Air Distribution

Selection Guides p.184 - 185 p.206 p.218 - 219

Selection Tables from p.279

- Well thought out products for high performance and sound attenuation in ductworks.
- The assurance of having a reliable supply in high quality steel (galvanisation in compliance with standard EN 10142).
- Fully controlled manufacture in compliance with standards EN 1506 (dimensions) and EN 12237 (airtight sealing and resistance).

Pressure Independent VAV boxes:

- Volume flow rate controlled by:
  - duct static pressure,
  - zone temperature control signal.
- Lower system energy consumption cost.
- Lower set-up and installation cost.

Constant Airflow Regulators (CAR):

- Airflow automatically balanced at pre-set constant levels.
- Air exhaust and air supply.
- Horizontal or vertical.

A complete range of grilles and diffusers for commercial and residential buildings designed:
- for full control of air diffusion,
- to fulfill thermal, airflow and acoustical comfort.

Airflow control

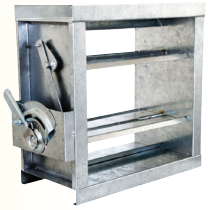
Pressure Independent VAV Boxes

Basic unit
VA 110
p. 187

Extended casing
VA 120
p. 187

Volume Control Dampers

Rectangular VCD,
aerofoil blades - SU 651 Q
p. 199



Rectangular VCD, single skin blades
SU 650 Q
p. 200

Non Return Dampers

Duct mounted
SG 661
p. 204

Wall mounted
SG 663
p. 204

Sound Attenuation

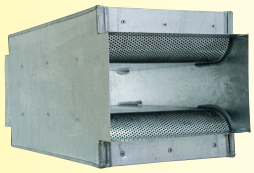
Rectangular Sound Attenuators

SA 20
p. 210

Bend Type Attenuators

Vertical and horizontal
SA 20V
p. 211

Cross Talk Attenuators

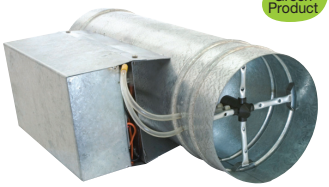


SCS
p. 214

Acoustic Louvres

SU 631
p. 215

aldes
euroregister



Circular
VA 130
p. 190

By-Pass VAV Boxes

VA 200
p. 194

Constant Airflow Regulators

MR
p. 196

Circular VCD
SR 653 Q
p. 201

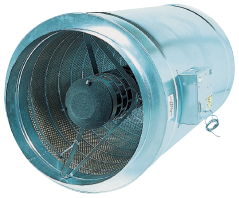
Splitter dampers
SU 655
p. 202

Pressure Relief Dampers

Wall mounted
SG 662
p. 204

Circular Sound Attenuators

Standard
SAR 100
p. 212



Active
ACTA
p. 213

Air Diffusion

Swirl Diffusers

Adjustable circular swirl diffusers
p. 223

Aesthetic swirl diffusers for ceiling tiles
p. 224

Adjustable square swirl diffusers
p. 226

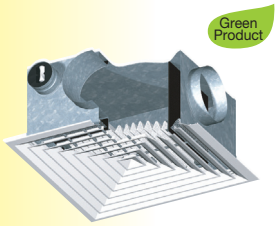
Adjustable square swirl diffusers
p. 227

Fixed square swirl diffusers
p. 228

Fixed circular swirl diffusers for ceiling tiles
p. 229

Fixed circular swirl diffusers
p. 230

Special Diffusers



Standard Combined Solution
p. 231

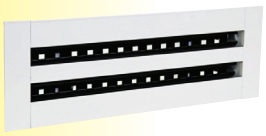
Multi-slot Combined Solution
p. 232

Adjustable diffusers with rotating nozzles
p. 233

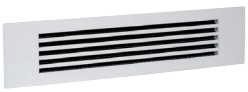
Jet diffusers
p. 234

Jet diffusers
p. 236

Slot Diffusers



Adjustable aluminium slot diffusers
p. 237



Adjustable aluminium slot diffusers
p. 238

Fixed high airflow level aluminium slot diffusers
p. 240

Ceiling Diffusers

Multi-slot square diffusers
p. 241

Fixed square diffusers for ceiling tiles
p. 242

Square, removable, core diffusers
p. 243

Fixed circular diffusers for ceiling tiles
p. 245

Fixed circular diffusers
p. 246

Adjustable circular diffusers for ceiling tiles
p. 247

Adjustable circular diffusers
p. 248

Adjustable square diffusers for ceiling tiles
p. 249

Square diffusers with perforated sheet
p. 250

Small & Constant Exhaust Grilles

Self-balanced grilles
p. 251

Adjustable core grilles
p. 253

Small plastic grilles
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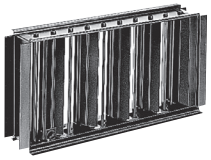
Small plastic grilles
p. 255

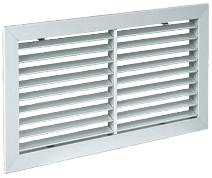
Small fixed metal grilles
p. 256

Indoor Grilles

Single & double deflection grilles
p. 258



Indoor grilles accessories
p. 260



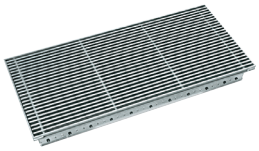
Fixed blade grilles
p. 261

Fixed mesh grilles
p. 262

Grilles with fixed aluminium linear bars
p. 263

Fixed blade grilles with filter
p. 265

Fixed air transfer blade grilles
p. 266

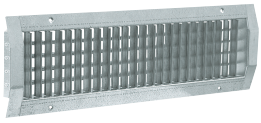


Grilles with fixed linear bars for floor mounting
p. 267

Pressed grilles
p. 269

Fixed blade grilles for ceiling tiles
p. 270

Fixed blade grilles with filter for ceiling tiles
p. 271



Grilles for circular ducts
p. 272

Louvres

Acoustic louvres SU 631
p. 273

Sand trap louvres SG 644
p. 274

Fresh air louvres AG 638
p. 275

Fresh air louvres Robust construction - AG 639
p. 276

Small outdoor grilles AWA 251
p. 278

Selection Guide

Category	Model	Description	Sound attenuation	Comfort	Energy saving	AHU
Variable Air Volume Boxes	Pressure independent VAV boxes (Green Product) 	➡ VA 110 / VA 120 / VA 130 • Lower system energy consumption cost • Lower set-up and installation cost • Greater flexibility with regulation resulting in occupancy controlled comfort • Volume flow rate controlled by: - duct static pressure - zone temperature control signal	✔	✔✔✔	✔✔✔	✔
	By-pass VAV boxes (Green Product) 	➡ VA 200 • Controls volume flow rate in response to zone temperature control signal • Excess air inside the VAV diverted through by-pass damper into ceiling plenum or return duct	✔	✔✔		✔

Category	Model	Description	Comfort	Energy saving	Ventilation	AHU
Constant Airflow Regulators	Fixed airflow (Green Product) 	➡ MR • Airflow automatically balanced at pre-set constant levels	✔✔	✔✔	✔✔	✔

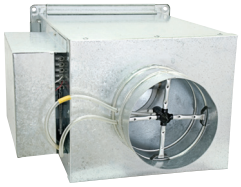
Selection Guide

Category	Model	Description	Control	Comfort	Ventilation	AHU
Volume Control Dampers	Rectangular volume control damper 	➡ SU 650 Q / SU 651 Q • Single skin blade (SU650) or aerofoil blade (SU651)	Manual or Motorised	✔✔	✔	✔✔
	Circular volume control damper 	➡ SR 653 Q • Single skin blade	Manual or Motorised	✔✔	✔	✔✔

Category	Model	Description	Control	Comfort	Ventilation	AHU
Non-Return & Pressure Relief Dampers	Duct/wall mounted non-return damper 	➡ SG 661 / SG 663 • Air intake or exhaust • Blades remain closed to prevent reverse airflow		✔	✔✔	✔✔
	Wall mounted pressure relief damper 	➡ SG 662 • Air exhaust • Blades open to relief excess pressure • Counter weight	Motorised version available	✔	✔✔	✔

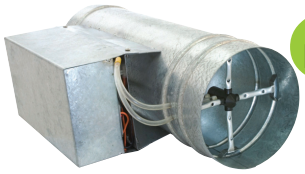
Pressure Independent VAV Boxes

Presentation of pressure independent VAV boxes



VA 110
Basic unit

VA 120
Extended box



VA 130
Basic unit

Green Product

Advantages

- Volume flow rate controlled by:
  - zone temperature control signal,
  - duct static pressure.
- Lower system energy consumption cost.
- Lower set up and installation cost.

APPLICATION

- The extensive range of VAV terminals manufactured by Aldes Euroregister have been designed specifically to accommodate the rigrous criteria of today's modern buildings.
- The equipment selection offers outstanding advantages in terms of service, flexibility reliability and product performance which are equally recognised by the energy conscious designer and provides a tangible system which is capable of meeting the most demanding design applications.

DESCRIPTION

- Aldes Euroregister VAV boxes are designed to control the volume flow rate of the conditioned air in an occupied zone in response to a duct static pressure or zone temperature control signal.
- These VAV deliver variable / constant air volume (CAV) as designed by providing excellent performance and temperature control for central air distribution with unlimited zoning, combined with, by passing with Variable Frequency Drive (VFD).
- Extensive range of 7 sizes, covering volume flow range from 55-5700 m³/h. Accurate control with low leakage damper achieving proportional control between volume flow range 15 to 100% depending on controller used.

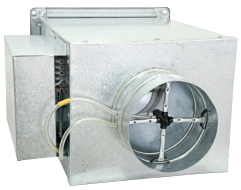
AVAILABLE OPTIONS

- Extended terminal box construction for additional attenuation.
- Ancillary connecting flange. Multi-octopus outlet plenum chamber.
- Direct digital controllers.
- Perforated sheet over acoustic lining.

OPERATION PRINCIPLE

- Model type VA100 features a unique cross flow sensor located in the upstream section of the valve chamber. The sensing points collectively average the primary air velocity pressure across the entire inlet area.
- Requirement is achieved through a differential pressure sensing system which regulates the damper independent of static pressure developed in the supply duct. Air volume is achieved in the limit to Vmin to Vmax by directing required volume of air in direct response to temprature signals for modulating thermostat installed in the room. This grid measures the differential pressure at the inlet and transfer to the actuator through a controller to adjust the damper in order to meet required air flow within the set values.
- Aldes Euroregister averaging differential cross flow sensor integrates and monitors the pressure difference and allows precise volume flow control, regardless of adverse upstream conditions and ductworks configuration. The accuracy of the sensor is however subject to the upstream condition of the ductwork.
- Ideally the inlet condition to the sensor should be in the region of 4 x diameter of straight ductwork, to achieve accurate flow readings. The terminal housing is constructed from high quality heavy gauge galvanized mild steel which is cladded internally with 25 mm thick high density insulation. The face of the insulation is lined to prevent degradation and air erosion. The complete assembly is secured to the structure by means of hanger brackets for drop rod fixing by others.

VAV boxes + Twisted



VA 110
Basic unit

Twisted

Green Product

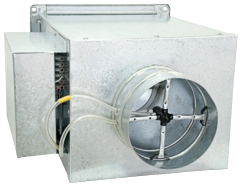
TWISTED + VAV = Your Best Comfort Solution

DESCRIPTION

- The association of a Twisted swirl diffuser with a wide airflow capacity (150 to 650 m/h) and a pressure independant VAV box is the best solution to ensure comfort in any variable airflow system.
- For more details, please consult us.

Pressure Independent VAV Boxes

Basic units and extended casings



VA 110
Basic unit

VA 120
Extended box comprising of basic unit with attenuator section

Green Product

TWISTED + VAV = Your Best Comfort Solution

Advantages

- Volume flow rate controlled by:
  - zone temperature control signal
  - duct static pressure.
- Lower system energy consumption cost.
- Lower set up and installation cost.

DESCRIPTION

- Please, see page 186.

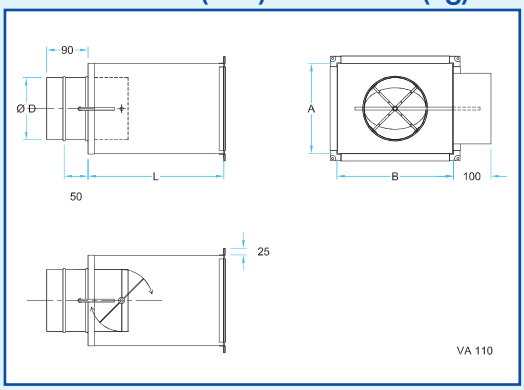
CONSTRUCTION

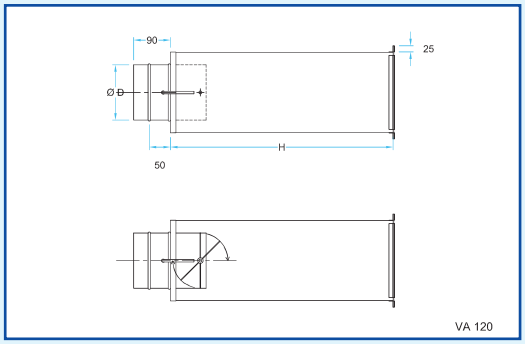
- VA 110 and VA 120 units manufactured from 20 ga. galvanized sheet steel casing.
- The blade assembly comprised of single skin 22 ga. galvanized sheet steel with a flexible gasket to assure low leakage.
- All VA units are lined by 1/2" thick sound liner.
- All VA units are equipped with actuator which accepts as standard 0-10 or 2-10 V signals from thermostat units.
- All units can be supplied with secondary attenuators to achieve required noise levels.
- Controls are calibrated and tested by Aldes.
- Units are provided with flow sensor grid at the inlet of the unit.

RANGE

Description	Code
Pressure independent VAV: VA 110	
VA 110 - 12	
VA 110 - 14	
VA 110 - 16	
VA 110 - 20	
VA 110 - 25	
VA 110 - 31	
VA 110 - 40	
Pressure independent VAV: VA 120	
VA 120 - 12	
VA 120 - 14	
VA 120 - 16	
VA 120 - 20	
VA 120 - 25	
VA 120 - 31	
VA 120 - 40	

DIMENSIONS (mm) - WEIGHT (kg)



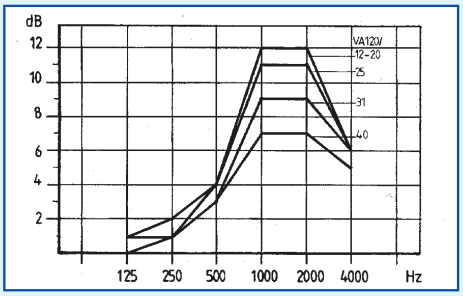


VA	A	B	Ø D	H	L	V	W	Qnom
12	210	310	123	1000	400	0.056	7	540
14	210	310	138	1000	400	0.056	7	700
16	260	310	158	1000	400	0.066	7	920
20	260	310	198	1000	400	0.066	7.5	1460
25	320	360	248	1000	400	0.086	8.5	2300
31	385	410	313	1000	500	0.139	12	3700
40	460	615	398	1000	500	0.222	16	5980

- V (m3) is the overall volume of the basic unit (VA 110).
- W (kg) is the weight of the basic unit (VA 110).
- Qnom is the nominal airflow rate in m^3/h.

EXTENDED CASING

The correction values highlighted in the adjacent graph should be deducted from the discharge sound power level characteristics indicated in the VA 110 discharge sound power level data for the introduction of the attenuation within the extended box (VA 120).



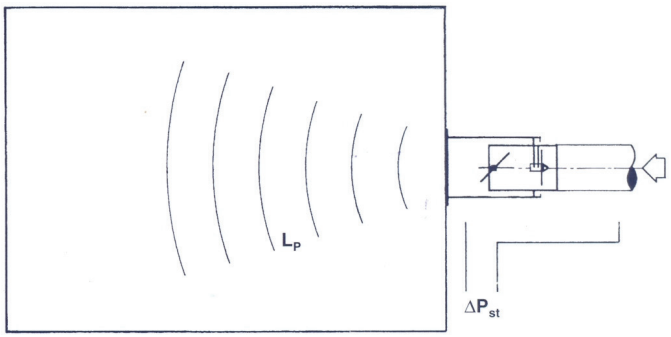
Pressure Independent VAV Boxes

Application / performance data

DISCHARGE SOUND POWER LEVEL - VA 110

VA	Q L/s	Q m³/h	Min Pa	125 Pa ΔPst 125	250	500	1000	2000	4000	250 Pa ΔPst 125	250	500	1000	2000	4000	500 Pa ΔPst 125	250	500	1000	2000	4000	1000 Pa ΔPst 125	250	500	1000	2000	4000
12	15	54	-	53	47	41	33	32	29	56	52	47	40	40	37	58	56	53	47	47	45	61	60	59	54	54	53
	35	125	-	54	48	42	34	33	29	57	53	48	41	40	37	59	57	54	48	47	45	62	61	60	55	54	53
	69	250	9	57	52	45	36	35	30	60	56	51	43	42	38	62	60	57	50	49	46	65	64	63	57	56	54
	106	380	22	62	58	50	40	38	31	65	61	56	47	45	39	67	65	62	54	52	47	70	69	68	61	59	56
	150	540	44	69	66	57	45	43	33	73	69	64	52	50	41	75	73	70	61	57	49	78	77	78	68	64	59
14	19	69	-	53	49	41	33	32	29	57	53	48	40	39	37	60	57	54	47	47	45	62	61	60	54	54	53
	42	150	-	54	50	42	33	33	29	57	53	48	41	40	38	60	57	54	48	47	46	62	62	60	55	54	54
	90	325	10	57	53	45	36	35	30	60	56	51	43	42	38	63	60	57	50	48	46	65	64	63	57	55	54
	139	500	24	61	57	49	39	37	31	64	60	55	46	44	39	66	64	61	53	51	47	69	67	67	60	58	55
	192	690	46	66	62	55	44	41	33	64	60	55	46	44	39	72	69	66	57	55	49	74	73	72	64	61	57
16	26	92	-	46	41	33	26	28	27	48	45	39	33	35	35	51	49	45	41	43	43	54	52	51	48	50	51
	63	225	-	47	42	34	27	29	27	49	46	40	34	36	35	52	50	46	42	43	43	55	53	52	49	50	51
	104	375	7	50	45	37	30	31	28	52	49	43	36	38	36	55	53	49	44	44	44	58	56	55	51	51	52
	194	700	25	59	55	47	37	36	31	61	58	52	44	43	39	63	61	58	51	49	46	66	64	64	58	56	54
	256	920	43	66	62	55	44	40	33	69	66	61	50	47	41	72	69	66	57	54	49	74	72	72	64	61	57
20	42	150	-	58	50	40	38	37	33	61	56	48	44	42	41	64	61	55	49	48	46	67	67	61	54	54	54
	106	380	-	59	51	41	39	38	34	62	57	49	47	43	41	65	62	56	50	49	47	68	68	62	55	55	54
	208	750	7	61	54	44	43	40	36	64	59	51	47	45	43	67	64	58	52	51	49	70	70	64	57	57	56
	347	1250	20	66	60	50	49	44	41	69	65	67	54	49	47	72	70	64	59	55	53	75	75	70	64	61	60
	417	1500	30	69	63	53	52	46	43	72	68	60	58	52	49	75	74	68	63	58	56	78	78	74	68	64	62
25	67	240	-	58	54	46	44	45	38	62	61	56	53	52	46	65	67	67	62	59	54	69	74	77	70	67	62
	139	500	-	58	54	46	44	46	38	62	61	56	53	53	47	65	67	67	62	60	55	69	74	77	70	67	63
	278	1000	-	60	54	46	44	46	39	64	61	56	53	53	47	67	67	67	62	60	55	71	74	77	70	67	63
	444	1600	-	63	55	45	45	48	41	66	62	56	54	55	49	70	68	66	63	62	57	73	75	77	71	69	65
	667	2400	-	67	57	44	47	50	44	71	63	55	56	57	52	75	70	65	64	64	60	78	77	76	73	71	68
31	103	370	-	57	50	46	43	41	37	61	58	53	50	48	45	66	64	60	57	55	52	70	70	67	64	62	60
	250	900	-	58	51	47	43	41	37	62	58	53	50	48	45	66	65	60	58	56	53	70	70	67	65	63	61
	500	1800	-	60	53	49	45	43	39	64	60	55	52	50	47	68	66	62	59	57	54	72	72	69	66	64	62
	750	2700	-	64	55	51	47	45	41	68	62	57	54	52	49	72	67	64	60	58	55	76	74	71	67	65	63
	1028	3700	-	69	58	54	49	47	43	72	64	60	56	54	51	76	70	67	63	61	58	80	77	74	70	68	66
40	161	580	-	51	38	45	46	45	43	57	47	51	52	52	49	61	54	58	59	59	56	65	62	64	65	66	63
	389	1400	-	53	40	46	46	45	44	58	48	52	52	53	50	62	55	58	60	60	57	66	63	64	66	67	64
	778	2800	-	57	43	49	48	47	45	61	51	55	54	54	51	65	58	60	61	61	58	69	66	66	67	68	65
	1278	4600	-	64	51	54	51	50	47	69	58	59	57	56	53	72	65	65	64	63	60	76	73	71	70	70	67
	1611	5800	-	70	56	58	54	52	49	75	63	63	60	59	56	79	71	69	67	66	62	83	79	75	73	73	69

- ΔP_{st} is the difference in static pressure from inlet to discharge
- (-) ΔP_s < 5 Pa
- Minimum ΔP_s is the lowest intet-to-discharge static pressure difference (damper wide open)
- End discharge sound power is the noise emitted from the unit discharge into the downstream duct
- Sound power levels are in decibels, re 10^{-12} watts.



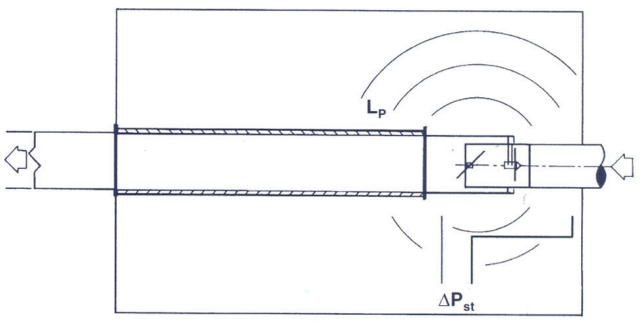
Pressure Independent VAV Boxes

Application / performance data

RADIATED SOUND POWER LEVEL - VA 110

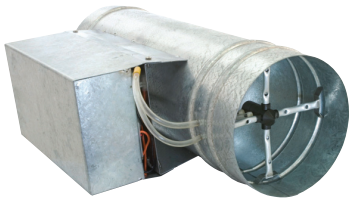
VA	Q L/s	Q m³/h	Min Pa	125 Pa ΔPst 125	250	500	1000	2000	4000	250 Pa ΔPst 125	250	500	1000	2000	4000	500 Pa ΔPst 125	250	500	1000	2000	4000	1000 Pa ΔPst 125	250	500	1000	2000	4000
12	15	54	-	47	36	26	20	20	14	51	41	34	27	25	19	53	45	41	34	30	26	55	49	49	41	35	32
	35	125	-	48	37	27	20	20	15	52	41	35	28	26	20	54	46	42	35	31	26	56	50	50	42	36	32
	69	250	9	51	40	29	22	22	16	54	44	37	29	27	21	56	48	44	36	32	27	58	52	52	43	37	33
	106	380	22	55	45	33	24	24	18	58	48	41	31	29	23	60	52	48	38	34	29	62	56	56	45	39	35
	150	540	44	62	52	38	28	28	21	63	55	46	35	33	27	66	59	55	42	38	32	69	63	62	49	43	38
14	19	69	-	49	37	27	21	20	15	51	41	34	27	25	20	53	45	42	34	30	26	56	49	51	41	35	32
	42	150	-	49	38	28	21	20	15	52	41	35	27	25	20	54	46	43	34	30	26	57	50	51	41	35	33
	90	325	10	52	41	30	22	21	16	54	44	37	28	26	21	56	48	45	35	31	27	59	52	52	42	36	33
	139	500	24	55	45	33	25	24	18	57	47	40	31	29	23	59	51	48	38	33	29	31	55	55	44	38	34
	192	690	46	59	50	37	28	27	19	61	52	44	34	31	25	63	56	52	41	36	31	66	60	59	47	41	36
16	26	92	-	42	30	20	16	16	12	45	34	28	23	22	18	47	38	36	30	27	23	49	42	44	37	32	29
	63	225	-	43	31	21	17	17	12	46	35	29	23	22	18	48	39	37	30	27	23	50	43	45	37	32	29
	104	375	7	45	34	23	19	19	13	48	37	31	24	23	19	50	41	39	31	28	24	52	45	47	38	33	30
	194	700	25	53	42	31	24	23	16	55	45	38	29	28	22	57	49	45	36	32	27	59	53	53	43	37	33
	256	920	43	59	49	37	28	27	19	62	52	44	33	31	25	63	56	51	40	36	31	65	60	59	47	41	37
20	42	150	-	50	41	29	21	20	17	52	46	37	27	25	21	55	51	45	35	31	25	57	56	54	40	34	29
	106	380	-	51	42	30	22	21	18	53	47	38	28	26	22	56	52	46	35	31	26	58	57	55	41	35	30
	208	750	7	53	44	32	24	23	20	55	49	40	30	28	24	58	54	48	37	33	28	60	59	57	43	37	32
	347	1250	20	58	49	37	29	28	25	60	53	45	34	32	29	63	58	53	41	37	33	66	63	61	47	41	37
	417	1500	30	61	52	40	31	30	28	63	56	48	37	35	32	66	61	56	43	39	36	70	66	64	50	44	40
25	67	240	-	48	43	34	32	24	17	50	49	40	36	29	22	53	55	47	40	35	27	55	61	53	44	40	33
	139	500	-	49	44	34	32	24	17	51	50	40	36	29	22	53	56	47	40	35	27	55	61	54	45	40	33
	278	1000	-	51	44	36	34	26	19	53	50	41	38	31	24	55	56	48	42	37	29	57	61	54	45	43	35
	444	1600	-	55	46	38	36	29	21	57	52	43	40	33	26	58	58	50	44	39	31	60	63	56	47	44	37
	667	2400	-	61	48	41	40	33	25	63	54	47	44	38	30	65	60	54	48	44	35	67	65	60	51	49	41
31	103	370	-	51	42	34	28	23	20	55	48	42	34	31	28	59	54	48	40	38	35	64	62	55	47	44	41
	250	900	-	51	43	35	28	24	21	56	49	42	35	32	28	60	55	48	41	39	36	64	62	56	47	45	41
	500	1800	-	53	44	37	30	26	23	57	50	44	36	33	30	62	56	50	43	41	37	66	63	57	49	46	43
	750	2700	-	56	45	39	33	30	25	60	51	46	39	36	32	64	57	52	45	43	38	68	64	58	51	49	45
	1028	3700	-	60	47	42	37	34	28	64	53	48	43	40	34	68	60	55	49	47	41	72	66	61	55	54	48
40	161	580	-	45	39	35	30	27	26	49	46	42	36	34	33	54	52	48	42	41	40	58	58	54	48	48	47
	389	1400	-	46	40	35	30	27	26	50	46	42	36	35	33	55	52	48	42	42	40	59	58	54	48	49	47
	778	2800	-	49	43	37	32	29	26	53	48	44	38	36	33	58	54	50	44	43	40	62	60	56	50	50	47
	1278	4600	-	55	47	41	36	32	28	59	53	48	42	38	35	64	59	54	47	45	42	68	64	60	53	52	49
	1611	5800	-	60	50	44	39	34	29	64	56	51	44	41	36	69	62	57	50	48	43	73	68	63	56	55	50

- ΔP_{st} is the difference in static pressure from inlet to discharge
- (-) ΔP_s < 5 Pa
- Minimum ΔP_s is the lowest inlet-to-discharge static pressure difference (damper wide open)
- Radiated sound power is the noise transmitted through the unit casing walls
- Sound power levels are in decibels, re 10^{-12} watts.



Pressure Independent VAV Boxes

Circular pressure independent VAV boxes



Green Product

TWISTED
+
VAV
=
Your Best
Comfort Solution

Advantages

- Volume flow rate controlled by:
  - zone temperature control signal,
  - duct static pressure.
- Lower system energy consumption cost.
- Lower set up and installation cost.

VA 130

DESCRIPTION

- Please, see page 186.

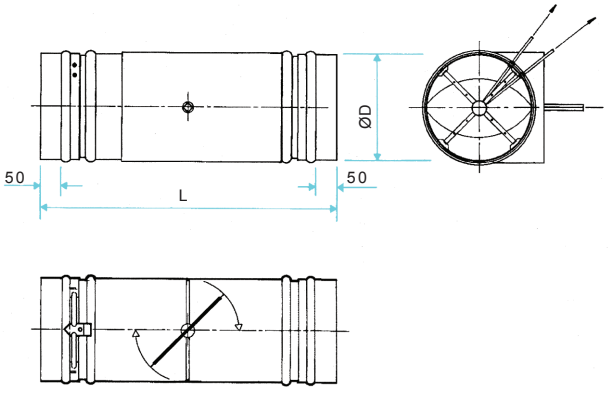
CONSTRUCTION

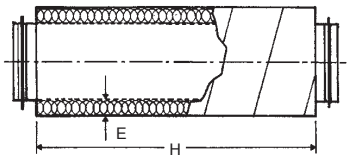
- Low leakage robust single blade damper housed within a circular casing.
- Damper rotation via a steel shaft revolving in a self-lubricating bearing providing an unequalled low friction damper operation. The damper interface within the chamber is sealed with a flexible gasket located on the damper blade.
- Unique cross flow sensor located in the upstream section of the VAV casing. The sensing points collectively average the primary air velocity pressure across the entire inlet area. The averaging differential cross flow sensor integrates and monitors the pressure to achieve accurate flow reading.
- Various, analog and digital controls can be factory fitted (optional extra) to suit the specific design criteria sound attenuators (SAR) shown adjacent available in various dimensions to meet the required duct borne sound levels.

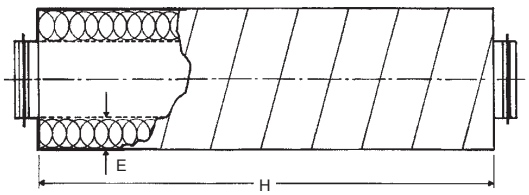
RANGE

Description	Code
Pressure independent VAV	
VA 130 - 12	
VA 130 - 14	
VA 130 - 16	
VA 130 - 20	
VA 130 - 25	
VA 130 - 31	
VA 130 - 40	

DIMENSIONS (mm) - WEIGHT (kg)







VA	Ø D	E	H	L	V	W	Qnom
12	123	100	300/600/900	500	0.01	3.5	540
14	138	100	300/600/900	500	0.02	3.5	700
16	158	100	300/600/900	500	0.02	4.5	920
20	198	100	300/600/900	500	0.03	5.0	1460
25	248	100	600/900/1200	500	0.05	6.0	2300
31	313	100	600/900/1200	600	0.09	7.0	3700
40	393	100	900/1200	600	0.14	10.0	5980

- V (m3) is the overall volume of the basic unit.
- W(kg) is the weight of the basic unit.
- Qnom is the nominal airflow rate in m^3/h.

Pressure Independent VAV Boxes

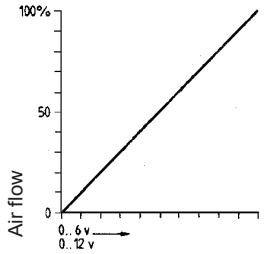
Accessories

ELECTRIC AND ELECTRONIC CONTROLS

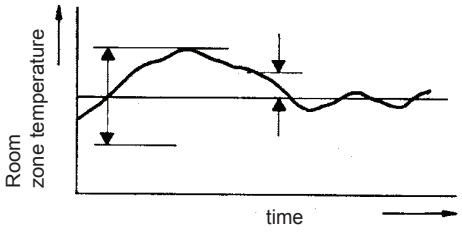
- Electronic controls use line voltage of 220 volts alternating current (A/C) or low voltage 24 volts, and are two position devices. In most cases electronic controls are low-voltage, 24 volts A/C. Electronics controllers use electronics circuits to sense and transmit varying voltages for the proportional controlled devices Electronics controllers are proportional (P) and proportional plus integral (PI) mode controllers. The controls have ability to measure variable electronic input signals and to produce variable output signals.
- Analog signals express information in measurable increments that are continuously changing or modulating. An example is a thermostat expressing temperature by gradually rising and falling in proportion with the amount of heat increase is considered to be analog. The purpose of automatic control is to modulate the capacity of the VAV terminal unit to satisfy the cooling and heating requirements of a zone condition thus optimize energy and maximise occupant comfort.
- This type of control has traditionally been performed by pneumatic and electric control systems. A comparison between conventional and digital control systems is based on the criteria of system performance, cost, reliability, flexibility, maintainability ease of use and life cycle costs. It is easy to recognise that digital controls can perform complex control sequences far beyond the capabilities of single purpose controllers. Innovations in the design and manufacturer of DDC (Direct Digital Control) product have reduced the costs of these systems substantially, to the point where they can now complete on a first-cost basis. Automatic control is the ability of a system to self correct output signals from a variable device, such as room thermostat or the multipoint averaging velocity sensor. Example for three automatic controls are shown.
- Each condition are differentiated by their response rate to changes within the varaible parameter and the rate of accuracy in which they return to the desired condition. Controls can be factory calibrated and tested. Available Control Package by Belimo.

CONTROLS

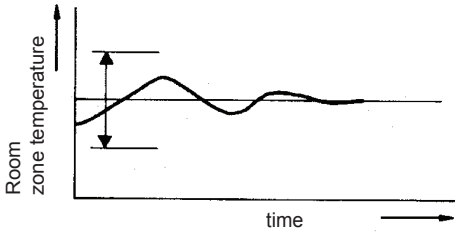
Propotional input/output
Vs air flow control



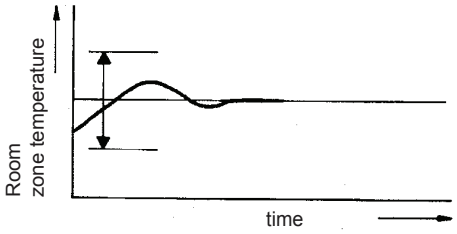
Propotional
control code (P)



Propotional
with integral
control code (PI)



Propotional
with integral
and derivative control
code (PID)



Pressure Independent VAV Boxes

Accessories

Circular electric coil

Advantages

- Heating the fresh air supply.
- Easy installation.
- Homogeneous heating throughout the cross section of the air passage.
- Manual and automatic temperature limiter.
- Duct connection with seals.

APPLICATION

- Airflow heating for commercial or industrial premises.
- Used as a fan accessory (VC, VEKITA+ or VIK type) or as a terminal coil on air diffusion terminal plenums (diffusers etc.).
- Circular connection on standard ducts.

DESCRIPTION

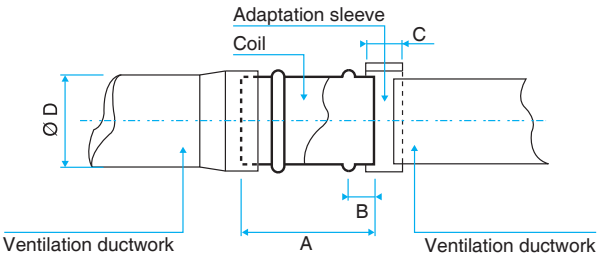
- Galvanised steel shell with seals.
- AISI 321 L stainless steel circuit.
- Single phase 230 V or three-phase 400 V power supply.
- Available with 1 or 3 shielded circuits (1C, 2C or 3C).
- IP 40 box.
- Temperature limiter automatic and manual (60°C/ 120°C up to Ø250, beyond that, 79°C/ 113°C).

RANGE R7

Description	Code
1-phase	
BCA Ø125 - 0.5 kW - 1C	11090750
BCA Ø125 - 1 kW - 2C	11090751
BCA Ø160 - 0.5 kW - 1C	11090752
BCA Ø160 - 1 kW - 2C	11090753
BCA Ø160 - 1.5 kW - 3C	11090754
BCA Ø200 - 1 kW - 1C	11090755
BCA Ø200 - 2 kW - 2C	11090756
BCA Ø200 - 3 kW - 3C	11090757
BCA Ø250 - 1 kW - 1C	11090758
BCA Ø250 - 2 kW - 2C	11090759
BCA Ø250 - 3 kW - 3C	11090760
BCA Ø250 - 4.5 kW - 3C	11090761
BCA Ø315 - 1 kW - 1C	11090762
BCA Ø315 - 2 kW - 1C	11090763
BCA Ø315 - 4 kW - 2C	11090764
BCA Ø315 - 6 kW - 3C	11090765
BCA Ø355 - 4 kW - 2C	11090767
BCA Ø355 - 6 kW - 3C	11090768
BCA Ø400 - 3 kW - 1C	11090770
BCA Ø400 - 6 kW - 2C	11090771
BCA Ø450 - 5 kW - 2C	11090772
BCA Ø450 - 9 kW - 3C	11090773
BCA Ø500 - 12 kW - 3C	11090775
BCA Ø630 - 18 kW - 3C	11090777
3-phase	
BCA Ø500 - 18 kW - 6C	11090780
BCA Ø500 - 30 kW - 6C	11090781
BCA Ø500 - 36 kW - 6C	11090782
BCA Ø630 - 18 kW - 3C	11090783
BCA Ø630 - 30 kW - 6C	11090784
BCA Ø630 - 36 kW - 6C	11090785

xC: x indicates the number of circuits.

DIMENSIONS - WEIGHT



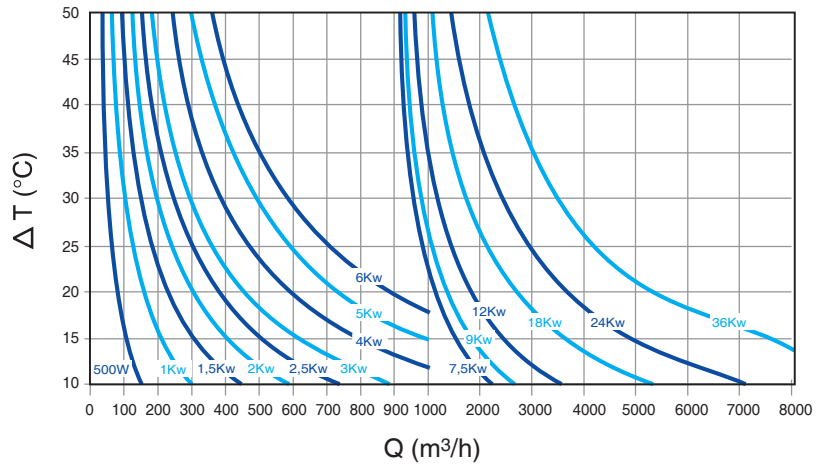
ØD (mm)	A (mm)	B (mm)	C (mm)	Weight (kg)
125	300	50	120	3.0 - 4.0
160	300	50	120	3.5 - 5.0
200	300	50	120	4.0 - 5.5
250	300	50	120	4.5 - 6.5
315	300	50	120	5.5 - 7.5
355	300	50	120	6.5 - 8.0
400	300	80	250	7.0 - 8.5
450	300	80	250	7.5 - 9.0
500	350	80	250	8.0 - 10.5
630	350	80	250	9.5 - 12.0

AIRFLOW DETAILS

Air speed in the duct (m/s)	Pressure loss ΔP (Pa)
2	2
4	8
6	18
8	32

SELECTION CURVES

ΔT = Temperature difference between the outgoing air and the incoming air, Q = airflow.



Pressure Independent VAV Boxes

Accessories

Circular regulated electric heating coil

Advantages

- Accurate incoming air temperature control.
- Easy installation.
- Autonomous.
- Manual and automatic temperature limiter.
- Low temperature sensor and room temperature thermostat.
- Duct connection with seals.

APPLICATION

- Regulated heating of the air supply in a CMEV ductwork.

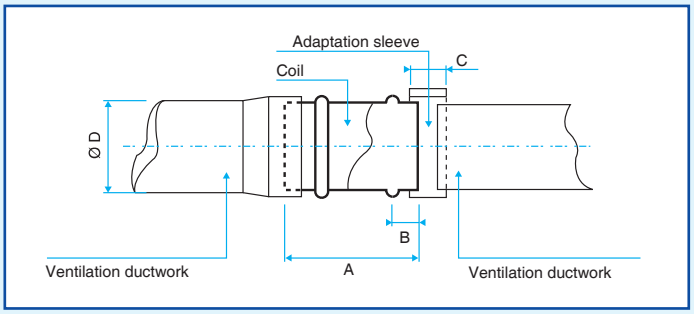
DESCRIPTION

- Galvanised steel shell with seals. IP40 Control Box - Adjusted using a potentiometer mounted in the box.
- Temperature limiter automatic and manual (60°C/ 120°C up to Ø 250 mm, beyond that, 79°C/ 113°C).
- 4 inputs, pressure switch for airflow control, duct sensor, ambient temperature thermostat and external control.

RANGE R7

Description	Code
1-phase	
BCA R Ø125 - 0.5 KW	11090800
BCA R Ø125 - 1 kW	11090801
BCA R Ø160 - 0.75 kW	11090802
BCA R Ø160 - 1.5 kW	11090803
BCA R Ø200 - 1.5 kW	11090804
BCA R Ø200 - 3 kW	11090805
BCA R Ø250 - 2.5 kW	11090806
BCA R Ø250 - 4.5 kW	11090807
BCA R Ø315 - 3 kW	11090808
BCA R Ø315 - 6 kW	11090809
BCA R Ø355 - 7.5 kW	11090810
BCA R Ø400 - 7.5 kW	11090811
3-phase	
BCA R Ø160 - 5 kW	11090820
BCA R Ø200 - 6 kW	11090821
BCA R Ø250 - 5 kW	11090822
BCA R Ø250 - 9 kW	11090823
BCA R Ø315 - 6 kW	11090824
BCA R Ø315 - 12 kW	11090825
BCA R Ø355 - 6 kW	11090826
BCA R Ø355 - 12 kW	11090827
BCA R Ø400 - 7.5 kW	11090828
BCA R Ø400 - 15 kW	11090829
BCA R Ø450 - 9 kW	11090830
BCA R Ø450 - 18 kW	11090831
BCA R Ø500 - 9 kW	11090832
BCA R Ø500 - 18 kW	11090833
BCA R Ø560 - 12 kW	11090834
BCA R Ø560 - 24 kW	11090835
BCA R Ø630 - 12 kW	11090836
BCA R Ø630 - 24 kW	11090837
BCA R Ø630 - 36 kW	11090838
Accessories	
Duct sensor +25/+90°C	11090900
Duct sensor -10/+35°C	11090902
Room temperature control thermostat	11090903
Weekly programmable thermostat 230 V	11090904
Battery operated weekly programmable thermostat	11090905
Airflow control kit (20-300 Pa)	11090901

DIMENSIONS - WEIGHT



Ø D (mm)	A (mm)	B (mm)	C (mm)	Weight (kg)
125	500	50	120	3.0 - 4.0
160	500	50	120	3.5 - 5.0
200	500	50	120	4.0 - 5.5
250	500	50	120	4.5 - 6.5
315	500	50	120	5.5 - 7.5
355	500	50	120	6.5 - 8.0
400	500	80	250	7.0 - 8.5
450	500	80	250	7.5 - 9.0
500	500	80	250	8.0 - 10.5
560	500	80	250	9.0 - 11.5
630	500	80	250	9.5 - 12.0

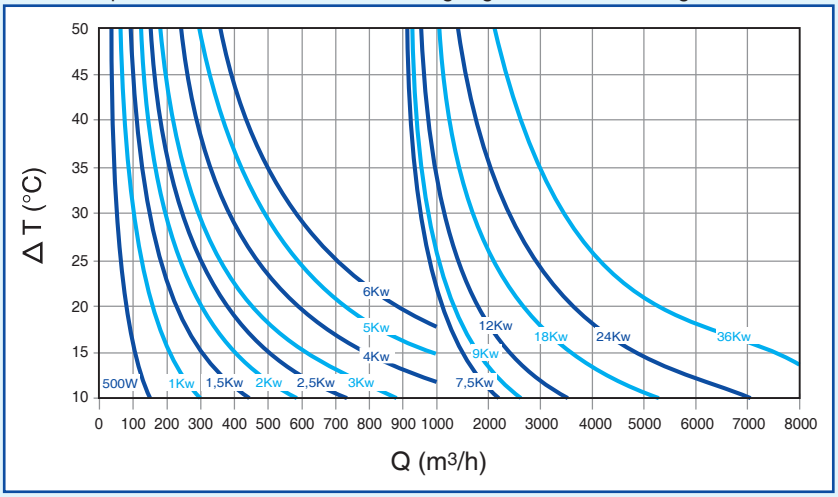
ELECTRICAL DETAILS

- M = 1-phase, T = 3-phase, I = Current.

BCA R	M 0.5 kW	M 0.75 kW	M 1 kW	M 1.5 kW	M 2.5 kW	M 3 kW	M 4.5 kW
I (A)	2.2	3.3	4.4	6.6	10.1	13.2	19.8
BCA R	**M 6 kW**	**M 7.5 kW**	**T 4.5 kw**	**T 5 kw**	**T 6 kw**	**T 7.5 kw**	**T 9 kw**
I (A)	26.4	33.0	6.5	7.2	8.7	10.8	13.0
BCA R	**T 12 kw**	**T 15 kw**	**T 18 kw**	**T 24 kw**	**T 36 kw**		
I (A)	17.4	21.6	26.0	34.8	52.2		

SELECTION CURVES

- ΔT = Temperature difference between the outgoing air and the incoming air, Q = airflow.



By-Pass VAV Boxes

By-pass VAV boxes

VA 200

TWISTED
+
VAV
=
Your Best
Comfort Solution

Advantages

- Provides airflow to induvidual zone while by-passing the unneeded air to ceiling plenum for recirculation.
- Delivers relatively constant air flow over the full range of by-pass damper positions.

DESCRIPTION

- Combination of the advantages of proven air handling concepts to give complete flexibility from a single zone source.
- Provides excellent temperature control and central air distribution with unlimited zoning.
- Simple solution to distribute and control airflow from constant speed FCUs or AHVs
- Multi-zone systems: supplying centralized air distribution from unwanted zones to demand related zones.
- Extensive range of 8 sizes covering volume flow range from up to 5440 m³/h.

CONSTRUCTION

- Manufactured from 20 ga. galvanized mild steel casing.
- Incorporate a 1/2" insulation of sound liner.
- Blades composed of 20 ga. galvanized mild steel with a flexible gasket to assure low leakage.
- Equipped with modulating actuator, which accepts 0-10 or 2-10 V signals from thermostats.
- Electronic thermostat provides accurate modulating - ON/OFF. Standard supply is modulating 0-10 V.
- In case lower noise levels are required, VAV units can be provided with integral sound attenuators to achieve lower noise level.

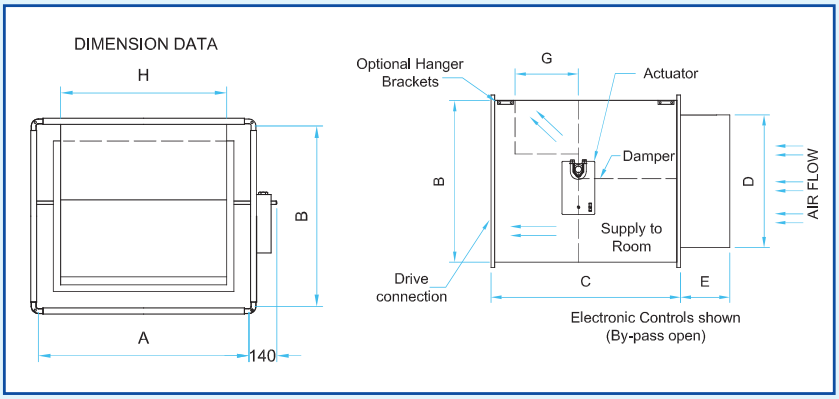
OPERATION PRINCIPLE

- A variable air volume, by-pass system consists of VAV units connected to the supply air duct of a constant air volume source. A constant air volume of conditioned air is supplied to each VAV unit. The primary damper modulates in response to a zone thermostat demand, to vary the amount of combined air delivered to the occupied to the zone. Damper modulation will range from full shut off to full open position by supplying variable air volume or to a minimum air volume to the conditioned zone.
- As the primary damper modulates in response to room thermostat demand and once it is satisfied to reduce the air to occupied zone, the excess air is diverted through the secondary by-pass damper into ceiling plenum or ducted return.

RANGE

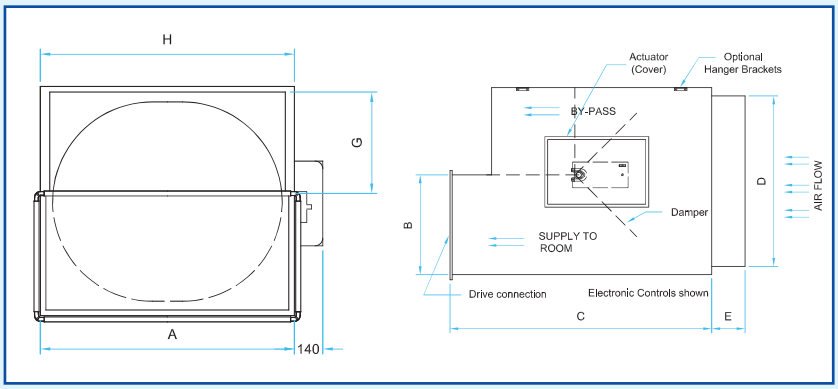
Description	Code
By-Pass VAV	
VA 200 - 02	
VA 200 - 04	
VA 200 - 06	
VA 200 - 08	
VA 200 - 12	
VA 200 - 16	
VA 200 - 24	
VA 200 - 32	

DIMENSIONS (mm)



Unit size	Discharge		Basic assembly			By-pass opening		Airflow
	A	B	C	D	E	G	H	Q_{nom}
02	254	203	400	127	60	111	178	340
04	305	254	400	203	60	137	229	680
06	356	305	552	254	60	238	279	1020
08	406	356	552	305	60	238	330	1360
12	457	406	603	356	60	264	381	2040

- Q_{max} is the airflow rate in m³/h.



Unit size	Discharge		Basic assembly			By-pass opening		Airflow
	A	B	C	D	E	G	H	Q_{nom}
16	508	254	622	406	67	165	432	2550
24	610	254	622	406 x 457	86	165	533	4080
32	813	254	622	406 x 610	92	165	737	5440

- Q_{nom} is the nominal airflow rate in m³/h.

By-Pass VAV Boxes

Perfomance Data

SOUND DATA

CFM	ΔPs	Sound Power db Octave Band (2) 125	(3) 250	(4) 500	(5) 1000	(6) 2000	(7) 4000	Max. Disc. NC	Radiated NC
SIZE 02									
80	.07	40	31	24	17	15	15	--	10
120	.14	47	41	34	28	24	23	12	12
160	.24	51	49	42	36	30	26	14	14
200	.35	55	54	48	42	35	28	19	20
SIZE 04									
160	.05	44	30	22	19	17	20	--	--
240	.12	49	41	33	29	25	25	12	13
320	.21	52	48	41	36	31	28	13	19
400	.33	54	53	47	42	36	31	15	25
SIZE 06									
240	.04	42	31	22	20	18	21	--	--
360	.09	56	39	32	28	25	24	--	11
480	.16	50	45	40	34	30	27	12	14
600	.25	52	49	46	39	34	29	13	22
SIZE 08									
320	.03	41	28	19	18	18	21	--	--
480	.07	46	38	30	26	24	23	--	12
640	.12	49	45	37	31	28	25	11	15
800	.20	52	50	43	35	31	27	13	22

NOTES:

1. Δ P_s static pressure difference from inlet to discharge.
2. Dash (----) indicates sound power db or NC level less than 10.
3. Δ P_s is the minimum pressure drop required to deliver CFM shown with the primary damper in wide open position (Bypass Closed).

Discharge NC levels are based on --

a) 5 foot rectangular 12" x 12" duct lined with 1" fiberglass insulation.

b) Rectangular tee attenuation entering branch duct.

c) 6 foot lined flex duct (8" diameter).

d) Maximum of 300 CFM per outlet.

e) Space effect factor (5000 ft^3) at 5 feet from outlet.

f). End reflection.

g) Environmental adjustment factor.

