXIAL WINDER
Axial
"Winder" fans
PAGE 6



BASIC
Wall-mounted
helical fans
PAGE 7



ROTEX
Wall-mounted helical fans
with external rotor
PAGE 7



VL
Circular in line
centrifugal fans
PAGE 8



IN-NOVO
Circular in line centrifugal fans
EC motor
PAGE 9



MBC
In line centrifugal fans
with circular inlets
PAGE 10



MBR
In line centrifugal fans
with rectangular inlets
PAGE 10



VC
Simple
inlet
PAGE 12



BOX-BD
Directly coupled centrifugal
box fans
PAGE 13



ECA 8M F
Directly coupled
box fan constant flow
PAGE 14



BOX-HC
Plug box fans
for high temperatures
PAGE 16



ET
Centrifugal
belt-driven box fans
PAGE 18



PP
Anti-acid
centrifugal fans
PAGE 20



TCV
Anti-acid vertical flow
exhaust roof fan
PAGE 21



TN
Centrifugal horizontal flow
exhaust roof fan
PAGE 22



TNV
Centrifugal vertical flow
exhaust roof fan
PAGE 22



TN 400
Centrifugal horizontal flow
exhaust roof fan 400° 2 h
PAGE 22



TNV 200
Centrifugal vertical flow
exhaust roof fan 200° 2 h
PAGE 22



TNV 400
Centrifugal vertical flow
exhaust roof fan 400° 2 h
PAGE 22



BPT-BOX
Centrifugal belt-driven box
fans 400° 2 h
PAGE 25

QAD



Description

QAD: ducted axial fan compact unit

- steel casing with RAL 7032 epoxy coating
- hub in cast aluminium
- impeller with adjustable angle of incidence, dynamically balanced glass fibre reinforced technopolymer blades
- IP 55 motors with thermal protector
- IP 55 external junction box
- operating temperature -20°C / +70°C

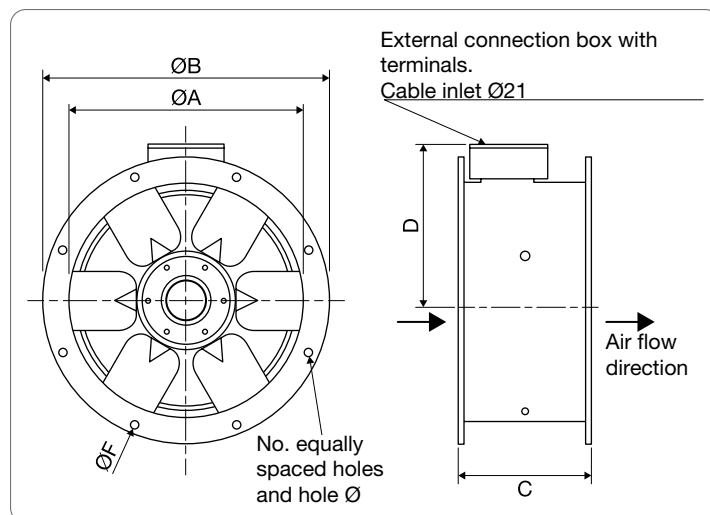
Accessories

- foot
- anti-vibration supports (4 pieces)
- flexible anti-vibration joint
- mesh on impeller side
- sound attenuators (see Acoustics section, page 1)
- inverter

Special executions

- casing in AISI 304/316 stainless steel
- ATEX execution
- other executions on request

Dimensions



GR	Ø A	Ø B	C	D	E	Ø F	Weight (Kg)
315	315	382	180	207	8	9.5	8
350	350	421	180	224	8	9.5	8
450	450	515	190	274	12	9.5	14
500	500	567	250	300	12	9.5	21
560	560	636	250	330	16	11.5	23
630	630	709	250	365	16	11.5	30

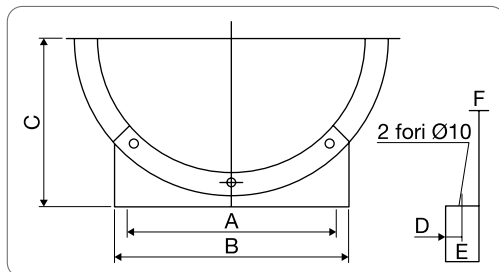
All prices are list prices for local market, for a quotation please contact us.

Selection table and price list

Three-phase - 1400 rpm

GR	kW	Amp.	Eff. %	Static pressure (Pa)												Noise in dBA at 3 metres		€
				0	10	20	40	60	80	100	120	140	160	180	IN	OUT		
				Flow rate (m³/h)														
315	0.12	0.42	15.90	2100	2010	1920	1680	-	-	-	-	-	-	-	52	51	529	
350	0.12	0.42	26.20	2240	2160	2100	1950	1750	1460	-	-	-	-	-	52	52	534	
450	0.25	0.68	38.80	5450	5350	5250	4900	4750	4350	4100	3500	-	-	-	60	59	646	
500	0.55	1.35	38.50	7720	7550	7490	7200	6800	6400	6100	5620	4870	-	-	59	60	771	
560	0.75	1.90	42.30	10400	10250	10100	9700	9200	8750	8500	8000	7500	7000	6000	61	61	857	
630	1.10	2.70	40.90	15300	15100	14900	14300	13850	13300	12650	12100	11400	10750	-	65	66	949	

Accessories



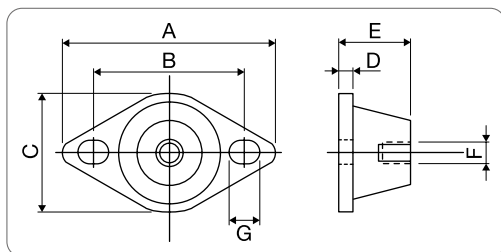
FOOT: made of steel with RAL 7032 beige powder coating to attach to the fan flange for anchoring.

Size	A	B	C	D	E	F	Weight (Kg)
315	250	280	200	20	40	2	1
350	280	310	225	20	40	2	1.3
450	240	275	275	20	40	2	2
500	280	315	315	25	50	2.5	2.5
560	320	355	355	25	50	2.5	4
630	360	400	400	25	50	2.5	5

Dimensions in mm

Ducted axial fans compact unit

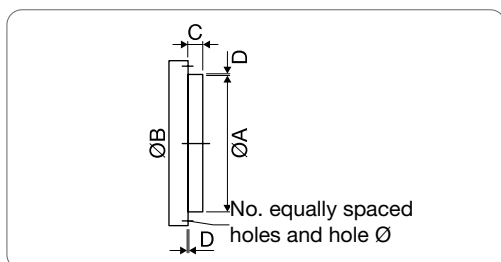
Accessories



ANTI-VIBRATION SUPPORTS: kit of 4 pieces, made of rubber with metal insert.

Size	DN	A	B	C	D	E	F	G	Weight (Kg)
ES 62 1	315-450	64	50	43	5.5	20	M6	Ø 7	0.04
ES 62 2	500-630								

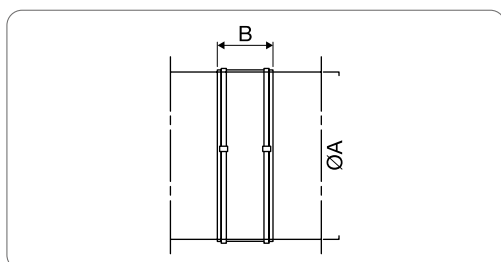
Dimensions in mm



FLANGES: flanges for connection to the duct or to flexible joints, made of RAL 7032 beige powder-coated steel.

Size	Ø A	Ø B	C	D	E	Ø F	Weight (Kg)
315	315	382	30	1.6	8	9.5	0.7
350	350	421	30	1.6	8	9.5	1
450	450	515	40	1.6	12	9.5	2.2
500	500	567	45	1.6	12	9.5	2.6
560	560	636	45	1.6	16	11.5	3
630	630	709	45	1.6	16	11.5	3.5

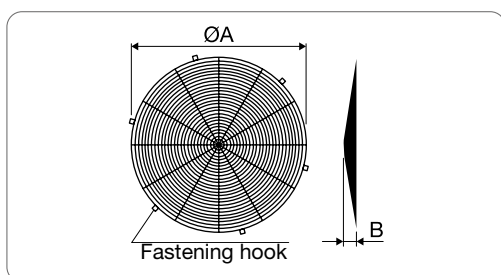
Dimensions in mm



FLEXIBLE ANTI-VIBRATION JOINT: made of PVC-coated polyester with steel fastening bands.

Size	Ø A	B	Weight (Kg)
315	315	150	0.6
350	350	150	0.7
450	450	150	1.1
500	500	150	1.2
560	560	150	1.3
630	630	200	1.4

Dimensions in mm



MESH ON IMPELLER SIDE: for protection, made of RAL 7040 grey painted steel.

Size	Ø A	B	Weight (Kg)
315	335	21	1.1
350	370	23	1.4
450	470	29	1.8
500	520	32	2.2
560	585	32	2.5
630	655	40	2.6

Dimensions in mm

Price list

All prices are list prices for local market, for a quotation please contact us.

Size	Price list €				
	Pair of feet	Flange	Flexible anti-vibration feet	Mesh on impeller side	Anti-vibration supports (Kit of 4)
315	98	49	27	19	164
350	106	53	27	19	164
450	126	63	32	26	164
500	136	68	34	27	164
560	170	85	37	32	164
630	200	100	39	43	164

ADU F 300 - F 400/120



► **CERTIFIED F300 AND F400/120 MIN.**
ACCORDING TO EN 12101-3

Description

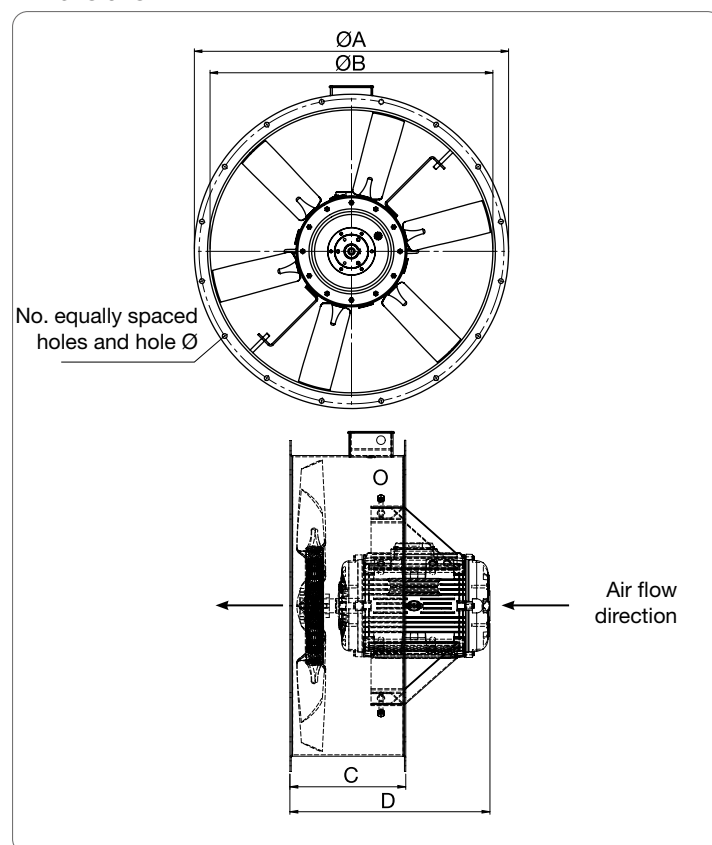
ADU F 300/120 - ADU F 400/120: ducted axial fans for “Dual Use” ventilation, daily ventilation and smoke extraction in case of fire

- made with single-sheet bent steel casing
- hot-dip galvanised coating after fabrication according to BS EN ISO 1461-1999
- impeller with variable angle of incidence, made of die-cast aluminium with natural finish, dynamically balanced according to ISO 14694 grade G6.3
- factory-set angle of incidence to guarantee optimal performance
- IP 55 class H completely enclosed motors
- temperature of use under normal conditions +40°C
- motor connection cables enclosed in a special sheath resistant to high temperatures and housed in an external IP 55 junction box
- executions up to DN 2000

Accessories

- support feet
- flexible anti-vibration joints
- anti-vibration supports
- mesh on motor side
- mesh on impeller side
- flange

Dimensions



F 300 dimensional data

GR	Poles	Ø A	Ø B	C	D	E	Ø F	Weight (Kg)
400	2	475	400	220	375	8	12	26.7
400	4	475	400	220	375	8	12	23.9
450	2	530	450	220	375	8	12	36.8
450	4	530	450	220	375	8	12	38
500	2	585	500	220	375	12	12	40.9
500	2	585	500	250	435	12	12	52.3
500	4	585	500	220	375	12	12	27.2
560	4	645	560	220	375	12	12	28.5
630	4	715	630	250	375	12	12	42.1
630	4	715	630	250	375	12	12	45.1
710	4	795	710	250	435	16	12	52.3
710	4	795	710	250	435	16	12	59.9
800	4	885	800	250	435	16	12	63
800	4	885	800	250	435	16	12	73.1
800	4	885	800	300	555	16	12	102.6
900	4	1000	900	300	555	16	15	113.2
900	4	1000	900	300	555	16	15	123.4
900	4	1000	900	420	685	16	15	172.9
1000	4	1100	1000	300	570	16	15	177
1000	4	1100	1000	420	700	16	15	167.6
1000	4	1100	1000	420	700	16	15	187.6

F 400 dimensional data

GR	Poles	Ø A	Ø B	C	D	E	Ø F	Weight (Kg)
400	2	475	400	220	375	8	12	26.7
400	4	475	400	220	375	8	12	23.9
500	4	585	500	220	375	12	12	27.2
560	4	645	560	220	375	12	12	32.4
630	4	715	630	250	375	12	12	45.1
710	4	795	710	250	435	16	12	56.4
710	4	795	710	250	435	16	12	55.4
800	4	885	800	250	435	16	12	58.5
800	4	885	800	250	435	16	12	73.1
900	4	1000	900	300	555	16	15	114.4
900	4	1000	900	300	555	16	15	124.7
900	4	1000	900	300	555	16	15	128.9
1000	4	1100	1000	300	570	16	15	181
1000	4	1100	1000	420	700	16	15	171.7
1000	4	1100	1000	420	700	16	15	194.1

F 300 - Selection table and price list

All prices are list prices for local market, for a quotation please contact us.

GR	Current	Motor				Air flow rate (m³/h)	Static pressure (Pa)								Noise level		Price list €
		Poles	kW	At Nomin.	At Start		0	60	100	160	200	250	300	400	IN	OUT	
400	3F	2	1.32	2.8	12.18		8600	8100	7500	-	-	-	-	-	70	69	1695
400	3F	4	0.66	1.49	6.14		4860	3750	-	-	-	-	-	-	55	54	1632
450	3F	2	2.64	5.36	25.03		12280	11500	10900	10100	9200	8500	-	-	75	74	2026
450	3F	4	0.66	1.49	6.14		6950	5800	4800	-	-	-	-	-	60	60	1710
500	3F	2	3.3	6.73	38.55		16750	15750	15300	14350	13500	12300	11000	-	72	73	2133
500	3F	2	4.6	8.88	53.27		18220	17800	17250	16500	16150	15600	14800	13300	76	75	2878
500	3F	4	0.66	1.49	6.14		9540	8150	7100	-	-	-	-	-	57	57	1720
560	3F	4	0.66	1.49	6.14		11340	9000	-	-	-	-	-	-	60	60	1803
630	3F	4	1.32	2.84	13.01		17390	15600	13900	11600	10000	-	-	-	65	65	1844
630	3F	4	1.8	3.76	17.09		18100	16250	15100	12250	-	-	-	-	66	66	1943
710	3F	4	2.53	5.23	28.21		25000	23000	21500	18500	15550	-	-	-	72	73	2319
710	3F	4	3.6	7.3	33.44		27180	25200	24100	22100	20600	17700	-	-	72	72	2543
800	3F	4	3.6	7.3	33.44		34560	32450	30250	27250	23700	-	-	-	70	70	2613
800	3F	4	4.8	9.7	41.29		36750	34600	33400	31200	30000	27200	24100	-	72	71	3099
800	3F	4	6.6	12.48	63.65		40860	39000	37400	35000	33300	31000	28000	-	75	74	3858
900	3F	4	6.6	12.48	63.65		47240	44500	41700	37900	35450	30000	-	-	75	74	4111
900	3F	4	8.63	16.34	88.18		53820	51500	49500	46600	44500	39600	38400	-	78	77	4454
900	3F	4	13.2	25.32	113.31		57490	56000	54800	52950	52000	49200	46500	41500	74	75	6102
1000	3F	4	8.63	16.34	88.18		62960	59200	56500	52400	49500	45400	39000	-	81	79	4617
1000	3F	4	13.2	25.32	113.31		76220	72600	71000	67000	64000	61600	57200	48700	81	80	6817
1000	3F	4	18	34.2	148.2		79300	76450	73200	70150	67200	63500	59500	51000	81	80	7199

Motor insulation class IP 55 Class H

Noise level: Lp db(A) at three metres in free field

F 400 - Selection table and price list

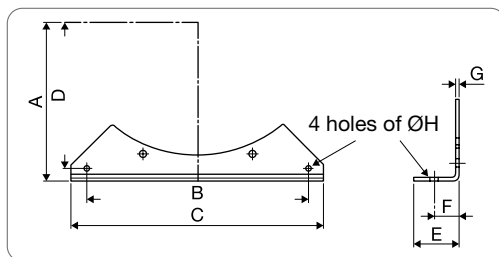
GR	Current	Motor				Air flow rate (m³/h)	Static pressure (Pa)							Noise level		Price list €	
		Poles	kW	At Nomin.	At Start		0	60	100	160	200	250	300	400	IN		OUT
400	3F	2	1.32	2.8	12.19		8390	7780	7130	6530	5900	-	-	-	70	69	2944
400	3F	4	0.66	1.49	6.14		4750	3775	-	-	-	-	-	-	56	55	2616
500	3F	4	0.66	1.49	6.14		9540	8200	7000	-	-	-	-	-	58	58	2729
560	3F	4	0.9	1.92	8.13		12850	11240	10000	-	-	-	-	-	62	61	2785
630	3F	4	1.8	3.76	17.09		18110	16250	14630	11480	-	-	-	-	67	67	3726
710	3F	4	2.64	5.5	25.56		25530	23400	21400	18000	-	-	-	-	72	73	4171
710	3F	4	3.6	7.3	33.44		27180	25550	23970	21900	20150	-	-	-	74	74	4705
800	3F	4	3.6	7.3	33.44		34490	32000	30000	26350	22700	-	-	-	71	71	4910
800	3F	4	4.8	9.7	41.29		36540	33600	32200	31200	27600	25000	21500	-	73	72	5176
900	3F	4	6.6	12.48	63.65		47630	45600	44000	41400	39000	35850	31900	-	77	76	6087
900	3F	4	8.63	16.34	88.18		51150	49300	48000	45400	43500	40000	35900	-	79	77	6890
900	3F	4	10.6	20.85	115.66		56050	54300	52800	50000	48100	45500	43000	36150	75	76	10377
1000	3F	4	8.63	16.34	88.18		59760	56250	53100	48750	45800	40000	-	-	81	79	7227
1000	3F	4	13.2	25.32	113.31	72620	70500	67800	64800	61400	58900	55000	45600	80	80	10794	
1000	3F	4	18	34.2	148.2	78800	76600	75000	72100	70150	68300	65800	59200	83	82	11485	

Motor insulation class IP 55 Class H

Noise level: Lp db(A) at three metres in free field

Accessories

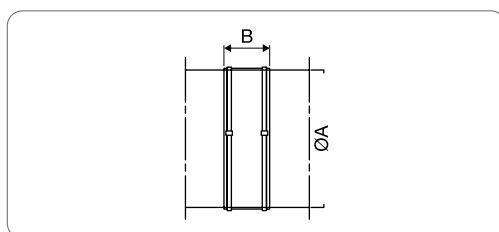
All prices are list prices for local market, for a quotation please contact us.



FEET OF BRACKETS: hot-dip galvanised steel structure.

GR	A	B	C	D	E	F	G	ØH	Kg	€ (pair)
400	250	350	400	230	50	27.5	4	9	1.5	66
450	280	400	450	255	50	27.5	4	11	2	89
500	315	450	500	290	50	27.5	4	11	2.5	112
560	355	510	560	330	60	32	5	11	4	136
630	400	580	630	375	60	32	5	11	5	142
710	450	660	710	425	60	32	5	11	5.5	142
800	500	750	800	475	60	32	5	11	6	165
900	560	850	900	530	70	36	6	11	9	235
1000	630	950	1000	595	70	36	6	13	12	288

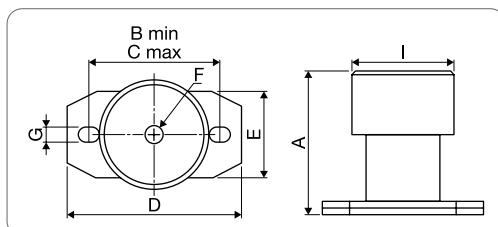
Dimensions in mm



FLEXIBLE ANTI-VIBRATION JOINT: made of PVC-coated polyester with steel fastening bands.

GR	Ø A	B	Weight (Kg)	Price list €
400	400	150	0.9	36
450	450	150	1	46
500	500	150	1.2	41
560	560	150	1.3	43
630	630	200	1.4	46
710	710	200	2	50
800	800	200	2.2	88
900	900	200	2.4	99
1000	1000	250	2.6	104

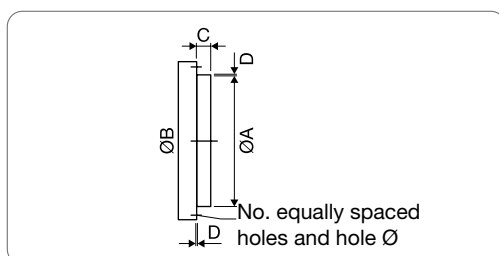
Dimensions in mm



GR	DN	A	B	C	D	E	F	G	I	Price list €
ES 20	400 - 900	63	54	60	76	38	M8	M6	48	238
ES 25	900 - 1000	88	85	90	110	70	M10	M8	78	523

Dimensions in mm

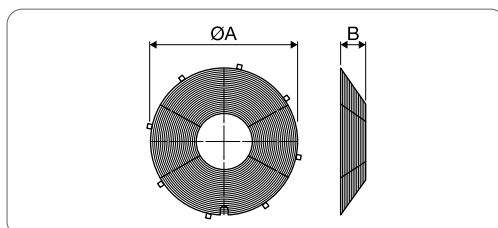
ANTI-VIBRATION SUPPORTS: kit of 4, made of rubber with steel insert.



FLANGE: made of galvanised steel.

GR	Ø A	Ø B	C	D	E	Ø F	Kg	Price list €
400	400	475	40	1.5	8	12	1.2	60
450	450	530	40	1.5	8	12	2.2	68
500	500	585	45	2	12	12	2.6	78
560	560	645	45	2	12	12	3	88
630	630	715	45	2	12	12	3.5	89
710	710	795	45	2	16	12	3.7	93
800	800	885	50	2.5	16	12	5	132
900	900	1000	50	2.5	16	15	5.5	155
1000	1000	1110	50	2.5	16	15	6.5	180

Dimensions in mm

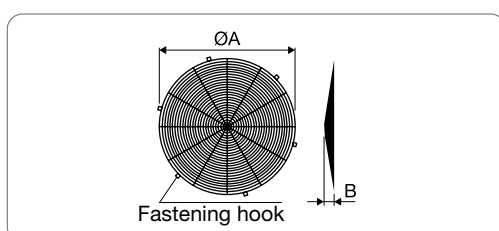


GR	Ø A	B	Price list €
400	432	50	89
450	475	45	112
500	534	55	126
500	534	105	126
560	594	55	142
630	664	55	160
710	744	55	174

Dimensions in mm

MESH ON MOTOR SIDE: made of galvanised steel, supplied with fastening screws.

GR	Ø A	B	Price list €
710	744	102	174
800	845	102	185
800	845	155	185
900	940	102	227
900	940	165	227
1000	1040	165	251
1000	1040	165	251



MESH ON IMPELLER SIDE: made of galvanised steel, supplied with fastening screws.

GR	Ø A	B	Weight (Kg)	Price list €
400	420	26	1.6	20
450	470	29	1.8	25
500	520	32	2.2	26
560	585	32	2.5	31
630	655	40	2.6	41
710	730	50	2.7	48
800	840	50	2.8	172
900	946	50	2.9	245
1000	1040	75	3	266

Dimensions in mm

AXIAL WINDER

► **SPECIAL WINDER PROFILE: GREATER EFFICIENCY AND REDUCED NOISE LEVELS**



Description

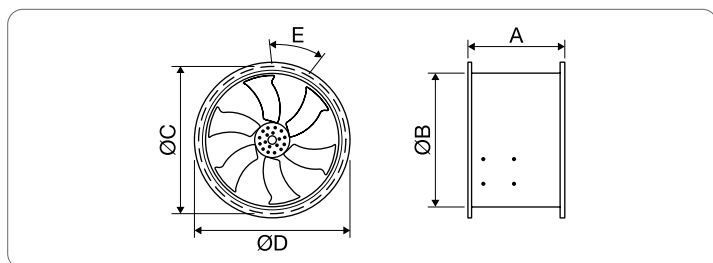
AW: Ducted axial fans, special "Winder" blade profile means less noise and greater efficiency and pressure with the same motor power

- certified executions 300°C 2 h - 400°C 2 h in the hazard zone
- epoxy painted steel casing
- high efficiency fan, aluminium "Winder" profile
- IP 55 motors in class F
- operating temperature -20°C / +70°C

Options

- execution in stainless steel
- motors with various polarities
- selection with dedicated program
- special executions on request

Dimensions



Size	A	Ø B	Ø C	Ø D	E	Kg*
560	400	565	620	648	12x30	55
630	400	640	690	720	12x30	84
710	500	720	770	800	12x30	90
800	600	807	860	900	16x22.5	130
900	700	910	970	1010	16x22.5	204
1000	700	1010	1070	1110	16x22.5	221
1250	900	1265	1315	1355	16x22.5	268

*: approx. weight with maximum power motor

Selection table and price list

All prices are list prices for local market, for a quotation please contact us.

GR	Poles	kW	Static pressure (Pa)									Noise	€		
			0	100	200	400	600	800	1000	1200	1400	LpA (dBA)	AW	F300 AW	F400 AW
			Flow rate (m³/h)												
560	2	4.00	20000	19000	18000	16000	14000	11000	7000	5000		80	1970	2507	4388
560	2	5.50	24500	23500	23000	21000	18500	16500	13500	9000	5000	82	2338	3055	5349
560	2	7.50	28000	27000	25500	23000	21000	18000	15500	10500	7000	83	2539	3347	5938
GR	Poles	kW	Static pressure (Pa)									Noise	€		
			0	100	200	300	400	500	600	700	800	LpA (dBA)	AW	F300 AW	F400 AW
			Flow rate (m³/h)												
560	4	0.55	10000	8000	5800	2600	-	-	-	-	-	66	1309	1638	2631
560	4	0.75	12100	10500	8000	4500	-	-	-	-	-	68	1449	1670	2739
560	4	1.10	14000	10700	9500	5700	-	-	-	-	-	68	1514	1686	2851
630	4	0.75	13500	11900	9000	5700	3000	-	-	-	-	69	1618	1838	2723
630	4	1.10	-	15000	12500	6000	-	-	-	-	-	72	1690	1858	2839
630	4	1.50	18500	17000	14000	10000	-	-	-	-	-	71	1782	1906	3119
710	4	1.10	16000	14000	11000	6500	-	-	-	-	-	74	1854	2182	3379
710	4	1.50	18000	17000	13500	10000	5500	-	-	-	-	73	1942	2218	3640
710	4	2.20	23500	21000	17500	11000	-	-	-	-	-	72	2090	2551	4040
800	4	3.00	27500	25000	21000	17500	12500	8500	-	-	-	73	2434	2919	4725
800	4	4.00	33000	31500	29500	25000	18500	-	-	-	-	76	2623	3239	4965
800	4	5.50	35000	34000	31500	27000	22000	-	-	-	-	75	2947	3752	5590
900	4	4.00	35000	31500	29000	25000	20000	15000	12000	-	-	76	3159	3532	5189
900	4	5.50	41000	39000	35000	29000	25000	19000	15000	-	-	79	3495	4076	5814
900	4	7.50	49500	45000	41000	39000	32000	25000	15000	-	-	83	3784	4517	6150
1000	4	7.50	55000	50000	48000	42000	39000	32000	26000	21500	19000	80	3996	4989	6831
1000	4	11.00	61000	59000	58000	52000	48500	40000	36000	30000	20000	80	5189	6783	8861
1000	4	15.00	-	-	69500	67000	62000	57000	50000	38000	29000	81	5465	7135	10158
1250	4	15.00	90000	85000	82000	79500	75000	65000	60000	50000	42000	86	6434	8108	11331
1250	4	22.00	110000	105000	100000	96000	91000	84000	79000	68000	60000	89	11580	13193	17217
1250	4	30.00	130000	125000	120000	117000	110000	100500	100000	90000	80500	91	13069	15379	20621

LpA: measured at 1 m

Accessories price list

Size	Price list €				
	Pair of feet	Anti-vibration joint	Anti-vibration supports (kit of 4)		Mesh
			Sizes	€	
560	128	360	50/75	296	68
630	200	480			76
710	312	513			84
800	336	609			108
900	392	729			136
1000	521	785	75/100	312	208
1250	753	1097			224

BASIC



Description

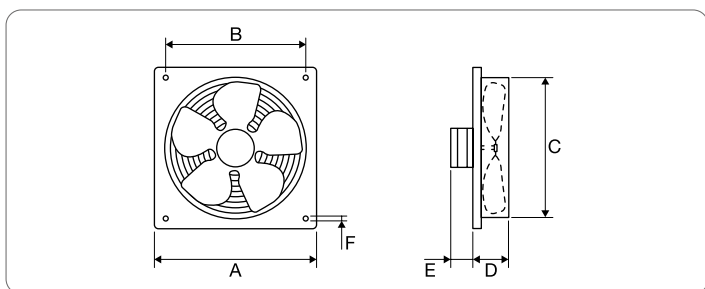
BASIC: wall-mounted helical fans

- epoxy painted aluminium impeller up to DN 300
- plastic impeller for DN 400
- IP 42 class B motor up to DN 300, DN 400 IP 54 class F with thermal protectors
- frame in thermoplastic material
- galvanised steel protective mesh
- operating temperature -30°C / +70°C
- motor / fan air flow

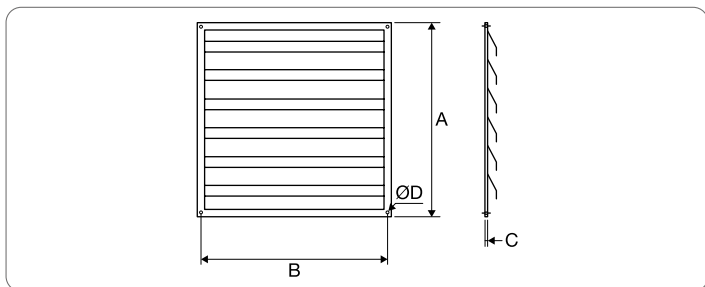
Special executions

- Winder impeller (on request)
- ATEX execution (on request)

BASIC / ROTEX dimensions



PG overpressure damper dimensions



Technical specifications

Power supply 230V / 50Hz - 1400 rpm.

Model	Size	Watt	dB(A)
BASIC	200	10	46
BASIC	250	10	50
BASIC	300	16.5	54
BASIC	350	34	56
BASIC	400	90	59

Power supply 230V / 50Hz - 1400 rpm.

Model	Size	Watt	dB(A)
ROTEX	315 M	80	57
ROTEX	355 M	120	59
ROTEX	400 M	180	63
ROTEX	450 M	230	66

Power supply 400V / 50Hz - 1400 rpm.

Model	Size	Watt	dB(A)
ROTEX	315 T	80	57
ROTEX	355 T	130	59
ROTEX	400 T	180	63
ROTEX	450 T	240	66

Selection table and price lists

BASIC

GR	Static pressure (Pa)								€
	0	10	20	40	60	80	100	120	
	Flow rate (m³/h)								
200	580	500	250	-	-	-	-	-	159
250	1000	900	800	500	-	-	-	-	170
300	1400	1300	1250	1100	500	-	-	-	227
350	1900	1800	1750	1650	1200	500	-	-	231
400	2850	2750	2700	2550	2350	2000	1500	700	436

ROTEX

GR	Static pressure (Pa)											M*	T**
	0	10	20	40	60	80	100	120	140	160	180	€	€
	Flow rate (m³/h)												
315	1470	1450	1400	1350	1200	1000	950	850	300	-	-	482	593
355	3000	2950	2900	2450	2400	2200	2000	1600	1000	-	-	457	630
400	4450	4400	4250	4200	3950	3650	3400	3000	2600	2000	-	523	675
450	6650	6600	6400	6250	6000	5800	5600	5200	4800	4000	3500	601	692

*: single-phase

**: three-phase

VL



Description

VL: centrifugal fan for direct assembly on circular duct

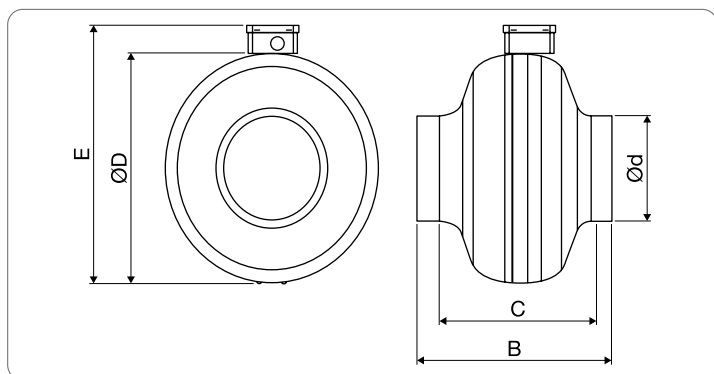
- galvanised steel casing
- motor with external rotor
- thermal protection
- IP 44 motors
- IP 55 terminal box
- operating temperature -40°C / +40°C

Including bracket

Accessories

REM 600: single-phase speed regulator

VL



Price list

Type	Size	€	REM600
VL	100	171	82
VL	125	175	82
VL	160	206	82
VL	200	220	82
VL	250	325	82
VL	315	384	82

Delivery: material with prices in bold in stock

Selection table

Type	GR	Static pressure (Pa)				
		50	100	150	200	250
		Flow rate (m³/h)				
VL	100	325	260	220	170	100
VL	125	360	290	220	160	90
VL	160	790	700	600	500	420
VL	200	950	870	810	750	650
VL	250	950	850	790	700	620
VL	315	1400	1330	1250	1200	1150

Dimensions

Mod.	Watt	LWA dB(A)	Amp.	B	C	ØD	Ød	E	Kg
VL 100	74	71	0.31	189	152	244	100	287	3
VL 125	74	68	0.31	182	143	243	125	286	3
VL 160	100	75	0.50	217	166	344	160	387	4
VL 200	140	74	0.60	231	179	344	200	387	4.7
VL 250	140	75	0.60	230	167	344	250	387	7.7
VL 315	280	74	1.20	256	188	402	315	444	6

IN-NOVO



- ▶ **SPECIAL WINDER PROFILE**
- ▶ **EC MOTORS**
- ▶ **LOW NOISE LEVEL**
- ▶ **LOW CONSUMPTION**



Special "Winder-type" fan and air conveyor profile for reduced noise level and greater fan efficiency

Description

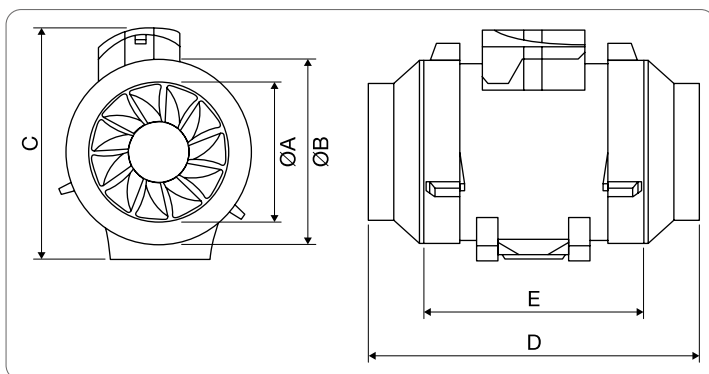
IN-NOVO: "Mixed" in line fans for circular duct

- high performance thanks to "Winder-type" impellers
- made of extra-strong thermoplastic
- single-phase motors up to 200 size and three-phase motors for 250 and 315 sizes
- "telescopic" inlet and outlet for easy installation
- independent support with screw fastening
- EC, S1 motors with IP54 protection rating
- impellers mounted on ball bearings
- integrated electronic control with 0-10V signal

Accessories

- Potentiometer 0-10V (list price €145)

Dimensions



Size	Ø A	Ø B	C	D	E
100	100	175	235	321	185
125	125	175	235	321	185
160	160	206	275	355	215
200	200	206	275	355	215
250	250	323	400	495	340
315	315	323	400	495	340

Selection table and price lists IN-NOVO EC

All prices are list prices for local market, for a quotation please contact us.

GR	Poles	kW	Static pressure (Pa)												Noise	€
			0	10	20	30	40	50	60	80	100	150	200	LpA (dBA)		
			Flow rates (m³/h)													
100	4	0.009	180	150	130	80	-	-	-	-	-	-	-	31	204	
125	4	0.012	190	170	160	130	120	100	80	-	-	-	-	32	212	
160	4	0.023	410	380	350	330	310	280	260	210	150	-	-	33	364	
200	4	0.080	-	490	450	410	380	340	310	250	180	-	-	34	380	

IN-NOVO EC PLUS

GR	Poles	kW	Static pressure (Pa)											Noise	€
			0	10	20	30	40	50	60	80	100	150	200	LpA (dBA)	
			Flow rates (m³/h)												
100	2	0.012	260	245	220	195	175	130	90	-	-	-	-	31	228
125	2	0.012	300	280	260	245	220	200	180	130	-	-	-	32	332
160	2	0.110	800	780	770	760	720	680	660	600	580	400	-	40	757
200	2	0.115	1100	1050	980	960	930	910	900	850	810	700	550	41	765

IN-NOVO Three-phase

GR	Poles	kW	Static pressure (Pa)												Noise	€
			0	100	150	200	250	300	400	500	600	700	800	LpA (dBA)		
			Flow rates (m³/h)													
250	2	1.100	-	3900	3700	3600	3400	3300	3000	2500	2000	800	300	69	1946	
315	2	1.100	4950	4800	4700	4300	4100	4000	3700	3400	2800	2200	400	70	2346	

LpA(dBA): sound pressure level measured at 3 m in free field

MBC



Description

MBC: inline centrifugal fans with circular inlets

- galvanised steel casing
- backward inclined blade fan in galvanised steel
- IP 44 / 54 motor with external rotor
- adjustable motor

MBR

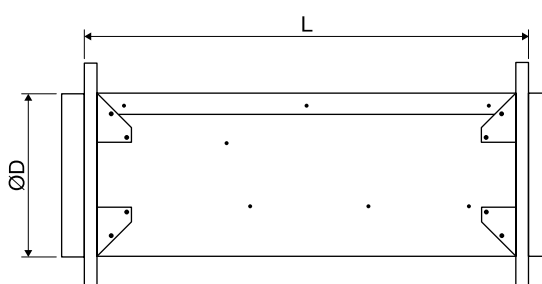
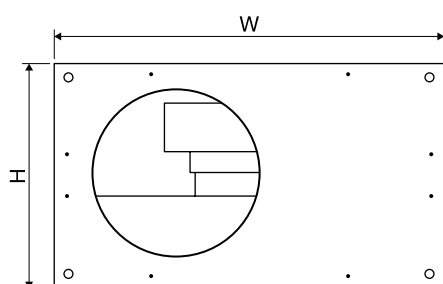


Description

MBR: inline centrifugal fans with rectangular inlets

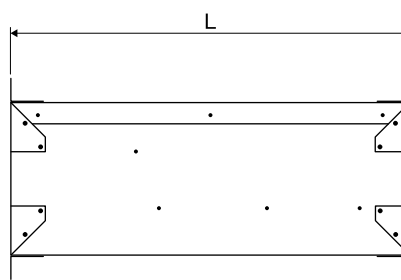
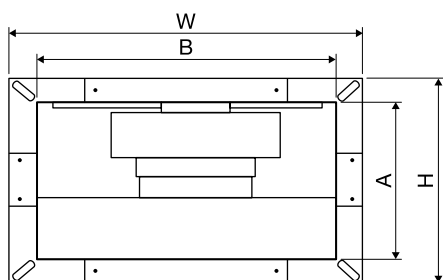
- galvanised steel casing
- backward inclined blade fan in galvanised steel
- IP 44 / 54 motor with external rotor
- adjustable motor

Dimensions MBC



Model	Poles	Rpm	W	Amp.	Voltage	A	B	Ø D	H	L	W
MBC 100 2M	2	2600	60	0.30	M	203	270	100	-	350	-
MBC 125 2M	2	2600	106	0.50	M	224	400	125	-	400	-
MBC 160 2M	2	2600	135	0.60	M	240	400	160	-	400	-
MBC 200 2M	2	2650	135	0.60	M	200	400	200	264	533	444
MBC 250 2M	2	2600	155	0.70	M	250	500	250	314	533	544
MBC 315 2M	2	2700	225	1.00	M	300	500	315	364	562	544
MBC 315 4M	4	1300	270	1.20	M	300	600	315	364	642	644
MBC 350 4M	4	1290	640	3.10	M	350	600	350	475	717	644
MBC 400 4M	4	1390	1300	5.70	M	500	700	400	568	787	744

Dimensions MBR



Model	Poles	Rpm	W	Amp.	Voltage	A	B	H	L	W
MBR 2M 40x20	2	2650	135	0.60	M	200	400	264	533	444
MBR 2M 50x25	2	2600	155	0.70	M	250	500	314	533	544
MBR 2M 50x30	2	2700	225	1.00	M	300	500	364	562	544
MBR 4M 60x30	4	1300	270	1.20	M	300	600	364	645	644
MBR 4M 60x35	4	1290	640	3.10	M	400	600	475	717	644
MBR 4M 70x40	4	1390	1300	5.70	M	500	700	568	787	744
MBR 4T 60x35	4	1130	470	0.82	T	400	600	475	717	644
MBR 4T 70x40	4	1340	1150	2.10	T	400	700	568	787	744
MBR 4T 80x50	4	1300	1800	3.40	T	500	800	568	880	840
MBR 6T 70x40	6	910	390	0.81	T	500	700	568	787	744
MBR 6T 80x50	6	880	610	1.05	T	500	800	568	880	740
MBR 6T 100x50	6	910	1050	2.20	T	600	1000	640	980	1040

Selection table and price lists MBC

All prices are list prices for local market, for a quotation please contact us.

Model	Static pressure (Pa)										Noise	€
	0	50	100	150	200	250	300	400	500	600	LpA (dBA)	
	Flow rate (m³/h)											
MBC 100 2M	500	440	350	200	-	-	-	-	-	-	54	465
MBC 125 2M	500	440	350	200	-	-	-	-	-	-	54	465
MBC 160 2M	600	700	500	300	-	-	-	-	-	-	55	502
MBC 200 2M	-	-	950	900	790	600	450	-	-	-	62	811
MBC 250 2M	-	-	1100	1050	980	800	700	350	-	-	67	869
MBC 315 2M	1800	1700	1600	1550	1450	1300	1150	1000	700	450	71	972
MBC 315 4M	-	-	2900	2600	2400	2200	1800	700	-	-	67	1631
MBC 350 4M	-	-	3950	3700	3400	3100	2800	2150	800	-	79	1997
MBC 400 4M	-	-	7200	7000	6850	6400	5900	5300	4000	1300	87	3418

Noise level measured at 3 m

MBR

Model	Static pressure (Pa)										Noise	€
	0	50	100	150	200	250	300	400	500	600	LpA (dBA)	
	Flow rate (m³/h)											
MBR 2M 40x20	-	-	950	850	780	620	450	-	-	-	62	717
MBR 2M 50x25	-	-	1100	1050	980	850	770	530	180	-	67	861
MBR 2M 50x30	-	-	1600	1550	1450	1350	1300	1000	700	350	71	939
MBR 4M 60x30	-	-	2800	2600	2400	2150	1800	800	-	-	67	1421
MBR 4M 60x35	-	-	3950	3700	3550	3100	2800	2200	500	-	79	1907
MBR 4M 70x40	-	-	7300	6900	6600	6200	5800	5500	4000	1200	87	2994
MBR 4T 60x35	-	-	3500	3300	3000	2700	2300	1200	-	-	79	1956
MBR 4T 70x40	-	-	7000	6700	6500	5800	5400	4000	1000	-	87	3163
MBR 4T 80x50	-	-	10300	9700	9000	8300	7900	6400	2000	-	89	4048
MBR 6T 70x40	-	4700	4600	3600	2700	-	-	-	-	-	79	3389
MBR 6T 80x50	-	6700	6000	5000	4100	2700	-	-	-	-	82	3579
MBR 6T 100x50	-	10000	9300	8600	8000	7000	6000	2000	-	-	84	4897

Noise level measured at 3 m

Fans



Description

VC-A: centrifugal fan with forward inclined blades

- powder-coated carbon steel casing
- 4/6/8 pole motors, three-phase 400/230/50 Hz
- max fluid temperature 60°C
- air flows between 500 and 20000 m³/h
- useful static pressure between 250 - 800 Pa

VC-R: like VC-A but with backward inclined blades

- air flows between 500 and 200000 m³/h
- useful static pressure between 250 - 2000 Pa

Prices on request

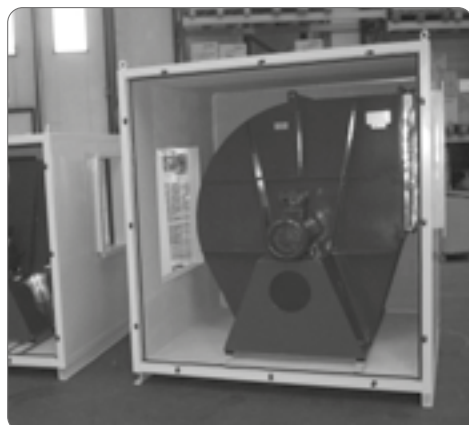
Accessories

- volume control / shut-off dampers
- gravity dampers
- flow regulation with inverter
- sound attenuators
- water or electric coils

Special executions

- ATEX execution:
 - ATEX 2 G Ex h - IIB T1....T4 Gb
 - ATEX 2 D Ex h - IIIB T450°C....T135°C Db
- corrosion proof execution (special coating or stainless steel)
- execution for high temperatures, max 400°C
- execution with dual motor
- afonic execution via cover box

Production examples



Centrifugal fan with afonic box



Centrifugal fan with afonic box, sound attenuator, inlet suction grilles with rainproof profile that can be opened for wall inspection G4 / G7 filter efficiency, multiple stages electric coil



Centrifugal fan with afonic box, sound attenuator and G4 efficiency filter wall



Centrifugal fan with afonic box, sound attenuator and G4 efficiency filter wall

BOX-BD



Description

BD: extractors centrifugal box fans

- fan with forward inclined blades, double intake with directly coupled motor
- self-supporting galvanised steel structure
- internal insulation with class 1 acoustic panel
- inlet / outlet with rectangular section
- suitable for outdoor installation

ECA: like BD but executed with structure in aluminium profiles and panelling in galvanised sheet (on request)

- double panelling version also available (on request)

Accessories

MR: protective mesh casing (list price € 98)

REM: single-phase speed regulator

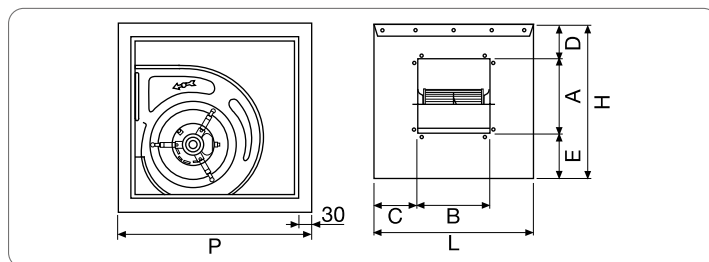
All prices are list prices for local market, for a quotation please contact us.

