

DBC

VARIZON® Arc shaped low velocity air diffuser with adjustable spread pattern



QUICK FACTS

- Adjustable spread pattern and affected area
- Suitable for all types of rooms
- Measurement unit
- Cleanable
- Concealed fixing
- Standard colour White RAL 9003
 - 5 alternative standard colours
 - Other colours upon request

DBC Size	AIR FLOW - SOUND PRESSURE ROOM (Lp10A) *)					
	25 dB(A)		30 dB(A)		35 dB(A)	
	l/s	m ³ /h	l/s	m ³ /h	l/s	m ³ /h
200	150	540	175	630	200	720
250	200	720	240	864	270	972
315	340	1224	395	1422	460	1656
400	460	1656	550	1980	630	2268
200-600	450	1620	520	1872	610	2196
300-600	650	2340	750	2700	880	3168

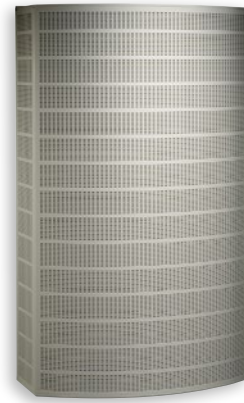
Data for the DBC + regulator REG are shown in a separate table.

*) L_{p10A} = Sound pressure incl. A-filter with 4 dB room attenuation and 10 m² room absorption area.

Technical description

Design

The DBC is a bow-shaped displacement unit for wall installation. The body consists of a rear section with top and bottom plates and an air diffusion plate which is equipped with a number of adjustable discs. The top plate has either a circular or rectangular inlet depending on the size of the unit. The diffusion plate has an inspection cover for access to the duct system. There is a perforated front panel on the exterior of the body which is attached to the rear section with screws. These are concealed behind a removable aluminium profile. The measurement outlet is placed behind the removable aluminium profile.



Materials and surface treatment

The displacement unit is manufactured in galvanized sheet steel and aluminium profiles. It is coated.

- Standard colour:
 - White semi-gloss, lustre 40, RAL 9003/NCS S 0500-N
- Alternative standard colours:
 - Silver gloss, lustre 80, RAL 9006
 - Grey aluminium gloss, lustre 80, RAL 9007
 - Blanc semi-brillant, lustre 40, RAL 9010
 - Black semi-gloss, lustre 35, RAL 9005
 - Grey semi-gloss, lustre 30, RAL 7037
- Non-painted finish and other colours available on request.

Customisation

In addition to the standard sizes, these displacement units are available in special dimensions, with reinforced front panels, etc. The duct covers, regulator units and plinths can also be supplied in different dimensions. Please contact your nearest sales representative for further information.

Accessories

Regulator: REG - combination unit with damper and sound attenuator

Duct Cover: DBCT 1 - for the enclosure of the regulator unit and the connection duct.

Plinth: DBCT 2 - for the installation of the displacement unit on the floor.

Decorative top:

DBCT 3. Removable top board in different materials and dimensions. Can be used when duct cover is not utilized. Please contact your nearest sales representative for further information.

Planning

It is possible to modify the affected area by adjusting the VARIZON® discs behind the perforated front panel. This does not affect the air flow, pressure drop or sound level. This flexibility simplifies any future changes in the furnishing of the room etc.

Installation

The terminal is attached to the wall using angle brackets supplied with the terminal. The base plinth is screwed into place on the bottom of the unit. The telescopic duct cover is screwed into place on the wall using the wall mounting

