

PELICAN Wall

Rectangular perforated wall air diffusers for supply air



QUICK FACTS

- Flexible air distribution pattern, easy to set
- Cleanable, removable damper
- Simple commissioning, fixed measurement tapping
- Removable air diffuser face
- Used together with the ALV commissioning box
- Standard colour White RAL 9003
 - 5 alternative standard colours
 - Other colours upon request

AIR FLOW - SOUND PRESSURE ROOM (Lp10A) *)							
PELICAN Wall Size	ALV Size	25 dB(A)		30 dB(A)		35 dB(A)	
		l/s	m ³ /h	l/s	m ³ /h	l/s	m ³ /h
300 x 150	300-150-100-B	16	58	21	76	31	112
400 x 150	400-150-125-B	22	79	28	101	40	144
400 x 200	400-200-160-B	36	130	46	166	62	223
550 x 250	550-250-200-B	52	187	69	248	86	310
550 x 300	550-300-250-B	85	306	100	360	130	468

The data is applicable to 50 Pa total pressure.

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

Technical description

Design

Rectangular supply air diffuser for installation in a wall, a so-called rear-edge air diffuser. If the perforated air diffuser section is mounted in an ALV commissioning box, it is removable and is also equipped with adjustable type VARIZON® air distribution nozzles.

Materials and finish

The air diffuser section consists of sheet steel and the commissioning box is made of galvanized sheet steel. The VARIZON® air distribution nozzles are made of black PP plastic. The air diffuser section is painted.

- 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.

Accessory

Commissioning box:

ALV. Made of galvanized sheet steel and contains removable commissioning damper, fixed measurement tapping and acoustic baffle. The commissioning box is available with two different connection options: rear and side connection respectively.

Project planning

The air diffuser section is equipped with a number of air distribution nozzles. By dismantling the air diffuser section from the wall, you can access these nozzles to reset them on the rear side of the air diffuser section, see Figure 1. The air distribution nozzles can be pivoted through 360° for directing the air to suit your needs.

Note that if the air diffuser for some reason has been situated near an inside corner, a satisfactory air distribution pattern can still be maintained in the room by pivoting the nozzles to appropriate angles. For this purpose, use the optional 45° distribution pattern. See Figure 6.

Installation

1. Cut an opening in the wall according to the wall opening dimensions specified.
2. Place the commissioning box in the opening.
3. Sealant is applied between the commissioning box and mounting frame to avoid leakage. Insert the mounting frame into the commissioning box and secure it by means of screws in the short sides to the commissioning box and to the wall structure.
4. The assembly and dismantling of the component parts are shown in Figure 1.
5. Press the diffuser face to engage it in the mounting frame.



Commissioning

Commissioning must be carried out after the diffuser has been mounted and completely assembled. Pull the measuring tubes and damper adjustment cords out through the diffuser face. Connect a manometer to the measuring tubes. The desired commissioning pressure can be computed by applying the K-factor (rated coefficient of performance) of the air diffuser. Set the damper to the correct blade position, tie a commissioning knot in the damper cords to indicate the damper position. See Figure 1.

Maintenance

The air diffuser can be cleaned, if necessary, using lukewarm water with dishwashing detergent added or by vacuum cleaning using a brush nozzle. The duct system can be accessed after the air diffuser section has been removed, the acoustic baffle has been withdrawn, the air distribution nozzles have been moved to the side and the damper has been turned and withdrawn from its fastener from the inlet. See Figure 1.

Environment

The Building Material Declaration is available for downloading at www.swegon.com.

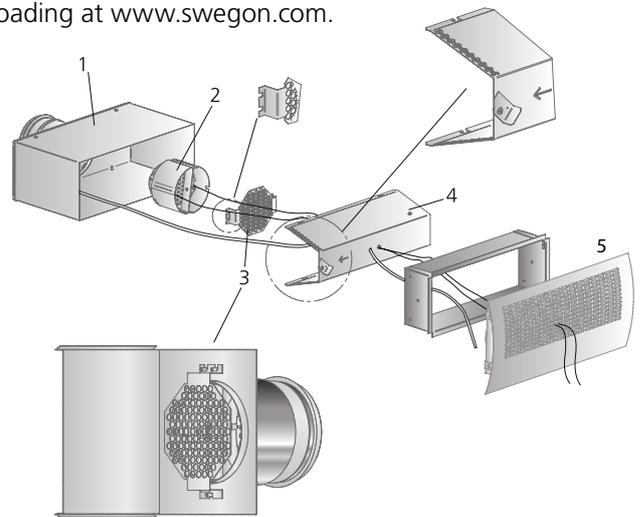


Figure 1. Installation.