Price list

Model	Fan	Single-phase regulator	
	€	Model	€
7/7 4P	580	REM 600	82
7/7 6P	520	REM 600	82
10/10 4P	720	REM 900	152
12/12 6P	1030	REM 900	152

Material with prices in bold in stock

Dimensions

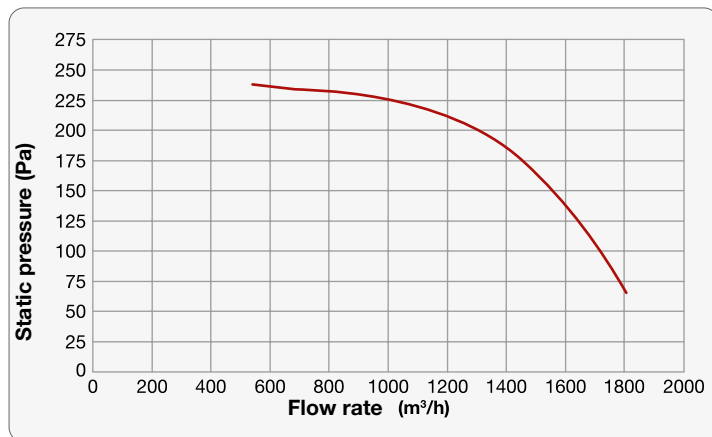


Mod.	A	B	C	D	E	H	L	P	Kg
7/7	242	216	117	81	150	450	450	450	21
10/10	342	298	141	84	195	580	580	580	32
12/12	408	349	150.5	83	216	650	650	650	54

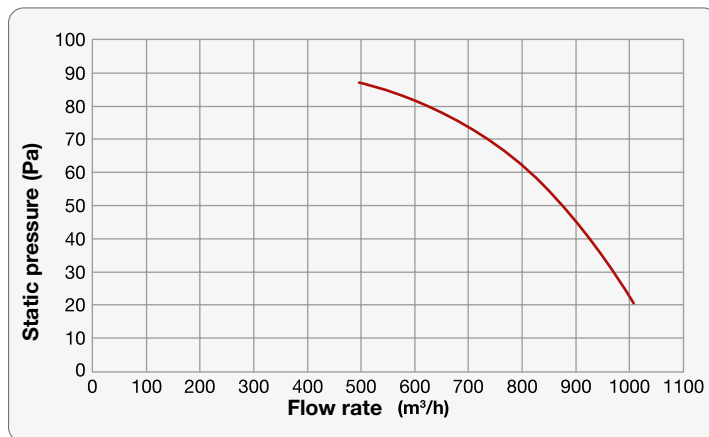
Technical specifications

Model	Voltage	rpm	kW	Lp dB(A)
7/7 4P	M	1410	0.13	57
7/7 6P	M	970	0.04	51
10/10 4P	M	1410	0.59	63
12/12 6P	M	970	0.76	59

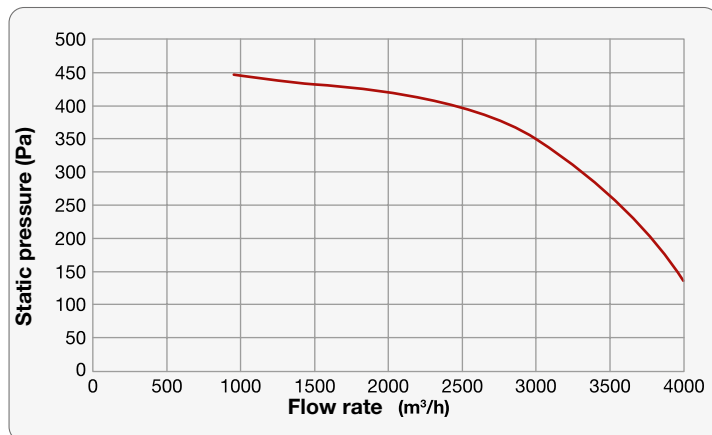
BD 7/7 4P 0.13 kW



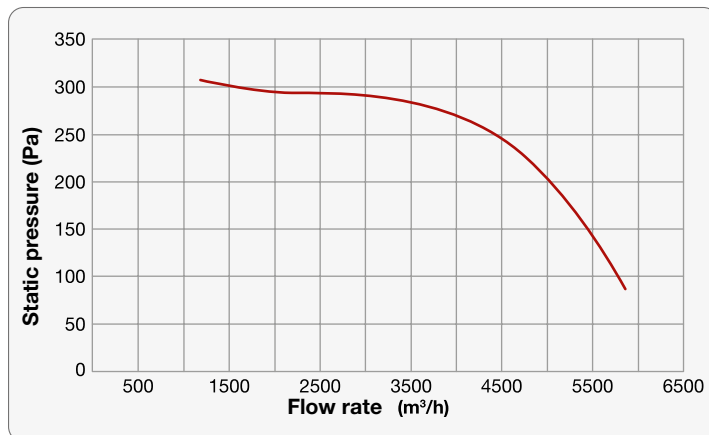
BD 7/7 6P 0.04 kW



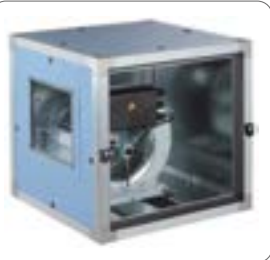
BD 10/10 4P 0.59 kW



BD 12/12 6P 0.76 kW



ECA 8M F



Description

ECA 8M F: extractors centrifugal box fans

- fan with forward inclined blades, double intake with directly coupled motor, EC with permanent magnets with built-in electronics
- structure made of aluminium profiles, galvanised steel panels
- internal insulation with class 1 acoustic panel
- G4 + F7 filter system with constant flow operation
- integrated solution
- maximum efficiency
- plug and play
- configuration not required
- low noise levels
- high reliability
- "Drive-sensor - Less" mounted directly on the fan casing, with integrated PFC and protection against voltage drop, for a configuration-free plug and play system

- continuous control of speed variation via a 0-10 Volt signal from potentiometer or with Modbus RS485 compliant interface
- fan with IP44 protection IP 44 rating, Drive with IP 54 protection rating
- performance in line with AMCA 210-99 and ISO 5801
- dynamic balancing according to ISO 1940
- working temperature -20°C / +40°C

Accessories

PA: support feet (included)

MR: protective mesh casing (list price € 138)

TPE: rain protection cover for exterior (list price € 130)

P: potentiometer 0-10V (list price € 145)

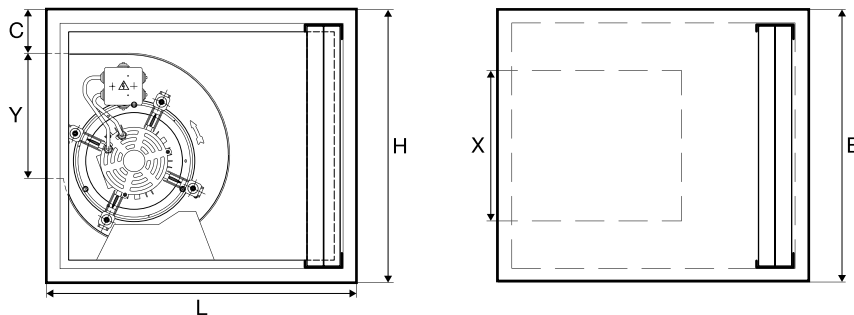
Special executions

- double panel execution (on request)
- constant pressure execution (on request)

How it works

Through the 0-10 Volt signal from either the adjustment or the potentiometer, the constant flow system allows you to find the correct working point that our system needs. Once the working point has been identified, the electronics on the fan will keep the flow rate constant until the maximum head is reached.

Dimensions

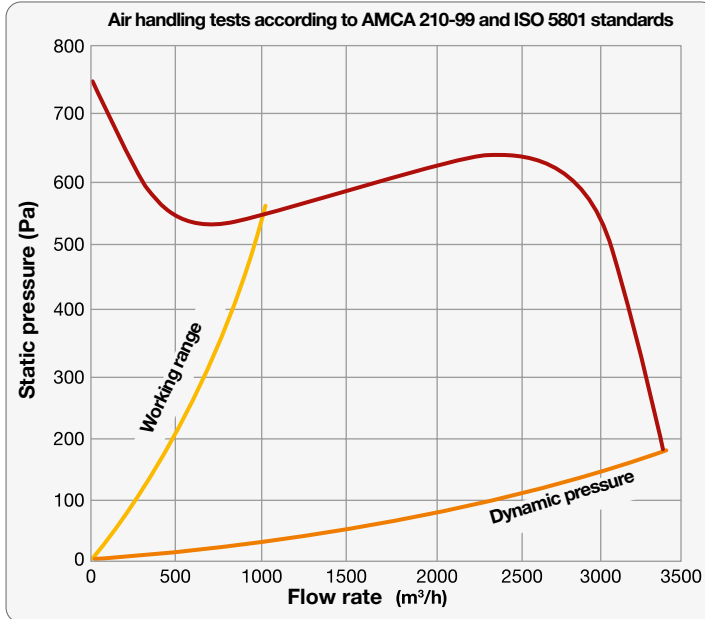


Selection table and price list

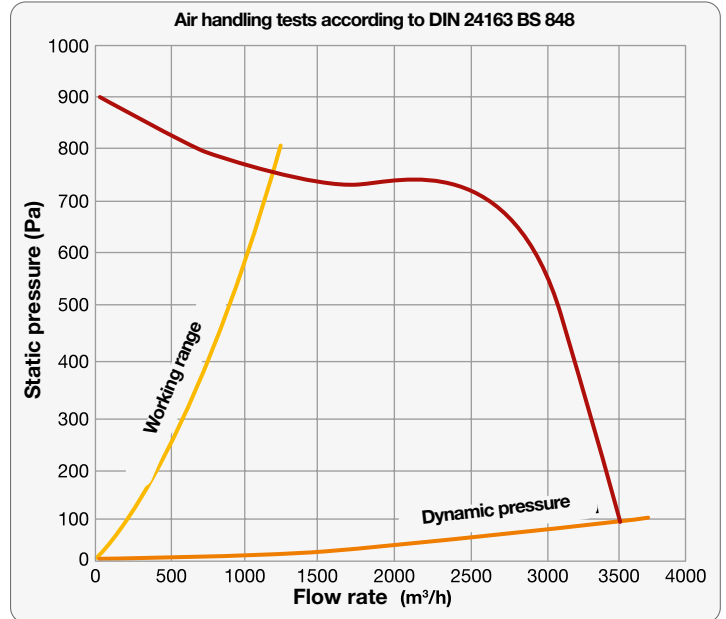
All prices are list prices for local market, for a quotation please contact us.

Type	kW	Noise level [dB(A)]	Dimensions			Min. flow (m³/h)	Pressure (Pa)	Max flow (m³/h)	Pressure (Pa)	€
			B	H	L					
7/7 8M EC	1.04	64	500	500	650	1000	500	3000	350	1821
9/9 8M EC	1.04	64	600	600	750	1000	600	3000	480	2160
10/10 8M EC	1.04	64	600	600	750	1000	700	4000	400	2392
9/9 8M EC	2.2	64	600	600	750	1000	600	5000	420	2885
10/10 8M EC	2.2	64	600	600	750	1400	850	5000	600	2966

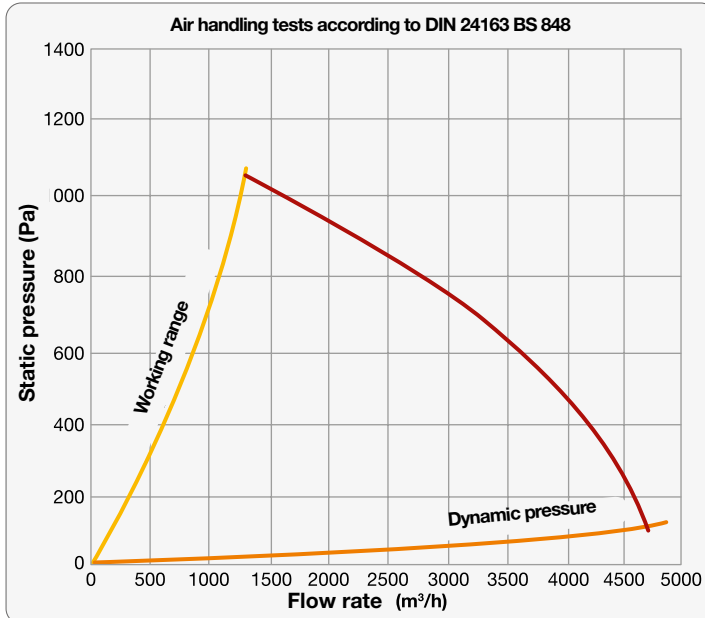
7/7 8M EC 1kW



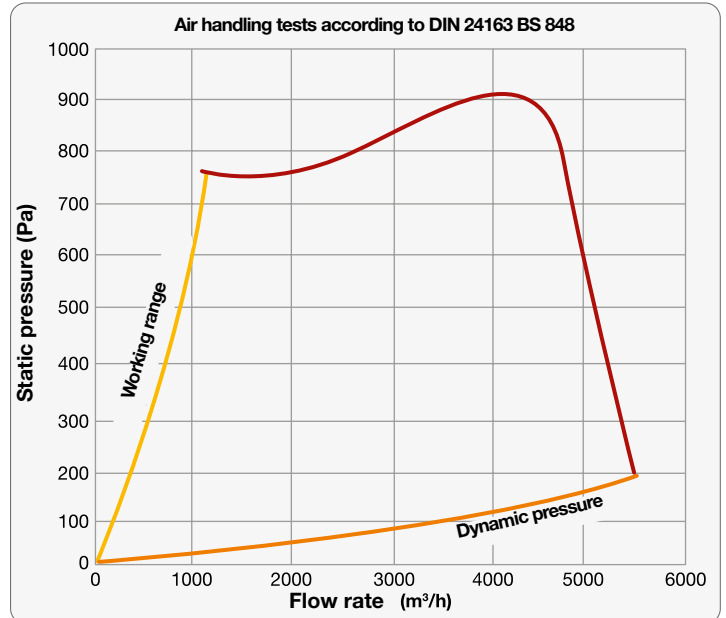
9/9 8M EC 1kW



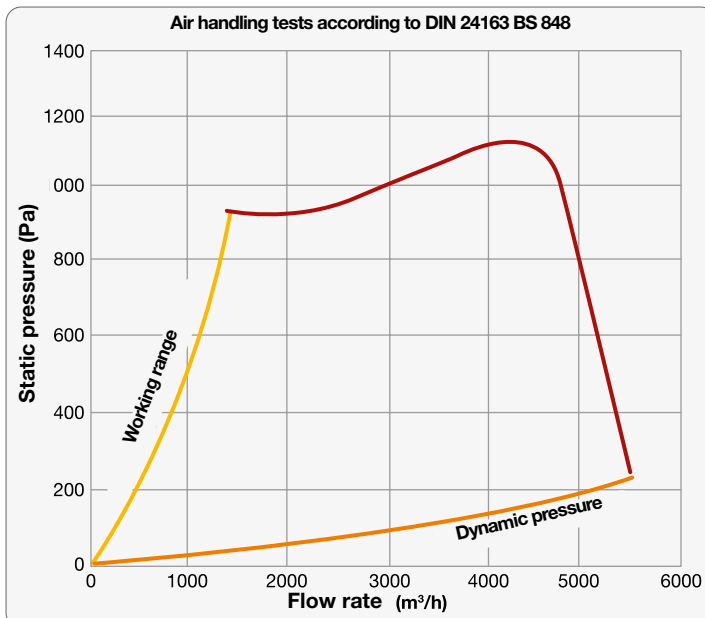
10/10 8M EC 1kW



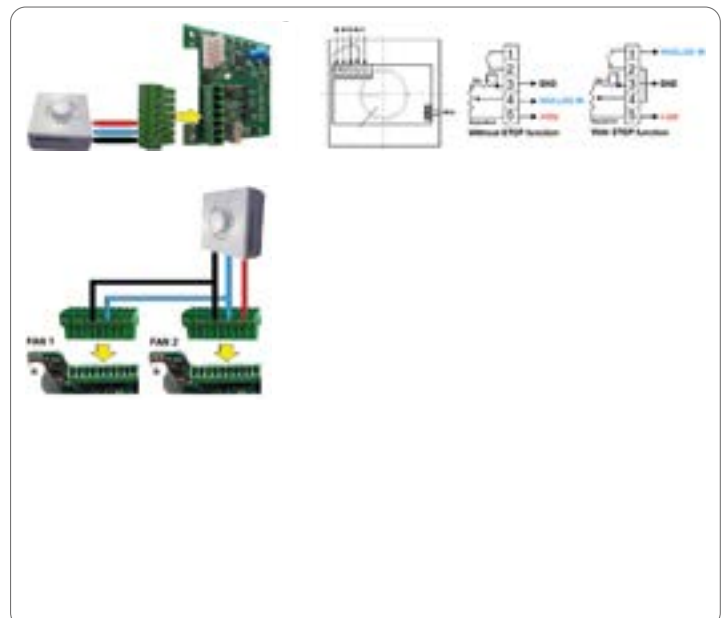
9/9 8M EC 2kW



10/10 8M EC 2kW



Electrical connections



BOX-HC

► MOTOR OUTSIDE THE FLOW



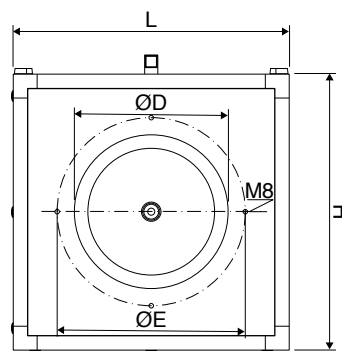
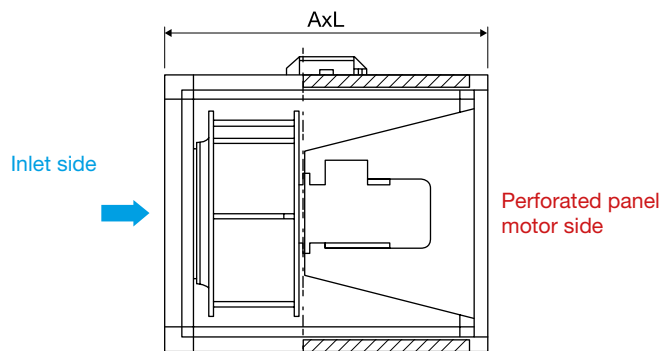
Description

- BOX-HC:** Centrifugal box fan with single inlet (Plug Fan) with motor outside the flow, suitable for extracting hot air with temperatures up to 150°C
- frame with extruded aluminium profiles
 - galvanised panelling
 - double panels with heat and sound insulation th. 25 mm in polyurethane foam with 40 Kg/m³ density, reaction to fire class "0"
 - backward inclined impellers in galvanised steel
 - 4 removable panels allow you to direct the air in 4 different directions by drilling the panel
 - grease discharge

Accessories

- IS1 on-off safety switch 16A - 600V - IP65 1 speed (list price €222)
- single-phase control REM 600/900
- NE S1 inverter
- PA: support feet (list price € 120)
- TPE: rain protection cover for exterior (list price € 130)

BOX-HC



All prices are list prices for local market, for a quotation please contact us.

Price list

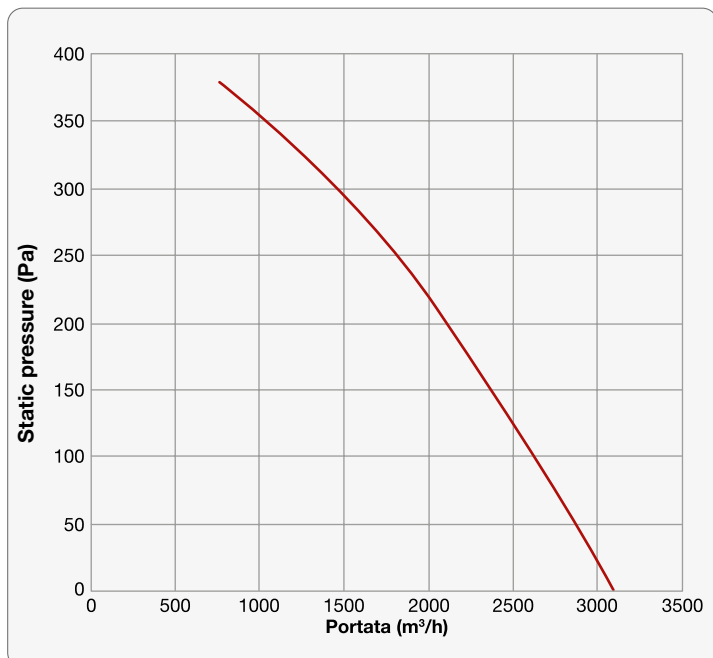
Model	kW	Int.	Amp.	€	Single-phase regulator	
					Model	€
BOX-HC 30P4M	0.25	230	1.10	1408	REM 600	82
BOX-HC 40P4M	0.37	230	1.60	1715	REM 600	
BOX-HC 50P4M	0.75	230	3.20	2040	REM 600	
BOX-HC 60P4M	1.50	230	6.50	2186	REM 900	152
Model	kW	Int.	Amp.	€	Inverter	
BOX-HC 30 P4 T	0.25	400	0.36	1406	NE S1 007	650
BOX-HC 40 P4 T	0.37	400	0.53	1555	NE S1 007	
BOX-HC 50 P4 T	0.75	400	1.08	1922	NE S1 007	
BOX-HC 60 P4 T	1.50	400	2.16	2186	NE S1 015	695
BOX-HC 70 P4 T	2.20	400	3.23	3412	NE S1 022	805

Material with prices in bold in stock

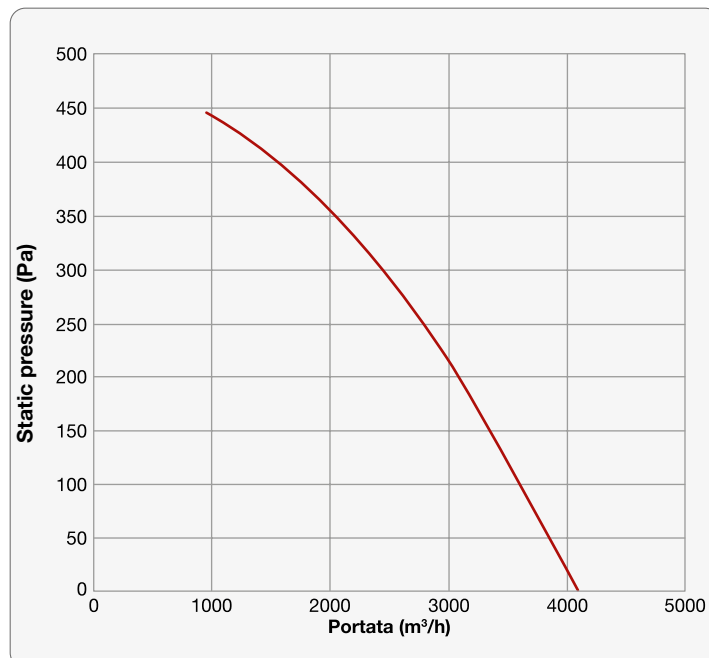
Dimensions

Size	A	ØD	ØE	L	H
30	500	300	330	500	500
40	560	350	381	560	560
50	630	400	431	630	630
60	710	450	485	710	710
70	760	500	533	760	760

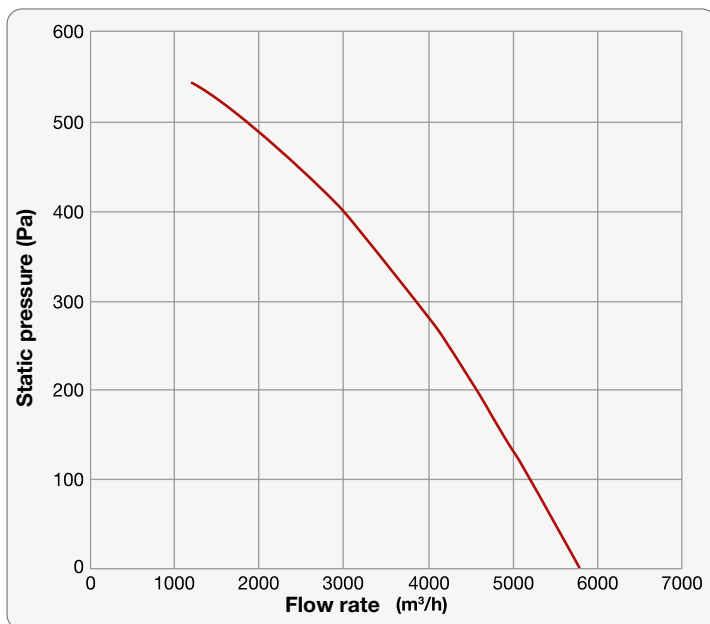
BOX-HC 30 P4 T/M



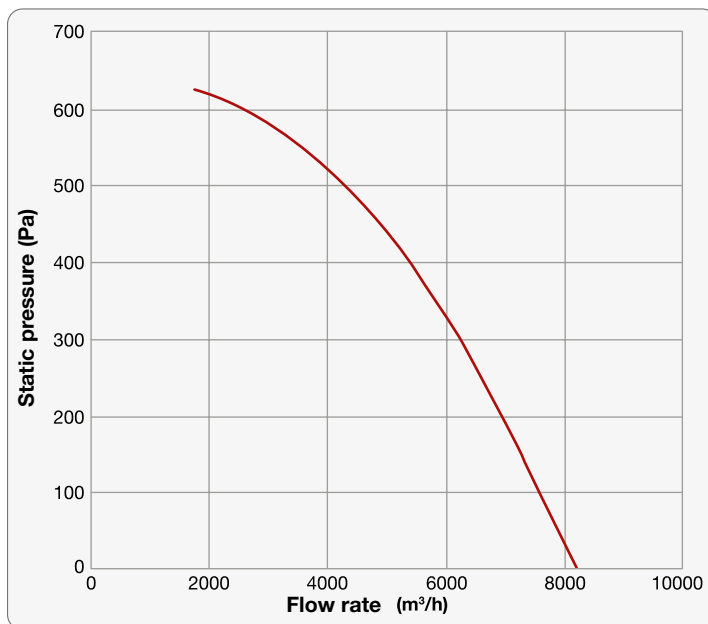
BOX-HC 40 P4 T/M



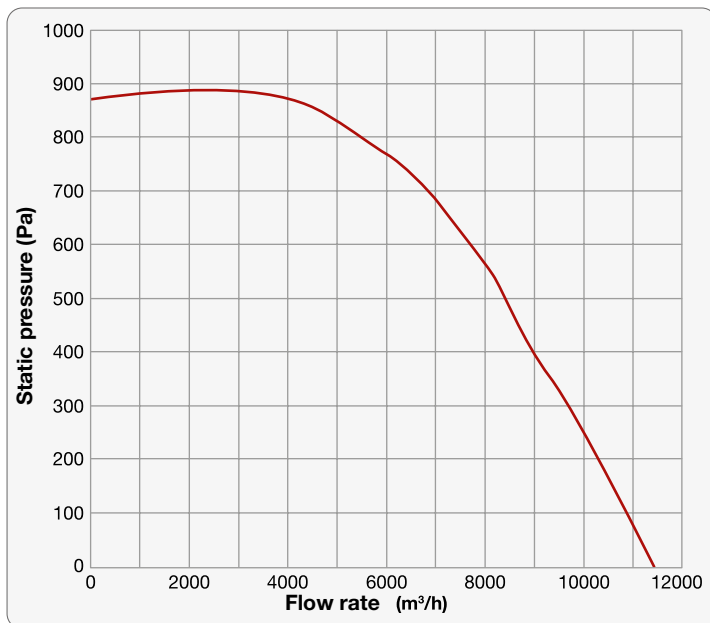
BOX-HC 50 P4 T/M



BOX-HC 60 P4 T/M



BOX-HC 70 P4 T



Centrifugal belt-driven box fans

ET



Description

ET: forward inclined double inlet centrifugal fans, with pulley and belt drive

- frame in extruded aluminium profiles with aluzinc panelling and internal insulation
- in the double-skinned "DP" version with sandwich panels filled with polyethylene foam th. 25 mm
- motor-fan unit mounted on anti-vibration supports
- fan inlet fitted with anti-vibration joint
- operating temperature -20°C / +40°C
- IP 55 motors class F

Accessories

TPE: rain protection cover

MR: spigot with mesh

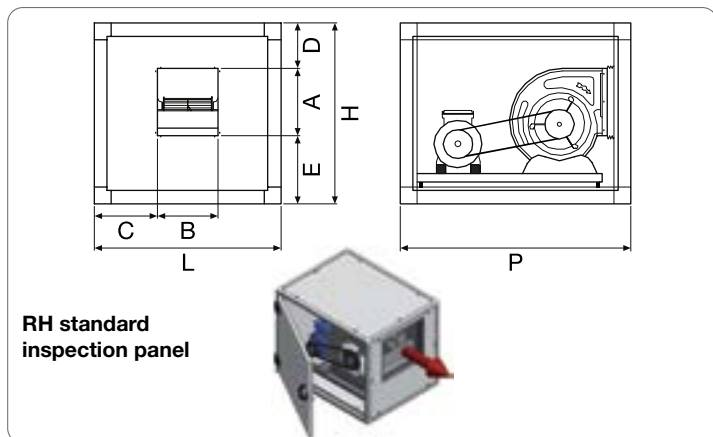
PA: foot kit H 100 mm

INVERTER

Special executions

- dual polarity
- panelling in AISI 304/316 stainless steel

ET



RH standard inspection panel

Dimensions

Model	L	H	P	A	B	C	D	E
7-7	500	500	700	210	230	135	65	225
9-9	600	600	800	260	300	150	90	250
10-10	600	600	800	290	330	135	60	250
12-12	700	700	900	340	395	152	65	295
15-15	950	950	1200	405	470	240	215	330
18-18	950	950	1200	480	555	197	80	390
500	1200	1200	1500	640	640	280	165	395
560	1300	1300	1600	715	715	292	160	425
630	1500	1400	1700	800	800	350	95	605
710	1600	1600	1800	900	900	350	140	560

* Price list valid for D1 (standard) and S1 (on request) configurations; for optional configurations S2, S3, D2 and D3, a 10% surcharge applies.
For sizes from 7/7 to 18/18, 2 inspection doors are always provided (right or left orientation only affects the position of the motor and transmission); while for sizes from 500 to 710 there is only one inspection door (motor and transmission side), it is possible to have a double inspection door with a 2% increase compared to the price list.

** Specify the power supply voltage when ordering (if not specified, the standard 230/400V version will be supplied).

*3 25 mm thick panels for sizes 7/7 to 560, 45 mm thick panels for sizes 630 and 710.

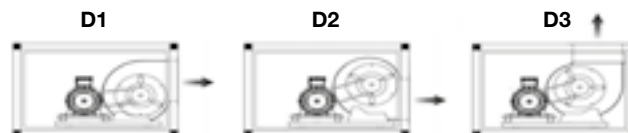
All prices are list prices for local market, for a quotation please contact us.

Price list

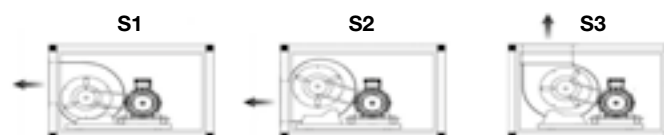
Size	Motor power (kW)	Single wall		Double wall*3		Foot kit 20/10 h100	Rain protection cover	Spigot
		BOX ET SP		BOX ET DP		PA	TPE	MR
		Wt (kg)	List price*	Wt (kg)	List price*	List price	List price	List price
7-7	0,75	50	1.785	64	1.974	-	50	53
	0,75	61	1.890	80	2.127	-	56	59
9-9	1,10	65	1.997	85	2.235	-	56	59
	0,75	64	1.984	84	2.221	-	64	82
10-10	1,10	68	2.091	88	2.329	-	64	82
	1,50	71	2.197	91	2.434	-	64	82
	0,75	79	2.330	105	2.634	-	74	84
12-12	1,10	83	2.438	109	2.742	-	74	84
	1,50	86	2.544	112	2.848	-	74	84
	2,20	93	2.745	119	3.049	-	74	84
	1,10	119	3.047	167	3.554	-	74	84
15/15	1,50	122	3.153	170	3.660	322	109	96
	2,20	130	3.431	177	3.938	322	109	96
	3,00	134	3.542	182	4.049	322	109	96
	1,50	136	3.450	184	3.957	322	109	96
18/18	2,20	144	3.728	191	4.235	322	109	120
	3,00	148	3.839	196	4.346	322	109	120
	4,00	157	4.164	204	4.671	322	109	120
	5,50	170	4.422	217	4.929	322	109	120
	2,20	214	5.908	298	6.966	371	166	137
500	3,00	218	6.019	303	7.077	371	166	137
	4,00	227	6.293	311	7.351	371	166	137
	5,50	240	6.551	324	7.609	371	166	137
	7,50	250	6.889	334	7.947	371	166	137
	3,00	249	6.439	336	7.542	389	181	155
560	4,00	258	6.712	345	7.816	389	181	155
	5,50	271	6.971	358	8.074	389	181	155
	7,50	281	7.309	368	8.412	389	181	155
	11,00	344	8.190	431	9.293	389	181	155
	3,00	306	9.459	428	10.627	included	214	167
630	4,00	314	9.809	437	10.977	included	214	167
	5,50	327	10.068	450	11.236	included	214	167
	7,50	337	10.457	460	11.625	included	214	167
	11,00	400	11.337	523	12.505	included	214	167
	4,00	371	11.044	516	12.419	included	236	181
710	5,50	384	11.302	529	12.678	included	236	181
	7,50	394	11.691	539	13.067	included	236	181
	11,00	457	12.572	602	13.948	included	236	181

Configurations

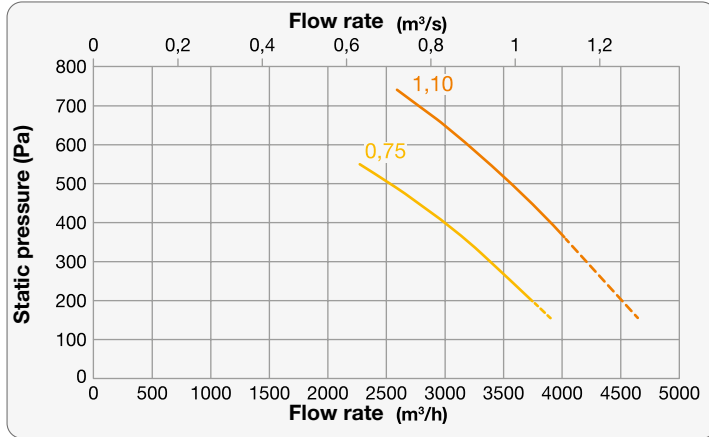
Orientation – Right-hand inspection (standard)



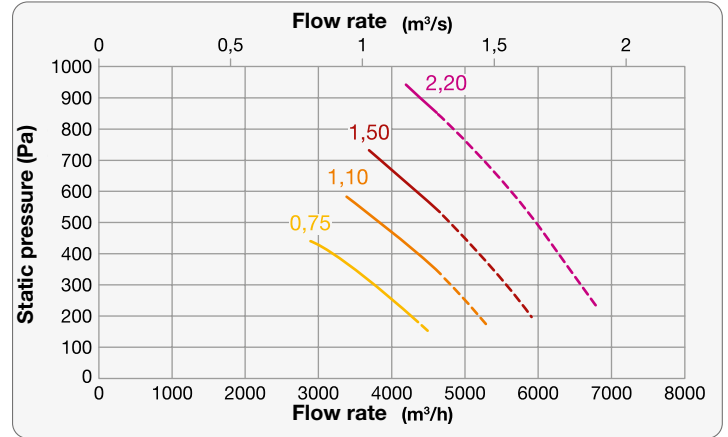
Orientation – Left Inspection



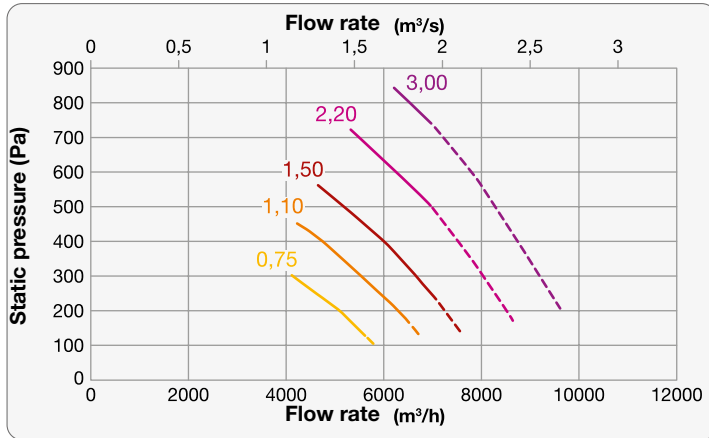
ET 9/9



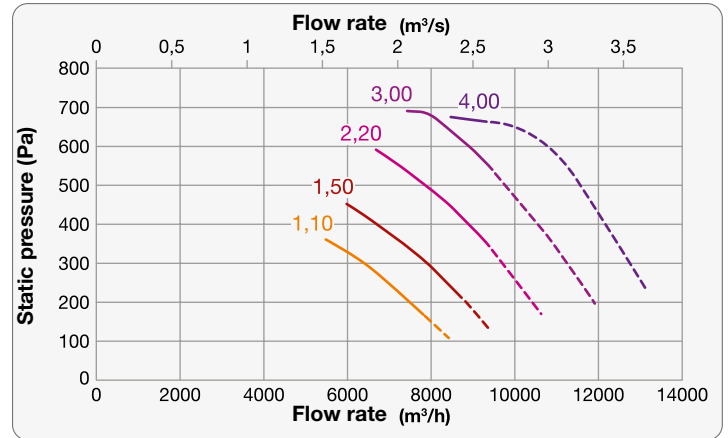
ET 10/10



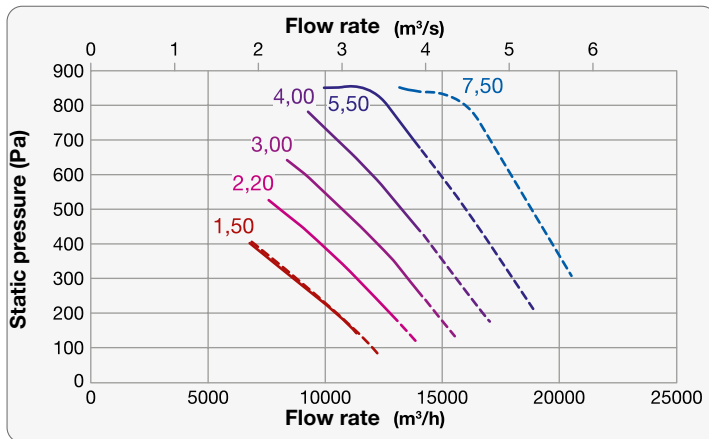
ET 12/12



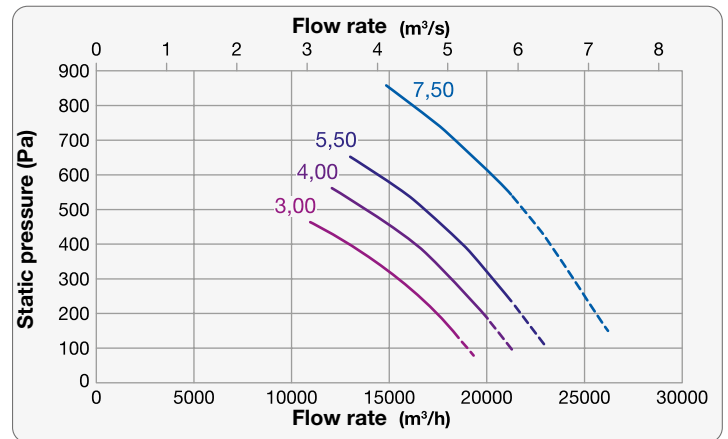
ET 15/15



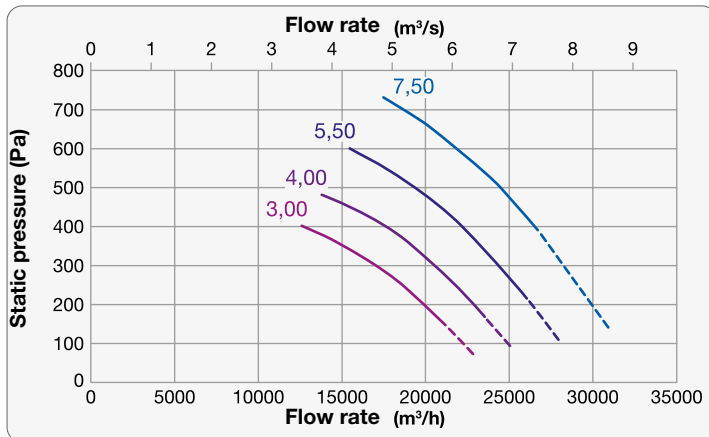
ET 18/18



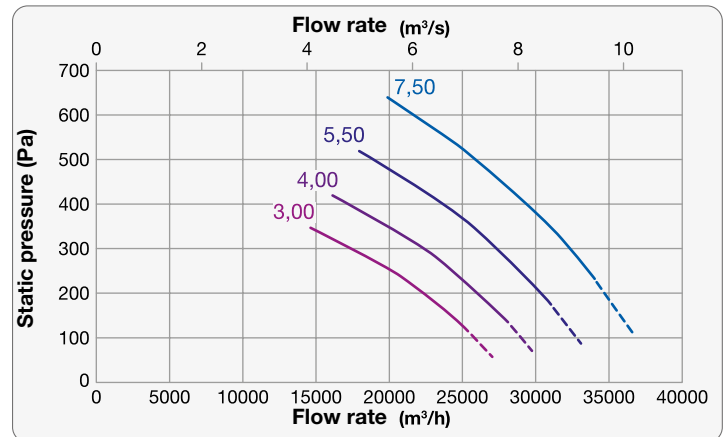
ET 500



ET 560



ET 630



— 0.75 kW
 — 1.10 kW
 — 1.50 kW
 — 2.20 kW
 — 3.00 kW
 — 4.00 kW
 — 5.50 kW
 — 7.50 kW
- - - No ErP
- - - No ErP
- - - No ErP
- - - No ErP
- - - No ErP
- - - No ErP
- - - No ErP
- - - No ErP

Anti-acid centrifugal fans

PP



Description

PP: centrifugal fan to extract air in corrosive environments

- polyethylene housing
- polypropylene moulded impeller
- powder-coated galvanised steel structure
- three-phase gear motor 220/380/50Hz
- screws in AISI 304/316 stainless steel
- operating temperature -40°C / +70°C

Accessories

PMR: spigot with polypropylene mesh

PST: polypropylene volume control damper

PSS: polypropylene gravity damper

Special executions

PPEExd: EExd blast-proof three-phase motor version ATEX 2G ZONES 1 – 2 2GD ZONE 21 – 22

X: motor support in AISI 304/316 stainless steel

A: anti-static housing

Note: Always specify the orientation

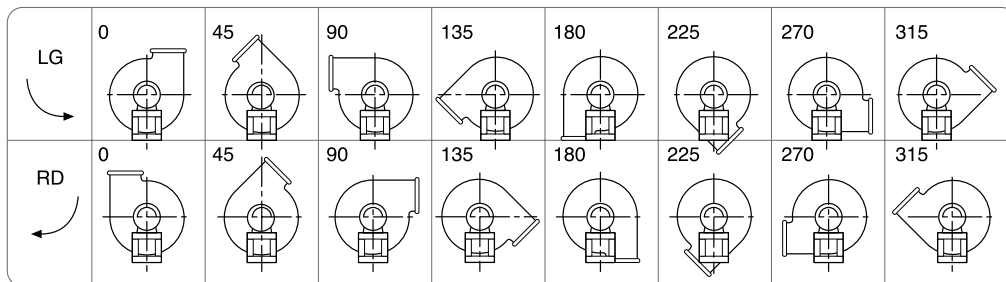
All prices are list prices for local market, for a quotation please contact us.

