VDYc/VRYc

Wall terminals with discs,
flush mounted, for supply air

FUNCTION

Rectangular supply air terminal with discs. Type VDY is equipped with 55 mm discs whereas type VRY has 35 mm discs. The difference between the two sizes of disc only affects the appearance of the terminals. Suitable for constant or variable airflow. Air can be supplied at over or under temperature and both horizontal and vertical spread patterns are possible. It is always possible to change the spread pattern after commissioning, without affecting the airflow, pressure drop or sound levels.

QUICK FACTS

- 100% flexible spread pattern
- Simultaneous horizontal and vertical spread possible
- Cleanable
- Adjustable slot for increased capacity
- Simple commissioning
- Used with plenum box ALV
- Measurable and adjustable flow
- Non fouling
- Corner position in room possible
- Available in alternative colours
- Included int the MagiCAD database

QUICK GUIDE

AIR FLOW-SOUND LEVEL				
VDYc/VRYc	ALVb	l/s		
Size	Size	25 dB(A)	30 dB(A)	35 dB(A)
300 x 125	300x125- 80-B	12	22	30
400 x 150	400x150-100-B	18	28	40
500 x 150	500x150-125-B	34	42	53
600 x 200	600x200-160-B	28	58	78
700 x 250	700x250-200-B	48	90	115

Data applies to a total pressure of 40 Pa. The diffuser is set with an open slot and side connection.

DESIGN

Rectangular supply air terminal for mounting in walls. The terminal is equipped with aerodynamically shaped discs. The disc plate can be tilted out to reveal a slot in the upper section.

MATERIALS AND SURFACE TREATMENT

The diffuser face is manufactured in sheet steel and aluminium. The plenum box ALV is manufactured in galvanised sheet steel. The diffuser face is painted with our pure white standard paint, RAL 9010. The unit is also available in other standard colours: Dusty grey 7037, white aluminium RAL 9006, jet black RAL 9005, grey aluminium RAL 9007 and signal white RAL 9003 (NCS 0500).

SPECIAL VERSIONS

In addition to the standard diffuser sizes, this unit can be supplied with special dimensions, different quantities of discs, special disc patterns and so on. VDY/VRY are also available as galvanized versions. Please contact your nearest sales representative for further information.

ACCESSORIES

Plenum box:

ALV. Manufactured in galvanized sheet steel. Contains removable commissioning damper, fixed measurement outlet and an air distribution baffle. The plenum box is available with two connection alternatives, rear or side connection.

Frame:

VDYT 1a. For the aesthetic installation of the non recessed plenum plenum box ALV. See figure 4.

PLANNING

The discs can be rotated through 360° which means that an infinite number of spread pattern combinations can be achieved without affecting the airflow, sound level or pressure drop. Simultaneous horizontal and vertical spread is possible among other things. The upper edge of the diffuser face can be pulled out to reveal an open slot for use when increased air capacity is desired.
Note that even if the diffuser has to be placed in the corner of a room for whatever reason, it is still possible to achieve a satisfactory spread pattern in the room by adjusting the discs. In this case use the alternative 45° spread pattern.

INSTALLATION (See Figure 1)

1. Cut a hole in the wall according to the dimensions table and diagrams.
2. Place the plenum box in the hole.
3. The mounting frame is pushed into the plenum box and screwed into place through the short sides into the plenum box and the framework of the wall.
4. The air distribution baffle is pushed into the mounting frame and fixed into place using the hooks.
5. The diffuser face is pressed into place on the mounting frame.

