

DHC

VARIZON® Curved displacement unit with adjustable spread pattern



QUICK FACTS

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

DHC 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
125	55	198	65	234	80	288
160	85	306	100	360	120	432
200	135	486	150	540	180	648
250	180	648	215	774	250	900
315	300	1080	350	1260	400	1440
400	425	1530	500	1800	590	2124
500	625	2250	730	2628	860	3096
630	900	3240	1100	3960	1250	4500
800	1300	4680	1500	5400	1750	6300

Data for the DHC + 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.

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Technical description

Design

The DHC is a complete, semi-circular displacement unit for wall installation. The body consists of a rear section with top and bottom plates and an air diffusion plate equipped with a number of adjustable discs. The top plate has a circular inlet socket. The diffusion plate has an access hatch for accessing the duct system. The perforated front plate is fixed to the terminal with concealed screws, behind the removable aluminium side strips. The measuring point is placed behind one of the side strips.

Materials and surface treatment

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

- 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
 - White semi-gloss, 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 diffusers are available in special dimensions, with reinforced front plates 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:

DHCT 1 - for the installation of the regulator unit and the connecting circular duct.

Plinth:

DHCT 2 - for the installation of the displacement unit on the floor.

Decorative top:

DHCT 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 discs behind the front plate. This does not affect the air flow, pressure drop or sound level. This flexibility simplifies any future changes in the furnishings of the room etc.



Installation

The displacement unit is attached to the wall using angle brackets and screws. The base plinth is screwed into place on the bottom of the unit. The telescopic duct cover is attached to the wall using the wall brackets, the screws being concealed by the 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 measuring point is placed 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 to regulate the air flow. See Figure 2.

Maintenance

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

Environment

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

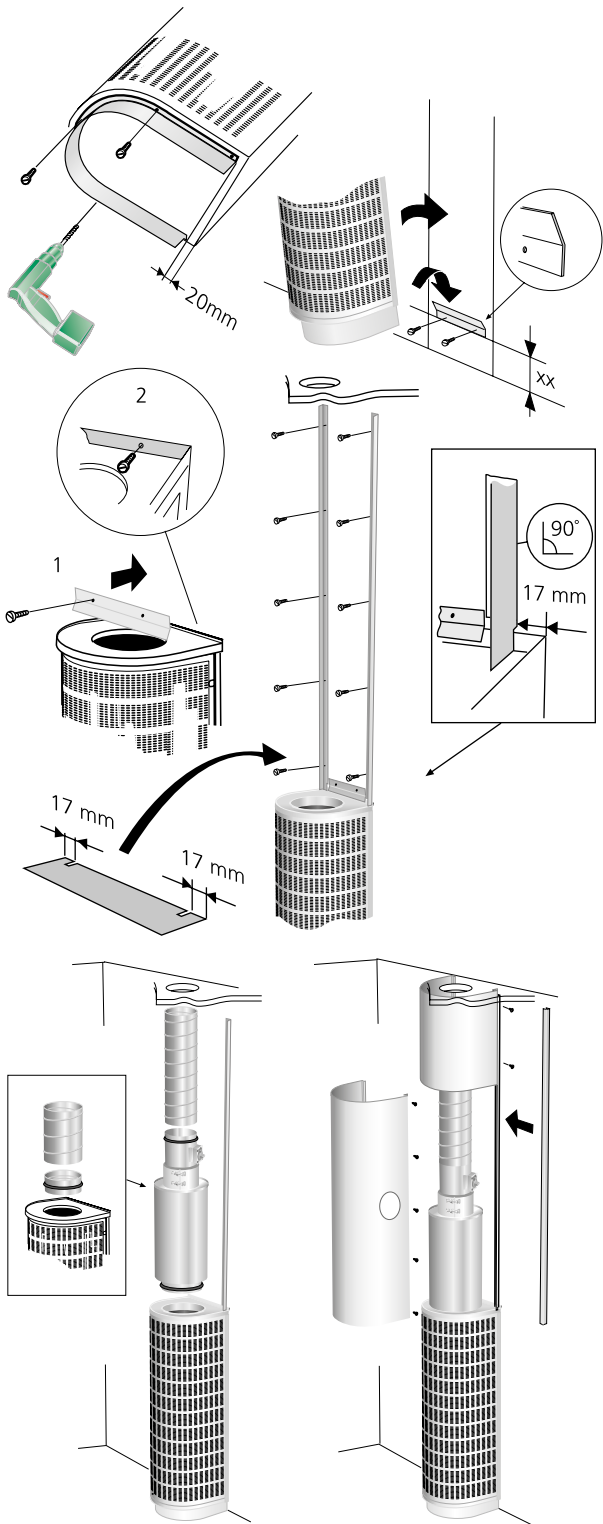


Figure 1. Installation.