Price list

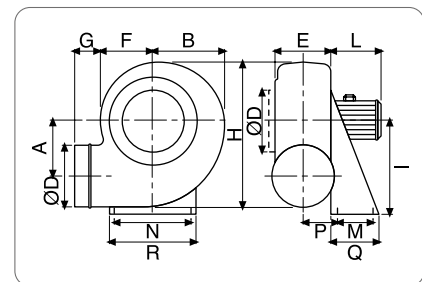
GR	DN	kW	RPM	Price list €						
				PP	PPEExd	PMR	PST	PSS	A	X
202	160	0.18	2800	790	1445	101	183	195	75	146
204	160	0.12	1400	786	1441	101	183	195	75	146
252	200	0.37	2800	1060	1962	135	206	240	157	221
254	200	0.12	1400	1007	1797	135	206	240	157	221
282	225	0.75	2800	1348	2325	154	217	281	225	262
284	225	0.18	1400	1206	2067	154	217	281	225	262
312	250	1.50	2800	1621	2905	180	225	311	243	326
314	250	0.25	1400	1378	2370	180	225	311	243	326
316	250	0.18	900	1411	2389	180	225	311	243	326
352	280	2.20	2800	1891	3377	191	236	333	292	371
354	280	0.37	1400	1602	2737	191	236	333	292	371
356	280	0.18	900	1617	2737	191	236	333	292	371
404	315	0.55	1400	2033	3242	198	281	352	386	887
406	315	0.25	900	1988	3205	198	281	352	386	887
452	355	3.00	2800	5043	7076	243	285	393	479	1528
454	355	1.10	1400	2591	3935	243	285	393	479	1007
456	355	0.37	900	2392	3729	243	285	393	479	1007

Type	kW	rpm	A	B	ØD	E	F	G	H	I	L	M	N	P	Q	R	Kg
20	0.12	1370	140	180	160	150	138	60	370	250	190	100	195	95	140	225	10
	0.18	2750									190						10
25	0.12	1370	183	228	200	180	170	80	465	310	210	100	252	110	140	282	12
	0.37	2820									210						12
28	0.16	1370	208	255	225	190	190	80	520	350	232	120	277	120	190	312	17
	0.75	2820									232						22
31	0.25	1400	240	280	250	200	210	80	580	410	245	150	315	140	230	350	23
	1.50	2850									245						31
35	0.37	1400	260	312	280	220	230	80	640	445	270	150	345	150	230	380	28
	2.20	2870									270						38
40	0.55	1420	290	352	315	240	264	80	723	495	232	170	325	160	250	425	38
	0.25	920									210						34
45	1.10	1420	324	392	355	265	290	80	810	550	245	170	370	173	250	470	46
	0.37	920									232						37

Orientation



Dimensions



Selection table

GR	Motor	kW	no.	LP	Q= m³/h																							
					480	540	600	720	840	960	1080	1200	1320	1500	1680	1860	2100	2400	3000	3360	3780	4260	4800	5400	6000			
		inst.	min-1	dB(A)	mm H ₂ O																							
P 202	63 A2	0.18	2750	62	45	43	42	38	31	23	13																	
P 252	71 A2	0.37	2850	71			75	75	74	72	69	67	64	60	54	45	32											
P 282	80 A2	0.75	2850	75					110	110	109	106	100	95	91	88	80	67	47	30								
P 312	90 S2	1.50	2860	79								132	132	131	130	126	121	113	98	87	70	50						
P 352	90 L2	2.20	2870	80											170	170	168	160	148	146	130	115	96	80				
P 254	63 A4	0.12	1370	54	15	14	14	12	10	7	5																	
P 284	63 B4	0.18	1370	55	24	23	23	22	20	18	16	14	12	8														
P 314	71 A4	0.25	1400	59			29	29	28	28	27	25	24	21	19	16	9											
P 354	71 B4	0.37	1400	61					38	38	37	36	36	35	33	30	28	23	13									
P 404	80 A4	0.55	1410	69								52	52	51	50	50	48	45	39	35	30	24						
P 454	90 S4	1.10	1410	70											65	65	64	63	59	53	51	46	41	31	19			
P 316	71-6	0.18	930	48	14	13	13	12	11	9	8	7	6															
P 356	71-6	0.18	930	52			17	17	16	16	15	14	13	11	10	9												
P 406	71 B6	0.25	920	56						24	24	23	22	21	20	19	17	14										
P 456	80 A6	0.37	920	59								29	29	28	28	27	26	24	20	17	14							

TCV



Description

TCV: vertical flow exhaust roof fan, made of anti-acid polypropylene

- housing moulded in PE (polyethylene)
- PP moulded impeller (polypropylene)
- stainless steel screws

ATEX 2G ZONE 1 – 2 GD ZONE 21 – 22 execution

- housing moulded in conductive PE-EL
- impeller moulded in PP

Executions available

- other sizes
- variety of motor sizes
- various polarities

Accessories

- on-off switch, standard motor version (€75 each)
- on-off switch, Atex motor (€351 each)
- PTC/PTO/Clickson thermal protectors, standard motor version (€42 each)
- PTC/PTO/Clickson thermal protectors, Atex version (€70 each)
- cable gland on Atex motors (€54 each)

Dimensions

Size	Motor size	kW	rpm	Dimensions (mm)												Weight (Kg)	
		Installed	Rpm	A	B	C	D	E	F	I	No.	L	M	N	O	Std	Atex
204	63	0.12	1450	400	350	145	160	420	40	200	6 M6	240	540	80	490	10	13
202	63	0.18	2850	400	350	145	160	420	40	200	6 M6	240	540	80	490	10	14
254	63	0.12	1450	500	450	185	200	460	50	230	8 M6	265	540	80	490	13	15
252	71	0.37	2850	500	450	185	200	460	50	230	8 M6	265	540	80	490	13	16
314	71	0.25	1450	600	560	240	280	600	50	325	8 M6	365	540	80	490	26	29
312	90	1.50	2850	600	560	240	280	600	50	325	8 M6	365	540	80	490	33	40
356	71	0.18	930	600	560	240	280	600	50	325	8 M6	365	540	80	490	26	29
354	71	0.37	1450	600	560	240	280	600	50	325	8 M6	365	540	80	490	26	30
352	90	2.20	2850	600	560	240	280	600	50	325	8 M6	365	540	80	490	35	42
456	80	0.37	930	800	730	280	355	700	50	405	8 M6	450	750	145	700	40	46
454	90	1.10	1450	800	730	280	355	700	50	405	8 M6	450	750	145	700	48	58

Selection table and price list

All prices are list prices for local market, for a quotation please contact us.

Size	kW	Static pressure (Pa)															Noise	Price list €				
		30	60	80	110	150	180	250	280	300	350	400	500	600	700	800		Single-phase	Three-phase	Atex	PE´	SL´´
		Flow rate (m³/h)															LpA dB(A)					
204	0.12	480	400	325	185	-	-	-	-	-	-	-	-	-	-	-	54	1335	1228	2079	182	143
202	0.18	-	-	-	955	900	850	770	700	670	640	400	-	-	-	-	67	1374	1263	2546	182	143
254	0.12	-	890	800	675	400	-	-	-	-	-	-	-	-	-	-	59	1699	1576	2455	182	143
252	0.37	-	-	-	-	-	1800	1650	1700	1600	1550	1350	1250	800	-	-	75	1762	1643	2812	182	143
314	0.25			-	1800	1750	1480	1200	760	-	-	-	-	-	-	-	58	1980	1841	3073	182	162
312	1.50	-	-	-	-	-	-	-	-	-	-	3700	3390	3400	3000	2700		2622	2412	4305	182	162
356	0.18	-	1750	1500	1350	950	-	-	-	-	-	-	-	-	-	-	58	2253	2024	3219	182	162
354	0.37	-	-	-	2600	2300	2100	2200	1600	1850	1350						69	2245	2075	3382	182	162
352	2.20	-	-	-	-	-	-	-	-	-	-	5200	5000	4800	4200	4350	84	2915	2566	4621	182	162
456	0.37	-		3300	3200	3100	2400	1500	-	-	-	-	-	-	-	-	62	3279	3018	4708	317	174
454	1.10	-	-	-	-	5200	5100	4700	4600	4400	3900	3400	3000	2100	-	-	72	3453	3227	4792	317	174

*: support base

** : side supports in sheet metal

LpA: max efficiency at 1.5 m in free field

Fans



Description

TN: centrifugal exhaust roof fan with horizontal flow

- made of galvanised steel
- protective cap in thermoplastic polymer (ABS)
- centrifugal impeller with backward inclined blades
- closed motor with external ventilation, IP 55 protection rating, class F insulation
- air temperature from -20°C to +80°C

TN 400°: centrifugal exhaust roof fan with horizontal jet approved at 400 ° 2 h

- uprights, motor plate, protective mesh in galvanised steel
- protective cap in thermoplastic polymer (ABS)
- centrifugal impeller with backward inclined blades
- closed motor with external ventilation, IP 55 protection rating, class F insulation
- air temperature 80°C in continuous use or 400°C for hours in an emergency

TNV: centrifugal exhaust roof fan with vertical flow

- made of galvanised steel
- centrifugal impeller with backward inclined blades
- closed motor with external ventilation, IP 55 protection rating, class F insulation
- air temperature from -20°C to +80°C

TNV 200°: centrifugal exhaust roof fan with vertical flow

- base, motor plate with heat sink, protective mesh, motor protection cover, impeller air conveyor, made of galvanised sheet metal
- centrifugal impeller with backward inclined blades
- closed motor with external ventilation, IP 55 protection rating, class F insulation and bearings with "C3" tolerance
- air temperature from -20°C to +200°C

TNV 400°: centrifugal exhaust roof fan with vertical flow approved at 400 ° 2 h

- base, motor plate with heat sink, protective mesh, motor protection cover, impeller air conveyor, made of galvanised sheet metal
- centrifugal impeller with backward inclined blades
- closed motor with external ventilation, IP 55 protection rating, class F insulation
- air temperature 80°C in continuous use or 400°C for hours in an emergency

Accessories

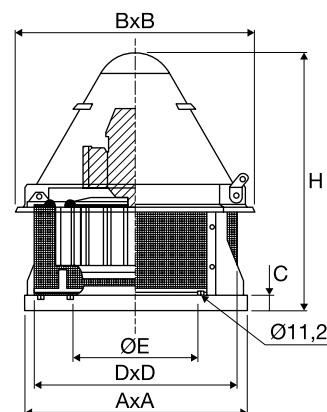
- counter-base to set in CB
- gravity damper SG
- frame for flat cover, externally insulated (on request)
- inverter

Special executions

M: single-phase

T: Three-phase

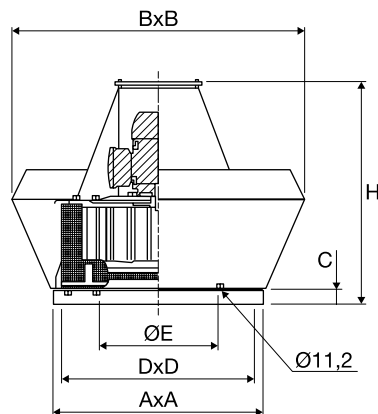
TN - Centrifugal exhaust roof fan with horizontal flow



Size	AxA	BxB	C	DxD	E	H	Kg
5	400	470	40	350	200	520	14
20	400	470	40	350	250	520	18
30	560	595	40	460	300	650	25
40	560	595	40	460	350	650	30
50	710	800	40	610	400	700	40
60	710	800	40	610	450	700	48
70	900	1000	40	800	500	880	57
80	900	1000	45	800	550	910	76
90	900	1000	45	800	600	940	96
100	900	1000	45	800	600	960	110
110	1200	1250	50	1100	640	1120*	170
120	1200	1250	50	1100	710	1160*	195

*: square cap

TNV - centrifugal exhaust roof fan with vertical flow



Size	AxA	BxB	C	DxD	ØE	H	Kg
5	400	590	40	350	200	480	18
20	400	590	40	350	250	500	22
30	560	780	40	460	300	630	30
40	560	780	40	460	350	630	37
50	710	930	40	610	400	700	48
60	710	930	40	610	450	730	58
70	900	1210	40	800	500	780	69
80	900	1210	45	800	550	820	91
90	900	1210	45	800	600	860	112
100	900	1210	45	800	600	900	128
110	1200	1600	50	1100	640	1160	194
120	1200	1600	50	1100	710	1200	209

Price list

All prices are list prices for local market, for a quotation please contact us.

GR	Motor			Price list €					SG	CB
	Poles	Phase	kW	TN	TN 400°	TNV	TNV 200°	TNV 400°		
05	4	M	0,12	1.243	-	1.457	-	-	214	182
05	4	T	0,12	1.386	-	1.291	-	-		
05	6	T	0,09	1.307	-	1.212	-	-		
20	4	M	0,18	1.267	1.286	1.240	1.822	ON REQUEST	230	182
20	4	T	0,18	1.426	1.402	1.110	1.658	ON REQUEST		
20	6	T	0,09	1.346	1.283	1.121	ON REQUEST	ON REQUEST		
20	4/6	T	0,26/0,09	1.560	1.711	ON REQUEST	ON REQUEST	2.035		
30	4	M	0,25	1.521	1.576	1.476	2.281	ON REQUEST	233	190
30	4	T	0,25	1.426	1.560	1.312	1.925	ON REQUEST		
30	6	T	0,18	1.552	ON REQUEST	1.338	1.934	ON REQUEST		
30	8	T	0,12	1.576	ON REQUEST	ON REQUEST	ON REQUEST	ON REQUEST		
30	4/6	T	0,29/0,09	1.742	1.861	1.639	ON REQUEST	ON REQUEST		
40	4	M	0,37	1.647	1.703	1.598	2.279	1.860	253	190
40	4	T	0,37	1.616	1.508	1.375	2.091	1.750		
40	6	T	0,18	1.703	ON REQUEST	ON REQUEST	ON REQUEST	ON REQUEST		
40	8	T	0,12	1.616	ON REQUEST	ON REQUEST	ON REQUEST	ON REQUEST		
40	4/6	T	0,55/0,18	1.742	2.194	2.305	2.593	ON REQUEST		
50	4	M	0,75	2.075	2.305	1.940	2.761	ON REQUEST	261	206
50	4	T	0,75	2.297	2.321	2.186	2.601	2.384		
50	6	T	0,37	2.218	2.368	ON REQUEST	ON REQUEST	ON REQUEST		
50	8	T	0,18	2.313	ON REQUEST	2.123	ON REQUEST	ON REQUEST		
50	4/6	T	0,75/0,25	2.455	2.677	2.534	3.117	ON REQUEST		
50	6/8	T	0,37/0,15	2.416	2.614	ON REQUEST	ON REQUEST	ON REQUEST		
60	4	T	1,50	2.661	2.772	2.740	2.960	2.978	293	206
60	6	T	0,37	2.645	2.519	1.882	ON REQUEST	ON REQUEST		
60	8	T	0,18	2.622	ON REQUEST	2.107	ON REQUEST	ON REQUEST		
60	4/6	T	1,1/0,37	2.994	3.160	2.601	3.673	ON REQUEST		
60	6/8	T	0,37/0,15	2.677	2.843	ON REQUEST	ON REQUEST	ON REQUEST		
70	4	T	2,20	2.930	-	2.835	4.221	-	348	222
70	6	T	0,75	3.136	2.835	2.653	3.388	ON REQUEST		
70	8	T	0,37	2.994	3.160	2.986	ON REQUEST	ON REQUEST		
70	4/6	T	2,2/0,75	3.326	-	ON REQUEST	ON REQUEST	ON REQUEST		
70	6/8	T	1,25/0,60	3.627	3.833	ON REQUEST	ON REQUEST	ON REQUEST		
80	6	T	1,10	3.326	3.271	3.208	4.313	3.589	372	246
80	8	T	0,55	3.160	ON REQUEST	3.147	ON REQUEST	3.485		
80	6/8	T	1,25/0,60	4.261	4.269	3.730	ON REQUEST	ON REQUEST		
90	6	T	2,20	4.055	3.944	4.063	5.132	4.150	388	246
90	8	T	1,10	3.786	3.936	3.691	ON REQUEST	ON REQUEST		
90	6/8	T	1,84/0,81	4.744	ON REQUEST	4.372	ON REQUEST	ON REQUEST		
100	6	T	3,00	4.570	4.573	4.385	5.653	ON REQUEST		
100	8	T	2,20	4.586	4.519	4.530	ON REQUEST	ON REQUEST	768	261
100	6/8	T	3/1,5	6.328	6.494	4.475	ON REQUEST	ON REQUEST		
110	6	T	4,00	6.233	-	ON REQUEST	-	-		
110	8	T	3,00	6.027	-	ON REQUEST	-	-	784	261
110	6/8	T	4,4/2,9	7.800	-	ON REQUEST	-	-		
120	6	T	7,50	7.904	-	ON REQUEST	-	-		
120	8	T	4,00	7.603	-	ON REQUEST	-	-	784	261
120	6/8	T	7,5/3,7	ON REQUEST	-	ON REQUEST	-	-		

Selection table

GR	Motor			Static pressure (Pa)														Noise
	Poles	Phase	kW	0		100		200		300		400		500		600		Lp dB(A)
				Flow rate (m³/h)														
05	4	M	0.12	1150		800		-		-		-		-		-		52
05	4	T	0.12	1150		800		-		-		-		-		-		52
05	6	T	0.09	750		-		-		-		-		-		-		42
20	4	M	0.18	1800		1500		1050		-		-		-		-		58
20	4	T	0.18	1800		1500		1050		-		-		-		-		58
20	6	T	0.09	1210		530		-		-		-		-		-		49
20	4/6	T	0.26/0.09	1800	1210	1500	530	1050	-	-	-	-	-	-	-	-	-	58/49
30	4	M	0.25	3050		2700		2150		1480		-		-		-		61
30	4	T	0.25	3050		2700		2150		1480		-		-		-		61
30	6	T	0.18	2000		1250		-		-		-		-		-		51
30	8	T	0.12	1600		-		-		-		-		-		-		49
30	4/6	T	0.29/0.09	3050	2000	2700	1250	2150	-	1480	-	-	-	-	-	-	-	61/51
40	4	M	0.37	4050		3550		3050		2550		1550		-		-		62
40	4	T	0.37	4050		3550		3050		2550		1550		-		-		62
40	6	T	0.18	2650		1800		-		-		-		-		-		52
40	8	T	0.12	-		-		-		-		-		-	-	-	-	50
40	4/6	T	0.55/0.18	4050	2650	3550	1800	3050	-	2550	-	1550	-	-	-	-	-	62/52
50	4	M	0.75	5600		5150		4500		3900		3000		1900		-		67
50	4	T	0.75	5600		5150		4500		3900		3000		1900		-		67
50	6	T	0.37	3600		2800		1400		-		-		-		-		57
50	8	T	0.18	2600		1500		-		-		-		-		-		55
50	4/6	T	0.75/0.25	5600	3600	5150	2800	4500	1400	3900	-	3000	-	1900	-	-	-	67/57
50	6/8	T	0.37/0.15	3600	2600	2800	1500	-	-	-	-	-	-	-	-	-	-	57/
60	4	T	1.50	8100		7800		7000		6100		5400		4200		2700		70
60	6	T	0.37	5100		4200		2900		-		-		-		-		59
60	8	T	0.18	4100		2800		-		-		-		-		-		54
60	4/6	T	1.1/0.37	8100	5100	7800	4200	7000	2900	6100	-	5400	-	4200	-	2700	-	70/59
60	6/8	T	0.37/0.15	5100	4100	4200	2800	2900	-	-	-	-	-	-	-	-	-	59/54
70	4	T	2.20	9600		9000		8350		7500		7000		6400		6000		70
70	6	T	0.75	7000		6000		5000		3500		-		-		-		63
70	8	T	0.37	5500		4150		2200		-		-		-		-		56
70	4/6	T	2.2/0.75	9600	7000	9000	6000	8350	5000	7500	3500	7000	-	6400	-	6000	-	70/63
70	6/8	T	1.25/0.60	7000	5500	6000	4150	5000	2200	3500	-	-	-	-	-	-	-	53/56
80	6	T	1.10	10700		9800		8400		6500		4500		-		-		67
80	8	T	0.55	8400		7600		4600		-		-		-		-		59
80	6/8	T	1.25/0.60	10700	8400	9800	7600	8400	4600	6500	-	4500	-	-	-	-	-	67/59
90	6	T	2.20	14000		12800		11000		9100		7500		4800		-		72
90	8	T	1.10	11000		9000		6800		3800		-		-		-		63
90	6/8	T	1.84/0.81	14000	11000	12800	9000	11000	6800	9100	3800	7500	-	4800	-	-	-	72/63
100	6	T	3.00	18200		17000		15500		13600		11500		9000		6000		76
100	8	T	2.20	14400		12600		10000		7000		-		-		-		66
100	6/8	T	3/1.5	18200	14400	17000	12600	15500	10000	13600	7000	11500	-	9000	-	6000	-	76/66
110	6	T	4.00	24000		22900		21500		19800		18500		16200		13200		73
110	8	T	3.00	19000		16800		14500		12000		8000		-		-		65
110	6/8	T	4.4/2.9	24000	19000	22900	16800	21500	14500	19800	12000	18500	8000	16200	-	13200	-	73/65
120	6	T	7.50	30000		29000		28000		26500		25000		23000		20000		75
120	8	T	4.00	23500		22000		20400		18000		13000		-		-		67
120	6/8	T	7.5/3.7	30000	23500	29000	22000	28000	20400	26500	18000	25000	13000	23000	-	20000	-	75/67

BPT BOX HT COMPACT



- **F400**
- **CERTIFIED 400° 2 h**

Description

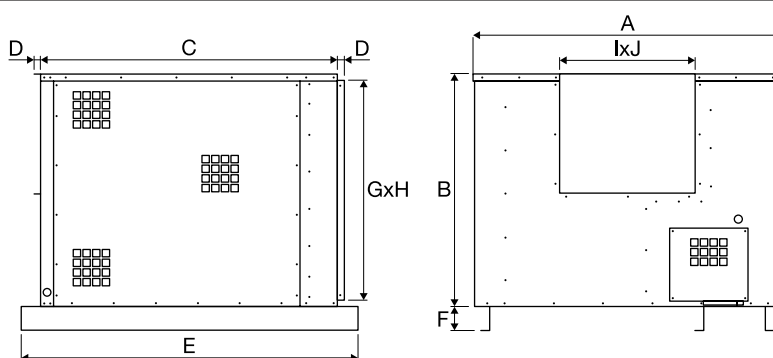
BPT BOX HT: box fans for smoke extraction certified at 400° 2 h, placed outside the hazard zone

- dual intake fan with forward inclined blades in galvanised steel
- IP 54 class F motor outside of flow
- galvanised steel casing with Class M1 insulation

Options

- various motor powers
- two-speed motors
- other sizes
- selection with calculation program

BPT BOX HT



Dimensions

Size	A	B	C	D	E	F	G x H	I x J
9 - 9	795	621.5	705	25	863	100	571x693	265x296
10 - 10	800	653.5	808	25	964.5	100	603.5x696	292.5x331
12 - 12	922	705	859	25	1017	100	655x820	344x395
15 - 15	1050	801	1010	25	1164	100	751x948	411x473
18 - 18	1250	940	1208	25	1365	100	890x1148	485x553
20 - 20	1327	938.5	1359	25	1535	100	888.5x1224	408x603
22 - 22	1448	1021	1458	25	1614	100	961x1346	422x654
25 - 25	1610	1145	1559	25	1726	100	1095x1509	578x765
30 - 28	1892	1380	1810	25	2000	100	1320x1681	768x888

Selection table and price list

All prices are list prices for local market, for a quotation please contact us.

Size	kW	Static pressure (Pa)											Noise	€
		0	40	50	80	90	100	150	200	250	300	350	LpA (dBA)	
		Flow rate (m³/h)												
9 - 9	0.75	4200	3950	3900	3800	3700	3600	3100	2350	-	-	-	65	2274
10 - 10	2.20	7000	6800	6700	6200	6300	6400	6000	5600	5100	4700	4000	72	2603
12 - 12	2.20	9000	8700	8600	8200	8100	8000	7600	7000	5600	-	-	69	2875
15 - 15	4.00	13500	13100	13000	12800	12700	12500	11500	11000	10400	9000	7000	66	3692
18 - 18	5.50	19800	19000	18800	18650	18000	17900	16750	15600	14000	11900	8600	72	4492



RCE-EC
Heat recovery unit
80% efficiency
PAGE 1



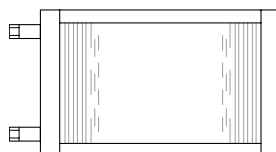
REC-D9
Heat recovery unit
90% efficiency
PAGE 5



UVC 90
Controlled ventilation unit
90% efficiency
PAGE 8



UFA
Activated carbon
filter unit
PAGE 17



BAC/C
Duct hot water coil
PAGE 18



BDOP
Air inlet
valve
PAGE 19



RED
CAV units
PAGE 20



ELIZE
Self-adjusting
valves
PAGE 20



ES
Steam
humidifiers
PAGE 21

RCE-EC



Description

RCE Q-SW-EC: cross-flow heat recovery units

- 80% efficiency
- aluminium exchange pack
- casing in galvanised steel
- execution with double panelling filled with acoustic foam 40 Kg/m³ density
- single-phase EC high efficiency fans
- temperature probes
- differential pressure switches for filters
- automatic motorised by-pass
- M6 (ISO ePM10 70%) and F7 (ISO ePM1 50%) filters, removable on both sides
- condensate drip tray
- configuration can be modified at installation site (standard D3/D6)

Remote control with LCD (included):

- backlit
- dirty filters warning light
- RS485 port
- can be installed up to 200m from the unit
- 2 manual functions
- 2 automatic functions

Accessories

- hot and cold water coil
- 230 Volt electric coil with thermostat (on request)
- cover for outdoors
- spigot with wire mesh
- additional external filter modules, flat filters and rigid pockets (on request)

All prices are list prices for local market, for a quotation please contact us.

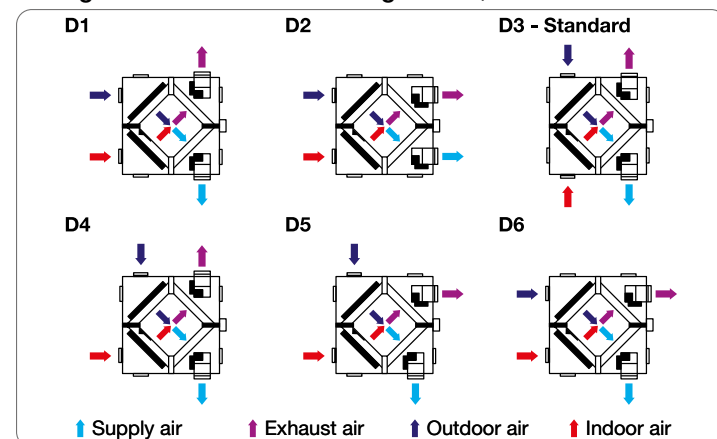
Selection table and price lists

Model	Flow rate	Voltage	Nom. kW	DN connection	€	€	€	€	€	€	€	€	€	€	€
					Horizontal version SP	Vertical version SP	Horizontal version DP	Vertical version DP	Hot coil 2 rows ¹	kW	Cold coil 4 rows ²	kW	Circular spigot with wire mesh	Cover for horizontal	Cover for vertical
500	500	230	0.24	150	3.363	3.535	3.972	4.159	1.340	3.46	1.464	0.93	12.40	120.28	74.40
700	750	230	0.24	150	3.740	3.927	4.479	4.639	1.340	4.16	1.464	1.38	12.40	132.68	83.08
1200	1200	230	0.24	180	4.338	4.555	4.959	5.119	1.379	8.30	1.550	3.6	14.88	132.68	83.08
1600	1600	230	0.548	250	4.778	5.013	5.636	5.928	1.426	11.10	1.550	4.73	18.60	150.04	100.44
2000	2000	2300	0.85	315	5.072	5.325	6.132	6.579	1.612	15.90	1.860	6.53	23.56	150.04	100.44
2300	2300	230	2.148	315	6.103	6.410	7.038	7.416	1.612	15.90	1.860	6.53	23.56	150.04	100.44
2800	2800	230	2.148	315	7.186	7.545	8.984	9.418	1.612	19.40	2.015	8.37	23.56	249.24	150.04
3200	3200	230	2.072	350	7.651	8.035	9.758	10.189	1.612	22.10	2.015	9.51	28.52	249.24	150.04
3800	3800	230	2.08	350	8.531	8.958	10.263	10.771	2.058	26.30	2.573	11	28.52	249.24	153.76
4500	4500	230	4.426	350	10.271	10.786	11.890	12.104	2.058	31.10	2.573	13.1	28.52	249.24	157.48
4900	4900	230	4.426	350	10.370	10.890	12.183	12.637	2.058	33.90	3.627	15.1	28.52	270.32	159.96
5400	5400	230	4.404	350	-	-	13.516	13.810	2.635	37.30	3.627	16.8	28.52	270.32	159.96
6500	6500	230	4.62	450	-	-	13.889	14.156	2.976	41.50	3.627	18.4	33.48	270.32	167.40
7100	7100	230	4.74	600	-	-	18.310	19.421	3.286	49.10	5.270	21.5	40.92	292.64	176.08
7200	7200	400	4.6	600	-	-	23.250	24.738	3.286	49.10	5.270	24.3	40.92	292.64	176.08
8500	8500	230	4.76	600	-	-	19.975	21.178	3.286	55.30	5.270	24.3	40.92	292.64	176.08
8700	8700	400	4.2	600	-	-	24.186	25.674	3.286	55.30	5.270	24.3	40.92	292.64	176.08
10500	10500	400	3.4	800	-	-	-	26.827	-	-	-	-	-	-	-
12000	12000	400	4	800	-	-	-	43.400	-	-	-	-	-	-	235.60

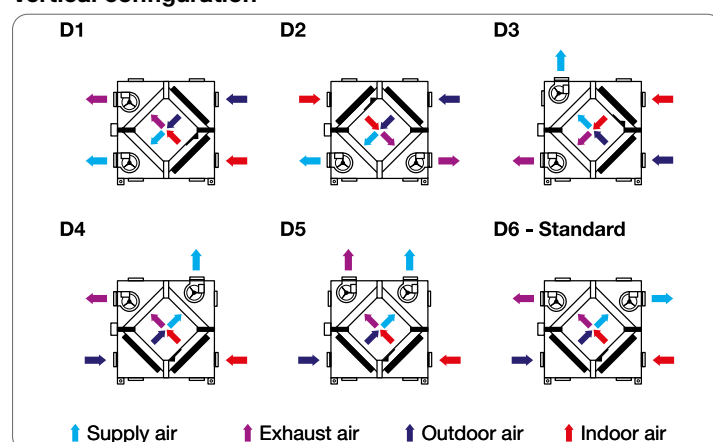
Heat recovery unit including remote control (LCD).

The control and electronic board manage both the water and electric coil.

Ceiling mounted horizontal configuration (VIEW FROM BOTTOM COVER SIDE)



Vertical configuration



The indications below relate to the colors of the arrows on the recuperators
RED/PURPLE = ROOM AIR INPUT.
RED = ROOM AIR INTAKE. RED/PURPLE = AIR EXPULSION.
BLU = EXTERNAL AIR INTAKE.

Accessories

1: inlet/outlet water temperature: 70/60°C

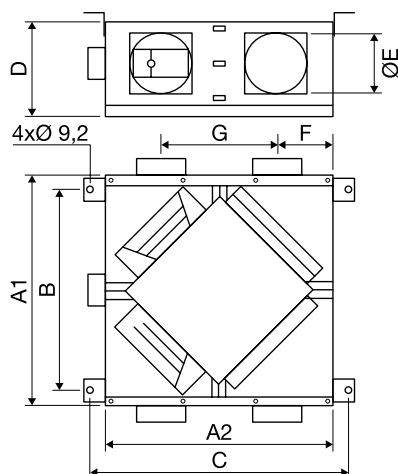
air inlet/outlet temperature: 10/30°C

2: inlet/outlet water temperature: 12/17°C

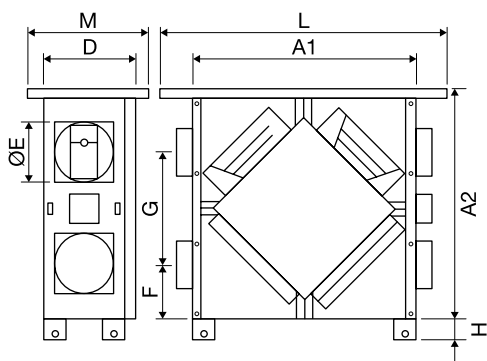
air inlet/outlet temperature: 30/25°C

RCE-EC series heat recovery units

Dimensions - Horizontal configuration



Dimensions - Vertical configuration



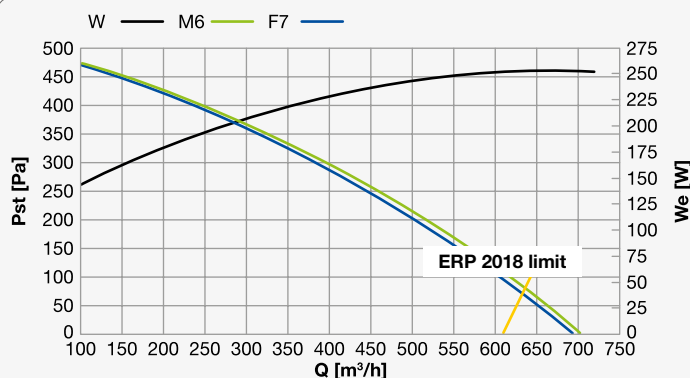
Mod.	A1	A2	B	C	D	Ø E	F	G	H	L	M	Kg Horiz.	Kg Vert.
500	850	850	755	910	380	150	175	500	100	1050	450	55	57
700	1000	1000	905	1060	380	150	250	500	100	1200	450	64	66
1200	1000	1000	905	1060	380	180	200	600	100	1200	450	80	86
1600	1200	1200	1105	1260	525	250	300	600	100	1450	610	110	117
2000	1200	1200	1105	1260	525	315	275	650	100	1450	610	110	117
2300	1200	1200	1105	1260	525	315	275	650	100	1450	610	124	135
2800	1350	1350	1255	1410	575	315	300	750	100	1650	670	161	167
3200	1350	1350	1255	1410	675	350	300	750	100	1650	770	178	183
3800	1350	1350	1255	1410	675	350	325	700	100	1650	770	188	208
4500	1350	1350	1255	1410	775	350	300	750	100	1550	850	215	245
4900	1350	1350	1255	1410	775	350	300	750	100	1550	850	215	245
5400	1650	1650	1080	1710	775	350	285	1080	100	1900	850	302	340
6500	1650	1650	1080	1710	775	450	355	940	100	1900	1000	302	340
7100	2170	2170	-	-	1110	600	435	1300	100	2200	1130	500	550
8500	2170	2170	-	-	1110	600	435	1300	100	2200	1130	500	550

Erp 2018 - EU 1253/2014

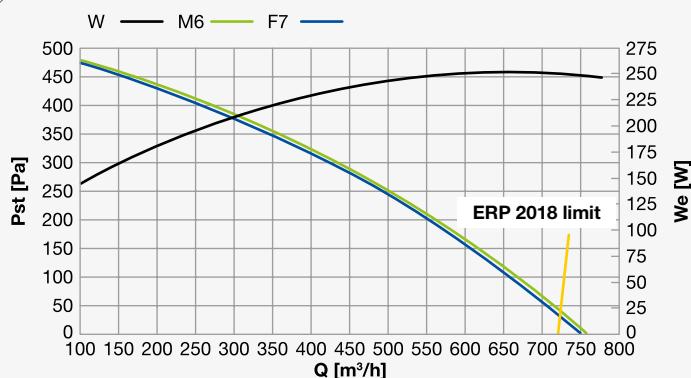
Flow rate (m³/h)	Prev. (Pa)	Yield¹ (Eff. %)	Noise level on output² (dBA)	Noise level 1 metre³ (dBA)	Noise level 3 metres³ (dBA)
520	88	71.8	79	52	46
720	37	73.7	70	53	47
1120	54	75.1	82	55	48
1580	25	75.3	84	56	50
1780	365	74.6	86	58	52
1780	365	74.6	86	58	52
2160	406	74.7	85	61	53
2540	412	74.7	80	61	54
2760	381	74.8	80	62	56
2680	481	74.6	92	63	57
3360	570	74.9	83	64	58
4780	511	74.9	84	64	60
4880	669	74.8	87	65	62
5140	700	74.7	89	67	62
6460	445	76.6	82	67	61

- 1: thermal efficiency of exchange pack 20°C dry
- 2: total sound power of fans at maximum flow rate, non-ducted
- 3: sound pressure, measured at 1 m and 3 m from the machine casing, at maximum range, ducted outlets

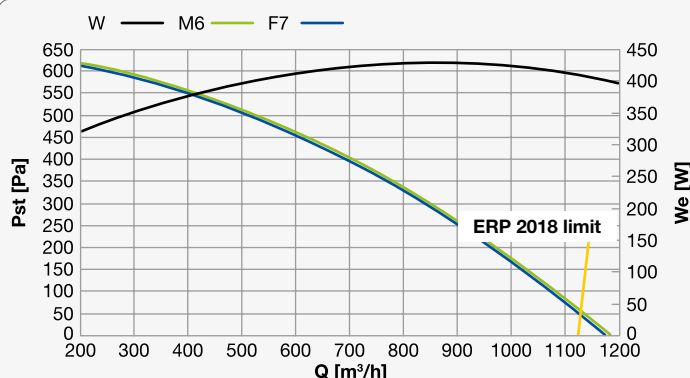
500Q-SW-EC RCE



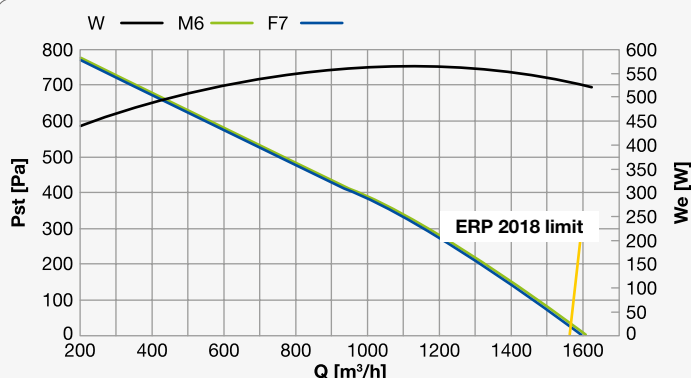
700Q-SW-EC RCE



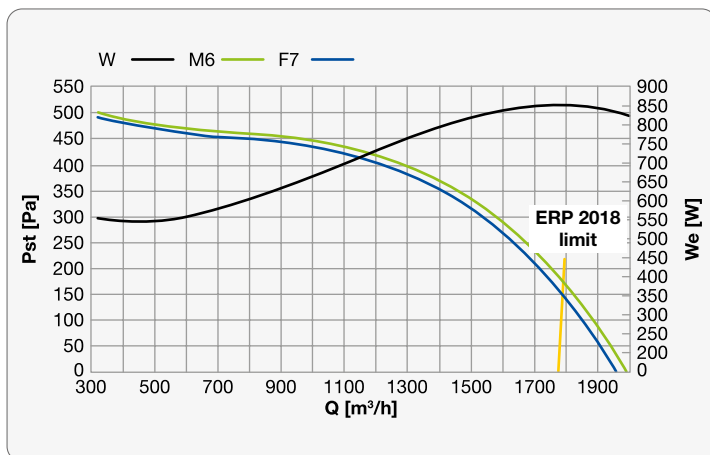
1200Q-SW-EC RCE



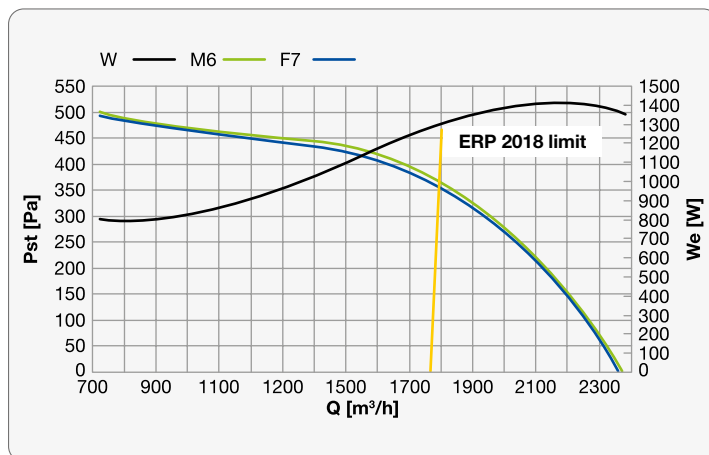
1600Q-SW-EC RCE



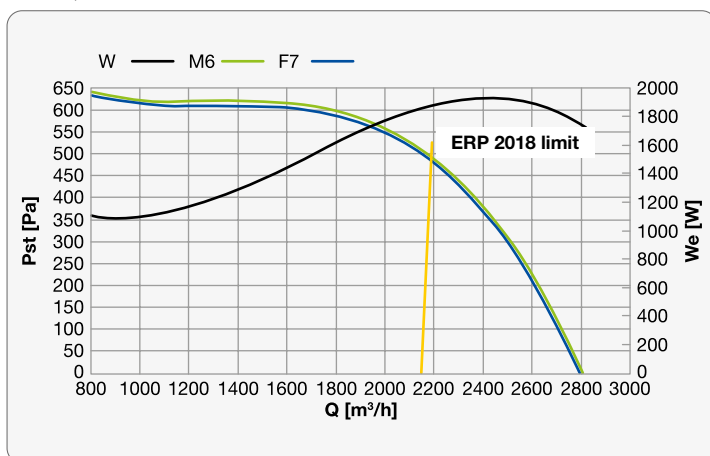
2000Q-SW-EC RCE



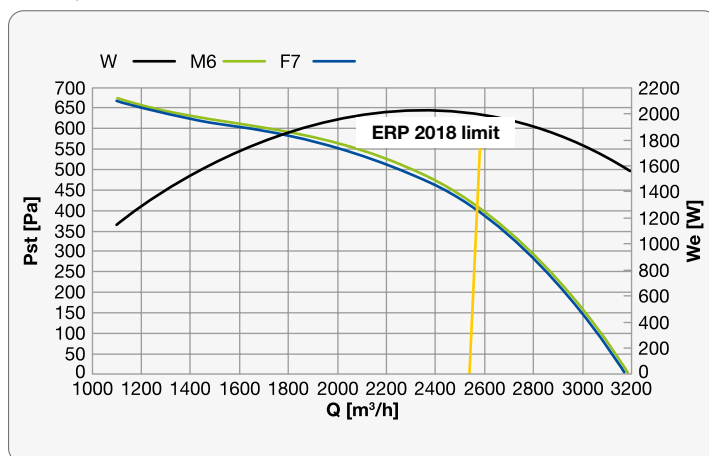
2300Q-SW-EC RCE



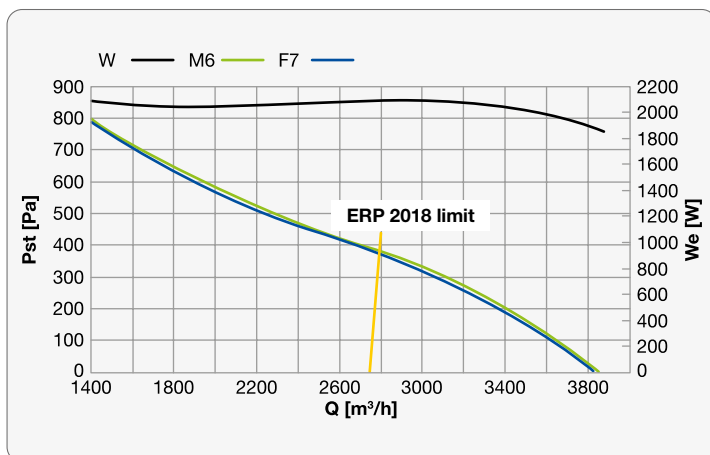
2800Q-SW-EC RCE



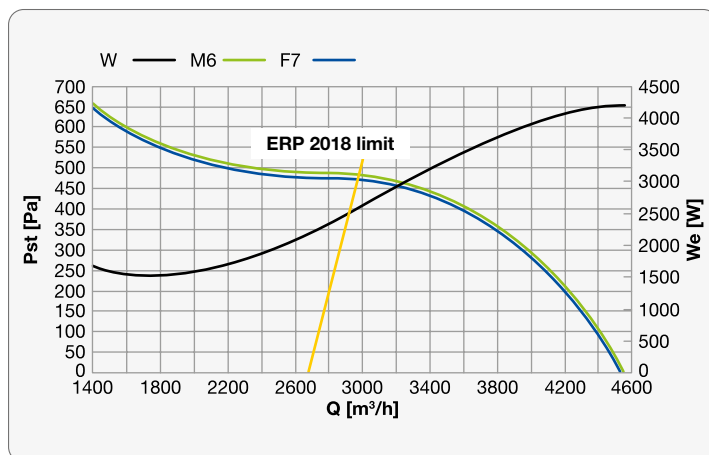
3200Q-SW-EC RCE



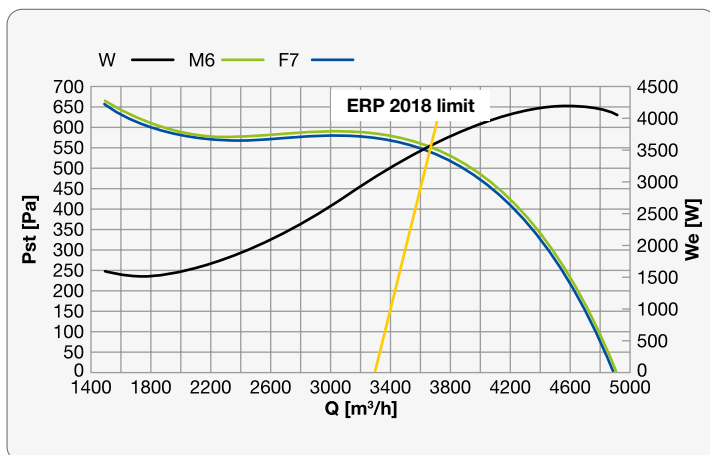
3800Q-SW-EC RCE



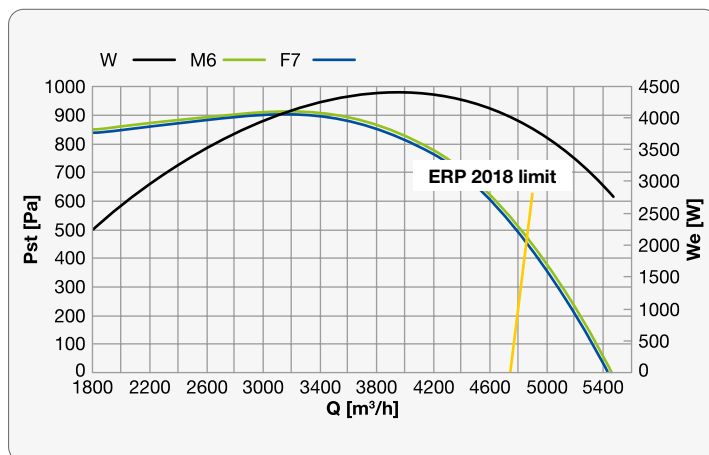
4500Q-SW-EC RCE



4900Q-SW-EC RCE



5400Q-SW-EC RCE



Spare filter

All prices are list prices for local market, for a quotation please contact us.