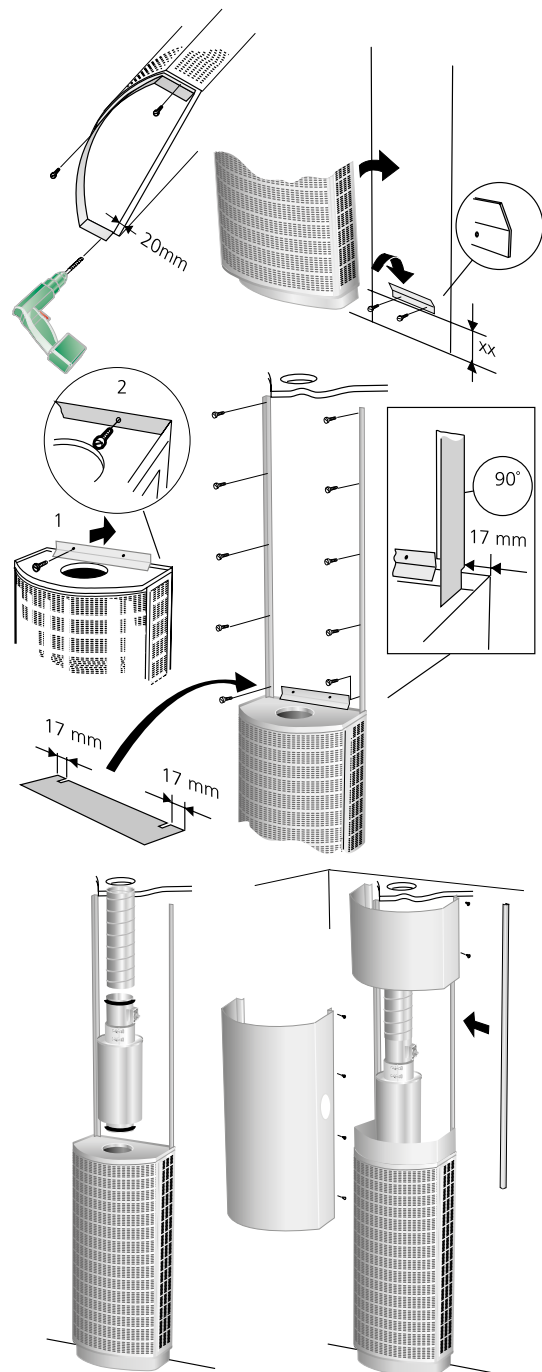


Figure 1. Installation.

brackets. The screws are concealed by the aluminium side strips. The regulator, which has a circular connection spigot with a rubber seal, is pressed into the inlet socket of the terminal. See Figure 1.

Commissioning

The measurement outlet is positioned on the side of the displacement unit behind the aluminium profile. The k-factor of the unit is marked on one side of the measurement outlet. The k-factor can also be found at www.swegon.com in the relevant k-factor guide. It is recommended that the REG regulator is used in order to control the air volume. See Figure 2.

Maintenance

The displacement unit can be cleaned when necessary using luke warm water with added detergent. The duct system is accessed by removing the perforated front panel and the inspection hatch. See Figure 2.

Environment

The Declaration of construction materials is available from www.swegon.com.

Sizing

- Sound pressure level dB(A) applies to rooms with 10 m² equivalent sound absorption area.
- Sound attenuation (ΔL) below is shown in the octave band. Orifice attenuation is included in the values.
- Recommended maximum under temperature 6 K.
- To calculate the width of the affected area, air velocities in the zone of occupation or sound levels in rooms with other dimensions, please refer to our calculation programmes ProAir web, which is available for download at www.swegon.com.

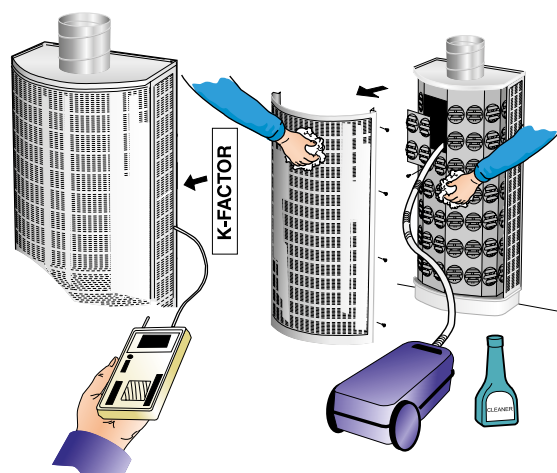


Figure 2. Commissioning. Maintenance.