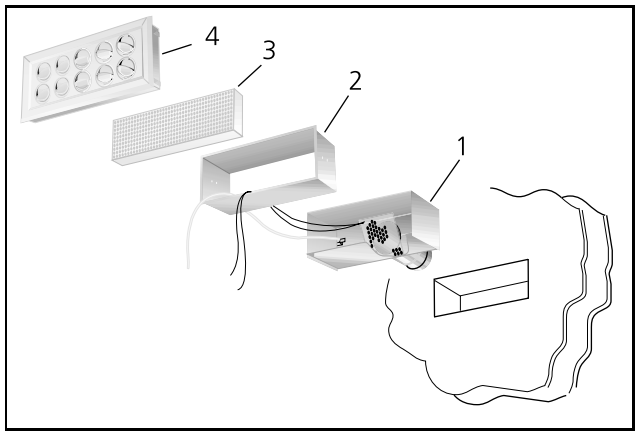


Figure 1. *Installation.*
1. Plenum box
2. Mounting frame
3. Air distribution baffle
4. Diffuser face

COMMISSIONING (See Figure 1)

Commissioning is to be performed with the plenum box in place. The measurement tube and damper cord are pulled out of the diffuser face through one of the disc holes. The damper setting can be locked. The k-factor is found in the product label as well as in the relevant k-factor guide which is to be found on our website.

MAINTENANCE (See Figure 1)

The diffuser can be cleaned when necessary using luke warm water and detergent. The duct system can be accessed by removing the diffuser plate, pulling out luftfördelningsbaffeln and removing the damper in the fully open position.

ENVIRONMENT

The declaraion of construction materials is available on our website or may be ordered from one of our sales offices.

TECHNICAL DATA

- Sound level dB(A) applies to rooms of 10 m^2 equivalent absorption area, which gives 4 dB room attenuation.
- The throw $l_{0.2}$ is applicable to isothermal conditions. The graphs presents the data for the VDY/VRY mounted with the upper edge 200 mm from the ceiling. To correct the throw $l_{0.2}$ for other distances between the upper edge and the ceiling, please see Technical Section.
- Recommended maximum under temperature is 12 °C with standard disc setting.
- For calculating the width of the spread pattern, air velocities in the zone of occupation or sound levels in rooms with other dimensions, please refer to our calculation programmes ProAir web and ProAc, which are both available for download on our website.

Sound data - VDY/VRY + ALV - Supply air

Sound power level L_w(dB)
Table K_{OK}

Size VDYc/VRYc + ALVb	Mid-frequency (oktave band) Hz							
	63	125	250	500	1000	2000	4000	8000
300-125	-9	-1	2	-1	-1	-6	-10	-15
400-150	3	0	3	-1	-1	-4	-10	-17
500-150	-3	-1	4	1	-2	-6	-11	-16
600-200	0	-1	4	0	-1	-6	-14	-19
700-250	6	1	5	-1	0	-7	-16	-27
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB)
Table ΔL

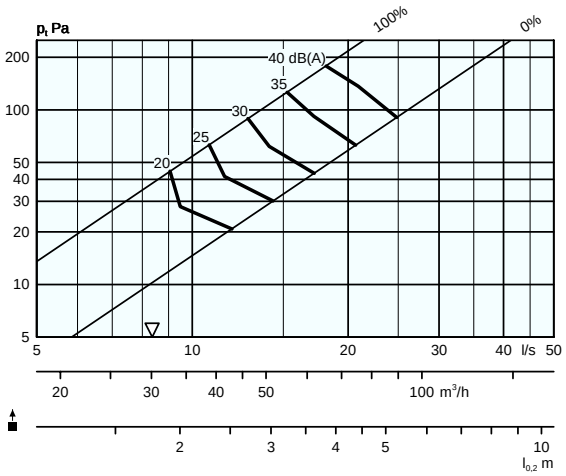
Size VDYc/VRYc + ALVb	Mid-frequency (oktave band) Hz							
	63	125	250	500	1000	2000	4000	8000
300-125	22	15	13	12	10	6	7	10
400-150	21	16	10	11	6	4	6	8
500-150	22	15	9	11	5	5	6	8
600-200	18	13	7	10	4	4	5	6
700-250	15	10	5	9	2	4	5	7
Tol. ±	2	2	2	2	2	2	2	2