Model	Number of filters per side	Dimensions (mm)	List price €/each		
			F7 Standard	F8	F9
500	1	450x340x25	87	87	88
700	1	450x340x25	87	87	88
1200	1	450x340x25	87	87	88
1600	1	500x400x48	103	109	115
2000	1	625x500x48	142	148	159
2300	1	625x500x48 ¹	142	148	159
2800	1	625x500x48	142	148	159
3200	1	625x600x48 ²	142	148	159
3800	1	625x600x48 ²	142	148	159
4500	1	625x700x48	144	150	160
4900	1	625x700x48	144	150	160
5400	2	800x350x48 ³	160	169	180
6500	2	800x350x48 ³	160	169	180
7100	3	800x350x48 ⁴	160	169	180
8500	3	800x350x48 ⁴	160	169	180

1: from September 2019

2: from January 2018

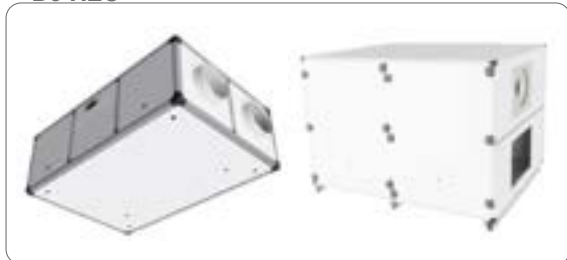
3: from July 2018

4: from July 2019

Price list Accessories for RCE

Accessories	€
Remote control "S-0241,00 (replacement)	262
Machine board (replacement)	350
Probes	
SACV 0-10V DC ambient CO2 probe	427
SDCV 0-10V DC duct CO2 probe	518
Accessories for water coil	
3-way adjustment valve for coil, 1/2"	420
3-way adjustment valve for coil, 3/4"	469
3-way adjustment valve for coil, 1"	595
3-way adjustment valve for coil, 1 1/4"	574
"LR24-SR" 24V Rotary actuator proportional 0 - 10V, for 3-way valve	560
Accessories for smoking rooms (one for each machine)	
Relay for "FUMO-RCE" control board	316
"NO SMOKING DUE TO FAULT" neon light	206
"SMOKING AREA" neon light	206

D9 REC



Description

REC D9: heat recovery unit with aluminium counter-flow heat exchanger, with Eff. > 90%

- execution with frame made of aluminium profiles
- double panels filled with rock wool heat and acoustic insulation th. 25 mm
- external panels in pre-painted sheet metal, interior in galvanised steel
- EC high efficiency centrifugal fans
- temperature probes
- integrated by-pass for free-cooling / free-heating (manual, motorised or automatic operation)
- M5 (ISO ePM10 50%) and F7 (ISO ePM1 70%) filters, removable from below in the horizontal ceiling version
- control board on the machine
- integrated frost protection
- working temperature 0°C and 45°C

Remote controls

3V EVO:

- on / off
- 3-speed selection
- by-pass (opening/closing) alert with automatic control
- frost protect alert
- dirty filters alert (with counter)
- probe malfunction alert
- can be installed in type 503 horizontal box
- possibility of automatic control of antifreeze heater, including 2 stages
- possibility of controlling the unit with simple digital inputs (on-off and remote speeds)

LCD (white):

- LCD display
- integrated temperature / humidity probes
- selectable fan speed control:
 - 3 preset manual speeds (can be changed from 10% to 100%)
 - automatic (depending on humidity or air quality or temperature or other external probes)
 - diversify the speed of the inlet and expulsion fan
- can be installed in type 503 horizontal box
- automatic by-pass control
- frost protection with "pre-heating" coil management
- post-heating battery management with 0-10 Volt signal
- active alarms and alarm history
- clogged filter alarm
- hourly / weekly programming
- possibility of controlling the unit with simple on-off inputs through the control board:
 - on-off contacts (speed - summer-winter)
 - pairing with external probes 0-10 Volt
- ModBus on RS485
- pre-configuration for additional modules (Lan, RS485, RS232, GSM)

All prices are list prices for local market, for a quotation please contact us.

Price list

Model	WITH ELECTRONICS AND 3V EVO PANEL	WITH ELECTRONICS AND WHITE LCD
REC D9 800 EC	5079	5731
REC D9 1200 EC	7171	7823
REC D9 1600 EC	7693	8344
REC D9 2200 EC	9580	10231
REC D9 3000 EC	11189	11840
REC D9 4000 EC	12951	13602
REC D9 5000 EC	15830	16482
REC D9 8000 EC	22495	23146
REC D9 8000 EC*	-	25110

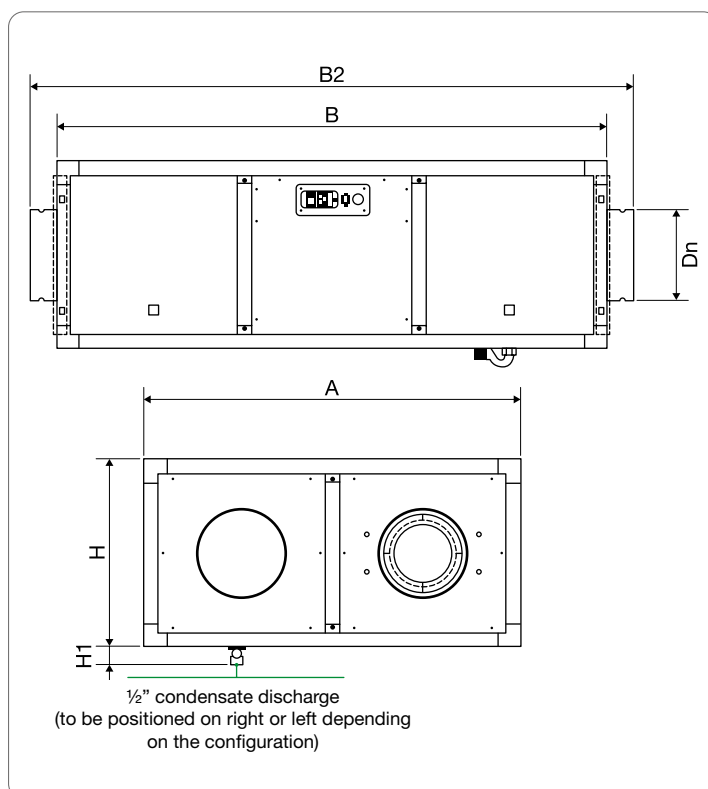
*: with integrated hot/cold coil
water 50/40°C - 15°C - 60 kW
water 7/12°C - 27 °C - 43 kW

REC D9 EC				
Erp 2018 - EU 1253/2014				
Model	Flow rate (m³/h)	Prev. (Pa)	Yield of exchange pack 20°C dry (Eff. %)	LwA (dBA)
800 EC	850	110	78.3	57
1200 EC	1340	420	78.6	67
1600 EC	1580	290	78.8	68
2200 EC	2050	510	80.3	67
3000 EC	2720	345	80.5	68
4000 EC	3600	245	80.5	66
5000 EC	4460	480	80.4	70
8000 EC*	7300	420	81.5	71

Dimensions

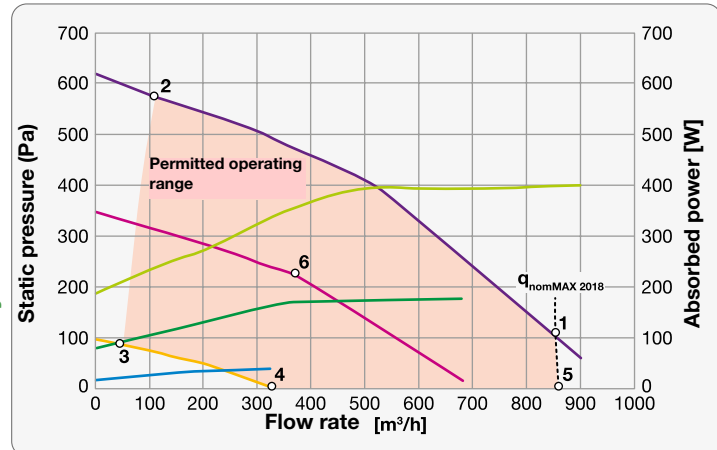
Model	A	B	H	B2	H1	Ø	Weight (Kg)	ASS (W)	Current (V)
800 EC	970	1350	410	1460	40	250	131	380	230
1200 EC	1100	1500	520	1607	40	315	188	1000	230
1600 EC	1100	1500	600	1607	40	315	207	1000	230
2200 EC	1250	1500	620	1716	40	355	242	1500	230
3000 EC	1250	1800	800	1916	40	400	304	2000	400/3F
4000 EC	1250	1800	1050	1916	40	400	381	2000	400/3F
5000 EC	1250	1800	1350	1917	40/100	450	455	3400	400/3F
8000 EC*	1800	1250	1500	-	40/100	810X510	780	5000	400/3F

*: with integrated hot/cold coil
water 50/40°C - 15°C - 60 kW
water 7/12°C - 27 °C - 43 kW

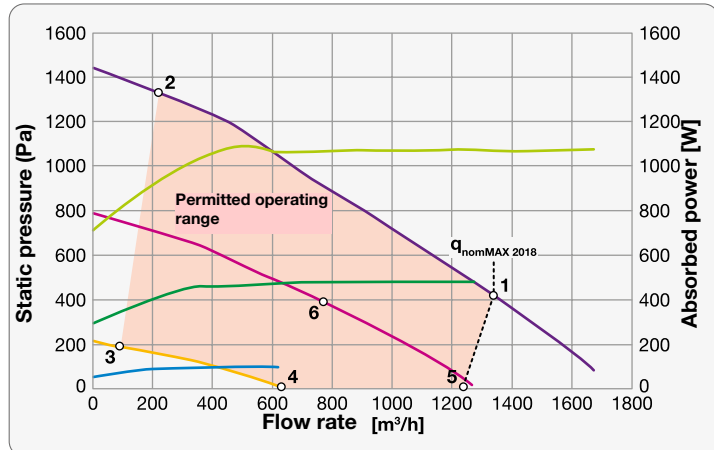


REC D9 heat recovery unit Eff. 90%

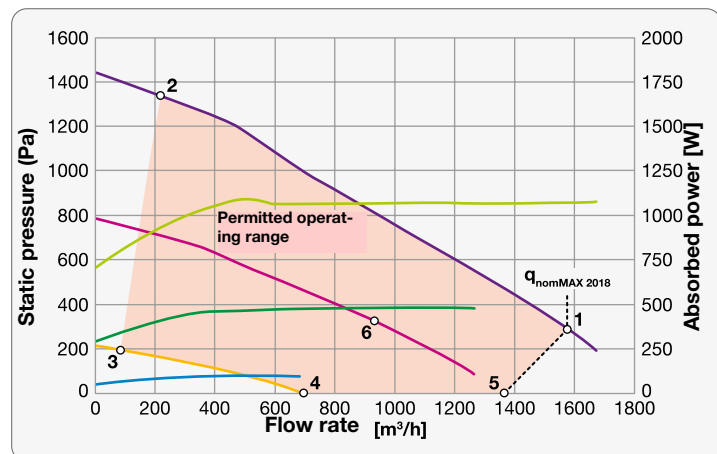
REC D9 800 EC



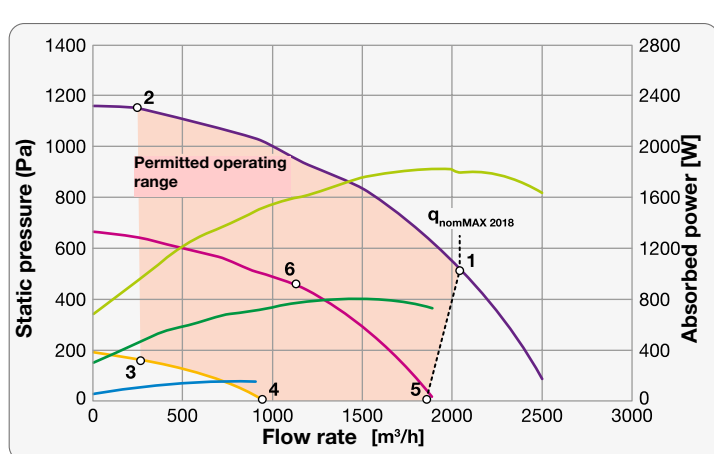
REC D9 1200 EC



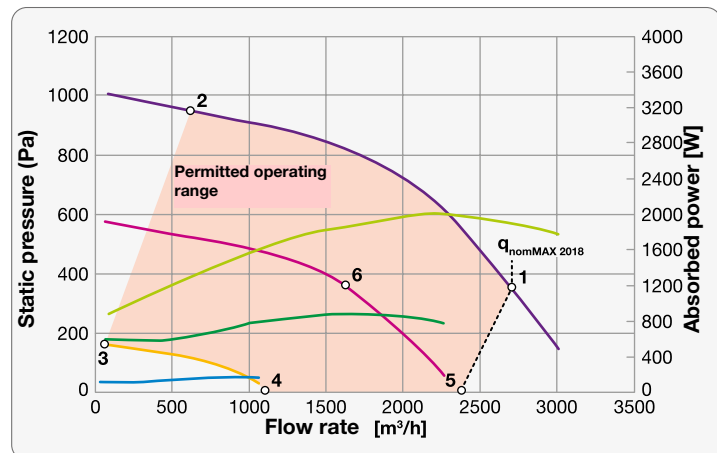
REC D9 1600 EC



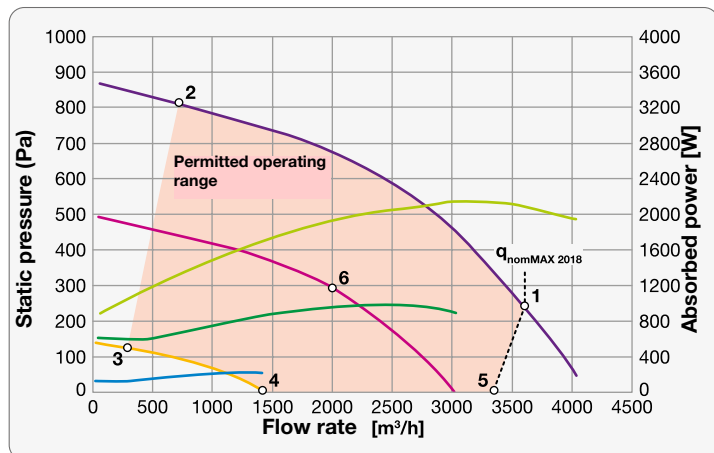
REC D9 2200 EC



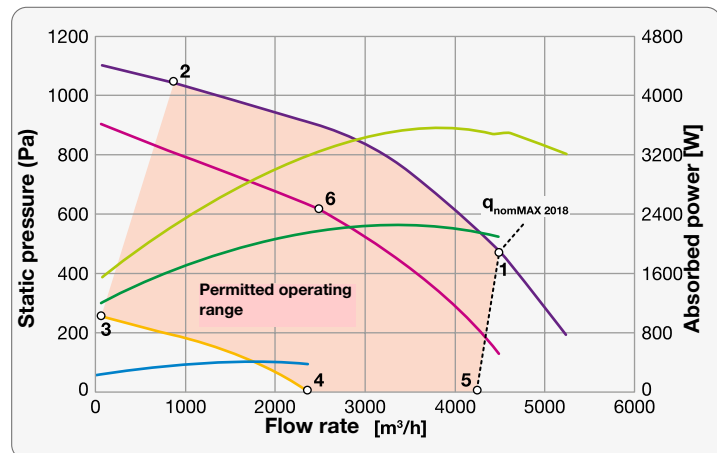
REC D9 3000 EC



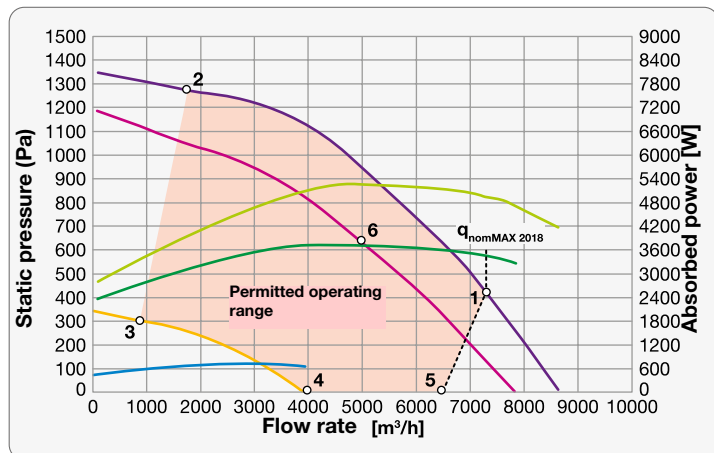
REC D9 4000 EC



REC D9 5000 EC



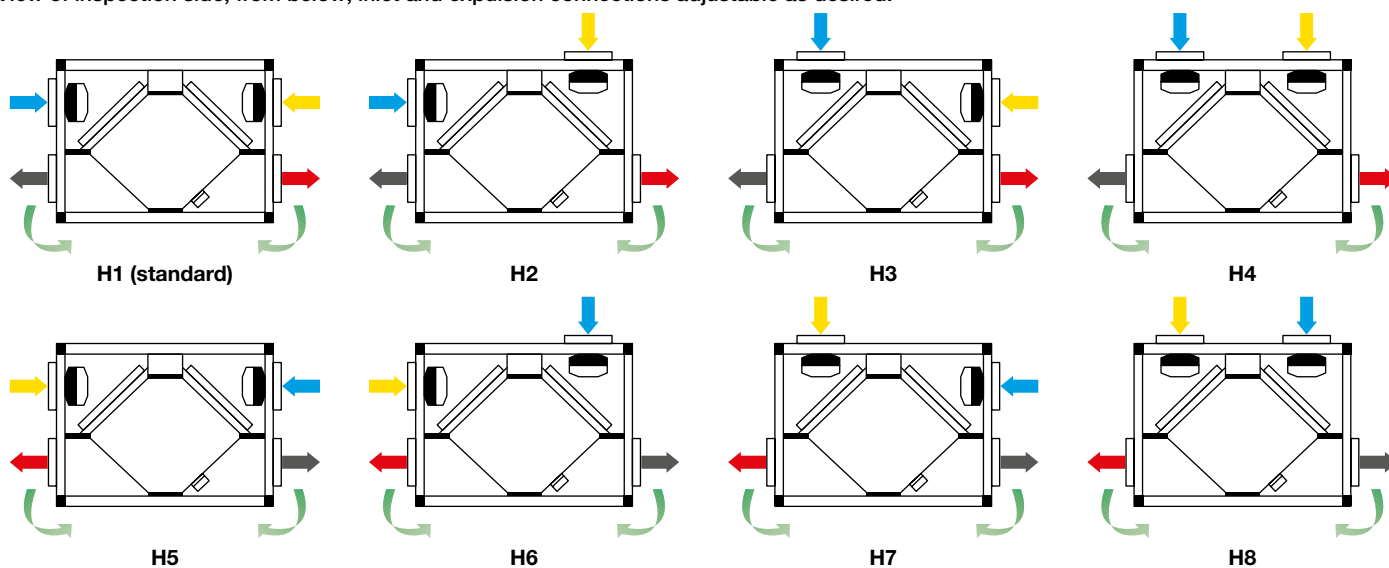
REC D9 8000 EC



Configurations

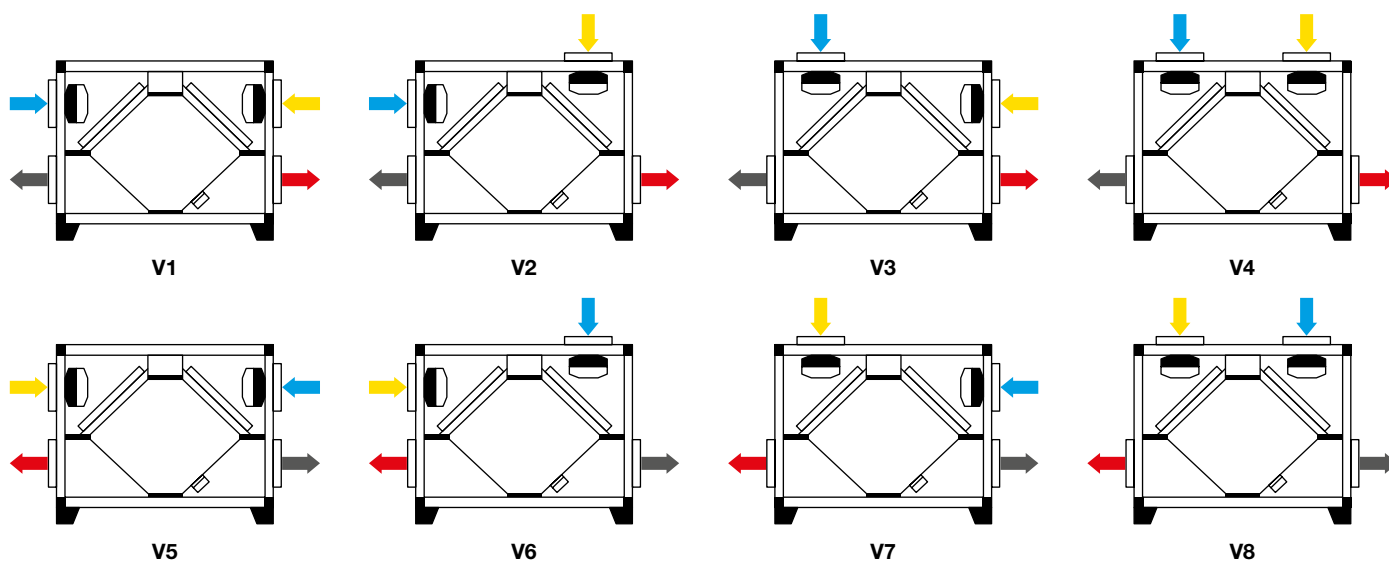
Ceiling-mounted horizontal installation

View of inspection side, from below; inlet and expulsion connections adjustable as desired.



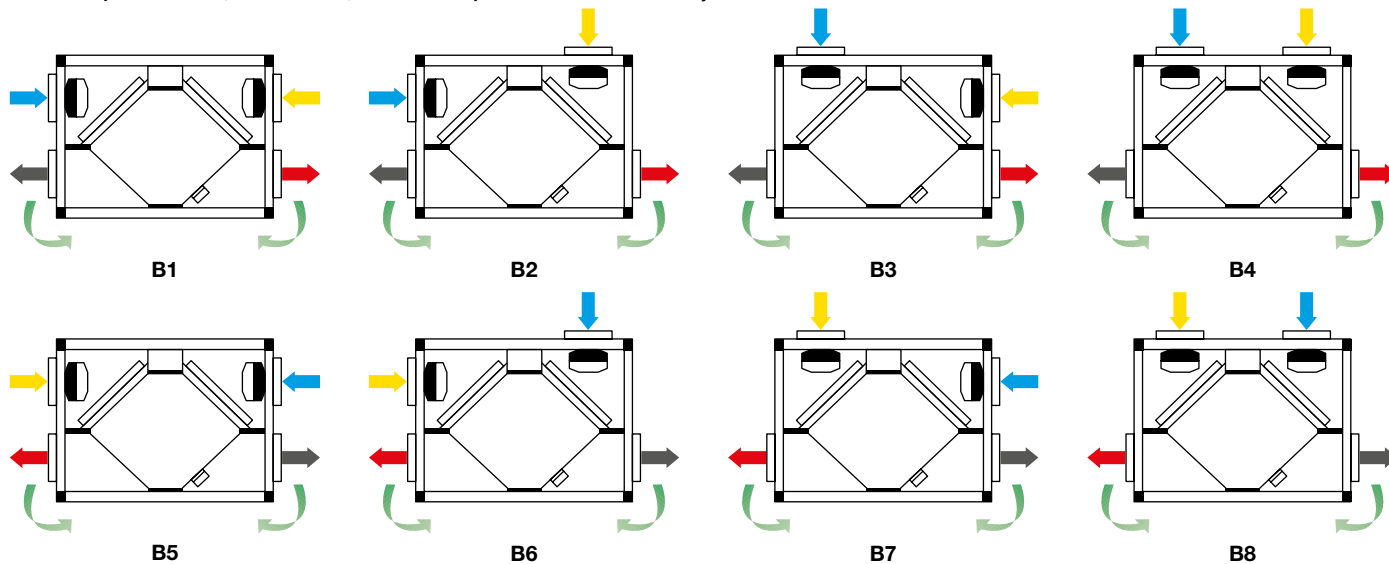
Vertical installation

Front view (inspection side)



Horizontal installation on floor

View of inspection side, from above; inlet and expulsion connections adjustable as desired.



↑ RENEWAL (external air intake)
 ↑ RECOVERY (extraction from room)
 ↑ EXPULSION (expulsion to outside)
 ↑ INTAKE (supply in room)

UVC 90

ENERGY CLASS ERP 2018



Description

UVC 90: Residential series heat recovery unit with polypropylene counter-flow exchanger, high efficiency > 90%

- execution with self-supporting structure in pre-painted sheet metal with rock wool insulation filling
- EC high efficiency fans
- temperature probes
- integrated by-pass for free-cooling / free-heating
- F7 (ePM10 70%) filters on both supply and return
- control board on the machine
- integrated frost protection
- working temperature 0°C and 45°C with humidity < 80%

Remote controls

3V EVO:

- on / off
- 3-speed selection
- by-pass (opening/closing) alert with automatic control
- frost protect alert
- dirty filters alert (with counter)
- probe malfunction alert
- can be installed in type 503 horizontal box
- possibility of automatic control of antifreeze heater, including 2 stages
- possibility of controlling the unit with simple digital inputs (on-off and remote speeds)

LCD (white):

- LCD display
- integrated temperature / humidity probes
- selectable fan speed control:
 - 3 preset manual speeds (can be changed from 10% to 100%)
 - automatic (depending on humidity or air quality or temperature or other external probes)
 - diversify the speed of the inlet and expulsion fan
- can be installed in type 503 horizontal box
- automatic by-pass control
- frost protection with "pre-heating" coil management
- post-heating battery management with 0-10 Volt signal
- active alarms and alarm history
- clogged filter alarm
- hourly / weekly programming
- possibility of controlling the unit with simple on-off inputs through the control board:
 - on-off contacts (speed - summer-winter)
 - pairing with external probes 0-10 Volt
- ModBus on RS485
- pre-configuration for additional modules (Lan, RS485, RS232, GSM)

All prices are list prices for local market, for a quotation please contact us.

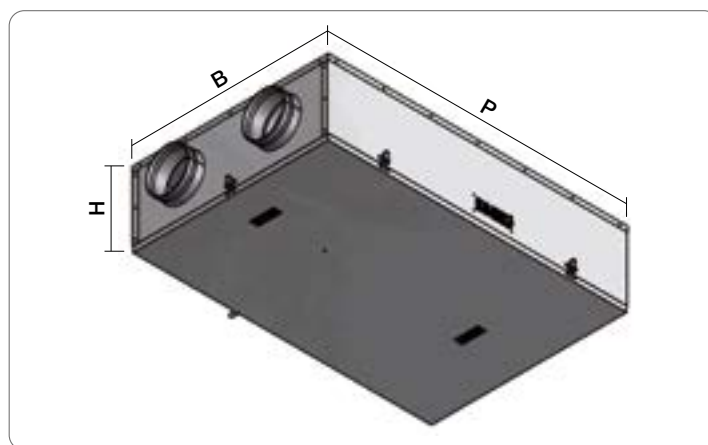
Price list

Models			Automatic motorised by-pass			
			EVO 3-speed		White LCD panel	
			€	Class	€	Class
UVC residential ventilation unit	100 m³/h	UVC 100** H-AC-LC	1275	A	-	-
	150 m³/h	UVC 150 H-LC ECO	1875	A	2521	A
		UVC 150 H JOLLY	2351	A	2997	A
		UVC 150 H SLIM	2362	A	3008	A
		UVC 150 HA	2559	A	3205	A
		UVC 150 V	2434	A	3080	A
		UVC 150 V COMPACT	2471	A	3117	A
	200 m³/h	UVC 220 H	2663	B*	3309	A
		UVC 220 HA	2828	B*	3474	A
		UVC 220 V	2745	B*	3391	A
	350 m³/h	UVC 350 H	3130	A	3776	A
		UVC 350 V	3317	A	3963	A
UVMR non-residential ventilation unit	800 m³/h	UVC 800 H	5770	-	6416	-
		UVC 800 V	6019	-	6665	-
	1200 m³/h	UVC 1200 H	7551	-	8197	-
		UVC 1200 V	7828	-	8474	-
	1600 m³/h	UVC 1600 H	8865	-	9511	-
		UVC 1600 V	9141	-	9787	-
	2200 m³/h	UVC 2200 H	10695	-	11341	-
		UVC 2200 V	11025	-	11671	-
	3000 m³/h	UVC 3200 HP	13972	-	14618	-
		UVC 3000 V	13296	-	13942	-
	4000 m³/h	UVC 4000 V	14874	-	15520	-
	5000 m³/h	UNV 5000 V	17874	-	18520	-

*: for class A, add humidistat or air quality probe

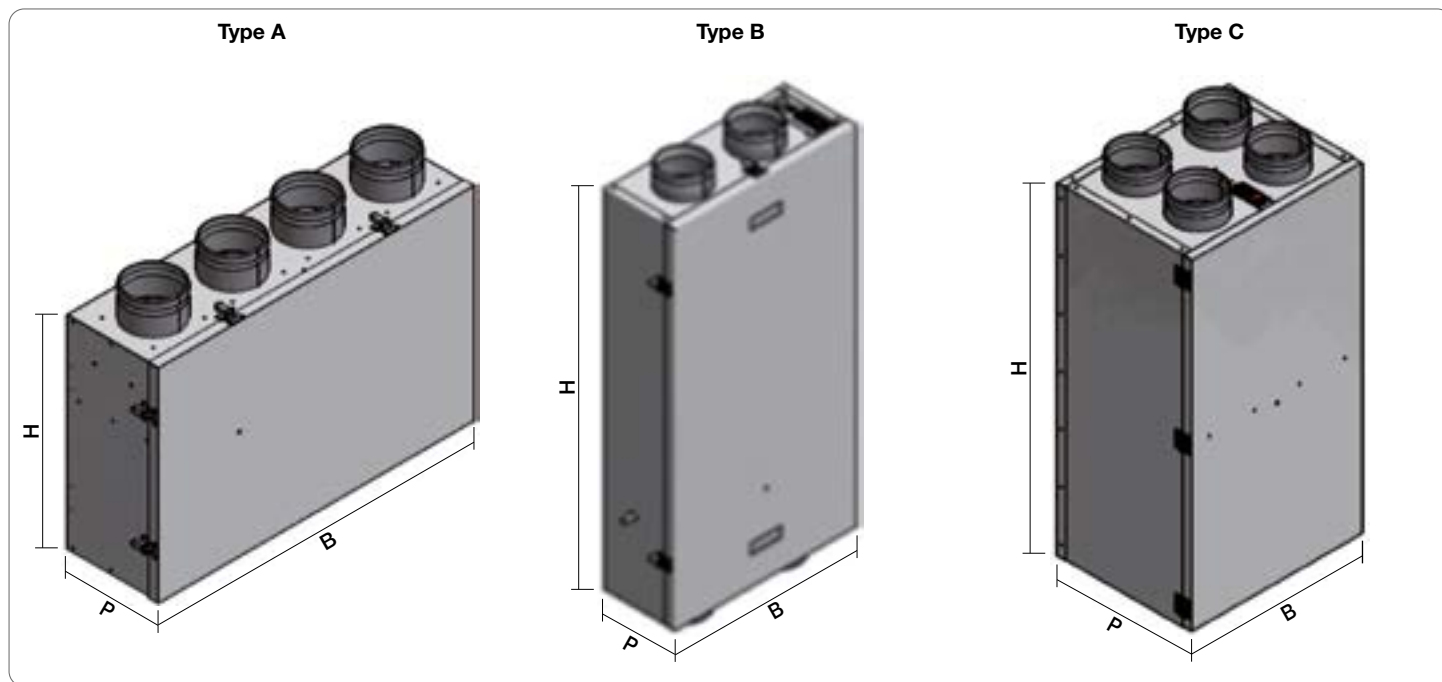
**: one speed

Dimensions - Horizontal version



UVC MODEL	B	H	P	Ø	Kg	Watt	Amp.	Volt
100	410	207	804	125	24	52	0.23	230
150 H LC	490	207	804	125	29	100	0.80	230
150 JOLLY	487	250	854	125	33	100	0.80	230
150 SLIM	560	180	952	125	20	100	0.80	230
220 H	580	262	1000	160	42	173	1.50	230
350 H	720	275	1100	160	46	175	1.50	230
500 H	720	275	1100	200	49	332	2.70	230
800 H	1040	420	1300	250	100	380	2.90	230
1200 H	1230	420	1500	315	115	1000	4.40	230
1600 H	1200	700	1600	315	160	1000	4.40	230
2200 H	1070	690	1700	355	210	1500	6.60	230
3200 H	780	1250	1900	400	270	2000	3.30	400

Dimensions - Vertical version



Type	UVC Model	B	P	H	Ø	Kg	Watt	Amp.	Volt
B	150 HA	520	207	1000	125	37	100	0.8	230
A	150 V-SP*	770	226	500	125	20	100	0.8	230
C	150 V COMPACT	450	350	850	125	40	100	0.8	230
A	150 V	800	265	555	125	36	100	0.8	230
B	220 V HA	600	267	1000	160	47	173	1.5	230
A	220 V	900	270	800	160	53	173	1.5	230
A	350 V	900	410	900	160	75	176	1.5	230
A	500 V	900	410	900	200	77	334	2.7	230
A	800 V	1350	416	1100	250	95	380	2.9	230
A	1200 V	1500	420	1200	315	110	1000	4.4	230
A	1600 V	1550	630	1400	315	170	1000	4.4	230
A	2200 V	1750	690	1400	355	220	1500	6.6	230

*: prices on request

Configurations

Horizontal installation



HS Standard
Ceiling



HB
Support base



HP
Wall



KS*
Ceiling



KB
Support base



KP*
Wall

"Type A" vertical installation



VA Standard
Wall



VB
Wall



HA Standard
Wall



KA*
Wall



VM Standard
Wall

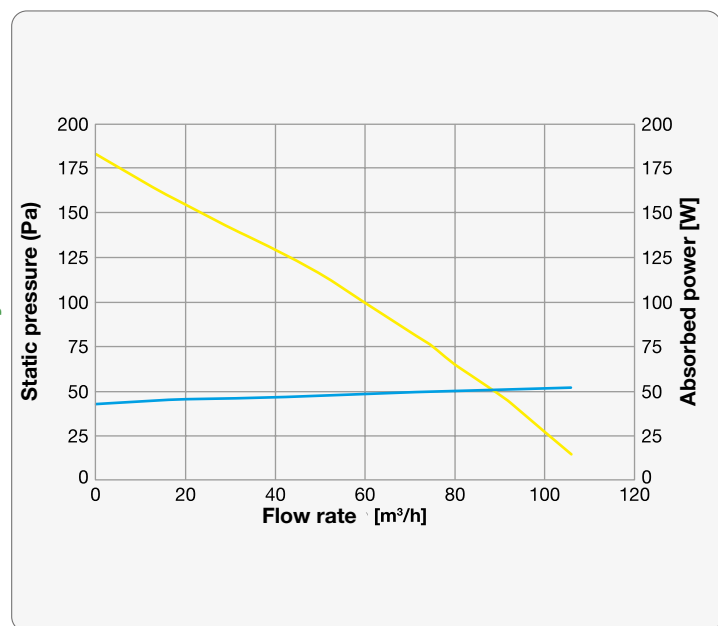


VN
Wall

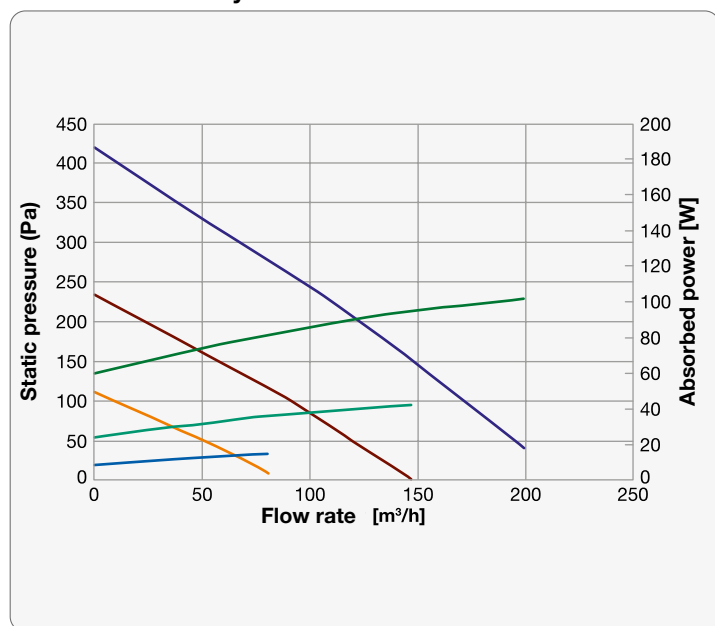
*: version with prices on request

RENEWAL (external air intake)
 RECOVERY (extraction from room)
 EXPULSION (expulsion to outside)
 INTAKE (supply in room)

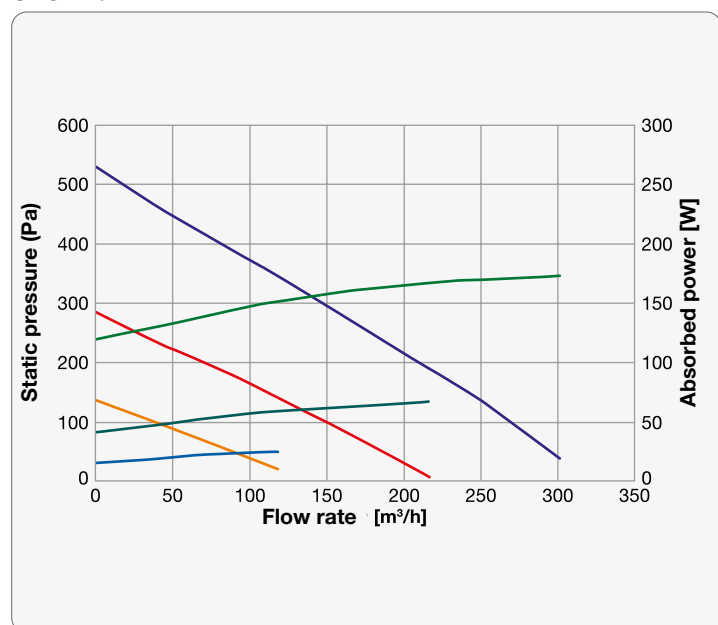
UVC 100



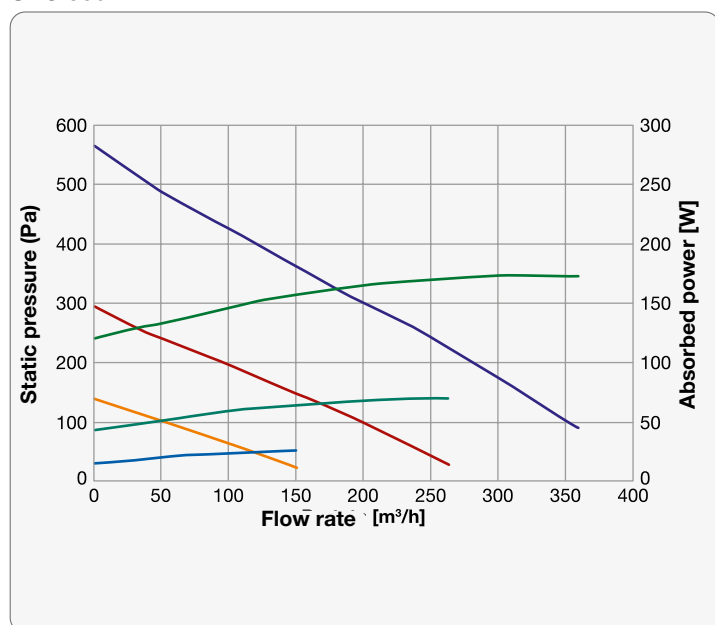
UVC 150 H LC / Jolly / Slim



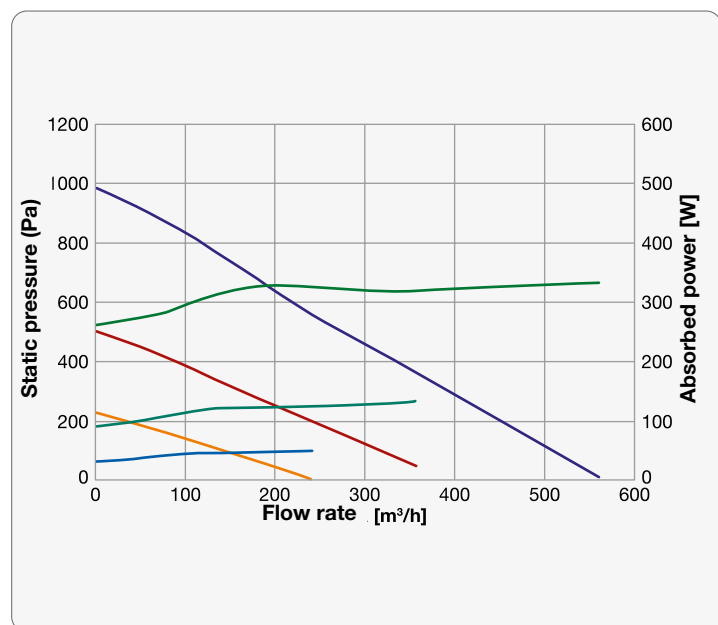
UVC 220



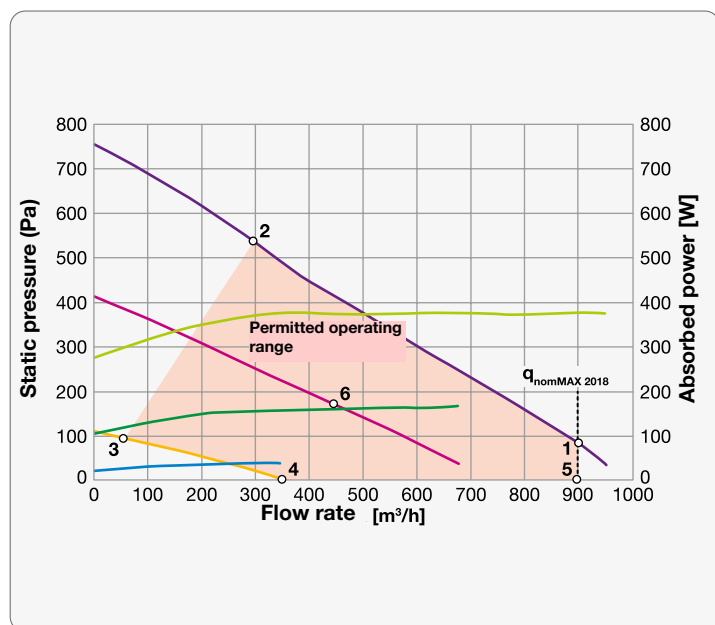
UVC 350



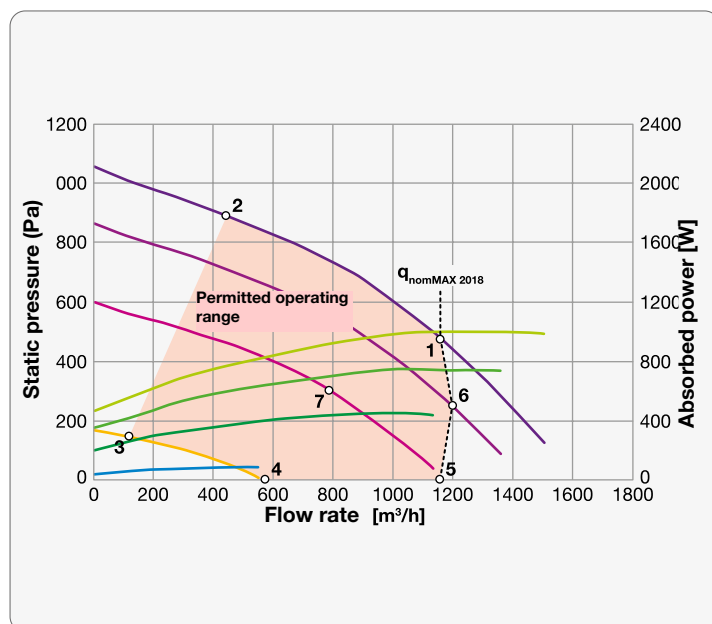
UVC 500



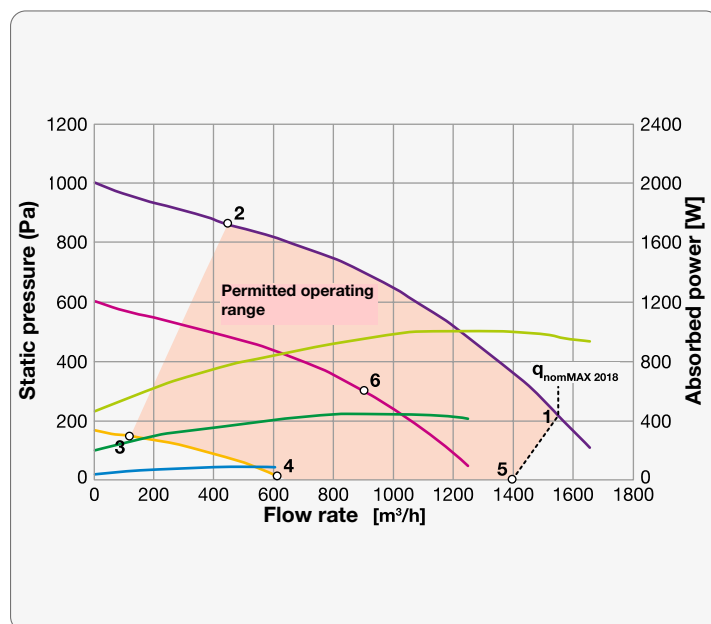
UVC 800



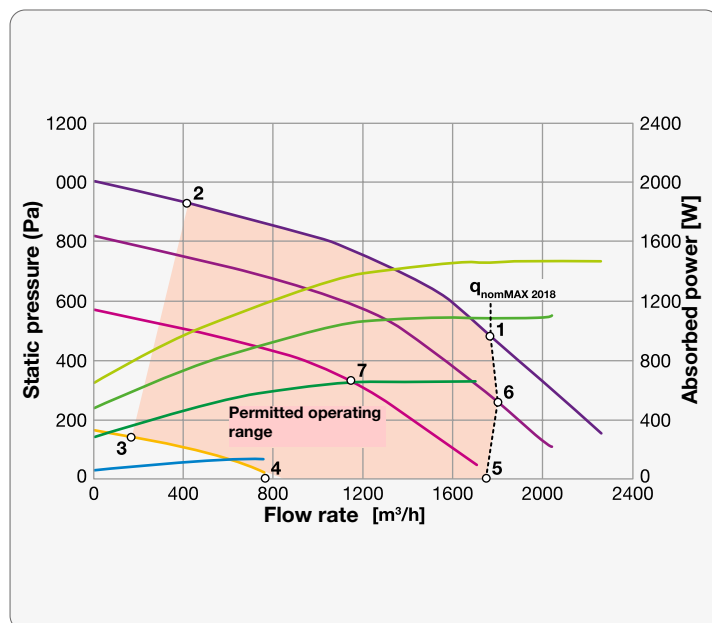
UVC 1200



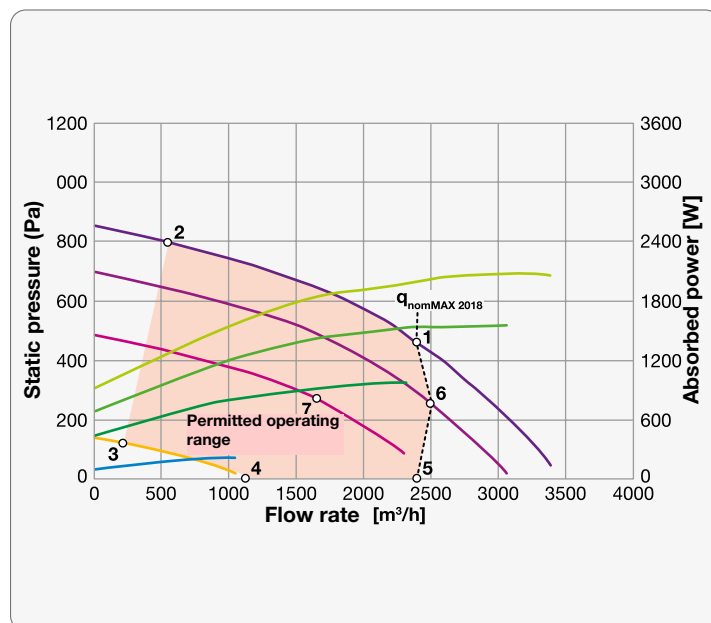
UVC 1600



UVC 2200



UVC 3200



Accessories for REC D9 and UVC 90



All prices are list prices for local market, for a quotation please contact us.

