

EAGLE Wall

Wall air diffusers with nozzles for supply air and flush mounting



QUICK FACTS

- Rotatable nozzles
- 100% flexible distribution pattern
- Cleanable
- Simple adjustment
- Used together with ALV commissioning box
- Standard colour White RAL 9003
 - 5 alternative standard colours
 - Other colours upon request

AIR FLOW - SOUND PRESSURE ROOM (Lp10A) *)							
EAGLE Wall Size	ALS Size	25 dB(A)		30 dB(A)		35 dB(A)	
		l/s	m³/h	l/s	m³/h	l/s	m³/h
300-150	300-150-100-B	15	54	20	72	33	119
400-150	400-150-125-B	24	86	29	104	42	151
400-200	400-200-160-B	37	133	46	166	60	216
550-250	550-250-200-B	52	187	70	252	85	306
550-300	550-300-250-B	90	324	105	378	120	432

The data specified in the table is applicable to 50 Pa total pressure, with commissioning box ALV with rear connection.

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

Technical description

Design

Rectangular supply air diffusers for installation in a wall. The air diffuser, which is easy to dismantle, is equipped with aerodynamically shaped nozzles that are rotatable.

Materials and surface treatment

The air diffuser face is made of sheet steel and 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.

The nozzles are made of plastic (PP-polypropylene).

Accessories

Commissioning box

ALV

Made of galvanised sheet steel and contains a removable commissioning damper, fixed measurement tapping and air distribution baffle. Available with two connection options: rear and side connection. Tightness class C on the housing according to SS-EN 12237 and VVS/AMA.

Cover plate

ALVT 1

For the aesthetic installation of the ALV commissioning box.

Planning

Each individual nozzle is rotatable through 360°. This entails a large number of alternative air distribution patterns with no change in the pressure drop or sound level. For example, scope is available for simultaneous horizontal and vertical air diffusion.

If the diffuser is placed close to an inner corner, a satisfactory distribution pattern for the room can be maintained with the aid of the nozzles. For this purpose, use the optional 45° distribution pattern.

The ALV commissioning box is well-suited for installation in 1200 mm plasterboard walls (600 mm centre to centre) and 900 mm plasterboard walls (450 mm centre to centre).

Installation

Installation and dismantling can be seen from figure 1.

1. Prepare an opening in the wall according to the dimensions specified.
2. Place the commissioning box containing the damper insert, air distribution plate and air distribution baffle in the opening.



3. Apply sealing compound between the commissioning box and the mounting frame to prevent air leakage. Insert the mounting frame into the commissioning box and secure it with screws in the short sides to the commissioning box and to the wall structure.
4. Press the diffuser face into the mounting frame.

Commissioning

Commissioning must be carried out with the diffuser face in place. Pull the measuring hose and damper adjustment cords out of the air diffuser through a nozzle. Connect a manometer to the measurement hose. The desired commissioning pressure be computed by applying the 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. Then lock the cords against the locking screw in the air distribution baffle.

The rated coefficient of performance (K-factor) is specified on the identification label of the product and in the relevant commissioning instructions at www.swegon.com.

Maintenance

Clean the air diffuser when necessary using lukewarm water with added detergent. The duct system can be accessed after opening the diffuser face by pulling it down from the upper edge, withdrawing the air distribution baffle and lowering the fully open damper.

Environment

The Building Materials Declaration is available from www.swegon.com.