SOUND DATA

CFM	ΔPs	Sound Power db Octave Band (2) 125	(3) 250	(4) 500	(5) 1000	(6) 2000	(7) 4000	Max. Disc. NC	Radiated NC
SIZE 12									
480	.03	42	30	21	21	20	21	--	--
720	.06	47	39	31	29	26	24	--	12
960	.11	50	46	39	34	30	26	12	16
1200	.17	53	51	44	38	33	28	13	21
SIZE 16									
840	.03	42	30	22	19	19	18	--	--
960	.06	48	40	33	28	25	22	--	13
1280	.12	52	47	40	35	30	25	11	16
1500	.18	55	53	46	40	34	28	13	23
SIZE 24									
960	.04	41	32	27	18	15	16	--	11
1440	.10	49	42	38	31	27	26	--	15
1920	.18	54	50	46	39	35	33	12	23
2400	.29	58	56	52	46	41	38	14	30
SIZE 32									
1280	.04	44	37	33	27	23	22	--	11
1920	.09	51	47	42	36	32	29	11	15
2560	.15	57	54	48	43	39	34	12	23
3200	.23	61	59	53	48	44	37	14	31

Radiated NC levels are based on --

a) Plenum / ceiling effect - 5/8" mineral fiber tile, 35 lb / ft^3
- 3 foot plenum

b) Space effect factor (5000 ft^3) at 10 feet from source

c) Environmental adjustment factor.

Constant Airflow Regulators

General information

Green Product

Advantages

- Automatically balance airflow at pre-set constant levels.
- Standard (low pressure) and high pressure (150 - 600 Pa)

APPLICATION

- Airflow is controlled at a pre-set value in HVAC circular ductwork.
- Installation of CMEV and air conditioning.
- Air exhaust and supply.
- Operating temperature range: -10°C/ +60°C.

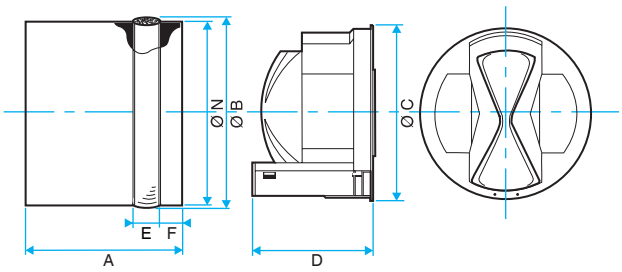
DESCRIPTION

- Plastic body (M1 fire resistance classification) housing the silicone regulating membrane in a calibrated air passage.
- "Brush type" peripheral outdoor seal.
- Outdoor diameter calibrated for standard duct diameters up to 250 mm.
- Operating range of the standard range: 50-200 Pa.
- Airflow tolerances:
  - Q medium = Q nominal +/- 5 m³/hr for MR ≤ 50 m³/hr,
  - Q medium = Q nominal +/- 10% for MR > 50 m³/hr.
- Operating range of the high pressure range: 150-600 Pa.

INSTALLATION

- Inserts directly into a circular duct near a connection or a terminal.
- In air exhaust mode: distance equivalent to Ø 3 mm between the MR and the terminal.
- In air supply mode: distance equivalent to Ø 5 mm between the MR and the terminal.
- Direction of assembly indicated on the omponent.
- Horizontal / vertical.

DIMENSIONS - WEIGHT



Ø (rated) - Duct (mm)	ØN (mm)	ØB (mm)	ØC (mm)	A (mm)	D (mm)	E (mm)	F (mm)	Weight (g)
80	76	82	76	82	79	15	12	150
100	98	104	96	80	60	13	10	190
125	121	128	119	137	95	13	20	400
160	156	166	148	137	105	20	20	570
200	196	206	192	155	125	20	20	920
250	247	256	234	172	158	20	20	1700

Standard MR

RANGE R11

Ø (mm)	Lw* dB (A)	Description	Code	Pack.
80	39.5	MR 15	11016320	10
	42	MR 30	11016321	
	45	MR 45	11016322	
	39	MR 60	11016323	
100	24**	MR 15	11016330	10
	25**	MR 20	11016170	
	26**	MR 25	11016336	
	29**	MR 30	11016331	
	32**	MR 40	11016171	
	33**	MR 45	11016332	
	33**	MR 50	11016337	
	33**	MR 55	11016172	
	33.5**	MR 60	11016333	
	33.5**	MR 75	11016334	
	36**	MR 85	11016173	
	37**	MR 90	11016335	
Lw*: sound power level at 100 Pa except ** at 50 Pa				

Constant Airflow Regulators

Standard MR

Green Product

Advantages

- Automatically balance airflow at pre-set constant levels.
- Standard (low pressure) and high pressure (150 - 600 Pa)

RANGE R11

Ø (mm)	Lw* dB (A)	Description	Code	Pack.
125	25**	MR 15	11016346	10
	29**	MR 25	11016340	
	29**	MR 30	11016347	
	29**	MR 45	11016348	
	29.5**	MR 50	11016341	
	30.5**	MR 60	11016349	
	27.5	MR 75	11016342	
	29	MR 95	11016174	
	29.5	MR 100	11016343	
	30	MR 105	11016175	
	30	MR 110	11016176	
	31	MR 120	11016191	
	32	MR 130	11016344	
	32.5	MR 140	11016213	
	34	MR 160	11016345	
150	28.5	MR 110	11016178	10
	29.5	MR 130	11016370	
	31	MR 150	11016179	
	32	MR 170	11016371	
	34.5	MR 210	11016372	
	37	MR 250	11016373	
160	29	MR 120	11016180	10
	29.5	MR 130	11016350	
	30	MR 140	11016181	
	31	MR 150	11016192	
	31.5	MR 160	11016182	
	32	MR 170	11016351	
	32.5	MR 180	11016183	
	33.5	MR 190	11016184	
	34	MR 200	11016185	
	34.5	MR 210	11016352	
	37	MR 250	11016353	
200	30	MR 200	11016360	4
	30.5	MR 225	11016186	
	31.5	MR 250	11016361	
	32	MR 275	11016187	
	32.5	MR 300	11016362	
	-	MR 325	11016188	
	34	MR 350	11016363	
	35.5	MR 400	11016364	
250	34	MR 300	11016365	1
	35	MR 350	11016189	
	35.5	MR 400	11016366	
	36.5	MR 450	11016190	
	37.5	MR 500	11016367	
	38.5	MR 550	11016368	
	40	MR 650	11016369	
Lw*: sound power level at 50 Pa except** at 100 Pa				

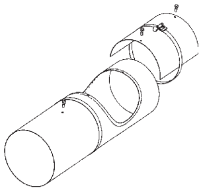
Constant Airflow Regulators

High pressure MR

RANGE R11

Ø (mm)	Description	Code	Pack.
125	MR 110 HP	11016101	10
	MR 150 HP	11016102	10
	MR 200 HP	11016103	10
	MR 240 HP	11016104	10
	MR 290 HP	11016105	
150	MR 210 HP	11016111	10
	MR 260 HP	11016112	10
	MR 310 HP	11016113	10
	MR 380 HP	11016114	10
	MR 450 HP	11016115	10
160	MR 210 HP	11016106	10
	MR 260 HP	11016107	10
	MR 310 HP	11016108	10
	MR 380 HP	11016109	10
	MR 450 HP	11016110	10
200	MR 350 HP	11016116	4
	MR 440 HP	11016117	4
	MR 530 HP	11016118	4
	MR 620 HP	11016119	4
	MR 700 HP	11016120	4
250	MR 550 HP	11016121	1
	MR 600 HP	11016122	1
	MR 800 HP	11016123	1
	MR 950 HP	11016124	1
	MR 1100 HP	11016125	1

Sleeve with inspection door for MR



DESCRIPTION

- Enables the MR to be extracted for maintenance.

RANGE R3

Description	Code
Sleeve with Ø100 mm inspection door	11013121
Sleeve with Ø125 mm inspection door	11013122
Sleeve with Ø150 mm inspection door	11013123
Sleeve with Ø160 mm inspection door	11013124
Sleeve with Ø200 mm inspection door	11013125

Sound-proofed flexible aluminium duct

INSTALLATION

- Inserts a length of 3 diameters between the MR and the grille.

RANGE R9

Ø (mm)	Description	Code
100	Sound proofed alflex aluminium (by 3 m)	11091971
125	Sound proofed alflex aluminium (by 3 m)	11091972
150	Sound proofed alflex aluminium (by 3 m)	11091973
160	Sound proofed alflex aluminium (by 3 m)	11091974
200	Sound proofed alflex aluminium (by 3 m)	11091975
250	Sound proofed alflex aluminium (by 3 m)	11091976

Volume Control Dampers

Rectangular VCD - aerofoil blades

SU 651 Q

SU 651 M

Advantages

- Manual or motorized control.
- Low pressure loss resulting from aerofoil blades.

DESCRIPTION

- Single and multi-blade volume control dampers designed for quiet, efficient and reliable air volume control in ventilation systems.
- Ruggedly built damper, with a casing of robust assembly formed from channel frame for flanged connection to the ductwork.

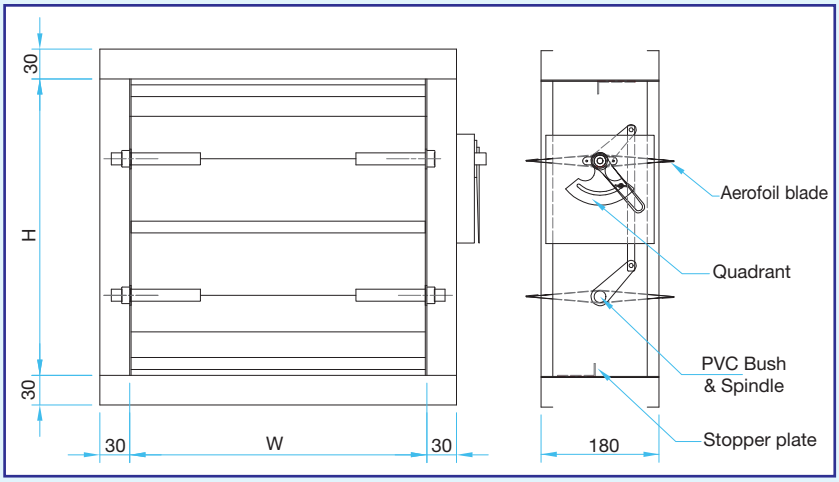
CONSTRUCTION

- Casing manufactured from 20 ga. galvanized sheet as standard. Other gauges available on request.
- Aerofoil shaped blades manufactured from 24 ga. galvanized steel double skin construction. Opposed blade operation standard. Parallel blade operation available upon request.
- Stainless steel side seal, code J, available on request. Standard neoprene gasket, code N2. Silicon rubber gasket, code N3, available upon request.
- External linkages shall be concealed in a frame, and bolted or welded. Internal linkages available upon request.
- Blades connected to the casing by means of spindles which are mild steel hot dip galvanized. Size shall be 12 mm round or 10 mm square. Spindles bolted, riveted or welded as per specification.
- Standard brass bushes, code B1. PVC bush, code B2. Stainless steel bearing, code B3. Available upon request.
- Mode of operation: manual quadrant, code Q. Motorization, code M, available upon request.
- Minimum size: 100 x 100 mm. Single blade damper construction up to 250 mm height.
- Maximum size: 1000 x 800 mm as single section. Larger sizes can be manufactured in multiple sections for assembly on site.

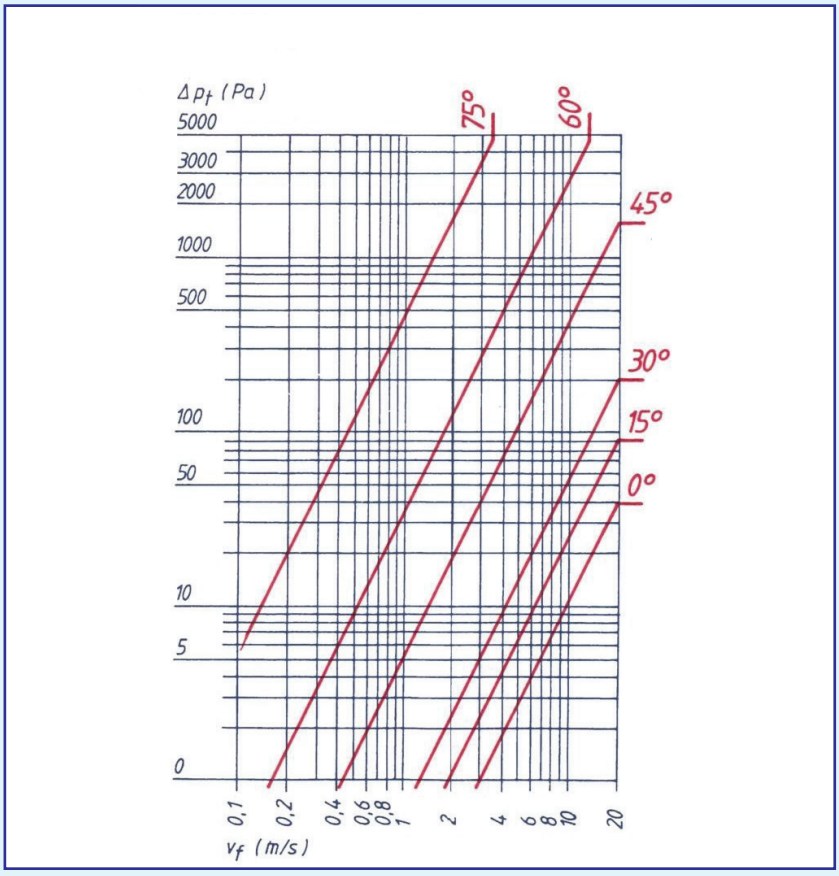
RANGE

Type	Description	Code
SU 651	Aerofoil blade VCD with casing and blades manufactured from GI	
EU 651	Aerofoil blade VCD with casing, blades, spindles and linkages made from SS (grade 304)	
AU 651	Aerofoil blade type volume control damper with casing and blades manufactured from mill aluminum.	

DIMENSIONS (mm)



PRESSURE DROP



Volume Control Dampers

Rectangular VCD - single skin blades

SU 650 Q

Advantages

- Manual or motorised control.

DESCRIPTION

- Single skin volume control dampers designed for quiet, efficient and reliable air volume control in ventilation and air conditioning systems.
- Ruggedly built damper, with casing of robust assembly formed from channel frame for flanged connections to ductwork.

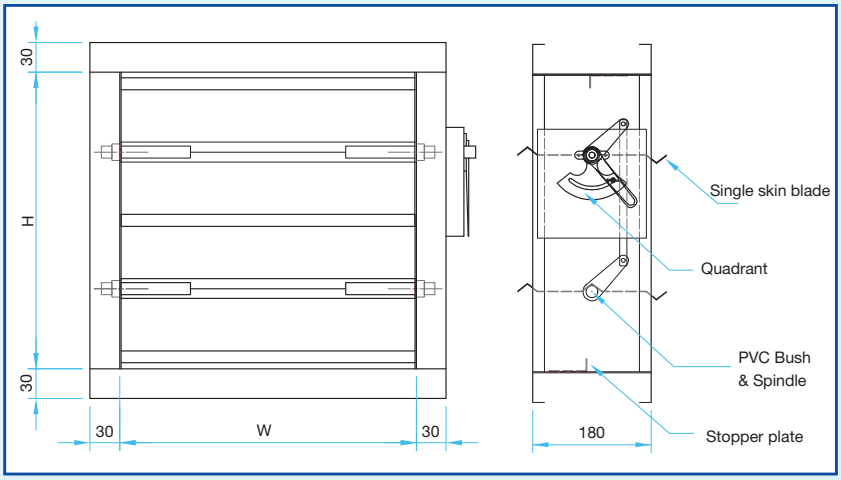
CONSTRUCTION

- Casing manufactured from 20 ga. galvanized sheet as standard. Other gauges available on request.
- Single skin blades manufactured from 20 ga. galvanized sheet. Opposed blade operation standard. Parallel blade operation available upon request.
- Stainless steel side seal, code J, available upon request. Standard neoprene gasket, code N2. Silicon rubber gasket, code N3, available upon request.
- External linkages shall be concealed in a frame, and bolted, riveted or welded. Internal linkages available upon request.
- Blades connected to the casing by means of spindles which are mild steel hot dip galvanized. Size shall be 12 mm round or 10 mm square. Spindles bolted or welded as per specification.
- Standard brass bushes, code B1. PVC bush, code B2. Stainless steel bearing, code B3, available upon request.
- Mode of operation: standard manual quadrant, code Q. Motorization, code M, available upon request.
- Minimum size:100 x 100 mm. Single blade damper construction up to 250 mm height.
- Maximum size: 1000 x 800 mm as single section. Larger sizes can be manufactured in multiple sections for assembly on site.

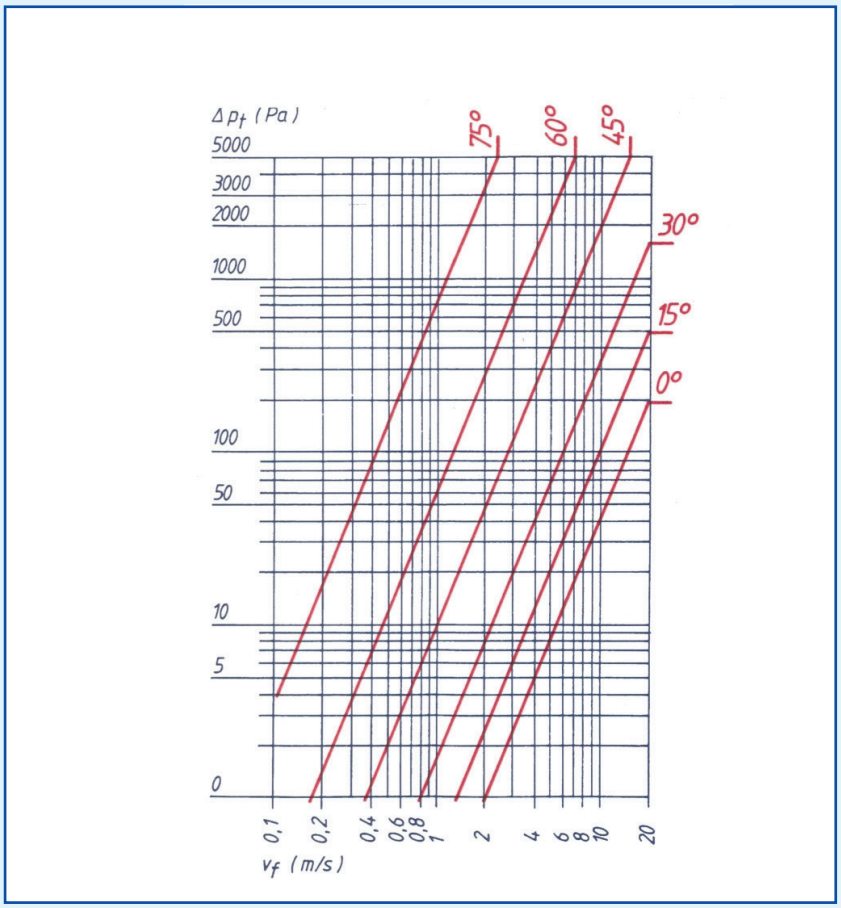
RANGE

Type	Description	Code
SU 650	Single skin blade VCD with casing and blades manufactured from GI	
EU 650	Single skin blade VCD with casing, blades, spindles and linkages made from SS (grade 304)	
AU 650	Single skin blade VCD with casing and blades manufactured from mill aluminium	

DIMENSIONS (mm)



PRESSURE DROP



Volume Control Dampers

Circular VCD

SR 653 Q

Advantages

- Manual or motorised control.

DESCRIPTION

- Volume control dampers are designed for quiet, efficient and reliable air volume control in ventilation systems.

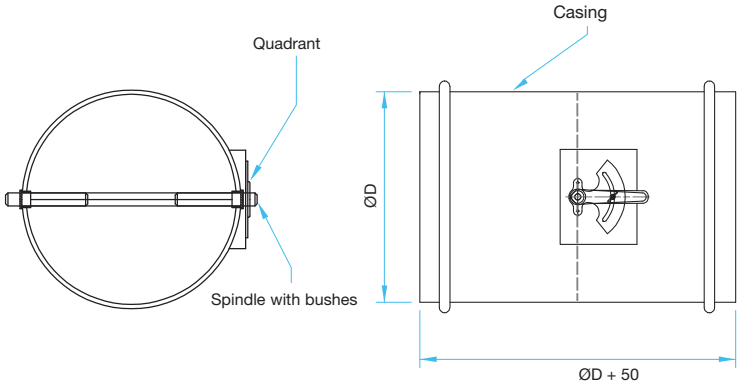
CONSTRUCTION

- Casing manufactured from 20 ga. galvanized sheet as standard. Other gauges available on request.
- Blades manufactured from 20 ga. galvanized steel up to 500 mm and 18 ga. for larger sizes.
- Standard neoprene gasket, code N2.
- Blades connected to the casing by means of spindles which are mild steel hot dip galvanized. Size shall be 12 mm round or 10 mm square. Spindles bolted, riveted or welded as per specification.
- Standard brass bushes, code B1. PVC bush, code B2. Stainless steel bearing, code B3, available upon request.
- Mode of operation: standard manual quadrant code Q. Motorization, code M, available upon request.
- Minimum size: 100 mm.
- Maximum size: 700 mm.

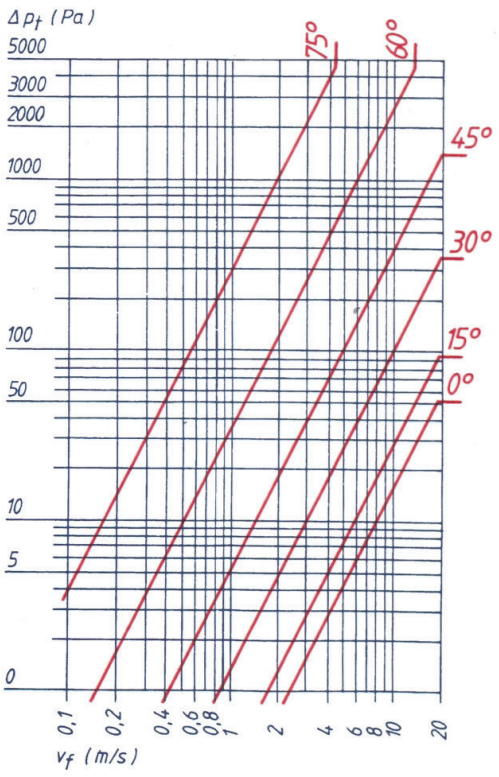
RANGE

Type	Description	Code
SR 653	Circular VCD with casing and blades manufactured from GI	
ER 653	Circular VCD with casing and blade made from SS (grade 304)	

DIMENSIONS (mm)



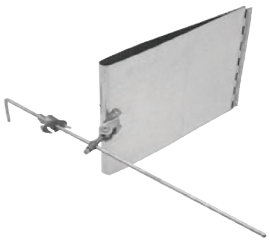
PRESSURE DROP



Volume Control Dampers

Splitter dampers

SU 655



Aerofoil Blade

Advantages

- Easy solution for balancing and adjusting airflow in duct branches.

DESCRIPTION

- Airflow balancing and adjustment in duct branches.

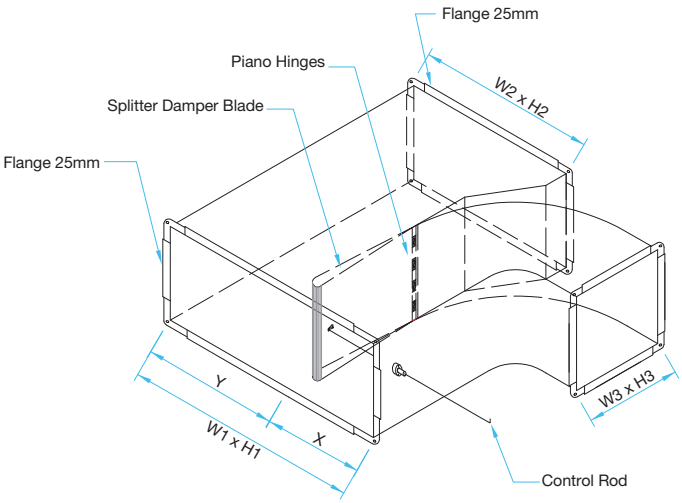
CONSTRUCTION

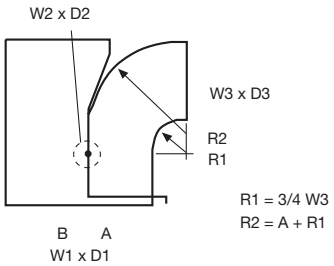
- Manufactured from 20 ga. galvanized sheet.
- Aerofoil blade complete with brackets, nuts and bolts, continuous piano hinge and control rod.

RANGE

Type	Description	Code
SU 655	Aerofoil blade splitter damper	

DIMENSIONS (mm)





Splitter damper length is equal to 1.5 A

Where: A = 100 mm Min.

Trunk may be divided using:

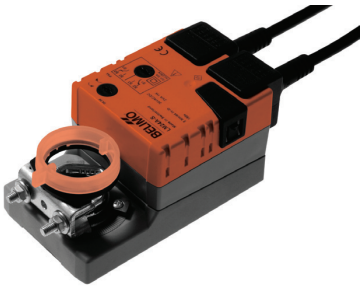
$$A = \left[\frac{(W3 \times D3)}{(W2 \times D2) + (W3 \times D3)} \right] W1$$

$$B = \left[\frac{(W2 \times D2)}{(W2 \times D2) + (W3 \times D3)} \right] W1$$

One rod to 610 mm depth (D1)
Two rod 635 mm to 1525 mm depth (D1)
Three rods abve 1525 mm depth (D1)

Volume Control Dampers

Motorisation and accessories



APPLICATION

- Motorisation and adjustment of SU650, SU651 and SR653 dampers.
- Choice of actuators depending on torque, modulated or total open / close functions, safety functions and data feedback.

DESCRIPTION

- Actuators covering torque levels of 2 to 20 Nm.
- Open / close type or modulating type.
- Safety functions: re-arming spring.
- Data feedback: actuators with contacts.
- All the F type actuators have a reversible sprocket wheel in the event that the shaft is too short.
- Actuators type 24: 24 V AC / DC.
- Actuators type 230: 230 V AC.

DETAILS

Damper type	Max. area (m^2)	Type of actuators	Torque (Nm)	Circular shaft Ø (mm)	Square Shaft (mm)
Non-spring return actuators					
SU 650 M SU 651 M SR 653 M	up to 1 m^2	LM 24 A-S & LM 230 A-S	5	6-20	6-20
		LM 24 A-SR & LM 230 A-SR			
	from 1 to 2 m^2	NM 24 A-S & NM 230 A-S	10	8-20	8-20
		NM 24 A-SR & NM 230 A-SR			
	from 2 to 4 m^2	SM 24 A-S & SM 230 A-S	20	10-20	10-20
		SM 24 A-SR & SM 230 A-SR			
Spring return actuators					
SU 650 M SU 651 M SR 653 M	up to 0.4 m^2	TF 24-S & TF 230-S	2	6-12	6-12
		TF 24-SR & TF 230-SR			
	from 0.4 to 0.8 m^2	LF 24-S & LF 230-S	4	8-16	8-16
		LF 24-SR & LF 230-SR			
	from 0.8 to 3 m^2	AF 24-S & AF 230-S	15	10-20	10-16
		AF 24-SR & AF 230-SR			

ACCESSORIES

Description	Code
Contacts (for LM, NM and SM models only)	
S1 A	
S2 A	

NON-SPRING RETURN ACTUATORS

Description	Code
Open / close type	
LM 230 A - S	
LM 24 A - S	
NM 230 A - S	
NM 24 A - S	
SM 230 A - S	
SM 24 A - S	
Modulating type	
LM 230A - SR	
LM 24A - SR	
NM 230A - SR	
NM 24A - SR	
SM 230A - SR	
SM 24A - SR	

SPRING RETURN ACTUATORS

Description	Code
Open / close type	
TF 230 - S	
TF 24 - S	
LF 230 - S	
LF 24 - S	
AF 230 - S	
AF 24 - S	
Modulating type	
TF 230 - SR	
TF 24 - SR	
LF 230 - SR	
LF 24 SR	
AF 230 - SR	
AF 24 SR	

Non Return Dampers/Pressure Relief Dampers

Non return / pressure relief dampers

SG 661
Non return damper
(duct mounted)

SG 663
Non return damper
(wall mounted)

SG 662
Pressure relief damper
(wall mounted)

Advantages

- NRD prevents reverse airflow.
- PRD releases excess pressure inside pressure controlled rooms.
- Protection against ingress of untempered air, rain and birds into air conditioning system.

DESCRIPTION

- Non return/pressure relief dampers are designed for use in intake and discharge opening in commercial and residential air conditioning systems.
- When the ventilation system is on, the blades of the non-return damper are held in the open position by the airflow.
- If the system is switched off, the damper blades close automatically, thus preventing reverse airflow and giving protection against the ingress of untempered air, rain and birds into the air conditioning system.

CONSTRUCTION

SG 661

- Non return damper designed to be duct mounted.
- Frame & blades made from 20 ga. galvanized steel.
- Round spindles Ø 12 mm linked together by means of GI linkages.
- Gasket is provided on blade tips for low leakage.

AG 661

- Same as SU 661.
- Frame and blades manufactured from mill finish aluminium.

EG 661

- Same as SU 661.
- Only frame and blades manufactured from SS (grade 304).

SG 663

- Non return damper.
- Wall mounted.
- Frame and blades manufactured from 20 ga. galvanized steel. Other gauges available upon request. Blades are fixed on Ø 12 mm round spindle and are linked together by GI linkages.

AG 663

- Same as SG 663.
- Only frame and blades manufactured from mill finish aluminium.

EG 663

- Same as SG 663.
- Only frame and blades manufactured from mill finish SS (grade 304).

SG 662

- Pressure relief damper.
- Wall mounted.
- Casing manufactured from 18 ga.
- Blades manufactured from 20 ga. galvanized steel sheet.

AG 662

- Same as SG 662.
- Only frame and blades manufactured from mill finish aluminium.

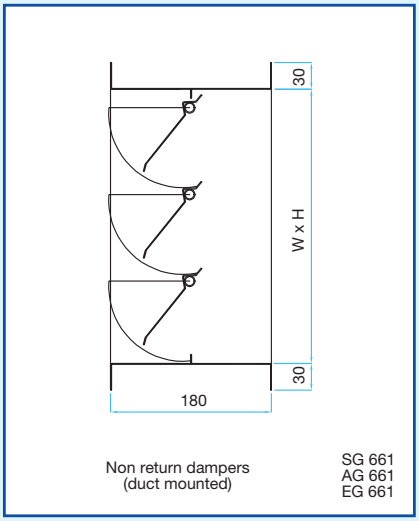
EG 662

- Same as SG 662.
- Only frame and blades manufactured from SS (grade 304).

AVAILABLE OPTIONS

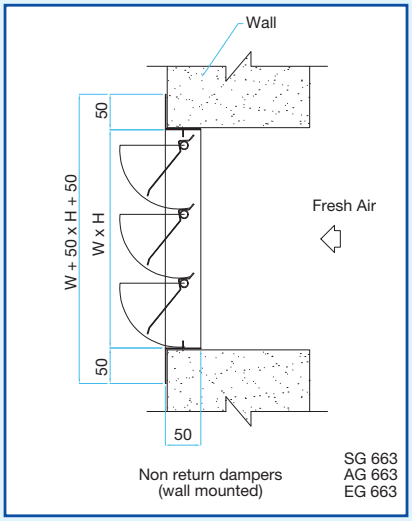
- Belimo actuator, code M.
- Brass / PVC bushes, code B1/B2.
- Counter weight, code K.
- Natural anodized aluminium, code A.
- Power coated to RAL colour, code Z.

DIMENSIONS (mm) - PRESSURE DROP



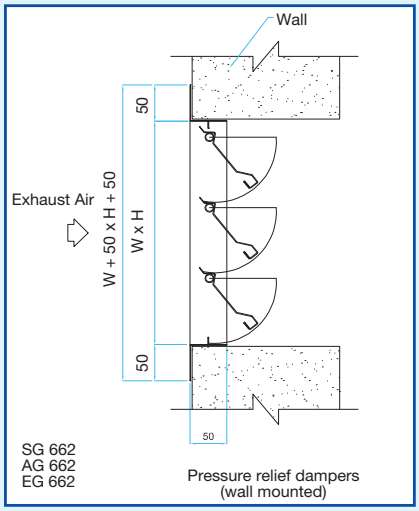
Non return dampers
(duct mounted)

SG 661
AG 661
EG 661



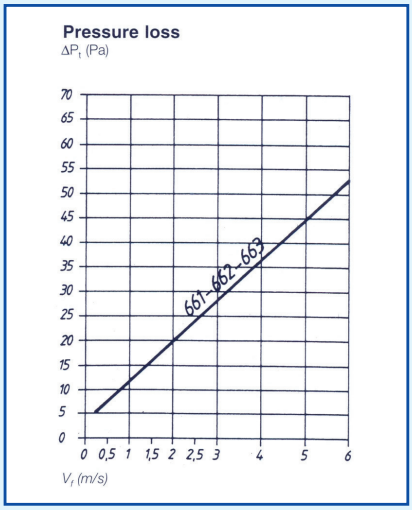
Non return dampers
(wall mounted)

SG 663
AG 663
EG 663



SG 662
AG 662
EG 662

Pressure relief dampers
(wall mounted)



RANGE

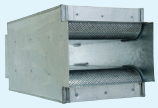
Type	Description	Code
SG 661	Duct mounted NRD, casing and blades made from GI	
AG 661	Duct mounted NRD, casing and blades made from aluminium	
EG 661	Duct mounted NRD, casing and blades made from SS (grade 304)	
SG 663	Wall mounted NRD, casing and blades made from GI	
AG 663	Wall mounted NRD, casing and blades made from aluminium	
EG 663	Wall mounted NRD, casing and blades made from SS (grade 304)	
SG 662	Wall mounted PRD, casing and blades made from GI	
AG 662	Wall mounted PRD, casing and blades made from aluminium	
EG 662	Wall mounted PRD, casing and blades made from SS (grade 304)	

Project Reference List

Below are few project references supplied by ALDES.

S. No.	Project	Consultant/Client	Contractor	Location
1	ADCB Head Quarter	APG	ETA	Abu Dhabi
2	ADNOC Head Quarter	Atkins	ETA	Abu Dhabi
3	Ajman University	Adnan Saffarini	ETTS	Abu Dhabi
4	Al Bateen Airbase	DMW	Code Contracting	Abu Dhabi
5	Bab & Buhasa Substation	Lahmeyer	York's	Abu Dhabi
6	Cosmetic Surgery Hospital for American Academy	Art Consultants	Elemec	Abu Dhabi
7	Etihad Airways Complex	ACG	Verger	Abu Dhabi
8	Qasr Al Sarab	Halcrow Yolles	ALEC	Abu Dhabi
9	Sheikh Khalifa Medical Centre	Ministry of health	Al Sabah Company	Abu Dhabi
10	SVC Plant	Lahmeyer	ACECO/York	Abu Dhabi
11	Al Gurg Tower	RMJM	TTE	Dubai
12	Al Mas Tower	W. S. Atkins	ETA	Dubai
13	American School	RMJM	Drake & Scull	Dubai
14	Concorde Tower	Arif & Bintoak	Drake & Scull	Dubai
15	Emirates Flight Catering	IBA	Transgulf	Dubai
16	Emirates Sports Centre	Spec/Emirates Airlines	Bilt Middle East	Dubai
17	Harvard Medical School	Arif & Bintoak	Transgulf	Dubai
18	Iris Tower	Atkins	ETA	Dubai
19	JC Mcleans Factory	Diar	Trinity	Dubai
20	Jumeirah Beach Club	Roberts and Parteners	Diplomat	Dubai
21	Latifa Tower	Arkiplan	ETA	Dubai
22	Madina Jumeirah Resort III	RPW	Transgulf	Dubai
23	Mall of the Emirates	WSP watson	Khansaheb/Voltas	Dubai
24	Marina View Towers @ Dubai Marina	Adnan Saffarini	Transgulf	Dubai
25	Mott McDonalds Office	Mott McDonalds	Al Reyami	Dubai
26	Muraqqabad Police Station	Arenco	Bilt Middle East	Dubai
27	PVG & HVG Warehouse	Arif & Bintoak	Al Naboodah	Dubai
28	Renaissance Hotel at Motor City	Burt Hill	Thermo	Dubai
29	Sky Courts	Hydro	China State	Dubai
30	Zulekha Hospital	Electrowatt	Jamaheer	Dubai
31	Fujairah Beach Resort	Archon	Bilt Middle East	Fujairah
32	Sheikh Khalifa Specialist Hospital	Bayati	ETA	RAK
33	American University	AECOM	AMBB	Sharjah
34	Beach Tower	Consultaire	ETA	Sharjah
35	Palm Tower	Consultair	ETA	Sharjah
36	Petrofac Tower	Consultair/Al Turath/Arenco	ETA	Sharjah
37	Research Laboratory	Cansult	GECO	Sharjah
38	Bahrain International Circuit	Tilke	Almoayed-Bhn	Bahrain
39	Isa Sport City	Gemac	Almoayyed	Bahrain
40	Sheikh Isa Library	EMDEG	Al Komed	Bahrain
41	Sofitel Zallaq Resort	Halcron	Awal Products/Awdco	Bahrain
42	Ministry of Defense	MOD	Airmech	Oman
43	Ministry of Higher Education	Gulf Engineering Consultancy	Al Adrak	Oman
44	Palm Garden @ Sohar	Kadri Consultant	Larsen & Toubro	Oman
45	Qasr Al Alam	RCA	IRACO	Oman
46	Sohar Court Complex	National Engineering Office	Drake & Scull	Oman
47	Tilal Complex	IBN Khaldun	Bahwan Engg	Oman
48	AKH Tower	Syna Development	Almoayyed	Qatar
49	Al Udeid project	Qatar Armed Forces	Almoayed/Voltas	Qatar
50	Business Park & Hotel Facilities	AEB	QEMG	Qatar
51	Khalifa stadium	Midmac	Qatari Engg	Qatar
52	Pearl Qatar Parcel 1C, 2A, 7A	KEO	Arabian AC	Qatar
53	School of Foreign Services	KEO	Midmac Cont.	Qatar
54	Texas A & M College	QP/KEO	Midmac Cont.	Qatar
55	Two Oil Platform for Maersk Oil	Maersk Oil Qatar S.A. / GPMC	Specialist Services	Qatar
56	UB 400	Kahrama	Butec	Qatar
57	Woqod Tower	Romatre	Diplomat	Qatar

Selection Guide

Category	Model	Description	Sound attenuation – Low frequency	Sound attenuation – High frequency	Pressure loss	AHU
Sound Attenuators	Rectangular sound attenuators (Green Product) 	SA20 • Highly effective at medium & high frequencies • SA or SAL type baffles • Available with air gaps from 75 mm - 200 mm • Easy installation	✔✔	✔✔✔	✔	✔✔
	Circular sound attenuators 	SAR100 • Standard circular sound attenuator • Acoustic infill 100 mm thick • Available in spigot or flange connection • Circular sound attenuator with pod (SARP 100) available upon request	✔	✔	✔✔	✔✔✔
	Active circular sound attenuators (Green Product) 	ACTA • Active circular sound attenuator with pod • Highly effective at low frequency • Easy installation	✔✔✔	✔✔	✔✔	✔✔
	Cross talk sound attenuators 	SCS • Designed for inline duct mounting in system where rooms are served by branches of common duct • Reduce noise transfer in adjacent rooms	✔	✔	✔	✔✔

Category	Model	Description	Sound attenuation	Comfort	Ventilation	AHU
Louvres	Acoustic louvres 	SU 631 / SU 632 • Air intake or air exhaust • Acoustic infill for reduced noise • SU 632: combination of two back-to-back SU 631 acoustic louvres	✔	✔✔	✔✔	✔

Terminology

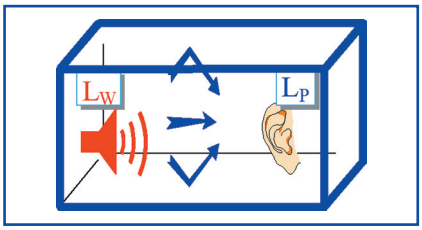
General Information

DEFINITIONS

The following terms are commonly used in the field of acoustic and understanding of their practical (rather than academic) meaning and import might be of use to the ventilation engineer. (as a high tone) or slowly (a low tone) or somewhere in the middle, and we hear these pressure changes as sound.

1. Attenuation

The reduction of sound level per unit distance by divergence, diffusion, absorption or scattering.



Pressure (Lp) - Power (Lw)

2. Sound power level (LW)

A level which depends only on the source and is independent of the environment or location. The sound power level of a fan is therefore very useful information since any level quoted can be compared directly with data from any other manufacturer.

3. Sound pressure level (LP)

A measured sound level which is an indication only of the noise produced at source since environmental factors such as reverberation and distance from the source shall affect the measurement. The sound pressure level of a fan is not very useful since environmental factors apparent when the unit was measured may or may not be present in the actual location of the plant.

4. Decibel (DB)

Commonly, the unit used to measure sound. It is a logarithmic ratio of two sound pressures or sound powers where one is a reference level. Care must be exercised when mathematically manipulating decibels.

5. A-weighting

The A- weighting is a collection of coefficients to be added to the acoustic pressure levels or acoustic power levels for each octave band. The overall acoustic pressure level is therefore closer to sensorial perception by the human ear.

6. Criteria

Noise levels which are subjectively or objectively acceptable in a given environment.The most commonly used criteria are Noise Criteria Curves (NC Levels). Noise Rating Curves (NR Levels) and dB (A).

7. Ductborne noise

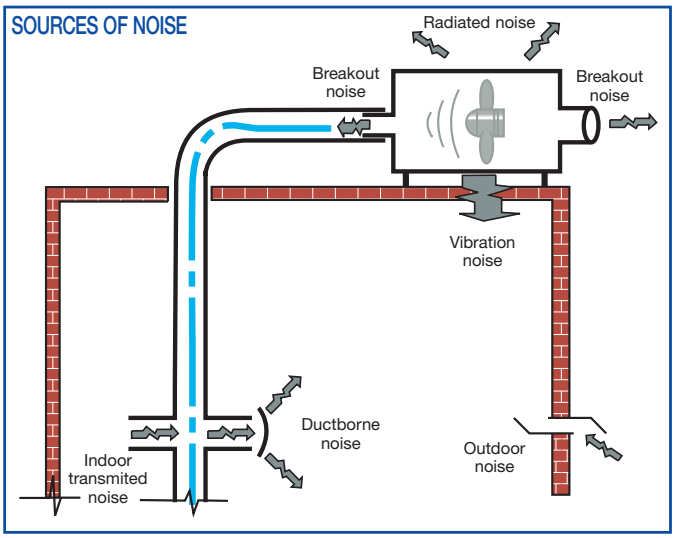
Noise which is transmitted along ductwork, both upstream and downstream of a fan.

8. Flanking noise (breakout)

Noise transmitted through a barrier, often a fan casing or ductwork. Any indirect noise path which tends to devalue noise control measures used to reduce the transmission along the more obvious paths.

9. Noise outlet

Usually a grille or a diffuser. Any opening acting as a terminal element on either an extract or supply system.



10. Direct sound power level

Noise, which is transmitted directly from a source (i.e. a grille or diffuser) without reflection.

11. Reverberant sound power level

Noise, which is transmitted by reflection from room surfaces.

12. Reverberation time

A measurement of a room acoustic "reflectiveness".

13. Background noise

It is the constant noise level measured in the absence of any building occupants when all of known sound sources have been turned off.

14. Insertion loss

A measure of the noise reduction capability of an attenuator (sometimes of a partition) so named after the method of testing where a section of ductwork is replaced by an attenuator between two test rooms. One room contains the noise source and the other sound level measuring equipment. The difference in recorded noise level is said to be the insertion loss due to the insertion of the attenuator in the system.

15. Regenerated noise

Noise in addition to that produced by the fan, caused by air passing over fixed duct elements such as blades on grilles, dampers, air turns, splitters in attenuators, etc. Not normally a problem on low velocity systems and is not dealt with in this booklet.

16. Frequency (Hz.)

The pitch of sound. The number of sound pressure waves arriving at a fixed point per second.

17. Octave bands

Subdivisions of the frequency range each identified by its mid (or centre) frequency. By international agreements these comprise 63, 125, 250, 500, 1k, 2k, 4k and 8k Hz, and sometimes 31.5 Hz.

Acoustic Design

Definition & basic principles

NOISE CONTROL PRINCIPLES

There are three distinct stages to the noise control process:

1. Source
2. Transmission
3. Reception

Noise control problem involves examining the noise sources (fan noise, duct noise, diffuser noise and building noise), the sound transmission paths and the receivers.

For most HVAC system, the sound sources are associated with the building mechanical and electrical equipment. Noise travels from the source to the receiver through many possible sound transmission paths, (structure- borne path through floor, airborne path through supply air system, duct breakout from supply airduct, airborne path through return air system, and airborne path through mechanical equipment room wall). Sound sources are the components that either generate noise, like electric motors, or produce noise when air passes by them, like dampers or diffusers. Sound receivers are generally the occupant of the building. The noise control engineers are most often constrained to modify the sound transmission paths as a means of achieving the desired sound levels in occupied areas of a building.

HOW TO CONTROL THE NOISE

Efforts to controls noise and vibration in a wide range of mechanisms and devices inevitably require the use of passive acoustical materials. To achieve the greatest performance per dollar requires not only the correct choice of materials, but also an understanding of how they work, and of how and where to install them. All passive noise control systems use at least one of the following material types:

- **Barrier…** Enclosures, weighted materials
- **Walls Absorption materials...** Acoustical foams, fibrous batts or blankets acoustical tiles.
- **Vibration isolators...** Equipment mounts plastic or rubber-based bushing and grommets, steel spring equipment supports...
- **Damping materials...** Plastic sheets, mastic solutions, adhesive films.

To carry out an accurate acoustic assessment of a ductwork run for the selection of a silencer, the following information will be required:

1. Ductwork losses

This is assessed from ductwork layout drawing provided by the design team. However site co-ordination can often result in some ductwork runs being altered. Ductwork losses should always be checked with the mechanical contractor prior to final schedule selection of the silencers.

2. Grille size and location

Required to assess end reflection. 'The End Reflection - the energy loss and subsequent attenuation of sound change in cross section from one area to another and directivity' without the need for detailed drawing, air volumes and approximate pressure and fan type.

3. Number of noise sources in a room

For instance one extract and one supply grille would be two noise sources. This would add 10 (Log2) to the overall sound pressure, i.e 3dB. Hence if one calculated NR30 independently for each noise sources, without taking into account the two noise sources within the calculation, the overall result could be NR30 + 3dB, an excess. The greater the number of noise sources, the worse the potential problem.

4. Sound power to room

Sound is measured in decibels, a logarithmic scale, and this changes in proportion to the amount of air entering a room from the total being handled by the fan.

5. Room size (volume)

In reality, it is really the room volume that one requires. However, most room tend to be a standard Length x Width x Heigth, hence 'Room Size'.

6. Reverberation time (RT)

The reverberation time can dramatically change overall sound pressure measured in a room from the same sound source. The lower the reverberation time the lower the contribution to the overall sound level, and vice versa with a higher RT.

However, as it is affected by the amount of total absorption in a room (the great number of soft furnishings, i.e chairs, curtains, carpets etc., the greater the absorption and the lower the reverberation time and hence overall sound level in the room, from a given noise source), it is often difficult to assess at design stage. Opposite is a basic guide for different applications where the RT is unknown.

7. Sound power to outlet

This is effectively the outlet for the sound power, which in the case of an induct silencer is often an air inlet or outlet grill, diffuser, stub duct or other termination, such as an atmospheric louvre.

8. Distance to listener

The distance from the sound source (for instance the grille) to the receiver (the human ear). Generally for a ceiling mounted grille with a standard room height of 2.8m - this is usually calculated as 1.0m (average human height is 1.8m). In the case of an atmospheric calculation this will change from site to site and will be dependent upon the proximity of other noise sensitive areas on the site, i.e. office or bedroom windows and / or the site legal boundary, i.e. industrial location or close to residential properties.

The above is a basic guide only with regards to the minimum of information required to a carryout an induct silencer selection.

Please, note this system is a guide only and not a substitute for accurate calculations.

Design guidelines for HVAC-related background sound in rooms (Ref. *ASHRAE Handbook*)

Room Types	RC(N); QAI ≤ 5dB Criterion a,b
Residences, Apartments, Condominiums	25 – 35
Hotels / Motels	
Individual rooms or suites	25 – 35
Meeting / banquet rooms	25 – 35
Corridors, lobbies	35 – 45
Service / support areas	35 – 45
Office Buildings	
Executive and private offices	25 – 35
Conference rooms	25 – 35
Teleconference rooms	25 (max)
Open-plan offices	30 – 40
Corridors and lobbies	40 – 45
Hospitals and Clinics	
Private rooms	25 – 35
Wards	30 – 40
Operating rooms	25 – 35
Corridors and public areas	30 – 40
Performing Arts Spaces	
Drama theaters	25 (max)
Concert and recital halls c	
Music teaching studios	25 (max)
Music practice rooms	30 - 35 (max)
Laboratories (with fume hoods)	
Testing / research, minimal speech communication	45 – 55
Research, extensive telephone use, speech communication	40 – 50
Group teaching	35 – 45
Churches, Mosques, Synagogues	
General assembly	25 – 35
With critical music programsc	
Schools[d]	
Classrooms up to 70 m2	40 (max)
Classrooms over 70 m2	35 (max)
Large lecture rooms, without speech amplification	35 (max)
Libraries	30 – 40
Courtrooms	
Unamplified speech	25 – 35
Amplified speech	30 – 40
Indoor Stadiums, Gymnasiums	
Gymnasiums and natatoriums	40 – 45
Large seating-capacity spaces with speech amplification[e]	45 – 55

a The values and ranges are based on judgment and experience, not on quantitative evaluations of human reactions. They represent general limits of acceptability for typical building occupancies. Higher or lower values may be appropriate and should be based on a careful analysis of economics, space use, and user needs.

b When quality of sound in the space is important, specify criteria in terms of RC(N). If the quality of the sound in the space is of secondary concern, the criteria may be specified in terms of NC or NCB levels of similar magnitude.

c An experienced acoustical consultant should be retained for guidance on acoustically critical spaces (below RC 30) and for all performing arts spaces.

d HVAC-related sound criteria for schools, such as those listed in this table, may be too high and impede learning by children in primary grades whose vocabulary is limited, or whose first language is not the language of the class. Some educators and others believe that the HVAC-related background sound should not exceed RC 25(N).

e RC or NC criteria for these spaces need only be selected for the desired speech and hearing conditions.

Rectangular Sound Attenuators

Rectangular sound attenuators

SA 20
SA type baffle

SA 20
SAL type baffle

Green Product

Advantages

- Efficient at medium and high frequencies.
- Easy installation.

APPLICATION

- Attenuation of fan / AHU noises propagated through air ducting.
- Highly effective at medium and high frequencies.
- Air exhaust and air supply.

DESCRIPTION

- Sound attenuators and sound baffles are heavy duty type, galvanized mild steel construction for air conditioning and industrial applications.

CONSTRUCTION

- Casing and baffles manufactured from galvanized sheets metal of 20 ga. thickness in accordance to BS 2989 grade Z2 G275 casing are formed with lock formed seams. The construction complies with DW 144 Class B code, slide on flanges are fitted as standard.
- The baffle contains acoustic infill which complies with Class O building regulation. The infill cloth has a black glass tissue facing and is contained behind perforated sheet of 0.7 mm thickness on both sides.

  D = Width of baffles (200 mm)
  S = Air gap (75 to 200 mm)
  S+D = 1 module
- Minimum size: W = 275 mm; H = 300 mm; L= 600 mm.
- Maximum size: W=2100 mm; H=1800 mm; L=2400 mm.

NOTE: bigger sizes available upon request and will be supplied in sections.

INSTALLATION

- Install directly on a duct section.
- Horizontal / vertical Installation.
- Indoor / outdoor.