Engineering graphs - VDY/VRY + ALV - Supply air

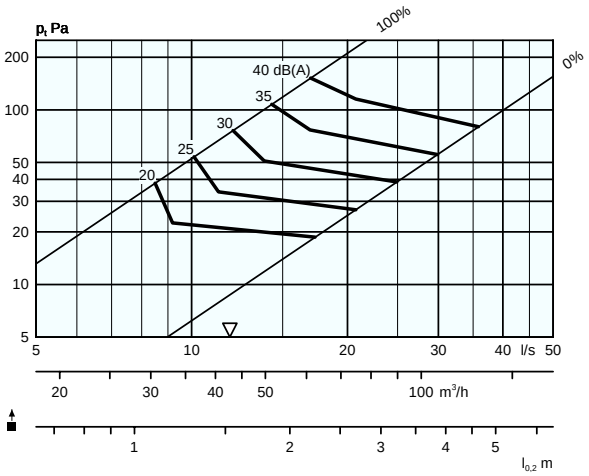
Air flow - Pressure drop - Sound level - Throw

- The graphs are not to be used for commissioning.
- ∇= min. airflow to obtain sufficient commissioning pressure.
- The dB(A) values are for rooms with normal acoustic absorption of 4 dB.
- The dB(C) value is normally 6-9 dB's higher than the dB(A) value. For more accurate calculations, see the calculation template in the chapter on Acoustics in the Technical Information section of this catalogue.
- When the 45° disc setting, refer to figure illustrating disc settings, $l_{0,2}$ is extended by approximately 50%. The throw length is then calculated from the centre of the terminal and 45° one-way spread direction. See also the figure showing Isovels.

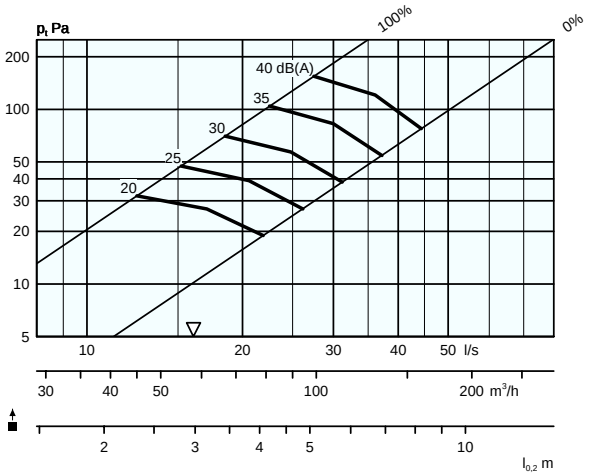
VDYc/VRYc 300-125 + ALVb 300-125 Ø 80 B/K, closed slot



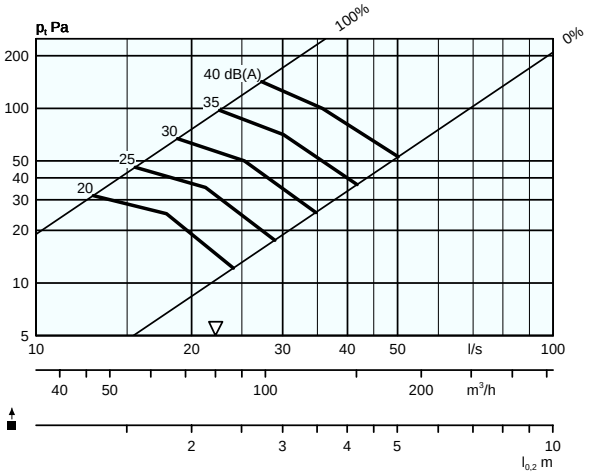
VDYc/VRYc 300-125 + ALVb 300-125 Ø 80 B/K, open slot