L_w = Sound power level

L_{p10A} = Sound pressure level dB (A)

K_{ok} = Correction for producing the L_w value in the octave band

$L_w = L_{p10A} + K_{OK}$ gives the frequency divided octave band

Sound data

DBC

Sound power level L_w (dB)

Table K_{OK}

Size DBC	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
200	3	5	5	1	-1	-5	-12	-18
250	4	6	5	2	-1	-6	-14	-20
315	2	6	6	1	-1	-7	-15	-21
400	3	6	6	2	-1	-8	-16	-17
200-600	2	5	6	3	-1	-9	-19	-18
300-600	2	6	6	3	-1	-10	-23	-27
Size DBC + REG	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
200	8	6	5	-1	0	-5	-10	-15
250	7	5	5	1	-1	-6	-10	-15
315	3	6	5	-1	-1	-4	-9	-17
400	4	7	4	0	-2	-4	-9	-14
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB)

Table ΔL

Size DBC	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
200	15	12	6	2	2	3	5	4
250	14	10	5	2	2	3	4	5
315	13	9	4	1	0	1	2	2
400	12	6	4	1	1	1	1	1
200-600	8	4	1	0	0	0	0	0
300-600	6	3	1	0	0	0	0	0
Size DBC + REG	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
200	20	13	9	14	29	28	23	21
250	17	11	7	11	26	23	18	18
315	15	10	6	14	24	21	19	21
400	14	9	5	12	25	20	18	21
Tol. ±	2	2	2	2	2	2	2	2

Engineering graphs

DBC

Air flow – Pressure drop – Sound level – Affected area

- The affected area refers to the distance to the isovel limit of 0.2 m/s at Δt 3 K. Δt in this case signifies the difference between the room air temperature measured at 1.2 m above the floor and the supply air temperature.
- The graphs are not to be used for commissioning.
- The dB(C) value is normally 6-9 dB's higher than the dB(A) value.
- ∇ = min. airflow to obtain sufficient commissioning pressure.

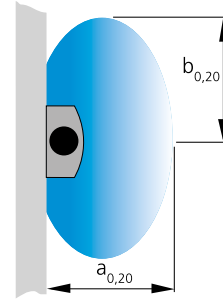
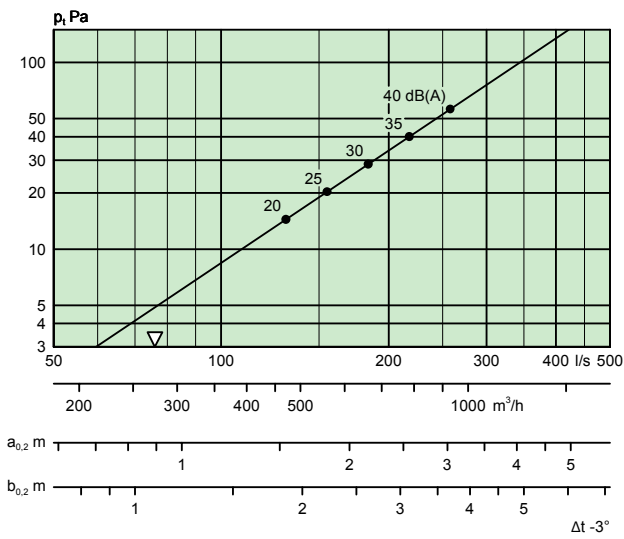
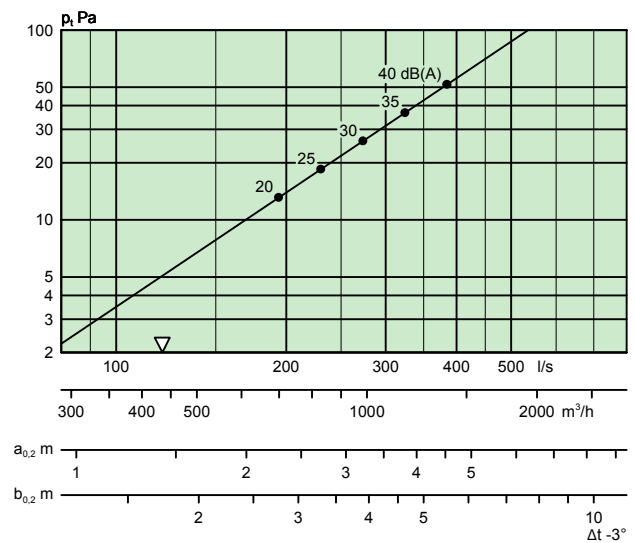