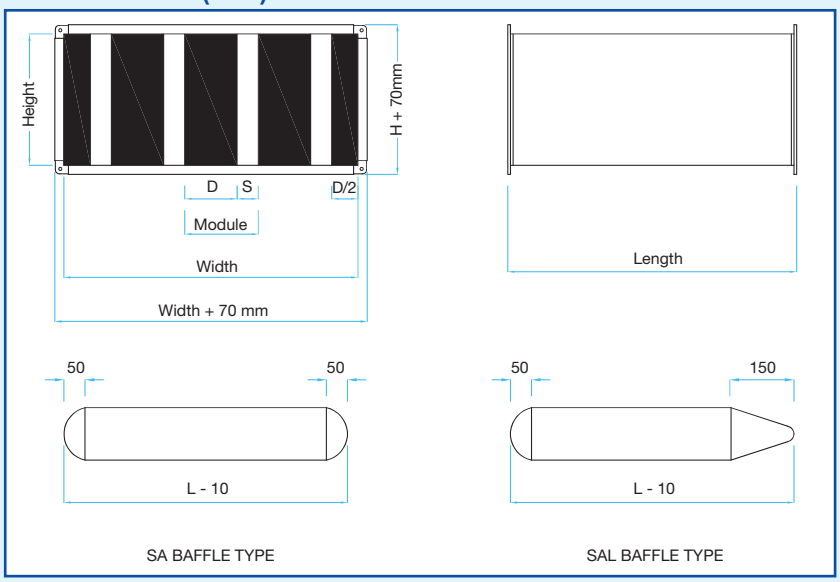
AVAILABLE OPTIONS

- Melinex is an impervious thin membrane used totally enclosed sound absorbent material where clinical conditions are required. This is used for the hospitals food factories and also where humidifiers are used.
- Melinex film on both sides reducing contamination risk, code P.

RANGE with a choice of options

Description	Code
SA 20 - 75	
SA 20 - 100	
SA 20 - 125	
SA 20 - 150	
SA 20 - 175	
SA 20 - 200	

DIMENSIONS (mm)



INSERTION LOSS (dB)

Model	Length L	Octave centre frequency in Hz							
		63	125	250	500	1k	2k	4k	8k
SA20 - 75	600	7	11	19	31	45	36	29	20
SA20 - 75	900	9	14	26	49	50	50	37	29
SA20 - 75	1200	10	18	33	50	50	50	47	38
SA20 - 75	1500	12	21	40	50	50	50	50	45
SA20 - 75	1800	13	24	47	50	50	50	50	50
SA20 - 75	2100	15	28	50	50	50	50	50	50
SA20 - 75	2400	17	31	50	50	50	50	50	50
SA20 - 100	600	6	9	14	22	28	28	21	15
SA20 - 100	900	8	11	19	31	37	37	28	21
SA20 - 100	1200	9	14	25	41	48	48	34	27
SA20 - 100	1500	11	17	30	50	50	50	42	33
SA20 - 100	1800	12	20	34	50	50	50	49	39
SA20 - 100	2100	14	23	39	50	50	50	50	45
SA20 - 100	2400	15	26	44	50	50	50	50	50
SA20 - 150	600	5	7	11	17	24	20	13	11
SA20 - 150	900	6	9	14	24	33	25	18	15
SA20 - 150	1200	7	11	18	31	42	33	23	19
SA20 - 150	1500	8	12	22	39	50	40	28	23
SA20 - 150	1800	9	14	25	45	50	47	34	27
SA20 - 150	2100	10	16	29	50	50	50	39	31
SA20 - 150	2400	11	19	32	50	50	50	44	35
SA20 - 200	600	5	6	9	13	18	14	10	9
SA20 - 200	900	6	7	12	20	25	20	14	12
SA20 - 200	1200	6	9	14	25	33	25	18	15
SA20 - 200	1500	7	10	18	30	40	31	22	18
SA20 - 200	1800	8	11	20	35	48	37	26	21
SA20 - 200	2100	8	13	24	40	50	42	30	24
SA20 - 200	2400	9	15	26	45	50	48	34	27

Bend Type Sound Attentuators

Vertical and horizontal bend type sound attenuators

SA 20 V
SA 20 H

APPLICATION

- Bend attenuators can be designed for vertical or horizontal installation to suit the ductwork layout.

DESCRIPTION

- Vertical / horizontal mounting.
- Rectangular cased bend attenuator is mainly used to reduce fan noise to meet the required NC levels.

CONSTRUCTION

- Generally as for the straight version. To minimise resistance to airflow, turning vanes are incorporated into the design.
- The vertical and horizontal mounting cased bend rectangular attenuator mainly used to reduce fan & machine noise to meet the required or allowed noise levels.
- The SA sound attenuators offer many advanced features including standard aerodynamic splitters.
- Erosion protected acoustic infills covered by galvanized perforated sheet.

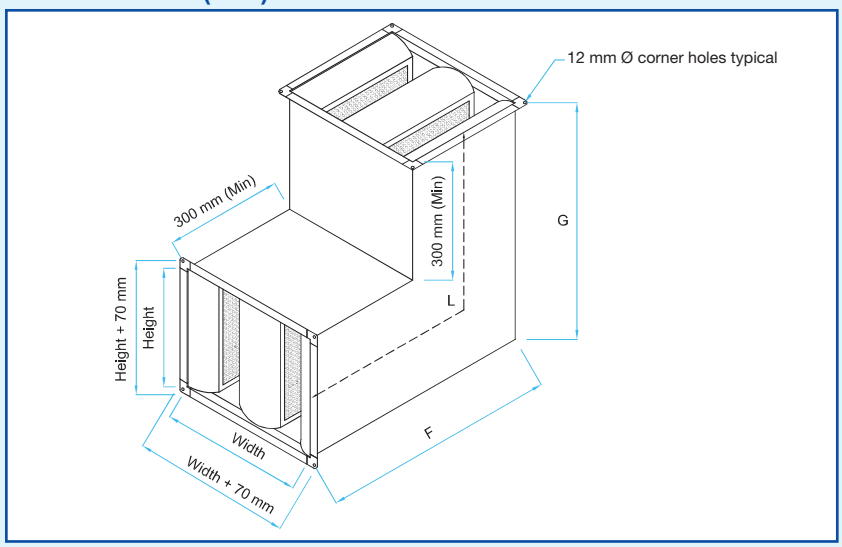
INSTALLATION

- Directly installed on a duct section.
- SA 20 V for vertical installation.
- SA 20 H for horizontal installation.

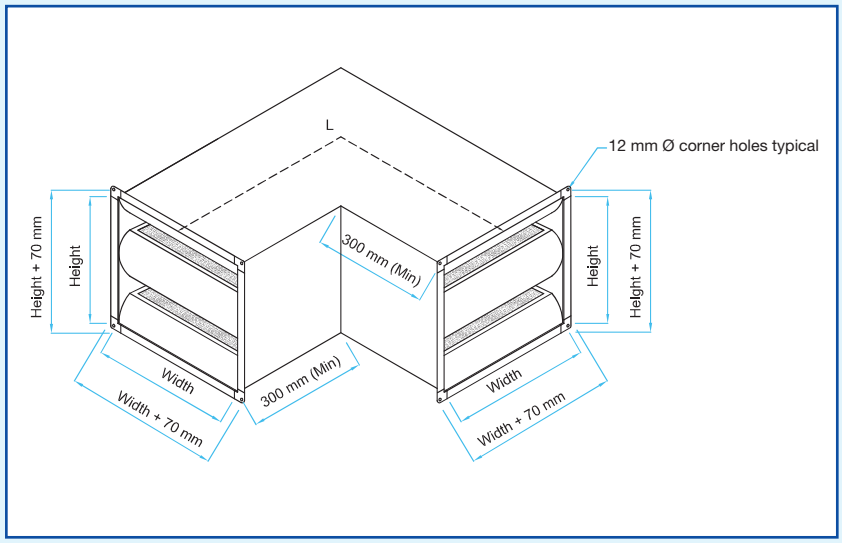
RANGE

Type	Description	Code
SA 20 V	Vertical bend type sound attenuator	
SA 20 H	Horizontal bend type sound attenuator	

DIMENSIONS (mm)



SA 20 V

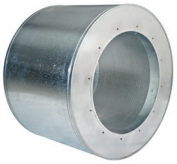


SA 20 H

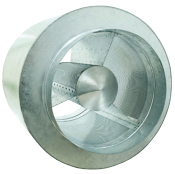
Circular Sound Attenuators

Circular passive attenuators

SAR 100
Spigot connection



SAR 100
Flange connection



SARP 100 *

Advantages

- Low pressure loss.
- Easy installation.

APPLICATION

- Attenuation of fan / AHU noises propagated through air ducting.
- Air exhaust and air supply.

DESCRIPTION

- Prefabricated sections of double walled round duct with solid outer shell and perforated inner shell with acoustic infill in between both shells.
- Designed to reduce fan noise meeting required noise levels such as NC and NR levels.

CONSTRUCTION

- Standard type SAR and podded type SARP available in different size range. Standard attenuator casing is manufactured from galvanized sheet metal in accordance to BS 2989 grade Z2 G275, casing are constrcuted with full seam welding, casing thickness complies with DW 144 Class B duct work code.
- Contains acoustic infill which complies with Class O building regulation. The infill has black glass tissue coating contained behind perforated sheet of 0.7mm thickness. This dual protection prevent damage and fibre erosion up to 30 m/s air way velocity.
- Available in diameter from 100 to 630 mm and incorporating absorbing partitions available in two densities.
- SAR 100: 100 mm thickness.

INSTALLATION

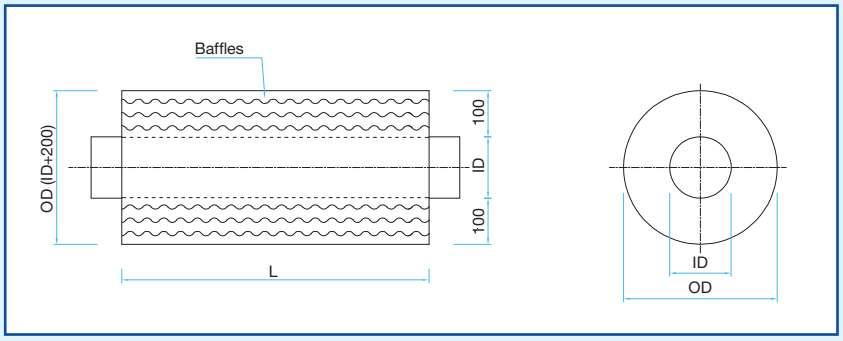
- Directly installed on a duct section.
- Horizontal / vertical installation.
- Indoor / outdoor.

RANGE

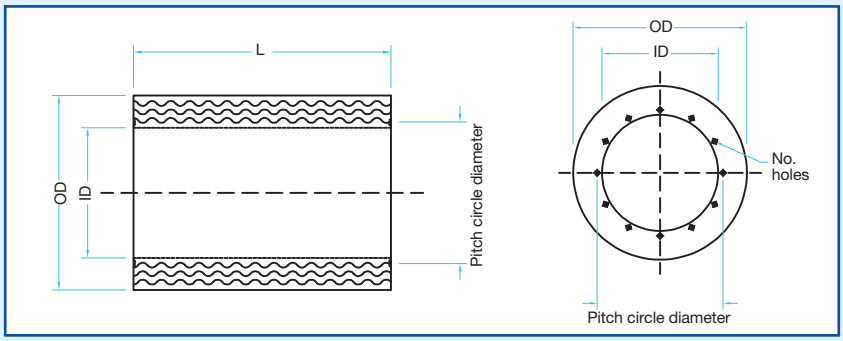
Description	Code
SAR 100 - Ø 100 mm	
SAR 100 - Ø 125 mm	
SAR 100 - Ø 160 mm	
SAR 100 - Ø 200 mm	
SAR 100 - Ø 250 mm	
SAR 100 - Ø 315 mm	
SAR 100 - Ø 400 mm	
SAR 100 - Ø 500 mm	
SAR 100 - Ø 630 mm	

* SARP 100 and other sizes of SAR 100 are also available upon request.

DIMENSIONS (mm)



SAR 100 (spigot connection)



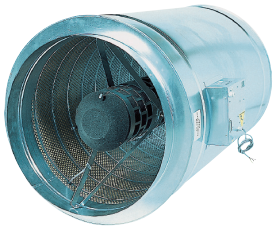
SAR 100 (flange connection)

INSERTION LOSS (dB)

Model	Length L	Octave centre frequency in Hz							
		63	125	250	500	1k	2k	4k	8k
100	300	6	8	13	20	26	30	30	24
125	300	6	7	12	19	24	29	28	21
160	300	5	6	9	14	20	22	22	16
200	600	6	9	13	22	27	32	21	18
250	600	6	7	12	21	26	29	19	17
315	600	5	7	10	16	20	22	16	15
400	900	3	5	9	19	26	20	13	10
500	900	3	4	9	15	23	17	12	8
630	1200	5	7	12	16	16	16	12	8

Circular Sound Attenuators

Circular active attenuators



ACTA

Green Product

Advantages

- Attenuates noises in air ducts.
- Efficient at low frequencies.
- Low pressure loss.
- Easy installation.
- New: integrated self-test.

APPLICATION

- Attenuation of fan / AHU noises propagated through ductworks.
- Highly effective at low frequencies with low pressure losses.
- Air exhaust and air supply.
- Operating range: -10° C to +55°C.

INSTALLATION

- Directly installed on a duct section (please, consult us).
- Horizontal / vertical.
- Interior / exterior.
- Power supply wiring and remote signals.
- Adjustment during installation by control box / integrated test.

DESCRIPTION

- Ø 315 to 500 mm models, cylindrical exterior casing.
- Ø 560 and 630 mm models, rectangular exterior casing.
- Passive circular silencer in galvanised steel.
- Central bulb in perforated galvanised steel housing the electro-acoustic system.
- Bulb operated by enclosed electronics box fixed on outer casing.
- 8 models in standard diameters: up to 630 mm to process up to 7000 m ³/h.
- The acoustic performances of ACTA partly depend on the installation: please, consult us.

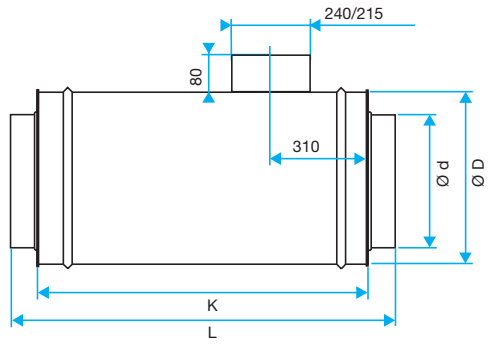
RANGE R17

Description	Code
ACTA Ø 250	11094801
ACTA Ø 315	11094802
ACTA Ø 355	11094803
ACTA Ø 400	11094804
ACTA Ø 450	11094805
ACTA Ø 500	11094806
ACTA Ø 560	11094818
ACTA Ø 630	11094819

ELECTRICAL ACCESSORIES R7

Description	Code
0.4 to -0.6 A circuit breaker in an IP 55 box	11056183

DIMENSIONS - WEIGHT

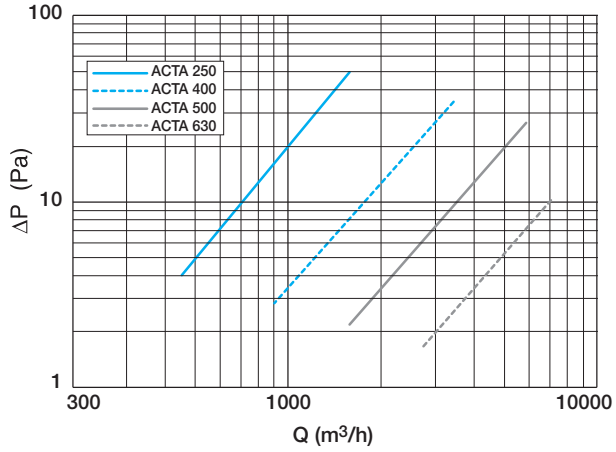


Model	Ø d (mm)	Ø D (mm)	K (mm)	L (mm)	Weight (Kg)
250	250	450	1499	1579	33
315	315	530	1514	1604	41
355	355	530	1465	1544	41
400	400	400	1250	1365	38
450	450	450	1491	1621	56
500	500	500	1250	1365	52
560	560	650 x 650	2000	2115	80
630	630	650 x 650	2000	2115	80

AIRFLOW AND ACOUSTIC DETAILS

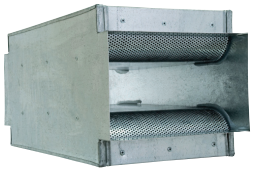
Example of acoustic performances. For an air speed passage upstream of the silencer of 4 m/s and an sound pressure level of 90 dB (A).

Model	Octave band central frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
250	9	19	25	26	32	50	45	33
315	7	19	22	25	32	41	30	22
355	7	19	22	25	32	41	30	22
400	7	19	22	25	31	41	31	22
450	4	9	19	24	28	33	25	17
500	4	9	19	24	28	33	25	17
560	9	16	20	27	31	33	22	16
630	9	16	20	27	31	33	22	16



Cross Talk Sound Attenuators

Cross talk sound attenuators



SC series

Advantages

- Reduce noise transfer in adjacent room.
- Easy installation.

APPLICATION

- SCS type is designed for in-line duct mounting in a ventilation system where rooms are served by branches of common duct galvanized sheet metal construction to BS 2989 grade Z2 G275 with DW144 Class B code.

DESCRIPTION

- The splitters contain acoustic infill which complies with Class O building regulations.
- The splitters are radiussed at both ends to minimize air pressure loss and regenerated noise.

CONSTRUCTION

- Casing and side splitters manufactured from 20 ga. galvanised sheet metal. Casing formed with pittsburgh lock formed seams with mastic sealant. The construction complies with SMACNA & DW 144 standards. Plain ends for duct connection as standard.
- The side baffles contain acoustic infill with glass cloth facing and contained behind galvanised perforated metal. This dual protection prevents damage and fiber erosion up to 30 m/s airway velocity. The splitters are radiussed at both ends to minimise air pressure loss.

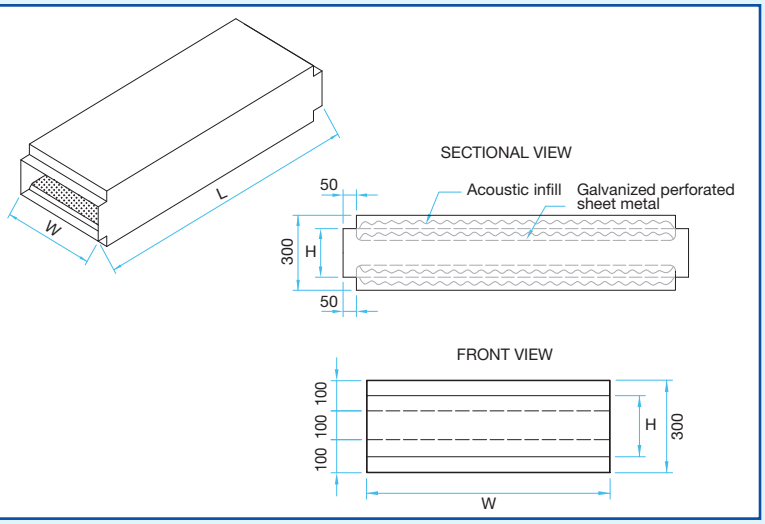
QUICK SELECTION

Design noise criterion in noise critical area	Attenuator length required (mm)	Total noise reduction at 500 Hz, dB
NC45	500	30
NC40	750	35
NC35	1000	40
NC30	1250	45
NC25	1500	50

INSERTION LOSS, D. IN dB

Attenuator length L (mm)	Octave band central frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
500	5	7	10	15	23	17	13	11
750	6	9	14	23	37	29	22	16
1000	8	11	19	31	48	37	28	21
1250	9	14	23	38	50	44	32	26
1500	10	16	27	45	50	50	39	31

DIMENSIONS (mm)



PRESSURE DROP

Attenuator Type	Air velocity, v, in m/s at duct size B x H		2.0	3.0	4.0	5.0
	Self noise guide against velocity		NC 25	NC 30	NC 35	NC 40
	Width B (mm)	Height H (mm)	Volume flow V litters / seconds			
SCS -1	100	100	20	30	40	50
	150	100	30	45	60	75
	200	100	40	60	80	100
Pressure loss, Δp in Pa			<5	<5	<5	<5
SCS - 2	150	150	45	70	90	115
	200	150	60	90	120	150
	250	150	75	115	150	190
	300	150	90	135	180	225
Pressure loss, Δp in Pa			<5	<5	<5	<5
SCS - 3	200	200	80	120	160	200
	250	200	100	150	200	250
	300	200	120	180	240	300
	350	200	140	210	280	350
	400	200	160	240	320	400
Pressure loss, Δp in Pa			<5	10	15	25
SCS - 4	250	250	125	190	250	315
	300	250	150	225	300	375
	350	250	175	265	350	440
	400	250	200	300	400	500
	450	250	225	340	450	565
	500	250	250	375	500	625
Pressure loss, Δp in Pa			10	20	35	50
SCS - 5	300	300	180	270	360	450
	350	300	210	315	420	525
	400	300	240	360	480	600
	450	300	270	405	540	675
	500	300	300	450	600	750
	550	300	330	495	660	825
	600	300	360	540	720	900
Pressure loss, Δp in Pa			15	30	55	85

Acoustic Louvres

Acoustic Louvres

SU 631 - Galvanized steel
AU 631 - Aluminium

Advantages

- Noise reduction with minimal airflow restrictions.

DESCRIPTION

- Acoustic louvres designed to provide optimal acoustic performance (noise reduction) with minimal airflow restrictions.

CONSTRUCTION

- SU 631: blades inclined at 40° on 300 mm pitch centers provide a resistence to water ingress with acoustic properties. Infill material is inert, incombustible, non-hygroscopic and vermin proof. Enclosed and covered on the under side with a perforated sheet suitable for velocities up to 20 m/s. Bird mesh in galvanized steel as standard (12 x 12 x Ø 1 mm).
- SU 632: combination of two SU 631 back to back to achieve 610 mm depth. Made in single section up to 1200 x 2100 mm. Larger sizes manufactured in multiple sections for assembly on site.

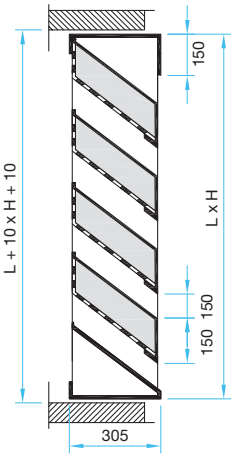
AVAILABLE OPTIONS

- Natural anodized aluminium, code A.
- Construction in stainless steel (grade 304), code EU.
- Insect mesh in galvanized steel (6 x 6 x Ø 0.8 mm).

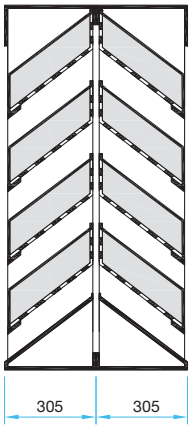
RANGE

Type	Description	Code
SU 631	Construction in galvanized steel	
AU 631	Construction in aluminium	
EU 631	Construction in stainless steel (grade 304)	
SU 632	Combination of two SU 631 back to back	
AU 632	Combination of two AU 631 back to back	
EU 632	Combination of two EU 631 back to back	

DIMENSIONS (mm)



SU 631

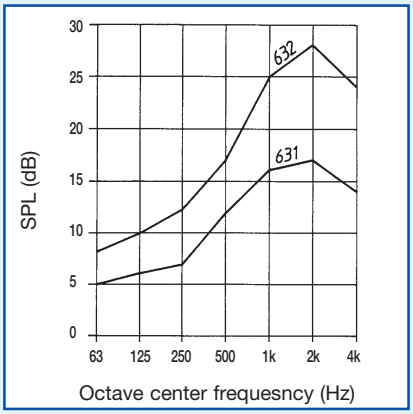


SU 632

H (mm)	L (mm)					
	400	500	600	800	1000	1200
600	0.11	0.15	0.18	0.24	0.31	0.38
900	0.21	0.28	0.34	0.47	0.59	0.72
1200	0.32	0.41	0.50	0.69	0.87	1.06
1500	0.42	0.54	0.66	0.91	1.16	1.40
1800	0.52	0.67	0.83	1.13	1.44	1.74
2100	0.62	0.81	0.99	1.35	1.72	2.09

- Af (m^2) - frontal surface.
- Other dimensions are available upon request.

SOUND REDUCTION INDEX (SPL)



Project Reference List

Below are few of our prestigious project references.

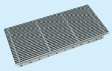
S. No.	Project	Consultant/Client	Contractor	Location
1	7 Substations	PB Power Ltd.	York	Abu Dhabi
2	Abu Dhabi Exhibition Center	RMJM	ETA	Abu Dhabi
3	ADDC Head Quarters	APG	York's A/C	Abu Dhabi
4	ADWEA Head Quarters	APG	Verger et Delporte	Abu Dhabi
5	ADWEA Substation	ADWEA / ESBI	Hyundai	Abu Dhabi
6	Al Hamed Residential Compound	Khatib & Alami	Emirates – EMI	Abu Dhabi
7	Al Wahda Mall	Khatib Alami/EC Harris	Aster	Abu Dhabi
8	B+G+7 Storey Luxury Bldg. On Plot 317-0218	Electrowatt Engg.	Elemec	Abu Dhabi
9	Conference Palace Hotel	Mott McDonald	Al Inayah	Abu Dhabi
10	Juvenile Center	Tahl Engg. Consultant	IECO	Abu Dhabi
11	K - Race Track	Tilke & Partner	Voltas Limited	Abu Dhabi
12	Qasr Al Sarab	Halcrow Yolles	ALEC	Abu Dhabi
13	Sheraton Hotel Extension	Khatib & Alami	Airmech	Abu Dhabi
14	Tweelah 400 Kv Substation	Lahmeyer International	Aceco	Abu Dhabi
15	Al Ain Airport Extension	Mein-Hardt	Nael E/m	Al Ain
16	Celebration Hall	Parc International /CRSS	Al Sabbah E/M	Al Ain
17	I.T. College	Keo International	Emirates – EMI	Al Ain
18	Soldier's Club	Military Works	Al Sabbah	Al Ain
19	Al Mas Tower	Atkins	ETA	Dubai
20	Boutique Offices	Al Hashemi	International E/M Services	Dubai
21	DIFC - District Cooling North Plant	Ellerbe Beckets/Tebodin	Voltas Limited	Dubai
22	Dubai Festival City	Mario & Associates	Transgulf	Dubai
23	Dubai Marina	Roberts & Partners	Yateem A/c	Dubai
24	Dubai Marina Phase - 1	Mott McDonald	Danway	Dubai
25	Dubai Municpality	Dubai Municpality	MACAir	Dubai
26	Dubai Public Library @ Al Twar	Gulf Engineering	Condor	Dubai
27	Indoor sports Hall	Archon / Jain & Partners	ETA	Dubai
28	Laboratory Building at Dubiotech	Kling	MACAir	Dubai
29	Madinat Jumeirah	RPW	Transgulf	Dubai
30	Marina View Towers @ Dubai Marina	Engg. Adnan Safrini	Transgulf	Dubai
31	Palace for H.H. The Chairman, D.M.	Shadid Engg.	Bin Ladin	Dubai
32	Petrofac Tower	Consultair / Arenco	ETA	Dubai
33	Zabeel Sports Club	Engineer's Office	Engineer's Office	Dubai
34	Fujairah Power Plant II	OTV S.A.	Dubai A/C	Fujairah
35	Palm Garden @ Sohar	Kadri Consultant	Larsen & Toubro	Oman
36	QLNG Headquarter @ Gala	Alkins	Al Ansari	Oman
37	Al Nakheel Tower at West Bay	Diwan Al Emara	Al Moayyed	Qatar
38	Al Nahda residence	QHC/TNQ	Al Hamad	Sharjah
39	Emirates Banking Institute	Gambert	Al Hamad	Sharjah
40	Etisalat - Thuraya Extension	Arif & Bintoak	Al Rehan	Sharjah
41	Youth Center At Malyha	CAB Consultant	IECO	Sharjah
42	Umm Al Quwain Hospital	HDP	Bpower	Umm Al Quwain
43	City Center	AAA	Bukamal	Bahrain
44	Riffa Views	MSCEB	Bukamal	Bahrain
45	SPM Project	MSCEB	Yateem A/c	Bahrain
46	Al Saad Development Complex	AEB	Samko	Qatar
47	Business Park & Hotel Facilities	AEB	QEMG	Qatar
48	Dental Clinics	Q.E.A.	Satco	Qatar
49	Kinder Garden School	QEA	Al Malki	Qatar
50	Preparatory Schools	Q.E.A. Doha	Al Moayyed	Qatar
51	Ras Gas Project	Qatar Petroleum	Al Moayyed	Qatar
52	Two Oil Platform for Maersk Oil	Maersk Oil Qatar S.A./GPMC	Specialist Services	Qatar
53	Villagio Mall	QEA	Voltas	Qatar

Notes

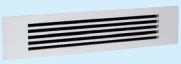
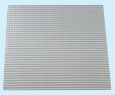
Selection Guide

Suitable for ceiling heights of less than 3 metres

++ Optimal comfort and system efficiency
+ Correct comfort level, acceptable system performance
− Prior to use an in-depth diffusion study must be carried out.

Applications	Range	Model		System upstream of the diffuser		
				Ventilation	AHU	Fan coil unit
Wall-mounted air supply	Small fixed metal grilles Air circulation levels 1 - 6		BIM 320 Page 255	++	+	−
	Adjustable core grilles Air circulation levels 1 - 4		SR 149 Page 253	++	−	−
	Single / double deflection grilles Air circulation levels 4 - 10		AC 101 D Page 259	++	++	+
	Fixed linear bar grilles Air circulation levels 4 - 10		AC 440 Page 263	++	++	++
	Floor-mounted fixed linear bar grilles Air circulation levels 4 - 10		AG 450 Page 267	++	+	+
	Fixed linear bar grilles (L/H 10) Air circulation levels 4 - 15		AC 440 Page 263	+	++	++
	Fixed air transfer blades grilles		AC 181 Page 266	++	++	++
Ceiling-mounted air supply	Small fixed metal grilles Air circulation levels 1 - 6		BIM 320 Page 255	++	+	−
	Fixed circular diffusers for ceiling tiles Air circulation levels 6 - 10		SC 832 TP Page 245	++	+	−
	Adjustable circular diffusers for ceiling tiles Air circulation levels 6 - 25		AT 842 Page 247	+	++	++
	Fixed square diffusers for ceiling tiles Air circulation levels 6 - 20		SF 704 TP Page 242	+	++	++
	Combined multi-slots square diffusers for ceiling tiles (air supply and return) Air circulation levels 6 - 22		ALD 610 K COMBINED Page 232	+	++	++
	Adjustable square diffusers - perforated sheet - for ceiling tiles Air circulation levels 6 - 20		SC 360 R Page 249	+	+	++
	Swirl square diffusers for ceiling tiles Air circulation levels 6 - 28		SF 786 Page 228	+	++	++

Selection Guide

Applications	Range	Model		System upstream of the diffuser: Ventilation	AHU	Fan coil unit
Ceiling-mounted air supply	Swirl diffusers for ceiling tiles Air circulation levels 6 - 32		Twisted 850 Page 224	+	++	++
	Adjustable aluminium slot diffusers Air circulation levels 6 - 20		AG 280 Page 237	+	++	++
	Adjustable aluminium slot diffusers Air circulation levels 6 - 20		AN 285 DTP Page 238	++	+	++
Wall-mounted air return	Small fixed metal grilles		BIM 300 Page 255	++	+	–
	Fixed blades grilles		AC 121 Page 261	++	+	+
	Fixed blades grilles with filter		AC 163 W Page 265	++	+	+
Ceiling-mounted air return	Small fixed metal grilles		BIM 300 Page 255	++	+	–
	Frameless grilles for ceiling tiles		AU 124 Page 270	+	++	++
	Fixed blade grilles with fitted filter - for ceiling tiles		AG 637 WZ Page 271	+	++	++

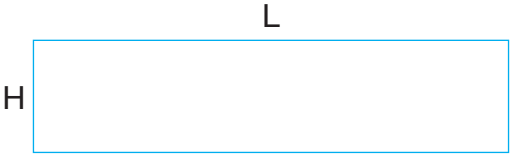
Category	Model	Description	Sound attenuation	Comfort	Ventilation	AHU
Louvres	Acoustic louvres 	SU 631 / SU 632 • Air intake or air exhaust • Acoustic infill for reduced noise • SU 632: combination of two back-to-back SU 631 acoustic louvres	✓	✓✓	✓✓	✓
	Fresh air louvres 	AG 638 / AG 639 • Air intake or air exhaust		✓	✓✓	✓
	Sand trap louvres 	SG 644 • Air intake • Separates sand and dust particles • Self cleaning & maintenance free		✓✓	✓✓	✓

Technical Datas

Air diffusion and comfort

DIMENSIONS

- All grille dimensions are in nominal values L x H (in mm). L x H is the opening required in either the duct or the partition.

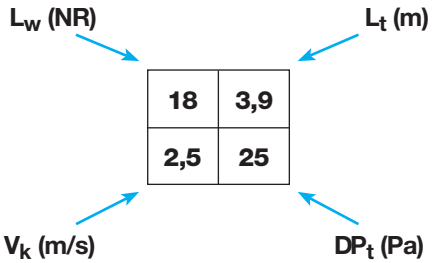


SYMBOLS

- Q_v (m^3/h) = Airflow.
- V_k (m/s) = Airspeed in the diffuser.
- V_t (m/s) = Final velocity (at the end of the airstream throw).
- A_k (m^2) = Free surface.
- L_w (NR) = Sound power level.
- ΔP_t (Pa) = Total pressure drop.
- L_t (m) = Air jet throw.

SELECTION TABLES

- The selection tables at the end of the section comprise the following information:
  - Nominal dimensions L x H (or D) and free surface area A_k.
  - The airfllow Q_v.
  - The four data items below.



AIR JET THROW (L_t)

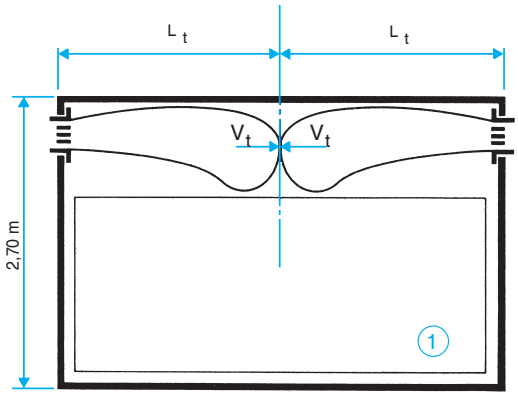
- In most cases, for high wall grilles or ceiling grilles with ceiling heights of about 2.7 m (± 0.3 m) the throw is considered as being the distance of the grille as far as the opposite wall or the middle distance between two opposite grilles with air jets that meet in the middle. For even higher ceilings, one could add, to this distance, the difference between 3 m and the actual room height. In such a way that this vertical throw L_v is less than or equal to the half of the horizontal part L_h of the air throw. Thus $L_t = L_h + L_v < 1.5 \times L_h$.
- The airthrow depends on the accepted final velocity (V_t) in order to guarantee comfort (see below).

FINAL VELOCITY (V_t)

- The published ranges are for final, optimum velocity in the direction of the air jet axis. This optimum velocity is a value found by experimentation, giving the best criteria of comfort for each type of air grille. Final throw levels for other terminal velocities are given in the form of correction factors. Extreme values represent the practical limitations for use.

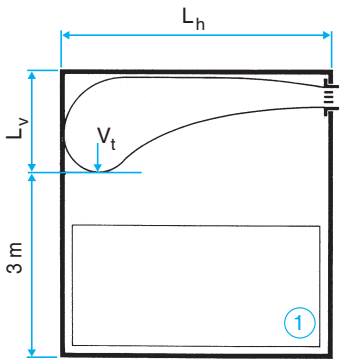
ZONE OF OCCUPATION

- The occupied zone is defined as being that volume contained within two horizontal planes at 0.15 and 1.8 metres from the ground and by vertical planes 0.15 metres from the walls.



① Zone of occupation

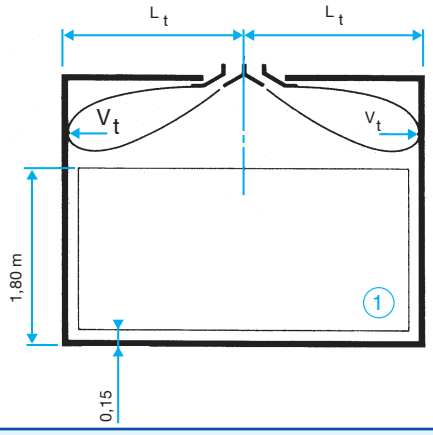
Wall-mounted grilles face-to-face



① Zone of occupation

Wall mounted grille

AIR JET REPRESENTATION



① Zone of occupation

Ceiling diffuser

Design guidelines for HVAC-related background sound in rooms (Ref. *ASHRAE Handbook*)

Room Types	RC(N); QAI ≤ 5dB Criterion a,b
Residences, Apartments, Condominiums	25 – 35
Hotels / Motels	
Individual rooms or suites	25 – 35
Meeting / banquet rooms	25 – 35
Corridors, lobbies	35 – 45
Service / support areas	35 – 45
Office Buildings	
Executive and private offices	25 – 35
Conference rooms	25 – 35
Teleconference rooms	25 (max)
Open-plan offices	30 – 40
Corridors and lobbies	40 – 45
Hospitals and Clinics	
Private rooms	25 – 35
Wards	30 – 40
Operating rooms	25 – 35
Corridors and public areas	30 – 40
Performing Arts Spaces	
Drama theaters	25 (max)
Concert and recital halls[c]	
Music teaching studios	25 (max)
Music practice rooms	30 - 35 (max)
Laboratories (with fume hoods)	
Testing / research, minimal speech communication	45 – 55
Research, extensive telephone use,	
Speech communication	40 – 50
Group teaching	35 – 45
Churches, Mosques, Synagogues	
General assembly	25 – 35
With critical music programs[c]	
Schools[d]	
Classrooms up to 70 m2	40 (max)
Classrooms over 70 m2	35 (max)
Large lecture rooms, without speech amplification	35 (max)
Libraries	30 – 40
Courtrooms	
Unamplified speech	25 – 35
Amplified speech	30 – 40
Indoor Stadiums, Gymnasiums	
Gymnasiums and natatoriums	40 – 45
Large seating-capacity spaces with speech amplification[e]	45 – 55

a The values and ranges are based on judgment and experience, not on quantitative evaluations of human reactions. They represent general limits of acceptability for typical building occupancies. Higher or lower values may be appropriate and should be based on a careful analysis of economics, space use, and user needs.

b When quality of sound in the space is important, specify criteria in terms of RC(N). If the quality of the sound in the space is of secondary concern, the criteria may be specified in terms of NC or NCB levels of similar magnitude.

c An experienced acoustical consultant should be retained for guidance on acoustically critical spaces (below RC 30) and for all performing arts spaces.

d HVAC-related sound criteria for schools, such as those listed in this table, may be too high and impede learning by children in primary grades whose vocabulary is limited, or whose first language is not the language of the class. Some educators and others believe that the HVAC-related background sound should not exceed RC 25(N).

e RC or NC criteria for these spaces need only be selected for the desired speech and hearing conditions.

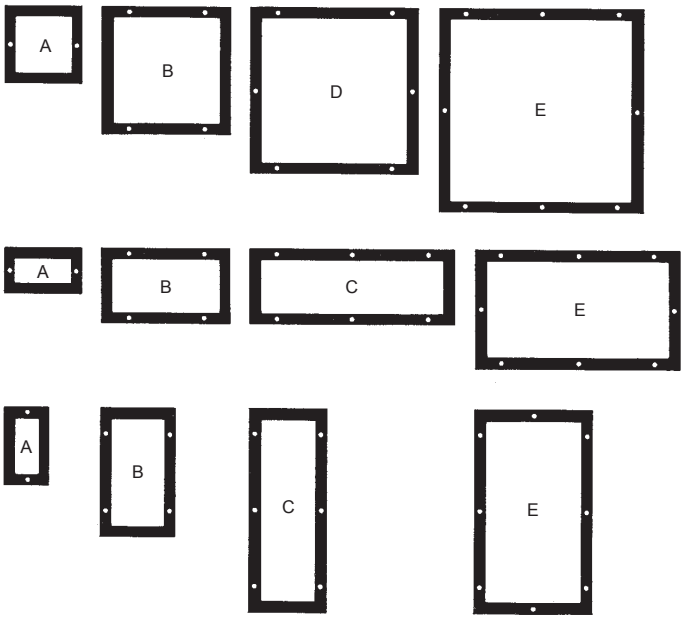
Technical Datas

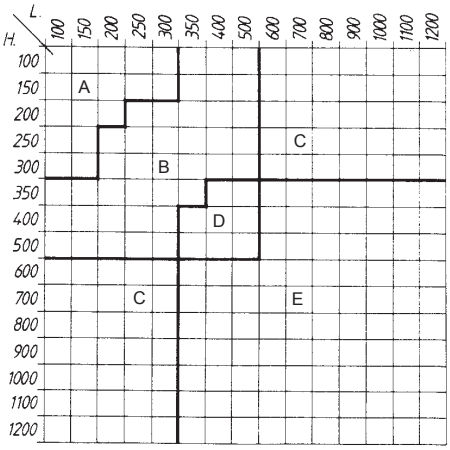
Grille fixing systems

Standard fixing (flange screw fixing)

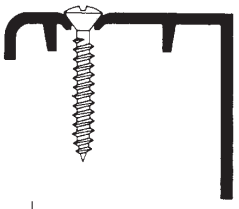
All grilles supplied with visible screw fixing pre-punched holes, code F1.

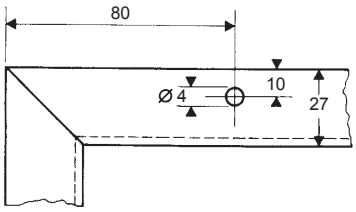
Screw hole location chart.





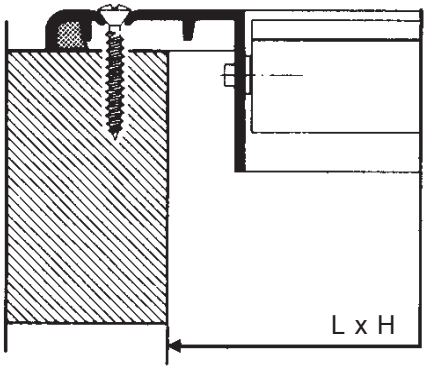
Recommended
self tapping screw
cross recess
DIN 7983
∅ 3,5 x 38 mm
(not supplied)



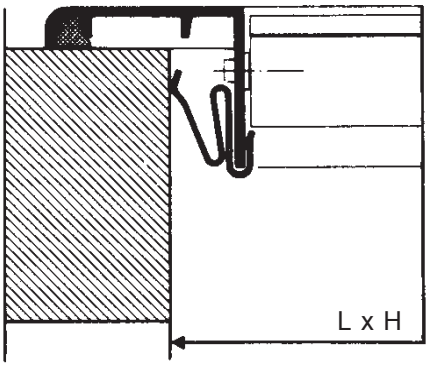


OTHER FIXING AVAILABLE UPON REQUEST

Fixing type F1
Visible screw fixing.
Fixing holes location see above.



Fixing type F3
Concealed spring clip.
(Not recommended for ceiling mounting)



Swirl Diffusers

Adjustable circular swirl diffusers

AR 883 series - Aluminium

Advantages

- Adjustable diffusion.
- Ideally suited for heigh ceilings or those requiring a high-volume air displacement.
- Motor driven air diffuser blades.

APPLICATION

- Air supply: high inductance adjustable airflow.
- Ideal for high temperature air-conditioning installations (high ΔT).
- Adjustable, motorised diffusion for optimum supply in both winter and summer.
- Very high levels of air circulation.
- Ceiling mounted.

DESCRIPTION

- Body and diffusion vanes in aluminium.
- White epoxy painted aluminium finish, RAL 9010 tint.
- Concealed fixing to the plenum by using a screw on the neck of the diffuser. The plenum is fitted with lugs for fixing to the concrete tile.
- Use the suspension cables.

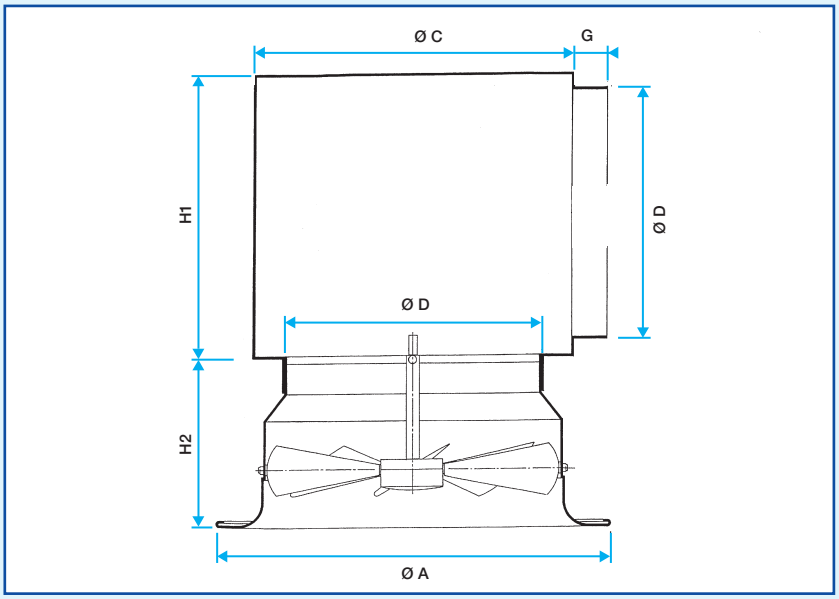
ACCESSORIES

- Connection plenum "side connection", supplied with the diffusers, code RE.
- Single speed 230V motor included.
- Damper with mounting frame supplied with the diffuser on request (supplied fitted with a plenum connection.)

ADDITIONAL RANGE

- Proportional motors.
- Manual version.
- Insulated plenums on 2 or 5 sides.
- Damper with control dial delivered fitted to the plenum connection.
- Paint finish in accordance with the RAL colour chart (please, consult us).

DIMENSIONS



AR 883 diffuser with RE plenum

Comfort airflow levels for Lw < NR 40 and dimensions							
Ø D (mm)	C (mm)	Ø A (mm)	G (mm)	H1 (mm)	H2 (mm)	Airflow (m³/h)	Airflow in cooling position (m³/h)
250	310	425	50	300	225	500	450
315	375	500	50	365	240	1000	750
400	460	615	60	450	280	1600	900
500	560	850	70	550	320	2500	1400
630	690	1070	70	680	410	6000	1600

• See selection table on page 280.

RANGE R10

Dimensions	AR 883 M1 Motorised Code	AR 883 Manual Code	Plenum side connector Code
Ø 250	11051095	11002361	11053313
Ø 315	11051096	11002362	11053314
Ø 400	11051097	11002363	11053316
Ø 500	11051098	11002364	11053318
Ø 630	11051099	11002365	11053319

Swirl Diffusers

Aesthetic swirl diffusers for ceiling tiles

Green Product

Twisted 850 supply diffuser

Pending Aldes Patent

TWISTED + VAV = Your Best Comfort Solution

New

Advantages

- Can be installed to replace a suspended ceiling tile 600 x 600 or 675 x 675 mm.
- Blends perfectly with the majority of ambience fittings in commercial premises.
- Ideal for variable airflow systems.
- Excellent high level air circulation.
- Accepts large differences in temperature.
- Easy access to the filter on the exhaust model.

APPLICATION

- Ceiling mounted diffuser designed to replace a 600 x 600 or 675 x 675 mm suspended ceiling tile.
- Air supply or air exhaust, fixed high induction diffusion by helicoid air pattern swirl diffusers.
- Large airflow range on a single dimension for the diffuser.
- Heating and air-conditioning installations requiring high levels of air circulation.
- Ideal for the supply of cold or hot air (air conditioning) with large differences in temperature and low ceiling heights.
- Ideal for variable airflow installations (of the ducted fan coil units type).

DESCRIPTION

Design

- Diffusion of high induction air by the rotation of an air jet inside the plenum.
- The diffusion cone, by maintaining a sufficient speed of ejection, ensures a perfect Coanda effect (ceiling effect) and a helicoid air pattern. It is this swirl effect (or helicoid air patern) that will induce the movement of the ambient air, and thus mix it with the air blown in to guarantee great homogeneity of temperatures in the occupied area.

Description

- Diffusion cone and central disk in painted steel.
- Compensation plate in steel adapted to 600 x 600 mm ou 675 x 675 mm ceiling tiles, with "Tbar" or "Fine-Line" frames.
- Air supply model fitted with a fixed central disk, serving as a deflector.
- Exhaust model fitted with a removable central disk and an elliptical filter. Access to the filter is by quick and simple opening of the central disk.
- Galvanised steel cylindrical plenum for direct connection to a circular duct with a 200 mm diameter.
- RAL9010 mat epoxy paint finish.
- Fixing to all of the concrete tile using the lugs located on the plenum.

NOTE: the diffuser weight must not be borne by the frame of the suspended ceiling. Use the suspension cables.

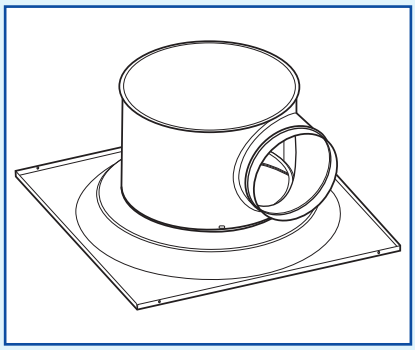
ACCESSORIES

- G2 efficiency elliptical flat filter in compliance with the HQE label supplied with the exhaust diffuser.
- M1 fire protection classification.

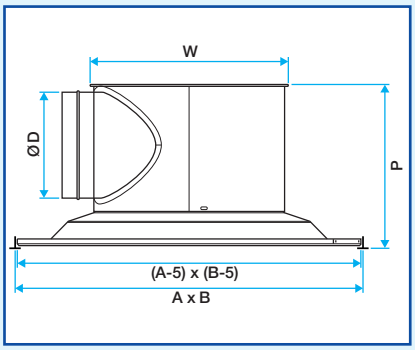
ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).

DIMENSIONS



Twisted 850 diffuser top view



Twisted 850 diffuser

Comfort airflow levels for Lw < NR 35 and dimensions				
A x B* (mm)	Ø W (mm)	Ø D (mm)	P (mm)	Airflow (m^3/h)
600 x 600	366	200	298	150 à 600
675 x 675	366	200	298	150 à 600

* Nominal ceiling tile dimensions.

• See selection table on page 279.

RANGE R10

Dimensions	Air inlet and exhaust diffuser with filter Twisted 850 W 600 x 600 Code	Air supply diffuser Twisted 850 600 x 600 Code	Spare filter W 850 Code
Ø 200	11051162	11051161	11053949

PRODUCT RANGE WITH CHOICE OF OPTIONS R10

Dimensions	Air inlet and with filter Twisted 850 W 600 x 600 Code	Air inlet and exhaust diffuser with filter Twisted 850 W 675 x 675 Code	Air supply diffuser Twisted 850 600 x 600 Code	Air supply diffuser Twisted 850 675 x 675 Code
Ø 200	11003362	11003364	11003361	11003363

AVAILABLE OPTIONS

Options
For T-bar or Fine Line type ceilings
Epoxy paint according to RAL colour chart
Acoustic insulation
Acoustic + thermal insulation

Swirl Diffusers

Aesthetic swirl diffusers for ceiling tiles

New

Twisted 850
Return diffuser with filter

Twisted 850
Return diffuser without plenum

Advantages

- Can be installed to replace a suspended ceiling tile 600 x 600 or 675 x 675 mm.
- Blends perfectly with the majority of ambience fittings in commercial premises.
- Ideal for variable airflow systems.
- Excellent high level air circulation.
- Accepts large differences in temperature.
- Easy access to the filter on the exhaust model.