Accessory	Unit pairing	Control compatibility			List price €
		4V board (S4) Potentiometer (Pt) 3 speeds (3V)	3 speeds EVO (3E)	Electronics (SE), (EL), (EB) or (ET)	
Pressure switch 20-300 Pa (can be used for example as ventilation activation safety device)	All the UVC 90	0	0	0	77
	All the REC D9 EC	supplied separately	supplied separately	supplied separately	
Pressure switch filters (for both filters, order 2 pieces)	All the UVC 90	standard supply	0	V	93
	All the REC D9 EC	(1 mounted on renewal)	mounted, not connected	mounted, not connected	
Frost thermostat	All the UVC 90	V	X	X	80
	All the REC D9 EC				
Room thermostat on-off	All the UVC 90	0	0	0	87
	All the REC D9 EC	not managed	not managed	not managed	
Room temperature probe 0-10V	All the UVC 90	X	X	V	216
	All the REC D9 EC				
Room temperature probe 0-10V with display	All the UVC 90	X	X	V	410
	All the REC D9 EC				
Duct temperature probe 0-10V	All the UVC 90	X	X	V	258
	All the REC D9 EC				
Room humidistat on-off	All the UVC 90	V	V	V	219
	All the REC D9 EC				
Duct humidistat on-off	All the UVC 90	V	V	V	625
	All the REC D9 EC				
Humidity and room temperature probe 0-10V	All the UVC 90	X	X	V	383
	All the REC D9 EC				
Humidity and room temperature probe 0-10V with display	All the UVC 90	X	X	V	563
	All the REC D9 EC				
Humidity and duct temperature probe 0-10V	All the UVC 90	X	X	V	438
	All the REC D9 EC				
Room air quality probe (CO2) 0-10V	All the UVC 90	X	X	V	823
	All the REC D9 EC				
Room air quality probe (VOC) 0-10V	All the UVC 90	X	X	V	754
	All the REC D9 EC				
Room air quality probe (VOC) on-off	All the UVC 90	V	V	V	448
	All the REC D9 EC				
Room air quality probe (VOC) and humidity 0-10V	All the UVC 90	X	X	V	841
	All the REC D9 EC				
Duct air quality probe (VOC) 0-10V	All the UVC 90	X	X	V	889
	All the REC D9 EC				
Duct air quality probe (VOC) and humidity 0-10V	All the UVC 90	X	X	V	977
	All the REC D9 EC				
Additional ModBus module (add 1 RS458 port to use ModBus together with remote display)	All the UVC 90	X	X	V	148
	All the REC D9 EC				
Constant pressure control 0-100 / 0-250 Pa (inlet only; order 2 pieces for both fans)	All the UVC 90	X	X	V	606
	All the REC D9 EC				
Constant pressure control 0-500 / 0-1000 Pa (inlet only; order 2 pieces for both fans)	All the UVC 90	X	X	V	606
	All the REC D9 EC				
Constant flow control 0-950 m³/h (80) (inlet only; order 2 pieces for both fans)	UVC 90 800	X	X	V	606
	All the REC D9 EC				
Constant flow control 0-1900 m³/h (120 and 160) (inlet only; order 2 pieces for both fans)	UVC 90 1200-1600	X	X	V	606
	REC D9 1200-1600				
Constant flow control (inlet only; order 2 pieces for both fans)	UVC 90 from 2200 and above	X	X	V	606
0-3500 m³/h (2200)					
0-4650 m³/h (3000 - 3200)					
0-5800 m³/h (4000)	REC D9 from 2200 EC and above				
0-7400 m³/h (5000)					
0-9000 m³/h (8000)					

Accessory compatibility key: X= non compatible | 0= partial compatibility (compatible with unit but not managed) | V= total compatibility

All prices are list prices for local market, for a quotation please contact us.

Accessory	Unit pairing	Control compatibility			List price €
		4V board (S4) Potentiometer (Pt) 3 speeds (3V)	3 speeds EVO (3E)	Electronics (SE), (EL), (EB) or (ET)	
IP 55 control panel (Mandatory for external installations)	UVC 90 from 350 to 2200	V	V	V	171
	(UVC 90 3200 standard supply)				
	REC D9 EC from 500 to 2200				
	3000, 4000, 5000, 8000 standard supply				
Cover for outdoors for REC D9 800 horizontal (configuration from B1 to B8)	REC D9 800 EC (configuration from B1 to B8)		-		262
Cover for outdoors for REC D9 800 vertical (configuration V1 or V5)	REC D9 800 EC (configuration V1 or V5)		-		205
Cover for outdoors for REC D9 1200 horizontal (configuration from B1 to B8)	REC D9 1200 EC (configuration from B1 to B8)		-		305
Cover for outdoors for REC D9 1200 vertical (configuration V1 or V5)	REC D9 1200 EC (configuration V1 or V5)		-		239
Cover for outdoors for REC D9 1600 horizontal (configuration from B1 to B8)	REC D9 1600 EC (configuration from B1 to B8)		-		305
Cover for outdoors for REC D9 1600 vertical (configuration V1 or V5)	REC D9 1600 EC (configuration V1 or V5)		-		248
Cover for outdoors for REC D9 2200 horizontal (configuration from B1 to B8)	REC D9 2200 EC (configuration from B1 to B8)		-		376
Cover for outdoors for REC D9 2200 vertical (configuration V1 or V5)	REC D9 2200 EC (configuration V1 or V5)		-		299
Cover for outdoors for REC D9 3000 horizontal (configuration from B1 to B8)	REC D9 3000 EC (configuration from B1 to B8)		-		394
Cover for outdoors for REC D9 3000 vertical (configuration V1 or V5)	REC D9 3000 EC (configuration V1 or V5)		-		335
Cover for outdoors for REC D9 4000 horizontal (configuration from B1 to B8)	REC D9 4000 EC (configuration from B1 to B8)		-		394
Cover for outdoors for REC D9 4000 vertical (configuration V1 or V5)	REC D9 4000 EC (configuration V1 or V5)		-		367
Cover for outdoors for REC D9 5000 horizontal (configuration from B1 to B8)	REC D9 5000 EC (configuration from B1 to B8)		-		394
Cover for outdoors for REC D9 5000 vertical (configuration V1 or V5)	REC D9 5000 EC (configuration V1 or V5)		-		408
Cover for outdoors for REC D9 8000 vertical (configuration V1 or V5)	REC D9 8000 EC (configuration V1 or V5)		-		576
Roof UVC 90 350 - 500 HB	UVC 90 350 - 500 HB		-		198
Roof UVC 90 350 - 500 HP	UVC 90 350 - 500 HP		-		196
Roof UVC 90 800 HB	UVC 90 800 HB		-		230
Roof UVC 90 800 HP	UVC 90 800 HP		-		221
Roof UVC 90 1200 HB	UVC 90 1200 HB		-		280
Roof UVC 90 1200 HP	UVC 90 1200 HP		-		249
Roof UVC 90 1600 HB	UVC 90 1600 HB		-		285
Roof UVC 90 1600 HP	UVC 90 1600 HP		-		282
Roof UVC 90 2200 HB	UVC 90 2200 HB		-		321
Roof UVC 90 2200 HP	UVC 90 2200 HP		-		328
Roof UVC 90 3200 HP	UVC 90 3200 HP		-		383

Accessories for REC D9 and UVC 90



All prices are list prices for local market, for a quotation please contact us.

Accessory	Unit pairing	Control compatibility			List price €
		4V board (S4) Potentiometer (Pt) 3 speeds (3V)	3 speeds EVO (3E)	Electronics (SE), (EL), (EB) or (ET)	
Electric heating element Ø125 0,5kW 230V 1F 1 stage (thermostat -30+30°C)	UVC 90 150	V managed with integrated thermostat	V managed with integrated thermostat	V	486
Electric heating element Ø125 0,5kW 230V 1F (adjustment 0-10V)	UVC 90 150	X	X	V	818
Electric heating element Ø160 0,75kW 230V 1F 1 stage (thermostat -30+30°C)	UVC 90 220	V managed with integrated thermostat	V managed with integrated thermostat	V	551
Electric heating element Ø160 0,75kW 230V 1F (adjustment 0-10V)	UVC 90 220	X	X	V	916
Electric heating element Ø160 1kW 230V 1F 1 stage (thermostat -30+30°C)	UVC 90 350	V managed with integrated thermostat	V managed with integrated thermostat	V	549
Electric heating element Ø160 1kW 230V 1F (adjustment 0-10V)	UVC 90 350	X	X	V	875
Electric heating element Ø200 1,5kW 230V 1F 1 stage (thermostat -30+30°C)	UVC 90 500	V managed with integrated thermostat	V managed with integrated thermostat	V	567
Electric heating element Ø200 1,5kW 230V 1F (adjustment 0-10V)	UVC 90 500	X	X	V	903
Electric heating element Ø250 2kW 230V 1F 2 stages (thermostat -30+30°C)	UVC 90 800	V managed with integrated thermostat	V managed with integrated thermostat	V	845
	REC D9 800				
Electric heating element Ø250 2kW 230V 1F (adjustment 0-10V)	UVC 90 800	X	X	V	998
	REC D9 800				
Electric heating element Ø315 3kW 400V 3F 2 stages (thermostat -30+30°C)	UVC 90 1200	V managed with integrated thermostat	V managed with integrated thermostat	V	998
	REC D9 1200				
Electric heating element Ø315 3kW 400V 3F (adjustment 0-10V)	UVC 90 1200	X	X	V	1160
	REC D9 1200				
Electric heating element Ø315 4kW 400V 3F 2 stages (thermostat -30+30°C)	UVC 90 1600	V managed with integrated thermostat	V managed with integrated thermostat	V	1025
	REC D9 1600				
Electric heating element Ø315 4kW 400V 3F (adjustment 0-10V)	UVC 90 1600	X	X	V	1269
	REC D9 1600				
Electric heating element Ø355 6kW 400V 3F 2 stages (thermostat -30+30°C)	UVC 90 2200	V managed with integrated thermostat	V managed with integrated thermostat	V	1269
	REC D9 2200				
Electric heating element Ø355 6kW 400V 3F (adjustment 0-10V)	UVC 90 2200	X	X	V	1324
	REC D9 2200				
Electric heating element Ø400 12kW 400V 3F 2 stages (thermostat -30+30°C)	UVC 90 3200	V managed with integrated thermostat	V managed with integrated thermostat	V	1433
	REC D9 3000				
Electric heating element Ø400 12kW 400V 3F (adjustment 0-10V)	UVC 90 3200	X	X	V	1682
	REC D9 3000				
Electric heating element Ø400 16kW 400V 3F 2 stages (thermostat -30+30°C)	REC D9 4000	V managed with integrated thermostat	V managed with integrated thermostat	V	1541
Electric heating element Ø400 16kW 400V 3F (adjustment 0-10V)	REC D9 4000	X	X	V	2167
Electric heating element Ø450 16kW 400V 3F 2 stages (thermostat -30+30°C)	REC D9 5000	V managed with integrated thermostat	V managed with integrated thermostat	V	1541
Electric heating element Ø450 16kW 400V 3F (adjustment 0-10V)	REC D9 5000	X	X	V	2167

Accessory compatibility key: X= non compatible | O= partial compatibility (compatible with unit but not managed) | V= total compatibility

Accessory	Unit pairing	Control compatibility			List price €
		4V board (S4) Potentiometer (Pt) 3 speeds (3V)	3 speeds EVO (3E)	Electronics (SE), (EL), (EB) or (ET)	
Hot/cold water coil 150 m³/h and 1kW (1/2" connections)	UVC 90 150	0 not managed	0 not managed	V	479
Hot/cold water coil 220 m³/h and 1.6kW (1/2" connections)	UVC 90 220	0 not managed	0 not managed	V	565
Hot/cold water coil 350 m³/h and 2.2kW (1/2" connections)	UVC 90 350	0 not managed	0 not managed	V	565
Hot/cold water coil 500 m³/h and 3.2kW (1/2" connections)	UVC 90 500	0 not managed	0 not managed	V	633
Hot/cold water coil 800 m³/h and 5.7kW (1/2" connections)	UVC 90 800	0 not managed	0 not managed	V	777
	REC D9 800				
Hot/cold water coil 1200 m³/h and 7.8kW (3/4" connections)	UVC 90 1200	0 not managed	0 not managed	V	1470
	REC D9 1200				
Hot/cold water coil 1600 m³/h and 9.7kW (3/4" connections)	UVC 90 1600	0 not managed	0 not managed	V	1579
	REC D9 1600				
Hot/cold water coil 2200 m³/h and 15kW (3/4" connections)	UVC 90 2200	0 not managed	0 not managed	V	1773
	REC D9 2200				
Hot/cold water coil 3200 m³/h and 22kW (1" connection)	UVC 90 3200	0 not managed	0 not managed	V	2185
	REC D9 3000				
Hot/cold water coil 4000 m³/h and 29kW (1" connection)	REC D 9 4000	0 not managed	0 not managed	V	2459
Hot/cold water coil 5000 m³/h and 31kW (1" connection)	REC D 9 5000	0 not managed	0 not managed	V	2495

Accessory	Unit pairing	Control compatibility			List price €
		4V board (S4) Potentiometer (Pt) 3 speeds (3V)	3 speeds EVO (3E)	Electronics (SE), (EL), (EB) or (ET)	
2-way servovalve on-off (230V), 1/2" connections	All UVC 90 and REC D9 based on connection Ø	0 not managed	0 not managed	V	135
3-way servovalve on-off (230V), 1/2" connections	All UVC 90 and REC D9 based on connection Ø	0 not managed	0 not managed	V	143
2-way servovalve on-off (230V), 3/4" connections	All UVC 90 and REC D9 based on connection Ø	0 not managed	0 not managed	V	143
3-way servovalve on-off (230V), 3/4" connections	All UVC 90 and REC D9 based on connection Ø	0 not managed	0 not managed	V	151
2-way servovalve on-off (230V), 1" connections	All UVC 90 and REC D9 based on connection Ø	0 not managed	0 not managed	V	168
3-way servovalve on-off (230V), 1" connections	All UVC 90 and REC D9 based on connection Ø	0 not managed	0 not managed	V	173
2-way servovalve 0-10V (24V), 1/2" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	376
3-way servovalve 0-10V (24V), 1/2" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	383
2-way servovalve 0-10V (24V), 3/4" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	383
3-way servovalve 0-10V (24V), 3/4" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	390
2-way servovalve 0-10V (24V), 1" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	406
3-way servovalve 0-10V (24V), 1" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	412

Accessories for REC D9 and UVC 90



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Accessory	Unit pairing	Control compatibility			List price €
		4V board (S4) Potentiometer (Pt) 3 speeds (3V)	3 speeds EVO (3E)	Electronics (SE), (EL), (EB) or (ET)	
2-way ball servovalve 0-10V (24V), 1/2" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	485
3-way ball servovalve 0-10V (24V), 1/2" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	501
2-way ball servovalve 0-10V (24V), 3/4" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	486
3-way ball servovalve 0-10V (24V), 3/4" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	503
2-way servovalve 0-10V (24V), 1" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	506
3-way servovalve 0-10V (24V), 1" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	531
2-way ball servovalve 0-10V (24V), 1 1/4" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	693
3-way ball servovalve 0-10V (24V), 1 1/4" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	725
2-way ball servovalve 0-10V (24V), 1 1/2" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	868
3-way ball servovalve 0-10V (24V), 1 1/2" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	896
2-way servovalve 0-10V (24V), 2" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	1014
3-way servovalve 0-10V (24V), 2" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	1121
2-way ball servovalve 0-10V (230V), 1/2" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	517
3-way ball servovalve 0-10V (230V), 1/2" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	531
2-way ball servovalve 0-10V (230V), 3/4" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	519
3-way ball servovalve 0-10V (230V), 3/4" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	535
2-way servovalve 0-10V (230V), 1" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	536
3-way servovalve 0-10V (230V), 1" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	563
2-way ball servovalve 0-10V (230V), 1 1/4" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	740
3-way ball servovalve 0-10V (230V), 1 1/4" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	772
2-way ball servovalve 0-10V (230V), 1 1/2" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	914
3-way ball servovalve 0-10V (230V), 1 1/2" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	943
2-way servovalve 0-10V (230V), 2" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	1060
3-way servovalve 0-10V (230V), 2" connections	All UVC 90 and REC D9 based on connection Ø	X	X	V	1167

Accessory compatibility key: X= non compatible | O= partial compatibility (compatible with unit but not managed) | V= total compatibility

UFA



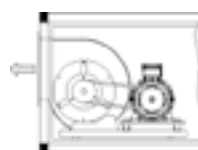
Description

- UFA:** air filter units with “G4” EPM coarse 65% filter, “F6” EPM 1 50% pocket filters, activated carbon filters
- forward inclined centrifugal fans, double inlet with belt transmission
 - frame in tubular aluminium and double-wall galvanised panels filled with polyurethane foam thermo-acoustic insulation (40 Kg/m³ density) in class “0” thickness 23 mm
 - support feet
 - working temperature -20°C / +40°C

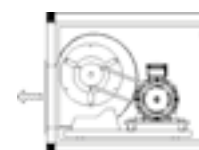
Accessories

- rain protection cover for outdoors
- inclined spigot with wire mesh
- safety switch (list price €210)
- inverter

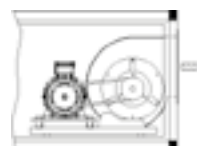
Configurations



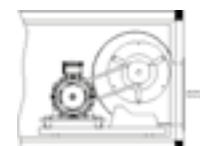
SX-BS



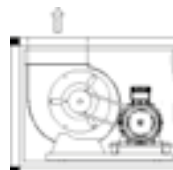
SX-BG



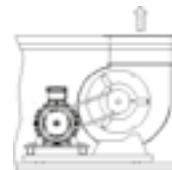
DX-BS



DX-BG

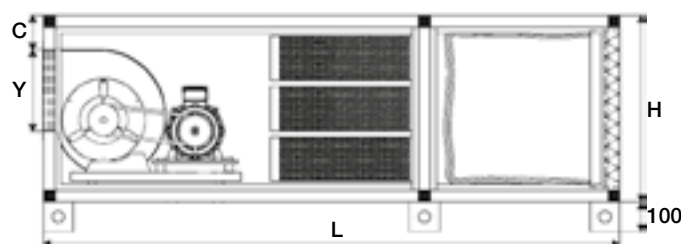
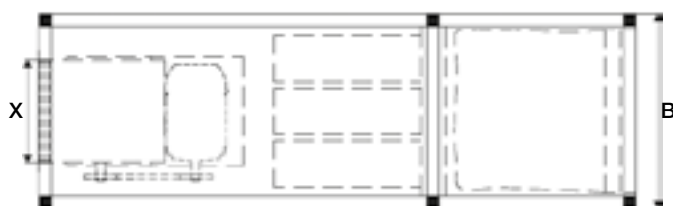


SX-BA



DX-BA

Dimensions



Model	B	L	H	C	X	Y
UFA / DP 1600	670	2000	670	110	232	255
UFA / DP 3300	670	2000	670	110	331	289
UFA / DP 4500	1080	2100	750	120	395	341
UFA / DP 6600	1280	2000	800	140	471	404
UFA / DP 8800	1680	2000	800	140	471	404
UFA / DP 9300	1280	2200	1080	140	557	478
UFA / DP 12000	1280	2200	1280	140	557	478
UFA / DP 18000	1900	2500	1280	140	638	638
UFA / DP 20000	2500	2500	1280	140	638	638

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Selection table and price list

Accessories

Model	Flow rate m ³ /h	Prev. Useful in Pa	kW	RPM speed	Voltage	Price list €	Rain protection cover	Inclined spigot
UFA / DP 1600	1600	200	0.55	1673	400/3 F	4148	150	108
UFA / DP 3300	3300	200	1.1	1481	400/3 F	4941	150	119
UFA / DP 4500	4500	200	1.5	1272	400/3 F	6672	259	120
UFA / DP 6600	6600	200	2.2	1062	400/3 F	7789	288	124
UFA / DP 8800	8800	200	3	1040	400/3 F	9663	450	124
UFA / DP 9300	9300	200	3	882	400/3 F	11106	469	127
UFA / DP 12000	12000	200	4	872	400/3 F	12837	506	127
UFA / DP 18000	20300	200	7.5	821	400/3 F	20264	768	166
UFA / DP 20000	25400	200	11	856	400/3 F	25817	809	166

HOT WATER COILS

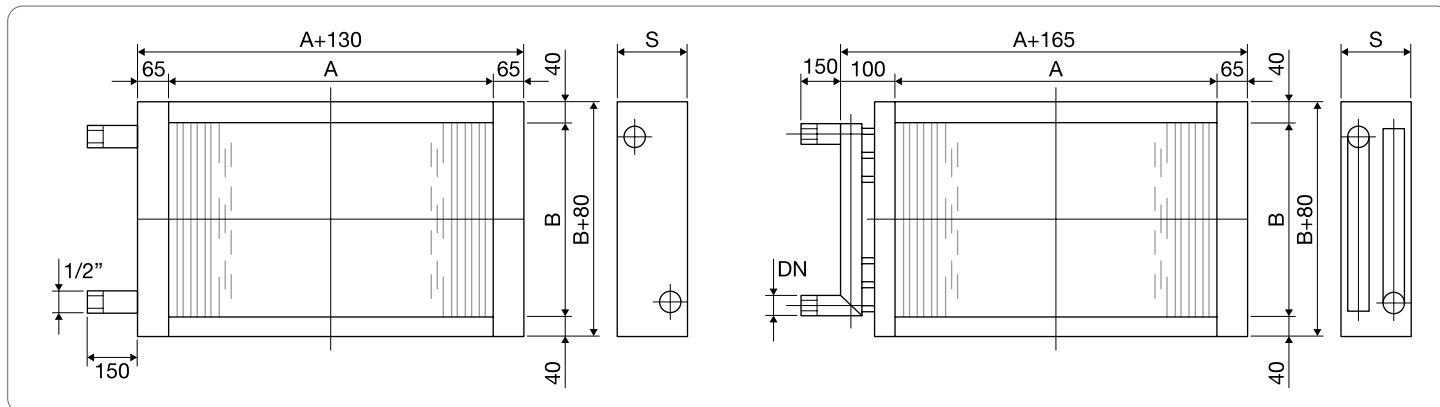
Description

- casing in galvanised steel
- copper piping
- aluminium blades

Special executions

Other executions on request

Dimensions



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Selection table and price list

Air flow (m³/h)	Air Ti (°C)	Air To (°C)	Air Δp (Pa)	Water flow (l/s)	Water Ti (°C)	Water To (°C)	Water Δp (kPa)	Power (kW)	Ø water	AxB (mm)	S (mm)	BxH (mm)	Coil pitch type	List price €
500	16	32	90	0.07	75	65	1	2.73	1/2"	300x120	130	430x200	P40 16 2R 3T	301
		32	116	0.07	60	50	1.1	2.73	1/2"		130	430x200	P40 16 2R 3T	305
		32	223	0.07	45	35	1.7	2.73	1/2"		190	430x200	P40 16 4R 3T	385
1000	16	32	74	0.13	75	65	5.1	5.47	1/2"	400x200	130	530x280	P40 16 2R 5T	356
		32	93	0.13	60	50	5.4	5.47	1/2"		130	530x280	P40 16 2R 5T	367
		32	143	0.13	45	35	7.5	5.47	1/2"		160	530x280	P40 16 3R 5T	428
1500	16	32	103	0.2	75	65	11.5	8.2	1/2"	500x200	130	630x280	P40 16 2R 5T	374
		32	126	0.2	60	50	11.9	8.2	1/2"		130	630x280	P40 16 2R 5T	381
		32	241	0.2	45	35	21.3	8.2	1/2"		190	630x280	P40 16 4R 5T	523
2000	16	32	94	0.27	75	65	24.7	10.94	1/2"	500x280	130	630x360	P40 16 2R 7T	421
		32	109	0.27	60	50	25.6	10.94	1/2"		130	630x360	P40 16 2R 7T	428
		32	223	0.27	45	35	7.7	10.94	1"		190	605x360	P40 16 4R 7T	686
2500	16	32	101	0.33	75	65	6.9	13.67	1"	600x280	130	705x360	P40 16 2R 7T	501
		32	124	0.33	60	50	7.2	13.67	1"		130	705x360	P40 16 2R 7T	519
		32	238	0.33	45	35	12.4	13.67	1"		190	705x360	P40 16 4R 7T	726
3000	16	32	74	0.4	75	65	12.2	16.41	1"	600x400	130	705x480	P40 16 2R 10T	581
		32	87	0.4	60	50	12.7	16.41	1"		130	705x480	P40 16 2R 10T	595
		32	143	0.4	45	35	18.2	16.41	1"		190	705x480	P40 16 3R 10T	766
3500	16	32	74	0.47	75	65	17.2	19.14	1"	700x400	130	805x480	P40 16 2R 10T	621
		32	87	0.47	60	50	17.9	19.14	1"		130	805x480	P40 16 2R 10T	635
		32	143	0.47	45	35	25.7	19.14	1"		160	805x480	P40 16 3R 10T	828
4000	16	32	94	0.53	75	65	21.9	21.88	1"	700x400	130	805x480	P40 16 2R 10T	621
		32	109	0.53	60	50	22.7	21.88	1"		130	805x480	P40 16 2R 10T	635
		32	223	0.53	45	35	14.4	21.88	1"		190	805x480	P40 16 4R 10T	969
4500	16	32	77	0.6	75	65	30.8	24.61	1"	800x440	130	905x520	P40 16 2R 11T	679
		32	91	0.6	60	50	32.1	24.61	1"		130	905x520	P40 16 2R 11T	697
		32	149	0.6	45	35	16.3	24.61	1"		160	905x520	P40 16 3R 11T	929
5000	16	32	93	0.66	75	65	14.9	27.35	1"	800x480	130	905x560	P40 16 2R 12T	733
		32	153	0.66	60	50	21.1	27.35	1"		160	905x560	P40 16 3R 12T	984

Key:

Air Ti: air inlet temperature

Air To: air output temperature

Air Δp1: air side pressure drop at a flow rate of 40% of the nominal rate

Air Δp2: air side pressure drop at a flow rate of 80% of the nominal rate

Water Ti: water inlet temperature

Water Tu: water outlet temperature

Power: power in kW

AxB: coil air passage

S: coil depth

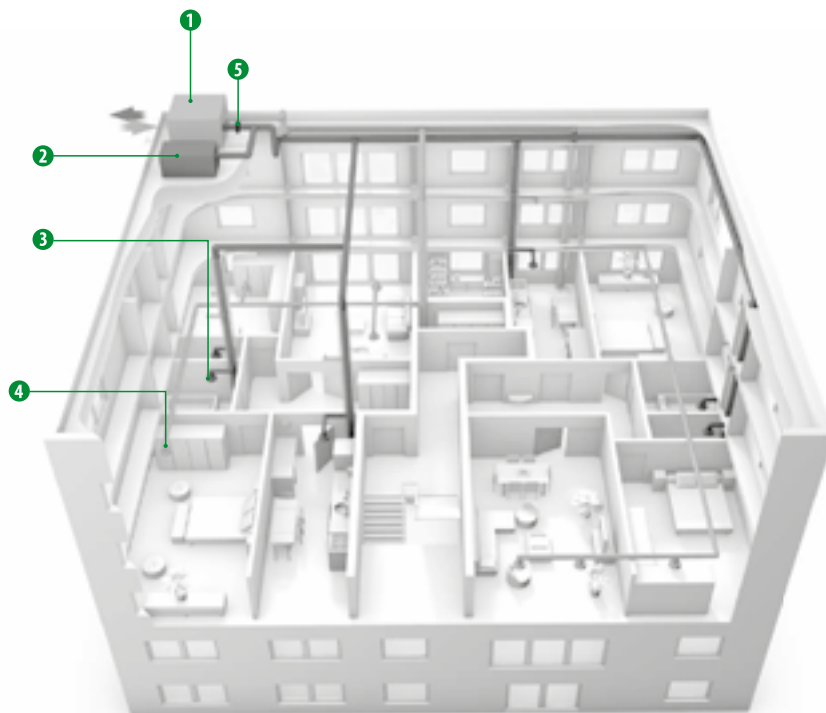
BxH: external flange dimensions

Double centralised flow for condominiums

Key:

1. Dual-flow heat recovery unit
2. Extraction box
3. Extraction valve with constant flow regulator
4. Supply valve with constant flow regulator
5. Fire damper

A high-performance dual-flow heat recovery unit, mounted on the terrace, ensures the intake of fresh air and extraction of stale air for all apartments. In the event of a fire, the fire damper mounted in the intake duct interrupts the flow of air, the limit switch contacts send the information to the heat recovery unit. The fan is switched off and the extraction box is switched on.



Air inlet valve

All prices are list prices for local market, for a quotation please contact us.

List price / Dimensions

Type	A	B	C	Ø	D	€	€ RED
BDOP 125 (mm)	185	205	30	118	100	28	39

BDOP

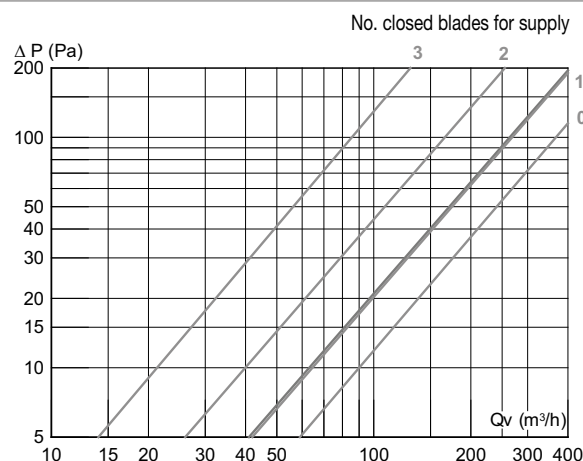
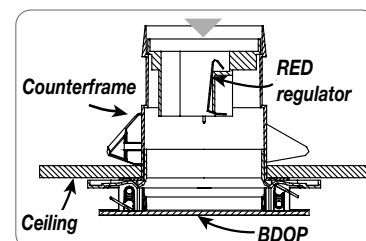
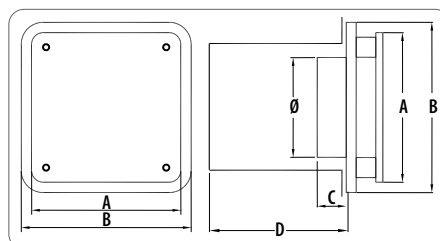
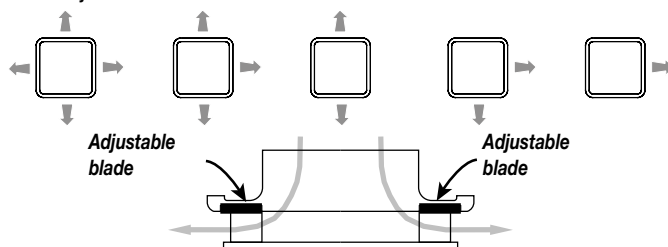


Description

BDOP: Air inlet valve for use in homes, collective buildings, tertiary sector (VMC)

- made of white ABS
- DN size 125 mm
- flow rate up to 300 m³/h with 4 throws
- flow rate with constant flow regulator up to 120m³/h
- orientation of adjustable throw
- including plastic subframe for fastening

Operation: air jet orientation in 1, 2, 3 or 4 directions depending on the blade adjustment



Self-adjusting flow regulators

RED



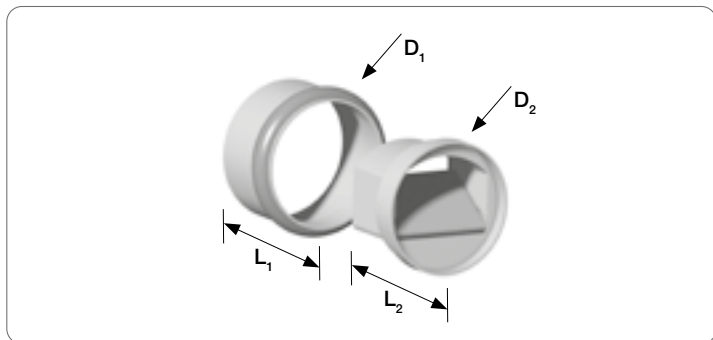
Description

RED: CAV unit

- made of class M1 plastic
- control unit with spring and shock absorber piston
- maximum temperature up to 60°C
- operating range from 50 to 200 Pa
- tolerance $\pm 10\%$
- horizontal or vertical assembly
- sizes from 80 to 250 mm
- flow rates from 15 to 700 m³/h factory set

Special executions

- **RED-AP:** like RED but with operating range from 150 to 600 Pa
- flow rates from 50 to 1200 m³/h factory set



Dimensions

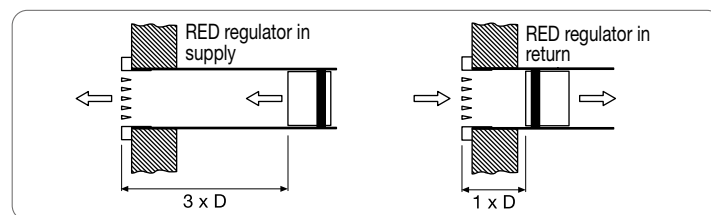
DN	80	100	125	160	200	250
D1 (mm)	76	95	120	146	196	544
L1 (mm)	55	60	60	120	120	120
D2 (mm)	73	93	117	146	192	242
L2 (mm)	50	55	56	82	82	82

All prices are list prices for local market, for a quotation please contact us.

Price list

DN	Flow rates (m³/h)	€ RED	€ RED AP
80	15,25,30,45,50	22	
80	25,50,75		24
100	15,25,30,45,50. 50,60,75,90,100	26	
100	25,50,75,100. 100,125,150		30
125	15,25,30,45,50. 50,60,75,90,100. 100,120,150,180	30	
125	25,50,75,100. 100,125,150,200. 200,250,300		33
160	15,25,30,45,50. 50,60,75,90,100. 100,120,150,180. 180,210,240,250,270,300	44	
160	25,50,75,100,125,150. 150,200,250. 250,300,350,400. 300,350,400,450,500		49
200	210,240,250,270,300. 300,350,400,450,500	66	
200	100,125,150. 200,250,300,350,400,450,500. 500,600,700,800		74
250	180,210,240,250,270,300. 300,350,400,450,500. 500,550,600,650,700	85	
250	150,200,250,300. 300,350,400,450,500. 500,600,700,800		95
250	800,900,1000,1100,1200		95

The flow rate fields are highlighted. In green the standard volume control. Material with prices in bold in stock



Technical data

Flow rate (m³/h)	Lw [dB(A)]			
	50 Pa	100 Pa	150 Pa	200 Pa
15	25	29	32	35
30	26	31	35	38
45	27	33	36	39
60	32	37	39	42
75	32	37	40	42
90	32	38	41	44
120	30	34	39	42
150	33	37	41	45
180	34	40	44	47
210	34	40	42	44
240	35	41	44	47
270	37	43	45	49
300	33	37	42	45
350	35	40	44	47
400	37	42	45	50
450	38	44	46	51
500	39	46	48	53

Self-adjusting extraction valves

ELIZE



ELIZE



Description

ELIZE: self-adjusting extraction valve with wide range of flow rates for use in homes, collective buildings, tertiary sector (VMC)

- made of white plastic
- built-in flow control unit
- operating range from 50 to 160 Pa
- DN sizes 125 mm
- flow rates from 15 to 150 m³/h factory set

All prices are list prices for local market, for a quotation please contact us.

Price list

DN	Flow rate (m³/h)	ELIZE	CM	CP
125	15	22	4	6
125	30	22	4	6
125	45	22	4	6
125	60	22	4	6
125	75	22	4	6
125	90	22	4	6
125	120	45	4	6
125	150	45	4	6

External valve dimension: 180 mm

Delivery: 2 weeks

Accessories

CM: plastic counterframe for wall-mounting

CP: plastic fastening counterframe for ceiling application

Special executions

ELIZE-IGRO: like ELIZE but with flow rate variation based on the room humidity (on request)

ES



Description

ES: steam humidifiers operating with the principle of the electrodes immersed in not-demineralised water

- production from 2 to 48 kg/h.

Construction features

- structure in AISI stainless steel and polypropylene
- ON-OFF operation, proportional 0-10V and with integrated humidistat for humidity probe (4..20 mA same device)
- electronic microprocessor control that can be interfaced with DDC
- display for reading and programming work data
- level probe
- draining during stand-by
- water fill solenoid valve
- water drain pump with pre-set automatic functions to increase the life of the machine
- non-toxic polypropylene cylinder with stainless steel electrodes (easily to replace)
- possibility of re-calibrating steam production up to 20%
- operating test on each single machine

Conformity

The product complies with the following directives and standards: 72/23 and 89/336 EEC EN 50081-1, 50082-1, 60335-1

Accessories

L250/L1000: steam distributor with L = 250 / 1000 mm with DN 25 or 40 mm made of AISI 304/316 stainless steel with automatic condensate return

TV: steam pipe DN 25 – DN 40

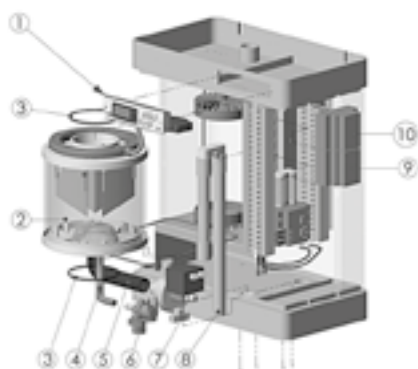
CL...: spare cylinder complete with electrodes

- the following spare parts are also available at our service centre:
 - pumps
 - valves
 - electronic boards, etc.

Description of components

Key:

- | | |
|----------------------------------------|---------------------------------------------|
| 1. Digital controller display | 6. 3/4 gas filling solenoid valve |
| 2. Steam production electrode cylinder | 7. Discharge pump |
| 3. Electrode cylinder O-ring | 8. Siphon pipes |
| 4. Solenoid valve filling pipe | 9. Tam electronic unit |
| 5. Pump discharge pipe | 10. Slim TLD microprocessor electronic unit |



All prices are list prices for local market, for a quotation please contact us.

Price list

Type	ES6	ES12	ES24	ES48
PRICES ON REQUEST				

Delivery: 3 weeks

Accessories

L 250		L 1000		TV		CL		
25	40	25	40	25	40	6	12	24
PRICES ON REQUEST								

Features

	ES6	ES12	ES24	ES48
Steam production (kg/h)	6.00	12.00	24.00	48.00
Electric power supply	400V 3/N 50-60 Hz			
Power (KW)	4.5	9	18	35
Absorbed current (A)	6.5	13	26	51
DN steam outlet mm	25	25	40	40
No. cylinders	1	1	1	2
Operating weight (kg)	13	18	37	74
Dimensions	Height (mm)	526	626	711
	Width (mm)	430	430	860
	Depth (mm)	240	240	240
Supply pressure	1-10 bar			

Standard equipment for assembly and use

The humidifiers of the ES line for assembly and use are fitted with:

- 1 x 3/4 gas connections for water filling.
- 1 x 40-mm external diameter connection for draining water with fastening band.
- 1 x 25-mm external diameter connection for the steam pipe for models ES6 and ES12 and 40-mm external diameter for models ES24 and ES48 with relevant fastening band.
- 1 x user manual.
- 1 x final test checklist.



Use steam pipe only with the diameter indicated for the model, fasten it to the steam pipe with a clamp avoiding kinks (fig.8) and siphon bends that can generate dangerous pockets of condensate (fig.9)!

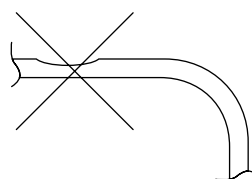


fig. 8

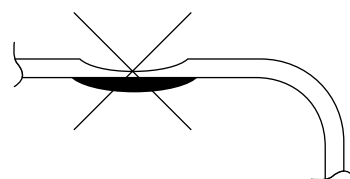


fig. 9



WING II

Design
air curtains

PAGE 1



ECON-C II

Recessed
air curtains

PAGE 3

WING II



Description

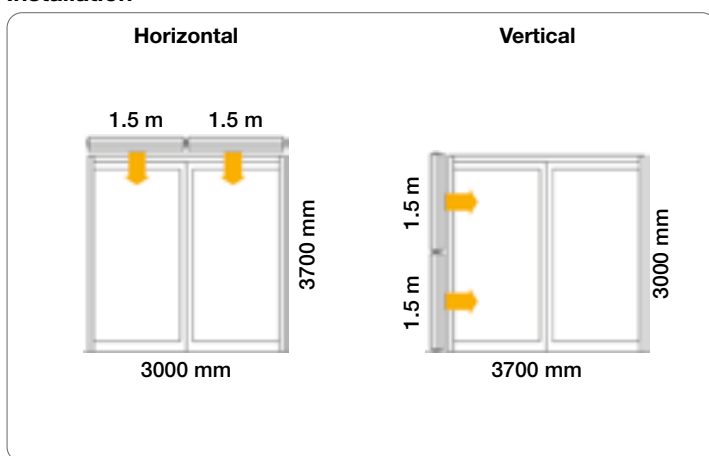
WING II: wing air curtain with a new generation design that recalls the lightness and harmony of the shapes; ideal installation in compact spaces

- energy saving EC fans
- large intake air surface with cover for easy cleaning and no disassembly required
- water and electric coils or neutral version without coil
- made of power-coated galvanised steel
- vertical or horizontal installation
- also available in version with AC motors

Programmable control panel:

- 3-speed fan
- electric coils 2 levels
- room thermostat
- weekly programme
- BMS systems
- can operate up to 8 blades
- door contact

Installation



All prices are list prices for local market, for a quotation please contact us.