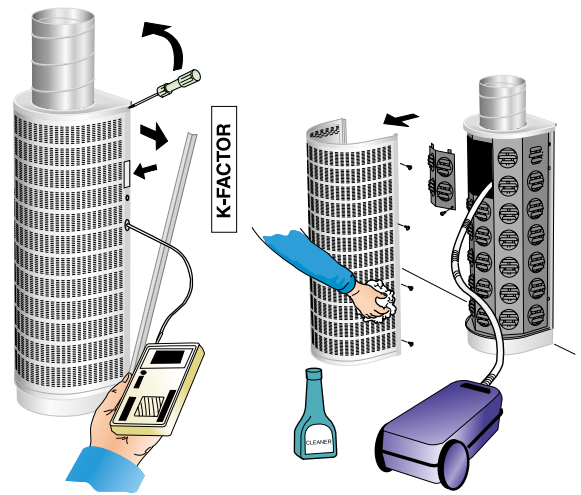


Figure 2. Commissioning. Maintenance.

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.
- For calculating the width of the air stream, air velocities in the occupied zone or sound levels in rooms with other dimensions, please refer to our web calculation softwares available for download at www.swegon.com.

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

DHC

Sound power level L_w (dB)

Table K_{OK}

Size DHC	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
125	-2	3	3	4	-1	-7	-15	-17
160	1	2	3	3	-1	-8	-18	-20
200	1	1	5	3	-1	-9	-18	-19
250	6	3	5	3	0	-8	-19	-20
315	5	4	5	3	-1	-8	-18	-19
400	7	5	6	3	-2	-9	-16	-15
500	7	5	6	3	-3	-12	-16	-20
630	10	8	7	3	-3	-13	-18	-20
800	10	8	7	3	-3	-13	-19	-20
Size DHC + REG	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
125	5	7	5	0	-2	-4	-11	-14
160	3	5	4	0	-1	-5	-13	-17
200	3	5	5	1	-1	-6	-13	-16
250	5	5	5	1	-1	-5	-14	-17
315	8	5	4	0	-1	-5	-12	-15
400	3	6	4	-1	-2	-4	-9	-11
500	3	5	5	-1	-3	-6	-12	-14
630	3	7	6	-1	-3	-7	-13	-15
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB)

Table ΔL

Size DHC	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
125	22	16	10	5	2	3	4	5
160	19	14	8	4	3	3	4	4
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
500	9	4	3	1	1	1	1	1
630	7	3	2	1	1	1	0	0
800	6	2	1	1	1	0	0	0
Size DHC + REG	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
125	25	18	17	20	33	31	27	22
160	22	15	14	18	31	28	24	20
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
500	12	7	3	11	24	20	17	20
630	11	6	2	11	23	20	17	20
Tol. ±	2	2	2	2	2	2	2	2

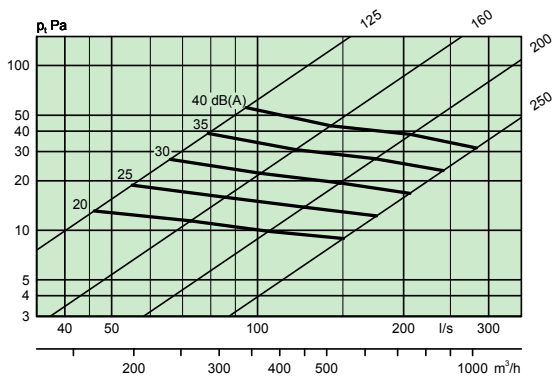
Engineering graphs

DHC

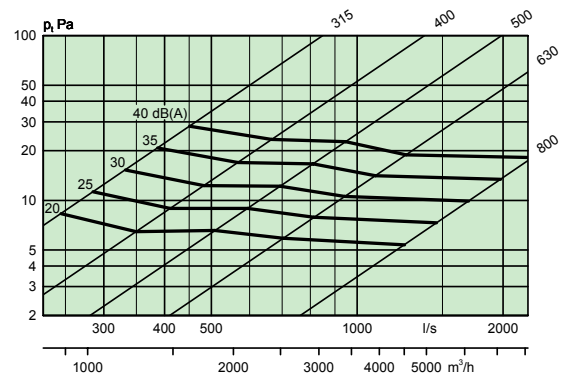
Air flow – Pressure drop – Sound level

- The graphs are not to be used for commissioning.
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.
- For data concerning the affected area, see the graph for DHC + REG combination.