FINISH

- RAL 9010 mat 30% epoxy paint finish.
- Paint finish in accordance with the RAL colour chart (please, consult us).

INSTALLATION

- Fixing to ceiling tile using lugs mounted on the plenum.

NOTE: the diffuser weight must not be borne by the frame of the suspended ceiling tile.

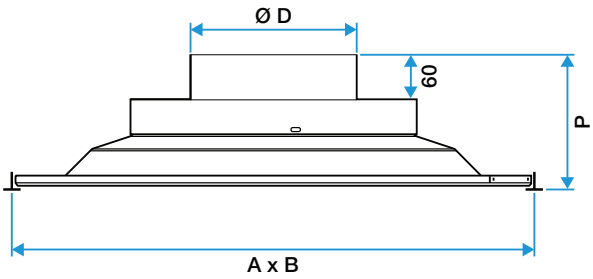
STANDARD DIMENSIONS

- Diffuser well adapted to standard 600 x 600 and 675 x 675 mm ceiling tiles.
- 200 mm diameter circular spigot.

ACCESSORIES

- G2 efficiency elliptical filter, provided with the supply diffuser.
- Acoustic insulation (M1 melamine foam, 15 mm thick inside the plenum).
- Thermal insulation (M1 polyurethane, 5 mm thick outside the plenum).

DIMENSIONS



Twisted 850 return diffuseur without plenum

Dimensions A x B* (mm)	Ø D (mm)	P (mm)
600 x 600	200 ou 250	170
675 x 675	200 ou 250	170
* Nominal ceiling tile dimensions		

Swirl Diffusers

Adjustable square swirl diffusers with helical air pattern

Advantages

- Adjustable air diffusion.
- Ideally suited for installations requiring a high-volume air displacement.

SF 773 series - Steel

APPLICATION

- Air supply: adjustable diffusion.
- Heating (ΔT_{max} = -30°C) and air conditioning (ΔT_{max} = -16°C) installations with adjustable, important airflow rates.
- Very high levels of air circulation.
- Ceiling mounted.

DESCRIPTION

- Flush mounted square ceiling diffuser designed specifically for T-bar lay-in application (tile replacement) for standard modular ceiling grid sizes, also available for surface mounted applications.
- Creative helical airstream discharge of supply air resulting in a high induction ratio and a rapid consolidation of supply air and room air temperature. Ability to handle high air change rates with draught free mixing.
- Galvanised mild steel pressed fascia having transverse supply apertures. Located within the supply apertures are acute angled deflectorals, adjustable for directional flow and painted stove enamelled black.

ACCESSORIES

- Connection arrangements for plenum boxes, manufactured from galvanised mild steel and available in 4 options as indicated below:
  - ST: top entry inlet spigot complete with perforated equalising grid and air deflectors (SF 773 ST).
  - RT: top entry inlet spigot without perforated equalising grid and air deflectors for return air application (SF 771 RT).
  - RS: side entry inlet spigot complete with perforated equalising grid and air deflectors (SF 773 RS).
  - RE: side entry inlet spigot without perforated equalising grid and air deflectors for return air application (SF 771 RE).

ADDITIONAL RANGE

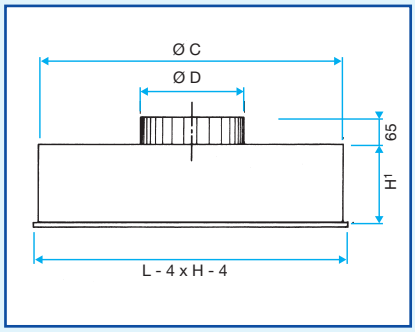
- Version without plenum.
- Paint finish in accordance with the RAL colour chart.
- Damper with control dial, supplied with the diffuser (delivered already fitted to the plenum connection).
- Lever operated quadrant damper located in the plenum inlet spigot, code Q.

RANGE with choice of options

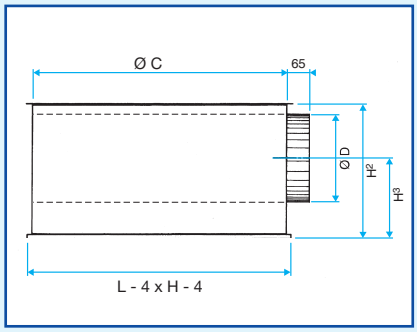
Description	Code
SF 773 - 400 x 400 mm (option: 44.4)	
SF 773 - 500 x 500 mm (option: 55.4, 55.5)	
SF 773 - 600 x 600 mm (option: 66.4, 66.5, 66.6)	
SF 773 - 625 x 625 mm (option: 662.4, 662.5, 662.6)	

DIMENSIONS (mm)

SF 773 diffuser



ST and RT type



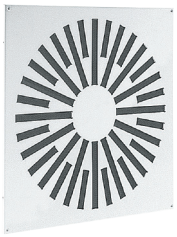
RS and RE type

L X H	Option	Ø C	Ø D	H1	H2	H3
400 x 400	44.4	360	198	200	300	175
500 x 500	55.4	460	198	200	300	175
500 x 500	55.5	460	198	200	300	175
600 x 600	66.4	545	198	200	300	175
600 x 600	66.5	545	198	200	300	175
600 x 600	66.6	545	248	250	350	200
625 x 625	662.4	545	198	200	300	175
625 x 625	662.5	545	198	200	300	175
625 x 625	662.6	545	248	250	350	200

L X H	ØW		
	340	440	540
400 x 400	44.4	-	-
500 x 500	55.4	55.5	-
600 x 600	66.4	66.5	66.6
625 x 625	662.4	662.5	662.6

Swirl Diffusers

Adjustable square swirl diffusers with helical air pattern



SF 783 series - Steel

Advantages

- Adjustable air diffusion.
- Ideally suited for installations requiring a high-volume air displacement.

APPLICATION

- SF 781: air exhaust.
- SF 783: air supply.
- Heating installations (ΔT_{max}=-30°C) and air-conditioning (ΔT_{max}=-16°C) with adjustable, important airflow rates.
- Very high levels of air circulation.
- Ceiling mounted.

DESCRIPTION

- Flush mounted square ceiling diffuser designed specifically for T-bar lay-in application (tile replacement) for standard modular ceiling grid sizes, also available for surface mounted applications.
- Creative helical airstream discharge of supply air resulting in a high induction ratio and a rapid consolidation of supply air and room air temperature. Ability to handle high air change rates with draught free mixing.
- Galvanised mild steel pressed fascia having transverse supply apertures. Located within the supply apertures are acute angled deflectorals, adjustable for directional flow and painted stove enamelled black.

ACCESSORIES

- Connection arrangements for plenum boxes, manufactured from galvanised mild steel and available in 4 options as indicated below:
  - ST: top entry inlet spigot complete with perforated equalising grid and air deflectors (SF 783 ST).
  - RT: top entry inlet spigot without perforated equalising grid and air deflectors for return air application (SF 781 RT).
  - RS: side entry inlet spigot complete with perforated equalising grid and air deflectors (SF 783 RS).
  - RE: side entry inlet spigot without perforated equalising grid and air deflectors for return air application (SF 781 RE).

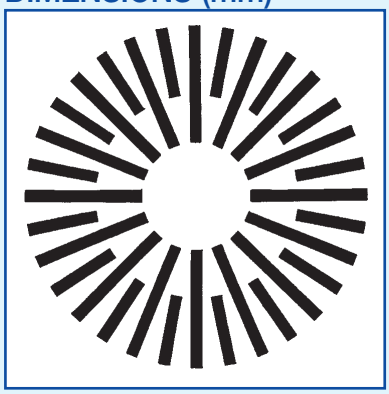
ADDITIONAL RANGE

- Version without plenum.
- Paint finish in accordance with the RAL colour chart.
- Damper with control dial, supplied with the diffuser (delivered already fitted to the plenum connection).
- Lever operated quadrant damper located in the plenum inlet spigot, code Q.

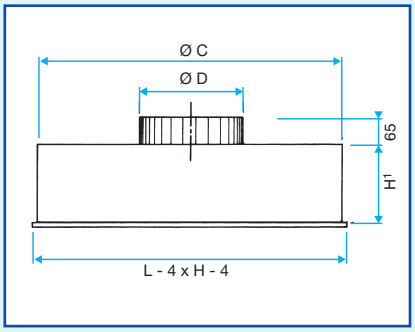
RANGE with choice of options

Description	Code
SF 783 - 400 x 400 mm (option: 44.4)	
SF 783 - 500 x 500 mm (option: 55.4, 55.5)	
SF 783 - 600 x 600 mm (option: 66.4, 66.5, 66.6)	
SF 783 - 625 x 625 mm (option: 662.4, 662.5, 662.6)	
SF 783 - 825 x 825 mm (option: 882.8)	

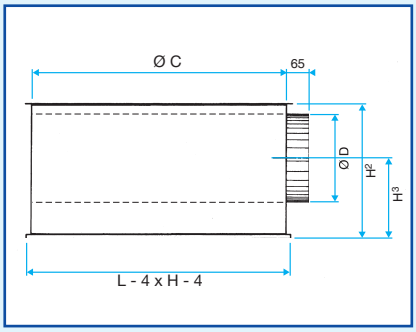
DIMENSIONS (mm)



SF 783 diffuser



ST and RT type



RS and RE type

L X H	Option	Ø C	Ø D	H1	H2	H3
400 x 400	44.4	360	198	200	300	175
500 x 500	55.4	460	198	200	300	175
500 x 500	55.5	460	198	200	300	175
600 x 600	66.4	545	198	200	300	175
600 x 600	66.5	545	198	200	300	175
600 x 600	66.6	545	248	250	350	200
625 x 625	662.4	545	198	200	300	175
625 x625	662.5	545	198	200	300	175
625 x 625	662.6	545	248	250	350	200
825 x 825	882.8	745	313	300	415	234

L X H	ØW			
	345	445	525	725
400 x 400	44.4	-	-	-
500 x 500	55.4	55.5	-	-
600 x 600	66.4	66.5	66.6	-
625 x 625	662.4	662.5	662.6	-
825 x 825	-	-	-	882.8

Swirl Diffusers

Fixed square swirl diffusers

New

Advantages

- Easy installation.
- Ideally suited for installations requiring a high-volume air displacement.

SF 786 series - Steel

APPLICATION

- Air supply fixed diffusion pattern.
- Heating and air-conditioning installations where the airflows are high and modulated.
- Very high levels of air circulation.
- Ceiling mounted.

DESCRIPTION

- Finish - white epoxy painted steel RAL 9010 tint.
- Fixing (F7) by means of a central screw under the plenum. This fixing is well adapted to staff or BA13 non removable fixed ceilings.
- Finish - white epoxy painted steel RAL 9010 tint.
- Front face adjustable blades in black polypropylene.
- Fixing to the plenum by means of a central screw (F7). This fixing is well adapted to staff or BA13 non removable fixed ceilings.
- Fixing to all of the concrete tile using the lugs located on the connecting plenum. Use the suspension cables.

ACCESSORIES

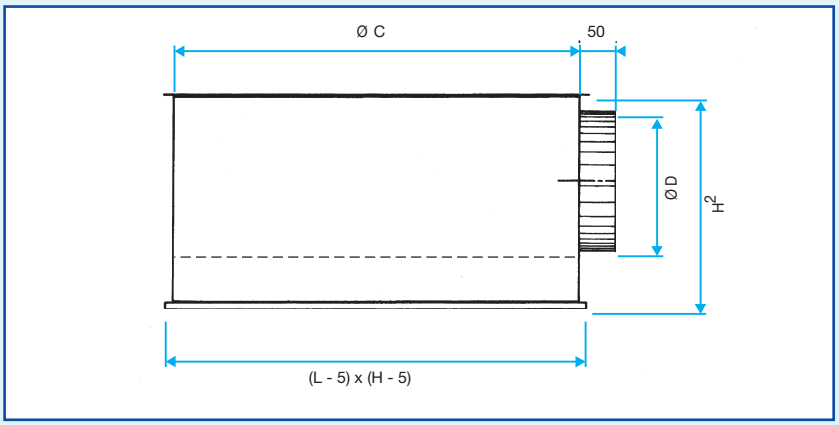
- RE connecting plenum (side connection).

NOTE: the plenums are fitted, as standard, with an airflow diffuser.

ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).
- Insulated plenum (please, consult us).
- Top connection plenum (please, consult us).

DIMENSIONS



SF 786 diffuser with RE plenum

Comfort airflow levels for Lw < NR 30 and dimensions				
L x H (mm)	Ø C (mm)	Ø D (mm)	H2 (mm)	Airflow (m^3/h)
600 x 600	560	250	340	550

- Dimension adapted to standard 600 x 600 mm ceiling tiles.
- See selection table on page 281.

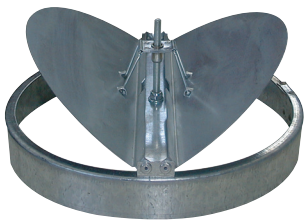
RANGE R10

Dimensions	Diffuser SF 786 F7 Code	Plenum RE Code
600 x 600	11051133	11002950

Swirl Diffusers

Fixed circular swirl diffusers for ceiling tiles

SF 861T series - Steel



BR damper

Advantages

- Designed for 600 x 600 mm ceiling tiles.
- Efficient diffusion and easy to fit.
- Excellent high level air circulation.

APPLICATION

- Ceiling mounted diffuser designed to replace a 600 x 600 mm suspended ceiling tile.
- Heating and air-conditioning installations requiring high levels of air circulation.
- Ideal for the cold air supply (air-conditioning).

DESCRIPTION

- Body and diffusion vanes in steel.
- Based on the design of the SF 861 diffuser as standard, integrated into a steel plate.
- Connection to circular ducts or the LRE plenum.
- White steel epoxy painted, RAL 9010 tint.

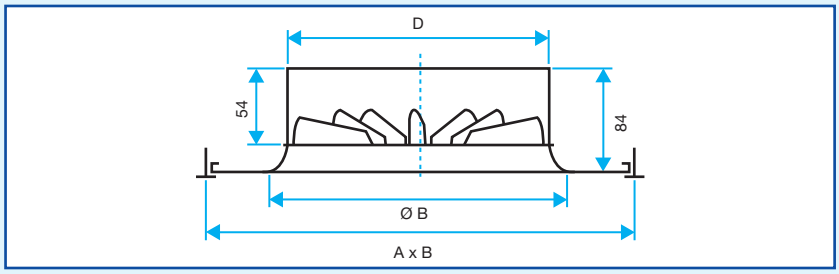
ACCESSORIES

- BR damper: butterfly type with either 2 or 4 V-shaped blades (depending on diameter). Manufactured in steel. Adjustment through the diffuser uses a screw.
- LRE side connector plenum in galvanised steel.

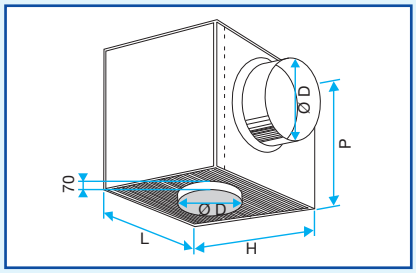
ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).

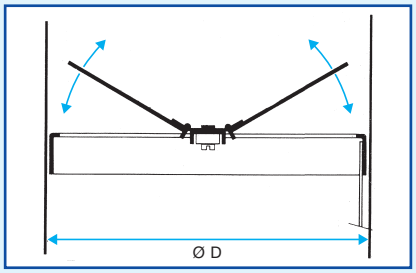
DIMENSIONS



SF 861T diffuser



LRE plenum



BR damper

Comfort airflow levels for Lw < NR 30 and dimensions					
Ø D (mm)	A x B* (mm)	Ø B (mm)	Ø Connections Plenum (mm)	P (mm)	Airflow (m^3/h)
160	600 x 600	200	160	210	130
200	600 x 600	250	200	250	200
250	600 x 600	300	250	300	280
315	600 x 600	360	315	365	420

* Nominal ceiling tile dimensions.

• See selection table on page 281.

RANGE R10

Dimensions	Diffuser SF 861 T Code	Damper BR Code	Plenum LRE Side connector Code
Ø 160	11051081	11053220	11053311
Ø 200	11051082	11053221	11053312
Ø 250	11051083	11053222	11053313
Ø 315	11051084	11053223	11053314

Swirl Diffusers

Fixed circular swirl diffusers

SF 861 series - Steel

SR 861 series - Steel

Advantages

- Perfect for cooling installations.
- Excellent high level air circulation.

APPLICATION

- Air supply and air exhaust: high inductance fixed airflow.
- Heating and air-conditioning installations requiring high levels of air circulation.
- Ideal for the cold air supply (air-conditioning).
- Ceiling mounted.

DESCRIPTION

- Body and diffusion vanes in steel.
- Finish - white epoxy painted steel RAL 9010 tint.
- Invisible fixing, using a screw in the diffuser neck.

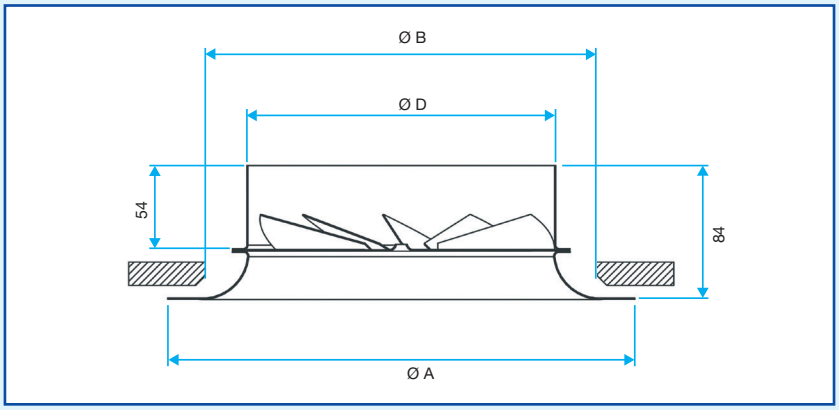
ACCESSORIES

- LRE: side connector plenum in galvanised steel.
- BR damper: butterfly type with either 2 or 4 V-shaped blades (depending on diameter). Manufactured in steel. Adjustment through the diffuser uses a screw.

ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).
- Models available to replace suspended ceiling tiles, see page 229.

DIMENSIONS



SR 861 & SF 861 diffusers

Comfort airflow levels for Lw < NR 30 and dimensions SR 861			
Ø D (mm)	Ø A (mm)	Ø B (mm)	Airflow (m^3/h)
125	225	175	80
160	250	210	130
200	300	250	200
250	350	300	280
315	415	360	420

Comfort airflow for Lw < NR 30 and connector diameters SF 861			
Ø D (mm)	A (mm)	Ø B (mm)	Airflow (m^3/h)
125	225	175	80
160	250	210	130
200	300	250	200
250	350	300	280
315	415	360	420

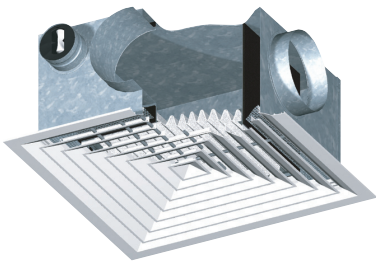
• See selection table on page 281.

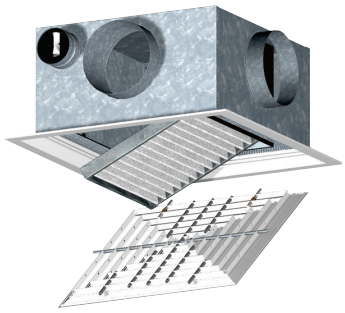
RANGE R10

Dimensions	Damper BR Code	Diffuser SF 861 Code	Diffuser SR 861 Code	Plenum LRE Side connector Code
Ø 125		11051121	11051105	
Ø 160	11053220	11051122	11051106	11053311
Ø 200	11053221	11051123	11051107	11053312
Ø 250	11053222	11051124	11051108	11053313
Ø 315	11053223	11051125	11051109	11053314

Special Diffusers

Square diffusers air supply + air exhaust





Standard Combined Solution
SF/SN 704S series
AF/AN 704S RREI Combined series
Steel or aluminium

Advantages

- Integrated air supply + air exhaust diffuser.
- Saves time during installation.
- Suitable for both centralised air conditioning and convector fans using ducts.
- Access to the air return filter (optional).

APPLICATION

- Simultaneous air supply (on the periphery) and air exhaust (at the centre) for all ventilation and air-conditioning applications.
- Ceiling mounted diffuser designed to replace a 600 x 600 or 675 x 675 mm suspended ceiling tile (T-shaped framework).
- Fixed air diffusion in four directions.
- Heating and air-conditioning installations.

DESCRIPTION

- Double plenum and air diffuser assembly ensuring the functions of air supply and exhaust simultaneously.
- SF and SN types: white epoxy painted steel RAL 9010 tint.
- AF and AN types: diffuser in anodised aluminium, natural satin finish.
- Double plenum in galvanised steel with two branches at 90°.
- Invisible fixing, using a screw in the neck of the diffuser. The plenum is fitted with lugs for fixing to the concrete tile. Use the suspension cables.

NOTE: the diffuser weight must not be borne by the frame of the suspended ceiling.

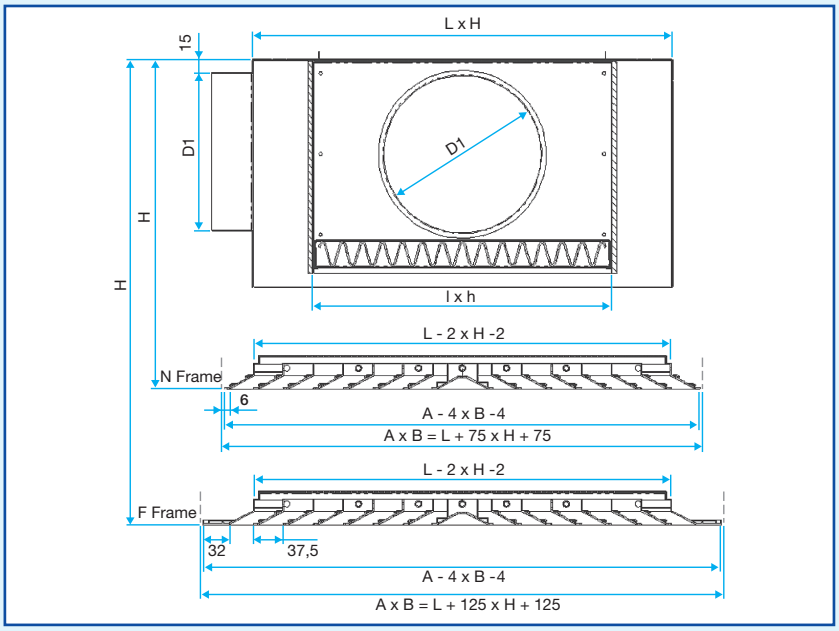
ACCESSORIES

- Folded 35 mm filter – G3 efficiency – M1 fire-resistance rating for air exhaust.

ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).
- Other connection diameters for the various airflow rates (please, consult us).

DIMENSIONS



704 S R REI diffuser

Comfort airflow levels for LW < NR 35 (air supply + exhaust) and dimensions						
Model	A x B* (mm)	L x H (mm)	l x h (mm)	H (mm)	Ø D1 (mm)	Airflow (m^3/h)
AF/SF 704S R REI	600 x 600	472 x 472*	323 x 323	355	250	500
AN/SN 704S R REI	600 x 600	525 x 525*	375 x 375	420	315	650
AN/SN 704S R REI	675 x 675	600 x 600**	375 x 375	420	315	850

* Dimensions for 600 x 600 mm suspended ceiling tiles.
** Dimensions for 675 x 675 mm suspended ceiling tiles.
• See selection table on page 282.

RANGE R10

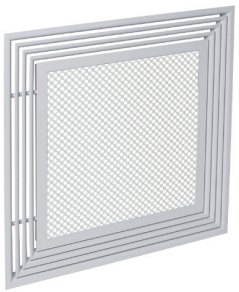
Dimensions	Diffuser SF 704 S Code	Double plenum R-REI Code	Filter (L1 x H1) W Code
472 x 472*	11051051	11003291	11053511
525 x 525 + 600 x 600			11053512

PRODUCT RANGE WITH CHOICE OF OPTIONS R10

Dimensions	Diffuser AF 704 S Code	Diffuser AN 704 S Code	Diffuser SF 704 S Code	Diffuser SN 704 S Code	Double plenum R-REI Code
472 x 472*	11002804		11002803		11003291
525 x 525*		11002807		11002805	11003292
600 x 600**		11002808		11002806	11003293

Special Diffusers

Multi-slot square diffusers



Multi-slot Combined Solution
ALD 610 K - Aluminium

Advantages

- Integrated air supply + air exhaust diffuser.
- Saves time during installation
- Suitable for both centralised air conditioning and convector fans using ducts.
- Access to the air return filter (optional).

APPLICATION

- Simultaneous air supply (on the periphery) and air exhaust (at the centre) for all ventilation and air-conditioning applications.
- Four direction horizontal fixed diffusion with 1, 2, 3 or 4 slots.
- Heating and air-conditioning installations.
- Ceiling mounted diffuser designed to replace a 600 x 600 or 675 x 675 mm suspended ceiling tile (T-shaped framework).

DESCRIPTION

- Diffuser équipped with a double plenum for simultaneous air supply and air exhaust functions.
- Body and deflectors of air supply in aluminium extrusions.
- Central plate (for exhaust) comprising are perforated steel sheet. This plate can have a filter, and in that case the central core opens for easy access.
- Double plenum in galvanised steel with two facing branches.
- White epoxy painted steel RAL 9010 tint.
- Diffuser fixed discreetly to plenum using non-removable clips.
- Fixing to all of the concrete tile using the lugs located on the plenum.

NOTE: the diffuser weight must not be borne by the frame of the suspended ceiling. Use the suspension cables.

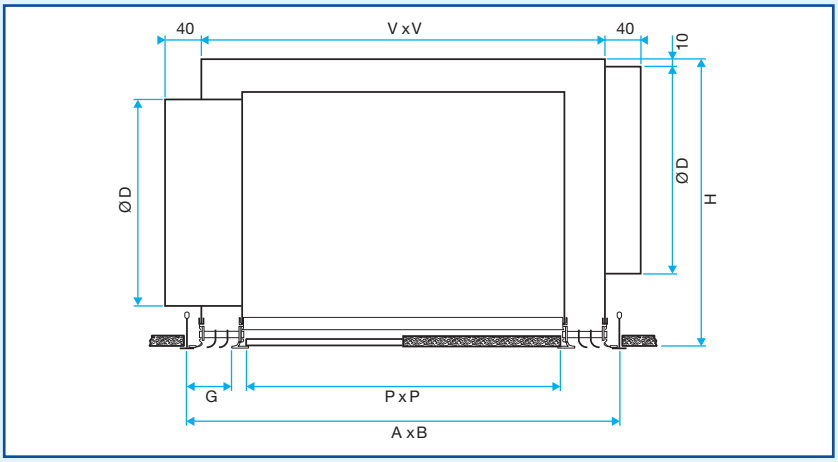
ACCESSORIES

- G2 or G3 flat filter delivered mounted in the plenum for air exhaust (M1).
- 5 sided plenum insulation (M1 polyurethane foam).

ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).

DIMENSIONS



Combined ALD 610 K diffuser

Comfort airflow levels for LW < NR 35 (air supply + exhaust) and dimensions							
A x B* (mm)	Number of slots	P x P (mm)	V x V (mm)	H (mm)	G (mm)	Ø D (mm)	Airflow (m^3/h)
600 x 600	1	508 x 508	560 x 560	365	25	250	300
600 x 600	2	474 x 474	560 x 560	365	42	250	500
600 x 600	3	440 x 440	560 x 560	365	59	250	750
600 x 600	4	406 x 406	560 x 560	365	76	250	900
675 x 675	1	583 x 583	635 x 635	365	25	250	350
675 x 675	2	549 x 549	635 x 635	365	42	250	550
675 x 675	3	515 x 515	635 x 635	365	59	250	850
675 x 675	4	481 x 481	635 x 635	365	76	250	1000

* Nominal ceiling tile dimensions.
• See selection table on page 283.

RANGE R10

Dimensions	N°. slots	Air inlet core with filter included option Code	Air inlet diffuser with filter included option Code	Double plenum R-RE Code	Filter holder on plenum (option) Code	Fixed diffuser with perforated sheet metal Combined ALD610K Code
600 x 600	1	11002881-a		11003341	11003341-a	11002881
600 x 600	2		11002882-a	11003342	11003342-a	11002882
600 x 600	3		11002883-a	11003343	11003343-a	11002883
600 x 600	4		11002884-a	11003344	11003344-a	11002884
675 x 675	1		11002886-a	11003346	11003346-a	11002886
675 x 675	2		11002887-a	11003347	11003347-a	11002887
675 x 675	3		11002888-a	11003348	11003348-a	11002888
675 x 675	4		11002889-a	11003349	11003349-a	11002889

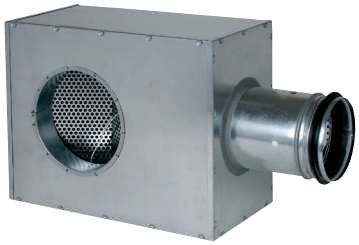
OPTIONS

Diffuser	Plenum
Epoxy paint according to RAL colour chart	Connections positioned at 90°
	5 sides insulation

Special Diffusers

Adjustable diffusers with rotating nozzles

SC 984 diffuser - Steel



Plenum LREI (5)

Advantages

- Aesthetic design.
- Ideally suited for installations requiring a high-volume air displacement.
- Adjustable diffusion.
- Version adapted to 600 x 600 mm. ceilig tiles.
- Easy installation.

APPLICATION

- Air supply: adjustable diffusion.
- Heating and air-conditioning installations.
- Very high levels of air circulation.
- Ceiling mounted.

DESCRIPTION

- Front face in steel plate with RAL9010 tint.
- White plastic rotating nozzles.
- Invisible fixing, using a screw in the neck of the diffuser.
- "T" models adapted to 600 x 600 mm suspended ceiling tiles of

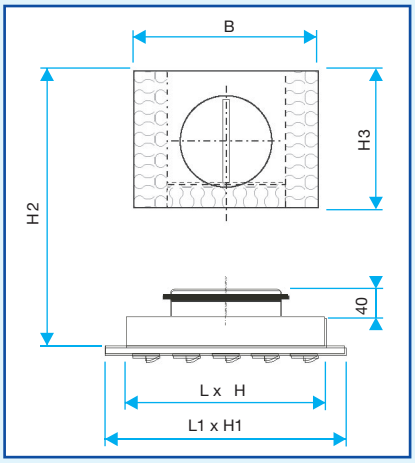
ACCESSORIES

- LREI (5) plenum insulated on 5 sides (side connection).
- Damper with control dial delivered fitted to the plenum connection (supplied as standard).

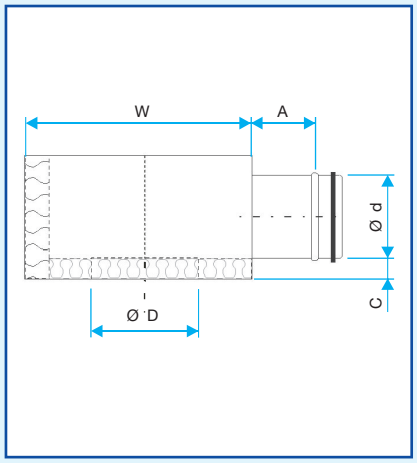
ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).

DIMENSIONS



SC 984 diffuser with plenum



LREI (5) plenum

Comfort airflow levels for Lw < NR 35 and dimensions										
Ø D (mm)	L x H (mm)	L1 x H1 (mm)	Ø d (mm)	H2 (mm)	H3 (mm)	B (mm)	W (mm)	A (mm)	C (mm)	Airflow (m^3/h)
125	333	389	100	185	155	250	320	81	30	130
125	333	595*	100	185	155	250	320	81	30	130
160	333	389	125	210	180	300	380	91	40	210
160	333	595*	125	210	180	300	380	91	40	210
200	415	472	160	260	215	370	440	103	35	300
200	415	595*	160	260	215	370	440	103	35	300
250	554	595	200	315	255	465	520	123	30	480
315	554	595	250	360	300	550	580	144	25	600

* Models adapted to 600 x 600 mm suspended ceiling tiles.

RANGE R10

Dimensions	600x600 mm diffuser SC 984T Code	Diffuser SC 984 Code	Insulated plenum LREI (5) Code
Ø 125	11051301	11051291	11053361
Ø 160	11051302	11051292	11053362
Ø 200	11051303	11051293	11053363
Ø 250	11051304		11053364
Ø 315	11051305		11053365

Special Diffusers

Jet diffusers

DGH series - Aluminium

Advantages

- Ideal for destratifying air layers in high ceilinged premises.
- Adjustable air-jet throw.

APPLICATION

- Air supply for premises with high ceilings of the airport type.
- Long-range diffusion to provide an airflow to the occupied zone, ideal for avoiding stratification of air in heating systems.
- Adjustable diffusion direction – angles of up to 30°.
- Wall or ceiling mounted.

DESCRIPTION

- White epoxy painted aluminium finish, RAL 9010 tint.
- DGH and DGHB: fixing by visible screws against the wall, rectangular frame.
- DGH-C and DGHB-C: fixing directly on to the circular air supply duct.

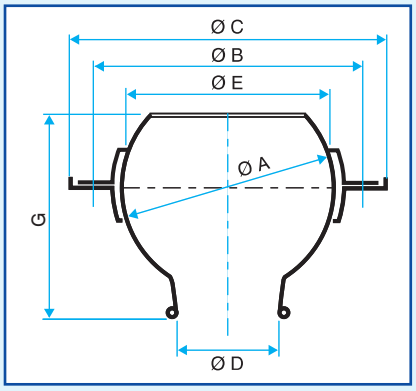
ACCESSORIES

- DGH-C: supplied with circular connector sleeve.
- DGHB: supplied with an integrated damper which can be adjusted.
- DGHB-C: supplied with circular connector sleeve and integrated damper.

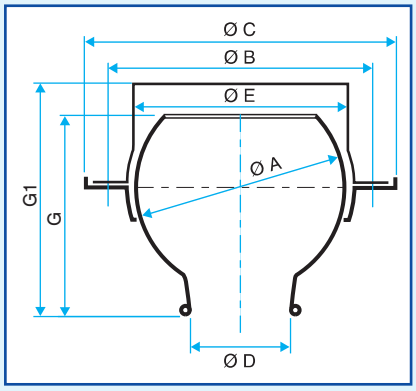
ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).

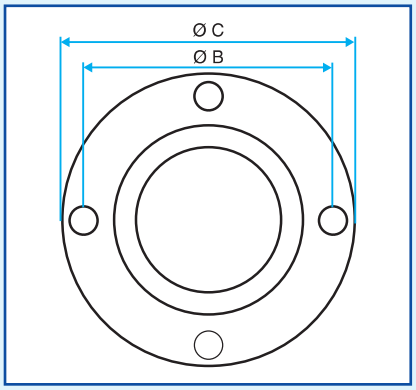
DIMENSIONS



DGH jet diffuser



DGH-C ejector



Comfort airflow levels for Lw < NR 40 and dimensions									
Model (mm)	Ø Réservation (mm)	Ø A (mm)	Ø B (mm)	Ø C (mm)	Ø D (mm)	Ø E (mm)	G (mm)	G1 (mm)	Airflow (m^3/h)
100	105	95	120	140	45	98	90	98	125
150	165	155	180	200	70	148	140	150	250
200	215	205	240	260	95	198	180	188	450
315	325	315	350	370	160	313	265	305	1000
400	425	415	455	480	225	398	355	395	2000

• See selection table on page 284.

RANGE R10

Dimensions	DGH Code	DGHB (with damper) Code	DGHB-C (damper + sleeve) Code	DGH-C (with sleeve) Code
Ø100	11051681	11051225	11051230	11051220
Ø150	11051682	11051226	11051231	11051221
Ø200	11051683	11051227	11051232	11051222
Ø315	11051684	11051228	11051233	11051223
Ø400	11051685	11051229	11051234	11051224

Special Diffusers

Jet diffusers

DGH2 series - Aluminium

Advantages

- Ideal for destratifying air layers in high ceilinged premises.
- Adjustable air-jet throw.
- Aesthetic design.

APPLICATION

- Air supply for premises with high ceilings of the airport type.
- Long-range diffusion to provide an airflow to the occupied zone, ideal for avoiding stratification of air in heating systems.
- Adjustable diffusion direction – angles of up to 30°.
- Wall or ceiling mounted.

DESCRIPTION

- White epoxy painted aluminium finish, RAL 9010 tint.
- DGH2: fixing by visible screws against the wall, rectangular frame.
- DGH2-C: fixing directly on to the circular air supply duct.

NOTE: no damper available for this range.

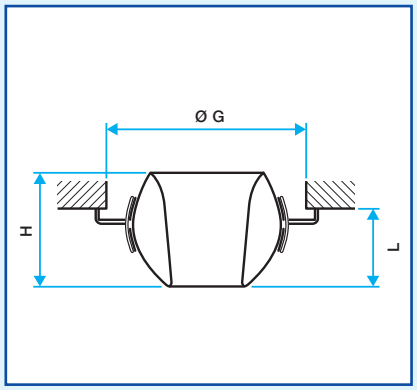
ACCESSORIES

- DGH2-C supplied with circular connector sleeve.

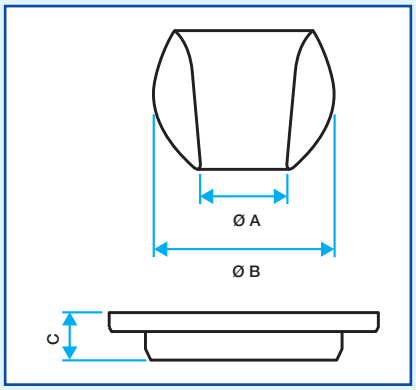
ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).

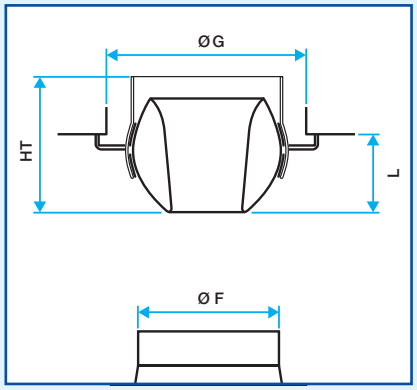
DIMENSIONS



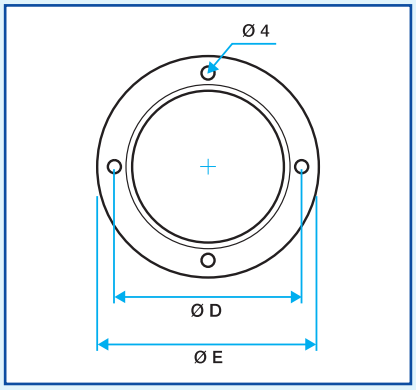
DGH2 jet diffuser



DGH2 jet diffuser



DGH2-C jet diffuser



Connection flange

Comfort airflow levels for Lw < NR 40 and dimensions											
Model (mm)	Ø G (mm)	Ø A (mm)	Ø B (mm)	Ø C (mm)	Ø D (mm)	Ø E (mm)	Ø F (mm)	H (mm)	HT (mm)	L (mm)	Airflow (m^3/h)
100	105	45	95	25	120	140	98	75	85	50	125
150	165	70	155	25	180	200	148	120	130	80	250
200	215	95	205	30	240	260	198	150	155	100	450
315	325	160	315	35	350	370	313	215	230	145	1000

• See selection table on page 284.

RANGE R10

Dimensions	DGH2 Code	DGH2-C (with sleeve) Code
Ø 100	11051281	11051271
Ø 160	11051282	11051272
Ø 200	11051283	11051273
Ø 315	11051284	11051274

Special Diffusers

Jet diffusers

SR 151 S series - Steel

Advantages

- Ideal for destratifying air layers in high ceilinged premises.

APPLICATION

- Air supply for premises with high ceilings of the industrial type.
- Long-range diffusion to provide an airflow to the occupied zone, ideal for avoiding stratification of air in heating systems.
- Adjustable diffusion direction - angles of up to 30°.
- Wall or ceiling mounted.

DESCRIPTION

- White epoxy painted steel finish, RAL9010 tint. Other colours on request.
- Fixing directly on to the circular air supply duct.
- Standard sizes: Ø 200, 250, 300, 350 mm.
- Adujstable core may be rotated through 360°and titled up to a maximum of 30° from mid position to produce a wide variation in air jet angles.
- Available with one, two, three or four elements per panel.

AVAILABLE OPTIONS

- Painted to RAL, code Z.

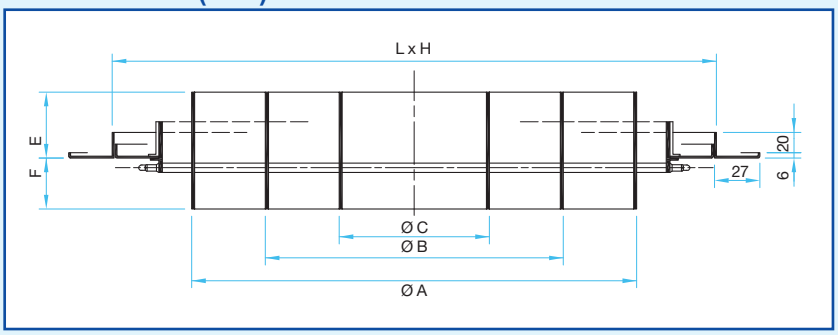
ADDITIONAL RANGE

- Air diffusers are mounted in batteries.
- Paint finish in accordance with the RAL colour chart (please, consult us).

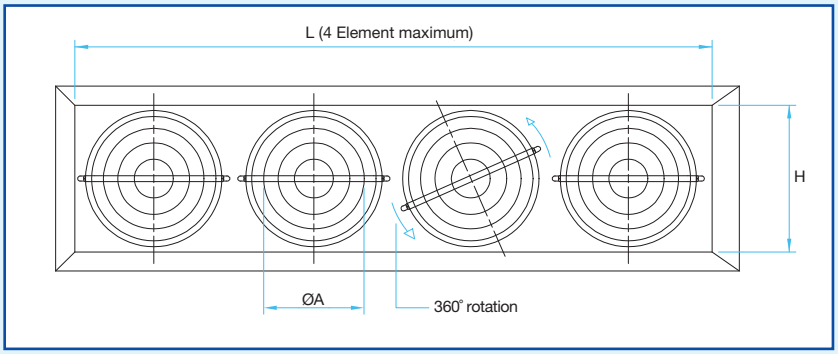
RANGE R10

Dimensions	Code
SR 151 S	**(1 elements)**
Ø 200	
Ø 250	
Ø 300	
Ø 350	
Ø 400	11051679
SR 152	**(2 elements)**
Ø 200	
Ø 250	
Ø 300	
Ø 350	
SR 153	**(3 elements)**
Ø 200	
Ø 250	
Ø 300	
Ø 350	
SR 154	**(4 elements)**
Ø 200	
Ø 250	
Ø 300	
Ø 350	

DIMENSIONS (mm)



SR 151 diffuser



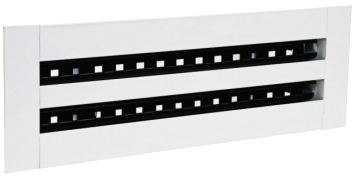
SR 154 (4 elements) diffuser

Size	No. of elements	L	H	ØA	ØB	ØC	E	F
Ø 200	1 2 3 4	300 600 900 1200	300	200	150	100	60	70
Ø 250	1 2 3 4	350 700 1050 1400	350	250	175	100	60	70
Ø 300	1 2 3 4	400 800 1200 1600	400	300	200	100	70	90
Ø 350	1 2 3 4	450 900 1350 1800	450	350	225	100	70	90
Ø 400	1	500	500	400	250	100	70	100

• See selection table on page 284.

Slot Diffusers

Adjustable aluminium slot diffusers



AG 280 BDE - Extruded aluminium

Advantages

- Adjustable diffusion.
- Aesthetic design.
- Possible exhaust filtration.
- Integrated damper.

APPLICATION

- Supply or exhaust systems.
- Adjustable diffusion using two directional deflectors on each slot.
- Heating installations (ΔT_{max} = + 30° C) and air-conditioning (ΔT_{max} = - 16° C) installations.
- Ceiling mounted.

DESCRIPTION

- AG 200, AN 200 series: available in slots of 20 mm, 25 mm and 12.5 mm, from 1 to 8 slots.
- For continuous length assembly, the maximum length per section will be 3000 mm complete with alignment strips.
- Two air pattern deflectors per slot provide an adjustable air pattern of 180°fully. The hit-and-miss damper does not affect the air pattern and can be used as an equalizing grid.

ACCESSORIES

- Connector plenum and lever in simple galvanised steel (P/S3) or insulated on two sides (PI/S3).

ADDITIONAL RANGE

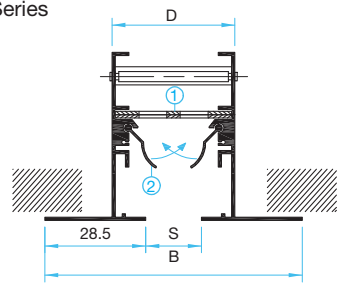
- Flange type AN: 20 mm width.
- Paint finish in accordance with the RAL colour chart (please, consult us).
- Version with between 5 and 8 slots (please, consult us).
- For the linear strips version (please, consult us).
- Corner pieces (please, consult us).
- For the expansion and insulated connection on 5 faces (please, consult us).
- Version without deflector or damper (please, consult us).

RANGE

Description	Code
AG 270 - No of slots 1 to 8	
AG 280 - No of slots 1 to 8	
AG 290 - No of slots 1 to 8	

DIMENSIONS (mm)

AG Series



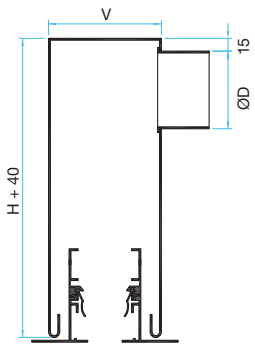
S = Width of slot
① = Hit-and-miss damper
② = Air pattern deflectors

Design for fixing system S3

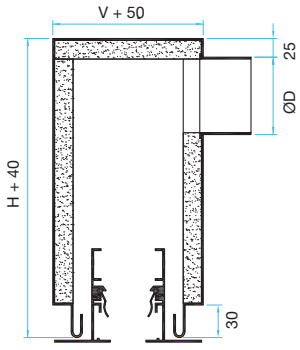
AG 270 S = 12.5 mm		
No. of Slots	B	D
1	69	33
2	100	63
3	131	94
4	162	125
5	193	156
6	224	187
7	255	218
8	286	249

AG 280 S = 20 mm		
No. of Slots	B	D
1	77	40
2	115	78
3	154	117
4	192	155
5	231	193
6	269	232
7	308	270
8	346	309

AG 290 S = 25 mm		
No. of Slots	B	D
1	82	45
2	125	88
3	169	132
4	212	175
5	256	218
6	299	262
7	343	305
8	386	349



Plenum boxes, code P
For S3 fixing system



Insulated plenum boxes, code P1
For S3 fixing system

AG 270 S = 12.5 mm			
No. of Slots	H	Ø D	V
1	250	123	53
2	250	158	83
3	300	198	117
4	300	198	145
5	300	198	176
6	300	248	207
7	300	248	238
8	300	248	268

AG 280 S = 20 mm			
No. of Slots	H	Ø D	V
1	250	123	60
2	250	158	98
3	300	198	137
4	300	248	175
5	300	248	213
6	300	248	252
7	365	313	290
8	365	313	328

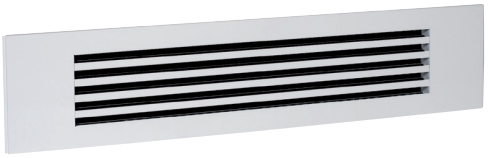
AG 290 S = 25 mm			
No. of Slots	H	Ø D	V
1	250	158	65
2	250	198	108
3	300	198	152
4	300	248	219
5	300	248	238
6	365	313	282
7	365	313	325
8	365	313	368

• See selection table on page 282.

Slot Diffusers

Adjustable aluminium slot diffusers

New



AN 285 D TP
1200 x 300 mm

AN 294 TP
600 x 600 mm

Advantages

- Adjustable diffusion.
- Aesthetic design.
- Replaces a standard suspended ceiling tile.
- Adapted to T frames or Fine-line frames.
- Slot length adjustable independently of ceiling panel.

APPLICATION

- Supply or exhaust systems – adjustable diffusion using two directional deflectors on each slot.
- Heating and air-conditioning installations.
- Ceiling mounted.
- Designed to replace a standard type T or Fine-line suspended ceiling tile.
- Inlet air supply models with filter replacing filter in duct-mounted convector fans.

DESCRIPTION

- Extruded aluminium body with RAL9010 tint.
- Ceiling-mounted compensation plate in RAL9010 tinted steel.
- Aluminium deflectors with RAL9005 black.
- Type 280 D: slot width 20 mm.
- Type 290 D: slot width 25 mm.
- Standard slot length (L) is the maximum available length in the selected ceiling panel. This length (L) can be reduced on request depending on the installation airflow.

NOTE: types 280 and 290: diffusers without deflectors to be used for air exhaust only. Come in air inlet filter holder models with core mounted on hinges and push-push opening.

- Concealed fixing, using screws in the plenum (type S2). The plenum is fitted with lugs for fixing to the concrete tile. Use the suspension cables.

NOTE: the diffuser weight must not be borne by the frame of the suspended ceiling.

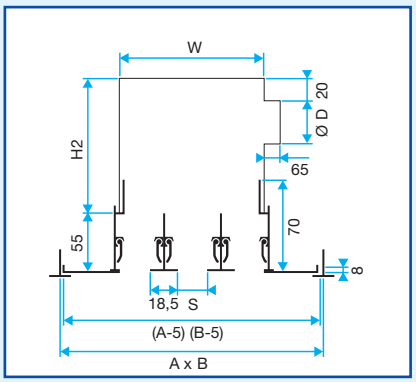
ACCESSORIES

- B: slide damper, in galvanised black sheet steel. Adjustable from the front panel of the diffuser. Delivered mounted on the diffuser.
- 1/2 B: attractive cover in black coloured sheet steel allowing for reducing the "openwork" effect of the slots (pointless with D deflectors). Delivered mounted on the diffuser.
- White deflectors (type D only).
- Connecting and expansion plenum in simple or insulated galvanised steel (models P280 and P290).

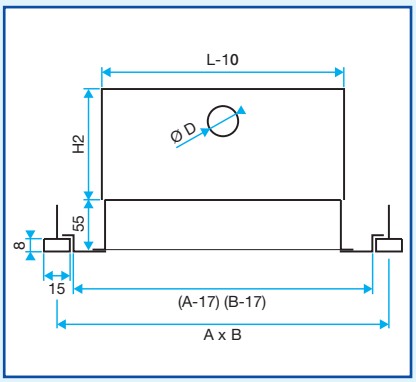
ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).
- Available in up to 8 slots if the ceiling width allows (please, consult us).
- Slot length (L) can be adjusted depending on airflow and / or desired attractiveness (please, consult us).
- Linear range without compensation plate (see preceding pages).

DIMENSIONS



Ceiling mounted with T profiles



Ceiling mounted with Fine-line profiles

AN 280 D TP : S = 20 mm				
Comfort airflow levels in m³/h for Lw < NR 30 and dimensions				
No. of slots	W (mm)	H2 (mm)	Ø D (mm)	Air supply airflow (m³/h)
1	34	175	125	125
2	72	210	160	225
3	110	250	200	300
4	149	300	250	400
5	187	300	250	480
6	225	300	250	550
7	263	365	315	610
8	302	365	315	700

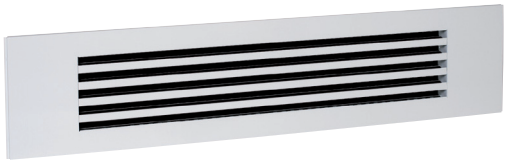
• See selection tables on page 282.

AN 290 D TP : S = 25 mm				
Comfort airflow levels in m³/h for Lw < NR 30 and dimensions				
No. of slots	W (mm)	H2 (mm)	Ø D (mm)	Air supply airflow (m³/h)
1	39	210	160	150
2	82	250	200	270
3	125	250	200	400
4	169	300	250	500
5	212	300	250	600
6	255	365	315	710
7	298	365	315	810
8	342	365	315	900

• See selection table on page 282.