WING II price list

Water-heated curtains	€	Electric air curtains	€	Neutral air curtains	€
WING W100 (EC)	1502	WING E100 (EC)	1502	WING C100 (EC)	1267
WING W150 (EC)	1807	WING E150 (EC)	1807	WING C150 (EC)	1577
WING W200 (EC)	2187	WING E200 (EC)	2187	WING C200 (EC)	1882

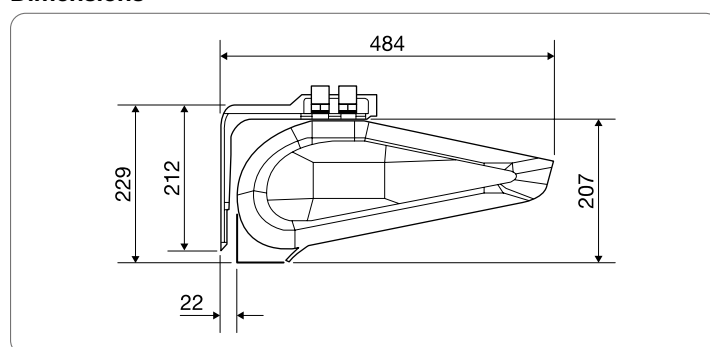
Material with prices in bold in stock

Accessories price list

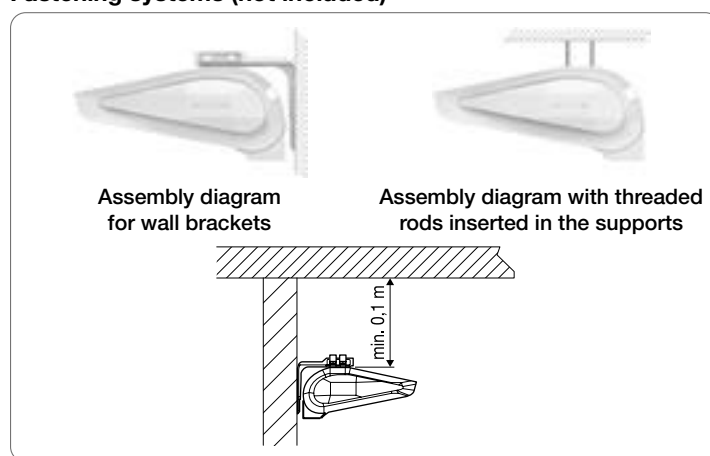
Wall mounting brackets	€	Accessories	€
Brackets x L= 1000	44	Motorised valve for water coil	141
Brackets x L= 1500 - 2000	67	Timer	42
Door contact	25	Thermostat	28
Ceiling fastening set	12		

Material with prices in bold in stock

Dimensions



Fastening systems (not included)



Selection table

	Water-heated curtains								
	W 100			W 150			W 200		
Air flow rate m³/h	880	1350	1850	1420	2050	3100	2050	3150	4400
Water-heated coil kW output	2.8	3.2	3.5	4.8	7.7	9.5	11.3	13.7	15.4
Air output temperature	28	27	26	28	30	29	32	31	30
Water flow rate (m³/h / Dp Kpa)	0.12/0.02	0.14/0.03	0.15/0.03	0.21/0.1	0.34/0.2	0.41/0.3	0.49/0.5	0.60/0.7	0.67/0.9
Rows of coils	2								
Power supply voltage	230/1/50 Hz								
EC motor power in kW	0.15			0.18			0.26		
EC motor rated current in A	1.1			1.3			1.9		
Weight (without water) in Kg	21.5			29			37.5		
Noise level in dB(A)	56	59	61	57	62	63	60	65	66
IP protection rating	20								

Water coil yield: inlet air temperature 20°C / water temperature 60/40°C

Air output temperature with input air at 20°C

Noise level measured in semi-open space at a distance of 3 metres

Maximum door height: 3.7 m

Selection table

	Electric air curtains								
	E 100			E 150			E 200		
Air flow rate m³/h	920	1400	1850	1450	2050	3150	2150	3200	4500
Electric coil power in kW	2/4 - 4/6	2/4 - 4/6	2/4 - 4/6	4/12 - 8/12	4/12 - 8/12	4/12 - 8/12	5/15 - 10/15	5/15 - 10/15	5/15 - 10/15
Air output temperature	26/31 - 31/36	24/27 - 27/31	23/26 - 26/30	28/41 - 34/41	25/34 - 29/34	24/30 - 27/30	27/36 - 30/36	25/31 - 27/31	24/29 - 25/29
Power supply voltage	400/3/50 Hz								
EC motor power in kW	0.15			0.18			0.26		
EC motor rated current in A	1.1			1.3			1.9		
Weight in Kg	22			30.5			39		
Noise level in dB(A)	53	55	62	55	60	62	59	63	64
IP protection rating	20								

Air output temperature with input air at 20°C

Noise level measured in semi-open space at a distance of 3 metres

Electric coils configurable as power directly from the control

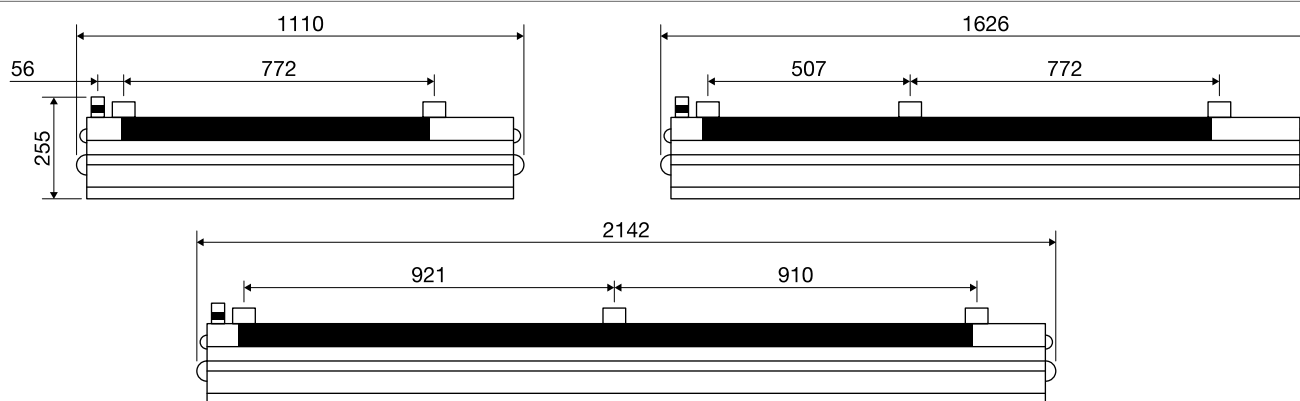
Maximum door height: 3.7 m

	Neutral air curtains								
	C 100			C 150			C 200		
Air flow rate m³/h	1050	1500	1950	1500	2250	3200	2340	3400	4600
Power supply voltage	230/1/50 Hz								
EC motor power in kW	0.15			0.18			0.26		
EC motor rated current in A	1.1			1.3			1.9		
Weight in Kg	19			25.5			32.5		
Noise level in dB(A)	57	63	66	58	66	67	61	65	67
IP protection rating	20								

Noise level measured in semi-open space at a distance of 3 metres

Maximum door height: 4 m

Dimensions



ECON-C II



Description

ECON-C II: recessed air curtain for insertion in false ceilings, simple design but with a refined aesthetic for insertion in any environment, both commercial and private.

- water and electric coils or neutral version without coil
- made of power-coated galvanised steel, front with RAL 9010 finish
- horizontal installation
- assembly height 3 and 4 m

Command and control panel included, two versions:

- **Econ:** 3-speed fan management, heating coil control, external contacts (door contact, room thermostat or external thermostat)
- **Ditronic Touch:** control with smart processor, allows the control of the air blade according to the ambient or external temperature
 - control of the water valve according to the door contact
 - automatic system
 - frost protection and weekly programming
 - connection with RJ45 cable



ECON



DITRONIC TOUCH

On request:

- RAL colours

All prices are list prices for local market, for a quotation please contact us.

Selection table and prices

Type	Model	Flow rate (m³/h)	Volt	Coil power (kW)	Installation height max (m)	Motor power (W)	Absorbed (A)	Lp(A)	Weight (Kg)	€	€
										with ECON control	with Ditronic Touch control
Recessed neutral air curtains	ECON C II 1000 S	2150	230/1/50 Hz	-	4	540	2.4	56	29	1577	2504
	ECON C II 1500 S	3100	230/1/50 Hz	-	4	810	3.6	58	43	2345	3272
	ECON C II 2000 S	4400	230/1/50 Hz	-	4	1080	4.8	59	52	2691	3618
Recessed air curtains with hot water coil	ECON C II 1000 W	2000	230/1/50 Hz	11.5	4	540	2.4	56	41	2007	2903
	ECON C II 1500 W	3000	230/1/50 Hz	20	4	810	3.6	58	62	2859	3751
	ECON C II 2000 W	4300	230/1/50 Hz	28.7	4	1080	4.8	59	79	3291	4186
Recessed three-phase electric air curtains	ECON C II 1000 E 10	2100	415/3/50 Hz	10 ¹	4	540	2.4	56	36	2114	3182
	ECON C II 1500 E 15	3050	415/3/50 Hz	15 ²	4	810	3.6	58	62	3065	4133
	ECON C II 2000 E 20	4300	415/3/50 Hz	20 ³	4	1080	4.8	59	79	3407	4544

KW with maximum air flow, water temperature 80°C/60°C, ambient air temperature 18°

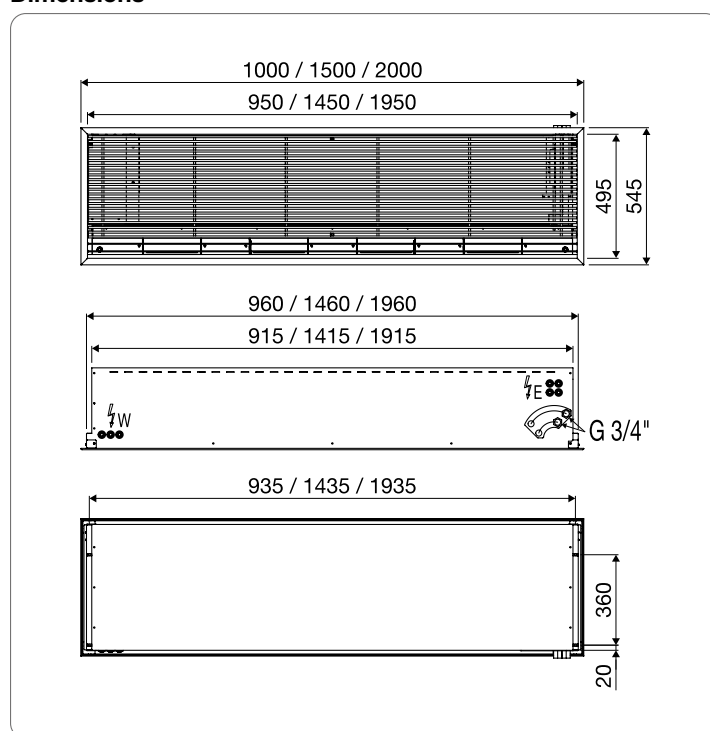
Can also be supplied with power in kW: 1) 5 / 7.5 / 10 2) 10 / 12.5 / 15 3) 10 / 12.5 / 15

Material with prices in bold in stock

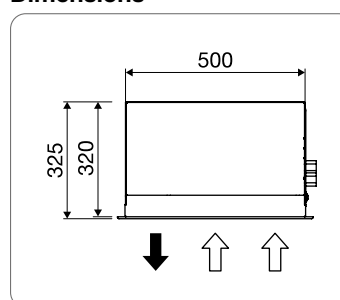
Accessories price list

Accessories	Price list €
DKM = Mechanical door contact	66
DKMG = Magnetic door contact	91
Econ Dual= For connection (master -slave)	167
BMS input	110
Zs- ECON C = Assembly brackets	16
TP1 = Basic room thermostat	64
TP2 = Room thermostat with Switch	75
TP3 = Digital room thermostat	152
PPH 3/4 = pair of water hose pipes	80
ETVQ 1 = 2-way valve, 230 Volt, electrothermal pressure independent	434
ETVQ 5/ 4 = 2-way valve, 230 Volt, electrothermal pressure independent	578
TV XXL = Thermostatic high-flow valve with 2-way diverter	421

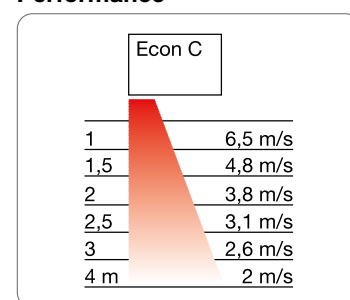
Dimensions



Dimensions



Performance



COMPACT



NUCLEO 3000



THCP Li



ARCUS X



ARCUS



AXI



MAGNUM

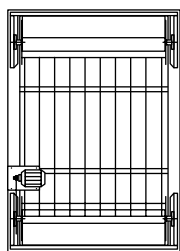


ECON-C



ECON





FR
Rotary
filter
PAGE 1



CCA
Activated carbon
flat panels
PAGE 1



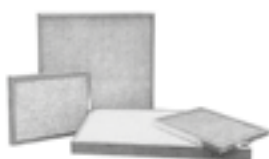
FCAD
Dihedral activated
carbon filter
PAGE 1



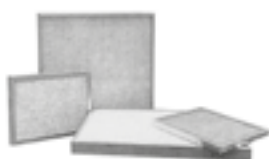
PCA
Plates with activated
carbon cartridges
PAGE 1



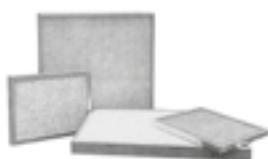
MK 8/10/15
Flat filters panels
8 / 10 / 15 mm thickness
PAGE 2



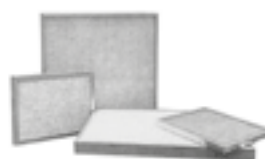
MK 23
Flat filters panels
23 mm thickness
PAGE 2



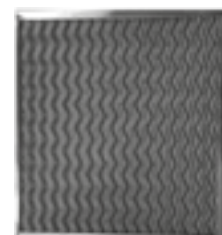
MK 50
Flat filters panels
48 mm thickness
PAGE 2



FZ 50
Pleated filter panels
48 mm thickness
PAGE 2



FZ 100
Pleated filter panels
100 mm thickness
PAGE 2



CM50/G3
Metal flat filter panels
th. 48 mm certified
PAGE 3



FTM
Pocket
filters
PAGE 4



FTR
Rigid pocket
filters
PAGE 4



FAD
Absolute filters
292 mm thickness
PAGE 5



FAL
Absolute filters
68 mm thickness
PAGE 5



BF
Filters duct
housing
PAGE 6



KAN
Safe change
housing
PAGE 7



CPFS
Terminal diffusers
with absolute filter
PAGE 8



DOPL
Filtering ceilings
for operating theatres ISO 5
PAGE 10



GRF-PFX
Return grilles with filter
for operating theatres
PAGE 11



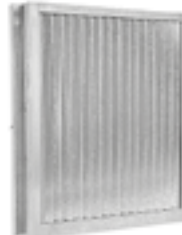
GRFFPFX
Return grilles
with absolute filter
PAGE 12



GSZ
Sand trap
louvers
PAGE 13



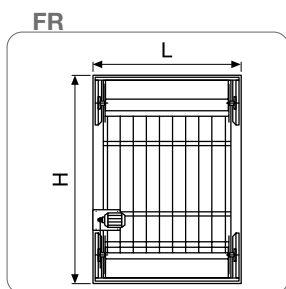
SG 40
Drop separators
pitch 40 mm
PAGE 14



SG 28
Drop separators
pitch 28 mm
PAGE 15



PSG 10/20/33
Drop separators
in polypropylene
PAGE 16



Description

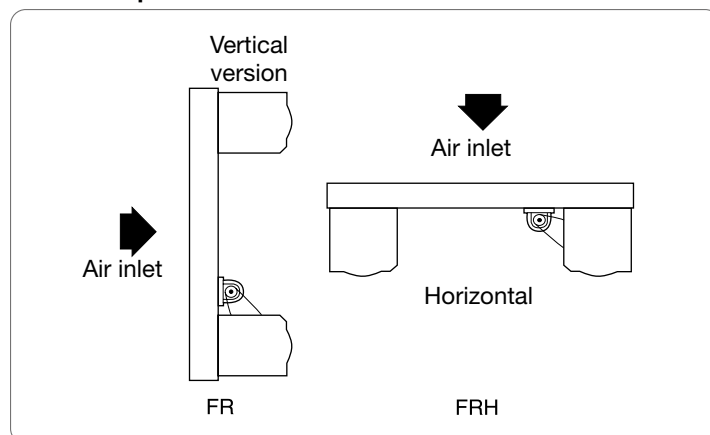
FR: rotary filter with automatic forward movement

- self-supporting frame in galvanised steel
- EU3 impregnated fibreglass filter coil
- coil length 20 m
- three-phase gear motor 230/380/V 50 Hz
- sealed control and alarm panel with low voltage control circuit
- differential pressure gauge, operating range 30 Pa
- working temperature -10°C / +80°C
- micro limit switch
- vertical assembly

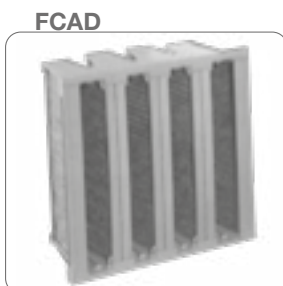
FRH: like FR but for horizontal assembly

Prices and dimensions: on request

Technical specifications



Activated carbon flat panels



Description

CCA23: activated carbon flat panels

- galvanised steel frame th. 8/10
- filtering material consisting of activated carbon granules contained in perforated sheet metal
- finished filtering panel thickness 23 mm

CCA48: like CCA23 but th. 48 mm

Aeraulic specifications and price list

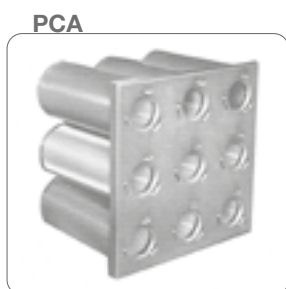
Type	Dimensions mm	Max flow m³/h	Initial Δpt Pa	Price list €
CCA23	500x500	500	100	72
CCA48	500x500	500	200	102
FCAD 30	288x593x292	1600	100	354
FCAD 32	593x593x292	3200	100	510

Delivery: 2 weeks

FCAD: dihedral activated carbon panels

- non-toxic plastic frame, incinerable
- granulated carbon in pleated synthetic fibre 400gr / m²
- F7 efficiency

Plate with activated carbon cartridges



Description

PCA: plate fitted with activated carbon cartridges

- frame in sturdy galvanised steel sheet
- activated carbon cartridges with single neoprene sealing gaskets, height 400 mm
- maximum working temperature +60°C
- maximum relative humidity 70%

PCA6: plate with 6 cartridges

PCA9: plate with 9 cartridges

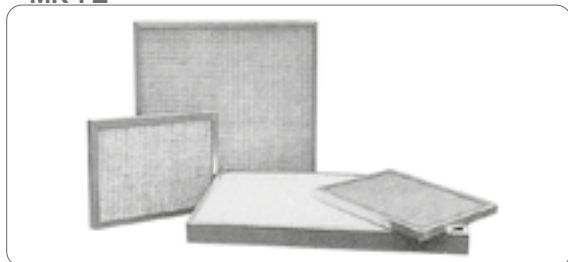
PCA19: plate with 16 cartridges

Aeraulic specifications and price list

Type	L x H x D mm	Max flow m³/h	Initial Δpt Pa	Price list €
PCA6	600x400x400	1700	140	715
PCA9	600x600x400	2500	140	1100
PCA16	800x800x400	4500	140	1800

Delivery: 2 weeks

MK-FZ



Description

MK-FZ: filter panels with synthetic media suitable for pre-filtration; G3-G4 efficiency

MK23: flat surface, th. 23 mm; galvanised frame and mesh

MK50: like MK23 but th. 48 mm

FZ50: pleated surface, th. 48 mm, galvanised frame and mesh

FZ100: like FZ50 but th. 98 mm

DS: disposable cardboard panels, filtering media in fibreglass

Accessories

CF: galvanised steel counterframe + fastening spring + gasket

CF 80: suitable for MK23, MK50, FZ50 cells

CF 130: suitable for FZ100 cells

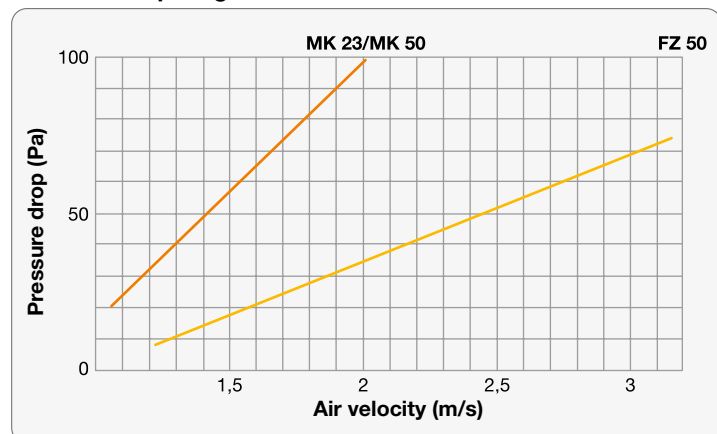
Technical specifications

Filtration class	
EN 779/2012	EN ISO 16890
G3	ePM coarse 50%
G4	ePM coarse 65%

Aeraulic specifications

Dimensions	Flow rate m³/h nominal MK23 / MK50	Flow rate m³/h nominal		Flow rate m³/h nominal DS48	Initial Δpt (Pa)			
		FZ50	FZ100		MK23 / MK50	FZ50	FZ100	DS48
400 x 500	950	1800	2500	1400	-	-	-	-
400 x 625	1200	2200	3200	1700	-	-	-	-
500 x 500	1200	2200	3200	1700	50	50	75	250
500 x 625	1500	2800	4000	2200	-	-	-	-
592 x 592	1700	3200	4500	2500	-	-	-	-
287 x 592	800	1600	2250	1200	-	-	-	-

Pressure drop diagram with clean filter



All prices are list prices for local market, for a quotation please contact us.

Price list

DR/Type	MK23	MK50	FZ50	FZ100	DS48	CF80	CF130
400 x 500	8	10	12	16	6	27	34
400 x 625	9	11	13	18	7	29	35
500 x 500	9	11	13	18	6	28	35
500 x 625	10	13	14	21	7	30	37
592 x 592	11	14	15	24	7	30	38
287 x 592	8	9	11	16	6	25	31

MK-FZ non-standard price list

Surface dm²	MK 8 - 10 - 15	MK23	MK50	FZ50	FZ100
< 10	5	6	8	9	12
15	6	7	9	11	16
20	8	8	11	13	19
25	9	9	13	15	21
30	10	11	15	16	24
35	11	12	16	17	27
40	12	13	17	19	29
45	13	15	19	21	32
50	14	16	21	23	35
55	15	17	23	24	36
60	16	18	25	26	41

Prices valid for a minimum of 10 pieces per size

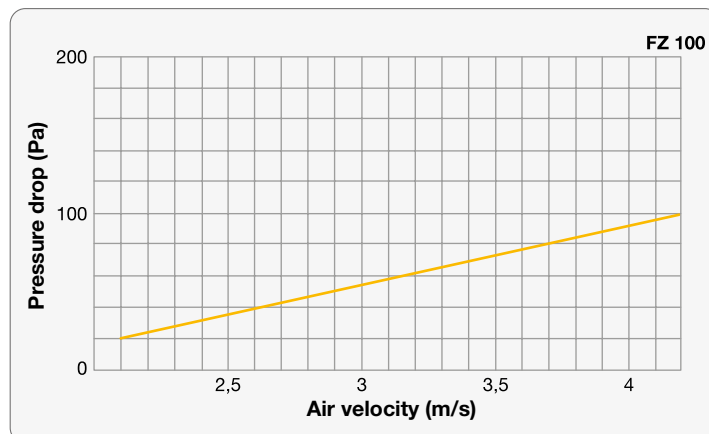
For smaller quantities, 50% surcharge

Synthetic media*

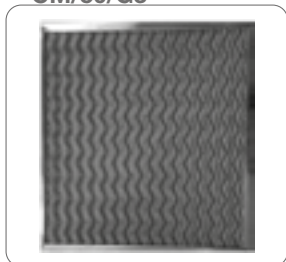
Type	g/m²	Th. mm	€/m² (roll)	€/m² (panel)
FL100	100	10	3.6	4.5
FL150**	150	14	4.8	6.3
FL200	200	20	5.9	7.6

*: available in 20x1.5 m (F100, F200) and 30x0.63 m (F150) roll or panels; self-extinguishing class F1

**: use for MK-FZ



CM/50/G3



Description

CM/50/G3: "Patented®" G3 high-efficiency metal filter, efficiency test no. 58/189 at the Politecnico di Torino

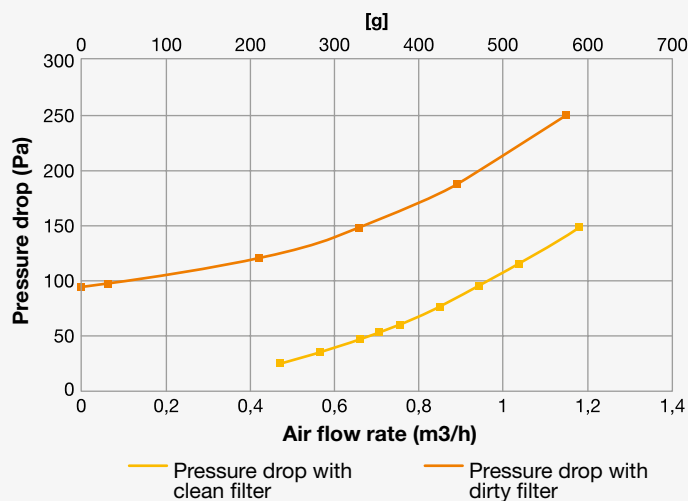
- fully washable

Construction:

- galvanised steel or AISI 304/316 stainless steel frame
- filter pack consisting of:
 - 12 layers of aluminium sock
 - 1 special flat inner layer
 - 2 external containment nets with special profile
- constant efficiency thanks to the special construction
- initial pressure drop with 2.7 m/s velocity: 100 Pa

ATEX version with earthing cable

Pressure drop diagram*



*: for 592x592 size

All prices are list prices for local market, for a quotation please contact us.

Price list

Dimensions	Galvanised frame	304 stainless steel frame
297x592	59	102
400x500	60	102
500x500	72	125
592x592	87	168
400x625	72	125
500x625	81	159

Dimensions

Dimensions	Thickness	Air flow rate (m³/h)*
297x592	48	1650
400x500	48	1940
500x500	48	2430
592x592	48	3400
400x625	48	2430
500x625	48	3040

*: air flow rate measured with 2.7 m/s velocity

FTM



Description

FTM: pocket filter with synthetic filtering media
• galvanised steel frame

Accessories

CF100: counterframe for frame th. 25, 50, 75 mm and/or combinations

Technical specifications

Filtration class				
EN 779 / 2012	EN ISO 16890	ePM 1	ePM 2.5	ePM 10
M6	ePM10 70%	10%-40%	20%-50%	60%-80%
F7	ePM1 55%	40%-65%	65%-75%	80%-90%
F8	ePM1 70 %	65%-90%	75%-95%	90%-100%
F9	ePM1 85 %	80%-90%	85%-95%	90-100%

All prices are list prices for local market, for a quotation please contact us.

Aeraulic specifications and price list

Efficiency	Class	Type	L x H x D mm	Filter surface m ²	Flow rate m ³ /h	Initial Δpt Pa	€
65%	M6	FTM6158	592x592x535	5.1	2800	110	92
65%	M6	FTM6254	287x592x535	2.5	1400	110	48
65%	M6	FTM6150	592x592x535	6.4	3400	110	112
65%	M6	FTM6255	287x592x535	3.2	1700	110	59
65%	M6	FTM6168	592x592x635	6.0	2800	100	100
65%	M6	FTM6264	287x592x635	2.9	1400	100	53
65%	M6	FTM6160	592x592x635	7.5	3400	100	123
65%	M6	FTM6265	287x592x635	3.7	1700	100	65
85%	F7	FTM7158	592x592x535	5.1	2800	130	95
85%	F7	FTM7254	287x592x535	2.5	1400	130	55
85%	F7	FTM7150	592x592x535	6.4	3400	130	116
85%	F7	FTM7255	287x592x535	3.2	1700	130	65
85%	F7	FTM7168	592x592x635	6.0	2800	110	107
85%	F7	FTM7264	287x592x635	2.9	1400	110	60
85%	F7	FTM7160	592x592x635	7.5	3400	110	130
85%	F7	FTM7265	287x592x635	3.7	1700	110	72
95%	F9	FTM9158	592x592x535	5.1	2800	150	107
95%	F9	FTM9254	287x592x535	2.5	1400	150	62
95%	F9	FTM9150	592x592x535	6.4	3400	150	131
95%	F9	FTM9255	287x592x535	3.2	1700	150	74
95%	F9	FTM9168	592x592x635	6.0	2800	130	119
95%	F9	FTM9264	287x592x635	2.9	1400	130	69
95%	F9	FTM9160	592x592x635	7.5	3400	130	147
95%	F9	FTM9265	287x592x635	3.7	1700	130	82

CF100 287x592 €28

CF100 592x592 €36

Delivery: 2 weeks

Rigid pocket filters

FTR



Description

FTR: rigid pocket filter with micro fibreglass filtering media
• non-toxic moulded plastic frame, incinerable

Accessories

CF130: galvanised steel counterframe

Technical specifications

Filtration class				
EN 779 / 2012	EN ISO 16890	ePM 1	ePM 2.5	ePM 10
M6	ePM10 70%	10%-40%	20%-50%	60%-80%
F7	ePM1 55%	40%-65%	65%-75%	80%-90%
F8	ePM1 70 %	65%-90%	75%-95%	90%-100%
F9	ePM1 85 %	80%-90%	85%-95%	90-100%

All prices are list prices for local market, for a quotation please contact us.

Aeraulic specifications and price list

Efficiency	Class	Type	L x H x D mm	Filter surface m ²	Flow rate m ³ /h	Initial Δpt Pa	€
65%	M6	FTR61	592x592x292	18	5000	130	171
65%	M6	FTR62	592x287x292	7.5	2300	130	124
65%	M6	FTR63	592x490x292	13	4100	130	148
85%	F7	FTR71	592x592x292	18	5000	150	177
85%	F7	FTR72	592x287x292	7.5	2300	150	127
85%	F7	FTR73	592x490x292	13	4100	150	154
95%	F8	FTR81	592x592x292	18	5000	160	178
95%	F8	FTR82	592x287x292	7.5	2300	160	128
95%	F8	FTR83	592x490x292	13	4100	160	154
98%	F9	FTR91	592x592x292	18	5000	220	248
98%	F9	FTR92	592x287x292	7.5	2300	220	154
98%	F9	FTR93	592x490x292	13	4100	220	184

CF130 592x592 €38

CF130 592x287 € 31

CF130 592x490 € 37

Delivery: 2 weeks

Example of order

N. 25 FTR 8 1
Quantity
Rigid pocket filters
Efficiency 95% / F8
Dimension 592x592x292

FAD



Description

- FAT:** absolute filter with micro fibreglass filtering media
- galvanised steel frame plus polyurethane foam gasket
 - DHES efficiency 99.99 – H13 (FAT3)
 - DHES efficiency 99.999 – H14 (FAT4)

FAD: multi-dihedral fibreglass absolute filter with fibreglass filtering media

- galvanised steel frame plus polyurethane foam gasket
- DHES efficiency 99.99 – H13 (FAD3)
- DHES efficiency 99.999 – H14 (FAD4)

All prices are list prices for local market, for a quotation please contact us.

Aeraulic specifications and price list

Efficiency	Class	Type	L x H x D mm	Filter surface m ²	Flow m ³ /h	Δpt initial Pa	€
DHES	EN 1822						
99.99	H13	FAT313	610x610x292	20	2000	250	258
99.99	H13	FAT323	305x610x292	10	1000	250	167
99.999	H14	FAT413	610x610x292	20	2000	280	270
99.999	H14	FAT423	305x610x292	10	1000	280	186
99.99	H13	FAD313	610x610x292	40	4000	250	475
99.99	H13	FAD323	305x610x292	20	2000	250	320
99.999	H14	FAD413	610x610x292	40	4000	280	495
99.999	H14	FAD423	305x610x292	20	2000	280	332

Delivery: 2 weeks

Example of order

	N. 25	FAT	3	13
Quantity				
galvanised steel absolute filter frame				
Efficiency 99,99% - H13				
Dimension 610x610x292				

Absolute filters for laminar flows

FAL



Description

- FAL:** absolute filter for laminar flows with glass microfibre filtering media including double protective shield
- polyurethane foam gasket
 - extruded aluminium frame
 - DHES efficiency 99.99 – H13 (FAL3)
 - DHES efficiency 99.999 – H14 (FAL4)
 - DHES efficiency 99.999 – U15 (FAL5)

All prices are list prices for local market, for a quotation please contact us.

Aeraulic specifications and price list

Efficiency	Class.	Type	L x H x D mm	Filtering surface m ²	Flow rate (m ³ /h)		initial Δpt (Pa)		€
					lamin.	max	lamin.	max	
DHES	EN1822								
99.99	H13	FAL333	305x305x68	2.7	150	250	100	200	79
99.99	H13	FAL344	457x457x68	6.2	330	550	100	200	139
99.99	H13	FAL336	305x610x68	5.5	300	500	100	200	128
99.99	H13	FAL366	610x610x68	11.0	600	1000	100	200	179
99.99	H13	FAL369	610x914x68	16.5	900	1500	100	200	256
99.99	H13	FAL3612	610x1220x68	22.0	1200	2000	100	200	313
99.999	H14	FAL433	305x305x68	2.7	150	250	120	230	88
99.999	H14	FAL444	457x457x68	6.2	330	550	120	230	153
99.999	H14	FAL455	545x545x68	5.5	500	750	120	230	173
99.999	H14	FAL436	305x610x68	5.5	300	500	120	230	142
99.999	H14	FAL466	610x610x68	11.0	600	1000	120	230	198
99.999	H14	FAL469	610x914x68	16.5	900	1500	120	230	283
99.999	H14	FAL4612	610x1220x68	22.0	1200	2000	120	230	347
99.9999	U15	FAL533	305x305x68	2.7	150	250	140	260	AR
99.9999	U15	FAL544	457x457x68	6.2	330	550	140	260	AR
99.9999	U15	FAL536	305x610x68	5.5	300	500	140	260	AR
99.9999	U15	FAL566	610x610x68	11.0	600	1000	140	260	AR
99.9999	U15	FAL569	610x914x68	16.5	900	1500	140	260	AR
99.9999	U15	FAL5612	610x1220x68	22.0	1200	2000	140	260	AR

Delivery: 2 weeks

Example of order

	N. 25	FAL	4	66
Quantity				
anodised aluminium absolute filter frame				
Efficiency 99,999% - H14				
Dimension 610x610x68				

BF



Description

BF: duct housing for different filtering stages

- casing in galvanised steel sheet
- perforated flanges for duct connection
- side door with knobs and sealing gasket
- double eccentric linkage for filter fastening
- slots for positioning the eccentrics according to the filter depth
- pressure plugs for pressure drop control
- casing leakage class of L1 according to EN 1886-2006

BFS: depth 650 mm

BFM: depth 900 mm

BFL: depth 1300 mm

Accessories

RCP: rectangular connection

RCC: circular duct conical connection

- cover (on request)
- visor (on request)
- assembly kit (on request)

Special executions

BF..X: in AISI 304 stainless steel (on request)

BF..VR: galvanised + epoxy coating (on request)

BFS series

Possibility of compact assembly of one of these solutions

(single guide):

- 1 filter th. 25 or 48 mm
- 1 filter th. 25 + filter th. 48
- 1 filter th. 48 + pocket filter with 24 mm frame (depth 292 - 535)
- 1 pleated filter th. 100 + pocket filter with 24 mm frame (depth 292 - 535)
- 1 filter th. 150 mm
- 1 filter th. 292 mm
- 1 pleated filter th. 100 + filter th. 292
- 1 filter th. 292 + 2 x 48 mm filters

BFM series

Possibility of assembling two of these solutions (double guide):

1st stage

- 1 filter th. 25 or 48 mm
- 1 filter th. 25 + filter th. 48
- 1 filter th. 48 mm + pocket filter with 24 mm frame (depth 292 - 535)

2nd stage

- 1 filter th. 150 mm
- 1 filter th. 292 mm
- 1 pleated filter th. 100 + filter th. 292
- 1 filter th. 292 + 2 x 48 mm filters

BFL series

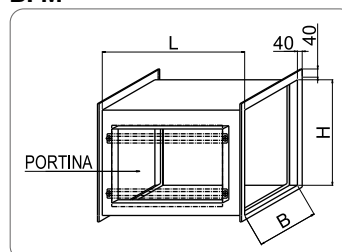
- double housing
- composition like BFS x 2

All prices are list prices for local market, for a quotation please contact us.

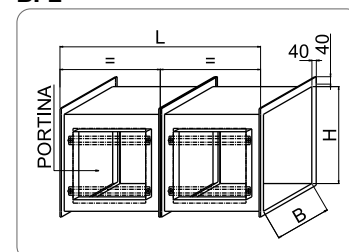
Price list

GR/Type	BFS	BFM	BFL	RCP	RCC
0.5	390	513	829	74	225
1	406	535	813	88	324
1.5	468	624	936	127	699
2	532	690	1064	149	849
3	637	806	1274	185	1173

BFM



BFL



Dimensions

GR Type	B	H	Depth (L)			Filters	
			BFS	BFM	BFL	Qty	Dimensions
0.5	309	614	650	900	1300	1	287x592 or 305x610
1	614	614	650	900	1300	1	592x592 or 610x610
1.5	920	614	650	900	1300	1	287x592 or 305x610
						1	592x592 or 610x610
2	1225	614	650	900	1300	2	592x592 or 610x610
3	1835	614	650	900	1300	3	592x592 or 610x610

Fastening systems

BFS

BFM

Position	Th. Filter
A	25 mm
	48 mm
	25 + 48 mm
B	150 mm
	197 mm
C	292 mm
D	397 mm

Key:

1: tie rods

2: screws ø8MA

3: frame stop

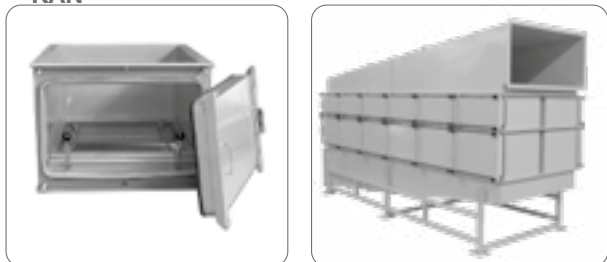
4: bar for filter centring to use for all the front dimensions (except for 610x610 to fasten with double-sided tape)

5: holes with blank inserts for tie rod fastening

Selection table

Size	Air flow by filter type (m³/h)				
	Flat or pleated filters	Pleated filter	Pocket filters	Absolute filters	
	FZ 50	FZ 100	FTR	FAT	FAD
	G4 M5 F7	G4	M6 F7 F9	H 13 / H 14	H 13 / H 14
	SP 48	SP 100	292	292	292
0.5	1600	2250	2300	1000	1000
1	3200	4500	5000	2000	2000
1.5	4800	6750	7300	3000	3000
2	6400	9000	10000	4000	4000
3	9600	13500	15000	6000	6000

KAN



Description

KAN: safety housing for special applications

- gas-tight casing in steel sheet th. 2 mm with epoxy coating
- AISI 304 filter housing with fastening device that closes the eccentric linkages only if the filter is correctly seated
- pre-configuration for barrier bag (not included) for safe replacement of filter
- side door with knobs and sealing gasket with additional safety closing device only if the filter is correctly seated and installed
- operation with working pressure of ± 5000 Pa
- Δp size fittings

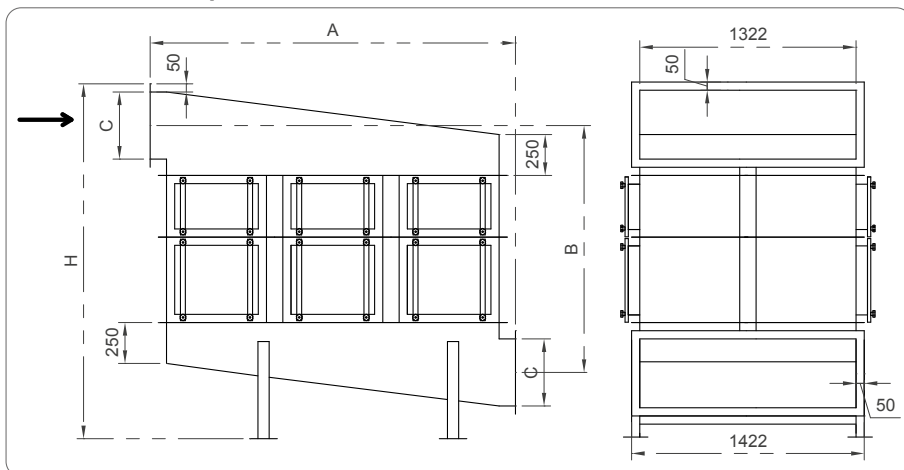
Accessories

- manifold fittings
- airtight damper EN 1751 CL4 or DIN 1946/4
- filter replacement bag (list price €80)
- pressure gauge
- depressurisation valve

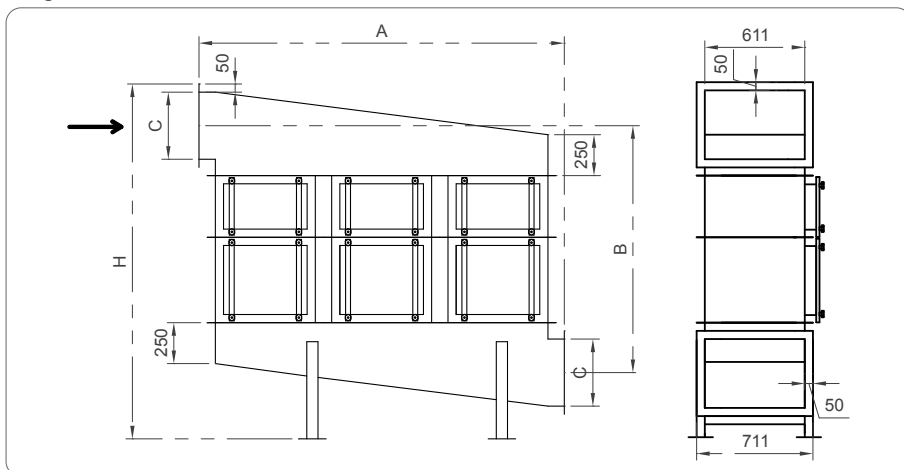
Special executions

- KAN..X: in AISI 304 stainless steel
- F6 F7 F8 filters multiple executions

Double-face multiple executions



Single-face executions



All prices are list prices for local market, for a quotation please contact us.

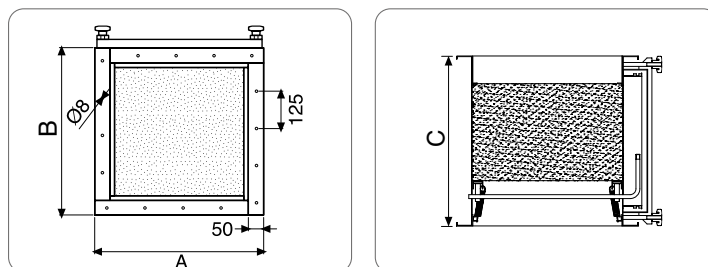
Price list

GR/Type	Code	KAN	H13 FAT3	H14 FAT4	H13 FAD3	H14 FAD4
305x305x155	331	790	OR	OR	OR	OR
457x457x155	441	896	OR	OR	OR	OR
610x610x155	661	1055	OR	OR	OR	OR
305x305x292	332	838	OR	OR	OR	OR
457x457x292	442	979	OR	OR	OR	OR
610x610x292	662	1194	258	270	475	495

Dimensions

Filter 292 mm	A (mm)	B (mm)	C (mm)
305x305	406	406	522
457x457	558	558	522
610x610	711	711	522

KAN



Dimensions

ROWS	Measurements (mm)				Weight (Kg)
	A	B	C	H	
2	1522	1349	250	1849	315
3	2233	1499	400	2149	480
4	2944	1649	550	2449	675
5	3655	1649	550	2449	830
6	4366	1899	800	2949	1055
7	5077	1899	800	2949	1210
8	5788	1999	900	3149	1425

Prices on request

Dimensions

ROWS	Measurements (mm)				Weight (Kg)
	A	B	C	H	
2	1522	1349	250	1849	660
3	2233	1499	400	2149	990
4	2944	1649	550	2449	1360
5	3655	1649	550	2449	1670
6	4366	1899	800	2949	2090
7	5077	1899	800	2949	2430
8	5788	1999	900	3149	2820

Prices on request

The executions shown refer to situations with double filtration stages, thickness 150 and 292

CPFS



► TERMINAL AIR DIFFUSERS WITH ABSOLUTE FILTERS FOR AIR FLOWS IN ONE DIRECTION

Description

CPF: absolute filter holder box, in sheet metal, th. 1 mm with RAL 9010 epoxy coating

- special stop to seal the absolute filter, tightened by non-deformable corners
- volume control damper operated from the front with filter installed
- connections for measuring the differential pressure of the filter both from the side and front without removing the filter
- leakage tests according to EN 1886/2006

CPFS: side connection

CPTS: top connection

CPFS...F: with perforated diffusers side connection

CPFS...F: with perforated diffusers top connection

CPFS...F: with swirl diffusers side connection

CPFS...F: with swirl diffusers top connection

Special executions

CPF: execution in AISI 304 stainless steel

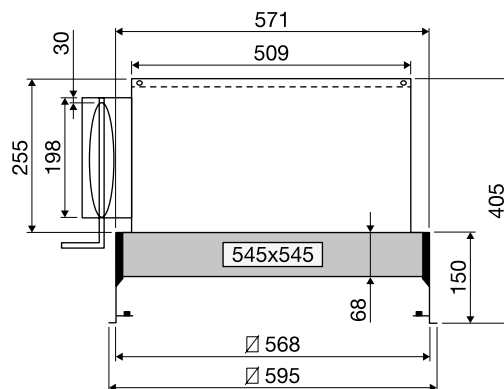
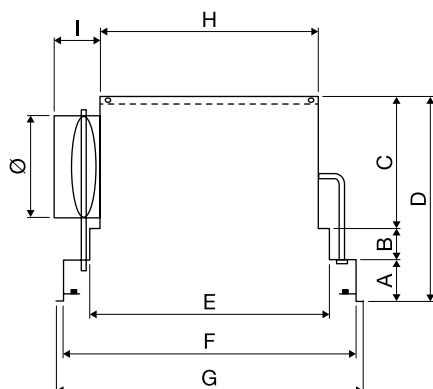
CFFA: execution in airtight aluminium

All prices are list prices for local market, for a quotation please contact us.

Price list

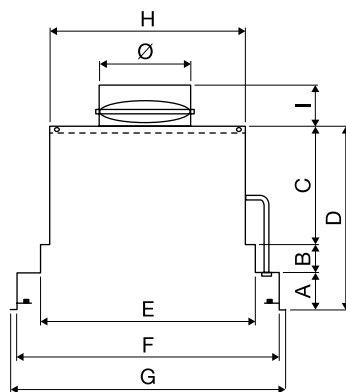
Dim. Filter	CPFS-F CPTS-F	CPFS-E CPTS-E	FAL 3 H13	FAL 4 H14
305x305x68	436	428	79	88
305x610x68	425	510	128	142
457x457x68	463	461	139	153
545x545x68	479	473	157	173
545x545x68 / 595	537	535	157	173
610x610x68	494	491	179	198
610x915x68	564	685	256	283
610x1220x68	729	894	314	348

Dimensions CPFS



Dim. Filter	A	B	C	D	E	F	G	H	I	DN
305x305x68-595	80	60	215	355	313	568	595	274	90	158
305x610x68	80	60	255	395	313x618	568x730	595x770	274x577	90	198
457x457x68	80	60	255	395	465	568	595	424	90	198
545x545x68	80	60	255	395	551	625	665	509	90	198
545x545x68-595	80	70	255	405	551	568	595	509	90	198
610x610x68	80	60	305	445	618	730	770	577	90	248
610x915x68	80	60	305	445	618x923	730x1035	770x1075	577x882	90	2x248
610x1220x68	80	60	305	445	618x1228	730x1340	770x1380	577x1187	90	2x248

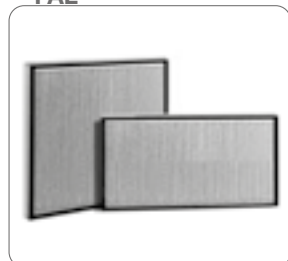
Dimensions CPFT



All prices are list prices for local market, for a quotation please contact us.