DHC 125 to 250



DHC 315 to 800



DHC + REG

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. It is not the difference between the exhaust air and the supply air temperatures.
- The graphs illustrate data for the displacement unit with the regulator installed.
- The graphs are not to be used for commissioning.
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.
- ∇ = min. air flow to obtain sufficient commissioning pressure.

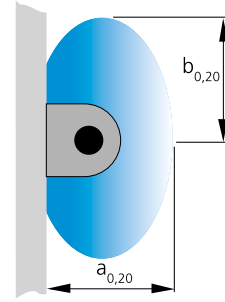
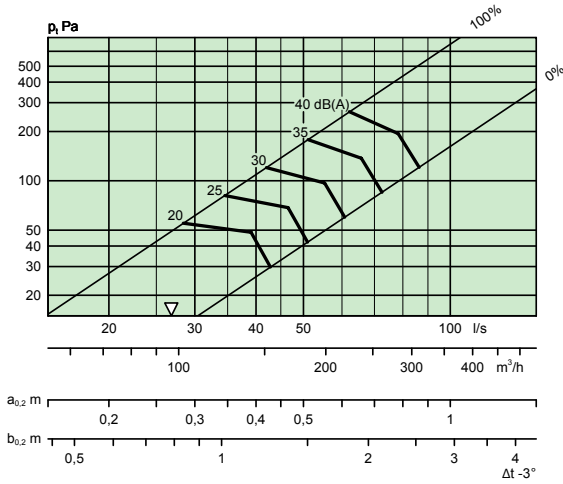
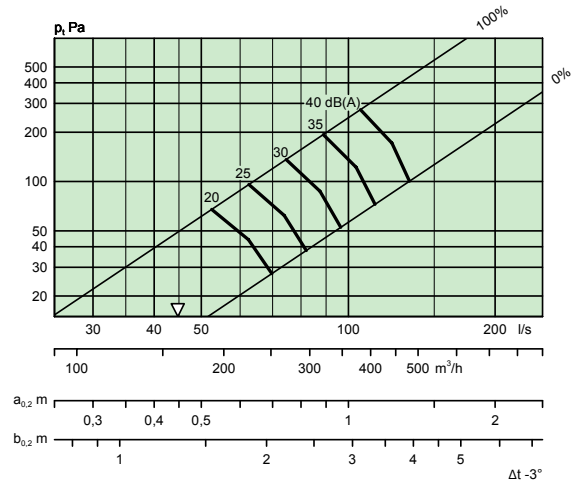


Figure 3. Affected area.