Slot Diffusers

Adjustable aluminium slot diffusers



AN 285 D TP

AN 294 TP

Advantages

- Adjustable diffusion.
- Aesthetic design.
- Replaces a standard suspended ceiling tile.
- Adapted to T frames or Fine-line frames.
- Slot length adjustable independently of ceiling panel.

280D TP and 290D TP air supply diffusers

	AN280DTP code 11002174 - AN290DTP code 11002176							
A x B H / L	600x300 570	900x300 870	1200x300 1170	1350x300 1320	600x600 570	1200x600 1170	675x675 645	1350x675 1320
1	•	•	•	•	•	•	•	•
2	•	•	•	•	•	•	•	•
3	•	•	•	•	•	•	•	•
4	•	•	•	•	•	•	•	•
5	•	•	•	•	•	•	•	•
6	•	•	•	•	•	•	•	•

280 TP and 290 TP air exhaust diffusers

	AN280TP code 11002173 - AN290TP code 11002175							
A x B H / L	600x300 570	900x300 870	1200x300 1170	1350x300 1320	600x600 570	675x675 645	1200x600 1170	1350x675 1320
1	•	•	•	•	•	•	•	•
2	•	•	•	•	•	•	•	•
3	•	•	•	•	•	•	•	•
4	•	•	•	•	•	•	•	•
5	•	•	•	•	•	•	•	•
6	•	•	•	•	•	•	•	•

280 TP and 290 TP air exhaust diffusers filter holder

	AN280TP+O code 11002177 - AN290TP+O code 11002178							
A x B H / L	600x300 570	900x300 870	1200x300 1170	1350x300 1320	600x600 570	1200x600 1170	675x675 645	1350x675 1320
4	•	•	•	•	•	•	•	•
5	•	•	•	•	•	•	•	•
6	•	•	•	•	•	•	•	•

P280 et P290 air supply or air exhaust plenums

	P280 code 11002122 - P290 code 11002123				
H / L	570	645	870	1170	1320
1	•	•	•	•	•
2	•	•	•	•	•
3	•	•	•	•	•
4	•	•	•	•	•
5	•	•	•	•	•
6	•	•	•	•	•

AVAILABLE OPTIONS

Diffuser	Options on plenum
White deflectors (type D only)	Special depth
Slide damper B	Special diameter on connectors
Attractive cover 1/2 B	Additional connectors
For T-bar or Fine-line type ceilings	Fresh air connector
Protective film	2 sides insulation
Epoxy paint according to RAL colour chart	5 sides insulation
	G3 filter included

Slot Diffusers

Fixed high airflow level aluminium slot diffusers

AF 792 F0 - AFZ 91 - S792 series

Advantages

- Capable of handling large volumes of airflow.
- Easy installation in all types of suspended ceilings with a length of 675 mm.

APPLICATION

- Horizontal air supply diffusion, fixed by 2 or 4 slots.
- Heating installations ($\triangle T_{max}$ = + 30° C) and air conditioning ($\triangle T_{max}$ = - 16° C) installations.
- To be mounted in a suspended ceiling.

DESCRIPTION

- Body and deflectors in extruded aluminium.
- Fixed central core.
- White epoxy painted aluminium finish, RAL 9010 tint.
- Fixing by screw into the neck of the diffuser.
- The plenum is fitted with lugs for fixing to the concrete tile.

NOTE: the diffuser weight must not be borne by the frame of the suspended ceiling. Use the suspension cables.

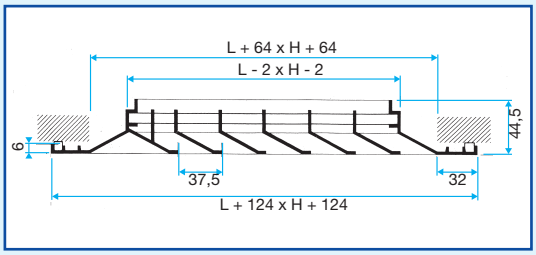
ACCESSORIES

- Damper B 700 in aluminium. Counter-rotating dampers. Adjustment via the front panel of the diffuser. Mounted on the diffuser using the clips supplied.
- Connector plenum and lever in galvanised steel - side connector (type RE).

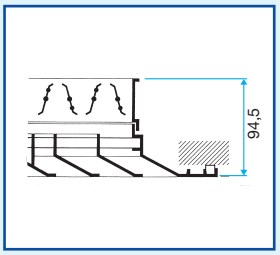
ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).
- F7 fixings for non-removable fixed ceiling tiles (please, consult us).
- For the linear strips version (please, consult us).
- Insulated connector plenum (please, consult us).

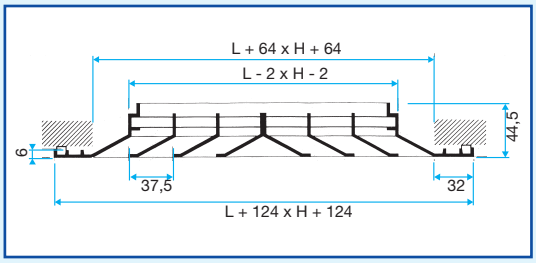
DIMENSIONS



AF 791R diffuser alone



Diffuser + B700 damper



AF 792R diffuser alone

Comfort airflow levels for Lw < NR 30 and dimensions					
Modèle	L x H (mm)	Tile (mm)	H plenum (mm)	Ø (mm)	Airflow (m^3/h)
AF 791 Z F0	472 x 75	600	235	125	190
AF 791 Z F0	472 x 150	600	270	160	290
AF 791 Z F0	547 x 75	675	235	125	220
AF 791 Z F0	1072 x 75	1200	310	200	430
AF 791 Z F0	1072 x 150	1200	425	315	660
AF 792 Z F0	1072 x 150	1200	425	315	660
AF 792-1 Z F0	1072 x 150	1200	425	315	660

- For dimensions of the plenums, please contact us.
- See selection table on page 281.

Directions of the air supply and number of slots				
Model	AF 791 Z F0		AF 792 Z F0	AF 792-1 Z F0
Width	75	150	150	150
No. of slots	2	4	4	4
Directions of air supply				

RANGE R10

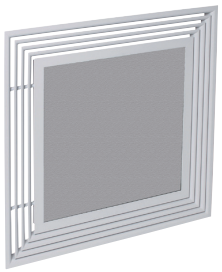
Dimensions	1 direction diffuser AF 791 Z F0 Code	2 directions diffuser AF 792 Z F0 Code	2 directions diffuser AF 792-1 Z F0 Code	Damper B 700 Code	Plenum side connection RE Code
472 x 75	11051241			11051331	11053541
472 x 150	11051242			11051334	11053544
547 x 75	11051243			11051332	11053542
1072 x 75	11051244			11051333	11053543
1072 x 150	11051245	11051246	11051247	11051335	11053545

Ceiling Diffusers

Multi-slot square diffusers

New

ALD 610 K with central plate



ALD 610 K with suspended ceiling tile

Advantages

- Diffuser adapted to standard 600 x 600 and 675 x 675 mm ceiling tiles.
- Aesthetic design.
- Access to the air return filter.
- Accepts variable flow system.

APPLICATION

- Air supply or exhaust. Four direction horizontal fixed diffusion with 1, 2, 3 or 4 slots.
- Filter holder version with opening core for easy access to the interior filter.
- Heating installations ($\triangle T_{max}$ = + 30° C) and air-conditioning ($\triangle T_{max}$ = - 16° C) installations.
- Ceiling mounted diffuser designed to replace a 600 x 600 or 675 x 675 mm suspended ceiling tile (T-shaped framework).

DESCRIPTION

- Body and deflectors in epoxy painted aluminium extrusions, RAL 9010 white tint.
- White epoxy painted steel RAL 9010 tint.

NOTE: the central plate may be replaced by a suspended ceiling tile cut in the same format as the plate for a more attractive integration.

- Filter holder model with opening central core.
- Side (RE type) or top (RT type) connection plenum in galvanised steel, simple or insulated.
- Diffuser fixed to plenum using non-removable clips. Fixing to all of the concrete tile using the lugs located on the plenum.

NOTE: the diffuser weight must not be borne by the structure of the suspended ceiling. Use the suspension cables.

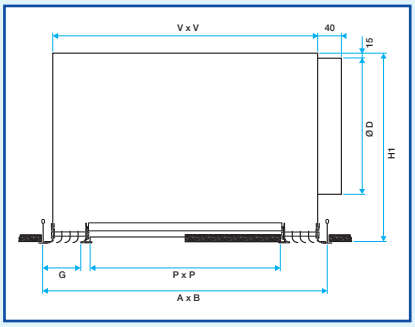
ACCESSORIES

- G2 or G3 flat filter for exhaust (M1).
- Adjustment damper mounted on the plenum with access via the diffuser.
- 2 or 5 sided plenum insulation (M1 polyurethane foam).

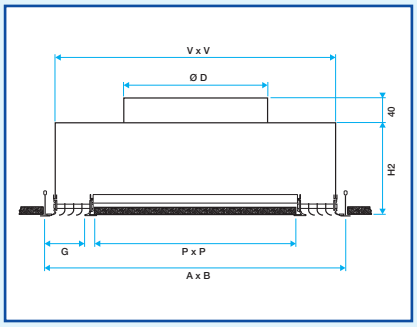
ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).

DIMENSIONS



ALD 610 K diffuser
with plenum with side connection



ALD 610 K diffuser
with plenum with bottom connection

Comfort airflow levels for Lw < NR 35 and dimensions										
A x B* (mm)	No of slots	P x P (mm)	V x V (mm)	H1 (mm)	H2 (mm)	G (mm)	Ø D (mm)	H1** (mm)	Ø D** (mm)	Airflow (m^3/h)
600 x 600	1	508 x 508	560 x 560	265	125	25	200	325	250	300
600 x 600	2	474 x 474	560 x 560	325	125	42	250	325	250	500
600 x 600	3	440 x 440	560 x 560	325	125	59	250	325	250	750
600 x 600	4	406 x 406	560 x 560	325	125	76	250	325		900
675 x 675	1	583 x 583	635 x 635	265	125	25	200	325	250	350
675 x 675	2	549 x 549	635 x 635	325	125	42	250	325	250	550
675 x 675	3	515 x 515	635 x 635	325	125	59	250	325	250	850
675 x 675	4	481 x 481	635 x 635	325	125	76	250	325	250	1000

250

* Nominal ceiling tile dimensions.
**Air inlet diffuser version with filter only.
• See selection tables on page 285.
NOTE: the diffuser and its plenum cannot be sold separately.

RANGE R10

Dimensions	N°. slots	Air inlet diffuser with filter included option	Damper on RE610* plenum (option)	Filter holder on RE610 plenum option	Fixed diffuser without central plate ALD610K	Full central plate option	Plenum side connection RE610	Plenum with bottom connection RT610
		Code	Code	Code	Code	Code	Code	Code
600 x 600	1	11002861-b	11003321-b	11003321-a	11002861	11002861-a	11003321	11003331
600 x 600	2	11002862-b	11003322-b	11003322-a	11002862	11002862-a		
600 x 600	3	11002863-b	11003323-b	11003323-a	11002863	11002863-a		
600 x 600	4	11002864-b	11003324-b	11003324-a	11002864	11002864-a	11003324	11003334
675 x 675	1	11002866-b	11003326-b	11003326-a	11002866	11002866-a	11003326	11003336
675 x 675	2	11002867-b	11003327-b	11003327-a	11002867	11002867-a		
675 x 675	3	11002868-b	11003328-b	11003328-a	11002868	11002868-a		
675 x 675	4	11002869-b	11003329-b	11003329-a	11002869	11002869-a	11003329	11003339

AVAILABLE OPTIONS

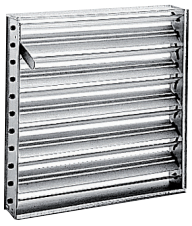
Diffuser	Plenum
Epoxy paint according to RAL colour chart	1 additional connector
	2 sides insulation
	5 sides insulation

Ceiling Diffusers

Fixed square diffusers for ceiling tiles

AN 704 TP - SF 704 TP series
Aluminium or steel

AF 704
with filter for air exhaust



Damper B 700

Advantages

- Designed for 600 x 600 mm suspended ceiling tiles.
- Aesthetic design.
- Air exhaust filter.
- The filter is accessible by a quick and simple dismantling of the central core.

APPLICATION

- Ceiling mounted diffuser designed to replace a 600 x 600 mm suspended ceiling tile (T-shaped framework).
- Air supply or exhaust, fixed diffusion pattern.
- Heating installations ($\triangle T_{max}$ = + 30° C) and air-conditioning ($\triangle T_{max}$ = - 16° C) installations.
- Posibility of adding a filter for air exhaust use.

DESCRIPTION

- External frame and core assembly of extruded aluminium sections (AN type) or in sheet steel section (SF type).
- Based on the design of the type 704 diffuser as standard, integrated into an aluminium or steel plate.
- White epoxy painted, RAL 9010 tint.
- Invisible fixing, using a screw in the neck of the diffuser. The plenum is fitted with lugs for fixing to the concrete tile.

NOTE: the diffuser weight must not be borne by the frame of the suspended ceiling. Use the suspension cables.

ACCESSORIES

- B700 aluminium damper. Counter-rotating dampers. Adjustment via the front panel of the diffuser. Mounted on the diffuser using the clips supplied.
- W4 folded filter (50 mm in height) G3, M1 fire rating, for air exhaust use. Access to the filter is made by a simple and rapid central core.

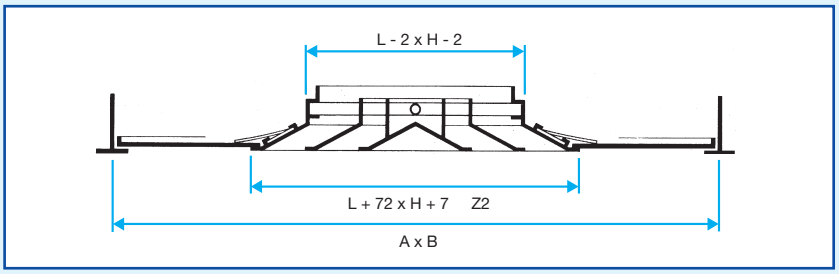
NOTE: the use of a W4 filter is incompatible with the B700 damper.

- RT connection plenums (top connection) and RE (side connection) in galvanised steel.
- REI (5) side connection plenums in galvanised steel, thermally insulated on five face (to avoid any risk of condensation in air-conditioning.)

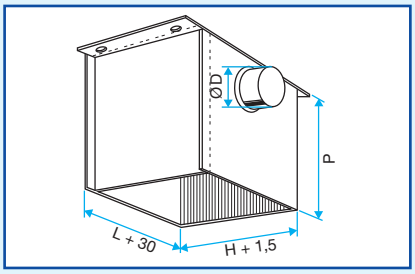
ADDITIONAL RANGE

- Models adapted to 675 x 675 mm suspended ceilings or with Fine-line frameworks (please, consult us).
- Paint finish in accordance with the RAL colour chart (please, consult us).
- Various connection diameters for connection on RT and RE plenums.
- For exhaust air filtration (please, consult us).

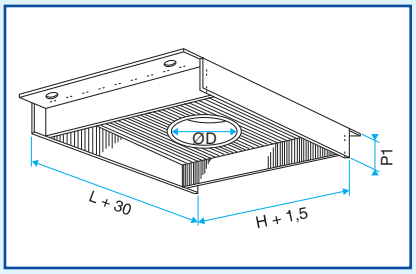
DIMENSIONS



AN 704 TP - SF 704 TP diffusers



RE type plenum



RT type plenum

Comfort airflow levels for Lw < NR 30 and dimensions						
L x H (mm)	A x B* (mm)	P1 (mm)	P (mm)	Ø D (mm)	Air supply airflow (m^3/h)	Air exhaust airflow with filter (m^3/h)
150 x 150	600 x 600	115	215	125	180	130
225 x 225	600 x 600	115	250	160	320	230
300 x 300	600 x 600	165	340	250	500	350
375 x 375	600 x 600	165	405	315	650	440

* Nominal ceiling tile dimensions.

• See selection table on page 286.

RANGE R10

Dimensions	Damper B 700 Code	Insulated side plenum REIF (5) Code	Rear plenum RT Code	Side plenum RE Code	Steel diffuser SF 704 TP Code	White aluminium diffuser AN 704 Z TP Code
150 x 150	11051321		11053580	11053610	11051076	11051746
225 x 225	11051322	11053594	11053583	11053613	11051077	11051747
300 x 300	11051323	11053595	11053585	11053615	11051078	11051748
375 x 375	11051324	11053596	11053588	11053618	11051079	11051749

Dimensions	Filter cassette (G3 filter included) CW4 Code	G3 filter alone (for spares) W4 Code
150 x 150	11053431	11053371
225 x 225	11053432	11053372
300 x 300	11053433	11053373
375 x 375	11053434	11053374

Ceiling Diffusers

Square, removable core diffusers

AF 704 - Extended aluminium
AF 703 - 702 - 701

AF 704
with filter for air exhaust

Damper B700

Advantages

- Aesthetic design.
- 1, 2, 3 or 4 way diffusion.
- Air exhaust filter.
- The fitter is accessible by a quick and simple dismantling of the central core.

APPLICATION

- Fixed horizontal air supply diffusion.
- Simple heating installations ($\triangle T_{max}$ = +30° C) and air-conditioning ($\triangle T_{max}$ = -14°C) installations.
- Ceiling mounted.

DESCRIPTION

- External frame and core in extruded aluminium assembled profiles, or in profile section sheet steel.
- Removable core using a system of clips for access to the interior.
- AF 701 - 702 - 703 - 704: aluminium.
- AF 704: white epoxy painted steel finish - RAL9010 tint.
- Concealed fixing, by lateral screws in the neck.
- Connection to circular ducts.

ACCESSORIES

- Damper B 700 in aluminium. Counter-rotating shutters. Adjustment via the front panel of the diffuser. Mounted on the diffuser using the clips supplied.
- RT (top connection) and RE (side connection) plenums in galvanised steel.
- REI (5) side connection plenum in galvanised steel - thermal insulation on 5 faces.

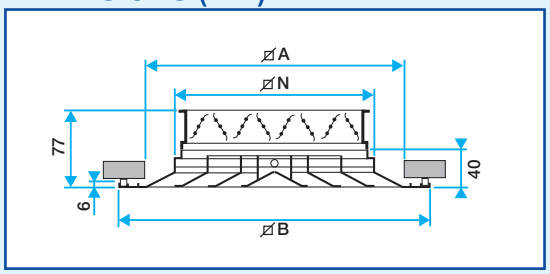
OPTIONS

- Visible flange screw, code F1 (for AF flange only).
- Concealed bracket fixing, code F7.
- Optional frame, code AS.
- All above types are available with opposed blade damper, adjustable from diffuser front face. eg. AF 704 B.

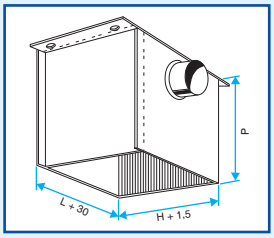
ADDITIONAL RANGE

- Thin framed versions. Rectangular versions.
- Paint finish in accordance with the RAL colour chart (please, consult us).

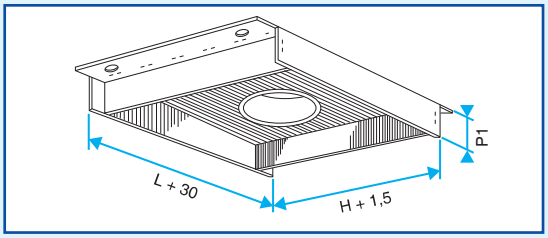
DIMENSIONS (mm)



Diffuser + B 700 damper



RE connecting plenum



RT connecting plenum

Comfort airflow levels for Lw < NR 30 and dimensions								
Dimensions L x H (mm)	Ø N (mm)	Ø A (mm)	Ø B (mm)	P1 (mm)	D (mm)	Ø (mm)	Air exhaust airflow with filter (m³/hr)	Air supply airflow (m³/hr)
150 x 150	148	214	274	115	235	125	130	180
225 x 225	223	289	349	115	270	160	230	320
300 x 300	298	364	424	165	360	250	350	500
375 x 375	373	439	499	165	425	315	440	630
472 x 472*	470	536	596	215	465	355	670	950
525 x 525	523	589	649	215	465	355	770	1100
600 x 600	598	664	724	215	510	400	980	1400

* Designed for suspended ceiling tiles.

• See selection table on page 286.

RANGE

Dimensions	1-way diffuser AF 701 Code	2-way diffuser AF 702 Code	3-way diffuser AF 703 Code	4-way diffuser AF 704 Z RAL 9010 Code	4-way diffuser AF 704 Code
150 x 150					
225 x 225					
300 x 300					
375 x 375					
450 x 450					
472 x 472*					
525 x 525					
600 x 600					

Ceiling Diffusers

Square diffusers accessories

B 700 Damper

OPPOSED BLADE DAMPER (OBD)

Code B

- The specially designed blades have an overlapping lip, which assures a tight closure.
- Blades are under spring wire tension to prevent rattling.
- Adjustment by lever through the front face of diffuser.
- Extruded aluminium construction / black matt finish.

EQUALIZING GRID

Code D

- Individually adjustable blades, to provide precise directional control of air throught the diffuser. Nylon tension bushes.
- Extruded aluminium construction/ black matt finish.

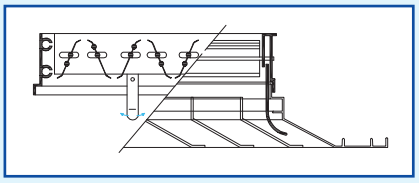
CIRCULAR DUCT CONNECTION ADAPTORS

- Suitable for supply and exhaust ceiling diffusers.
- Round inlet.
- Galvanized steel construction.
- Special construction available on request.

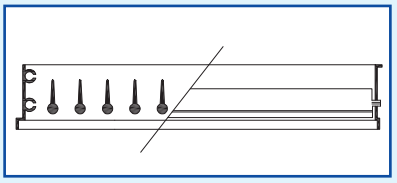
RANGE

Dimensions	Damper B 700 Code
150 x 150	
225 x 225	
300 x 300	
375 x 375	
450 x 450	
472 x 472*	
525 x 525	
600 x 600	

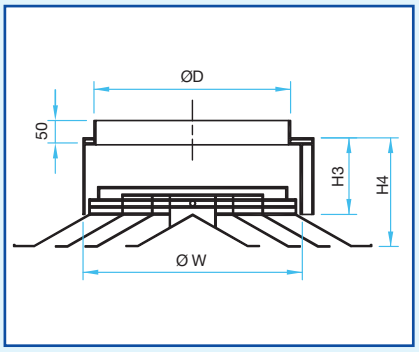
DIMENSIONS (mm)



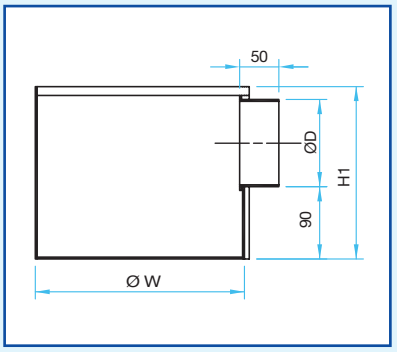
OBD



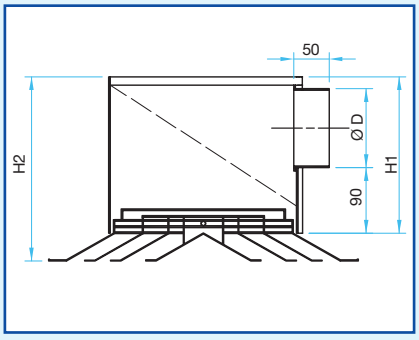
Equalizing grid



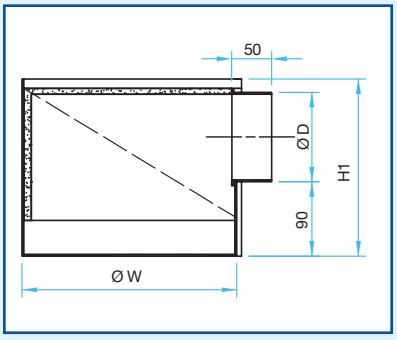
RT
Square to round adaptor without perforated plate. Top inlet.



RE
Square to round adaptor without perforated plate. Side inlet.



RS
Square to round adaptor without perforated plate. Side inlet.



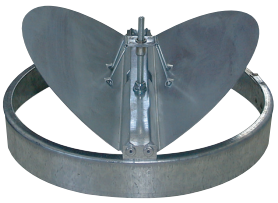
RSI
Insulated square to round adaptor with perforated plate. Side inlet.

Dim.	Ø D	Ø W	Type RS		Type RT	
			H1	H2	H3	H4
150	123	148	245	263	115	133
225	198	223	320	338	115	133
300	248	298	368	388	165	183
375	313	373	435	453	165	183
450	398	448	520	538	215	233
472	398	470	520	538	215	233
525	398	523	520	538	215	233
600	498	598	620	638	215	233

Ceiling Diffusers

Fixed circular diffusers for ceiling tiles

SC 832 TP series - Steel



BR damper

Advantages

- Designed for 600 x 600 mm suspended ceiling tiles.
- Easy installation.

APPLICATION

- Ceiling mounted diffuser designed to replace a 600 x 600 mm suspended ceiling tile (T-shaped framework).
- Horizontal air supply, fixed diffusion pattern.
- Simple heating and air-conditioning installations.

DESCRIPTION

- Fixed circular cones in pressed steel.
- Compensation plate in steel to replace a suspended ceiling tile.
- Concealed fixing to the concrete tile, using a screw in the neck of the diffuser.

NOTE: the diffuser weight must not be borne by the frame of the suspended ceiling. Use the suspension cables.

- Direct connection to circular ducts or the LRE plenum.
- Finish - white epoxy painted steel RAL 9010 tint.

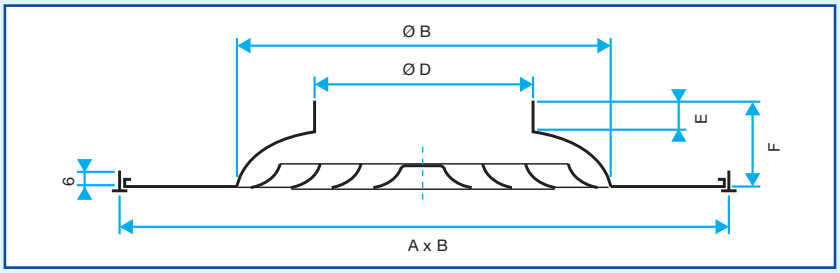
ACCESSORIES

- Butterfly type BR damper with 2 V-shaped blades.
- LRE side connection plenum in galvanised steel.

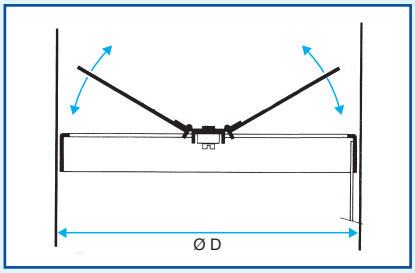
ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).

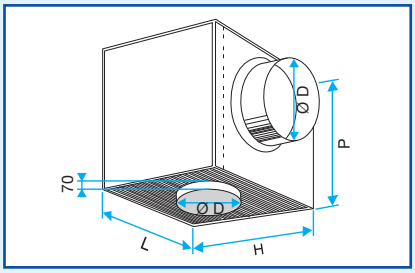
DIMENSIONS



SC 832 TP diffuser



BR damper



LRE plenum

Comfort airflow levels for Lw < NR 35 and dimensions						
Ø D (mm)	A x B* (mm)	Ø B (mm)	E (mm)	F (mm)	P (mm)	Airflow from (m^3/h)
160	600 x 600	188	60	104	210	250
200	600 x 600	235	60	104	250	450
250	600 x 600	294	60	104	300	600
315	600 x 600	370	60	104	365	900

* Nominal ceiling tile dimensions.

- For plenum sizes see page 248.
- See selection table on page 287.

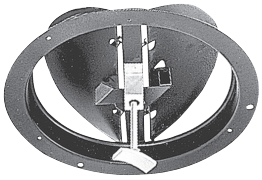
RANGE R10

Dimensions	Damper BR Code	Diffuser SC 832 TP Code	Plenum LRE Side connector Code
Ø 160	11053220	11051015	11053311
Ø 200	11053221	11051016	11053312
Ø 250	11053222	11051017	11053313
Ø 315	11053223	11051018	11053314

Ceiling Diffusers

Fixed circular diffusers

SC 831 series - Steel



Damper BY

Advantages

- Easy installation.

APPLICATION

- Horizontal air supply, fixed air diffusion pattern.
- Simple heating (ΔT_{max} = + 30° C) and air-conditioning (ΔT_{max} = - 14° C) installations.
- Ceiling mounted or on exposed ductwork.

DESCRIPTION

- Protruding pressed steel circular cones.
- Finish - white epoxy painted steel RAL 9010 tint.
- Visible fixing to ceiling, using screws in the external cone and FR mounting ring or BY damper.
- Connection to circular ducts.

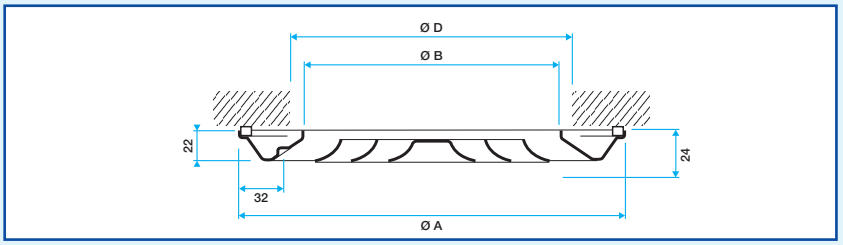
ACCESSORIES

- FR mounting ring in steel.
- BY damper in steel, also used as a mounting ring. Adjusted through the centre of the diffuser. Adjustment key supplied with the damper.
- LRE side connection plenum in galvanised steel – see page 248.

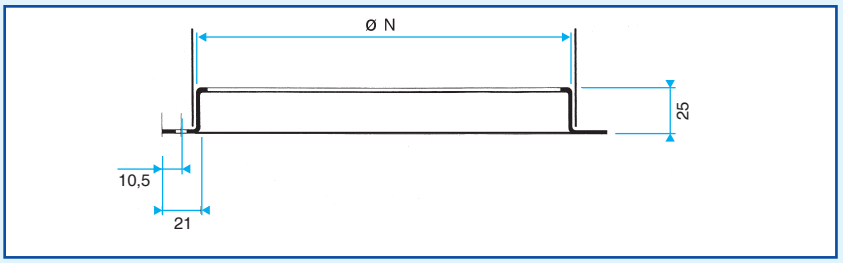
ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).

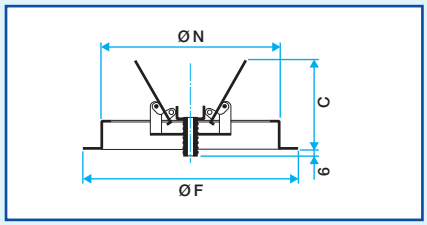
DIMENSIONS



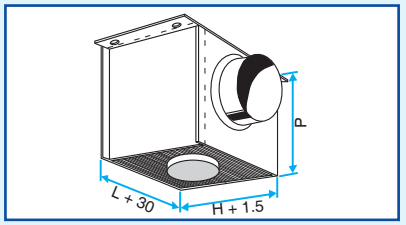
SC 831 diffuser



FR mounting ring



BY damper



LRE plenum

Accessories: Dimensions		
Ø N (mm)	Ø A (mm)	C (mm)
160	190	110
200	240	110
250	290	140
315	340	165
355	390	180

Diffusers: Comfort airflow levels for Lw < NR 35 and dimensions				
Ø N (mm)	Ø A (mm)	Ø B (mm)	E (mm)	Airflow (m³/h)
160	230	134	24	250
200	282	186	30	450
250	334	238	35	600
315	386	290	40	900
355	440	340	45	1200

- See selection table on page 287.
- For plenum sizes, see page 248.

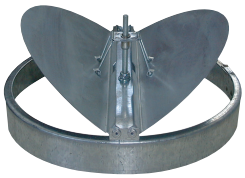
RANGE R10

Dimensions	Damper BY Code	Diffuser SC 831 Code	Mounting ring FR Code	Plenum LRE Side connector Code
Ø 160	11053180	11051020	11053440	11053311
Ø 200	11053181	11051021	11053441	11053312
Ø 250	11053182	11051022	11053442	11053313
Ø 315	11053183	11051023	11053443	11053314
Ø 355	11053184	11051024	11053444	11053315

Ceiling Diffusers

Adjustable circular diffusers for ceiling tiles

AT 842 series - Aluminium



BR damper

Advantages

- Replaces a 600 x 600 mm suspended ceiling tile.
- Aesthetic design.
- Wide airflow level range.
- Highly simplified adjustment (patented system).
- Easy ceiling fixing using the F16 lugs.

APPLICATION

- Ceiling mounted diffuser designed to replace a 600 x 600 mm suspended ceiling tile (T-shaped framework).
- Adjustable horizontal or vertical air supply diffusion.
- Heating installations ($\triangle T_{max}$ = + 30° C) and air -conditioning ($\triangle T_{max}$ = - 16° C) installations.

DESCRIPTION

- External cone in aluminium and core in pressed steel.
- Adjustable air diffusion by a quick and easy worm screw system (patented).
- Designed from a standard AF 842 diffuser whose outer cone is extended from a compensation plate for 600 x 600 mm ceiling tiles (pressed into one part).
- Fixing to the concealed concrete tile using lugs mounted on the diffuser (F16 fixing).

NOTE: the diffuser weight must not be borne by the frame of the suspended ceiling. Use the suspension cables.

- Connection to circular ducts or the LRE plenum.
- Finish - white epoxy painted steel RAL 9010 tint.

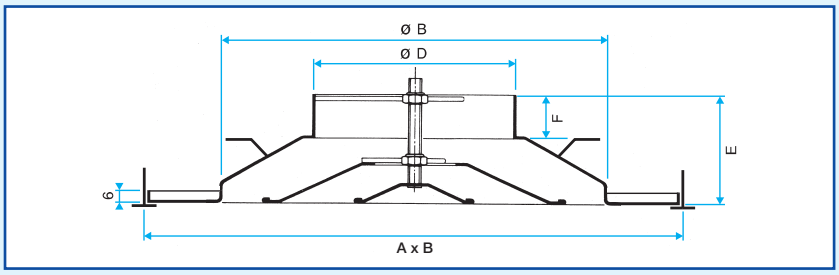
ACCESSORIES

- BR damper: butterfly type with either 2 or 4 V-shaped blades (depending on diameter). Manufactured in steel. Adjusted through the diffuser by direct movement of the blade
- BY damper: butterfly type with either 2 or 4 V-shaped blades (depending on diameter). Manufactured in steel. Adjusted through the diffuser by direct movement of the blades.
- LRE side connection plenum in galvanised steel.

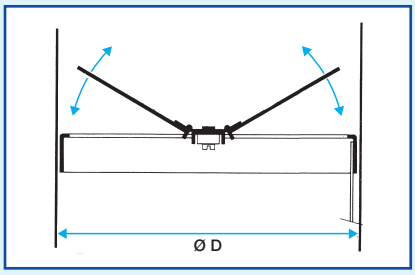
ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).
- LRE insulated connection plenums or with different connection diameters (please, consult us).

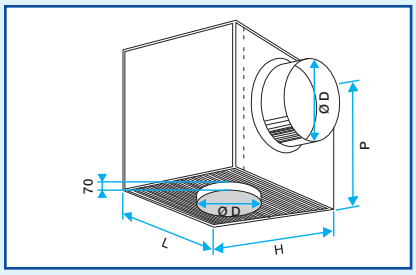
DIMENSIONS



AT 842 diffuser



BR damper



LRE plenum

Comfort airflow levels for Lw < NR 35 and dimensions						
Ø D (mm)	A x B* (mm)	Ø B (mm)	E (mm)	F (mm)	P (mm)	Airflow (m^3/h)
160	600 x 600	295	110	55	210	250
200	600 x 600	370	120	60	250	400
250	600 x 600	465	135	60	300	650
315	600 x 600	555	150	60	365	900

* Nominal ceiling tile dimensions.

- For plenum sizes see page 248.
- See selection table on page 286.

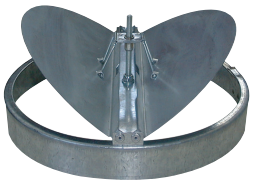
RANGE R10

Dimensions	Damper BR Code	Diffuser AT 842 F16 RAL9010 Code	Plenum LRE Side connector Code
Ø 160	11053220	11051071	11053311
Ø 200	11053221	11051072	11053312
Ø 250	11053222	11051073	11053313
Ø 315	11053223	11051509	11053314

Ceiling Diffusers

Adjustable circular diffusers

AF 842 series - Aluminium



BR damper

Advantages

- Available in two standard finishes.
- Wide airflow level range.
- Highly simplified adjustment (patented system).
- Easy ceiling fixing using the F16 lugs.

APPLICATION

- Adjustable horizontal or vertical air supply diffusion.
- Heating (ΔT_{max} = + 30° C) and air-conditioning (ΔT_{max} = - 16° C) installations.
- Ceiling mounted or on exposed ductwork.

DESCRIPTION

- External cone in aluminium and core in pressed steel.
- Adjustable air diffusion by a quick and easy worm screw system (patented).
- Painted in epoxy, white RAL 9010 or coloured alu. RAL 9006.
- Fixing to the concealed concrete tile using lugs mounted on the diffuser (F16 fixing).
- Direct connection on a circular duct or using the LRE plenum.

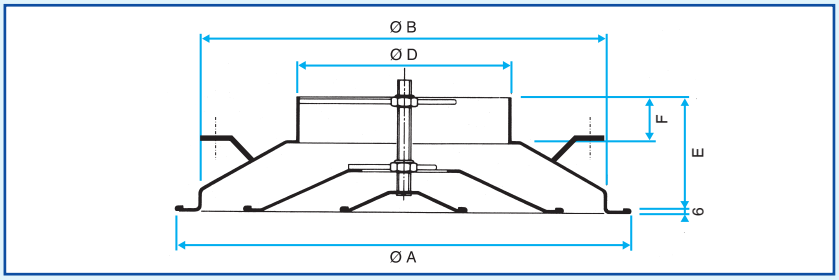
ACCESSORIES

- BR damper: butterfly type with either 2 or 4 V-shaped blades (depending on diameter). Manufactured in steel. Adjusted through the diffuser by direct movement of the blades.
- BY damper: butterfly type with either 2 or 4 V-shaped blades (depending on diameter). Manufactured in steel. Adjusted through the diffuser by direct movement of the blade.
- LRE side connection plenum in galvanised steel.

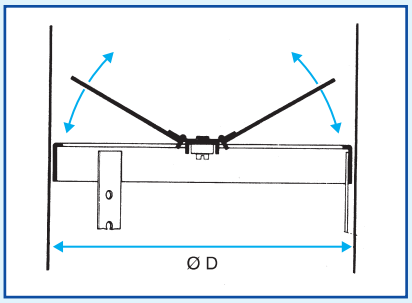
ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).
- LRE insulated connection plenums or with different connection diameters (please, consult us).

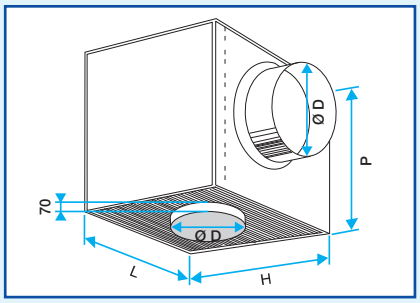
DIMENSIONS



AF 842 diffuser



BR damper



LRE plenum

Comfort airflow levels for Lw < NR 35 and dimensions							
Ø D (mm)	Ø A (mm)	Ø B (mm)	E (mm)	F (mm)	P (mm)	L x H (mm)	Airflow (m^3/h)
160	354	295	110	55	210	220 x 220	250
200	428	370	120	50	250	265 x 265	400
250	532	465	135	50	300	315 x 315	650
315	623	555	150	50	365	375 x 375	850
355	730	645	187	75	405	420 x 420	1100
400	776	690	185	78	450	460 x 460	1300
500	909	807	195	79	550	560 x 560	1800
630	1045	950	184	75	680	690 x 690	2500

• See selection table page 286.

RANGE R10

Dimensions	Damper BR Code	Diffuser AF 842 F16 RAL9006 Code	Diffuser AF 842 F16 RAL9010 Code	Plenum LRE Side connector Code
Ø 160	11053220	11051521	11051060	11053311
Ø 200	11053221	11051522	11051061	11053312
Ø 250	11053222	11051523	11051062	
Ø 315	11053223	11051524	11051063	
Ø 355	11053224	11051525	11051064	11053315
Ø 400	11053225	11051526	11051065	
Ø 500	11053227	11051528	11051067	
Ø 630	11053228	11051529	11051068	

Ceiling Diffusers

Adjustable square diffusers for ceiling tiles

SC 360 R - Steel
SC 369 series

SC 360 R - Rear

Advantages

- Designed for 600 x 600 mm suspended ceiling tiles.
- Circular connection to gain installation time.
- Diffusion 1, 2, 3 or 4 ways adjustable on-site.
- Filtration for air return.

APPLICATION

- Ceiling mounted diffuser designed to replace a 600 x 600 mm suspended ceiling tile (T-shaped framework).
- Air supply (SC 360 R model) or air exhaust (SC 369 R model).
- Adjustable diffusion in one to four directions by means of individually adjustable deflectors.
- Heating (ΔT_{max} = + 30° C) and air-conditioning (ΔT_{max} = - 16° C) installations where airflow levels are large and modulated.
- Possible exhaust filtration.

DESCRIPTION

- Removable perforated sheet metal.
- Based on the design of a SC 310 R or SC 319 R diffuser as standard, integrated into a steel compensation plate.
- Finish - white epoxy painted steel RAL 9010 tint.
- Fixing to the concealed concrete tile using lugs mounted on the diffuser (F16 fixing).

NOTE: the diffuser weight must not be borne by the frame of the suspended ceiling. Use the suspension cables.

- Direct connection to circular ducts.
- Thermally insulated version to avoid any risk of condensation under air conditioning.

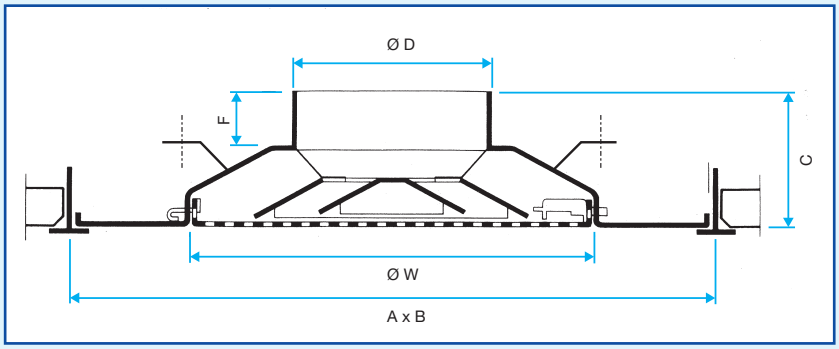
ACCESSORIES

- Dampers and plenums used for standard diffusers.
- W flat filter, attached to the T-stop ring M1 fire rating, G3, for exhaust diffusers SC 369 R.

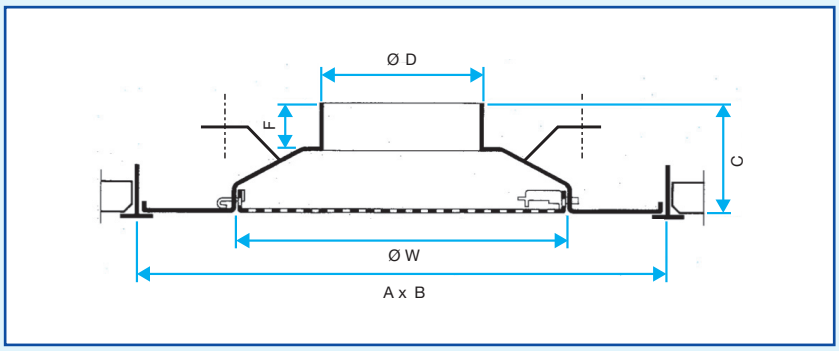
ADDITIONAL RANGE

- Models adapted to 675 x 675 mm suspended ceilings or with Fine-line frameworks (please, consult us).
- Paint finish in accordance with the RAL colour chart (please, consult us).
- SC 350 R range with the compensation plate completely perforated for a different aesthetic design (please, consult us).

DIMENSIONS



SC 360 R air supply diffuser



SC 369 R air exhaust diffuser

Comfort airflow levels for Lw < NR 30 and dimensions						
Ø D (mm)	A x B* (mm)	W (mm)	C (mm)	F (mm)	Air supply airflow (m^3/h)	Air exhaust airflow with filter (m^3/h)
160	600 x 600	280	98	55	250	250
200	600 x 600	380	108	60	400	450
250	600 x 600	480	122	60	600	650
315*	600 x 600	542	135	60	900	900

* Nominal ceiling tile dimensions.

• See selection table on page 286.

RANGE R10

Dimensions	Air supply diffuser SC 360 R F16 Code	Damper BR Code	Exhaust diffuser SC 369 R F16 Code	Insulated air supply diffuser SC360 RIF (5) F16 Code	Spare filter W Code
Ø 160	11051145	11053220	11051135		
Ø 200	11051146	11053221	11051136	11051159	11053519
Ø 250	11051147	11053222	11051137	11051160	11053520
Ø 315		11053223			11053521

Ceiling Diffusers

Square diffusers with perforated sheet

SC 310 R series - Steel

BR damper

SC 319 R series - Steel

Advantages

- Circular connection and plenum integrated in to the diffuser to gain installation time.
- Diffusion from one to four ways adjustable on site.
- Filtration for air exhaust - SC 319 R.

APPLICATION

- Air supply (SC 310 R model) or air exhaust (SC 319 R model).
- Adjustable diffusion (in one to four directions) by means of individually adjustable deflectors.
- Heating (ΔT_{max} = + 30° C) and air-conditioning (ΔT_{max} = - 14° C) installations with adjustable important airflow rates.
- Ceiling mounted.
- Possible air exhaust filtration.

DESCRIPTION

- Removable perforated sheet metal.
- Finish - white epoxy painted steel RAL 9010 tint.
- Fixing to the concealed concrete tile using lugs mounted on the diffuser (F16 fixing).
- Direct connection to circular ducts.

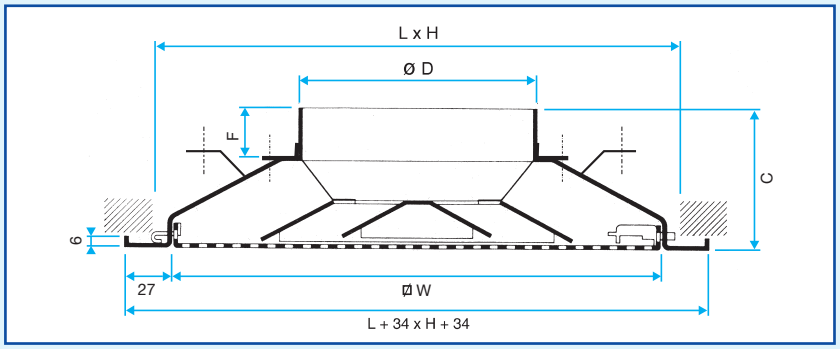
ACCESSORIES

- BR dampers: type butterfly damper with 2-V shaped blades. Fitted into the supply duct.
- Connecting plenum integrated into the diffuser. Circular connection (on the top).
- W flat filter attached to T-stop ring. M1 fire rating. G3 for exhaust diffusers SC 319 R.

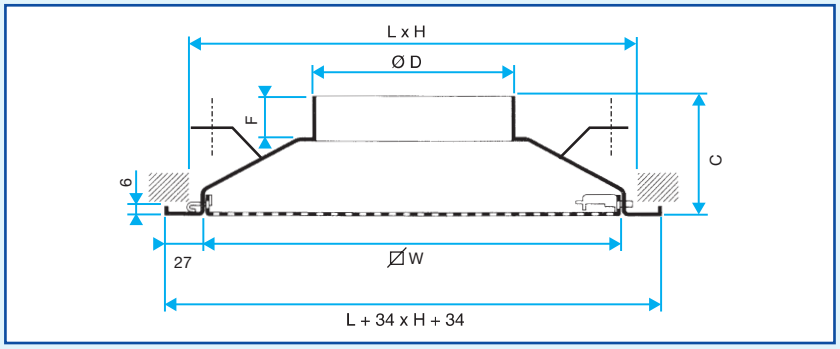
ADDITIONAL RANGE

- Fixed diffusion version.
- Paint finish in accordance with the RAL colour chart (please, consult us).

DIMENSIONS



SC 310 R air supply diffuser



SC 319 R air exhaust diffuser

Comfort airflow levels for Lw < NR 30 and dimensions						
Ø D (mm)	W (mm)	L x H (mm)	C (mm)	F (mm)	Air supply airflow (m^3/h)	Air exhaust airflow with filter (m^3/h)
160	280	300 x 300	98	55	250	250
200	380	400 x 400	108	60	400	450
250	480	500 x 500	122	60	600	650
315*	542	562 x 562	135	60	900	900

* Designed for 600 x 600 mm suspended ceiling tiles.

• See selection table on page 286.

RANGE R10

Dimensions	Air supply diffuser SC 310 R F16	Damper BR	Exhaust diffuser SC 319 R F16	Insulated air supply diffuser SC310 RIF (5) F16	Spare filter W
	Code	Code	Code	Code	Code
Ø 160	11051140	11053220	11051170		
Ø 200	11051141	11053221	11051171		11053519
Ø 250	11051142	11053222	11051172		11053520
Ø 315	11051143	11053223	11051173	11051144	11053521

Small & Constant Exhaust Grilles

Self-balanced systems: General Information

Green Product

AIRFLOW REQUIREMENTS

In a self-balancing CMEV system, the grilles and air inlets are self-balanced, guaranteeing a constant airflow whatever the atmospheric conditions or the occupation of the rooms.

The ventilation system must allows to reach the airflow levels given in the table opposite to be reached.

ACOUSTICS REQUIREMENTS

The acoustics regulations set results to be achieved.

The product requirements so also depend on other housing parameters (surface area of the room etc.)

AIRFLOW REQUIREMENTS

Apartment type	Total min.	Kitchen min.	Kitchen max.	Bathroom	Other sanitary area	WC	
						single	multiple
Studio	35	20	75	15	15	15	15
T2	60	30	90	15	15	15	15
2 bed.	75	45	105	30	15	15	15
3 bed.	90	45	120	30	15	30	15
4-bed.	105	45	135	30	15	30	15
5 bed.	120	45	135	30	15	30	15
6 bed.	135	45	135	30	15	30	15

FRENCH ACOUSTICS REQUIREMENTS

Demand bearing upon	Requirement of the result	Demand on the grille
Equipment noise	LnAT < 35 dB (A) in the kitchen	Lw < 38 dB (A) if the kitchen surface area >10 m²
	LnAT < 30 dB (A) in the main room	Lw < 38 dB (A) if the kitchen surface area >30 m² for opening on to the living room.
Insulation between dwellings	DnT, A>50 dB in kitchen and bathroom	The demand on the Dnew (C) depends on the room surface area and the manifold diameter.
	DnT,A>53 dB in the main room	

Aeraulic sizing

APPLICATION

- Self-balanced CMEV.
- Residential housing and commercial premises.
- New and renovation.

DESCRIPTION

Self-balanced CMEV

- Type of heating: electricity, gas (boiler with sealed chamber) or other device independent from the CMEV.

Self-balanced CMEV with compensation valve

- Type of heating: electricity, gas (boiler with sealed chamber) or other device independent from the CMEV.
- Dimensioning of the air inlets to minimum airflow.

Self-balanced CMEV for gas applications

- Type of heating: boiler connected to the CMEV.