VDYc/VRYc 400-150 + ALVb 400-150 Ø 100 B/K, closed slot



VDYc/VRYc 400-150 + ALVb 400-150 Ø 100 B/K, open slot

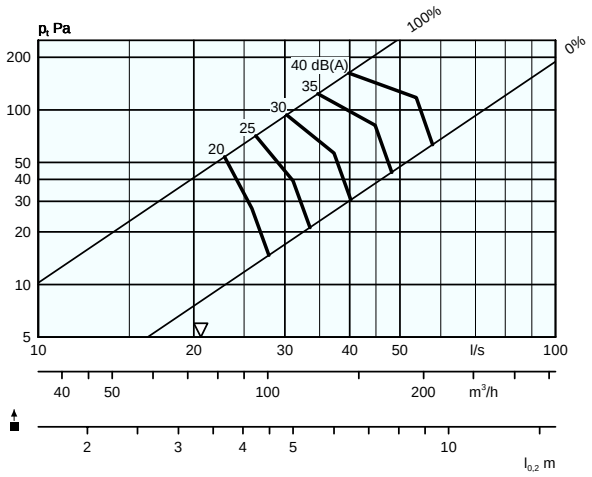


Engineering graphs - VDY/VRY + ALV - Supply air

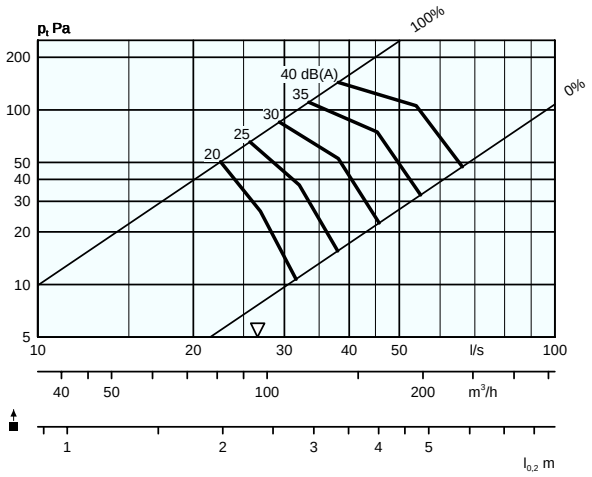
Air flow - Pressure drop - Sound level - Throw

- The graphs are not to be used for commissioning.
- ∇= min. airflow to obtain sufficient commissioning pressure.
- The dB(A) values are for rooms with normal acoustic absorption of 4 dB.
- The dB(C) value is normally 6-9 dB's higher than the dB(A) value. For more accurate calculations, see the calculation template in the chapter on Acousticsin the Technical Information section of this catalogue.
- When the 45° disc setting, refer to figure illustrating disc settings, $l_{0,2}$ is extended by approximately 50%. The throw length is then calculated from the centre of the terminal and 45° one-way spread direction. See also the figure showing Isovels.

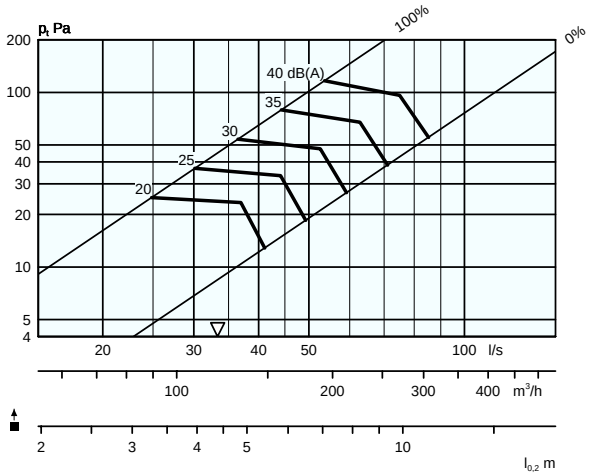
VDYc/VRYc 500-150 + ALVb 500-150 Ø 125 B/K, closed slot