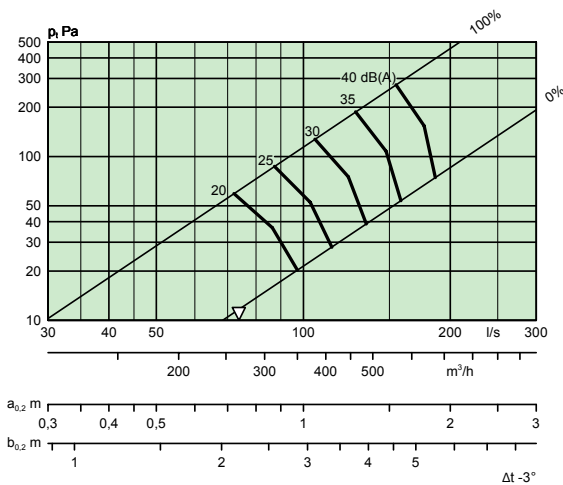
DHC 125 + REG



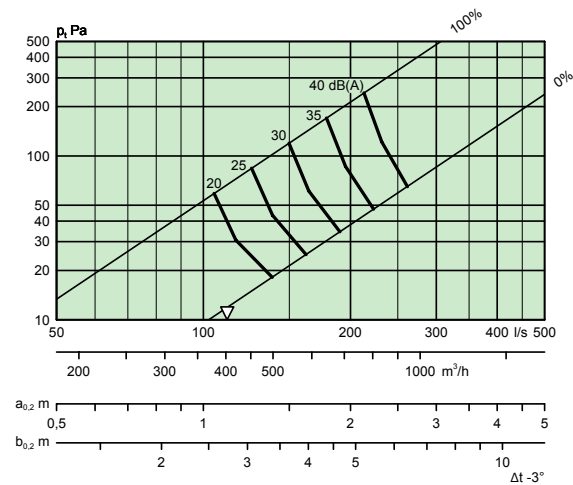
DHC 160 + REG



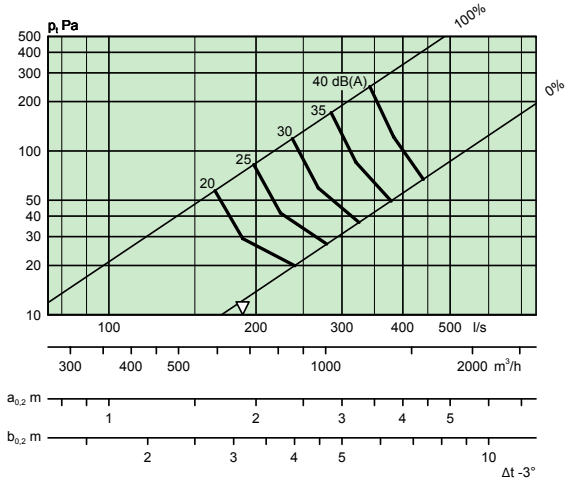
DHC 200 + REG



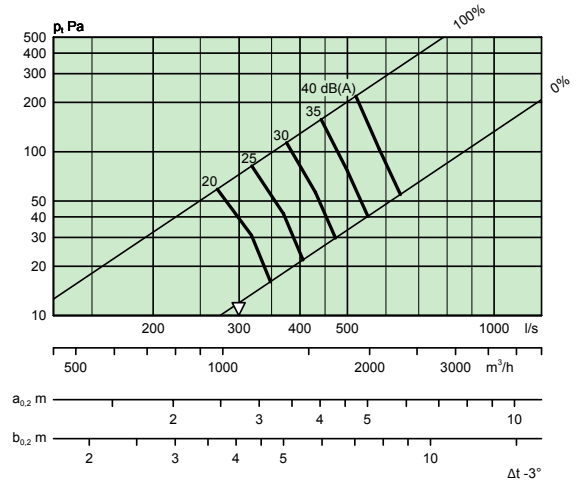
DHC 250 + REG



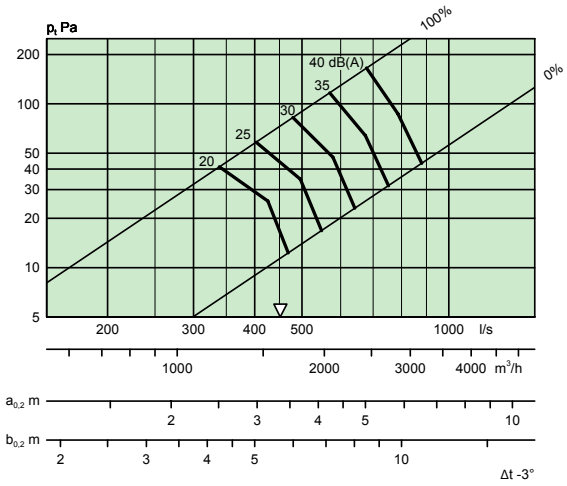
DHC 315 + REG



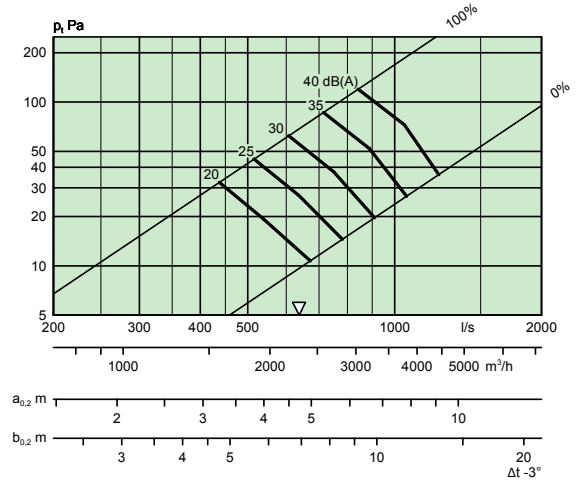
DHC 400 + REG



DHC 500 + REG



DHC 630 + REG



Dimensions and weights

DHC

Size	Dimensions (mm)					Weight (kg)
	A	B	C	ØD	G	
125	245	623	250	125	123	7
160	280	623	285	160	140	10
200	320	923	325	200	160	15
250	370	923	375	250	185	18
315	435	1523	435	315	218	23
400	520	2003	525	400	260	29
500	620	2003	620	500	310	36
630	750	2003	750	630	375	45
800	920	2003	920	800	460	56