Dim. Filter	A	B	C	D	E	F	G	H	I	DN
305x305x68-595	80	60	100	240	313x313	568x568	595x595	274x274	75	158
305x610x68	80	60	100	240	313x618	568x730	595x770	274x577	75	198
457x457x68	80	60	100	240	465x465	568x568	595x595	424x424	75	198
545x545x68	80	60	150	290	551x551	625x625	655x655	509x509	75	198
545x545x68-595	80	70	150	305	-	568x568	595x595	509x509	75	198
610x610x68	80	60	150	290	618x618	730x730	770x770	577x577	75	248
610x915x68	80	60	150	290	618x923	730x1035	770x1075	577x882	75	2x248
610x1220x68	80	60	150	290	618x1228	730x1340	770x1380	577x1187	75	2x248

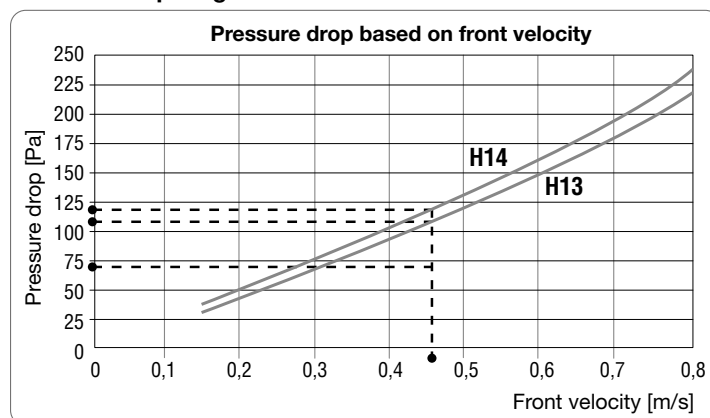
FAL



FAL H13	FAL H14	Dimensions L x H x D (mm)	Flow rate (m³/h)*	Filter surface (m²)	Initial pressure drop (Pa)
333	433	305x305x68	150	2.7	110 120
344	444	457x457x68	335	6.2	110 120
336	436	305x610x68	300	5.5	110 120
366	466	610x610x68	600	11	110 120
369	469	610x915x68	900	16.5	110 120
355	455	545x545x68	500	9.5	110 120
3612	4612	610x1220x68	1200	22	110 120

*: flow with laminar velocity of 0.45 m/s

Pressure drop diagram



DOPL



► **FILTERING CEILINGS FOR OPERATING THEATRES ISO 5 ACCORDING TO ISO 14644 Risk 4 ACCORDING TO NFS 90-351**

Description

DOPL: filtering ceilings for operating theatres with unidirectional flow on entire surface to protect including set-up for surgical lighting

- made of galvanised steel, thickness 1 mm, RAL 9010 white epoxy coating
- pressure plugs
- outer 25 mm flange
- side intake dimensions (A x B)
- filter support frame th. 1.5 mm
- stainless steel filter fastening device
- air diffusion via perforated metal sheet with RAL 9010 finish (40% empty/full)
- standard height 450 mm
- suitable for H14 - U15 68-mm thick filters
- FAL 4 = H14 filtration

Special executions

- in AISI 304 stainless steel (on request)
- lowered height (on request)
- custom connections (on request)

DOP: ceiling without surgical lighting layout (on request)

According to ISO 14644

- ISO 5 for complex surgical interventions such as transplants, prosthesis implantation, neurosurgery, oncology, orthopaedics, lasting more than 60 minutes
- ISO 7 for surgical interventions without implant of foreign materials, such as minimally invasive vascular surgery, obstetrics, ophthalmology
- ISO 8 for minor surgical interventions such as visceral surgery, day surgery, urology

According to NFS 90-351

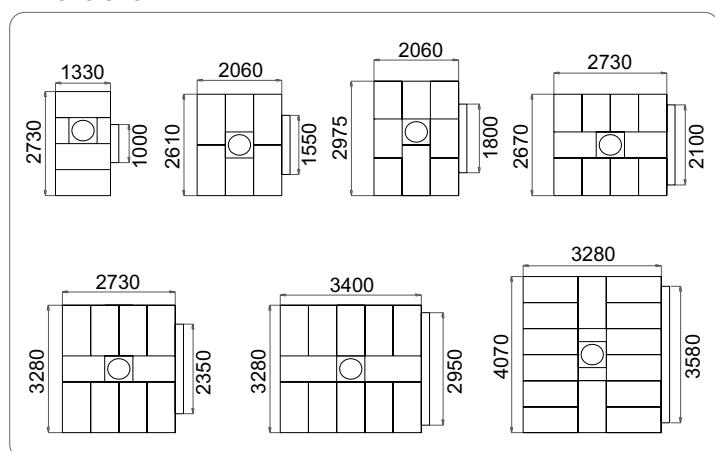
Risk 1: zero risk or virtually zero risk of infection, e.g. standard treatment room, waiting room or transit area

Risk 2: medium risk of infection, e.g. rehabilitation room, maternity ward, recovery room, etc.

Risk 3: high risk of infection, e.g. radiology room, intensive care, neurosurgery or cardiology ward

Risk 4: very high risk of infection, e.g. orthopaedic operation, transplant ward or hyperbaric chamber

Dimensions



All prices are list prices for local market, for a quotation please contact us.

Price list

Code	LxH	FAL4...	FAL5...
DOPL273133	2730x1330	5700	OR
DOPL261206	2610x2060	7500	OR
DOPL267273	2670x2730	10200	OR
DOPL2975206	2975x2060	8700	OR
DOPL328273	3280x2730	13200	OR
DOPL328340	3280x3400	15500	OR
DOPL407328	4070x3280	18500	OR

Prices including H14 filters

Selection table

Code	LxH	AxB	No. modules	Weight	No. filter	Air flow in m³/h, based on velocity from filters in m/s					
						0.25	0.28	0.3	0.32	0.35	0.4
DOPL273133	2730x1330	1000x200x150	1	202	(2x) 3.6 + (3x) 12.6	2350	2650	2840	3000	3280	3600
DOPL261206	2610x2060	1550x200x150	2	245	(2x) 9.6 + (4x) 12.6	3700	4100	4390	4700	5140	5700
DOPL267273	2670x2730	2100x200x150	2	330	(10x) 9.6	5000	5600	6000	6400	7000	7800
DOPL2975206	2975x2060	1800x200x150	2	264	(7x) 9.6 + (1x) 12.6	4200	4700	5335	5350	5852	6200
DOPL328273	3280x2730	2350x200x150	4	390	(2x) 9.6 + (8x) 12.6	6350	7100	7600	8100	8860	9800
DOPL328340	3280x3400	2950x200x150	4	455	(12x) 12.6	8000	9000	9640	10300	11270	12400
DOPL407328	4070x3280	3580x200x150	4	534	(14x) 12.6 + (2x) 3.6	9700	10850	11625	12400	13560	15000

GRFPFX



Description

GRFPFX: return grilles in perforate metal sheet suitable for installation in hospital environments in controlled contamination rooms

- made of coated AISI 304 stainless steel with rounded corners and push-pull opening system
- filter holder frame with filter fastening device
- perfect surface uniformity for easy maintenance and cleaning
- possibility of inserting G2 G4 M5 M6 F9 filters

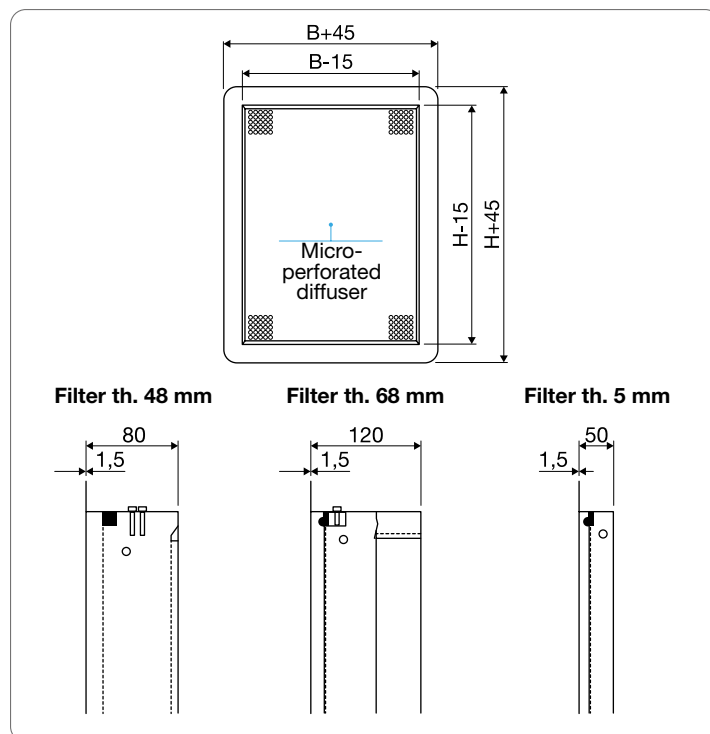
Accessories

- volume control damper

Special executions

- made of AISI 316 stainless steel (304 list price +15%)
- opening system with magnet fastening

Dimensions



Dimensions

Dimensions filter	Velocity (m/s)	Filter flow rate (m³/h)	Δp G2 filter (Pa) Th. 5 mm	Δp G4 filter (Pa) Th. 48 mm	Δp M5 filter (Pa) Th. 68 mm	Δp F9 filter (Pa) Th. 68 mm	Perforated sheet metal velocity (m/s)	Δp Perforated sheet metal (Pa)
300x300	0.50	162	10	10	20	40	1.25	10
	1.00	324	35	15	20	50	2.50	15
	1.50	486	75	20	30	50	3.75	20
600x300	0.50	324	10	10	20	40	1.25	10
	1.00	648	35	15	20	50	2.50	15
	1.50	972	75	20	30	50	3.75	20
900x300	0.50	486	10	10	20	40	1.25	10
	1.00	972	35	15	20	50	2.50	15
	1.50	1458	75	20	30	50	3.75	20

All prices are list prices for local market, for a quotation please contact us.

Grille price list

Filter dimensions	for filter th. 5 mm		for filter th. 48 mm		for filter th. 68 mm	
	White-coated sheet metal	304 STAINLESS steel	White-coated sheet metal	304 STAINLESS steel	White-coated sheet metal	304 STAINLESS steel
300x300	290	361	322	400	412	482
600x300	412	514	451	565	577	679
900x300	545	682	604	753	765	902

Filter price list

Filter dimensions	Filter th. 5 mm G2	Filter th. 48 mm G4	Filter th. 68 mm M5	Filter th. 68 mm F9
300	13	13	76	86
600	18	19	94	110
900	23	23	102	118

GRFFPFX



Description

GRFFPFX: return grille in perforated sheet metal for installation in contamination-controlled pharmaceutical environment

- including rear box with filter fastening device
- perforated grille and box made of AISI 304 stainless steel
- fastening with countersunk screws or magnets
- possibility of inserting G4 flat panels, F9 filters with mini pleats, th.48, absolute filters H14 th. 68

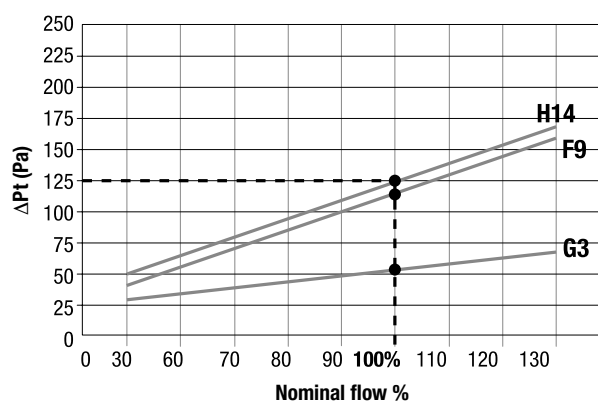
Accessories

- volume control damper

Special executions

- executions in AISI 316 stainless steel
- executions in aluminium

Filter pressure drop



Nominal flows

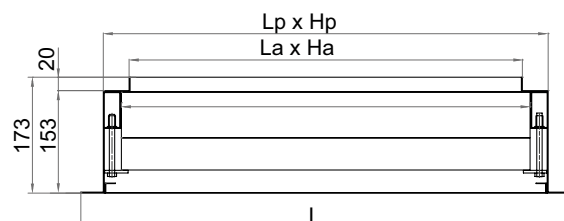
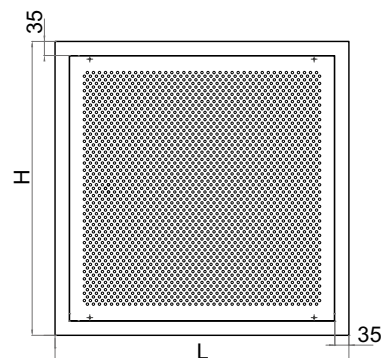
Type	Filter	m³/h
MK23	305x610	800
	610x610	1700
	600x915	2500
FTR-F9	305x610	1350
	610x610	2700
	610x915	4000
FAL436	305x610	300
FAL466	610x610	600
FAL469	610x915	900

All prices are list prices for local market, for a quotation please contact us.

Price list

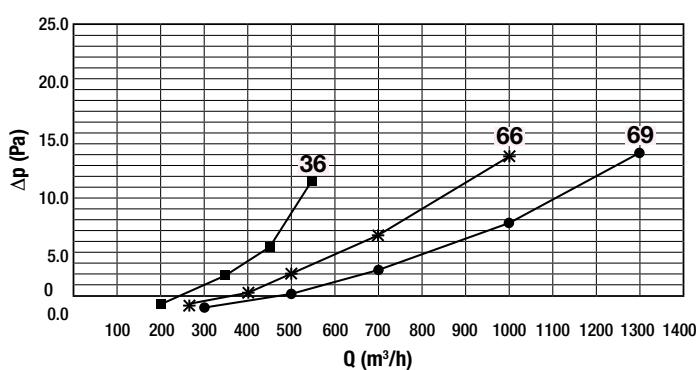
GR/Type	GRFFPFX	G4	F9	H14
305x610	700	8	80	142
610x610	850	11	100	198
610x915	1150	25	120	283

Dimensions



Type	Filter	L x H	Lp x Hp	La x Ha
GRFFPFX36	305x610	436x731	359x664	282x587
GRFFPFX66	610x610	731x731	664x664	587x587
GRFFPFX69	610x915	731x1036	664x969	587x892

Grille front pressure drop



All prices are list prices for local market, for a quotation please contact us.

GSZ price list

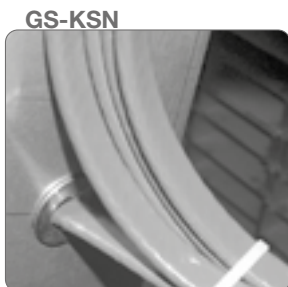
HxL	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100
300	154	180	205	231	257	282	308	333	359	385	411	436	462
400	164	192	221	249	277	305	333	362	390	419	447	475	504
500	174	205	236	267	298	329	359	390	422	453	483	514	545
600	185	218	252	285	319	352	385	419	453	486	519	553	587
700	195	231	267	303	340	375	411	448	484	520	556	592	628
800	205	244	283	321	360	399	437	476	515	554	592	631	670
900	215	257	298	340	381	422	463	505	546	587	629	670	711
1000	225	269	313	358	402	445	489	533	577	621	665	709	753
1100	236	282	329	376	422	468	515	562	608	655	701	748	795
1200	246	295	344	394	443	492	541	590	639	688	737	787	836
1300	257	308	360	412	463	515	567	619	671	722	774	826	878
1400	267	321	375	430	484	538	593	647	702	756	810	865	919
1500	277	334	391	447	505	562	619	676	733	789	846	904	961

GSA price list

HxL	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100
300	171	208	244	280	317	353	389	425	461	498	534	570	606
400	189	228	268	307	346	385	424	463	502	541	580	620	659
500	207	249	291	333	375	418	459	501	543	585	627	669	711
600	225	270	315	360	405	450	494	539	584	629	674	719	764
700	243	291	339	386	434	482	529	577	625	673	720	768	816
800	260	311	362	413	463	514	565	615	666	717	767	818	869
900	279	332	386	439	493	547	600	653	707	760	813	867	921
1000	296	353	410	465	522	579	635	691	748	804	860	917	973
1100	314	374	433	492	552	611	670	729	789	848	907	966	1026
1200	332	394	457	519	581	643	705	767	830	892	954	1016	1078
1300	350	415	480	545	610	675	740	806	871	936	1000	1065	1130
1400	368	436	504	572	640	708	775	843	911	979	1047	1115	1183
1500	386	456	527	598	669	740	811	881	952	1023	1094	1164	1235

Air density 1.20 kg/m³	
V m/s	Δp Pa
0.5	7.9
1.0	33.5
1.5	74.5
2.0	134
2.5	212
3.0	304
3.5	413

V: front velocity m/s (BxH)
Δp: pressure drop Pa



Description

GSZ: sand trap louver

- frame and C-shape blades (in galvanised steel)
- efficiency and pressure drop tests carried out according to EN13181: 2001 at VTT

GSA: like GSZ but in peralluman aluminium alloy 5754 metal sheet

GSX: like GSZ but in AISI 304 stainless steel (list price x2.5)

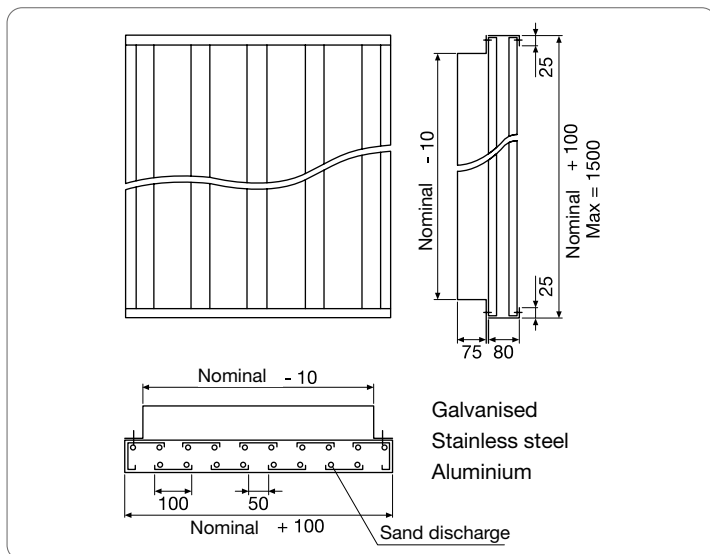
GSXX: like GSZ but in AISI 316 stainless steel (list price x3)

GS-KSN: with antifreeze heating cables (on request - see photo)

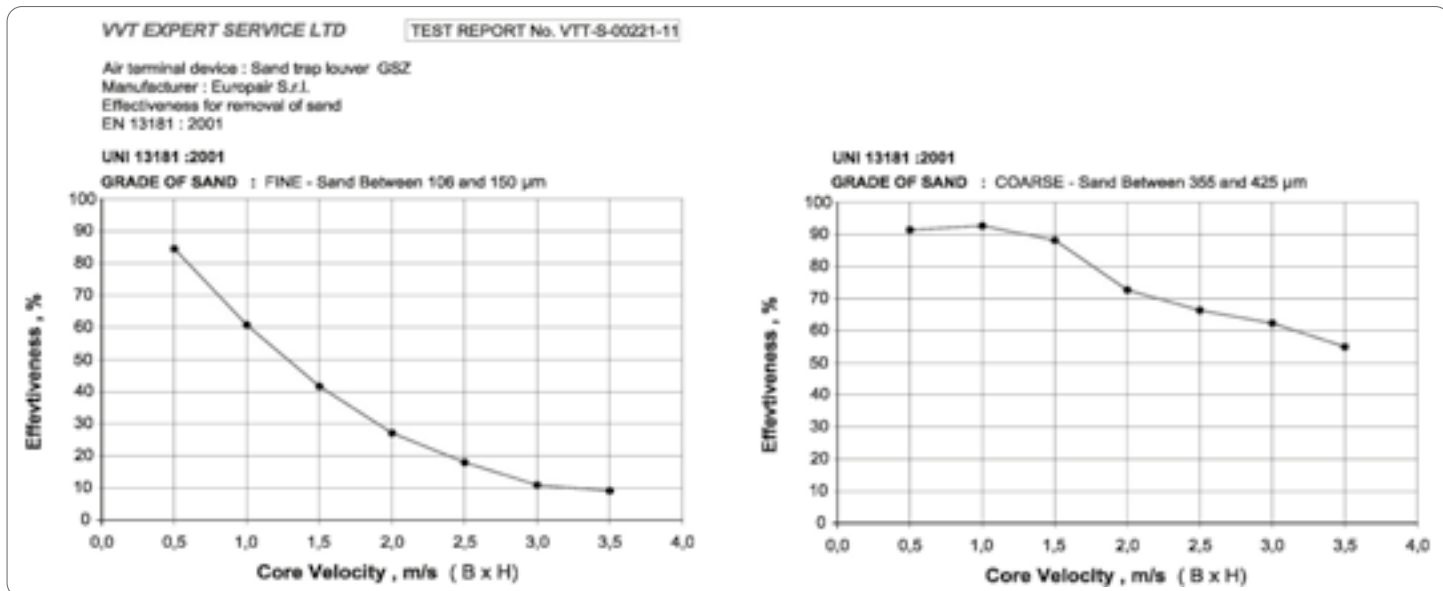
GSX-KSN:

- heating cables for SAFE zones
 - heating cables for ATEX zones
 - 500W/m² heating with 40W/m cables and surface temperature of 10°C
- R:** wire mesh (list price €35/sqm)

GSZ



Selection diagram



SG 40



SG 41X-KSN



Description

SG 40: Drop separators pitch 40 mm in galvanised steel

- execution: galvanised steel frame th. 15/10 mm
- galvanised steel blades th. 6/10 mm
- models with 1-5 pleats

SG 41 R: execution with 1 pleat and equaliser

SG 43 R: execution with 3 pleats and equaliser

SG40X: execution in AISI 304 stainless steel (list price x 3)

SG40XX: execution in AISI 316 stainless steel L (list price x 3.5)

Special executions

SG41R-KSN: with anti-freeze heating cables, for ATEX, SAFE zone;
1000 W/m² power with 40 W/m cables and surface temperature of 10°C

Tests carried out on the following models

SG41R: efficiency and pressure drop according to EN 13030-2001 (removal of simulated rain) carried out at VTT

SG43R: pressure drop according to EN 13030-2001; efficiency for particles between 10 and 50 micron at VTT in collaboration with FMI (Finnish Meteorological Institute)

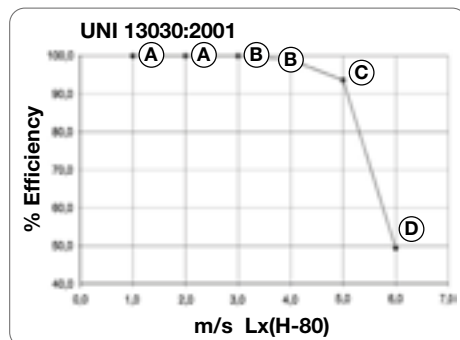
Drop size

	Particle diameter			Model tested
Heavy rain	Micron	2500	5000	-
Rain	Micron	500	2000	SG 41 R
Light rain	Micron	100	500	-
Wet mist	Micron	50	100	-
Damp mist	Micron	10	50	SG 43 R
Dry mist	Micron	2	10	SG 43 R

% Degree of efficiency / pressure drop for SG 43 R

Velocity (m/s)	Mist size in microns				Pressure drop (Pa)
	5	10	15	20	
1	5%	40%	80%	96%	17
2	12%	62%	90%	98%	71
3	28%	88%	99%	100%	153
4	53%	93%	99%	100%	280
5	70%	96%	100%	100%	428
6	75%	97%	100%	100%	615
Test method	DHES	FSSP	FSSP	FSSP	-

SG 41 R



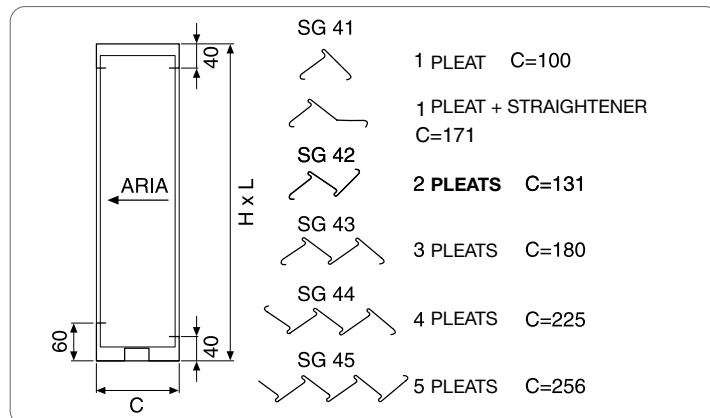
EN 13030-2001 TEST REPORT No. VTT-S-00 582-11

CL	% EFFICIENCY
A	100 ÷ 99
B	98.9 ÷ 95
C	94.9 ÷ 80
D	LESS THAN 80

V (m/s)	0.5	1	1.5	2	2.5	3	3.5	4.2	5	5.9
Pst (Pa)	2	9	19	34	54	77	103	137	214	309

Velocity for B x (H-80mm)

SG 40 dimensions



All prices are list prices for local market, for a quotation please contact us.

SG 41 price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	159	184	229	265	300	335	370	406
800	183	212	265	305	346	386	427	468
1000	208	240	300	346	392	438	484	529
1200	233	268	335	386	438	489	540	591
1400	257	296	370	427	484	540	597	653
1600	282	324	406	468	529	591	653	715
1800	307	352	441	505	575	642	710	777
2000	331	380	476	549	621	694	766	839
2200	355	409	510	588	666	743	821	899

SG42 - SG41R price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	188	231	273	316	359	401	443	486
800	219	269	319	369	418	468	518	568
1000	249	307	364	421	478	536	593	650
1200	280	345	410	474	538	604	668	732
1400	310	384	455	526	598	671	743	815
1600	341	422	500	579	658	739	818	897
1800	371	460	546	632	718	807	893	979
2000	402	498	591	685	778	874	968	1061
2200	434	535	636	738	839	941	1042	1144

SG43 price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	218	268	318	369	419	468	519	569
800	255	315	374	434	493	552	611	671
1000	292	361	431	499	567	636	704	772
1200	330	407	486	564	642	719	797	874
1400	367	454	543	630	716	803	890	977
1600	404	500	598	695	791	887	983	1078
1800	441	546	655	760	865	970	1075	1180
2000	478	593	711	825	939	1054	1168	1282
2200	517	641	765	889	1013	1137	1261	1385

SG44 - SG43R price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	247	304	362	419	477	535	592	649
800	291	359	428	497	565	634	703	772
1000	334	414	494	574	654	734	813	894
1200	378	468	559	651	742	833	924	1016
1400	421	523	625	729	831	933	1035	1138
1600	465	578	691	806	919	1032	1145	1260
1800	508	632	756	883	1008	1132	1256	1383
2000	552	687	822	961	1096	1231	1367	1505
2200	595	742	890	1037	1184	1332	1479	1626

SG45 price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	864	1066	1268	1471	1673	1876	2078	2280
800	1020	1264	1507	1750	1993	2238	2482	2725
1000	1175	1462	1746	2030	2314	2601	2884	3168
1200	1331	1660	1985	2309	2634	2963	3288	3613
1400	1486	1857	2223	2589	2954	3326	3691	4056
1600	1642	2056	2461	2868	3274	3688	4094	4500
1800	1797	2254	2700	3147	3594	4051	4497	4944
2000	1953	2451	2939	3426	3915	4413	4900	5388
2200	2113	2645	3176	3707	4239	4770	5302	5834

Description

SGA 40: drop separators pitch 40 mm in aluminium

- execution: frame in peralluman aluminium alloy 5754 th. 20/10 mm
- blades in aluminium alloy 1050 th. 7/10 mm
- models with 1-5 pleats

SGA 41 R: execution with 1 pleat and equaliser

SGA 43 R: execution with 3 pleats and equaliser

SG40PA: execution **ENTIRELY** in peralluman with blades th. 1 mm (list price x 1.5)

Special executions

SGA41R-KSN: with anti-freeze heating cables, for ATEX, SAFE zone; 1000 W/m² power with 40 W/m cables and surface temperature of 10°C

Tests carried out on the following models

SGA41R: efficiency and pressure drop according to EN 13030-2001 (removal of simulated rain) carried out at VTT

SGA43R: pressure drop according to EN 13030-2001; efficiency for particles between 10 and 50 micron at VTT in collaboration with FMI (Finnish Meteorological Institute)

Description

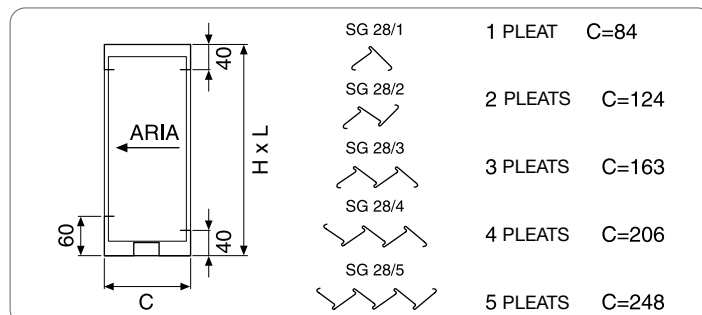
SG 28: drop separators pitch 28 mm in galvanised steel

- version: galvanised steel frame th. 15/10 mm
- galvanised steel blades th. 6/10 mm
- models with 1-5 pleats

SG28X: execution in AISI 304 stainless steel (list price x 3)

SG28XX: execution in AISI 316 stainless steel L (list price x 3.5)

SG 28 dimensions



SG28/1 price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	173	218	263	308	353	398	443	488
800	200	252	303	355	406	457	509	560
1000	228	285	344	401	458	517	574	632
1200	255	318	384	447	511	576	640	704
1400	282	352	424	494	564	636	706	776
1600	309	385	464	540	616	695	772	848
1800	336	418	504	587	669	755	837	920
2000	363	452	544	633	722	814	903	992
2200	389	486	582	679	776	872	969	1066

SG28/2 price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	224	277	330	382	435	487	540	593
800	260	322	383	444	506	567	629	689
1000	297	367	437	507	577	647	715	786
1200	333	412	490	569	648	727	805	883
1400	369	457	544	631	719	806	894	979
1600	405	501	598	694	790	886	982	1076
1800	442	546	651	756	861	966	1071	1173
2000	478	591	705	818	932	1046	1159	1269
2200	515	637	759	881	1002	1124	1246	1367

SG28/3 price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	274	335	395	456	516	577	638	698
800	320	391	462	534	605	676	748	819
1000	365	447	529	611	693	775	858	940
1200	411	503	595	689	782	874	968	1061
1400	456	559	662	767	870	973	1078	1182
1600	501	615	728	845	959	1072	1188	1302
1800	547	671	795	922	1047	1171	1299	1423
2000	592	727	862	1000	1135	1270	1409	1544
2200	636	782	930	1077	1224	1370	1517	1664

SG28/4 price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	325	393	462	531	599	668	736	804
800	379	461	542	623	705	786	868	949
1000	433	528	622	716	811	905	1000	1094
1200	487	595	701	809	916	1024	1132	1239
1400	541	662	781	902	1022	1143	1263	1384
1600	595	729	861	994	1128	1262	1395	1529
1800	650	796	940	1087	1234	1381	1527	1674
2000	704	864	1020	1180	1340	1500	1659	1819
2200	757	929	1101	1274	1447	1619	1791	1963

SG28/5 price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	864	1066	1268	1471	1673	1876	2078	2280
800	1020	1264	1507	1750	1993	2238	2482	2725
1000	1175	1462	1746	2030	2314	2601	2884	3168
1200	1331	1660	1985	2309	2634	2963	3288	3613
1400	1486	1857	2223	2589	2954	3326	3691	4056
1600	1642	2056	2461	2868	3274	3688	4094	4500
1800	1797	2254	2700	3147	3594	4051	4497	4944
2000	1953	2451	2939	3426	3915	4413	4900	5388
2200	2113	2645	3176	3707	4239	4770	5302	5834

All prices are list prices for local market, for a quotation please contact us.

SGA 41 price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	202	248	294	339	385	431	476	522
800	236	290	343	396	450	503	556	610
1000	269	331	392	453	514	575	636	697
1200	303	373	441	509	579	647	715	785
1400	337	415	490	564	644	719	795	872
1600	371	456	540	623	708	792	875	960
1800	405	498	610	679	773	864	954	1048
2000	438	540	638	736	838	936	1034	1135
2200	473	580	687	793	901	1008	1115	1222

SGA42 - SGA41R price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	242	297	353	409	465	520	576	632
800	284	350	416	482	549	615	681	747
1000	326	402	480	556	632	710	786	862
1200	368	455	543	629	716	804	891	978
1400	410	507	606	703	800	899	996	1093
1600	452	560	669	777	884	994	1101	1208
1800	495	612	733	850	968	1088	1206	1323
2000	537	665	796	924	1052	1183	1311	1439
2200	580	719	858	997	1136	1276	1415	1554

SGA43 price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	285	352	419	486	553	620	687	753
800	338	418	498	579	659	740	819	900
1000	391	484	578	672	765	860	953	1047
1200	444	550	658	765	872	980	1086	1193
1400	497	616	737	859	978	1100	1219	1340
1600	549	676	817	952	1085	1219	1352	1487
1800	602	748	897	1045	1191	1339	1485	1633
2000	655	814	976	1138	1297	1459	1618	1780
2200	707	881	1056	1230	1404	1578	1752	1926

SGA44-SGA43R price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	325	403	482	560	638	716	795	873
800	388	482	577	671	766	860	955	1050
1000	451	561	672	783	894	1005	1116	1227
1200	513	639	767	894	1022	1149	1277	1404
1400	576	718	862	1006	1150	1293	1437	1581
1600	639	797	957	1117	1278	1438	1598	1752
1800	702	875	1052	1229	1405	1582	1759	1935
2000	765	954	1147	1340	1533	1726	1919	2112
2200	826	1035	1244	1452	1662	1870	2080	2288

SGA45 price list

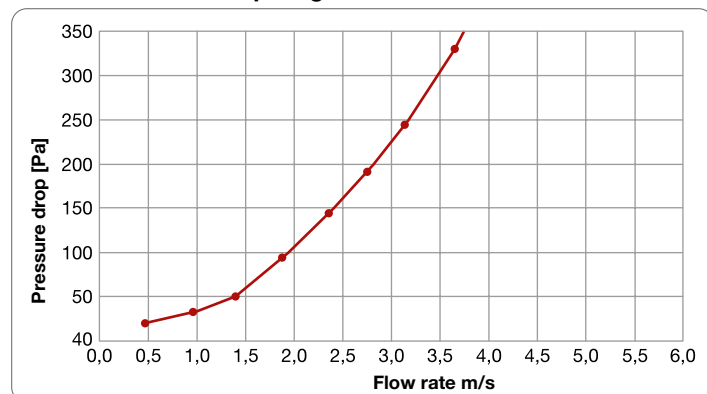
HxL	600	800	1000	1200	1400	1600	1800	2000
600	364	452	540	628	715	803	891	979
800	436	542	649	756	863	970	1077	1185
1000	507	633	759	885	1011	1138	1264	1390
1200	578	723	869	1014	1159	1305	1450	1596
1400	649	814	978	1143	1308	1472	1637	1802
1600	720	904	1088	1272	1456	1639	1823	2007
1800	792	995	1197	1401	1604	1807	2010	2213
2000	863	1085	1307	1529	1752	1974	2196	2419
2200	935	1177	1418	1659	1900	2142	2383	2624

Description

SGA 28: drop separators pitch 28 mm in aluminium

- execution: frame in Peralluman aluminium alloy 5754 th. 20/10 mm
- blades in aluminium alloy 1050 th. 7/10 mm
- models with 1-5 pleats
- execution ENTIRELY in Peralluman with blades th. 1 mm (list price x 1.5)

SG 28/3 Pressure drop diagram



SGA28/1 price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	221	279	338	395	453	511	569	627
800	259	326	394	461	528	595	663	732
1000	297	373	450	526	603	680	756	833
1200	335	420	506	592	678	764	850	936
1400	373	467	562	658	753	848	944	1039
1600	411	514	619	723	828	933	1037	1142
1800	449	560	675	789	903	1017	1131	1245
2000	487	607	731	854	978	1101	1225	1348
2200	523	656	788	921	1054	1186	1318	1451

SGA28/2 price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	283	351	420	488	556	625	693	761
800	332	413	493	574	655	735	816	896
1000	382	475	567	660	753	846	939	1031
1200	432	537	642	746	851	956	1061	1166
1400	481	598	716	833	950	1067	1184	1301
1600	531	660	796	919	1048	1178	1307	1436
1800	581	722	864	1005	1147	1288	1430	1571
2000	630	784	938	1091	1245	1399	1552	1706
2200	681	847	1013	1179	1345	1511	1677	1842

SGA28/3 price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	310	365	420	474	529	584	639	693
800	390	460	531	601	671	741	812	882
1000	470	556	642	727	813	899	985	1070
1200	550	651	752	854	955	1056	1157	1258
1400	630	747	864	981	1098	1216	1333	1450
1600	710	842	975	1108	1240	1373	1505	1638
1800	789	938	1086	1234	1382	1530	1678	1826
2000	869	1033	1196	1360	1524	1687	1850	2014
2200	949	1129	1308	1488	1667	1846	2026	2205

SGA28/4 price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	415	506	598	690	782	874	965	1057
800	490	601	711	822	933	1043	1154	1265
1000	565	695	825	954	1083	1213	1343	1472
1200	641	789	938	1086	1234	1383	1532	1680
1400	716	883	1052	1219	1385	1552	1721	1888
1600	792	977	1165	1351	1536	1722	1910	2095
1800	867	1071	1278	1483	1687	1891	2098	2303
2000	942	1165	1392	1615	1838	2061	2287	2510
2200	1019	1261	1504	1747	1990	2232	2475	2717

SGA28/5 price list

HxL	600	800	1000	1200	1400	1600	1800	2000
600	566	684	801	919	1037	1154	1272	1389
800	669	809	949	1089	1228	1369	1509	1649
1000	771	933	1096	1258	1420	1583	1745	1908
1200	873	1058	1243	1428	1612	1797	1982	2167
1400	975	1183	1390	1598	1803	2011	2218	2426
1600	1077	1307	1537	1767	1995	2225	2455	2685
1800	1179	1432	1684	1937	2186	2439	2692	2944
2000	1281	1556	1831	2106	2378	2653	2928	3203
2200	1385	1681	1978	2275	2571	2868	3164	3461

Description

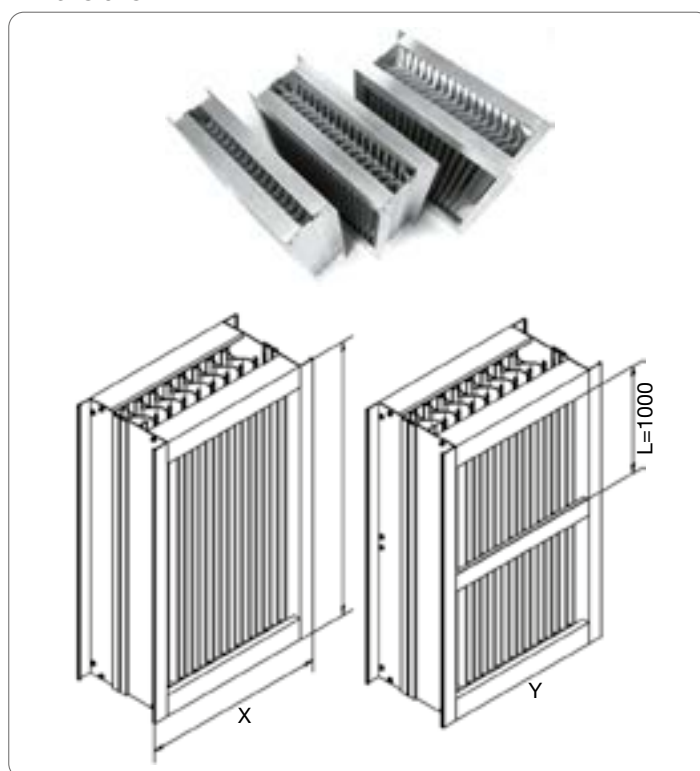
PSG 10: blade 170 mm, 0400 Aluminium, OR03 Polypropylene, 0300 Antibacterial polypropylene

PSG 20: blade 150 mm, OR03 Polypropylene, 0300 Antibacterial polypropylene

PSG 33: blade 150 mm, 0400 Aluminium, OR03 Polypropylene, 0300 Antibacterial polypropylene

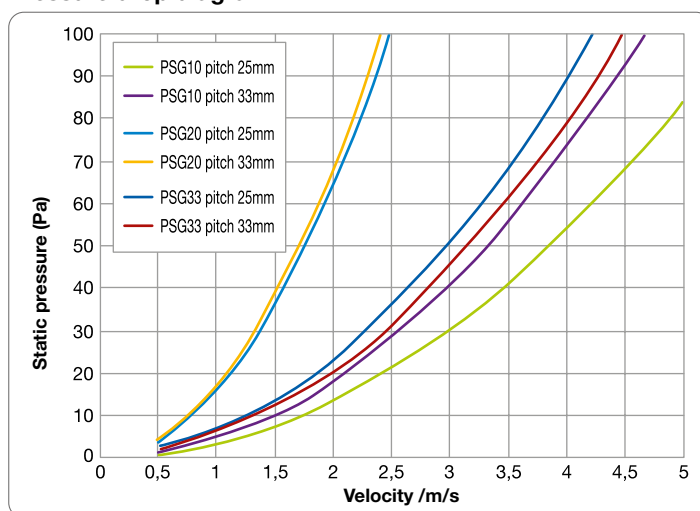
- extruded aluminium frame EN AW 6060 T6
 - blade pitch 25 or 33 mm
 - working temperature:
 - extruded polypropylene 130°C
 - black polypropylene 70°C
 - antibacterial execution according to VDI 6022
- Prices on request

Dimensions



External dimension	X
Internal dimension	X - 60 mm
Profile height	Y
Aluminium blade	Y - 50 mm
Polypropylene blade	Y - 50 mm
End profile	Y - 48

Pressure drop diagram





Marine



Oil & Gas



Power generation



Tunnel / Metro



Nuclear



Laboratories

	Test (T) - Certificati (C)	Prodotto
ISO 9001: 2015	C	-
Atex: ATEX 2014/34/EU	C	Serrande / Serrande Tagliafuoco Solas
Resistenza al Fuoco: EN 1366-2	C	Serrande Tagliafuoco
SOLAS 74 / IMO Res. A. 754(18) – B15 MED	C	Cabin Units
SOLAS 1974 / IMO Res. 307(88) FTP Code MED / BS476 (4 Hrs)	C	Serrande Tagliafuoco Solas
BS 476 (Pt 20) / UL555 400°C 2 Hrs	C	Serrande Tagliafuoco Tunnel
SIL 2	C	Serrande Tagliafuoco Solas
Tenuta aria: EN 1751 DIN 1946/4	T	Serrande / Serrande Tagliafuoco Solas
Tenuta aria: EN 1751 ZERO Leakage at 10.000 Pa	T	Serrande per Laboratori / Nucleare
Attenuazione acustica: EN ISO 11691 EN ISO 7235	T	Silenziatori / Griglie Afoniche
Rumore generato: EN ISO 25135	T	Serrande / Griglie / Silenziatori
Perdita di carico: ISO 7244 UNI CTI 8728	T	Serrande / Griglie / Silenziatori
Protezione pioggia: EN 13030	T	Separatori di gocce
Protezione nebbia: APS (DHES) / FSSP	T	Separatori di gocce
Protezione sabbia: EN 13181	T	Griglie antisabbia
Protezione scoppio: Blast test Abershock (Galles)	T	Serrande anti scoppio
Atex: ATEX 2014/34/EU	Requisiti 2014/34/EU	Ventilatori Assiali e Centrifughi
Serrande per Air-cooler / scambiatori: API 661 / ISO 13706 : 2005	Requisiti A. P. I.	Serrande
Marchio CE	Requisiti 2006/42/CE	Serrande

Etichettatura ATEX componenti non elettrici

Potentially explosive areas					
Conditions and Zone classification			Required marking on the equipment		
Flammable materials	Temporary behaviour of explosive atmosphere	Classification of hazardous areas	Group as defined in directive 2014/34/EU	Equipment category as defined in directive 2014/34/EU	Equipment protect level (EPL) as defined in EN ISO 80079-36 EN IEC 60079-0
Gas, vapours	is present continuously or for long periods or frequently	Zone 0	II	1G	Ga
	arises in normal operation occasionally	Zone 1	II	2G or 1G	Gb or Ga
	is not likely to arise in normal operation, or if it does, will persist for a short time only	Zone 2	II	3G or 2G or 1G	Gc or Gb or Ga
Dusts	is present in the form of a cloud continuously, or for long periods or frequently	Zone 20	II	1D	Da
	occasionally develops into a cloud during normal operation	Zone 21	II	2D or 1D	Db or Da
	is not likely to develop into a cloud during normal operation, or if it does, for short time only	Zone 22	II	3D or 2D or 1D	Dc or Db or Da
Methane, carbon dust	operation where there is a risk of explosion	-	I	M1	Ma
	disconnection where there is a risk of explosion	-	I	M2 or M1	Mb or Ma

Subdivision and classification of gases and vapours					
Gases and vapours			Assignment of gases and vapours according to the ignition temperature	Temperature class	Permitted Temperature classes (equipment)
Ammonia, methane, ethane, propane	Town gas, acrylonitril	Hydrogen	> 450°C	T1	T1 to T6
Ethyl alcohol, cyclohexane, n-butane	Ethylene, ethylene oxide	Ethine (Acetylene)	> 300°C ...≤ 450°C	T2	T2 to T6
Gasoline, n-hexane	Ethylene glycol, hydrogen sulphide		> 200°C ...≤ 300°C	T3	T3 to T6
Acetaldehyde	Ethyl ether		> 135°C ...≤ 200°C	T4	T4 to T6
			> 100°C ...≤ 135°C	T5	T5 to T6
		Sulphide of carbon	> 85°C ...≤ 100°C	T6	T6

Gas groups		
IIA	IIB	IIC
Permitted Equipment groups		
IIA, IIB, IIC	IIB, IIC	IIC

Gases/Vapours	CE NB ¹⁾ Ex	II	1G	Ex h	IIC	T6	Ga
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Dusts	CE NB ¹⁾ Ex	II	2D	Ex h	IIIC	T120°C	Db
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Protection principle / types of protection						
Applications (examples)	Flammable materials	Protection principle	Type of protection	Marking in accordance with the equipment protection level		
				very high level of protection	high level of protection	enhanced level of protection
All applications	Gases, vapours (G) and dusts (D)	-	General requirements	+	+	+
Coupling, belt drive, agitator, ventilation, mill	Gases, vapours (G) and dusts (D)	This protection principle ensures that a source of ignition cannot occur	Constructional safety	Ex h	Ex h	Ex h
Plain bearing, pump, agitator, vacuum pump, centrifuges	Gases, vapours (G) and dusts (D)	This protection principle prevents a source of ignition from becoming effective	Control of ignition sources	Ex h	Ex h	Ex h
Gear	Gases, vapours (G) and dusts (D)	This protection principle prevents the hazardous atmosphere reaching the source of ignition	Liquid immersion	Ex h	Ex h	Ex h
Centrifuge, compressor, geared motor, complex assembly group	Gases, vapours (G) and dusts (D)	This protection principle prevents the hazardous atmosphere reaching the source of ignition	Pressurised enclosure	-	Ex h	Ex h
Centrifuge, compressor, geared motor, complex assembly group	Gases and vapours (G)	This protection principle prevents the hazardous atmosphere reaching the source of ignition	Protection by flow restricting enclosure	-	-	fr
Mill, geared motor, complex assembly group	Dusts (D)	This protection principle prevents the hazardous atmosphere reaching the source of ignition	Protection by enclosure	Ex h	Ex h	Ex h
Brakes	Gases and vapours (G)	This protection principle prevents flame propagation through an enclosure	Flame-proof enclosure	-	Ex h	Ex h

1) Identification number of the Notify Body responsible for the surveillance of the manufacturer's quality system (Cat.1)

Application area (equipment)		
Zone 0 / 20	Zone 1 / 21	Zone 2 / 22
Zone 1 / 21	Zone 2 / 22	
Zone 2 / 22		

Industrial / Offshore / Marine


Industrial / Offshore / Marine

Etichettatura ATEX componenti elettrici

Suddivisione ed etichettatura degli ambienti a rischio d'esplosione					
Materie infiammabili	Ambienti a rischio d'esplosione	Aree a rischio di esplosione	Classificazione degli apparecchi		Livello di protezione dell'apparecchiatura (EPL)
			Gruppo	Categoria	
Gas, nebbie, vapori	Continuamente, per lunghi periodi o frequentemente	Zone 0	II		
	Occasionalmente	Zone 1	II	1G	Ga
	Raramente o per brevissimi periodi	Zone 2	II	2G	Gb
Polveri	Continuamente, per lunghi periodi o frequentemente	Zone 20	II		
	Occasionalmente	Zone 21	II	1D	Da
	Raramente o per brevissimi periodi	Zone 22	II	2D	Db
Organismi notificati					
Codice ente	Ente certificatore				
0102	PTB (Germania)				
0158	EXAM (Germania)				

Esempio:

CE	0158	Ex	II 2 G	Ex db	IIC	T6	Gb	NB 12 ATEX 1007 X
			II 2 D	Ex tb	IIIC	T80°C	Db	

Evita la propagazione di un'esplosione all'esterno di un contenitore	custodia a prova d'esplosione	Exd	da db dc		0,1,2 1,2 2	EN 60079-1
Previene le scintille e le temperature troppo elevate	sicurezza aumentata	Exe	eb ec		1,2 2	EN 60079-7
Bassa energia	sicurezza intrinseca	Exi	ia ib ic		0,1,2,20,21,22 1,2,21,22 2,22	EN 60079-11
Sovrapressione	custodia in sovrapressione	Exp	pxb pyb pzc		1,2,21,22 1,2,21,22 2,22	EN 60079-2
Componenti resinati	resinato	Exm	ma mb mc		0,1,2,20,21,22 1,2,21,22 2,22	EN 60079-18
L'atmosfera esplosiva viene separata dalla fonte d'innesco tramite olio	bagno in olio	Exo	ob oc		1,2 2	EN 60079-6
Previene la propagazione di un'esplosione all'esterno	insabbiamento	Exq	qb		1,2	EN 60079-5
Non permette la possibilità di innesco. Solo per zona 2	non innescabile „n“	Exn	nC nR		2 2	EN 60079-15
Non permette alla polvere esplosiva di entrare nel contenitore	protezione tramite custodia	Ext	ta tb tc		20, 21, 22 21, 22 22	EN 60079-31
Principio di protezione	Tipo di protezione	Codice	Simbolo	Zona d'uso	CENELEC	

Principio e tipo di protezione: Norme EN 60079-0 Requisiti Generali

Suddivisione per gruppo di esplosione e classe di temperatura							
Gruppo d'esplosione		Esempi relativi a					
		- gruppo d'esplosione					
		- classe di temperatura					
IIA	IIB	IIC	Ammoniaca	Etanolo	Benzina	Acetaldeide	
			Metano	Cicloesano	Diesel		
			Etano	n-Butano	n-Esano		
			Propano				
			Smog	Etilene	Glicol	Etere etilico	
			Nitrile acrilico	Ossido di etilene	Acido solfidrico		
			Idrogeno	Acetilene			Bisolfuro di carbonio

Attenzione: questo elenco è soltanto un piccolo estratto a titolo esemplificativo delle sostanze deflagranti!