APPLICATION

Type of dwelling	Kitchen	Bathroom	Single WC	Multiple WC
F1	BAP 20/75	BAP 15	BAP 15	BAP 15
F2	BAP 30/90	BAP 15	BAP 15	BAP 15
F3	BAP 45/105	BAP 30	BAP 15	BAP 15
F4	BAP 45/120	BAP 30	BAP 30	BAP 15
F5 - 3 bedrooms and more	BAP 45/135	BAP 30	BAP 30	BAP 15

Small & Constant Exhaust Grilles

Self-balanced grilles

Bap'si twin

Green Product

New

Advantages

- Designed without grille.
- Airflow between 15 and 150 m³/h.
- Modulo: airflow adjustment is possible.

APPLICATION

- Self-balanced Continuous Mechanical Extract Ventilation (CMEV).
- Residential housing and commercial premises.
- New buildings and renovation.

DESCRIPTION

- Self-balanced exhaust grille.
- Innovative design, without grille.
- Airflow between 15 and 150 m³/h.
- Composed of three parts: a technical fitting plate, a regulator, a removable front panel.
- Possibility of choosing from several airflows: the same grille gives several airflow rates:
  - Bap'SI twin 60 Ø 125 modulo (code 11019188) permits airflow rates of 60, 75 and 90 m³/h.
  - Bap'SI twin 100 Ø125 modulo (code 11019191) permits airflow rates of 100, 120 and 150 m³/h.
  - Bap'SI twin 60 without shaft modulo (code 11019197) permits airflow rates of 60, 75 and 90 m³/h.

INSTALLATION

- Pressure range: between 50 and 160 Pa.
- Grille Ø 125 mm for new construction:
  - Fixing by clipping into: sleeve Ø 125 mm, RT Flex, rigid duct Ø 125 mm.
  - The seal (roll in or foam depending on versions) ensures a high level of airtightness and flush fitting against the wall.
- Grille without shaft adapted to the majority of installation configurations for renovation:
  - Fixed by clip on to the shaft Ø 125 mm, Ø 116 mm and Ø 100 mm.
  - Screwed directly on to the wall.

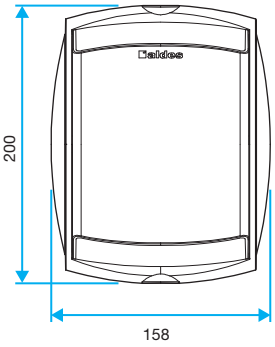
RANGE of Bap'SI twin Ø 125

Description	Code	Pack.
Bap'SI twin 15 Ø 125	11019185	10
Bap'SI twin 30 Ø 125	11019186	10
Bap'SI twin 45 Ø 125	11019187	10
Bap'SI twin 60 Ø 125 modulo	11019188	10
Bap'SI twin 75 Ø 125	11019189	10
Bap'SI twin 90 Ø 125	11019190	10
Bap'SI twin 100 Ø 125 modulo	11019191	5
Bap'SI twin 120 Ø 125	11019192	5
Bap'SI twin 150 Ø 125	11019193	5

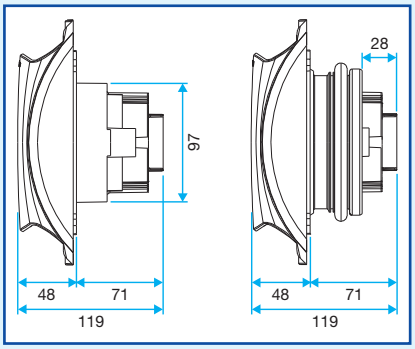
RANGE of Bap'SI twin without shaft

Description	Code	Pack.
Bap'SI twin 15 without shaft	11019194	10
Bap'SI twin 30 without shaft	11019195	10
Bap'SI twin 45 without shaft	11019196	10
Bap'SI twin 60 without shaft modulo	11019197	10
Bap'SI twin 75 without shaft	11019198	10
Bap'SI twin 90 without shaft	11019199	10
Bap'SI twin air supply	11019200	10

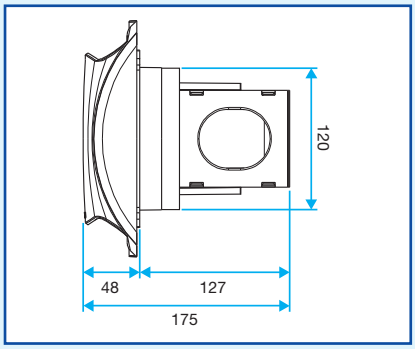
DIMENSIONS (mm)



Bap'SI twin front panel

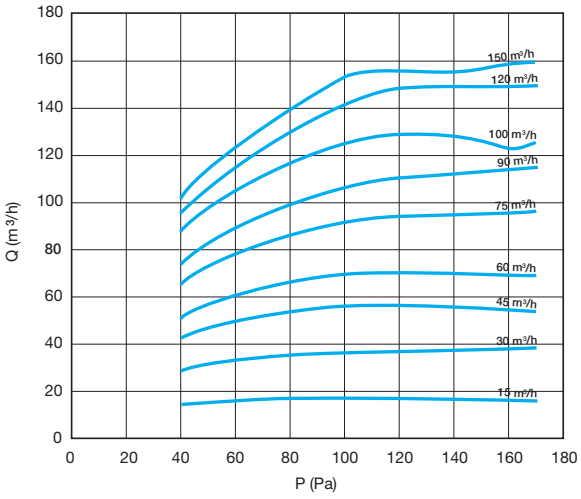


Bap'SI twin 15 to 90 & Bap'SI twin air supply



Bap'SI twin 100 to 150

AIRFLOW DETAILS



Small & Constant Exhaust Grilles

Adjustable core grilles

SR143 - Steel

SR 149 - Plastic

Advantages

- Adjustable.
- Connection sleeve supplied.

APPLICATION

- Air exhaust for all ventilation applications in small commercial premises.
- For wall or ceiling mounting.

DESCRIPTION

- Adjustable core.
- SR 143: white epoxy painted steel RAL 9010.
- SR 149: white polypropylene.
- BHP: white PVC.
- Fitted by clipping into the duct.

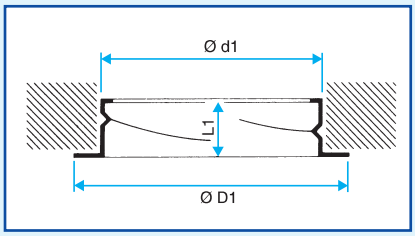
ACCESSORY

- Connection sleeve supplied.

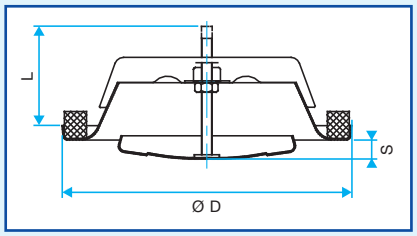
ADDITIONAL RANGE

- Air supply version.
- Paint finish in accordance with the RAL colour chart.

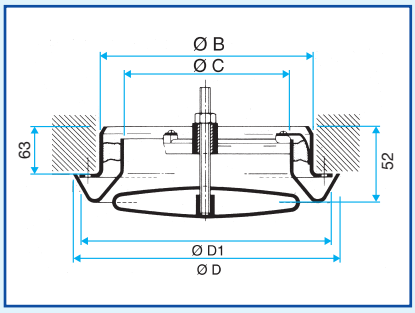
DIMENSIONS



SR 143 sleeve alone



SR143 grille alone



SR 149 grille with sleeve

Comfort airflow levels for Lw < NR 30 and dimensions						
Model	SR 143					
Dimensions (mm)	ØD (mm)	Ø D1 (mm)	Ø d1 (mm)	L (mm)	L1 (mm)	Airflow (m³/h)
Ø 100	137	130	100	47	50	80
Ø 125	161	155	125	49	50	100
Ø 160	218	190	160	60	50	150
Ø 200	248	236	200	75	50	190
Model	SR 149					
Dimensions (mm)	Ø B (mm)	Ø C (mm)	ØD (mm)	Ø D1 (mm)	-	Airflow (m³/h)
Ø 100	100	80	150	122	-	80
Ø 125	125	100	170	155	-	100
Ø 150	150	120	190	168	-	150
Ø 200	200	170	240	220	-	190

RANGE R10

Dimensions	SR 143 Code	SR 149 Code
Ø 100	11052226	11001996
Ø 125	11052227	11001997
Ø 150		11001998
Ø 160	11052228	
Ø 200	11052229	11001999

Small & Constant Exhaust Grilles

Small plastic grilles

GPA round

Advantages
- Comes in both round or square models.
- Mesh filter.

DESCRIPTION
- Air supply for exhaust system.
- Air discharge for exhaust system and CMEV.
- Plastic material.
- Colour - white.
- Mesh filter.

INSTALLATION
- Circular connection.
- Fitting using screws is possible for square models.

RANGE R18

Description	Dimension	Code
GPA Ø134	Ø 100 mm	11001504
GPA Ø159	Ø 120 - 125 mm	11001505
GPA Ø184	Ø 150 mm	11001506
GPA 140 x 140	Ø 100 - Ø 120 - Ø 125 mm	11001502
GPA 175 x 175	Ø 150 mm	11001503

Small plastic series

BIP

BSP

Advantages
- Aesthetic design.
- White plastic material RAL 9010 tint.

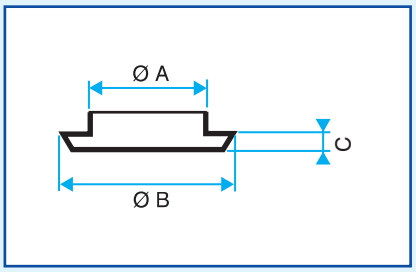
APPLICATION
- BSP: air exhaust for all ventilation applications in small commercial premises. For wall or ceiling mounting.
- BIP: air supply or air exhaust for all ventilation applications in small commercial premises. For wall mounting in air supply and wall or ceiling mounting in air exhaust.

DESCRIPTION
- Shock-proof injected polystyrene material, white RAL 9010 tint.
- BSP and BIP monobloc construction.
- Fixing by clipping on to the sheet metal sleeve.

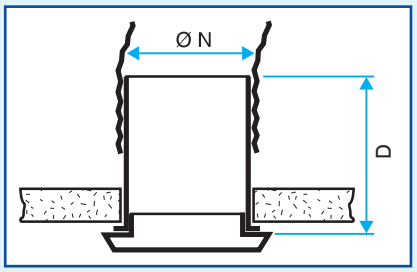
ACCESSORY
- Sheet metal connection sleeve.

ADDITIONAL RANGE
- Paint finish in accordance with the RAL colour chart (please, consult us).

DIMENSIONS



BIP grille alone



BIP with sleeve

Comfort airflow levels for Lw < NR 30 and dimensions					
Model	BIP				Airflow (m³/hr) Air supply or exhaust
ØN (mm)	ØA (mm)	ØB (mm)	C (mm)	D (mm)	
80	75	120	13	100	60
100	100	148	16	-	90
125	125	185	16	-	110
Model	BSP				
80	75	115	10	100	60

RANGE R1

Description	Dimensions	Code
BSP	Ø80	11022717
BIP	Ø80	11022073
BIP	Ø100	11085064
BIP	Ø125	11022078
Galvanized sleeve	Ø80 R3	11012490

Small & Constant Exhaust Grilles

Small fixed metal grilles

BIM 300

BIM 320

Advantages

- Aesthetic design.
- Available in white painted RAL 9010 tint or anodised aluminium.
- Easy installation.

APPLICATION

- Air supply and air exhaust for all ventilation applications in air exhaust or heat recovery ventilation, for small commercial premises.
- BIM 300: exhaust air. Wall or ceiling mounting. Ceiling mounting only for air supply.
- BIM 320: ceiling mounting.

DESCRIPTION

- Central core in extruded aluminium sections, inclined at 0° for BIM 300 and at 90° for BIM 320.
- Detachable cheek system to modify the terminal's airthrow.
- Framing in M1 polycarbonate.
- Anodised aluminium, natural gloss tint or epoxy white painted aluminium - RAL 9010.
- Wall fixing by slotting into the duct (can be screwed in if required) or into the ceiling by the use of fixing lugs supplied as accessories.

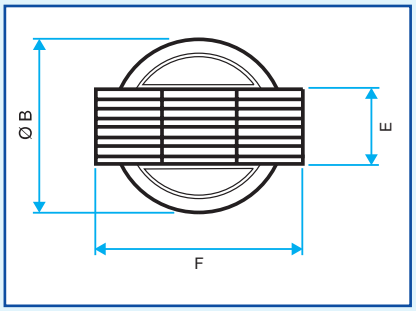
ACCESSORY

- Mounting lugs.

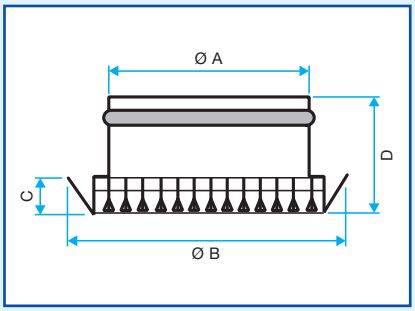
ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).

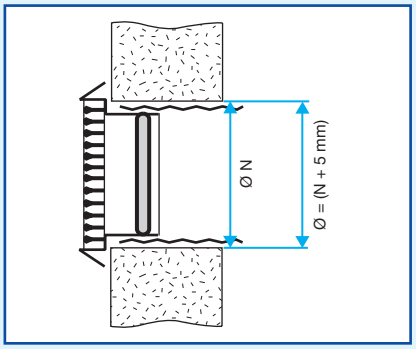
DIMENSIONS



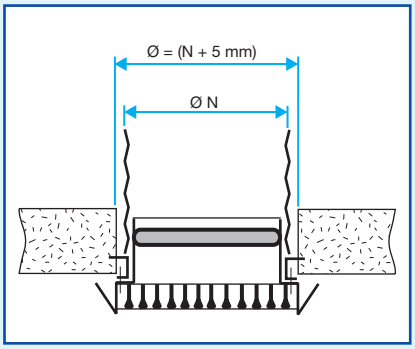
BIM 300 & BIM 320 grilles



BIM 300 & BIM 320 grilles



Wall mounting



Ceiling mounting (use the mounting lugs)

Comfort airflow levels for Lw < NR 30 and dimensions							
Ø N (mm)	Ø A (mm)	Ø B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Airflow (m³/h)
100	99	151	28	73	68	172	80
125	124	172	28	78	82	194	100
160	159	213	28	93	105	247	150

RANGE R10

Dimensions	BIM 300 anodised Code	BIM 300 white Code	BIM 320 anodised Code	BIM 320 white Code
Ø 100	11052216	11052231	11052221	11052236
Ø 125	11052217	11052232	11052222	11052237
Ø 160	11052218	11052233	11052223	11052238

ACCESSORIES R10

Dimensions	Fixing lugs for BEM and BIM Code
Ø 100 - Ø 125 - Ø 160	11053493

Small & Constant Exhaust Grilles

Small fixed metal grilles

BIM 400

BEM 780

Advantages

- Aesthetic design.
- Available in white painted RAL 9010 tint or anodised aluminium.
- Easy installation.
- Also comes in Ø 200 mm.

APPLICATION

- Air supply and air exhaust for all air exhaust or heat recovery ventilation applications in small commercial premises.
- BIM 400: air exhaust. Wall or ceiling mounting. Wall mounting only for air supply.
- BEM 780: air exhaust applications only. Wall or ceiling mounting.

DESCRIPTION

- Pressed aluminium frame.
- BIM 400: core made of extruded aluminium bars, inclined at 15°.
- BEM 780: core made of a 12.5 x 12.5 mesh.
- Anodised aluminium, natural gloss tint or epoxy white painted aluminium - RAL 9010.
- Wall fixing by slotting into the duct (can be screwed in if required) or into the ceiling by the use of fixing lugs supplied as accessories.

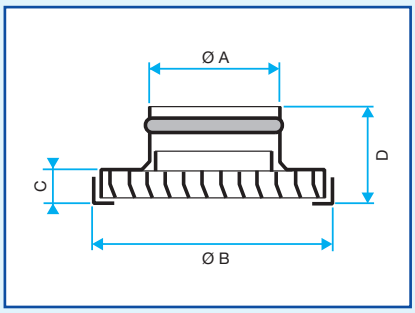
ACCESSORY

- Mounting claws.

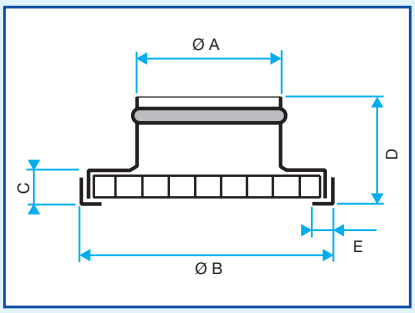
ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).

DIMENSIONS



BIM 400 grille



BEM 780 grille

Comfort airflow levels for Lw < NR 30 and dimensions							
Model	Ø N (mm)	Ø A (mm)	Ø B (mm)	C (mm)	D (mm)	E (mm)	Airflow (m³/h)
BIM 400	100	98	160	20	55	15	75
BIM 400	125	123	160	20	55	15	120
BIM 400	160	158	200	20	55	15	170
BIM 400	200	198	248	20	55	15	250
BEM 780	100	98	160	14	55	15	80
BEM 780	125	123	160	14	55	15	160
BEM 780	160	158	200	14	55	15	250
BEM 780	200	198	248	14	55	15	380

RANGE R10

Dimensions	BIM 400 anodised Code	BIM 400 white Code	BIM 780 anodised Code	BIM 780 white grille Code
Ø 100	11052211	11052208	11052201	11052245
Ø 125	11052212	11052209	11052202	11052246
Ø 160	11052213	11052210	11052203	11052247
Ø 200	11052214	11052215	11052249	11052248

ACCESSORIES R10

Dimensions	Fixing lugs for BEM and BIM Code
Ø 100 - Ø 125 - Ø 160	11053493

Small & Constant Exhaust Grilles

Bap'SI twin accessories

Shaft Ø 125 mm

Acoustic ring

DESCRIPTION

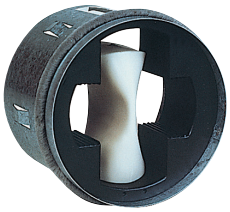
- Bag of five seals: allow to ensure airtightness when the grille is screwed directly on to the wall.
- Shaft of Ø 125, Ø 116 and Ø 100 mm: allows to connect to the Bap'SI twin without shaft to the existing duct.
- Solid blanking plate, allows to blank off old ventilation ductwork.
- Acoustic ring: to improve acoustic performances.

RANGE R3

Description	Code
Bap'SI 5 airtight seals	11019049
Shaft Ø 125 mm	11019023
Shaft Ø 116 mm	11019024
Shaft Ø 100 mm	11019025
180 x 280 mm blanking plate	11034108
Acoustic ring (x5)	11019429
Pull cord return	11015001

Grille + Regulation

BIM 400



MR

Green Product

DESCRIPTION

- The combination of a BIM and a MR also enables the grille to obtain a properly adjusted solution.
- BIM 400: see page 256.
- MR: see page 196.

Indoor Grilles

Single & double deflection grilles

AC 101 - SC 101
Extruded aluminium or steel

Advantages

- Adjustable blades.
- Easy installation.

APPLICATION

- Air supply and air exhaust for all ventilation and air-conditioning applications.
- Wall mounted.

DESCRIPTION

- AC 101: single deflection grille with horizontal, mobile and individually adjustable blades, with a 20 mm spacing.
- AC 101 D: double deflection grille with front horizontal and rear vertical, mobile & individually adjustable blades, with a 20 mm spacing.
- AC 101 B: grille AC 101 with opposed blade damper (OBD).
- AC 101 BD: grille AC 101 D with opposed blade damper (OBD).

STANDARD SUPPLY

- RAL 9010. Other RAL colours available upon request.
- Fixing F3 clips.

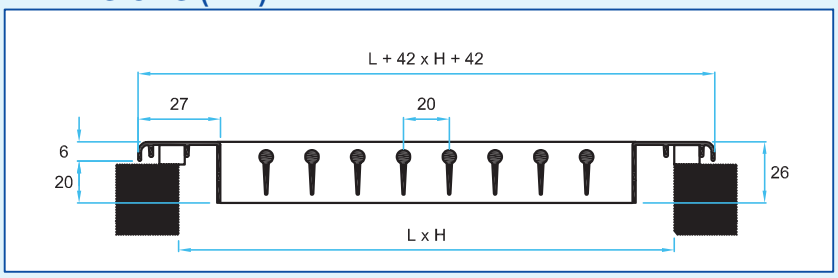
ACCESSORIES

- Opposed blade damper (OBD) - aluminum profiles. Fitted to the grille using clips.
- MT and ME connection plenum, aluminium or galvanized sheet, with rear or side mounted connection. See plenum dimensions on page 260.

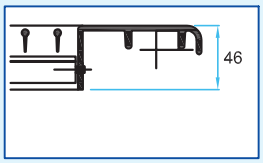
ADDITIONAL RANGE

- Other sizes available upon request.

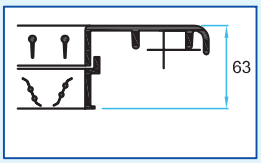
DIMENSIONS (mm)



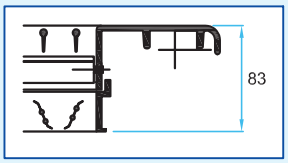
AC 101 grille



AC 101 D grille



AC 101 B grille



AC 101 BD grille

Comfort airflow in m³/hr for Lw < NR 25 and dimensions				
L (mm)	H (mm)			
	100	150	200	300
200	200	-	-	-
250	250	370	-	-
300	300	450	-	-
400	400	700	800	-
500	500	800	1000	-
600	-	900	1200	1700
800	-	-	1500	2300
1000	-	-	-	2700

• See selection tables on pages 288 and 291.

RANGE R10

Dimensions	SD Grille AC 101 F3 Code	SD Grille SC 101 F3 Code	DD Grille AC 101 D F3 Code
200 x 100		11050020	
250 x 100		11050021	
300 x 100		11050022	
400 x 100		11050023	
500 x 100		11050024	
250 x 150		11050025	
300 x 150		11050026	
400 x 150		11050027	
500 x 150		11050028	
600 x 150		11050029	
400 x 200		11050030	
500 x 200		11050031	
600 x 200		11050032	
800 x 200		11050033	
600 x 300		11050034	
800 x 300		11050035	
1000 x 300		11050036	

Indoor Grilles

Single & double deflection grilles

Advantages

- Adjustable blades.
- Easy installation.

AC 102 D - SC 102 D
Extruded aluminium or steel

APPLICATION

- Air supply and air exhaust for all ventilation an air-conditioning applications.
- Wall mounted.

DESCRIPTION

- AC 102: single deflection grille with vertical, mobile and individually adjustable blades, with a 20 mm spacing.
- AC 102 D: double deflection grille with front vertical and rear horizontal, mobile and individually adjustable blades, with a 20 mm spacing.
- AC 102 B: grille AC 102 with opposed blade damper (OBD).
- AC 102 BD: grille AC 102 D with opposed blade damper (OBD).

STANDARD SUPPLY

- RAL 9010. Other RAL colours available upon request.
- Fixing F3 clips.

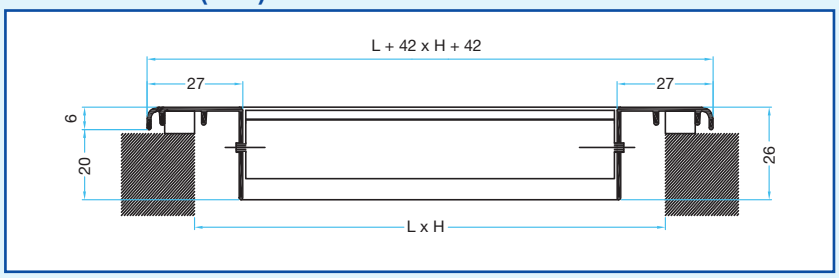
ACCESSORIES

- Opposed blade damper (OBD) - aluminum profiles. Fitted to the grille using clips.
- MT and ME connection plenum, aluminium or galvanized sheet steal, with rear or side mounted connection. See plenum dimensions on page 260.

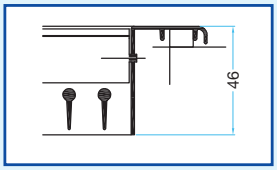
ADDITIONAL RANGE

- Other sizes available upon request.

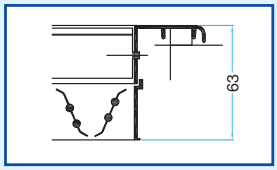
DIMENSIONS (mm)



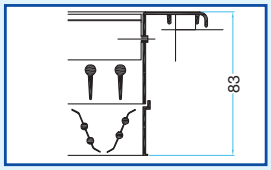
AC 102 grille



AC 102 D grille



AC 102 B grille



AC 102 BD grille

Comfort airflow in m³/hr for Lw < NR 25 and dimensions				
L (mm)	H (mm)			
	100	150	200	300
200	200	-	-	-
250	250	370	-	-
300	300	450	-	-
400	400	700	800	-
500	500	800	1000	-
600	-	900	1200	1700
800	-	-	1500	2300
1000	-	-	-	2700

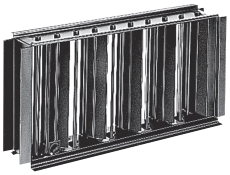
• See selection tables on pages 288 and 291.

RANGE R10

Dimensions	SD Grille AC 102 F3 Code	DD Grille AC 102 D F3 Code	DD Grille SC 102 D F3 Code
200 x 100			11050060
250 x 100			11050061
300 x 100			11050062
400 x 100			11050063
500 x 100			11050064
250 x 150			11050065
300 x 150			11050066
400 x 150			11050067
500 x 150			11050068
600 x 150			11050069
400 x 200			11050070
500 x 200			11050071
600 x 200			11050072
800 x 200			11050073
600 x 300			11050074
800 x 300			11050075
1000 x 300			11050076

Indoor Grilles

Indoor grilles accessories



Opposed Blade Damper (OBD)
MT F3 - ME F3 series - Aluminium

Advantages

- Facilitates installation of the indoor grilles.
- OBD to adjust airflow.

APPLICATION

- Range of accessories suitable for indoor grilles
- CAUTION: these accessories are not compatible with grilles intended for circular ducts.

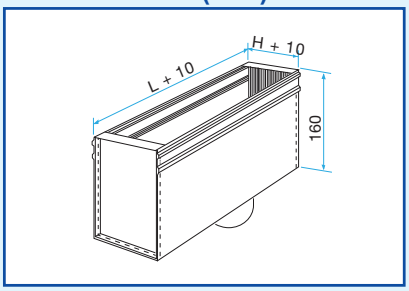
DESCRIPTION

- OBD: counter-rotating adjusting damper-in aluminium or galvanised sheet steel. Attaches to the grille with 'S' clips.
- MT F3: connection plenum with back duct connection. Construction - Aluminium or galvanised sheet steel. Two models are available - depending on the connection branch diameter -
  - "90°" model if the connection diameter < nominal height of the grille.
  - "83°" model if the connection diameter > nominal height of the grille.
- ME F3: connection plenum with side-mounted connector. Construction - aluminium or glavanised sheet steel.
- MEI (5) F3: connection plenum with side-mounted connector. Construction - aluminium or galvanised sheet steel. Insulated on 5 faces.
- Plenums MT F3 and ME F3 are suitable for use with F3 fixings (clips) designed for standard grilles and require no F4 fixing frame.

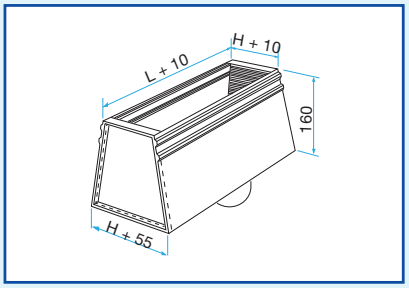
ADDITIONAL RANGE

- Other sizes available upon request.

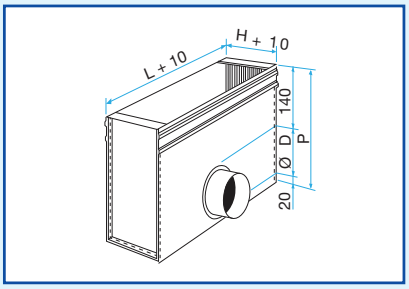
DIMENSIONS (mm)



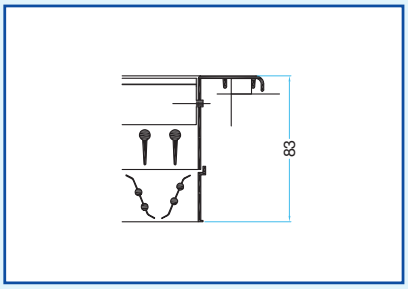
MT F3 plenum with 90° rear connection



MT F3 plenum with 83° rear connection



ME F3 plenum with 90° side connection



AC or SC 102 D grille with damper

L (mm)	Dimensions						
	H = 100		H = 150		H = 200		H = 300
	ME / MT F3	ME F3 A/C.	ME / MT F3	ME F3 A/C.	ME / MT F3	ME F3 A/C.	ME / MT F3
200	Ø 80*	Ø 125	-	-	-	-	-
250	Ø 100	-	Ø 125*	-	-	-	-
300	Ø 125	Ø 160	Ø 160	Ø 200	-	-	-
400	Ø 125	-	Ø 160	-	Ø 200	Ø 200	-
500	Ø 125	-	Ø 160	-	Ø 200	-	-
600	-	-	Ø 160		Ø 200	-	Ø 250*
800	-	-	-	-	2 x Ø 200	-	2 x Ø 250*
1000	-	-	-	-	-	-	2 x Ø 250*

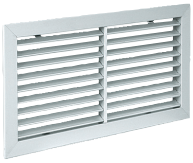
- All MT plenums are 83° models except those marked (*).

RANGE

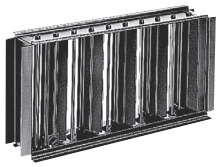
Dimensions	Opposed blade damper Code	ME F3 plenum side connection Code	MT F3 plenum back connection Code	ME F3 plenum connection A/C Code	MEI (5) plenum F3 conn. A/C. Code
200 x 100					
250 x 100					
250 x 150					
300 x 100					
300 x 150					
400 x 100					
400 x 150					
400 x 200					
500 x 100					
500 x 150					
500 x 200					
600 x 150					
600 x 200					
600 x 300					
800 x 200					
800 x 300					
1000 x 300					

Indoor Grilles

Fixed blade grilles



AC 121 or SC 121
Aluminium or steel



Opposed Blade Damper

Advantages

- Low noise level.
- Fixed blades for air exhaust.
- Easy installation.

APPLICATION

- Air supply and air exhaust for all ventilation and air-conditioning applications.
- Wall mounted.

DESCRIPTION

- AC 121: single deflection grille with fixed horizontal blades, inclined at 40° and with a spacing of 20 mm.
- AC 121 B: AC 121 grille with opposed blade damper (OBD).

STANDARD SUPPLY

- RAL 9010. Other RAL colours available upon request.
- Fixing F3 clips.

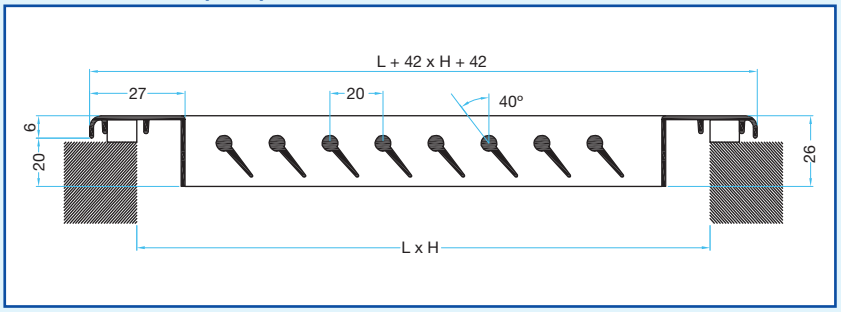
ACCESSORIES

- Opposed blade damper (OBD) - aluminum profiles. Fitted to the grille using clips.
- MT and ME connection plenums in galvanised sheet steel with rear or side mounted connection. See plenum dimensions on page 260.

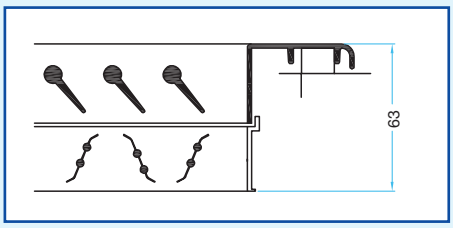
ADDITIONAL RANGE

- Other sizes available upon request.
- Single deflection grille with horizontal vanes, inclined at 40° and with a spacing of 20 mm.
- AC models: finish - anodised aluminium, natural satin finish.
- SC models: finish - white epoxy painted steel RAL 9010 tint.
- Hidden fixing using friction clips.

DIMENSIONS (mm)



AC or SC 121 alone



AC or SC 121 with damper

Comfort airflow levels for Lw < NR 25 and dimensions			
L (mm)	H (mm)	Ø plenum (mm)	Airflow (m³/hr)
200	100	80*	180
300	150	160	350
400	200	200	600
600	200	200	1200
300	300	250	700
500	300	315	1200
600	300	250*	1400
800	300	2 x 250*	1800
600	600	355	2000
1000	600	2 x 315	3000

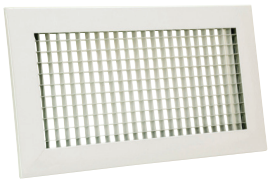
- All MT plenums are 83° models except those marked (*).
- See selection table on page 291.

RANGE

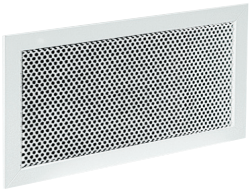
Dimensions	Aluminium grille AC 121 F3 Code	Steel grille SC 121 F3 Code	Opposed blade damper Code	ME F3 plenum side connection Code	MT F3 plenum back connection Code
200 x 100					
300 x 150					
400 x 200					
600 x 200					
300 x 300					
500 x 300					
600 x 300					
800 x 300					
600 x 600					
1000 x 600					

Indoor Grilles

Fixed mesh grilles



AC 123
Aluminium or steel



SC 125

Advantages

- Aesthetic, "mesh" type design for air exhaust.

APPLICATION

- Air exhaust for all ventilation and air- conditioning applications.
- Wall mounted.

DESCRIPTION

- Meshed grille with 12 x 12 x 0.4 mm squares (AC 123) or perforated sheet with 45 % free surface area (SC 125).
- AC models: finish - aluminium, desired RAL colour.
- SC models: white epoxy painted steel finish, RAL 9010 tint.
- Hidden fixings using friction clips.

STANDARD SUPPLY

- RAL 9010. Other RAL colours available upon request.
- Fixing F3 clips.

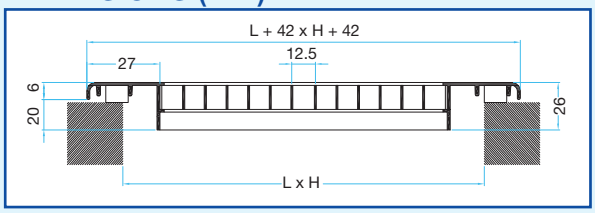
ACCESSORIES

- Opposed blade damper (OBD) - aluminum profiles. Fitted to the grille using clips.
- MT and ME connection plenums in galvanised sheet steel with rear or side mounted connection. See plenium dimensions on page 260.

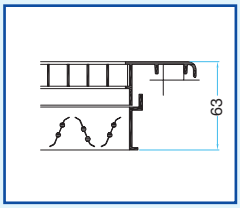
ADDITIONAL RANGE

- Other sizes available upon request.

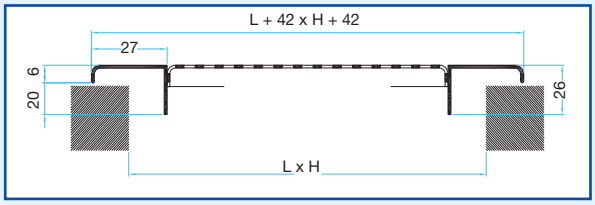
DIMENSIONS (mm)



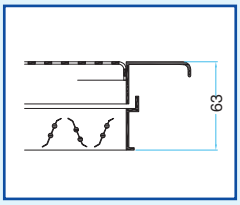
AC 123 grille alone



AC 123 with damper



SC 125 grille alone



SC 125 with damper

Comfort airflow levels for Lw < NR 25 and dimensions				
L (mm)	H (mm)	Ø plenum (mm)	Airflow (m³/hr) for AC 123	Airflow (m³/hr) for SC 125
200	100	80*	160	140
300	150	160	400	350
400	200	200	700	600
600	200	200	1200	900
300	300	250	700	600
500	300	315	1300	1100
600	300	250*	1500	1200
800	300	2 x 250*	1900	1600
600	600	355	2200	1800
1000	600	2 x 315	4000	

- All MT plenums are 83° models except those marked (*).
- See selection table on page 291.

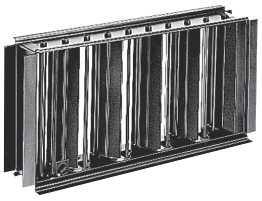
RANGE R10

Dimensions	Aluminium grille AC 123 F3 Code	Opposed blade damper Code	ME F3 plenum side connection Code	MT F3 plenum back connection Code	Steel grille SC 125 F3 Code
200 x 100					11050011
300 x 150					11050012
400 x 200					11050013
600 x 200					11050014
300 x 300					11050015
500 x 300					11050016
600 x 300					11050017
800 x 300					11050018
600 x 600					11050019
1000 x 600					

Indoor Grilles

Grilles with fixed aluminium linear bars

AC 440 - Aluminium



Opposed blade damper

Advantages

- Aesthetic design.
- Linear effect.

APPLICATION

- Air supply and air exhaust for all ventilation and air conditioning applications.
- Wall or breast wall mounting.

DESCRIPTION

- AC 440: fixed horizontal linear bars with a 13 mm spacing and 0°deflection.
- AC 440 B: AC 440 grille with opposed blade damper (OBD).
- AC 440 D: fixed horizontal lineart bars with a 13 mm spacing and 0°deflection, rear individually adjustable blades, perpendicular to frontal bars.
- AC 440 BD: AC 440 D grille with opposed blade damper (OBD).

STANDARD SUPPLY

- RAL 9010. Other RAL colours available upon request.
- Fixing F3 clips.

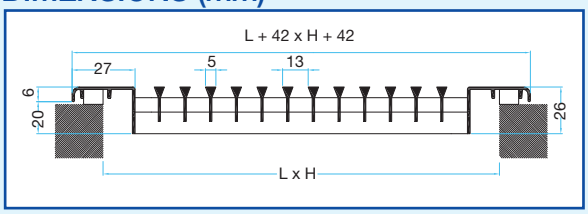
AVAILABLE OPTIONS

- Corner piece 90° or 45°; code K.

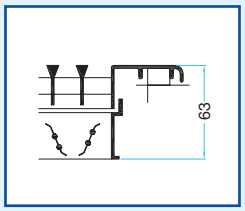
ADDITIONAL RANGE

- Other sizes available upon request.

DIMENSIONS (mm)



AC 440 grille alone



Grille + damper

Comfort airflow levels for Lw < NR 25 and dimensions					
L x H (mm)	Ø connections (mm)	Airflow (m³/hr)	L x H (mm)	Ø connections (mm)	Airflow (m³/hr)
200 x 100	80	160	600 x 150	160	650
250 x 100	100	180	600 x 200	200	800
300 x 100	125	250	800 x 100	2 x 125	550
400 x 100	125	330	800 x 200	2 x 200	1000
500 x 100	125	380	1000 x 150	2 x 160	1000
600 x 100	2 x 100	500	1500 x 200	3 x 200	1800
250 x 150	125	280	800 x 75	2 x 100	400
300 x 150	160	350	800 x 150	2 x 160	800
400 x 150	160	450	1000 x 75	2 x 100	550
500 x 150	160	550	1000 x 200	2 x 200	1200
400 x 200	200	550	1000 x 100	2 x 125	650
500 x 200	200	680	1500 x 150	3 x 160	1350

- All MT plenums are 83° models, except 250 x 150 and 200 x 100 mm.
- See selection tables on pages 289 and 291.

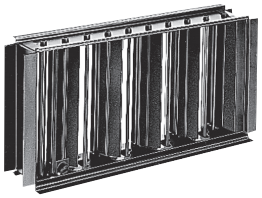
RANGE

Dimensions	Grille AC 440 F3 Code	Opposed blade damper Code	ME F3 plenum side connection Code	MT F3 plenum back connection Code
800 x 75				
1000 x 75				
200 x 100				
250 x 100				
300 x 100				
400 x 100				
500 x 100				
600 x 100				
800 x 100				
1000 x 100				
250 x 150				
300 x 150				
400 x 150				
500 x 150				
600 x 150				
800 x 150				
1000 x 150				
1500 x 150				
400 x 200				
500 x 200				
600 x 200				
800 x 200				
1000 x 200				
1500 x 200				

Indoor Grilles

Grilles with fixed aluminium linear bars

AC 441 - Aluminium



Opposed blade damper

Advantages

- Aesthetic design.
- Linear effect.

APPLICATION

- Air supply and air exhaust for all ventilation and air-conditioning applications.
- Wall or breast wall mounting.

DESCRIPTION

- AC 441: fixed horizontal linear bars with a 15 mm spacing and 15° deflection.
- AC 441 B: AC 441 grille with opposed blade damper (OBD).
- AC 441 D: fixed horizontal lineart bars with a 15 mm spacing and 15° deflection, rear individually adjustable blades, perpendicular to frontal bars.
- AC 441 BD: AC 441 D grille with opposed blade damper (OBD).

STANDARD SUPPLY

- RAL 9010. Other RAL colours available upon request.
- Fixing F3 clips.

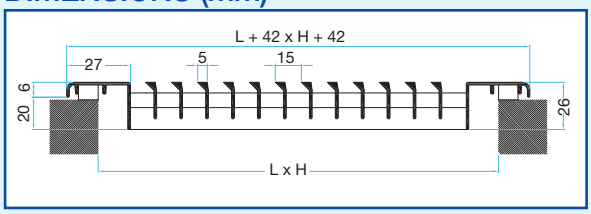
AVAILABLE OPTIONS

- Corner piece 90° or 45°; code K.

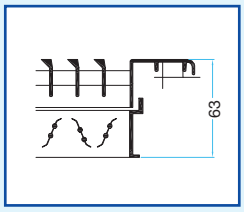
ADDITIONAL RANGE

- Other sizes available upon request.

DIMENSIONS (mm)



AC 441 grille alone



AC 441 with damper

Comfort airflow levels for Lw < NR 25 and dimensions					
L x H (mm)	Ø connections (mm)	Airflow (m³/hr)	L x H (mm)	Ø connections (mm)	Airflow (m³/hr)
200 x 100	80	160	600 x 150	160	650
250 x 100	100	180	600 x 200	200	800
300 x 100	125	250	800 x 100	2 x 125	550
400 x 100	125	330	800 x 200	2 x 200	1000
500 x 100	125	380	1000 x 150	2 x 160	1000
600 x 100	2 x 100	500	1500 x 200	3 x 200	1800
250 x 150	125	280	800 x 75	2 x 100	400
300 x 150	160	350	800 x 150	2 x 160	800
400 x 150	160	450	1000 x 75	2 x 100	550
500 x 150	160	550	1000 x 200	2 x 200	1200
400 x 200	200	550	1000 x 100	2 x 125	650
500 x 200	200	680	1500 x 150	3 x 160	1350

- All MT plenums are 83° models, except 250 x 150 and 200 x 100 mm.
- See selection tables on pages 289 and 291.

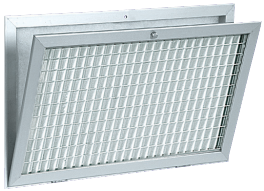
RANGE

Dimensions	Grille AC 441 F3 Code	Opposed blade damper Code	ME F3 plenum side connection Code	MT F3 plenum back connection Code
800 x 75				
1000 x 75				
200 x 100				
250 x 100				
300 x 100				
400 x 100				
500 x 100				
600 x 100				
800 x 100				
1000 x 100				
250 x 150				
300 x 150				
400 x 150				
500 x 150				
600 x 150				
800 x 150				
1000 x 150				
1500 x 150				
400 x 200				
500 x 200				
600 x 200				
800 x 200				
1000 x 200				
1500 x 200				

Indoor Grilles

Fixed blade grilles with filter

AC 161 W
Extruded aluminium



AC 163 W

Advantages

- Front face opening on hinges for easy access to filter.
- RAL 9010 white finish.

APPLICATION

- Air exhaust for all ventilation and air-conditioning applications.
- Wall mounted.

DESCRIPTION

- AC 161: single deflection grille with horizontal fixed blades inclined at 40° with a 20 mm spacing. Housing for 25 mm thick filter. Front of the grille hinged - locked into position with a button screw.
- AC 163: square mesh 12 x 12 mm grille. Housing for 25 mm thick filter. Front of the grille hinged and locked into position with a button screw.
- Models AC 161 & AC 163: finish - extruded aluminium, natural satin finish.
- Hinges in stainless steel.
- Concealed fixing, using screws in the filter housing acting as a mounting frame.

STANDARD SUPPLY

- RAL 9010. Other RAL colours available upon request
- Fixing F3 clips.

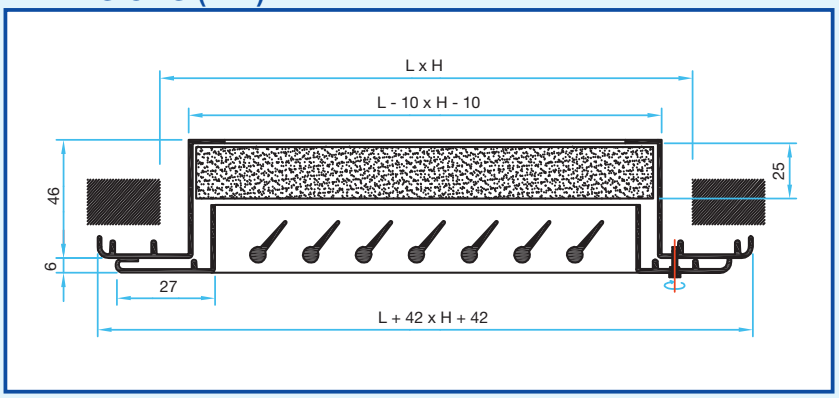
ACCESSORY

- Washable filter, code W.

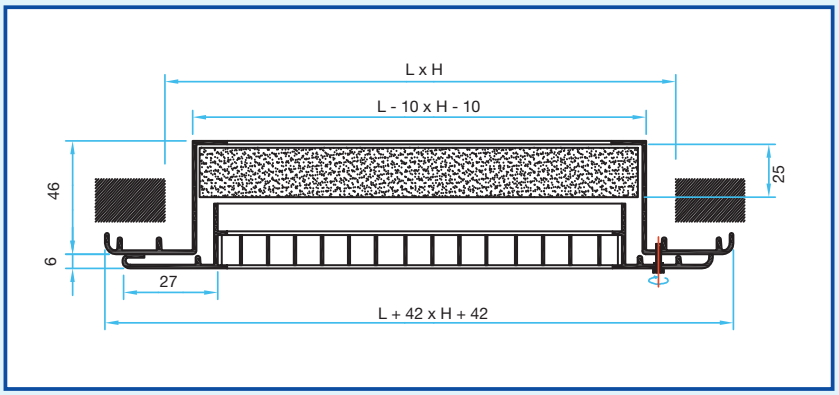
ADDITIONAL RANGE

- Other sizes available upon request.

DIMENSIONS (mm)



AC 161 grille with filter



AC 163 grille with filter

Comfort airflow levels for Lw < NR 25 and dimensions				
L x H (mm)	Standard filter (mm)	ØD Plenum (mm)	H Plenum (mm)	Airflow (m³/hr)
622 x 322	596 x 296	250	215	800
522 x 422	496 x 396	355	215	1600
622 x 422	596 x 396	355	215	1600
522 x 522	496 x 496	400	215	1800
622 x 522	596 x 496	450	215	2400

• See selection table on page 291.

RANGE

Dimensions	Vane grille AC 161 W F1 Code	Mesh grille AC 163 W F1 Code	Filters W Code	RT plenum back connection Code
622 x 322				
522 x 422				
622 x 422				
522 x 522				
622 x 522				

Indoor Grilles

Fixed air transfer blade grilles

AC 181 - Aluminium

Advantages

- Aesthetic design.
- Mounting frame supplied.
- No see-through from one room to another.

APPLICATION

- Air transfer from one room to another.
- Normally used as a door grille.

DESCRIPTION

- Single deflection grille with horizontal fixed vanes, spaced at 12.5 mm. Herringbone vane arrangement.
- Finish – anodised aluminium, natural satin finish.
- Visible fixing, by screwing into the frame.
- AC 180: non-vision door or partition transfer grille with fixed frame on one side. For dark rooms, we suggest two grilles (painted black), fitted to both sides of the door.
- AC 181: non-vision door or partition grille with fixed frame on one side, complete with sliding frame on the opposite side.

STANDARD SUPPLY

- RAL 9010. Other RAL colours available upon request.
- Fixing F3 clips.

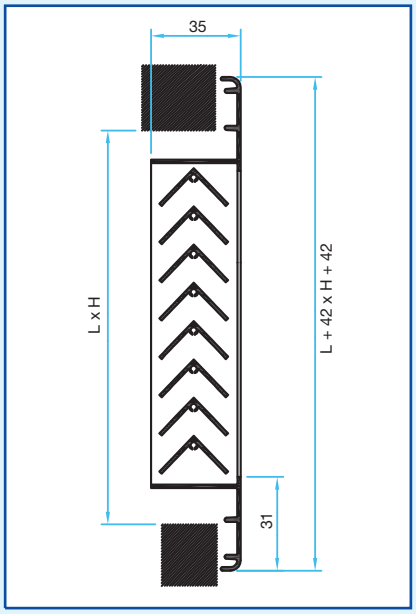
ACCESSORIES

- Mounting frame supplied.

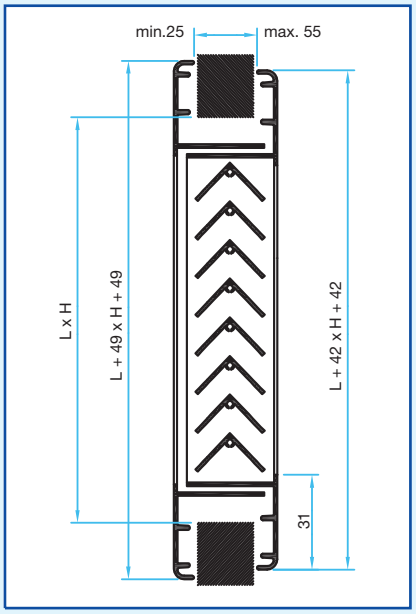
ADDITIONAL RANGE

- All sizes up to 1200 x 600 mm.
- Paint finishes as for RAL card (please, consult us).

DIMENSIONS



AC 180 grille



AC 181 grille

Comfort airflow levels for Lw < NR 25 and dimensions		
L (mm)	H (mm)	Airflow (m^3/h)
200	100	60
300	150	150
400	200	250
600	200	350
500	300	410
600	300	600
600	400	650

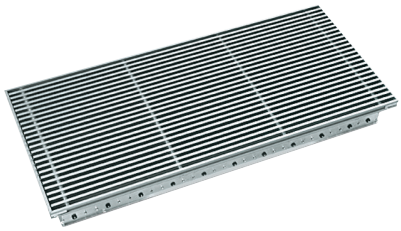
• See selection table on page 287.

RANGE

Dimensions	Air transfer grille AC 180 Code	Air transfer grille AC 181 Code
200 x 100		
300 x 150		
400 x 200		
600 x 200		
500 x 300		
600 x 300		
600 x 400		

Indoor Grilles

Grilles with fixed linear bars for floor mounting



AG 450 - AG 470 series
Steel

Advantages

- Version suitable for designed floor assemblies.

APPLICATION

- Air supply and air exhaust for all ventilation and air-conditioning applications.
- Suitable for floor mounting.

DESCRIPTION

- Fixed horizontal linear bars with a 13 mm spacing.
- Special version for designed floor assemblies with reinforced use (model AG 470).
  For this version, it is necessary to stipulate the floor height as the grille will be adapted in the factory up to this height (modification of dimension C).
  CAUTION: the minimum value of dimension C is 35 mm.
- Finish – anodised aluminium, natural satin finish.
- Embedded into the floor.