Figure 3. Affected area.

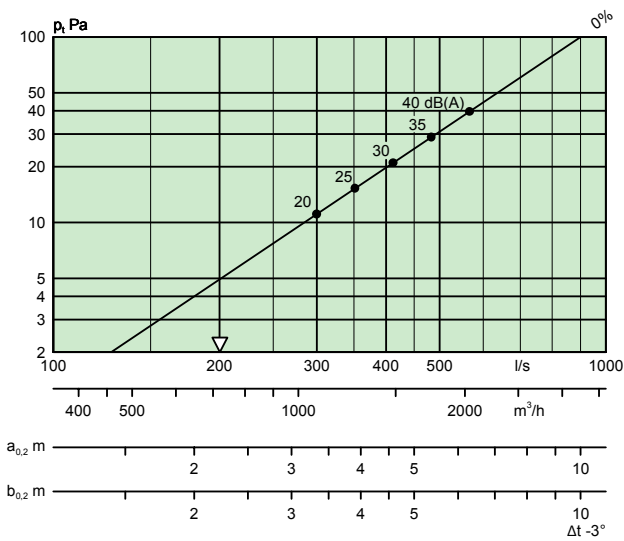
DBC 202



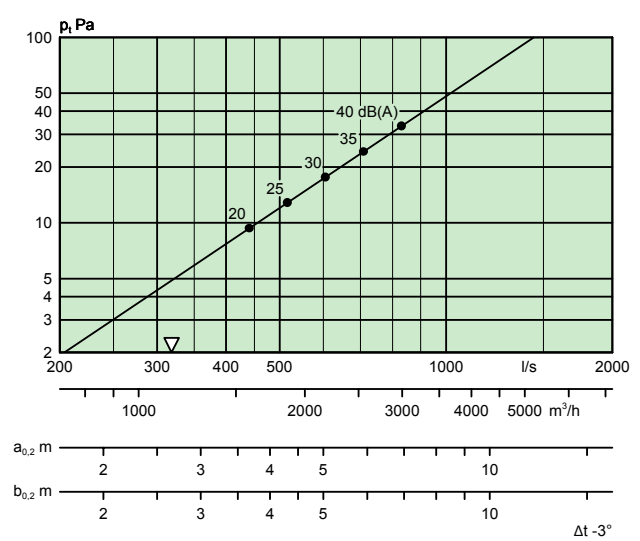
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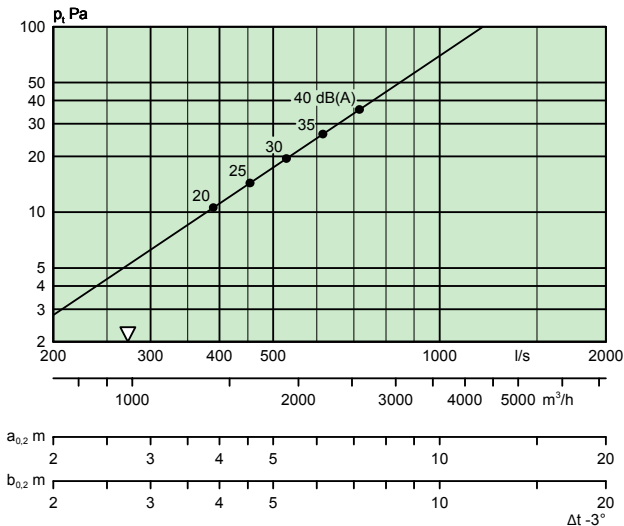
DBC 315