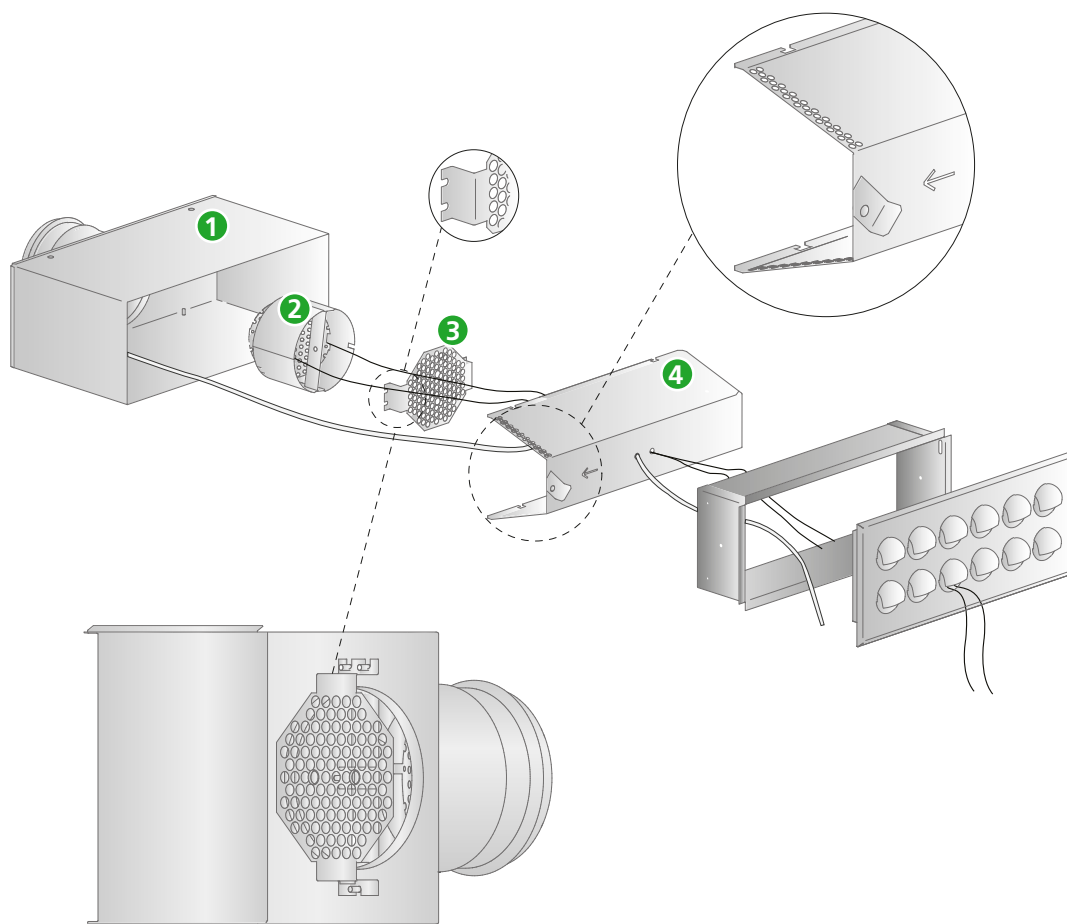


Figure 1. Installation.

1. Commissioning box.
2. Damper insert, bayonet catch.
3. Octagonal air distribution plate, enlarged image shows the locking device.
4. Air distribution baffle, enlarged image shows the locking device.
5. Mounting frame.
6. Diffuser face.

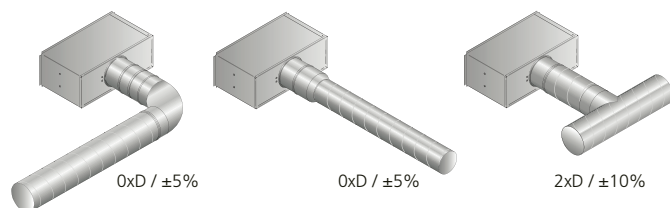


Figure 2. Installation options, applicable to all connections (B, K).

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.
- The throw, $I_{0.2}$, is measured under isothermal conditions.
- The diagrams illustrate data for the EAGLE W mounted with its top edge 200 mm from the ceiling.
- Recommended max. permissible temperature below room temp.: 12 K for standard nozzle settings.
- 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 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

EAGLE Wall + ALV – Supply Air

Sound power level, L_w (dB)

Table, K_{ok}

Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
300-150	-2	7	5	-2	0	-5	-15	-21
400-150	-1	5	5	0	-1	-6	-15	-20
400-200	1	6	6	0	0	-7	-16	-21
550-250	-3	6	6	1	-1	-7	-15	-19
550-300	0	7	4	3	-1	-9	-17	-20
Tol. \pm	2	2	2	2	2	2	2	2

Sound Attenuation ΔL (dB)

Table, ΔL

Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
300-150	20	12	8	2	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. \pm	2	2	2	2	2	2	2	2