To secure baffle (4) in bayonet catch and to secure the octagonal perforated face plate (3) against the duct connection.

1. Commissioning box
2. Damper action, bayonet catch
3. Octagonal air distribution plate
4. Air distribution plate
5. Mounting frame + air diffuser

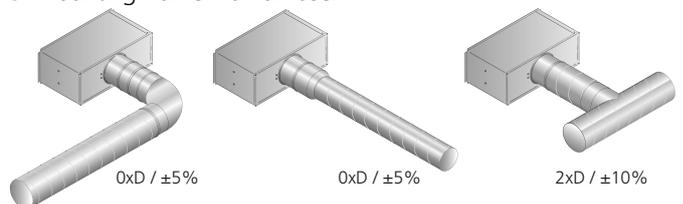


Figure 2. Installation alternatives, applies for all connections (B, K)

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.
- Throw I_{0,2} is measured under isothermal discharge conditions.
- The diagrams illustrate data for the PELICAN W with its top edge 200 mm from the ceiling.
- A max. permissible temperature below room temperature of 12 K is recommended for standard setting of the air distribution nozzles.
- 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

PELICAN W + ALV – supply air

Sound power level, L_w(dB)

Table K_{OK}

Size	Mid-frequency (Octave band) Hz							
PELICAN W + ALV	63	125	250	500	1000	2000	4000	8000
300-150	0	5	6	1	-2	-6	-14	-19
400-150	1	7	6	2	-2	-8	-16	-19
400-200	-3	5	5	2	-2	-2	-17	-20
550-250	3	5	5	3	-2	-8	-17	-18
550-300	-1	6	5	3	-2	-9	-18	-20
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation, incl. attenuation in air discharge grille ΔL(dB)

Table ΔL

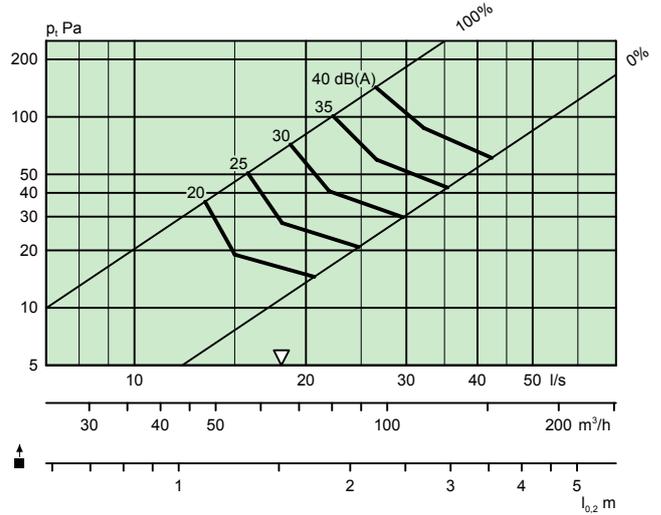
Size	Mid-frequency (Octave band) Hz							
PELICAN W + ALV	63	125	250	500	1000	2000	4000	8000
300-150	20	12	8	1	6	13	7	7
400-150	18	8	7	5	6	7	10	12
400-200	14	11	4	3	5	7	5	5
550-250	11	11	3	4	2	3	5	8
550-300	13	9	2	3	5	3	4	5
Tol. ±	2	2	2	2	2	2	2	2