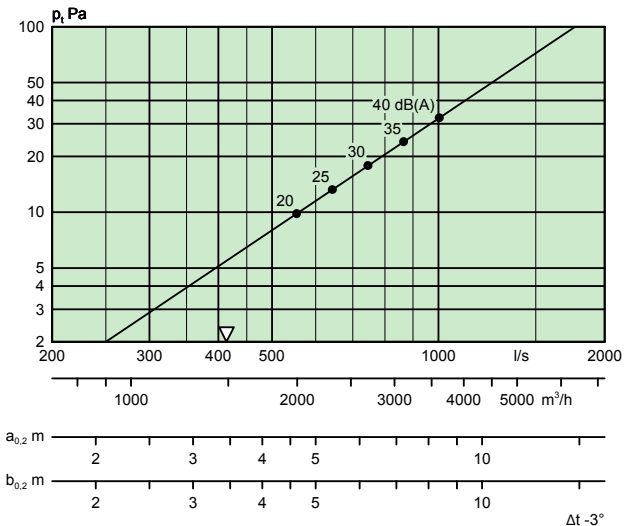
DBC 400



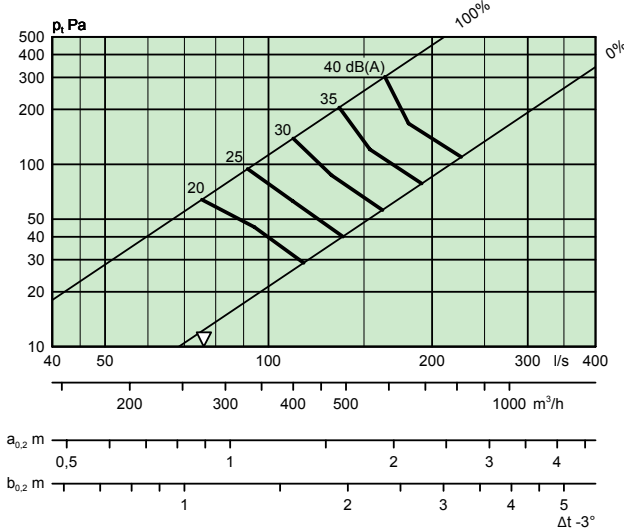
DBC 200-600



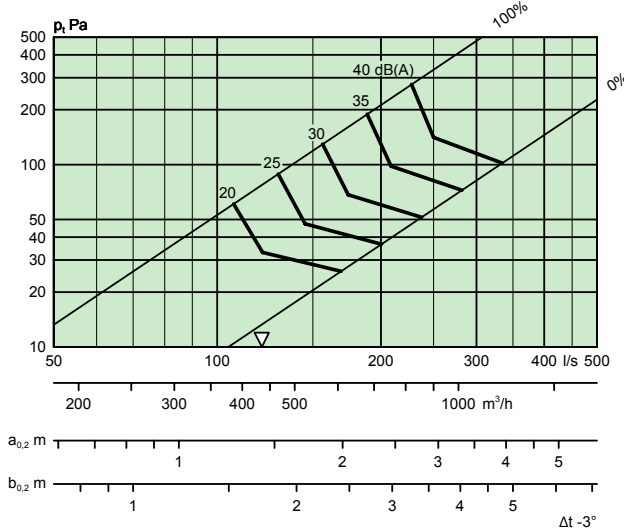
DBC 300-600



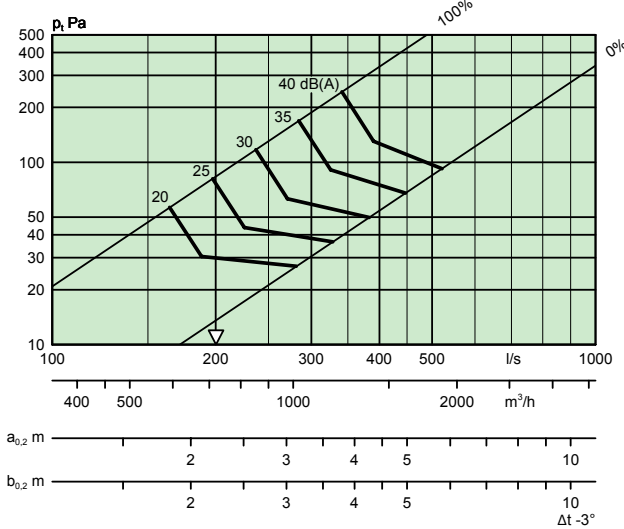
DBC 200 + REG



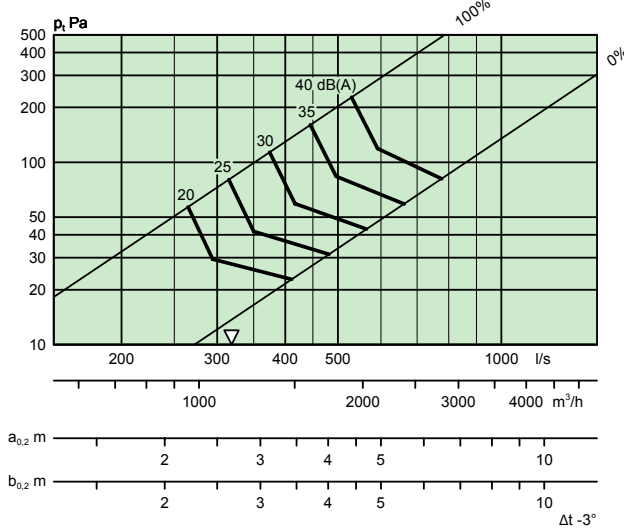
DBC 250 + REG



DBC 315 + REG



DBC 400 + REG



Dimensions and weights

DBC

Size	Dimensions (mm)					
	A	B	C	ØD	E	F
200	900	923	340	200	-	-
250	900	923	390	250	-	-
315	900	1523	455	315	-	-
400	900	2003	540	400	-	-
200-600	900	2003	340	-	600	200
300-600	900	2003	455	-	600	300

Size	Dimensions (mm)			Weight (kg)
	G	H	I	
200	160	-	188	26,0
250	185	-	238	28,0
315	218	-	303	45,0
400	260	-	388	75,0
200-600	113	55	188	65,0
300-600	163	55	303	70,0

REG

Size	Dimensions (mm)			
	ØC	Ød	G	H
200	300	199	230	500
250	350	249	250	500
315	415	314	260	800
400	500	399	300	800

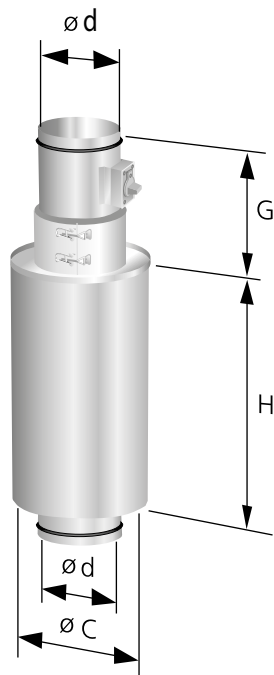


Figure 4. Regulator unit REG.