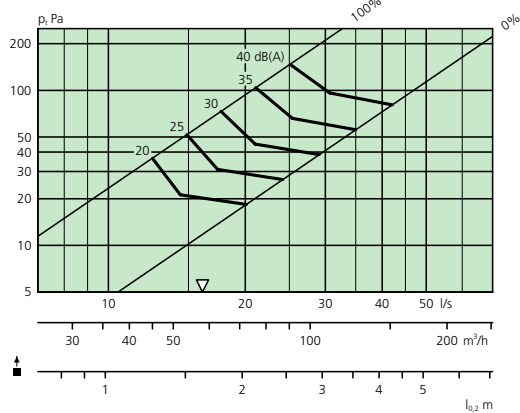
Sizing diagram

Air flow - Pressure drop - Sound level - Throw

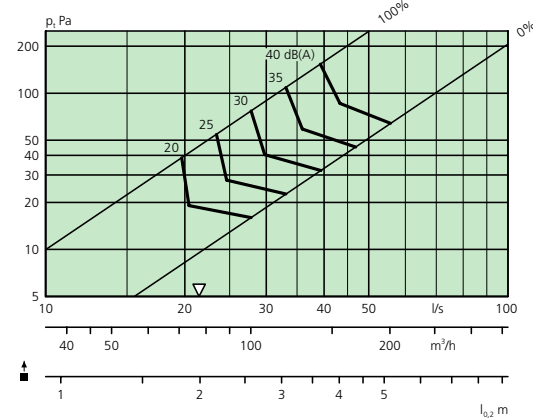
- The throw length $l_{0,2}$ is measured under isothermal discharge conditions.
- The diagrams illustrate data for EAGLE Wall mounted with its top edge 200 mm from the ceiling.
- The recommended max. permissible temperature below room temperature is 12 K at default nozzle setting.
- To calculate the air stream diffusion, air velocities in the occupied zone or sound levels in rooms with other dimensions, please refer to our calculation software available on www.swegon.com.
- 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.
- Nozzle setting for long throw length: lengthen the $l_{0,2}$ factor; $1.8 \times l_{0,2}$. See figure: Nozzle settings.

Supply air - Air diffuser with commissioning box

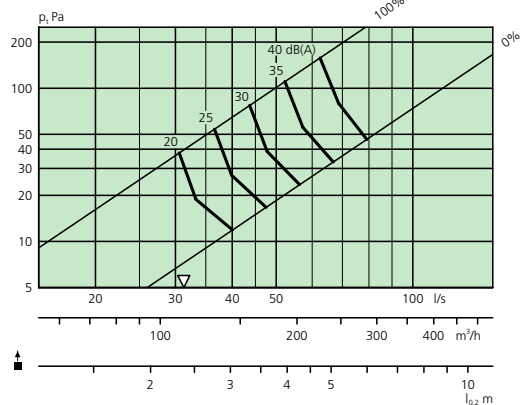
EAGLE Wall 300-150 + ALV 300-150-100-B/K



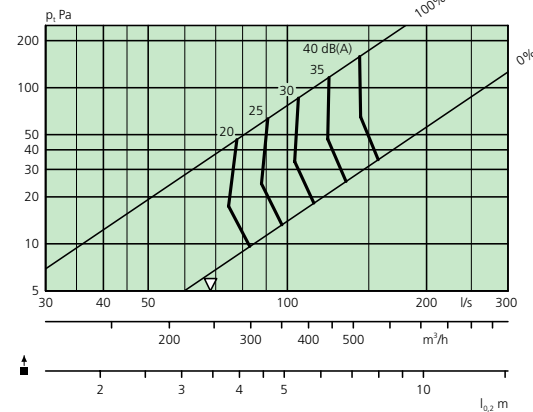
EAGLE Wall 400-150 + ALV 400-150-125-B/K



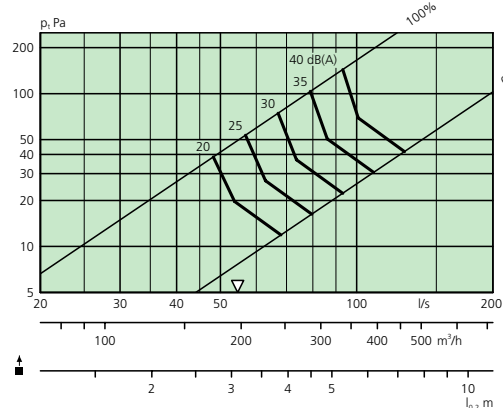
EAGLE Wall 400-200 + ALV 400-200-160-B/K



EAGLE Wall 550-300 + ALV 550-300-250-B/K



EAGLE Wall 550-250 + ALV 550-250-200-B/K



Dimensions and weight

EAGLE Wall and commissioning box ALV - rear connection

Size	Dimensions (mm)							Weight, diffuser (kg)	Weight, diffuser incl. ALV (kg)
	A	B	ØD	F	G	K	I x J		
300-150	330	180	99	295-375	225-305	70	305 x 155	0,7	3,1
400-150	430	180	124	295-375	225-305	70	405 x 155	0,9	3,9
400-200	430	230	159	315-395	225-305	90	405 x 205	1,0	4,5
550-250	580	280	199	360-440	251-331	110	555 x 255	1,5	6,5
550-300	580	330	249	385-465	251-331	134	555 x 305	1,6	7,5

Size of opening = I x J

CL = Centre line

EAGLE Wall and commissioning box ALV - short side connection

Size	Dimensions (mm)								Weight, diffuser (kg)	Weight, diffuser incl. ALV (kg)
	A	B	ØD	G2	K	L	M	I x J		
300-150	330	180	99	270-350	77	145-225	195-275	305 x 155	0,7	3,3
400-150	430	180	124	331-411	77	180-260	240-320	405 x 155	0,9	4,4
400-200	430	230	159	331-411	95	145-225	225-305	405 x 205	1,0	5,0
550-250	580	280	199	371-451	114	145-225	245-325	555 x 255	1,5	7,4
550-300	580	330	249	425-505	138	145-225	275-355	555 x 305	1,6	8,7