Sizing diagram - PELICAN W + ALV

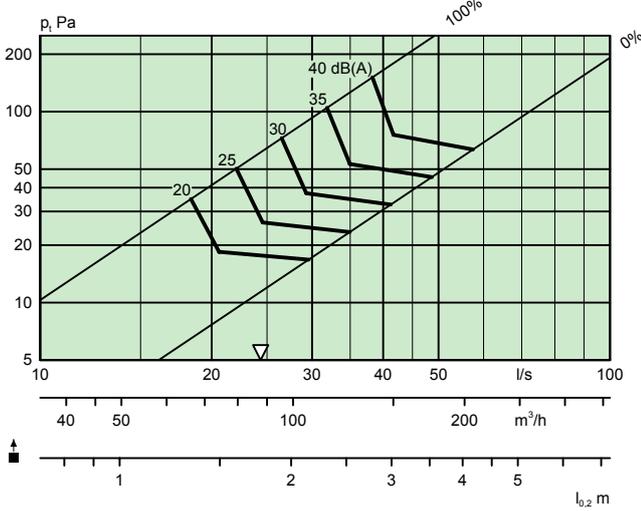
Air flow - Pressure drop - Sound level - Throw

- The diagrams should not be used for commissioning.
- ∇ = Min. airflow required for obtaining sufficient commissioning pressure.
- The dB(A) values are for rooms with normal acoustic absorption (4 dB room attenuation).
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.
- For an air deflector setting of 45°, $l_{0,2}$ is lengthened approx. 50%. Then calculate the throw from the centre of the air diffuser and 45° 1-way air discharge. See the figure, Isovel and To set the air deflector.