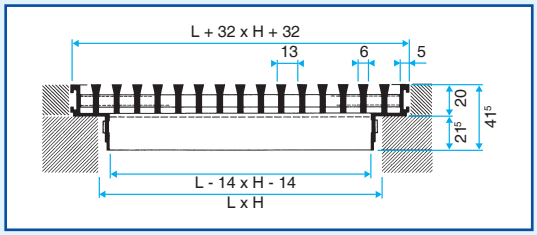
ACCESSORIES

- Counter-rotating movement AGB damper, in aluminium. Fitted to the grille using clips (please, consult us).

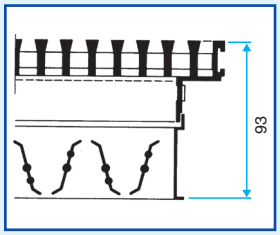
ADDITIONAL RANGE

- All sizes of up to 1200 x 400 mm. Finished with paint in accordance with RAL colour chart (please, consult us).
- All aluminium version for swimming pool applications (please, consult us).

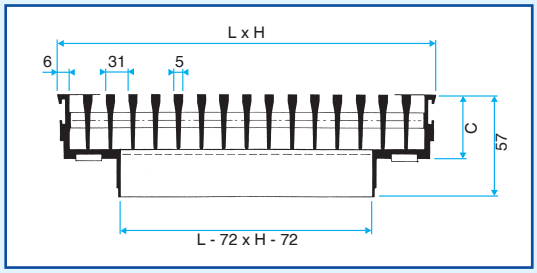
DIMENSIONS



AG 450 grille alone



AG 450 grille with damper



AG 470 grille alone

- C: variable depending on flooring type, specify when ordering.

Comfort airflow in m³/h for Lw < NR 25 and dimensions					
L (mm)	H (mm)				
	100	150	200	300	600
200	160	-	-	-	-
300	250	350	-	-	-
400	-	450	550	-	-
500	-	-	-	1200	-
600	-	-	800	1400	2000

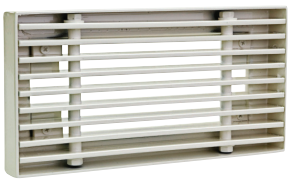
• See selection tables on pages 289 and 291.

RANGE R10

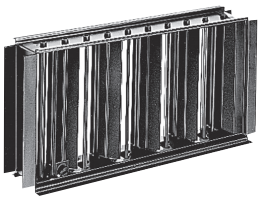
Dimensions	Floor grille AG 450 F0 Code	Floor grille AG 470 F0 Code
200 x 100	11050881	
300 x 100	11050882	
300 x 150	11050883	
400 x 150	11050884	
400 x 200	11050885	
600 x 200	11050886	
500 x 300	11050887	
600 x 300	11050888	
600 x 600	11050889	11002061

Indoor Grilles

Grilles with fixed linear bars for floor mounting



AG 450A - Extruded aluminium



Opposed Blade Damper

Advantages

- Version suitable for designed floor assemblies.

APPLICATION

- Air supply and air exhaust for all ventilation and air-conditioning applications.
- Floor mounted.

DESCRIPTION

- Fixed horizontal linear bars with a 16 mm spacing.
- Aluminium finish or desired RAL colour, natural satin finish.
- Embedded into the floor.

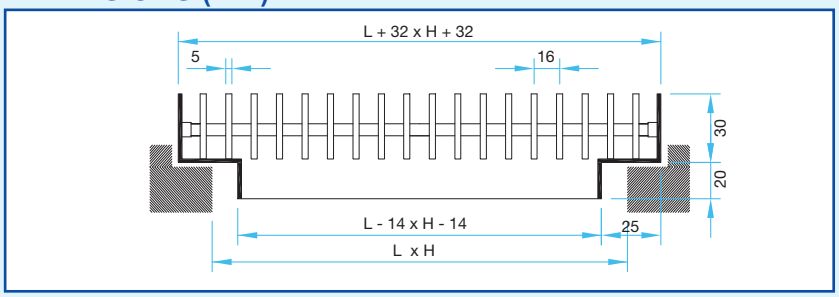
ACCESSORIES

- Opposed blade damper - in aluminium profiles, fitted to the grille using clips.
- All aluminium version for swimming pool applications (please, consult us).

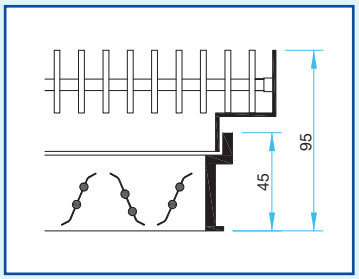
ADDITIONAL RANGE

- Other sizes available upon request.

DIMENSIONS (mm)



AG 450A grille alone



AG 450A with damper

Comfort airflow in m³/hr for Lw < NR 25 and dimensions					
L (mm)	H (mm)				
	100	150	200	300	600
200	160	-	-	-	-
300	250	350	-	-	-
400	-	450	550	-	-
500	-	-	-	1200	-
600	-	-	800	1400	2000

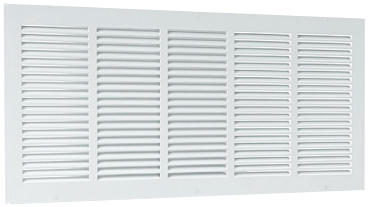
- Special grille for designed floor assemblies (600 x 600 mm tiles).
- State the type of flooring when ordering.
- See selection tables on pages 289 and 291.

RANGE

Dimensions	Grille AG 450 F0 Code
200 x 100	
300 x 100	
300 x 150	
400 x 150	
400 x 200	
600 x 200	
500 x 300	
600 x 300	
600 x 600	

Indoor Grilles

Pressed grilles



SR 377 - Steel

SR 378 - Steel

Advantages

- Wall mounted installation.

APPLICATION

- Air exhaust for simple air-conditioning or heating installations.
- Wall mounted.

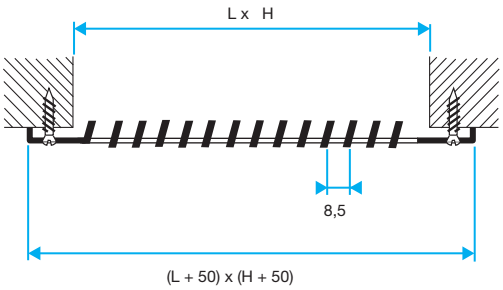
DESCRIPTION

- Single deflection grille with horizontal vanes, inclined at 20° and with a spacing of 8.5 mm.
- Pressed steel design.
- Finish - white epoxy painted steel RAL 9010 tint.
- Visible fixing, by screwing into the frame.

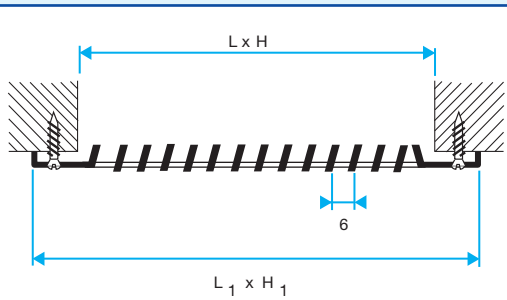
RANGE R10

Dimensions	Grille SR 377 Code	Grille SR 378 Code
100 x 100		11050272
200 x 100	11050260	
250 x 100	11050261	
300 x 100	11050262	
100 x 150		11050273
150 x 150		11050274
250 x 150		11050275
350 x 150	11050263	
400 x 150	11050264	
100 x 200		11050276
200 x 200		11050277
300 x 300	11050265	
600 x 300	11050266	
400 x 400	11050267	
500 x 500	11050268	
600 x 600	11050269	
750 x 750	11050270	
900 x 900	11050271	

DIMENSIONS



SR 377 grille

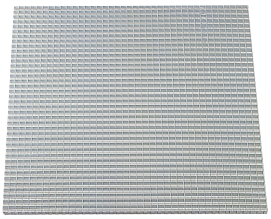


SR 378 grille

Comfort airflow levels for Lw < NR 30 and dimensions		
L (mm)	H (mm)	Airflow (m^3/h)
100	100	60
200	100	120
250	100	150
300	100	180
100	150	90
150	150	100
250	150	150
350	150	300
400	150	350
100	200	120
200	200	240
300	300	600
600	300	1200
400	400	1000
500	500	1800
600	600	2500
750	750	3000
900	900	3500

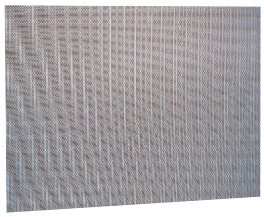
Indoor Grilles

Fixed blade grilles for ceiling tiles



AO 123 Z - AU 123 - AU 124
Aluminium or steel

AO 129



SC 370

Advantages

- Adapted for standard 600 x 600 mm suspended ceiling tiles.
- AU 123 and AU 124 series with a thin frame for even greater rigidity.

APPLICATION

- Exhaust grilles for all ventilation and air-conditioning applications.
- Ceiling mounted, replacing a 600 x 600 mm suspended ceiling tile.

DESCRIPTION

- AO 123 Z: frameless straight square mesh grille (15 x 15 mm).
- AU 123 Z: straight square mesh grille (15 x 15 mm) with thin 5 mm frame.
- AU 124 Z: square mesh grille (15 x 15 mm) – inclined at 45° with thin 5 mm frame. White epoxy painted aluminium finish, RAL 9010 tint.
- AO 129: grille with vanes inclinded at 45°. Anodized aluminium, natural tint or white epoxy painted aluminium, RAL 9010 tint (AO 129 Z model).
- SC 370: perforated sheet covering 45 % of free surface area without frame.
- Finish - white epoxy painted steel RAL 9010 tint.
- Gravity fixing using the T-branches of the suspended ceiling.

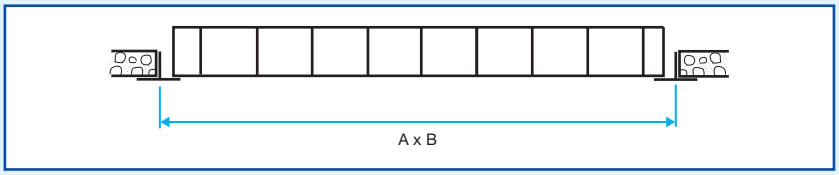
ACCESSORY

- Connection plenum supplied (side connection) in galvanised steel.

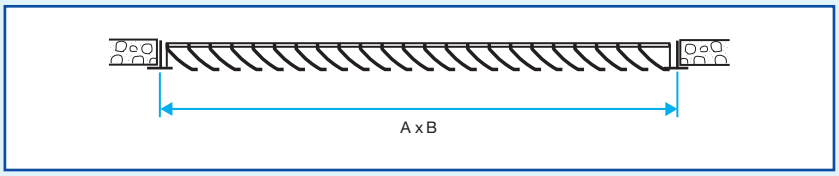
ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).
- Other dimensions available by request.

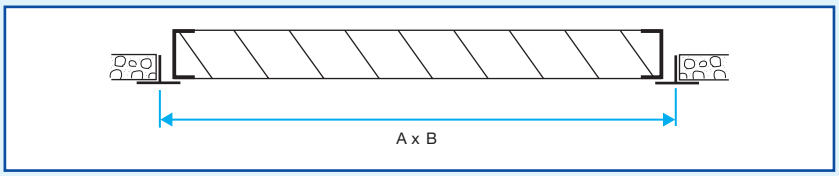
DIMENSIONS



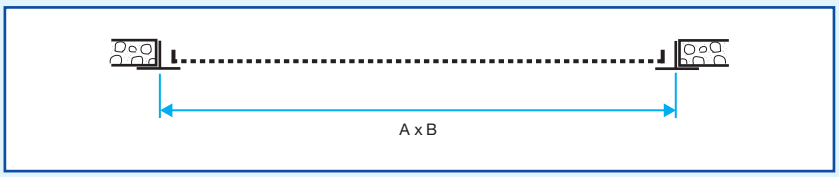
AO 123 grille



AO 129 grille



AU124 grille



SC 370 grille

Comfort airflow levels for Lw < NR 25 and dimensions				
A (mm)	B (mm)	Ø D plenum (mm)	H plenum (mm)	airflow(m^3/h)
600	600	250	300	1000
1200	600	-	-	2000

• See selection table on page 291.

RANGE R10

Dimensions	Grille anodised vanes AO 129 Code	Grille white vanes AO 129 Z Code	Grille with white mesh AO 123 Z Code	Grille with white mesh AU 124 Z Code	Plenum side connection RE 123 Code
600 x 600	11050663	11050665	11050661	11050727	11053694
1200 x 600	11050664	11050666	11050662		11053700

Dimensions	Grille with white mesh AU 123 Z Code	Plenum side connection RE 123 Code	Spare filter W Code	White perforated sheet + filter SC 370 W Code	White perforated sheet SC 370 Code
600 x 600	11050725	11053694	11053499	11050670	11050669

Indoor Grilles

Fixed blade grilles with filter for ceiling tiles

AG 637 WZ - Aluminium

AC174 WZ

Advantages

- Front face opening on hinges.
- Adapted for standard suspended ceiling tiles.
- Dimensions available for 675 x 675 mm tiles.
- Efficient and robust closing system.
- Can be fitted into fixed suspended ceilings.

APPLICATION

- Exhaust grilles for all ventilation and air-conditioning applications.
- Fitted into suspended ceiling tiles or wall-mounted.
- Special model for fixed suspended ceilings.

DESCRIPTION

- Front face opening on hinges.
- Aluminium construction.
- White epoxy painted, RAL 9010 tint.
- Gravity fixing using the 'T' pieces of the suspended ceiling (F0) or by visible screws (F1 - Designed for Staff ceilings).
- AG 637 WZ: front grille with fixed vanes inclined at 45° - with filter.
- AC 174 WZ: square mesh grille (15 x 15 mm) at 45° - with filter.

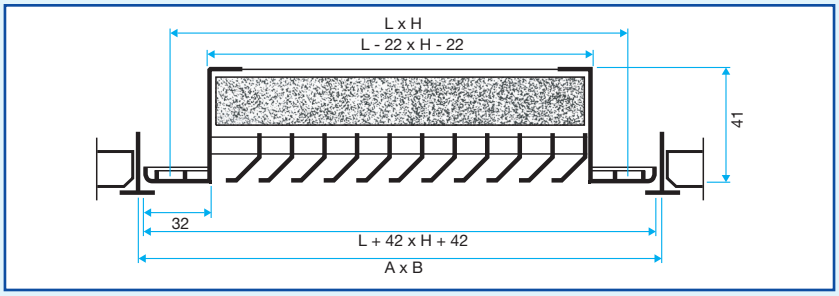
ACCESSORIES

- W filter 15 mm thick, M1 fire rating, G3 (supplied).
- Connection plenum in galvanised steel.

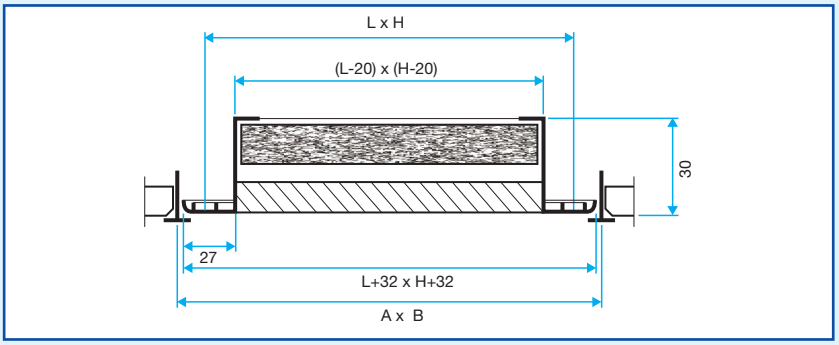
ADDITIONAL RANGE

- For other sizes, please consult us.
- Paint finish in accordance with the RAL colour chart (please, consult us).
- Other fitting methods (please, consult us).

DIMENSIONS



AG 637 WZ grille (for removable suspended ceilings with T-piece)



AC 174 WZ grille (for removable suspended ceilings with T-piece)

Comfort airflow levels for Lw < NR 30 and dimensions

Model	A x B* (mm)	L (mm)	H (mm)	Plenum height (mm)	Ø Plenum connection (mm)	Airflow (m^3/h)
AG 637 WZ	600 x 300	554*	254	360	250	800
	600 x 600	554*	554	360	250	1000
	675 x 675	628**	628	360	250	1000
AC 174 WZ	-	400	200	350	200	450
	-	500***	500	360	250	1000
	600 x 300	563*	263	360	250	1000
	600 x 600	563*	563	360	250	1000

* Special dimensions for suspended ceiling tiles 600 mm in length.
** Special dimmensions for suspended ceiling tiles 675 mm in length.
*** Dimensions and fittings for non-removable (fixed) suspended ceilings.

RANGE for removable suspended ceilings R10

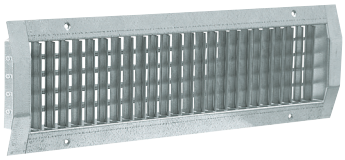
Dimensions	45° mesh grille AC 174 WZ F0 Code	Grille white vanes AG 637 WZ F0 Code	Side plenum RE 174 Code	Side plenum RE 637 Code	Spare filter W Code
600 x 300	11050742	11050682	11053572	11053575	11053515
600 x 600	11050743	11050681	11053570	11053577	11053514
675 x 675		11050683		11053576	11053516

RANGE for rigid suspended ceilings or walls R10

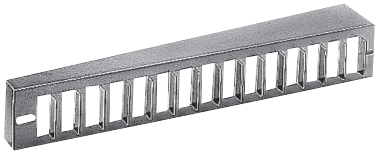
Dimensions	45° mesh grille AC 174 WZ F1 Code	Rear plenum MT F3 Code	Side plenum ME F3 Code	Side plenum RE174 Code	Spare filter W Code
500 x 500	11050741			11053578	11053518
400 x 200	11050740	11053648	11053678		11053517

Indoor Grilles

Grilles for circular ducts



GD 102 - GD 102 D
Steel



N damper

Advantages

- Suitable for circular and oblong ducts – all standard diameters.

APPLICATION

- Air supply and air exhaust for all ventilation and air-conditioning applications.
- Can be mounted on cylindrical or oblong ductwork.

DESCRIPTION

- GD 102 F1: single deflection grille (air return) horizontal vanes, mobile, individually adjustable with a 20 mm spacing.
- GD 102 D F1: double deflection grille (air supply) horizontal vanes behind and vertical vanes in front, mobile, individually adjustable with a 20 mm spacing.
- Galvanised steel with natural tint.
- Visible fixing, by screwing into the frame.

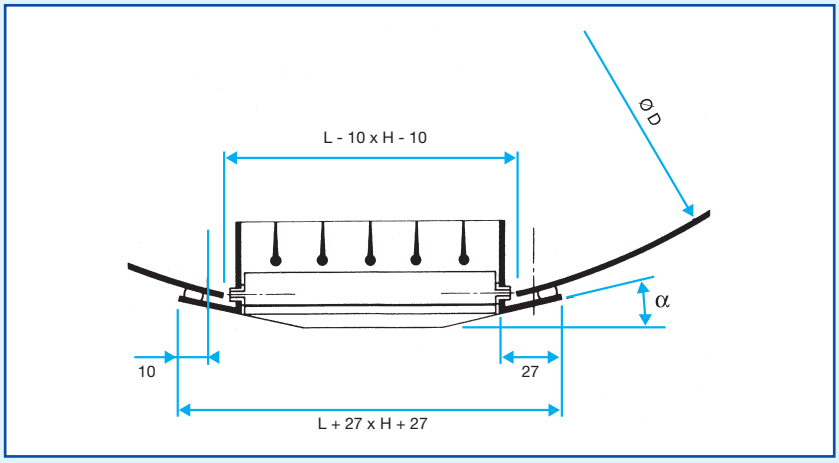
ACCESSORIES

- 'N' damper with inclined sliding rail, in black sheet steel with locking screws. Fitted to the grille using clips. Used for air supply.
- 'H' damper with straight sliding rail and in black sheet steel. Fitted to the grille using clips, with locking screws. Used for air exhaust.

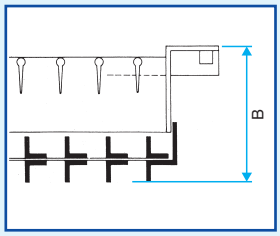
ADDITIONAL RANGE

- All sizes of up to 1225 x 225 mm.
- Finished with paint in accordance with RAL colour chart (please, consult us).

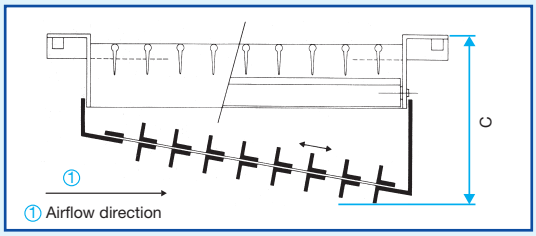
DIMENSIONS



GD 102 grille alone



GD 102 with H damper



GD 102 D with N damper

Comfort airflow levels for Lw < NR 35 (air supply with N damper 100 % open) and dimensions

L (mm)	H (mm)	A (mm)	B (mm)	C (mm)	Min. duct Ø D (mm)	Max. duct Ø D (mm)	Airflow (m^3/h)
325	75	42	86	124	160	400	190
425	75	42	86	137	160	400	230
525	75	42	86	150	160	400	300
625	75	42	86	163	160	400	360
425	125	46	90	141	315	900	460
525	125	46	90	154	315	900	560
625	125	46	90	167	315	900	680
525	225	56	100	164	630	1600	1000
625	225	56	100	177	630	1600	1300
825	225	56	100	204	630	1600	1500

• See selection tables pages 290 and 291.

RANGE R10

Dimensions	Double deflection grille GD 102 D F1 Code	Inclined slide damper N Code	Single deflection grille GD 102 F1 Code	Straight slide damper H Code
325 x 75	11050148	11053969	11050108	11053959
425 x 75	11050140	11053960	11050100	11053950
525 x 75	11050141	11053961	11050101	11053951
625 x 75	11050142	11053962	11050102	11053952
425 x 125	11050143	11053963	11050103	11053953
525 x 125	11050144	11053964	11050104	11053954
625 x 125	11050145	11053965	11050105	11053955
525 x 225	11050146	11053966	11050106	11053956
625 x 225	11050147	11053967	11050107	11053957
825 x 225	11050154	11053968	11050114	11053958

Louvres

Acoustic louvres

SU 631 - Galvanized steel
AU 631 - Aluminium

Advantages

- Noise reduction with minimal airflow restrictions.

DESCRIPTION

- Designed to provide optimal acoustic performance (noise reduction) with minimal airflow restrictions.

CONSTRUCTION

- SU 631: frame and blades made from galvanized steel.
- Blades inclined at 40° on 300 mm pitch centers provide a resistence to water ingress with acoustic properties. Infill material is inert, incombustible, non-hygroscopic and vermin proof. It is enclosed and covered on the under side with a perforated sheet suitable for velocities up to 20 m/s. Bird mesh in galvanized steel as standard (12 x 12 x Ø 1 mm).
- SU 632: combination of two SU 631 back to back to achieve 610 mm depth. The acoustic louvres are made in single section up to 1200 x 2100 mm. Larger sizes manufactured in multiple sections for assembly on site.

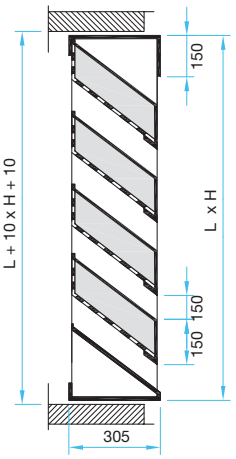
AVAILABLE OPTIONS

- Natural anodized aluminium, code A.
- Construction in stainless steel (grade 304), code EU.
- Insect mesh in galvanized steel (6 x 6 x Ø 0.8 mm).

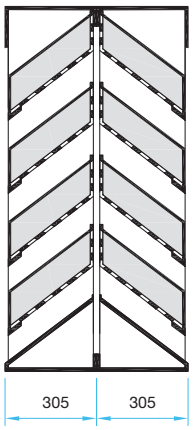
RANGE

Type	Description	Code
SU 631	Construction in galvanized steel	
AU 631	Construction in aluminium	
EU 631	Construction in stainless steel (grade 304)	
SU 632	Combination of two SU 631 back to back	
AU 632	Combination of two AU 631 back to back	
EU 632	Combination of two EU 631 back to back	

DIMENSIONS (mm)



SU 631

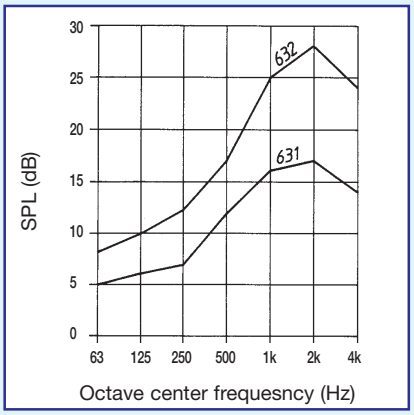


SU 632

H (mm)	L (mm)					
	400	500	600	800	1000	1200
600	0.11	0.15	0.18	0.24	0.31	0.38
900	0.21	0.28	0.34	0.47	0.59	0.72
1200	0.32	0.41	0.50	0.69	0.87	1.06
1500	0.42	0.54	0.66	0.91	1.16	1.40
1800	0.52	0.67	0.83	1.13	1.44	1.74
2100	0.62	0.81	0.99	1.35	1.72	2.09

- Af (m^2) - frontal surface.
- Other dimensions available upon request.

SOUND REDUCTION INDEX (SPL)



Louvres

Sand trap louvres

SG 644 - Galvanised steel

Advantages

- Separates dust and sand from air.

DESCRIPTION

- Used as prefilter for the protection of air-conditioning plants in areas exposed to extreme levels of industrial pollution.
- High degree of separation of sand and large dust concentrations.
- The vertically arranged sections and holes for sand drainage ensure that the sand trap louver is self cleaning and maintenance free.

CONSTRUCTION

- Sand trap louvres with vertical slots designed to separate dust and sand from air stream.
- Frame and baffles are made from 18 ga. galvanized steel.

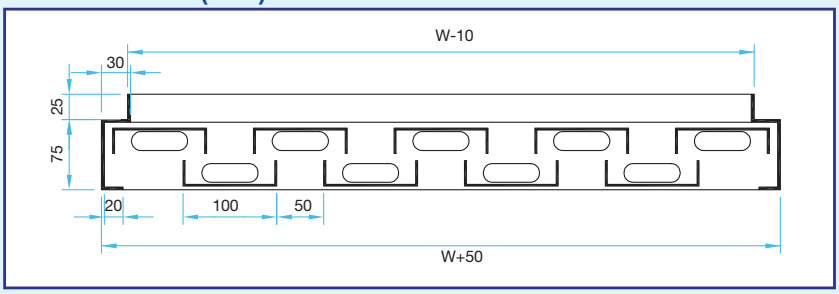
AVAILABLE OPTIONS

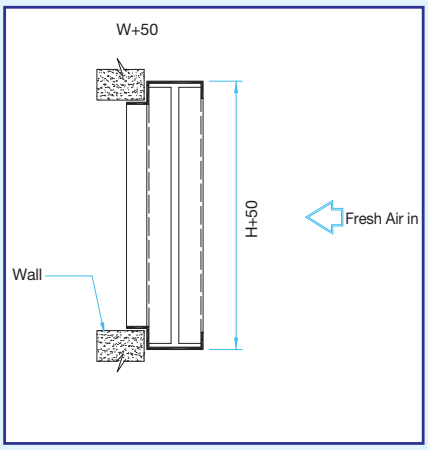
- Flush mounted sand trap louvre, code SG 644A.
- Extruded aluminium frame (16 ga. or 14 ga.) and blade (16 ga.), code AG 644.

RANGE

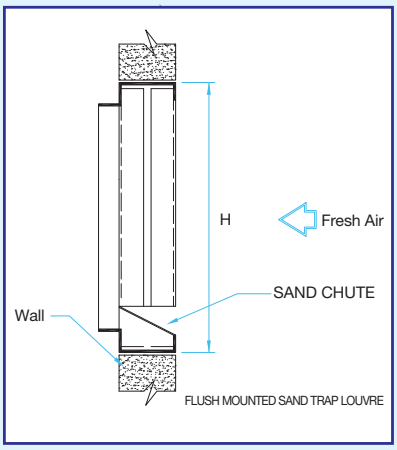
Type	Description	Code
SG 644	Sand trap louvre with frame and baffles made from GI	
AG 644	Sand trap louvre with frame and baffles made from aluminium	
EG 644	Sand trap louvre with frame and baffles made from SS (grade 304)	

DIMENSIONS (mm)





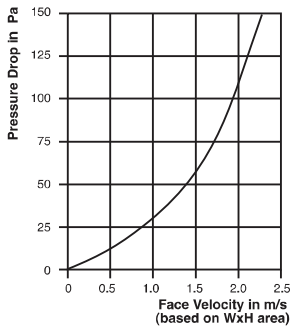
SG 644 louvre



SG 644 A louvre

PRESSURE DROP

Data for inlet application with rear duct or plenum connection.



PERFORMANCE DATA

The filtration performance is dependant on the dust type and the velocity of the air.

Particles Size Range	Filtration Efficiency in % at 1.0 m/s	at 2.0 m/s
350 - 700	90	70
75 - 700	60	approx. 30

Louvres

Fresh air louvres

AG 638 - Aluminium

Advantages

- Protection against rain water and weather.

DESCRIPTION

- Designed for both intake and exhaust air service in commercial and industrial application.
- Total structure is weather proof and blades inclined downwards to protect against rain water.

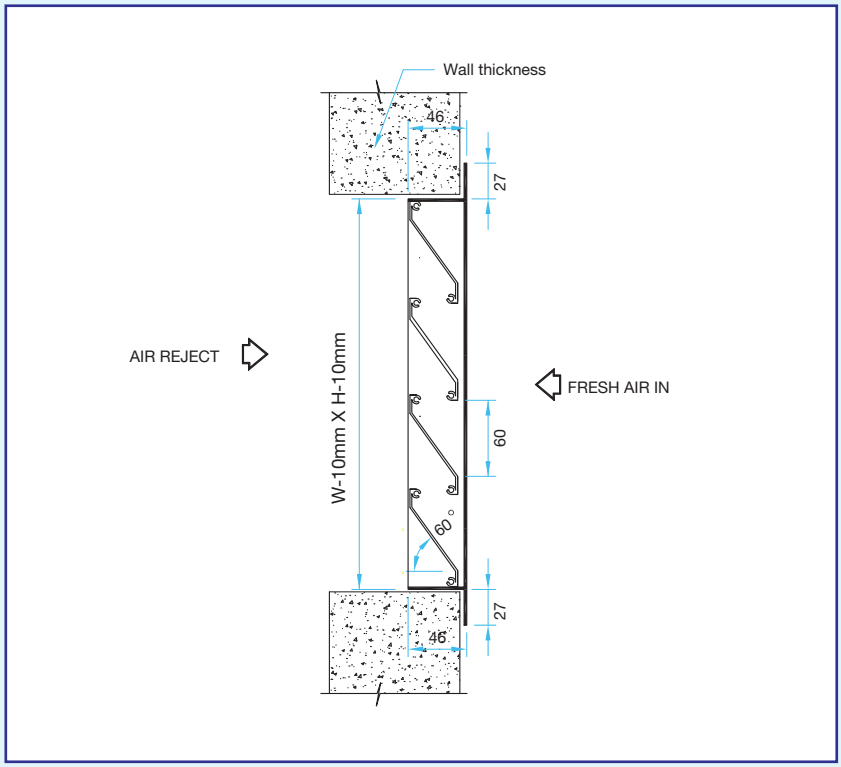
CONSTRUCTION

- Casing / frame manufactured from 1.2 mm extruded aluminium as standard.
- Blades manufactured from 1.2 mm extruded aluminium and are inclined at 60° on 60 mm blade pitch centre to minimize water ingress. Other inclinations available upon request. Bird mesh guard of size 12 x 12 x Ø 1 mm PVC coated GI as standard supply, insect mesh available upon request.

AVAILABLE OPTIONS

- Insect mesh in galvanized steel, code I.
- Insect mesh in stainless steel code IS.
- Bird mesh in galvanized steel, code T.
- Bird mesh in stainless steel, code TS.
- Powder coated to RAL colour, code Z.
- Bird mesh in PVC coated galvanised welded mesh - PT.
- Filter - FT.

DIMENSIONS (mm)



AG 638 louvre

RANGE

Type	Description	Code
AG 638	Fresh air louvre, casing and blades made from aluminium	
SG 638	Fresh air louvre, casing and blades made from GI	
EG 638	Fresh air louvre, casing and blades made from SS (grade 304)	

Louvres

Fresh air louvres, robust construction

AG 639

Advantages

- Protection against rain water and weather.
- Robust construction.

DESCRIPTION

- Designed for both intake and exhaust air service in commercial and industrial application.
- Total structure is weather proof and blades inclined downwards to protect against rain water.

CONSTRUCTION

- Casing manufactured from 3.0 mm heavy duty extruded aluminium. Other gauges available upon request.
- Blades manufactured from 1.2 mm inclined at 60° on 60 mm blade pitch centre to minimize water ingress. Other inclinations available upon request. Bird mesh guard of size 12 x 12 x Ø 1 mm PVC coated GI as standard supply, insect mesh available upon request.

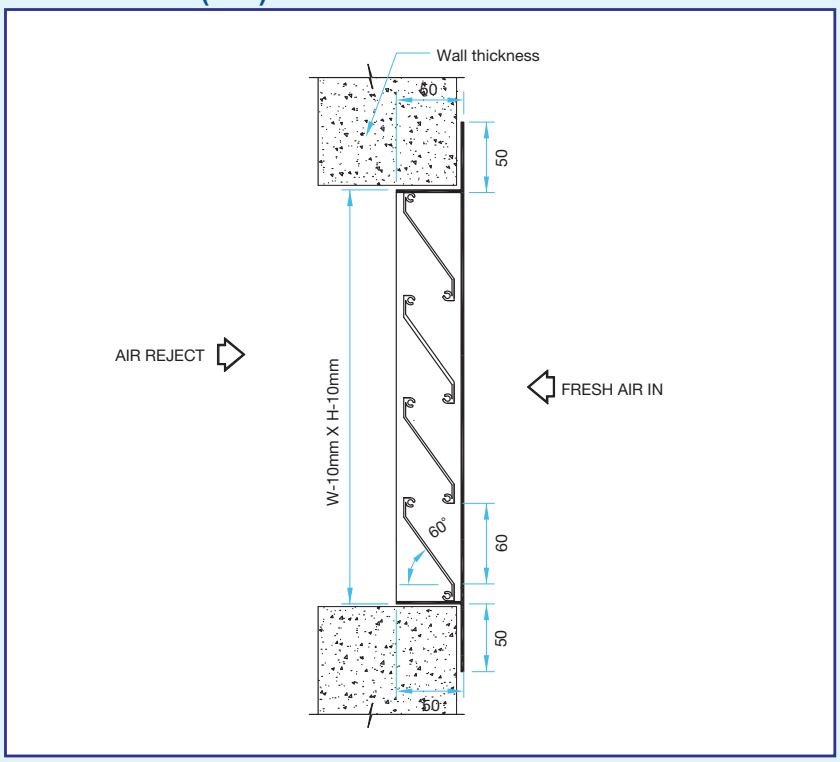
AVAILABLE OPTIONS

- Insect mesh in galvanized steel, code I.
- Insect mesh in stainless steel code IS.
- Bird mesh in stainless steel, code TS.
- Powder coated to RAL colour, code Z.
- PVC coated bird mesh - PT.
- Filter - FT.

RANGE

Type	Description	Code
AG 639	Robust construction FAL, casing and blades made from aluminium	
SG 639	Robust construction FAL, casing and blades made from GI	
EG 639	Robust construction FAL, casing and blades made from SS (grade 304)	

DIMENSIONS (mm)

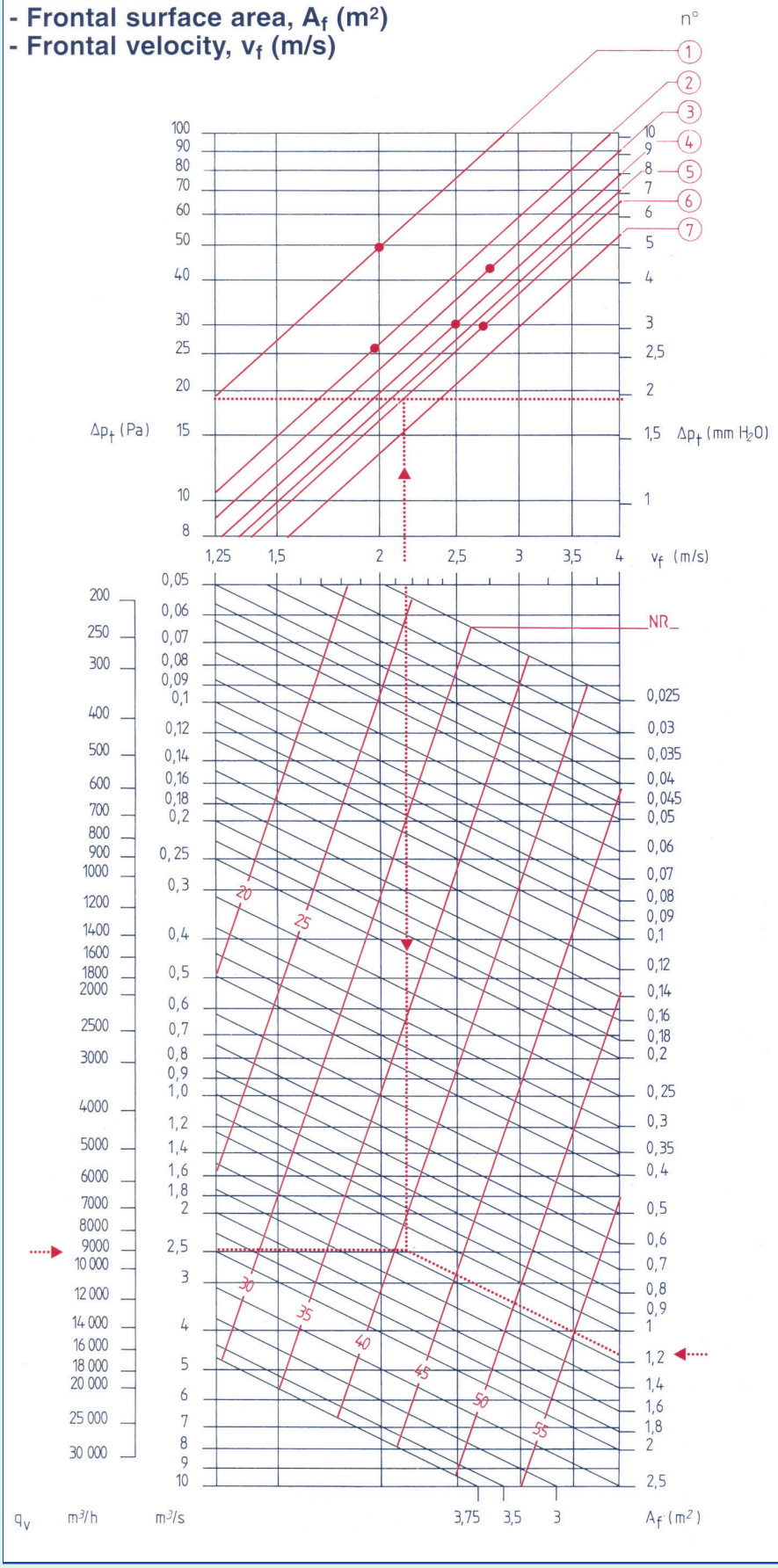


AG 639 louvre

Louvres

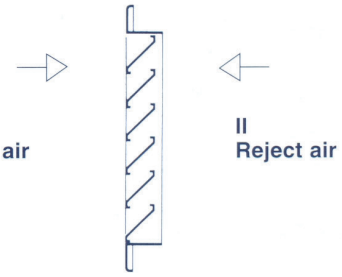
Selection curve - AG 638 & AG 639

Selection chart
- Frontal surface area, A_f (m^2)
- Frontal velocity, v_f (m/s)



n°	NR	Intake air I	Reject air II
1	+9	632	632
2	+6	631	-
3	+4	640, 641, AP	631
4	+2	638	-
5	+1	-	640, 641, AP
6	0	639	638
7	-2	-	639

- Acceptable limit of intake air (I) to ensure rain-proof characteristics.



Symbols

ΔP_t (Pa) Pressure loss
ΔP_t (mm H_2O) Pressure loss
v_f (m/s) Frontal velocity
A_f (m^2) Frontal surface area
q_v (m^3/h or m^3/s) Air volume
NR ISO acoustic noise levels

Selection example

Given
- Type of louvre : **AG 639**
- Volume : **9000 m³/h** (or 2.5 m³/s)
- Frontal velocity : **2.1 m/s**

Result
- Frontal surface area (A_f) expressed in m^2 : **1.16 m²**
- Nominal dimensions : **800 x 1600 mm**
- Noise level : **NR 40**
- Pressure loss : **18 Pa** or 1.83 mm H_2O

Louvres

Small outdoor grilles

AWA 251 - Aluminium

Advantages

- Light weight grille suitable for ventilation airflows.
- Available from stock in most standard dimensions.

APPLICATION

- Fresh air supply or exhaust of polluted air.
- Wall mounted.

DESCRIPTION

- Frame in extruded aluminium, horizontal rain-hood type fins in extruded aluminium.
- Centre distance of 25 mm between the vanes.
- Internally fitted with a protection grille (diamond shaped) 10 x 30, diameter 0.8 mm.
- Finish – anodised aluminium, natural satin finish.
- Visible fixing, by screwing into the frame.

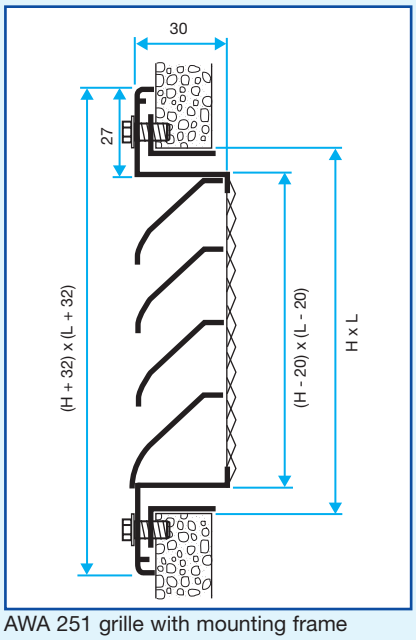
ACCESSORIES

- F4 fitting frame in galvanised sheet steel.
- Rear connector plenum up to 600 x 600 mm (please consult us).

ADDITIONAL RANGE

- Paint finish in accordance with the RAL colour chart (please, consult us).
- All sizes available up to 1200 x 1200 mm (please, consult us).

DIMENSIONS



AWA 251 grille with mounting frame

• See selection table on page 292.

RANGE R10

H	L 200 Code	L 250 Code	L 300 Code	L 350 Code	L 400 Code	L 450 Code
100	11152023	11052069	11052024	11052070	11152025	11052071
150	11052027	11052077	11052028	11052078	11052029	11052079
200	11052032	11052084	11052033	11052085	11052034	11052086
250	11052089	11052090	11052091	11052092	11052093	11052094
300	11052126	11052127	11052039	11052128	11052040	11052129
350	11052132	11052133	11052134	11052135	11052136	11052137
400	11052144	11052145	11052146	11052147	11052045	11052148
450	11052149	11052150	11052151	11052152	11052153	11052154

H	L 500 Code	L 600 Code	L 700 Code	L 800 Code	L 900 Code	L 1000 Code
100	11152026	11052072	11052073	11052074	11052075	11052076
150	11052030	11052031	11052080	11052081	11052082	11052083
200	11052035	11052036	11052037	11052038	11052087	11052088
250	11052095	11052096	11052097	11052098	11052099	11052125
300	11052041	11052042	11052043	11052044	11052130	11052131
350	11052138	11052139	11052140	11052141	11052142	11052143
400	11052046	11052047	11052048	11052049	11052050	11052051
450	11052155	11052156	11052157	11052158	11052159	11052160
500	11052052	11052064	11052065	11052066	11052067	11052068
600		11052167	11052168	11052169	11052170	11052171
700		11052172	11052173	11052174	11052175	11052176
800		11052177	11052178	11052179	11052180	11052181

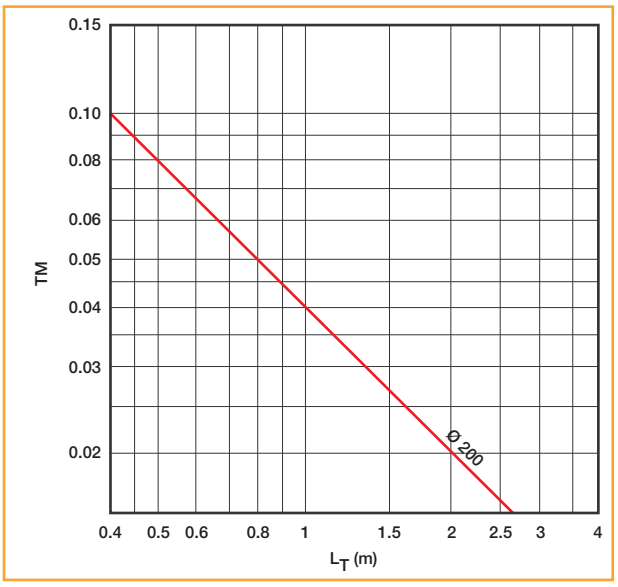
Selection Tables

Twisted 850 Series

Air supply with ceiling effect

Ak (m^2)	Dimensions	qv (m^3/h)																					
		150		200		250		300		350		400		450		500		550		600		650	
0.022	Ø 200	19	0.30	20	0.39	21	0.52	23	0.59	24	0.65	26	0.71	30	0.85	32	0.91	34	0.96	35	1.02	38	1.10
		2.0	2	2.6	3	3.3	4	3.9	6	4.6	8	5.2	11	5.9	13	6.5	17	7.2	20	7.8	24	8.5	28
		Lw	Lt																			Lw	Lt
		Vk	Pa																			Vk	Pa

The values Lw (NR) do not take any account of the attenuation in the premises. Tests carried out with a standard plenum. Vt = 0.37 m/s.



Mixing rate (TM)

Lt (m)	Throw in m
ΔTL (°C)	Difference between the temperature at the end of throw and room temperature (in °C)
ΔTS (°C)	Difference between the air supply temperature and room temperature (in °C)
TM = ΔTL / ΔTS	Temperature quotient. This value is significant capacity to mixing "fast" air supply to the room temperature.

Example

Example with 15°C supply and 25°C in the room	Air jet temperature at 1 m (Lt = 1m) of the diffuser = [25 - 10 x 0.04] (°C) = 24.6° C

Corrections for other terminal velocities

Vt (m/s)	0.25	0.37	0.5
Lt	x 1.5	x 1	x 0.75

Twisted 850 Series

Exhaust without filter

Ak (m^2)	Dimensions		qv (m^3/h)																				
			150		200		250		300		350		400		450		500		550		600		650	
0.029	Ø 200		19	-	19	-	20	-	21	-	22	-	25	-	28	-	31	-	33	-	35	-	37	-
			1.4	2	1.9	3	2.4	5	2.9	7	4.6	10	3.8	13	4.3	16	4.8	20	5.3	24	5.7	29	6.2	34
	-	Pa2	-	4	-	7	-	11	-	16	-	21	-	28	-	35	-	44	-	53	-	63	-	74
			Lw	-																			Lw	-
			Vk	Pa																			Vk	Pa

The values Lw (NR) do not take any account of the attenuation in the premises. Tests carried out without plenum and with a standard plenum (Pa2).

Exhaust G2 filter only

Ak (m^2)	Dimensions	qv (m^3/h)																					
		150		200		250		300		350		400		450		500		550		600		650	
	Ø 200	-	1	-	2	-	3	-	4	-	6	-	8	-	10	-	12	-	14	-	17	-	20
			Pa																				Pa

Selection Tables

AR 883 Series

Air supply with ceiling effect - Heating Position - ΔT +10° C - α 90°

Ak (m^2)	Ø D (mm)	qv (m^3/hr) 500		750		1000		1200		1600		2000		3000		4000		5000		6500		8000	
0.03665	250	38	5.9	48	9.0																	Lw	Lt
		3.8	27	5.8	63																	Vk	Pa
0.07355	315			27	4.5	37	6.5	41	7.6	49	10.3												
				2.7	14	3.8	27	4.4	35	6.4	76												
0.10970	400							29	5.2	37	7.3	43	9.0										
								2.9	15.8	4.0	29	5.2	47										
0.16293	500									25	5.1	31	6.3	42	10	50	14						
										2.5	11.4	3.3	19.5	5	45	6.9	86						
0.30157	630	Lw	Lt											25	5.8	37	7.8	37	10	44	12.7	52	16
		Vk	Pa											2.5	11.4	3.5	23	4.6	37	5.8	64	7.3	99

The values Lw (NR) do not take the attenuation in the premises into account. Vt = 0.25 m/s.

Corrections for other angles of air diffusion

α	LtM	Vk	ΔPt	Lw	Ak
45°	x 0.35	x 1.59	x 1.42	+ 10	x 0.63
60°	x 0.66	x 1.13	x 1.12	+ 3	x 0.88

α = angle of the blades. LtM = vertical reach.

AR 883 Series

Air supply with ceiling effect - Cooling Position - ΔT –10° C - α 30°

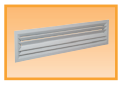
Ak (m^2)	Ø D (mm)	qv (m^3/hr) 200		300		400		500		600		800		1000		1400		1800		2000		2500	
0.01705	250	20	0.62	30	0.9	37	1.25	42	1.5													Lw	Lt
		3.4	8.1	5.0	16.5	70	30	8.7	44													Vk	Pa
0.03090	315			18	0.7	25	0.87	30	1.15	35	1.35	42	1.8	47	2.3								
				2.7	5.3	8.5	3.5	4.6	15	5.8	21	7.2	33	9.5	53								
0.03810	400							26	1.0	31	1.25	38	1.65	43	2	52	2.8						
								3.6	8.7	4.5	14	6	23	7.5	35	10.5	65						
0.06700	500											26	1.2	32	1.5	38	2.1	46	2.8	48	3.1		
												3.2	7.4	4.0	11	5.7	20	7.5	35	8.1	40		
0.07720	630	Lw	Lt											28	1.4	37	1.9	43	2.5	45	2.7	51	3.5
		Vk	Pa											3.4	8.0	4.8	16	6.3	25	7.0	35	9.0	48

The values Lw (NR) do not take the attenuation in the premises into account. α = angle of the blades. Vt = 0.25 m/s.

Corrections for other terminal velocities

Vt (m/s)	0.25	0.37	0.5	0.63
Lt	x 1	x 0.67	x 0.5	x 0.4

Selection Tables



AF 792 Series

Air supply for a length of 1 m with ceiling effect

Ak (m^2)	Height (mm)	No. of slots		qv (m^3/hr) 300		350		400		500		600		800		1100		1300	
0.025	75	2		25.0	3.7	28.0	4.7	32.0	5.1	35.0	6.1	40.0	7.2					Lw	Lt
				3.3	6.0	4.0	9.6	4.5	12.0	5.5	19.0	6.5	26.0					Vk	Pa
0.05	150	4										28.0	6.0	35.0	7.0	42.0	10.0	45.0	12.0
												3.4	7.2	4.5	12.0	6.5	25.0	7.5	38.0
0.05	150	4	3									28.0	4.7	35.0	6	42.0	7.7	45.0	9.3
												3.4	7.2	4.5	12.0	6.5	25.0	7.5	4.2
0.037 + 0.013			1									–	1.6	–	3.5	–	4.9	–	5.3
												3.4	–	4.5	–	6.5	–	7.5	–
0.05	150	4	2									28.0	3.7	35.0	5.1	42.0	6.4	45.0	7.4
												3.4	7.2	4.5	12.0	6.5	25.0	7.5	4.2
0.025 + 0.025			2	Lw	Lt							–	3.7	–	5.1	–	6.4	–	7.4
				Vk	Pa							3.4	–	4.5	–	6.5	–	7.5	–

The values Lw (NR) do not take the attenuation in the premises into account.