REG

Size	Dimensions (mm)			
	ØC	Ød	G	H
125	225	124	230	500
160	260	159	230	500
200	300	199	230	500
250	350	249	250	500
315	415	314	260	800
400	500	399	300	800
500	600	499	300	900
630	730	629	300	900

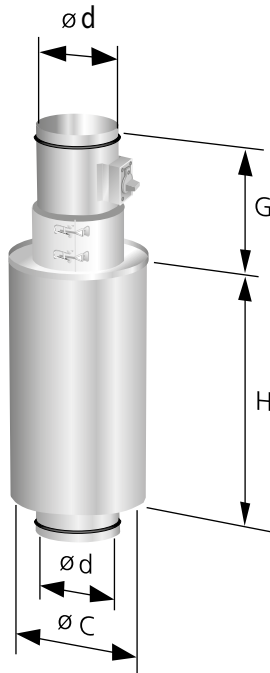


Figure 4. Regulator unit REG.

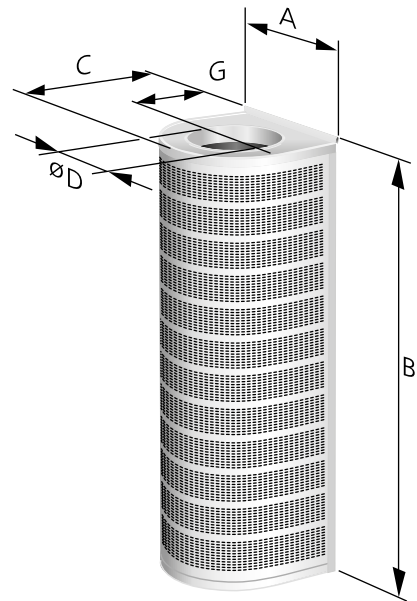


Figure 5. DHC.

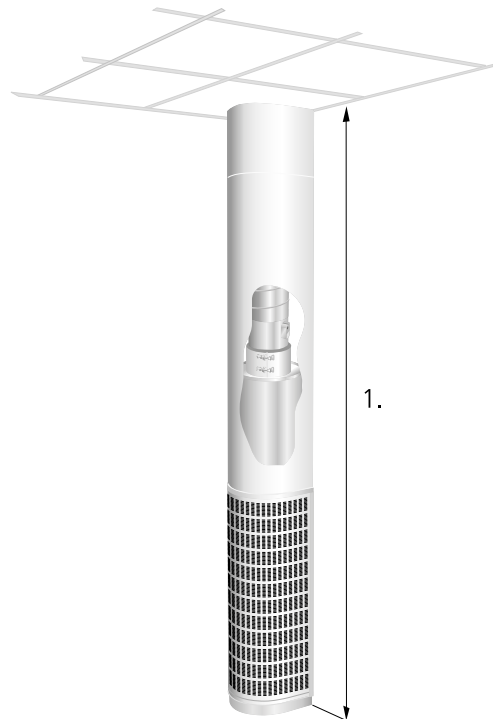


Figure 6. DHC with duct cover and plinth.

1. Size 125-315: 2400-2750.

Size 400-800: 2850-3200.

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

Order key

Product

Semi-circular displacement unit DHC e -aaa

Version:

Size:

125, 160, 200, 250

315, 400, 500, 630, 800

Accessories

Cover plate: DHCT 1 d -aaa

Version:

Size:

125, 160, 200

250, 315, 400

Specify special dimensions in bold text. Always state the total room height.

Plinth DHCT 2 a -aaa 70

Version:

Size:

125, 160, 200, 250

315, 400, 500, 630, 800

Height in mm. specify special heights in bold text. Always state the total room height.

Regulator unit REG b -aaa

Version:

Size:

125, 160, 200, 250

315, 400, 500, 630

Decorative top DHCT 3 a

Version:

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

Specification example

Swegons VARIZON® semi-circular displacement unit of type DHC, having the following functions:

- Adjustable spread pattern and affected area
- Air volume measuring point
- Concealed fixing
- Cleanable
- Powder coated in white paint, RAL 9003/NCS S 0500-N

Size: DHCe aaa xx items

Accessories

Cover plate: DHCT 1d aaa xx items

Plinth: DHCT 2a aaa - 70 xx items