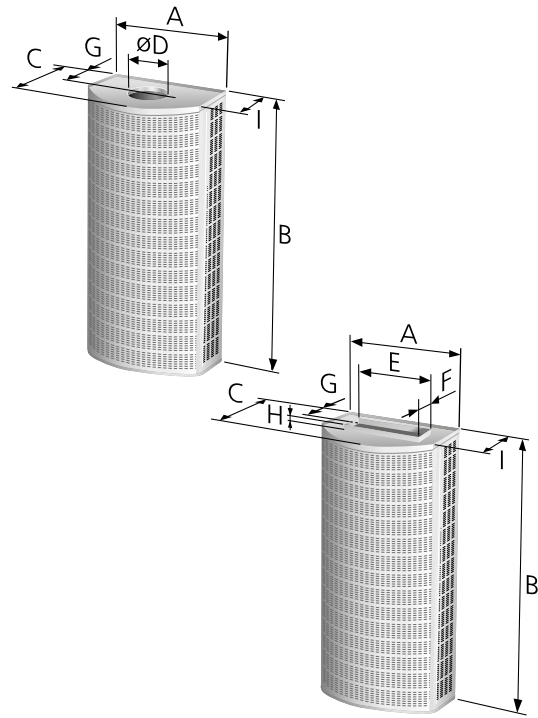


Figure 5. DBC.

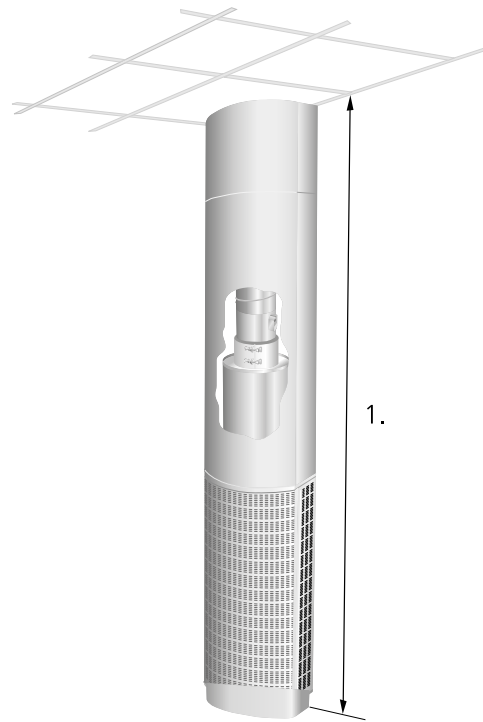


Figure 6. DBC with duct cover and plinth.

(1) Size 200-315: 2400-2750.

Size 400, 200-600 and 300-600: 2850-3200

If other lengths are required always state the total room height.

Order key

Product

Rectangular displacement unit with circular connection DBC a -aaa

Version:

Size: 200, 250, 315, 400

Rectangular displacement unit with rectangular connection DBC a -aaa - bbb

Version:

Size: 200-600, 300-600

Accessories

Cover plate DBCT 1 a -aaa - (bbb)

Version:

Size:
200, 250, 315, 400
200-600, 300-600

Specify special lengths in bold print.
Always state the total room height.

Plinth DBCT 2 a -aaa - (bbb) 70

Version:

Size:
200, 250, 315, 400
200-600, 300-600

Height in mm. specify special heights in bold print.

Decorative top DBCT 3 a

Version:

Please contact your nearest sales representative for further help with the design of the product.

Regulator REG b -aaa

Version:

Size: 200, 250, 315, 400

Specification example

Swegons VARIZON® rectangular low velocity terminal of type DBC, with the following functions:

- Adjustable spread pattern and affected area zone
- Non-fouling
- Fixed measurement outlet
- Cleanable
- Powder coated in white, RAL 9003/NCS S 0500-N

Size: DBCa aaa (- bbb) xx items

Accessories

Cover plate: DBCT 1a aaa (- bbb) xx items

Plinth: DBCT 2a aaa (- bbb) - 70 xx items