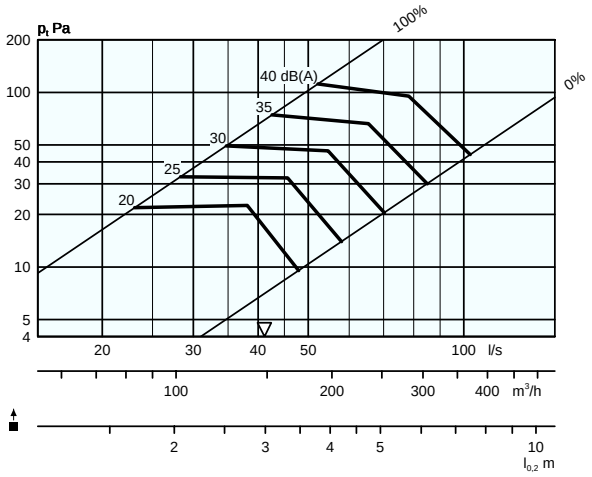
VVDYc/VRYc 500-150 + ALVb 500-150 Ø 125 B/K, open slot



VDYc/VRYc 600-200 + ALVb 600-200 Ø 160 B/K, closed slot



VDYc/VRYc 600-200 + ALVb 600-200 Ø 160 B/K, open slot

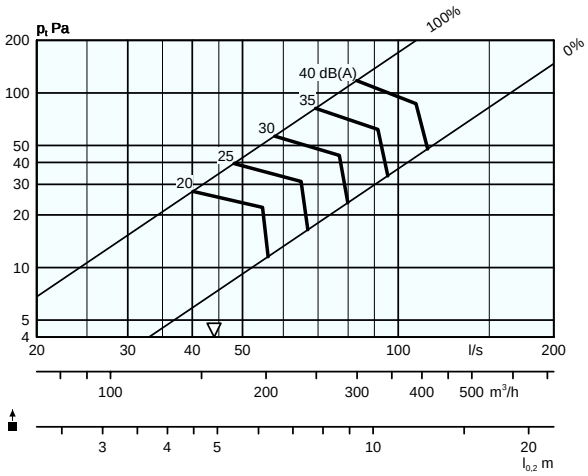


Engineering graphs - VDY/VRY + ALV - Supply air

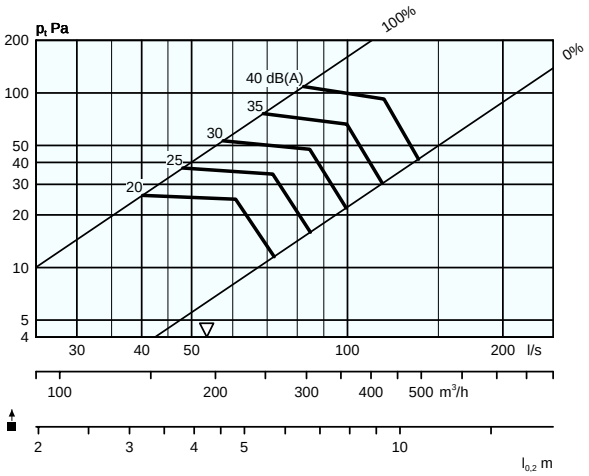
Air flow - Pressure drop - Sound level - Throw

- The graphs are not to be used for commissioning.
- ∇ = min. airflow to obtain sufficient commissioning pressure.
- The dB(A) values are for rooms with normal acoustic absorption of 4 dB.
- The dB(C) value is normally 6-9 dB's higher than the dB(A) value. For more accurate calculations, see the calculation template in the chapter on Acousticsin the Technical Information section of this catalogue.
- When the 45° disc setting, refer to figure illustrating disc settings, $l_{0,2}$ is extended by approximately 50%. The throw length is then calculated from the centre of the terminal and 45° one-way spread direction. See also the figure showing Isovels.