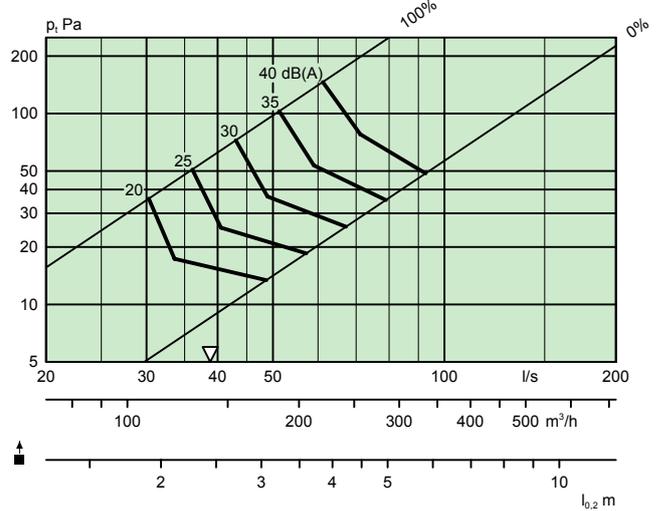
PELICAN W 300-150 + ALV 300-150-100 B/K



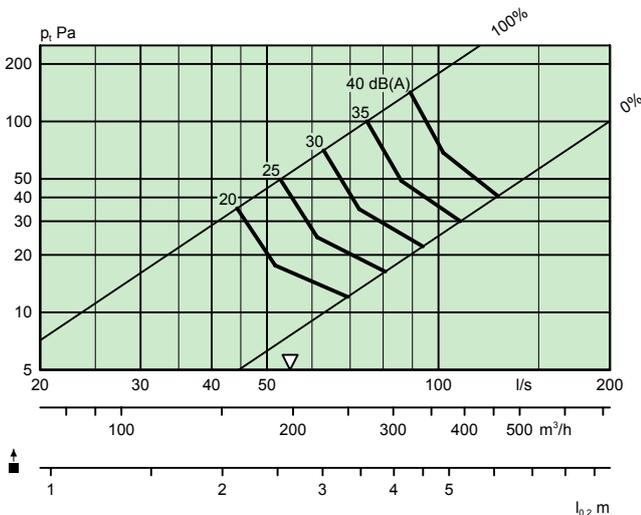
PELICAN W 400-150 + ALV 400-150-125 B/K



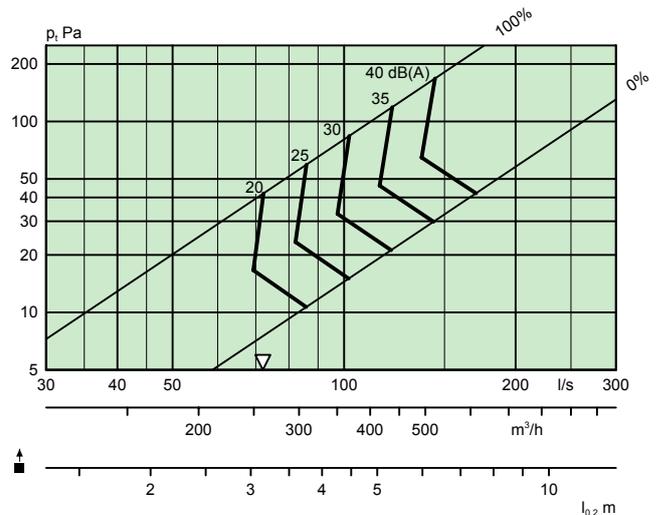
PELICAN W 400-200 + ALV 400-200-160 B/K



PELICAN W 550-250 + ALV 550-250-200 B/K



PELICAN W 550-300 + ALV 550-300-250 B/K



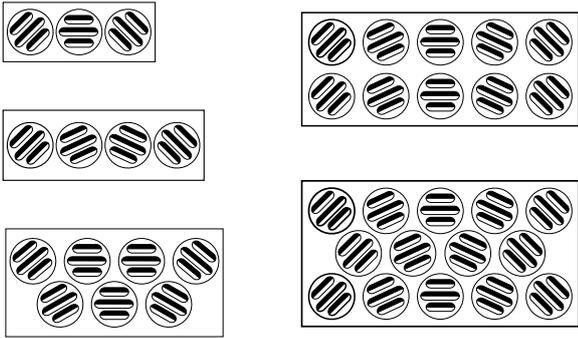


Figure 3. Air deflector settings for standard distribution pattern.

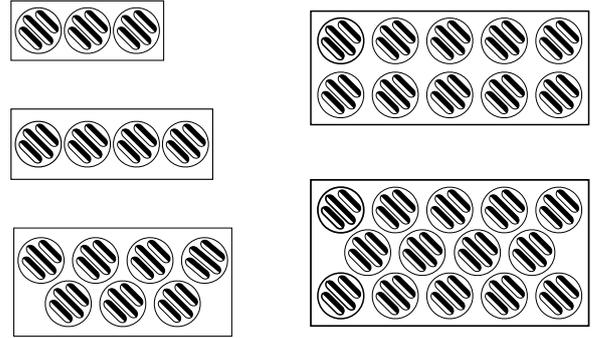


Figure 4. Air deflector settings for an alternative distribution pattern of 45° to the left.

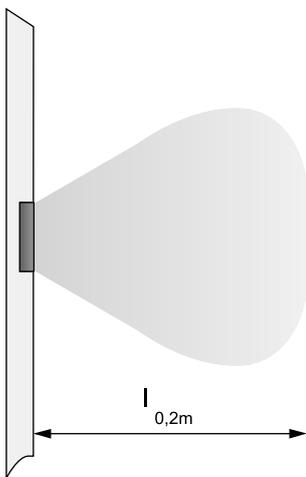


Figure 5. Isovel. Standard distribution pattern, 0°.

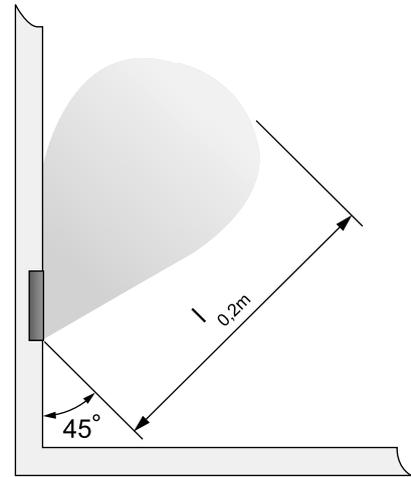


Figure 6. Isovel. Alternative distribution pattern 45° to the left.