Speed = 0.37 m/s.

Corrections for other terminal velocities

Vt (m/s)	0.25	0.37	0.5	0.63
Lt	x 1.5	x 1	x 0.75	x 0.6

SF 786 Series

Air supply with ceiling effect

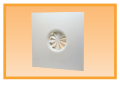
Ak (m^2)	Length L x H / W	qv (m^3/hr) 100		150		250		350		500		600		700		800	
0.0165	400 x 400	–	1	20	1.4	31	2.4	39	3.3							Lw	Lt
	345	1.7	2.5	2.5	6	4.0	15	5.9	35							Vk	Pa
0.0340	500 x 500			–	1.1	–	1.7	25	2.4	33	3.3	38	4				
	445			1.2	1.3	2.0	4	2.9	8	4.1	16	5	25				
0.0420	600 x 600					–	1.4	20	2.2	28	3.0	33	3.6	37	4.1		
	525					1.5	2	2.3	5	3.3	10	4.0	15	4.6	21		
0.0760	825 x 825	Lw	Lt			–	1.4	–	2.1	27	2.9	32	3.5	36	4.0	39	4.6
	725	Vk	Pa			1.5	2	2.2	4.6	3.0	9	3.7	14	4.3	18	5.0	25

The values Lw (NR) do not take the attenuation in the premises into account.

Speed = 0.25 m/s.

Corrections for other terminal velocities

Vt (m/s)	0.25	0.37	0.5
Lt	x 1	x 0.87	x 0.65



SR 861 - SF 861 - SF 861 T Series

Air supply with ceiling effect

Ak (m^2)	Ø D (mm)	qv (m^3/hr) 50		70		100		150		250		350		500		600	
0.0039	125	–	1	26	1.8	33	3									Lw	Lt
		2.5	4.5	5	17	8.5	45									Vk	Pa
0.0071	160			–	1.4	24	2.3	33	3.2	42	4.0						
				2.6	5	4.5	13	6.5	26	8.5	45						
0.0124	200					–	19	24	2.9	35	3.6	42	5.0				
						3.6	9	5.1	17	6.8	28	9.0	48				
0.0199	250							–	2	27	2.7	35	3.6	42	5.0	46	6.0
								2.7	5	3.5	9	4.9	16	6.5	26	8.5	45
0.0358	315	Lw	Lt							–	2.5	26	3.2	33	4.5	37	5.5
		Vk	Pa							3.0	7.0	4.0	11	5.5	20	7.0	30

The values Lw (NR) do not take the attenuation in the premises into account.

Speed = 0.25 m/s.

Corrections for other terminal velocities

Vt (m/s)	0.25	0.37	0.5	0.63
Lt	x 1	x 0.67	x 0.5	x 0.4

Selection Tables

Combined Series

Air supply in 4 directions with ceiling effect - air supply + air exhaust

Air supply selection (at the periphery of the diffuser)

Type	Ak (m^2)	L x H (mm)	qv (m^3/hr) 450		550		650		750		850		950		1100	
SF/AF	0.05	472 x 472	29	2.1	33	2.6	36	3.1	39	3.5					Lw	Lt
			2.5	21	3.1	32	3.61	45	4.2	60					Vk	Pa*
SN/AN	0.06	525 x 525			30	2.4	33	2.8	36	3.2	38	3.7				
					2.6	22	3	31	3.5	42	3.9	53				
SN/AN	0.09	600 x 600	Lw	Lt							31	3	33	3.4	36	4
			Vk	Pa*							2.6	24	3	29	3.4	40

* Pressure loss for the Combined assembly in air supply.

The values Lw (NR) do not take the attenuation in the premises into account and concern the Combined assembly in both air supply and air exhaust.

Speed = 0.5 m/s.

Air exhaust selection (at the centre of the diffuser)

Type	Ak (m^2)	L x H (mm)	L1 x H1 (mm)	qv (m^3/hr) 450		550		650		750		850		950		1100	
SF/AF	0.07	472 x 472	323 x 323	1.8	16	2.2	24	2.6	34	3	45					Vk	Pa*
SN/AN	0.094	525 x 525	375 x 375			1.6	14	1.9	19	2.2	25	2.5	32				
SN/AN	0.094	600 x 600	375 x 375	Vk	Pa*							2.5	32	2.8	40	3.2	53

* Pressure loss for the Combined assembly in air exhaust.

Air exhaust filter selection

Type	Ak (m^2)	L x H (mm)	L1 x H1 (mm)	qv (m^3/hr) 450	550	650	750	850	950	1100
SF/AF	0.07	472 x 472	323 x 323	21	25	29	33			Pa
SN/AN	0.094	525 x 525	375 x 375		19	22	25	29		
SN/AN	0.094	600 x 600	375 x 375	Pa				29	34	42

Corrections for other terminal velocities

Vt (m/s)	0.25	0.37	0.5	0.63	0.75
Lt	x 2	x 1.33	x 1	x 0.8	x 0.67

AG / AN 280 Series

Air supply for a length of 1 m with ceiling effect

Ak (m^2)	Number of slots	qv (m^3/hr) 60		100		150		200		250		300		400		500		600	
0.007	1	–	1.9	24	3.1	35	4.7											Lw	Lt
		2.4	5.1	4.0	14	6.0	32											Vk	Pa
0.014	2			–	2.2	20	3.3	27	4.4	33	5.5	38	6.6						
				2.0	3.5	3.0	8.0	4.0	14	5.0	22	6.0	32						
0.021	3					–	2.7	18	3.6	24	4.5	29	5.4	37	7.2				
						2.0	3.5	2.6	6.3	3.3	10	4.0	14	5.3	25				
0.028	4	Lw	Lt					–	3.1	18	3.9	23	4.7	30	6.2	36	7.8	41	9.3
		Vk	Pa					2.0	3.5	2.5	5.5	3.0	8.0	4.0	14	5.0	22	6.0	32

The values Lw (NR) do not take the attenuation in the premises into account.

Speed = 0.37 m/s.

Corrections for other terminal velocities

Vt (m/s)	0.25	0.37	0.5	0.63
Lt	x 2	x 1	x 0.75	x 0.6

Corrections for the vertical through with ceiling effects.

ΔT (°C)	- 10	0	+ 15	Vk	ΔP	Lw
Lt	x 0.8	x 0.5	x 0.3	x 0.45	x 0.8	- 3

Selection Tables

ALD 610 K Combined Series

Air supply with ceiling effect

Ak (m^2)	Dimensions	qv (m^3/h) 150		200		250		300		400		500		600		800		1000		1200		1400	
0.016	600-1 slot	20	2.3	27	2.7	32	3	34	3.4	41	4											Lw	Lt
		2.4	5	3.3	9	4	13	4.9	20	6.5	35											Vk	Pa*
0.018	675-1 slot	17	2	24	2.6	29	2.9	33	3.3	39	3.9	43	4.6										
		2.3	4	2.9	7	3.8	12	4.5	17	6	30	7.5	46										
0.030	600-2 slots					21	2.5	24	2.9	30	3.4	35	3.9	38	4.5	45	5.4						
						2.3	4	2.7	6	3.6	11	4.5	17	5.5	25	7.1	42						
0.034	675-2 slots					19	2.6	22	2.8	28	3.3	34	3.8	37	4.2	43	5.2						
						2	3	2.4	5	3.2	8	4	13	4.9	19	6.5	35						
0.045	600-3 slots									23	2.9	28	3.4	32	3.8	37	4.6	42	5.4	46	6.3		
										2.3	4	2.9	7	3.4	9	4.6	17	5.9	29	6.9	39		
0.051	675-3 slots									21	2.8	26	3.3	29	3.7	36	4.4	41	5.2	44	6		
										2	3	2.6	5	3	7	4	13	5.1	22	6.2	33		
0.060	600-4 slots											23	3.1	27	3.5	33	4.2	38	5	42	5.7	44	6.6
												2.2	4	2.6	5	3.5	10	4.5	16	5.2	22	6.2	31
0.068	675-4 slots	Lw	Lt											24	3.4	31	4	36	4.7	39	5.4	43	6.2
		Vk	Pa*											2.4	4	3	7	3.9	12	4.6	17	5.5	25

* Pressure loss of the combined assembly in supply mode. Tests carried out with a standard plenum. Vt = 0.37 m/s
Lw (NR) values are based without room absorption and related to the combined assembly in supply and extraction mode.

Selection - Air exhaust without filter

Dimensions	qv (m^3/h) 150	200	250	300	400	500	600	800	1000	1200	1400
600-1 slot	1	1	2	3	5						Pa*
675-1 slot	1	1	1	1	3						
600-2 slots			3	4	6	10	14				
675-2 slots			2	2	4	6	9	15			
600-3 slots					9	14	20	36	56		
675-3 slots					4	7	10	18	28	40	
600-4 slots						19	27	49			
675-4 slots	Pa*						13	23	36	52	

* Pressure loss of the combined assembly in supply mode. Tests carried out with a standard plenum. Dp > 70 Pa

Selection - Air exhaust with G2 filter

Dimensions	qv (m^3/h) 150	200	250	300	400	500	600	800	1000	1200	1400
600-1 slot	2	2	3	5	8						Pa*
675-1 slot	1	1	2	3	5						
600-2 slots			4	6	10	16	23				
675-2 slots			2	3	6	9	14	24			
600-3 slots					15	23	33	58			
675-3 slots					7	11	17	30	46	66	
600-4 slots						31	45				
675-4 slots	Pa*						20	46	60		

* Pressure loss of the combined assembly in supply mode. Tests carried out with a standard plenum. Dp > 70 Pa

Selection Tables

DGH - DGH2 Series

Air supply without ceiling effect

Ak (m^2)	Ø N (mm)	qv (m^3/hr) 25		50		75		100		125		150		200		300		400	
0.002	100	–	3.2	–	6.1	24	8.9	33	11.7	40	14.5	45	17.3					Lw	Lt
		4.1	11	8.3	43	12.4	96	16.5	170	20.6	266	24.8	383					Vk	Pa
0.004	150	–	1.9	–	3.5	–	5.0	20	6.5	17	8.0	22	9.5	31	12.5	43	18.6		
		1.8	2	3.6	8	5.4	18	7.2	33	9.0	51	10.8	73	14.4	130	21.6	293		
0.007	200			–	2.3	–	3.3	–	4.2	20	5.1	20	6.1	–	8.0	27	11.8	36	15.5
				1.9	2	2.9	5	3.8	9	4.8	14	5.8	21	7.7	37	11.5	83	15.4	147
0.020	300											–	3.1	–	3.9	–	5.7	< 20	7.4
												3.1	3	2.8	5	4.1	11	5.5	19
0.039	400	Lw	Lt													–	3.6	< 20	4.6
		Vk	Pa													2.1	3	2.8	5

• **With ceiling effect : throw multiplication (Lt) by 1.4.**

Ak (m^2)	Ø N (mm)	qv (m^3/hr) 500		600		700		800		1000		1500		2000		2500		3000	
0.007	200	43	19.3															Lw	Lt
		19.2	230															Vk	Pa
0.020	300	–	9.2	21	11	26	12.7	30	14.5	37	18								
		6.9	30	8.3	43	9.7	58	11.1	76	13.8	119								
0.039	400	–	5.7	–	6.7	–	7.8	–	8.8	–	10.9	31	16.2	40	21.5	48	27.5	52	34.1
		3.5	8	4.2	11	4.9	15	5.6	20	7.0	31	10.5	69	14	122	17.8	200	21.4	265

The values Lw (NR) do not take the attenuation in the premises into account. Speed = 0.5 m/s.

Corrections for other terminal velocities

Vt (m/s)	0.25	0.37	0.5	0.63	0.75
Lt	x 2	x 1.33	x 1	x 0.8	x 0.67

Corrections to the vertical throw depending on the air supply temperature

ΔT (° C)	-20	-15	-10	-5	0	5	10	15	20
Lt	x 2.5	x 2	x 1.7	x 1.3	x 1	x 0.7	x 0.5	x 0.4	x 0.33

SR 151 S Series

Air supply without ceiling effect

Ak (m^2)	Ø N (mm)	qv (m^3/hr) 500		750		1000		1500		2000		2500		3000		3500		4000		5000	
0.031	200	30	7.0	42	10															Lw	Lt
		4.5	25	7.0	58															Vk	Pa
0.049	250			32	8	38	10	51	16	58	21										
				4.2	23	5.8	40	8.5	40	11.5	150										
0.071	315					31	9	43	13	51	17	57	21	63	26						
						3.9	17	6.0	42	8.0	76	9.8	110	12	167						
0.096	350							36	9	45	15	50	17	56	22	61	26	65	30		
								4.2	23	5.9	41	7.2	60	8.5	90	10.2	130	12	165		
0.125	400	Lw	Lt							38	12	45	15	50	17	55	20	58	24	65	28
		Vk	Pa							4.5	25	5.5	37	6.8	52	7.8	70	9.3	100	11.3	150

The values Lw (NR) do not take the attenuation in the premises into account. Speed = 0.37 m/s.

• **With ceiling effect: multiply the throw (Lt) by 1.4.**

Corrections for other terminal velocities

Vt (m/s)	0.25	0.37	0.5
Lt	x 1.5	x 1	x 0.75

Corrections to the vertical throw depending on the air supply temperature

ΔT (° C)	-20	-15	-10	-5	0	5	10	15	20
Lt	x 2.5	x 2	x 1.7	x 1.3	x 1	x 0.7	x 0.5	x 0.4	x 0.33

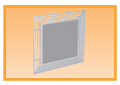
Selection Tables

ALD 610 K Series

Air supply with ceiling effect

Ak (m^2)	Dimensions	qv (m^3/h)																	
		150		200		250		300		400		500		600		800		1000		1200		1400	
0.016	600-1 slot	18	2.3	25	2.7	30	3	33	3.4	39	4											Lw	Lt
		2.4	5	3.3	9	4	13	4.9	20	6.5	35											Vk	Pa
0.018	675-1 slot	16	2	23	2.6	28	2.9	32	3.3	38	3.9	43	4.6										
		2.3	4	2.9	7	3.8	12	4.5	17	6	30	7.5	46										
0.030	600-2 slots					20	2.5	24	2.9	29	3.4	35	3.9	38	4.5	44	5.4						
						2.3	4	2.7	6	3.6	11	4.5	17	5.5	25	7.1	42						
0.034	675-2 slots					18	2.6	22	2.8	27	3.3	33	3.8	36	4.2	42	5.2						
						2	3	2.4	5	3.2	8	4	13	4.9	19	6.5	35						
0.045	600-3 slots									22	2.9	27	3.4	30	3.8	36	4.6	41	5.4	45	6.3		
										2.3	4	2.9	7	3.4	9	4.6	17	5.9	29	6.9	39		
0.051	675-3 slots									20	2.8	25	3.3	28	3.7	35	4.4	39	5.2	43	6		
										2	3	2.6	5	3	7	4	13	5.1	22	6.2	33		
0.060	600-4 slots											22	3.1	26	3.5	32	4.2	37	5	41	5.7	44	6.6
												2.2	4	2.6	5	3.5	10	4.5	16	5.2	22	6.2	31
0.068	675-4 slots	Lw	Lt											23	3.4	29	4	35	4.7	38	5.4	42	6.2
		Vk	Pa											2.4	4	3	7	3.9	12	4.6	17	5.5	25

The values Lw (NR) do not take the attenuation in the premises into account. Tests carried out with a standard plenum. Vt = 0.37 m/s



ALD 610 K Series

Air exhaust without filter

Ak (m^2)	Dimensions	qv (m^3/h)																	
		150		200		250		300		400		500		600		800		1000		1200		1400	
0.012	600-1 slot	13		20		25		28		34												Lw	Lt
		3.1	8	4.3	15	5.2	22	6.4	50	8.5	59											Vk	Pa
0.014	675-1 slot	11		18		23		27		33													
		3.0	7	3.8	12	4.9	20	5.9	29	7.8	47												
0.023	600-2 slots					15		19		24		30		33									
						3.0	7	3.5	10	4.7	17	5.9	29	7.2	43								
0.026	675-2 slots					13		17		22		28		31		37							
						2.6	5	3.1	8	4.2	14	5.2	22	6.4	32	8.4	59						
0.035	600-3 slots									17		22		25		31		36					
										3.0	7	3.8	12	4.4	15	6.0	29	7.7	49				
0.039	675-3 slots									15		20		23		30		34		38			
										2.6	5	3.4	8	3.9	12	5.2	22	6.6	37	8.1	56		
0.046	600-4 slots											17		21		27		32		36		39	
												2.9	7	3.4	8	4.6	17	5.9	27	6.8	37	8.1	53
0.052	675-4 slots	Lw												18		24		30		33		27	
		Vk	Pa											3.1	7	3.9	12	5.1	20	6.0	29	7.2	43

The values Lw (NR) do not take the attenuation in the premises into account. Tests carried out with a standard plenum.

ALD 610 K Series

Air exhaust with G2 filter

Ak (m^2)	Dimensions	qv (m^3/h)																	
		150		200		250		300		400		500		600		800		1000		1200		1400	
0.012	600-1 slot	13		20		25		28		34												Lw	Lt
		3.1	8	4.3	15	5.2	23	6.4	52	8.5	63											Vk	Pa
0.014	675-1 slot	11		18		23		27		33													
		3.0	7	3.8	12	4.9	21	5.9	31	7.8	55												
0.023	600-2 slots					15		19		24		30		33									
						3.0	8	3.5	12	4.7	23	5.9	34	7.2	50								
0.026	675-2 slots					13		17		22		28		31		37							
						2.6	6	3.1	10	4.2	18	5.2	27	6.4	39	8.4							
0.035	600-3 slots									17		22		25		31		36					
										3.0	11	3.8	17	4.4	22	6.0	40	7.7	68				
0.039	675-3 slots									15		20		23		30		34		38			
										2.6	9	3.4	13	3.9	19	5.2	33	6.6	56	8.1			
0.046	600-4 slots											17		21		27		32		36		39	
												2.9	12	3.4	15	4.6	28	5.9	46	6.8	62	8.1	
0.052	675-4 slots	Lw												18		24		30		33		27	
		Vk	Pa											3.1	14	3.9	23	5.1	39	6.0	54	7.2	68

The values Lw (NR) do not take the attenuation in the premises into account. Tests carried out with a standard plenum. Dp > 70 Pa

Selection Tables

AF 842 - AT 842 Series

Air supply with ceiling effect

Ak (m^2)	Ø N (mm)	qv (m^3/hr) 200		250		300		400		500		600		800		1000		1250		1500		1750		2000		1600	
0.015	160	25	1.4	30	1.7	36	2.1	45	2.8																	Lw	Lt
		3.7	14	4.4	20	5.6	33	7.2	54																	Vk	Pa
0.027	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														
0.040	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										
0.056	315							15	1.5	20	1.8	25	2.2	34	3	40	3.7	47	4.6								
								2	4.2	2.4	6	3	10	4	17	5	26	6.2	40								
0.074	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						
0.090	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						
0.013	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
0.019	630	Lw	Lt																			25	3.5	30	4.1	37	5.1
		Vk	Pa																			2.6	6.9	2.9	8	3.6	14

The values Lw (NR) do not take the attenuation in the premises into account.

Speed = 0.25 m/s.

Corrections for other terminal velocities

Vt (m/s)	0.25	0.37	0.5
Lt	x 1	x 0.87	x 0.65

Corrections for vertical air supply

Vk	Lt (m)				ΔPt	Lw
(m/s)	ΔT -10°	ΔT 0°	ΔT +10°	ΔT +20°	(Pa)	(NR)
x 1.15	x 2	x 1.15	x 0.8	x 0.5	x 1.3	+4

Series AF 704 - AN 704 TP - SF 704 TP

Air supply in 4 directions with ceiling effect

Ak (m^2)	L x H (mm)	qv (m^3/hr) 100		150		200		250		300		400		500		600		800		1000		1200		1500	
0.011	150 x 150	20	0.7	29	1.0	34	1.4																	Lw	Lt
		2.8	4.6	4.2	10	5.6	19																	Vk	Pa
0.023	225 x 225			17	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												
0.038	300 x 300							1.8	0.9	22	1.1	28	1.5	32	1.8	36	2.3								
								1.9	2.2	2.3	3.2	3.1	5.7	3.9	9.0	4.6	13								
0.057	375 x 375											21	1.2	25	1.5	29	1.8	35	2.4	40	3.0				
												1.9	2.4	2.5	3.7	2.9	5.3	3.9	9.4	5.0	15				
0.087	472 x 472															23	1.5	29	2.0	33	2.4	37	3.0	42	3.7
																2.1	2.5	2.8	4.5	3.4	5.9	4.2	10	5.1	15
0.106	525 x 525																	24	1.7	28	2.1	32	2.6	37	3.2
																		2.0	2.4	2.5	3.8	3.1	5.5	3.8	8.6
0.137	600 x 600	Lw	Lt															20	1.5	24	1.8	28	2.2	32	2.7
		Vk	Pa															1.5	1	2	2.4	2.5	3.8	3	5.4

The values Lw (NR) do not take the attenuation in the premises into account.

Speed = 0.5 m/s.

Corrections for other terminal velocities

Vt (m/s)	0.25	0.37	0.5	0.63	0.75
Lt	x 2	x 1.33	x 1	x 0.8	x 0.67

Series SC 360 R - SC 310 R

Air supply in 4 directions with ceiling effect

Ak (m^2)	L x H (mm)	Ø D (mm)	qv (m^3/hr) 125		150		200		250		300		400		600		800		1000	
0.018	300 x 300	160	–	0.8	–	1.0	21	1.3	28	1.7	34	2.0							Lw	Lt
			1.9	3.2	2.3	4.6	3.1	8.1	3.9	13	4.6	18							Vk	Pa
0.034	400 x 400	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						
0.056	500 x 500	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		
0.080	562 x 562	315	Lw	Lt									–	1.3	16	1.9	25	2.5	32	3.2
			Vk	Pa									1.4	1.7	2.1	3.9	2.8	6.9	3.5	11

The values Lw (NR) do not take the attenuation in the premises into account.

Speed = 0.5 m/s.

Corrections for other terminal velocities

Vt (m/s)	0.25	0.37	0.5	0.63	0.75
Lt	x 1.63	x 1.33	x 1	x 0.8	x 0.67

Selection Tables

AC 181 Series

Transfer

Ak (m^2)	L x H (mm)		qv (m^3/hr) 50		100		150		200		300		400		600		800		1000		1500		2000	
0.016	300 x 100	200 x 150	–	–	23	–																	Lw	Lt
			0.9	3.5	1.7	14																	Vk	Pa
0.027	500 x 100	300 x 150	–	–	14	–	23	–																
	200 x 200		0.6	1.6	1.0	4.0	1.5	9.9																
0.040	800 x 100	400 x 150			–	–	16	–	23	–														
	300 x 200				0.7	2.3	1.0	4.0	1.3	8.0														
0.056	1000 x 100	500 x 150			–	–	–	–	18	–	25		31											
	400 x 200				0.5	1.1	0.7	2.5	1.0	4.5	1.5	10	2.0	18										
0.070	1200 x 100	800 x 150			–	–	–	–	–	–	22		27											
	500 x 200	300 x 300			0.3	1.0	0.6	1.6	0.8	3	1.2	6.5	1.6	11										
0.081	800 x 150	600 x 200					–	–	–	–	20	–	26	–	35	–								
	400 x 300						0.5	1.6	0.7	2.3	1.0	4.0	1.3	8.0	2.1	20								
0.120	1200 x 150	800 x 200							–	–	–		20		27		33							
	500 x 300	400 x 400							0.5	1.4	0.7	2	0.9	4	1.4	9	1.9	15						
0.150	1000 x 200	600 x 300									–	–	–	–	24	–	30	–	35	–				
	500 x 400										0.57	1.6	0.6	2.0	1.1	5.0	1.5	9.8	1.9	15				
0.190	1200 x 200	800 x 300											–		20		25		30					
	600 x 400	500 x 500											0.6	1.5	0.9	3.5	1.1	6.0	1.5	10				
0.260	1200 x 300	800 x 400													13	–	21	–	26	–	34	–		
	600 x 500														0.63	1.8	0.8	3.1	1.0	4.1	1.6	11		
0.320	1000 x 400	800 x 500	Lw	Lt													18	–	22	–	30	–	36	–
	600 x 600		Vk	Pa													0.7	2.3	0.8	3.1	1.2	5.9	1.7	13

The values Lw (NR) do not take the attenuation in the premises into account.

SC 831 - SC 832 TP Series

Air supply with ceiling effect

Ak (m^2)	Ø N (mm)	qv (m^3/hr) 150		200		300		400		500		600		800		1000		1200		1400		1600	
0.011	160	–	1.8	27	2.3	41	3.4															Lw	Lt
		3.9	1	5.0	22	7.5	50															Vk	Pa
0.020	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												
0.031	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								
0.046	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				
0.047	355	Lw	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 values Lw (NR) do not take the attenuation in the premises into account.

Speed = 0.37 m/s.

Corrections for other terminal velocities

Vt (m/s)	0.25	0.37	0.5
Lt	x 1.5	x 1	x 0.75

Selection Tables

AC 101 D - SC 101 D - AC 102 D - SC 102 D Series

Air supply with ceiling effect

Ak (m^2)	L x H (mm)		qv (m^3/hr) 150		200		300		400		500		700		900		1200		1500		3000		5000	
0.0074	200 x 75		22	5.8	27	7.5																	Lw	Lt
			5.9	25	7.5	40																	Vk	Pa
0.0110	300 x 75		–	4.1	19	5.5	28	8.2																
	200 x 100		3.8	10	5.0	18	7.6	40																
0.0160	400 x 75	200 x 150	–	3.4	–	4.5	21	6.8	28	9.1														
	300 x 100		2.6	5	3.5	8	5.2	19	6.9	34														
0.0240	600 x 75	300 x 150			–	3.7	–	5.6	20	7.4	25	9.3												
	400 x 100	200 x 200			2.3	4	34.5	8	4.6	15	5.8	23												
0.0300	800 x 75						–	5.0	16	6.0	21	8.3	29	12										
	500 x 100						2.8	5	3.7	10	4.6	15	6.5	29										
0.0400	1000 x 75	400 x 150							–	5.7	–	7.2	23	10	29	13								
	600 x 100	300 x 200							2.8	5	3.5	8	4.9	17	6.2	27								
0.0490	1200 x 75	500 x 150							–	5.2	–	6.5	19	9.1	25	12	32	16						
	800 x 100	400 x 200							2.3	4	2.8	6	4.0	11	5.1	18	6.8	32						
0.0600	1000 x 100	500 x 200									–	5.9	15	8.2	21	11	22	14	34	18				
	600 x 150	300 x 300									2.3	4	3.2	7	4.2	12	5.5	22	6.9	34				
0.0780	1200 x 100	600 x 200											–	7.2	16	9.2	23	12	29	15				
	800 x 500	400 x 300											2.5	4	3.2	7	4.3	13	5.3	20				
0.1050	1000 x 150	500 x 300													–	8.0	17	11	23	13				
	800 x 200	400 x 400													2.4	4	3.2	7.0	4.0	11				
0.1320	1200 x 150	600 x 300															–	9.5	18	12	35	27		
	1000 x 200	500 x 400															2.5	4.0	3.2	7	6.3	30		
0.1600	1200 x 200	600 x 400															–	9.5	15	12.5	31	24		
	800 x 300	500 x 500															2.1	3.0	2.6	5.0	5.1	18		
0.2100	1000 x 300	600 x 500																	–	11	26	15	38	–
	800 x 400																		2.0	2.8	4.0	11	6.9	32
0.2800	1200 x 300	800 x 500																	–	9.0	20	18	33	30
	1000 x 400																		–	–	3.0	6.0	5.0	17
0.3500	1200 x 400																				15	16.5	27	27
	1000 x 500																				2.4	4.1	4.0	11
0.4200	1200 x 500		Lw	Lt																	–	15	24	25
			Vk	Pa																	2.0	2.8	3.3	7.5

The values Lw (NR) do not take the attenuation in the premises into account.

Speed = 0.37 m/s.

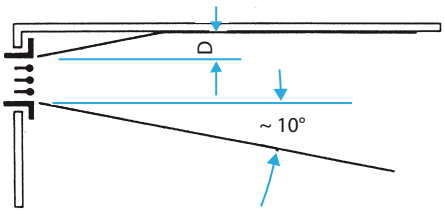
Corrections for other terminal velocities

Vt (m/s)		0.25	0.37	0.5	0.63
Lt	A	x 1.5	x 1	x 0.75	x 0.6
Lt	B	x 1.05	x 0.7	x 0.53	x 0.42

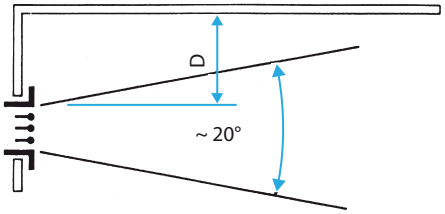
Corrections for deflection

α	β	Lt	Vk	ΔPt	Lw
22°	35°	x 0.77	x 1.15	x 1.30	+ 3
45°	60°	x 0.55	x 1.25	x 1.60	+6

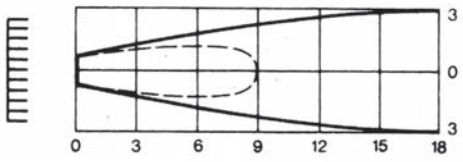
α = vanes angle - β = air jet angle



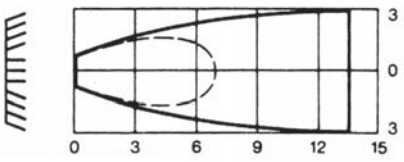
A : air supply with ceiling effect. D = 0.30 m maximum.



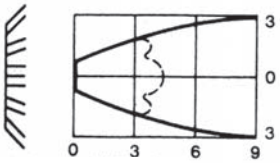
B : air supply without ceiling effect. D = 0.90 m minimum.



0° deflection



22° deflection



45° deflection

Selection Tables

AC 440 - AC 441 - AG 450/ 450 A - AG 470 Series

Air supply with ceiling effect

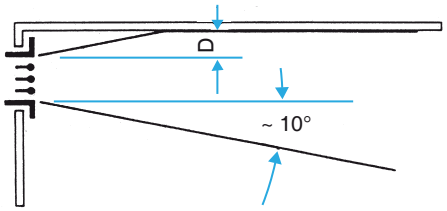
Ak (m^2)	L x H (mm)		qv (m^3/hr) 100		200		300		400		600		800		1000		1500		2000		2500		3000	
0.008	300 x 75	200 x 100	15	4	25	9																	Lw	Lt
			3.5	8.6	7.0	35																	Vk	Pa
0.012	400 x 75	300 x 100	–	3	20	8	25	12																
	200 x 150		2.3	4	4.8	16	7.0	35																
0.018	600 x 75	400 x 100			15	6	20	9.0	25	12														
	300 x 150	200 x 200			3.0	6.3	4.5	15	6.0	25														
0.022	800 x 75	500 x 100			15	6.0	20	9.0	25	12	30	17												
					2.5	4.4	3.7	10	5.0	17	7.5	40												
0.029	1000 x 75	600 x 100					16	7.0	20	10	25	15	30	17										
	400 x 150	300 x 200					2.8	6.0	3.7	10	5.8	23	6.0	25										
0.036	1200 x 75	800 x 100							20	9.0	25	13	25	16										
	500 x 150	400 x 400							3.0	6.3	4.5	15	5.0	17										
0.044	1000 x 100	600 x 150							15	8.0	20	12	20	14	30	20								
	500 x 200	300 x 300							2.5	4.4	3.7	10	3.7	10	6.3	28								
0.057	1200 x 100	800 x 150									15	10	15	12	25	18								
	600 x 200	400 x 300									2.9	6.1	3.0	6.3	4.8	16								
0.077	1000 x 150	800 x 200									–	9.0	–	11	20	15	31	17						
	500 x 300	400 x 400									2.2	3.5	2.3	4.0	3.7	10	5.5	22						
0.097	1200 x 150	1000 x 200													15	13	27	16	30	27				
	600 x 300	500 x 400													2.8	6	4.2	14	5.8	23				
0.117	1200 x 200	800 x 200													15	13	23	14	30	19	34	23		
	600 x 400														2.3	4.0	3.5	8.8	4.8	16	5.9	25		
0.154	1000 x 300	800 x 400															18	12	25	16	29	20	30	33
																	2.7	5.0	3.7	10	4.5	15	5.5	22
0.205	1200 x 300	1000 x 400	Lw	Lt															19	14	24	18	27	21
			Vk	Pa															2.7	5.0	3.4	8.0	4.0	11.3

The values Lw (NR) do not take the attenuation in the premises into account.

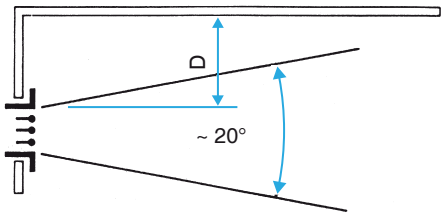
Speed = 0.25 m/s.

Corrections for other terminal velocities

Vt (m/s)		0.25	0.37	0.5	0.63
Lt	A	x 1	x 0.67	x 0.5	x 0.4
Lt	B	x 0.7	x 0.47	x 0.36	x 0.28

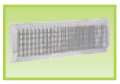


A : air supply with ceiling effect. D = 0.30 m maximum.



B : air supply without ceiling effect. D = 0.90 m minimum.

Selection Tables



GD 102 D Series

Air supply with ceiling effect - Damper 100% open

Ak (m^2)	L x H (mm)		qv (m^3/hr) 100		150		200		300		400		600		800		1200		1800		2500		3500	
0.011	325 x 75		17	2.8	28	4.1	35	5.5	45	8.3													Lw	Lt
			2.5	16	3.8	35	5.1	62	7.6	140													Vk	Pa
0.015	425 x 75		–	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												
0.019	525 x 75				15	3.2	23	4.2	33	6.3	41	8.4	55	15										
					2.2	12	2.9	21	4.4	47	5.8	83	9	200										
0.023	625 x 75	325 x 125					18	3.8	29	5.7	37	7.6	47	11										
							2.4	14	3.6	32	4.8	47	7.2	128										
0.030	825 x 75	425 x 125							23	5.0	31	6.7	41	10										
									2.8	19	3.7	33	5.1	75										
0.037	1025 x 75	525 x 125							19	4.5	26	6.0	37	9.0	44	12								
	325 x 175								2.2	15	3.0	22	4.5	49	6.0	88								
0.045	1225 x 75	625 x 125									22	5.5	32	8.2	40	11	44	14						
	4245 x 175	325 x 225									2.5	15	3.7	33	4.9	59	5.5	75						
0.060	825 x 125	525 x 175											26	7.1	34	9.5	39	13						
	425 x 225												2.8	19	3.7	33	4.4	47						
0.075	1025 x 125	625 x 175											21	6.4	29	8.5	36	13	50	21				
	525 x 225												2.2	12	3.0	22	3.7	35	7.0	118				
0.090	1225 x 125	825 x 175													26	8.6	29	11	46	20				
	625 x 225														2.5	15	2.8	20	5.8	80				
0.120	1025 x 175	825 x 225															25	10	40	17	55	27		
																	2.3	12.5	4.2	42	7.8	155		
0.150	1225 x 175	1025 x 225																	35	15	43	21	52	10
																			3.3	28	4.5	50	6.5	105
0.180	1225 x 225		Lw	Lt															32	14	39	17	47	26
			Vk	Pa															2.8	21	3.8	35	5.5	80

Corrections for grille without damper	
ΔPt	Lw
x 0.5	– 4

The values Lw (NR) do not take the attenuation in the premises into account.

Speed = 0.37 m/s.

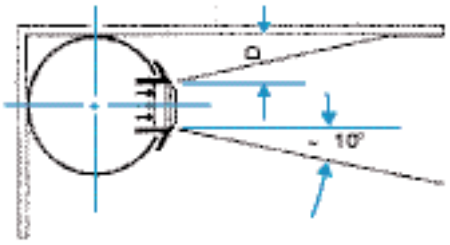
Corrections for other terminal velocities

Vt (m/s)		0.25	0.37	0.5	0.63
Lt	A	x 1.5	x 1	x 0.75	x 0.6
Lt	B	x 1.05	x 0.7	x 0.53	x 0.42

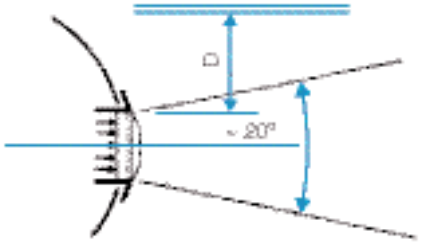
Corrections for deflection

α	β	Lt	Vk	ΔPt	Lw
22°	35°	x 0.77	x 1.15	x 1.30	+ 3
45°	60°	x 0.55	x 1.25	x 1.60	+6

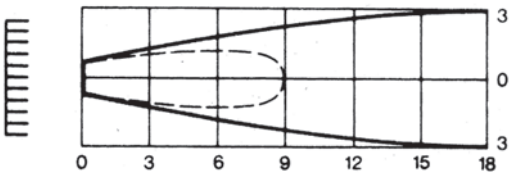
α = angle of the vanes - β = angle of the air jet



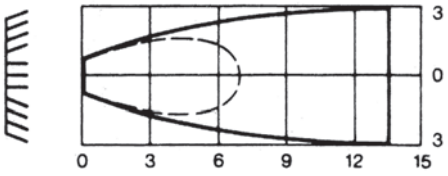
A : air supply with ceiling effect. D = 0.30 m maximum.



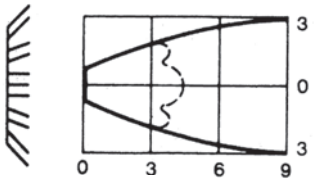
B : air supply without ceiling effect. D = 0.90 m minimum.



0° deflection

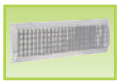


22° deflection



45° deflection

Selection Tables



GD 102 Series

Air exhaust - Damper 100% open

Ak (m^2)	L x H (mm)		qv (m^3/hr) 100		150		200		300		400		600		800		1200		1800		2500		3500	
0.014	325 x 75		–	–	–	–	25	–															Lw	Lt
			2	4	3	18	4	31															Vk	Pa
0.019	425 x 75				–	–	–	–	28	–														
					2.3	12	3	18	4.8	40														
0.023	525 x 75						–	–	25	–	31	–												
							2.5	12	3.8	30	5	49												
0.028	625 x 75	325 x 125					–	–	20	–	27	–												
							2	8	3	18	4	32												
0.037	825 x 75	425 x 125							–	–	22	–	32											
									2.3	12	3	18	4.9	45										
0.046	1025 x 75	525 x 125							–	–	–	–	26	–	34	–								
	325 x 175								1.8	6	2.5	12	3.6	25	5	49								
0.055	1225 x 75	625 x 125									–	–	23	–	30	–								
	4245 x 175	325 x 225									2	8	3	18	4	32								
0.074	825 x 125	525 x 175											–	–	24	–	34	–						
	425 x 225												2.3	10	3	18	4.6	42						
0.092	1025 x 125	625 x 175											–	–	20	–	29	–						
	525 x 225												1.8	5	2.5	12	3.5	24						
0.110	1225 x 125	825 x 175													–	–	23	–	36	–				
	625 x 225														2	8	3	18	4.2	37				
0.138	1025 x 175	825 x 225															22	–	32	–	40	–		
																	2.4	10	3.7	27	5	49		
0.166	1225 x 175	1025 x 225																	27	–	35	–		
																			3	18	4	31		
0.220	1225 x 225		Lw	Lt															23	–	30	–	37	–
			Vk	Pa															2.3	10	3.2	20	4.2	37

Corrections for grille without damper

ΔPt	Lw
x 0.45	– 6

The values Lw (NR) do not take the attenuation in the premises into account.

Series AC 101 - SC 101 - AC 102 - SC 102 - AC 440 - AC 441 - AG 450 /450 A - AG 470 AC 121 - SC 121 - AC 123 - SC 125 - AC 161 - AC 163 - AO 123 - AO 129 - SC 370

Air exhaust

Ak (m^2)	L x H (mm)		qv (m^3/h) 200		300		400		500		750		1000		1500		2000		3000		4000		5000	
0.013	200 x 100		25	–																			Lw	Lt
			4.2	35																			Vk	Pa
0.020	300 x 100		16	–	27	–																		
	200 x 100		2.8	15	4.2	35																		
0.030	400 x 100	200 x 200	–	–	19	–	26	–																
	300 x 150		1.9	7	2.9	16	3.7	27																
0.045	600 x 100	300 x 200			–	–	18	–	23	–														
	400 x 150				1.9	7	2.5	12	3.1	20														
0.060	800 x 100	400 x 200							17	–	27	–												
	500 x 150								2.3	10	3.5	24												
0.075	1000 x 100	500 x 200							–	–	22	–	30	–										
	600 x 150	300 x 300							1.8	6.5	2.7	15	3.8	28										
0.093	1200 x 100	600 x 200									18	–	25	–	35	–								
	800 x 150	400 x 300									2.2	10	3.0	18	4.5	40								
0.125	1000 x 150	500 x 300									–	–	19	–	29	–								
	800 x 200	400 x 400									1.6	5	2.2	10	3.4	22								
0.150	1200 x 150												–	–	25	–	32	–						
	800 x 300												1.8	7	2.7	15	3.7	26						
0.175	1000 x 200												–	–	21	–	29	–						
	500 x 400												1.6	5	2.4	11	3.2	20						
0.200	1200 x 200	600 x 400													19	–	26	–	36	–				
	1000 x 300	500 x 400													2.1	9	2.8	15	4.1	33				
0.260	1000 x 300	600 x 400													–	–	21	–	31	–	37	–		
	800 x 400	500 x 500													1.6	5	2.2	10	3.2	20	4.1	33		
0.350	1000 x 400	600 x 500																	28	–	35	–		
	800 x 500																		2.8	14	3.7	26		
0.420	1200 x 400																		21	–	28	–	34	–
	1000 x 400																		2.0	8	2.6	13	3.3	22
0.530	1200 x 400		Lw	Lt															15	–	23	–	29	–
			Vk	Pa															1.6	5	2.1	9	3.3	22

Corrections depending on type of grille

TYPE	ΔPt	Lw
A 121. S 121 A 161. A 129	x 1.00	+ 0
S 101. 102 / A 101. 102	x 0.35	- 8
S 125. S 370	x 1.20	+ 1
A 123. A 163	x 0.30	- 9
A 440. 450. 470	x 0.90	- 1

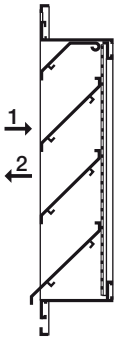
The values Lw (NR) do not take the attenuation in the premises into account.

Selection Tables

AWA 251 Series

Air intake and discharge

Af (m^2)	L x H (mm)	qv (m^3/hr) 250		500		750		1000		1500		2000		2500		3000		3500		4000		5000		6000		7000		8000	
0.010	200 x 100	33	88																									Lw	Pa1
		7	68																									Vf	Pa2
0.015	300 x 100	20	36	44	156																								
0.017	200 x 150	4.6	30	9.2	120																								
0.020	400 x 100	–	22	35	80																								
	200 x 200	3.5	17	6.9	60																								
0.025	500 x 100	–	14	26	51	42	115																						
	300 x 150	2.8	11	5.5	38	8.3	86																						
0.033	400 x 150	–	10	21	39	37	90																						
	300 x 200	2.4	8	4.6	29	7.1	70																						
0.040	500 x 150			–	22	26	51	38	91																				
	400 x 200			3.5	16	5.3	39	7.1	69																				
0.050	600 x 150 - 500 x 200			–	13	–	34	33	65	44	120																		
	300 x 300			2.7	10	4.3	25	6	50	8.1	90																		
0.070	600 x 200					–	19	25	37	36	68																		
	400 x 300					3.2	14	4.5	28	6.1	51																		
0.080	700 x 200					–	13	–	26	33	55	43	118																
						2.7	18	3.7	20	5.6	43	7.5	89																
0.090	800 x 200 - 500 x 300					20	10	–	20	29	42	39	80	46	125	52	160												
	400 x 400					2.4	8	3.2	15	4.9	33	6.6	60	8.3	94	9.5	130												
0.100	600 x 300							–	16	27	33	36	63	45	98	49	126												
								2.8	12	4.4	26	5.9	47	7.4	73	8.4	102												
0.120	500 x 400							–	10	23	27	33	51	39	80	45	102												
								2.6	8	3.9	21	5.3	38	6.6	59	7.6	83												
0.125	700 x 300									22	24	30	46	38	72	44	93												
										3.7	19	5	35	6.3	55	7.3	76												
0.140	600 x 400									–	16	23	29	30	45	37	65	41	89	46	116								
	800 x 300									3	12	4	22	5	34	5.7	43	6.7	59	7.7	77								
0.150	500 x 500									–	15	22	27	29	42	34	60	39	82	44	107								
										2.9	11	3.8	20	4.8	31	5.5	40	6.4	54	7.3	71								
0.160	700 x 400											21	16	25	25	31	48	36	65	39	85								
												3.4	14	4.3	22	4.9	32	5.7	44	6.5	58								
0.180	600 x 500											21	14	24	22	29	42	34	57	38	74	48	116						
												3.2	12	4	19	4.6	28	5.4	38	6.2	50	7.8	78						
0.190	800 x 400											–	12	23	17	27	32	31	44	37	58	44	91						
												3	11	3.8	15	4.3	21	5	29	5.7	38	7.1	59						
0.210	900 x 400											–	11	–	16	24	26	30	35	34	46	42	72						
	700 x 500											2.8	10	3.5	15	4	19	4.7	26	5.4	34	6.8	53						
0.220	600 x 600											–	10	–	15	25	26	27	30	27	33	34	52						
												2.5	9	3.2	13	3.8	19	4.0	21	4.2	24	5.3	38						
0.240	1000 x 400											–	11	–	15	–	23	27	31	33	41	41	70						
	800 x 500											2.5	9	3.1	12	3.6	17	4.2	23	4.8	30	6.2	50						
0.260	700 x 600											–	9	–	14	–	22	25	30	33	40	41	70						
	600 x 700											2.1	8	2.7	11	3.2	15	3.9	21	4.3	29	5.3	50						
0.270	900 x 500													–	12	–	18	–	25	24	25	30	36						
														2.8	10	3.2	13	3.7	18	3.8	18	4.5	28						
0.295	600 x 800 - 800 x 600													–	11	–	16	–	23	25	28	37	44						
	700 x 700													2.4	10	2.9	11	3.3	16	3.8	20	4.8	31						
0.300	1000 x 500															–	14	–	19	35	46	43	72						
																2.8	10	3.3	14	5.1	34	6.3	53						
0.340	700 x 800 - 800 x 700															–	11	–	16	–	20	35	35	39	45	42	60		
	900 x 600															2.5	8	2.9	11	3.3	15	4.3	25	5	35	5.9	45		
0.360	1000 x 600															–	12	–	14	–	18	31	30	35	40	39	56		
																2.4	9	2.7	10	3.2	14	4	23	4.8	31	5.7	43		
0.390	900 x 700																			–	15	27	22	33	35	38	45		
	800 x 800																			2.9	8	3.5	17	4.4	27	5	35		
0.440	1000 x 700																			–	13	23	20	30	30	34	36	37	50
	900 x 800																			2.6	10	3.4	15	4	23	4.5	28	5.2	39
0.480	1000 x 800	Lw	Pa1																	–	9	–	15	28	23	31	30	33	39
		Vf	Pa2																	2.3	7	2.9	12	3.5	18	4	23	4.6	30



The values Lw (NR) do not take the attenuation in the premises into account.

Pa1 (Pa) = Pressure loss on air intake.
Pa2 (Pa) = Pressure loss on exhaust discharge.
Af (m^2) = Front surface.
Vf (m/s) = Front velocity.

Project Reference List

Below are few of our prestigious project references.

S. No.	Project	Consultant/Client	Contractor	Location
1	30 Villa compound	W S Atkins	Verger	Abu Dhabi
2	400 KV substation	Lahmeyer	Al Inayah	Abu Dhabi
3	Bu Hasa ICS	Gasco	Emco	Abu Dhabi
4	E14 substation	ADWEA	Dynamic	Abu Dhabi
5	Emirates Centre for Strategic studies	DMW	ALGECO	Abu Dhabi
6	G+1, 96 Villas	Mario	ETTS	Abu Dhabi
7	Indian Embassy	Dustoor	Universal Voltas	Abu Dhabi
8	Marina Mall	Meinhardt	ETA	Abu Dhabi
9	Marina Mall Substation	ADWEA	ACECO	Abu Dhabi
10	Qasr Al Sarab	Halcrow Yolles	ALEC	Abu Dhabi
11	Ruwais Housing Complex	ADNOC	Square General	Abu Dhabi
12	Spinney's Shopping Complex	Archon	Elemec	Abu Dhabi
13	Taweelah 400 KV substation	Lahmeyer	ACECO	Abu Dhabi
14	Al Ain Zoo	Shankland Cox	Al hamad	Al Ain
15	Al Jeemi Mall Extension	GHD	ACECO	Al Ain
16	Al Mas Tower	W. S. Atkins	ETA	Dubai
17	Children's Museum	GEMAC	A & P partners	Dubai
18	City Bank	Kennedy & Donkin	Sensaire	Dubai
19	DIFC - District Cooling North Plant Cons.	Ellerbe Beckets/Tebodin	Voltas Limited	Dubai
20	Dubai Arch Tower	Art Consultants	Al Ahmadiah Aktor	Dubai
21	Dubai Mall	Meinhardt	Juma Al Majid	Dubai
22	Duboitech	Kling	Macair	Dubai
23	DWTC	RMJM	Transgulf	Dubai
24	Emirates Flight Catering Facility	Ian Banham	Transgulf	Dubai
25	Garden Tower	Shadeed Engg	GECO	Dubai
26	Kendah House	W S Atkins	ETA	Dubai
27	Mall of the Emirates	WSP watson	Khansaheb	Dubai
28	Marina Scape	Archgroup	Trinity	Dubai
29	Muraqqabad Police Station	Arenco	Bilt	Dubai
30	New Laboratories Bldg. & New ITD Bldg.	Arc International D.M.	Al Arrab	Dubai
31	PVG & HVG Warehouse	Arif & Bintoak	Al Naboodah	Dubai
32	Twin Tower at Marina	Adnan Saffarini	Transgulf	Dubai
33	Zen Gardens	ECG	JSCOM	Dubai
34	Dubai Airport	Dar al Handasah	Al Tamanir	Dubai
35	Aryar Tower	Erga	Al Bonian	Dubai
36	Majestic Tower	CAB	Universal Voltas	Dubai
37	Al Naeem Mall	Dynamic Engg	Strabag	Ras Al Khaimah
38	Hilton Hotel	W. S. Atkins	EMI	Ras Al Khaimah
39	Palm Tower & Beach Tower	Consultair	ETA	Sharjah
40	Petrofac Tower	Consultair	ETA	Sharjah
41	Police Head Quarter	Sharjah Police	Fawaz	Sharjah
42	Research Laboratory	Cansult	GECO	Sharjah
43	Centro Hotel, Sharjah	G.H.D	Al Bonian	Sharjah
44	Umm al Quwain Hospital	HDP	B Power	Umm Al Quwain
45	QLNG Headquarters	Atkins	Al Ansari	Oman
46	Al Nakheel Tower	Diwan Al Emara	Almoayyed	Qatar
47	Al Udeid project	Qatar Armed Forces	Almoayed	Qatar
48	Al Wosail Tower	KEO	Man Enterprises	Qatar
49	Diwan Ameri Building	Shaker Consultancy	Voltas Limited	Qatar
50	Oil Platform for Maersk Oil	Maersk Oil Qatar S.A./ GPMC	Specialist Services	Qatar
51	Qatar Petroleum Fire Station	Q.P.	Arabian A/c	Qatar
52	Texas A & M College	KEO	Midmac Cont.	Qatar
53	The Gate Development	Maunsell Consultancy	Man Enterprises	Qatar
54	Businesspark & hotel facilities	AEB	QEMG	Qatar
55	GTL Project	QP	Kentech	Qatar
56	SER Building @ NDIA	QP	Bluestar	Qatar
57	Woqod Tower	Romatre	Diplomat	Qatar