VDYc/VRYc 700-250 + ALVb 700-250 Ø 200 B/K, closed slot



VDYc/VRYc 700-250 + ALVb 700-250 Ø 200 B/K, open slot



DIMENSIONS AND WEIGHT

VDYc/VRYc

Size	A	B	D	F	G	G2
300x125	330	155	79	225	191-290	250-350
400x150	430	180	99	290	221-320	270-370
500x150	530	180	124	295	221-320	320-420
600x200	630	230	159	350	251-350	335-435
700x250	730	280	199	385	270-370	370-470

Size	K	L	M	I x J	Weight,kg
300x125	60	145	185	305x130	2.8
400x150	83	144	194	405x155	3.5
500x150	85	170	232	505x155	4.8
600x200	100	151	231	605x205	6.7
700x250	117	145	245	705x255	9.0

Hole making size = I x J.
The measurements G2, K, L resp. M apply for a side connected plenum box.

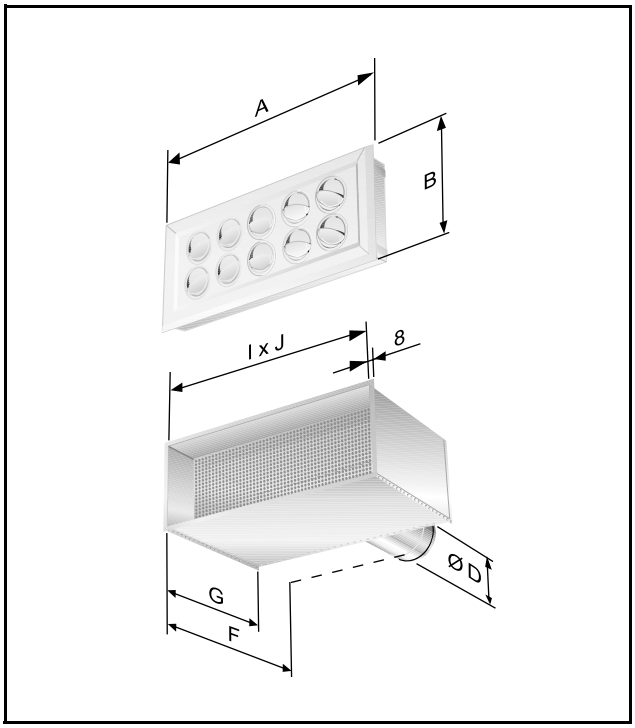


Figure 2. *Disc diffuser VDY/VRY + plenum box ALV-B.*

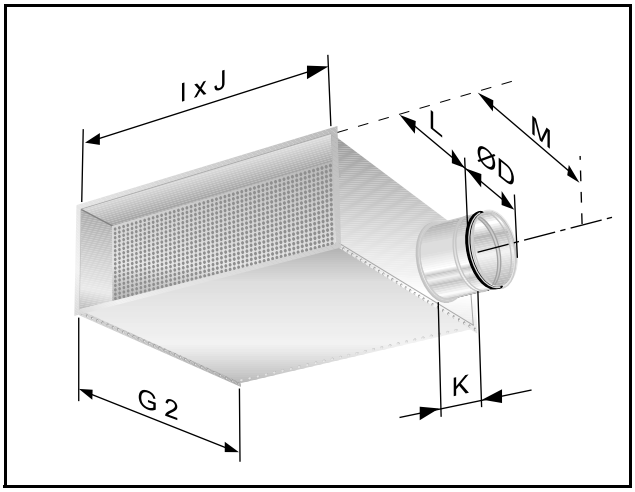


Figure 3. *Plenum box ALV-K.*

VDYT 1a/VRYT 1a

Size	A	B	L
300x125	330	155	195
400x150	430	180	225
500x150	530	180	225
600x200	630	230	255
700x250	730	280	275