Dimensions and weights

PELICAN W

Size	A	B	D	F	G	G2	K	L	M	I x J	Weight, kg
300x150	350	200	99	295-375	225-305	270-350	85	145-225	195-275	305x155	3.0
400x150	480	200	124	295-375	225-305	331-411	85	180-260	240-320	405x155	3.5
400x200	480	250	159	315-395	225-305	331-411	100	145-225	225-305	405x205	4.0
550x250	650	300	199	360-440	251-331	371-451	120	145-225	245-325	555x255	6.5
550x300	650	350	249	385-465	251-331	425-505	145	145-225	275-355	555x305	7.0

Size of opening = dimensions I x J

The G2, K, L and M dimensions are applicable to a commissioning box with side connection spigot.

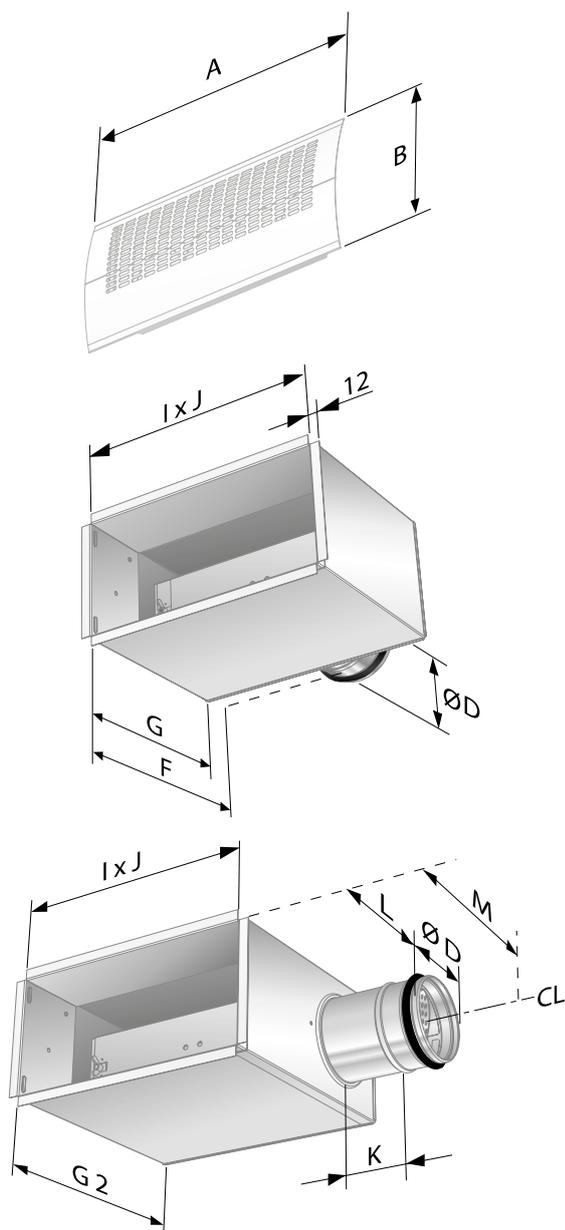


Figure 7. PELICAN W + ALV.

Order key

Product

Rectangular air diffuser for wall mounting PELICAN W a -aaa -bbb

Version:

Nom. width in mm
300, 400, 550

Nom. width in mm
150, 200, 250, 300

Standard range

Size: 300-150
 400-150
 400-200
 550-250
 550-300

Commissioning box

Commissioning box ALV e -aaa-bbb-ccc -d

Version:

For size:	ALV
300-150	300-150-100
400-150	400-150-125
400-200	400-200-160
550-250	550-250-200
550-300	550-300-250

Connection alternatives:

Rear = B
Short side = K

Specification text

Swegon's complete rectangular perforated air diffuser, type PELICAN W, for wall mounting, with type ALV commissioning box and the following functions:

- Flexible air distribution pattern
- VARIZON® type individually adjustable air distribution nozzles
- Removable commissioning damper, cord control
- Fixed measurement tapping with low error of method
- Cleanable
- Powder paint sprayed and baked white finish

Size: PELICAN Wa aaa - bbb with xx items
 ALVe aaa - bbb - ccc -d