T1 < 450 °C

T2 < 300 °C

T3 < 200 °C

T4 < 135 °C

T5 < 100 °C

T6 < 85 °C

L'uso di un prodotto dipende dalla classe di temperatura (T1-T6), che descrive la più alta temperatura possibile sulla sua superficie. Per apparecchi antideflagranti per polveri si indica espressamente la più alta temperatura possibile (es. T80 °C).

Classe di temperatura

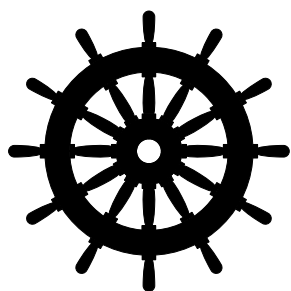
IIIA	IIB	IIC	Sostanze volatili combustibili (fibre)
			polveri non conduttive
			polveri conduttive
Gruppi			Classificazione polveri

8	-	protezione dalla sommersione
7	-	protezione alla immersione
6	totalmente protetto contro le polveri	protezione contro le ondate
5	polveri (ingresso limitato)	getti d'acqua da tutte le direzioni
4	oggetti solidi > 1 mm	spruzzi d'acqua da tutte le direzioni
3	oggetti solidi > 2,5 mm	la pioggia con angolazione fino a 60°
2	oggetti solidi > 12,5 mm	la pioggia con angolazione fino a 15°
1	oggetti solidi > 50 mm	protezione contro la pioggia verticale
0	non protetto	non protetto

IP	Protezione contro solidi/polveri	Protezione contro liquidi
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Norma EN 60529

Non sussistono limitazioni all'applicazione dell'apparecchio	-
Per poter applicare l'apparecchio si devono rispettare determinate condizioni	X
L'apparecchio è un componente Ex da non utilizzarsi da solo bensì in un sistema completo.	U
La conformità CE viene rispettata solo se così applicato.	
Applicazione	Codice
Informazioni aggiuntive	



Marine Equipment Directive (MED/MRA) accordo di riconoscimento reciproco

La Marine Equipment Directive – 96/98/EC(MED) come modificato dalla direttiva 98/95/EC è entrata in vigore il 1 Gennaio 1999 e copre gli aspetti relativi ai componenti di sicurezza (come serrande tagliafuoco o componenti correlati) installati sulle navi registrate sotto bandiera degli stati membri dell'Unione Europea.

Il riconoscimento degli USA/USCG entra in vigore dal Luglio 2004 sotto Accordo di riconoscimento dei componenti marini tra EU – US.

OFFSHORE E NAVALE

Classificazioni e test

Nei settori Offshore e Navale le classi di resistenza al fuoco sono normalmente denominate "A" o "B"; per il conseguimento della classificazione non bisogna superare un determinato limite di temperatura sulla parte fredda della struttura di compartimentazione.

Le compartimentazioni sono isolate come definito dalla Solas, per ridurre la temperatura entro i limiti per 60 minuti.

Quando la serranda è installata all'interno del condotto di attraversamento (sleeve/coaming) definito dalla Solas, il solo modo per controllare la temperatura entro i limiti sarà quello di isolare il telaio metallico della serranda con lo stesso materiale utilizzato per l'isolamento dello sleeve/coaming.

Installazione

I tipici di installazione sono definiti nei vari certificati rilasciati dai Registri Navali.

Le classi sono le seguenti :

Classe "B": per superare la Classe B, una serranda deve mantenere la propria integrità all'esposizione alla fiamma per almeno 30 minuti e la temperatura superficiale del telaio non deve superare di 140°C la temperatura ambiente né la temperatura in nessun punto dell'isolamento deve superare i 225°C durante lo stesso periodo.

Per quanto riguarda le cassette di distribuzione da installare nel controsoffitto, il tempo del test sarà di 15 minuti così come la resistenza al fuoco del controsoffitto nel quale saranno installate.

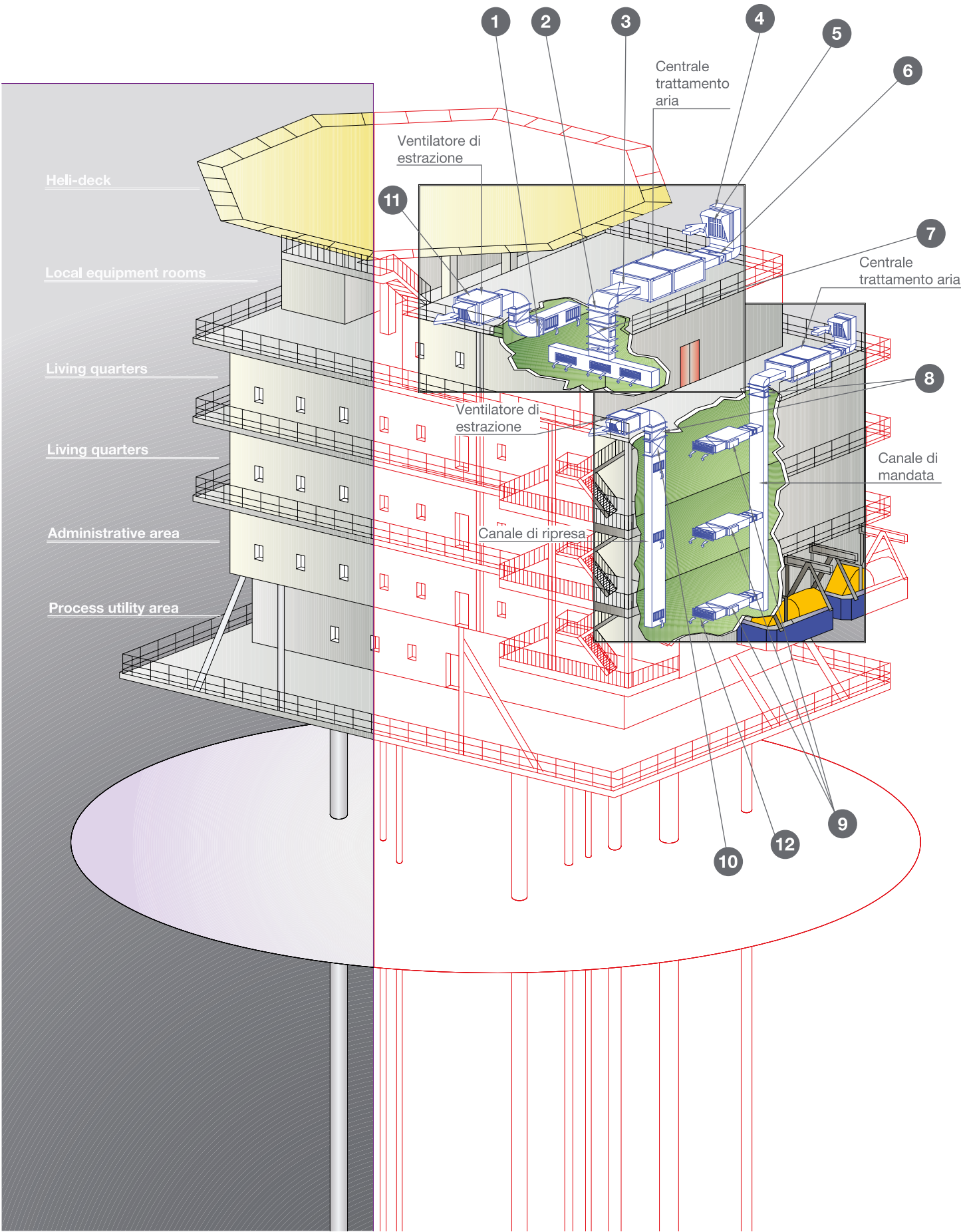
Classe "A": le serrande tagliafuoco per superare il test "A0" devono superare e resistere ad un'ora al test alla fiamma. Le serrande "A60" oltre a mantenere l'integrità strutturale come sopra devono resistere all'esposizione alla fiamma per almeno 60 minuti e la temperatura superficiale del telaio non deve superare di 140°C la temperatura ambiente né la temperatura in nessun punto dell'isolamento deve superare i 180°C durante lo stesso periodo.

Classe "H": queste serrande devono essere testate al fuoco secondo la curva definita agli "idrocarburi" e le classificazioni sono "0", "60" e "120".

È evidente che le serrande classificate "A-0" o "H-0" non avranno isolamento necessario invece per ottenere le altre classificazioni.



Schema distribuzione HVAC, componenti
Piattaforma, L.E.R. (Local Equipment Room), P.U.B. (Process Building), L.Q. (Living Quarter)



Legenda accessori HVAC

- | | | | | | |
|----|--------------------------------------------------------------------------------------|---------------------------------------------------------------------|----|--------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| 1 |  | Serranda di non ritorno /
Serranda di sovrappressione | 2 |  | Serranda antiscoppio |
| 3 |  | Silenziatori circolari
e rettangolari | 4 |  | Presa aria antisabbia |
| 5 |  | Presa aria antisabbia,
separatore di gocce
con cavi scaldanti | 6 |  | Batteria post riscaldamento elettrica
o ad acqua |
| 7 |  | Serrande di intercettazione elettriche
o pneumatiche | 8 |  | Serrande tagliafuoco <i>Fire & Gas</i>
elettriche o pneumatiche |
| 9 |  | Regolatore di portata
con batteria elettrica | 10 |  | Serranda di regolazione elettrica
o pneumatica |
| 11 |  | Ventilatori di mandata
o estrazione | 12 |  | Diffusori o ugelli |



B-MAR



Description

B-MAR

- flow control terminal unit to be installed in false ceilings B15 to restore the fire resistance class of the structure
- made of galvanised sheet metal with internal rock wool lining with marine certification
- possibility of internal rock wool lining with VDI6022 hygiene certificate
- manual, electronic or VAV flow range adjustment

Accessories

- post heating coil with 1 or 2 safety thermostats (automatic and/or manual)
- possibility of additional safety through static pressure sensor (air flow switch)
- junction box with protection and control accessories, electrical connections (**on request**)
- programmable adjustment and control module
- Belimo, Siemens or Johnson VAV actuator with built-in programmable adjustment and control module

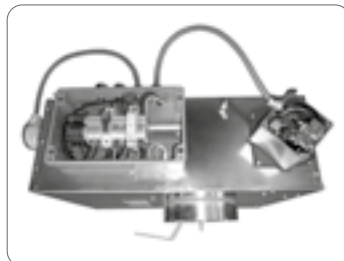
Technical specifications

- flow from 50 to 500 m³/h
- pressure drop according to the different configurations
- dimensions from 400x250x175 to 600x500x240 mm
- coil up to 1.5 kW

PRICE ON REQUEST



B-MARINE: with ATEX heater



Electrical details



Electrical tests



- B15 certification
- USCG approval

Flow regulator

CVR/VVR



Description

CVR: self-operated constant flow regulator including post-heating coil

- made of galvanised steel sheet

VVR: like CVR but with variable volume flow

Accessories

- post-heating coil with elements in AISI 304-316 or INCOLOY 800
- including 1 or 2 safety thermostats (automatic and/or manual)
- possibility of additional safety through static pressure sensor (air flow switch)
- junction box with protection and control accessories, electrical connections (**on request**)
- additional sound attenuator
- programmable adjustment and control module
- Belimo, Siemens or Johnson VAV actuator with built-in programmable adjustment and control module

Technical specifications

- dimension from 200x200 to 1000x410 in individual piece
- flow from 150 to 14000 m³/h
- possibility of assembly in multiple modules
- electric or water post-heating coil

PRICE ON REQUEST



CVR: electrical details



Electrical tests

FIRE & GAS DAMPER



Application

- marine installation (cruise ships, ferries, military ships, ships for commercial use in general)
- Oil&Gas Off-shore and On-shore facilities (Platform, Jack-up Rig, Drillship, FPSO, Windfarm, LER, PUB, Shelter)

Description

- made of galvanised steel, hot-dip galvanised steel, AISI 304/316 with thickness from 1.5 to 5.0 mm
- "double skin" blades with standard stub shafts or solid shafts
- leakage according to EN1751 from Class 2/A up to Class 3/C
- operating range up to -55°C

Certifications

- SOLAS 1974 / IMO Res. MSC. 307(88) 2010 / MED / USCG / SIL2 / ATEX 2014/34/EU
- fire-resistance from A0 up to H120

Accessories

- electric actuators for Safe Zone or Atex Zones
- pneumatic actuators with micro switches, solenoid valves, filter regulator, junction box for Safe or Atex zones
- heating cables for operation on air intakes in particularly cold environments

FIRE DAMPER EN 1366-2



Application

- Oil&Gas On-shore facilities (LER, PUB, Shelter)
- power plants
- Tunnel / Metro by-pass
- laboratories and hospitals

Description

- made of galvanised steel, AISI 304/316
- blade / blades in refractory material

Certifications/Tests

- EN 1366-2 / ATEX 2014/34/EU
- fire-resistance from EI30S to EI120S

Accessories

- electric actuators for Safe Zone or Atex Zones

FIRE DAMPER UL555



Application

- Oil&Gas On-shore facilities (LER, PUB, Shelter)
- power plants

Description

- made of galvanised steel, AISI 304/316
- blade / blades in galvanised steel, AISI 304/316

Certifications/Tests

- UL555 and UL555S
- fire-resistance from 1½h to 3 h

Accessories

- electric actuators for Safe zone
- junction box

TUNNEL DAMPER



Application

- systems for tunnels and metros

Description

- made of galvanised steel, AISI 304/316
- blade / blades in galvanised steel, AISI 304/316

Certifications/Tests

- UL555 / BS 476 Part 20 / 400°C 2 hours

Accessories

- electric, pneumatic, electro-hydraulic actuators

MPY125 2 LED

EXD1

Application

- for local control or testing of fire dampers, to be installed on the the bulkhead close to the damper
- marine installations (cruise ships, ferries, military ships, ships for commercial use in general)
- Oil&Gas Off-shore and On-shore facilities (Platform, Jack-up Rig, Drillship, FPSO, Windfarm, LER, PUB, Shelter)

Description

- electrical board for control and wiring
- junction box in polycarbonate, GRP, Aluminium, AISI 304 / 316
- polyamide or nickel-plated cable glands

Certifications

- ATEX with aluminium Exd Junction box

JB MARINE

JB MARINE
ATEX EXD

Application

- for connecting the damper actuator and the 2 control boxes
- marine installations (cruise ships, ferries, military ships, ships for commercial use in general)
- Oil&Gas Off-shore and On-shore facilities (Platform, Jack-up Rig, Drillship, FPSO, Windfarm, LER, PUB, Shelter)

Description

- electrical board for control and wiring with special communication relay
- junction box in polycarbonate, GRP, Aluminium, AISI 304 / 316
- polyamide or nickel-plated cable glands

Certifications

- ATEX with aluminium Exd Junction box

Benefits

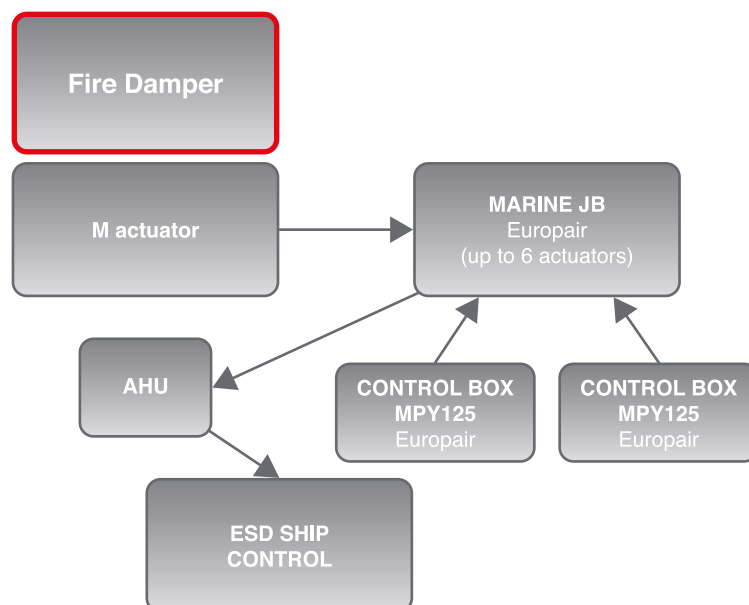
JB MARINE

- the advantage of the Marine junction box is the design of the electrical control, communication and wiring board
- thanks to a relay, it is possible to transmit the damper position status both to the AHU and the ship system using "only" the 2 standard micro switches of the actuator
- thanks to this solution, the cost of additional micro switches, connection cables and manpower is saved; consider also the lower overall weight due to the lack of connection cables of the additional micro switches

JB BUS

- thanks to this solution, the dampers can be controlled remotely on a serial line, reducing and simplifying the wiring

CONNECTIONS AND OPERATION



SS316 SHUT-OFF ELECTRICAL DAMPERS



PNEUMATIC DAMPER



SS316 SHUT-OFF ELECTR. DAMPERS



SS316 MANUAL DAMPERS



SS316 SHUT-OFF ELECTR. DAMPERS



Application

- marine installations (cruise ships, ferries, military ships, ships for commercial use in general)
- Oil&Gas Off-shore and On-shore facilities (Platform, Jack-up Rig, Drillship, FPSO, Windfarm, LER, PUB, Shelter)
- power plants

Description

- made of galvanised steel, hot-dip galvanised steel, AISI 304/316, aluminium with thickness from 1.0 to 5.0 mm
- "double skin" blades with standard pins or pass-through pins
- leakage according to EN1751 from Class 1/A up to Class 4/C
- operating range up to -55°C

Certifications

- ATEX 2014/34/EU

Accessories

- electric actuators for Safe Zone or Atex Zones
- pneumatic actuators with micro switches, solenoid valves, positioner, filter regulator, junction box for Safe or Atex zones
- heating cables for operation on air intakes in particularly cold environments

Dampers for air-coolers / heat exchangers

AIR COOLER DAMPER



Application

- Oil&Gas Off-shore and On-shore facilities (Platform, Jack-up Rig, Drillships, FPSO, Windfarms, LER, PUB)
- power plants

Description

- manufacture according to A.P. I. 661
- made of galvanised steel, hot-dip galvanised steel, AISI 304/316, aluminium with thickness from 2.0 to 4.0 mm
- "double skin" blades with standard pins or pass-through pins
- operating range up to -55°C

Accessories

- electric actuators for Safe Zone or Atex Zones
- pneumatic actuators with micro switches, solenoid valves, positioner, filter regulator, junction box for Safe or Atex zones
- heating cables for operation on air intakes in particularly cold environments

DROP SEPARATORS



Application

- marine installations (cruise ships, ferries, military ships, ships for commercial use in general)
- Oil&Gas Off-shore and On-shore facilities (Platform, Jack-up Rig, Drillship, FPSO, Windfarm, LER, PUB, Shelter)
- power plants

Description

The air intake systems can consist of either drop separators or sand trap louvers or from a combination of the two components for installations in particularly demanding environments

- made of galvanised steel, hot-dip galvanised steel, AISI 304 / 316, aluminium with thickness from 1.0 to 5.0 mm
- operating range up to -55°C

Test

- sand trap louvers: efficiency for fine and coarse sand filtration in accordance with EN 13181
- drop separators: efficiency against rain penetration in accordance with EN 13030
- drop separators: efficiency against mist penetration from 1 to 50 Micron according to the DHES and FSSP methodology

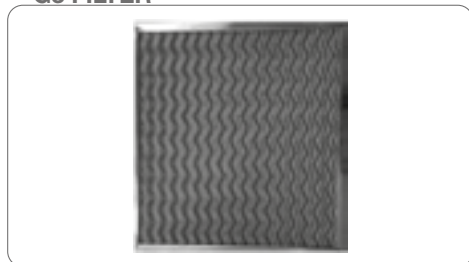
Accessories

- heating cables for operation in particularly cold environments
- filter wall with G3 / G4 / M5 / M6 panels
- special metal, washable G3 filter panel; "Patented" version

AIR INTAKE SAND TRAP



G3 FILTER



G4 FILTER



G4/M5/M6 FILTER



BLAST DAMPER



Application

- Oil&Gas Off-shore and On-shore facilities (Platform, Jack-up Rig, Drillships, FPSO, Windfarm, LER, PUB, Shelter)
- power plants

Description

- made of AISI 304 / 316, with thickness from 3.0 and 5.0 mm
- blast resistance up to 0.5 Bar and 1.0 Bar

Tests / Certifications

- blast resistance tests performed at the Aberystwyth University laboratory (Wales)
- ATEX 2014/34/EC

Overpressure / non-return dampers

SPTK - Front



Side



Application

This type of overpressure damper is particularly suitable for control and operation starting from 20-25 Pa (typical use in "Air Lock")

- Oil&Gas Off-shore and On-shore facilities (Platform, Jack-up Rig, Drillship, FPSO, Windfarm, LER, PUB, Shelter)
- power plants

Description

- made of galvanised steel, hot-dip galvanised steel, AISI 304 / 316, aluminium with thickness from 1.0 to 5.0 mm
- leakage according to EN1751 Class 2/B

Certifications

- ATEX 2014/34/EC

Centrifugal fans / Axial fans

AXIAL FAN



Application

- marine installations (cruise ships, ferries, military ships, ships for commercial use in general)
- Oil&Gas Off-shore and On-shore facilities (Platform, Jack-up Rig, Drillship, FPSO, Windfarm, LER, PUB, Shelter)
- power plants

Description

- made of galvanised steel, hot-dip galvanised steel, AISI 304 / 316, aluminium with thickness from 1.0 to 5.0 mm

Certifications

- ATEX 2014/34/EC

Accessories

- electric motors for Safe Zone or Atex Zones

CENTRIFUGAL FAN



BOX FAN



BOX FAN WITH FILTERS



AIR BLOWER



ROOF FANS



Plastic fans

PLASTIC FANS



Application

- Oil&Gas Off-shore and On-shore facilities (Platform, Jack-up Rig, Drillships, FPSO, Windfarm, LER, PUB, Shelter)
- power plants
- research laboratories

Description

- made of polyethylene and polypropylene

Certifications

- ATEX 2014/34/EC

Accessories

- electric motors for Safe Zone or Atex Zones

PLASTIC ROOF FANS



RECTANGULAR SOUND ATTENUATOR



Application

- marine installations (cruise ships, ferries, military ships, ships for commercial use in general)
- Oil&Gas Off-shore and On-shore facilities (Platform, Jack-up Rig, Drillship, FPSO, Windfarm, LER, PUB, Shelter)
- power plants

Description

- made of galvanised steel, hot-dip galvanised steel, AISI 304 / 316, aluminium with thickness from 1.0 to 5.0 mm
- acoustic material in rock wool protected against abrasion by glass veil or glass tissue

Certifications

- acoustic material Class A1 according to EN 13501-1
- acoustic material with hygiene certificate according to VDI 6022

Accessories

- micro-expanded mesh or perforated protection sheet

ACOUSTIC LOUVER



CIRCULAR SOUND ATTENUATOR



**SAFE CHANGE
HOUSING**



MULTIPLE MODULE



**ASSEMBLED
HOUSING**



HOUSING



ABSOLUTE FILTER



**CLASS 4
DAMPER**



**0 LEAKAGE
DAMPER**



**VENTURI
REGULATOR**



Application

- Oil&Gas Off-shore and On-shore facilities (Platform, Jack-up Rig, Drillships, FPSO, Windfarm, LER, PUB, Shelter)
- nuclear power plants
- research laboratories

Description

- airtight housing for H13 / H14 / U15 absolute filters in painted galvanised steel or in AISI 304 / 316
- Leakage Class 4 dampers according to EN 1751
- "Zero Leakage" dampers up to 10,000 Pa in galvanised steel, AISI 304 / 316
- terminal diffuser with absolute filter in painted galvanised steel or in AISI 304 / 316, with perforated or swirl diffuser
- "Venturi" regulator to control the flow or pressure in laboratories, made of aluminium, AISI or special plastic material

Test

- for "Zero Leakage" damper, test according to EN 1751 up to 10,000 Pa

Accessories

- electric actuators for Safe Zone or Atex Zones for "Zero Leakage" damper
- electric actuators for Safe Zone or controllers for "Venturi" regulators



RT 151
Linear slot diffuser
PAGE 1



NWP
High induction circular diffuser
PAGE 1



NWP-T
High induction circular diffuser on panel
PAGE 1



TWR
High induction square diffuser, fixed blades
PAGE 1



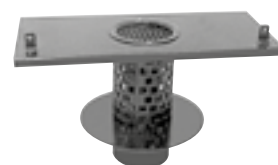
DVS
Square swirl diffuser, fixed blades
PAGE 1



PW1
High induction floor diffuser
PAGE 1



NW0-60
High induction diffuser for steps
PAGE 1



DU
Underchair diffuser
PAGE 1



NZ
Displacement diffusers
PAGE 1



ACTIVE
Microperforated galvanised steel duct
PAGE 2



DUC
Jet nozzles for large areas
PAGE 2



DEM
High induction swirl diffusers
PAGE 2



BDDVSM
Dual-duct VAV box
PAGE 2



LD
Long-range linear diffuser
PAGE 2



DT
Beam diffuser for operating theatres
PAGE 2



PGR
Architectural diffuser with adjustable micro nozzles
PAGE 2



PGP
Architectural diffuser with adjustable discs
PAGE 2



CD-CK
Architectural diffuser with deflectors
PAGE 2

RT 151



Description

- RT 151:** linear slot diffuser in aluminium
- adjustable flow for optimal air flow rate mixing to ensure maximum room comfort
 - deflector rollers in black plastic material to obtain a rapid reduction of temperatures with the possibility of working up to summer Δt of -12°K
 - possibility of assembly in continuous series with several elements
 - maximum length per element up to $L = 1500 \text{ mm}$
 - standard production in natural anodised aluminium

NWP



Description

- NWP:** high induction circular diffuser with fixed blades
- installation height between 2.7 and 4.5 m
 - operating range with Δt from $+5^{\circ}\text{C}$ to -12°C
 - suitable for VAV systems
 - suitable for assembly with or without false ceiling
 - made of aluminium with RAL 9010 finish

NWP-T



- NWP-T:** like NWP but with 596x596 panel for installation on false ceiling

TWR



Description

- TWR:** high induction square diffuser
- made of aluminium with RAL 9010 finish
 - pressed blades and external panel (see profiles) adaptable on multiples types of false ceilings measuring 600x600 mm
 - suitable for VAV systems
 - wide variety of profiles to meet all architectural requirements

IDEAL FLOW between 100 and 1250 m^3/h

DVS



Description

- DVS:** supply and return swirl diffuser
- square or round diffuser with swirl throw with fixed blades
 - installation height from 2.7 to 4 cm
 - suitable for VAV systems
 - made of aluminium with RAL 9010 finish
 - fastening with central screw

PW1



Description

- PW1:** high induction diffusers for floor application
- made of non-flammable plastic material with high mechanical strength
 - grey finish
 - maximum temperature difference $\pm 10^{\circ}\text{C}$

NWO-60



Description

- NWO-60:** high induction diffusers for application on step
- made of plastic and body in steel
 - RAL 9010 finish

DU



Description

- DU:** high induction diffusers for under-chair application
- made of black coated steel
 - consisting of: external perforated cylinder, internal induction cone, internal swirl diffuser for primary air, support for chair adaptation and floor-fastening collar
 - minimum cooling temperature 17°C
 - flow between 35 and 55 m^3/h
 - pressure drop between 8 and 18 Pa
 - max noise level $L_w(A) = 32 \text{ dB}(A)$; $L_p(A) = 24 \text{ dB}(A)$ with 8 dB(A) automatic sound attenuation

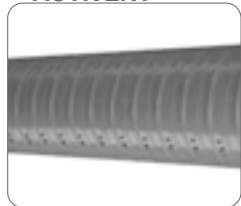
NZ



Description

- NZ:** low-speed displacement diffuser
- made of perforated steel coated in RAL 9010
 - maximum operating Δt -6°C
 - collar for duct connection
 - including support feet
 - NZOC:** quarter-sphere distribution
 - NZOJ:** half-sphere distribution
 - NZOP:** spherical distribution

ACTIVENT



Description

- made of perforated galvanised steel
- multiple throw direction options
- feasible production diameters (mm): 200, 250, 315, 400, 500
- including anchoring systems and assembly accessories
- individual pieces supplied in lengths of 2000, 2500, 3000
- installation height between 3 / 5 m

DUC



Description

- DUC:** jet nozzles with 30° adjustment in all directions, suitable for air inlet in large rooms
- max 8 exchanges per hour
 - 4 sizes with possibility of matching up to 4 elements in a single plate
 - made of aluminium with RAL 9006 finish

DEM



Description

- DEM:** high induction filter with swirl movement
- high-impact aesthetic finish thanks the combination of RAL 9010 white / RAL 9005 finish of the diffusion elements
 - installation height between 3- 5 m
 - direct application on duct or plenum
 - fastening: with central screw + cover

DEM-Q: version with 596 x 596 mm panel

BDDVSM



Description

- BDDV:** double duct VAV box
- casing in galvanised steel sheet with special profile for tie rod assembly
 - shaped micro-expanded mesh for equalisation and flow mixing
 - dampers leakage according to DIN 1946/4 and EN 1751/4
 - Acoustic double-density rock wool material lined with black glass tissue, fire-resistance M0
 - dynamic Dp tests for measuring and maintaining the required flow rate
 - operating range from 150 to 1500 Pa
 - flow adjustment and control with dedicated compact current regulator
 - acoustic tests according to UNI EN 23741

LD



Description

- LD:** linear diffusers with adjustable long throw nozzles, adjustable, width from 15 to 35 mm

DT



Description

- DT:** beam diffuser with absolute filter for operating theatres, ISO 7
- flow from 350 to 4600 m³/h

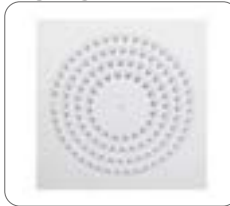
PGR



Description

- PGR:** architectural diffuser with adjustable micro nozzles in ABS ad perforated cover
- high induction
 - installation height from 2.7 to 4 m
 - air flow up to 800 m³/h
 - 595x595 panels RAL 9016

CD-CK



Description

- CD-CK:** architectural diffuser with slot and deflectors in pre-defined radial position
- high induction
 - installation height from 2.7 to 4 m
 - air flow from 480 up to 1200 m³/h
 - 595x595 panels RAL 9016

PGP



Description

- PGP:** architectural diffuser with circular adjustable micro elements in ABS and perforated cover
- high induction
 - installation height from 2.7 to 4 m
 - air flow up to 500 m³/h
 - 595x595 panels RAL 9016

FLH ON CEILING



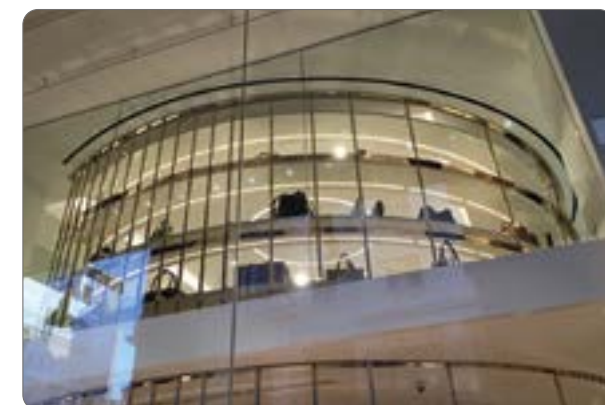
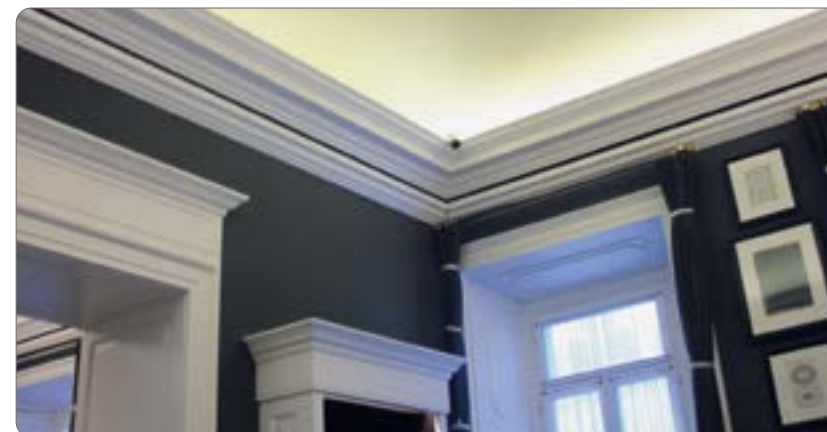
Products on request

Products on request

FLH ON WALL



FLH ROUNDED PROFILE



FLH ON DEMAND



DL INSERTED IN THE SLATS



GL 115



CONDIZIONI GENERALI DI VENDITA

Gli ordini sono da intendersi subordinati alle condizioni generali qui di seguito riportate, eventuali particolari condizioni d'acquisto, in deroga a quelle generali, dovranno essere espressamente riportate nell'ordine e approvate nella specifica conferma d'ordine.

La trasmissione di un ordine comporta quindi l'accettazione incondizionata delle presenti condizioni generali di vendita.

Nessun rappresentante o agente ha comunque facoltà di variare queste condizioni senza la preventiva autorizzazione scritta di **Europair**. In mancanza di tale autorizzazione, qualsiasi condizione diversa dalle presenti condizioni generali di vendita è inopponibile dal cliente indipendentemente dal momento in cui **Europair** ne è venuta a conoscenza. Il fatto che **Europair** non faccia valere una qualunque delle presenti condizioni di vendita non ne comporta automaticamente la rinuncia e tale condizione potrà essere da noi opposta in qualunque momento.

1. ACCETTAZIONE

Le informazioni riportate sui cataloghi, depliant, listini e tabelle, sono fornite a titolo puramente indicativo. Gli impegni presi dai nostri agenti o rappresentanti e gli ordini che pervengono tramite loro o direttamente ai nostri uffici, possono considerarsi da noi accettati solo se diventano oggetto di una nostra conferma d'ordine. L'ordine è personale e non può essere ceduto a terzi senza la nostra autorizzazione.

1.1 MODIFICA D'ORDINE

Qualsiasi modifica o annullamento di un ordine ha valore solo se concordati per iscritto e comunque pervenuti non oltre 2 (due) giorni dalla data della ricezione dell'ordine. **Non è comunque prevista la possibilità di annullamento di un ordine relativo a merce appositamente predisposta.**

Europair si riserva di apportare in qualunque momento tutte le modifiche che riterrà utili ai prodotti, senza l'obbligo di modificare i prodotti che siano già stati consegnati o in spedizione. Si riserva inoltre di modificare senza preavviso i modelli illustrati nei cataloghi e nei depliant.

2. ESECUZIONE DEL CONTRATTO - SPEDIZIONE

Il termine di consegna non è da intendersi tassativo, ma puramente indicativo; esso decorre dall'accettazione dell'ordine ed è evidenziato secondo la settimana prevista. Gli eventuali ritardi non danno diritto al committente di annullare l'ordine, di rifiutare la merce o di pretendere il risarcimento danni.

Resta esclusa la responsabilità di **Europair** per mancata consegna dovuta a cause di forza maggiore quali scioperi, interruzioni dei trasporti, calamità naturali, guerre, embargo ed ogni evento che sia ragionevolmente fuori di possibilità di controllo.

Salvo diversi accordi, la fornitura della merce è da intendersi franco ns. magazzino di Cormano (MI), con l'addebito delle spese di trasporto in fattura nel caso di richiesta di resa franco destino. Eventuali imballi particolari, richiesti dall'acquirente o che si rendessero necessari, saranno fatturati secondo quanto accordato con l'acquirente.

La firma del trasportatore sul DDT identifica che la merce è stata correttamente caricata ed è partita in perfetto stato. In caso di danni durante il trasporto con addebito in fattura, il destinatario è tenuto ad apporre una specifica riserva del danno visionato. Le riserve generiche (es. accettazione merce con riserva di controllo) non hanno nessuna validità ai fini del riconoscimento del danno. La mancanza di riserva specifica sul DDT di consegna rende automaticamente decaduta ogni pretesa di risarcimento danni o di sostituzione merce.

È compito dell'acquirente verificare l'integrità della merce spedita e, se ne ve ne sia motivo, di contestare ammannchi. Nel caso in cui siano riscontrate anomalie nella merce, l'acquirente dovrà metterci nelle condizioni di verificare l'esistenza di difetti e di porvi rimedio, senza intervenire sulla merce direttamente o per mezzo di terzi.

Eventuali reclami riguardanti difetti apparenti della merce dovranno essere formulati per iscritto, a pena di decadenza, entro otto giorni dall'avvenuta consegna.

3. PREZZI E FATTURAZIONE

I prezzi indicati nei listini sono suscettibili di modifiche senza nessun preavviso. Le date di validità sono fornite a titolo puramente informativo e possono subire variazioni in caso di notevoli oscillazioni delle divise e dei prezzi delle materie prime.

Le ns. merci sono sempre fatturate al prezzo in vigore al momento della consegna.

Salvo diversi accordi, le nostre offerte hanno una validità di un mese decorrente dalla loro emissione, tale validità è da intendersi in termini di contenuto e di prezzi.

I prezzi sono espressi in Euro al netto di I.V.A., spese di imballaggio fuori standard e trasporto.

4. PAGAMENTO

Il pagamento della prima fornitura deve avvenire alla conferma d'ordine.

Eventuali reclami e contestazioni riguardanti la merce fornita non dispensano l'acquirente dal pagamento della fattura alla data di scadenza.

I pagamenti devono essere effettuati alla scadenza fissata esclusivamente alla ns. società, che è considerata ad ogni effetto di legge luogo d'adempimento del contratto. Il mancato pagamento della merce fornita alla scadenza dei termini, comporterà il diritto di **Europair** di:

- recedere unilateralmente dal contratto;
- richiedere la restituzione della merce, fatto comunque saldo il diritto della ns. società di richiedere il risarcimento danni;
- richiedere l'immediato pagamento di tutti i crediti per decadenza del beneficio del termine.

Il mancato rispetto di una sola scadenza ci autorizza a richiedere il pagamento di tutte le somme dovute, anche se non ancora giunte a scadenza, e fa decadere ogni altro accordo preso in precedenza anche in assenza di una diffida.

L'acquirente dovrà rimborsare tutte le spese causate dal recupero del contenzioso comprese le spese legali e gli eventuali onorari dell'ufficiale giudiziario.

In nessun caso i pagamenti possono essere sospesi e l'acquirente non ha diritto ad eventuali compensazioni senza il nostro preventivo accordo scritto.

I pagamenti parziali andranno a copertura dei crediti più recenti e poi delle somme dovute in precedenza.

Il ritardo nei pagamenti dà diritto a **Europair** di addebitare al committente gli interessi legali di legge.

Il mancato pagamento autorizza comunque **Europair** a sospendere o annullare tutti gli ordini in corso, fatto salvo il ns. diritto al risarcimento danni.

L'annullamento dell'ordine o il mancato ritiro di merce appositamente prodotta su commissione ci autorizza a trattenere eventuali somme corrisposte a titolo di acconto a parziale copertura delle spese sostenute. Qualora l'acconto non fosse previsto dalle condizioni di pagamento dell'ordine, tale importo verrà quantificato e fatturato.

4.1 - GARANZIE DI PAGAMENTO

Un eventuale deterioramento della situazione finanziaria dell'acquirente che possa pregiudicare il normale rispetto delle scadenze contrattuali in relazione ai pagamenti, potrà giustificare la richiesta di garanzie o di un pagamento anticipato, prima dell'esecuzione degli ordini ricevuti. Lo stesso avviene in caso di modifiche della capacità finanziaria del debitore, della sua attività, della formula giuridica della società o in caso di cessione dell'azienda.

Nel caso in cui queste garanzie non siano fornite o risultino insufficienti, la ns. società ha il diritto di recedere dal contratto.

5. RISERVATO DOMINIO

La merce da noi fornita rimane di ns. proprietà fino al pagamento effettivo dell'importo complessivo dovuto dall'acquirente. Il mancato pagamento di una sola scadenza dà diritto alla ns. società di rivendicare la merce fornita.

6. RECLAMI E GARANZIE

La garanzia è valida limitatamente alla merce da noi fornita, ed esiste solo nei confronti del committente e non verso i terzi cui la merce potrebbe essere ceduta.

Il committente deve comunicare per iscritto eventuali reclami o contestazioni riguardanti la merce fornita, entro otto giorni dal ricevimento della stessa. La garanzia ha una validità di 12 mesi, salvo diversamente concordato.

La durata della garanzia decorre dalla data di consegna della merce e la riparazione, la modifica o la sostituzione di una parte durante il periodo di garanzia non comporta il prolungamento della durata della stessa.

La ns. garanzia si riferisce alle caratteristiche e alle prestazioni del materiale come indicate nell'ordine del committente, ed è limitata alla riparazione o alla sostituzione parziale o totale del materiale difettoso.

Questa garanzia non si applica in caso di normale usura del materiale, di montaggio non eseguito a regola d'arte, di collegamento errato alla rete di alimentazione, di rotture causate dal trasporto, o a seguito di una modifica apportata dall'acquirente, di uno stoccaggio in condizioni non idonee, di deterioramenti dovuti ad errori di scelta, utilizzo, raccordo o manutenzione. La ns. società si riserva il diritto di apportare modifiche dimensionali e di fabbricazione ai nostri materiali senza alcun preavviso.

La ns. responsabilità è strettamente limitata agli obblighi sopraindicati e non comprende il pagamento di risarcimenti.

Le spese di trasporto, comprese quelle di ritorno, sono a carico dell'acquirente.

7. RESI DI MERCE

I materiali che hanno caratteristiche diverse dal ns. standard, non saranno ripresi né sostituiti. I resi di materiali standard devono essere preventivamente autorizzati, e solo dopo verifica qualitativa e quantitativa della merce resa, la ns. società provvederà ad emettere relativa nota d'accredito, previa svalutazione del 20% del valore della merce a copertura delle spese amministrative di controllo. La merce resa sarà accettata solo a condizione che conservi ancora l'imballo originale e che sia commerciabile.

Le spese di trasporto relative a resi di merce sono a carico dell'acquirente.

8. FORO COMPETENTE

Per qualsivoglia controversia sull'esecuzione e/o interpretazione delle presenti condizioni generali di contratto è competente il Foro di Milano.