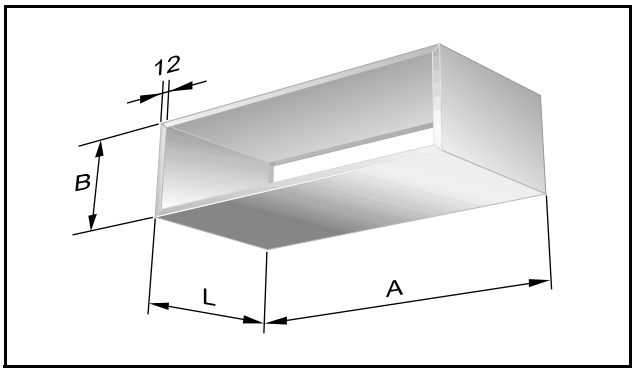


Figure 4. *Frame VDYT 1a.*

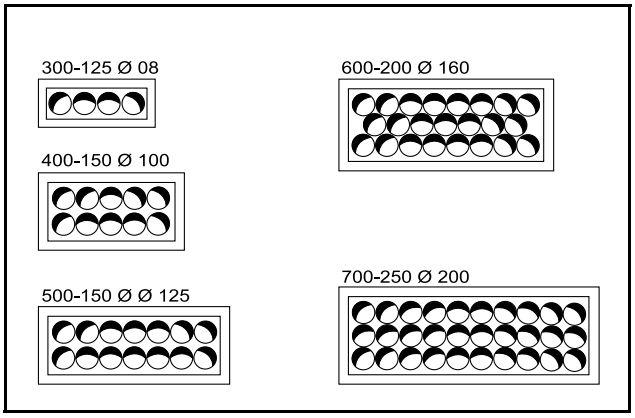


Figure 5. *Standard disc pattern VDY.*

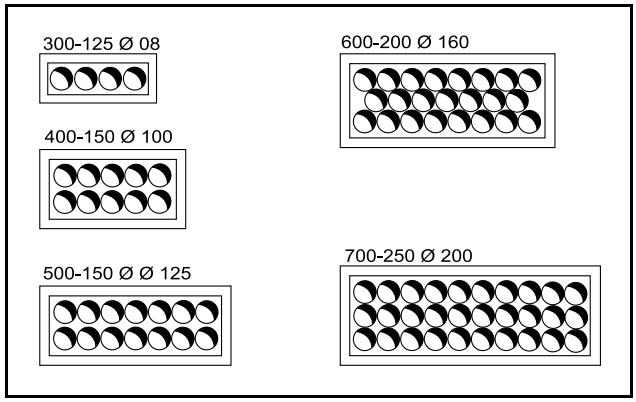


Figure 6. *Disc pattern VDY 45°.*

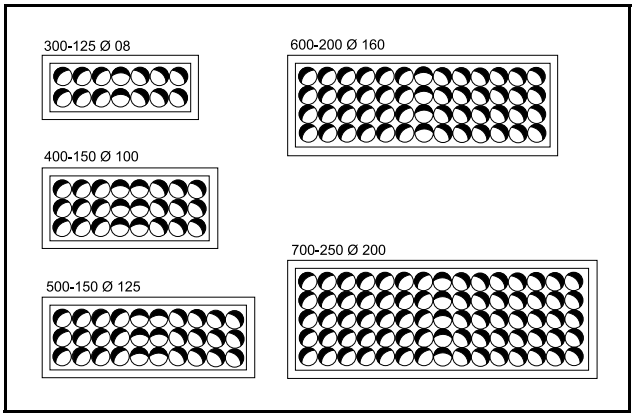


Figure 7. *Standard disc pattern VRY.*

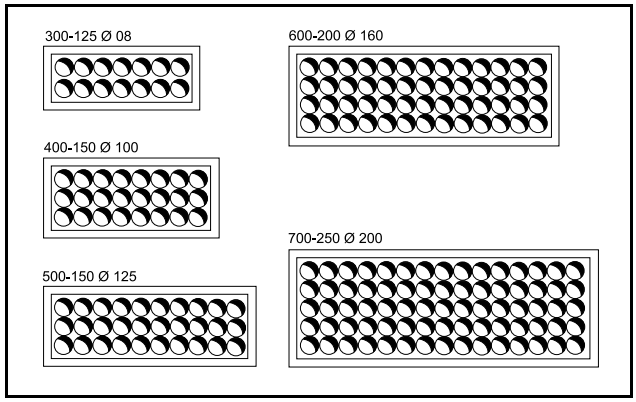


Figure 8. *Disc pattern VRY 45°.*

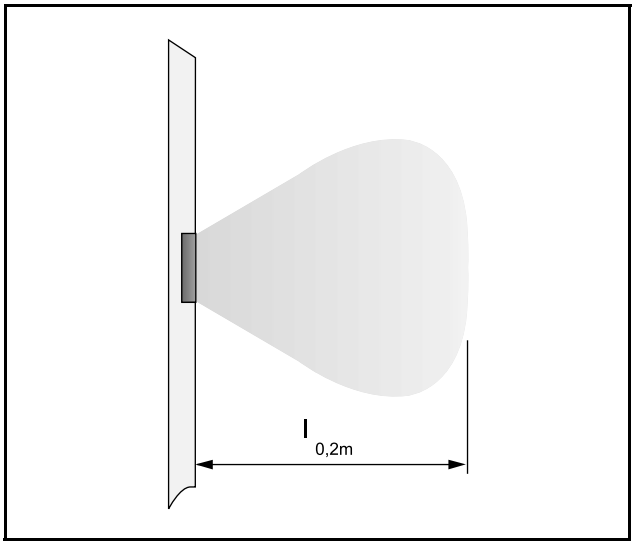


Figure 9. *Isovel. Spread pattern as standard is 0°.*

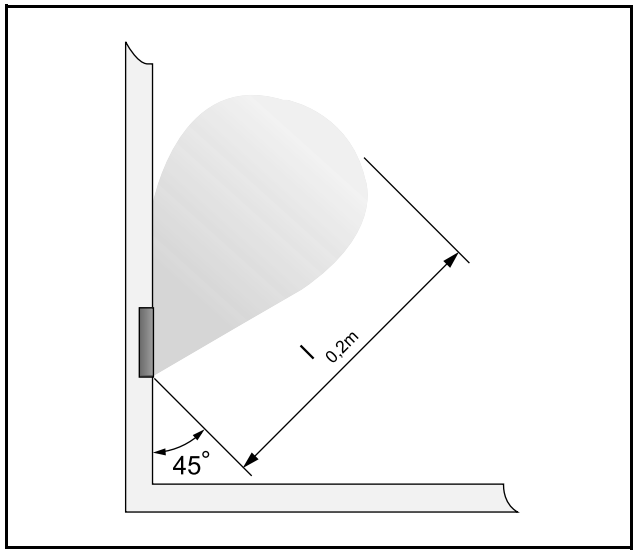


Figure 10. *Isovel. Spread pattern 45°.*

ORDER KEY

Product designation

Rectangular wall terminal with discs	AAAc	-bbb	-ccc
Type: VDYc (large discs) VRYc (small discs)			
Nom width, mm 300, 400, 500, 600			
Nom height, mm 125, 150, 200, 250			

Standard range	
Size:	300-125
	400-150
	500-150
	600-200
	700-250

Accessories

Plenum box		ALVb	-aaa - bbb - ccc	-d
For size				
300-125	ALVb	300-125-80		
400-150		400-150-100		
500-150		500-150-125		
600-200		600-200-160		
700-250		700-250-200		
Connection alternatives Rear = B Short side = K				

Frame		VDYT 1a	-aaa - bbb
Size:	300-125		
	400-150		
	500-150		
	600-200		
	700-250		

SPECIFICATION EXAMPLE

SD XX

Swegons complete, rectangular disc diffuser of type VDYc for wall-mounting, with the following functions:

- 100% flexible spread pattern
- Individually adjustable discs (55 mm) in recyclable plastic
- Removable commissioning damper with cord adjusters
- Fixed measurement outlet with low method error
- Telescopic mounting frame
- Cleanable
- Powder-coated in white paint

Accessories:

Frame:	VDYT 1a aaa - bbb	xx items
Size:	VDYc aaa - bbb with ALVb aaa - bbb - ccc - d	xx items