Size of opening = I x J

CL = Centre line

ALVT 1

Size	Dimensions (mm)		
	A	B	N
300-150	330	180	230
400-150	430	180	230
400-200	430	230	230
550-250	580	280	255
550-300	580	330	255

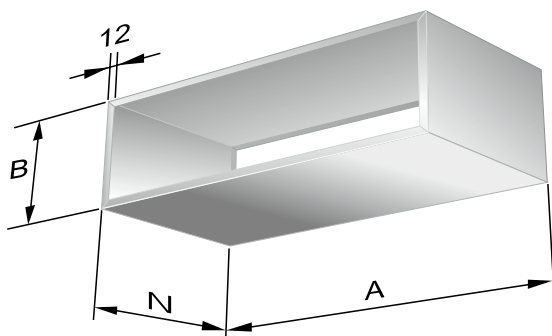


Figure 3. Cover plate ALVT 1.

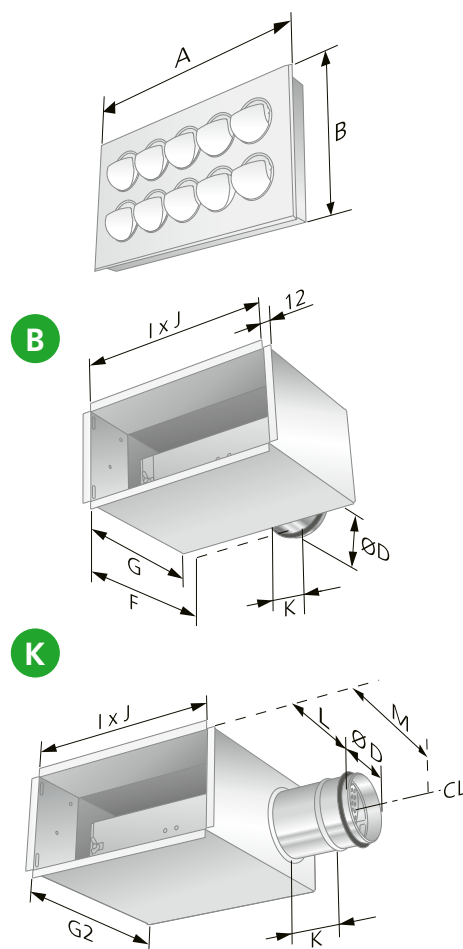


Figure 4. Dimensions, COLIBRI Wall and commissioning box ALV.

B = Rear connection.

K = Connection on short side.

CL = Centre line.

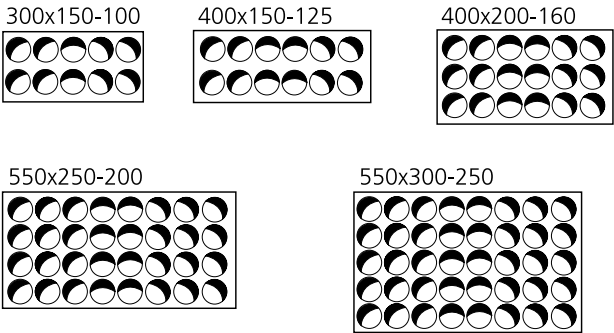


Figure 5. Standard nozzle pattern, short throw length.

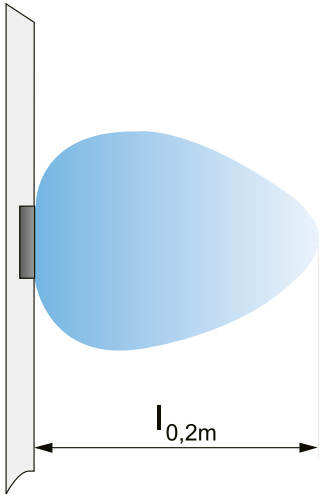


Figure 7. Isovel. Standard distribution pattern, short throw length).

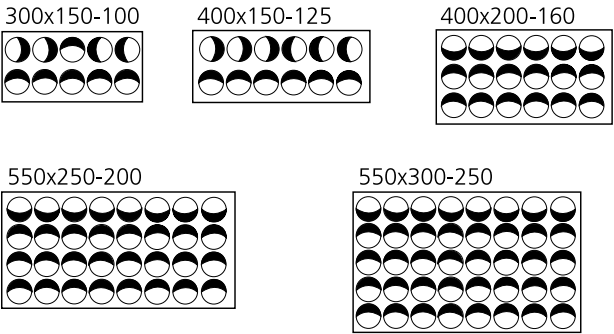


Figure 6. Nozzle pattern, long throw length.

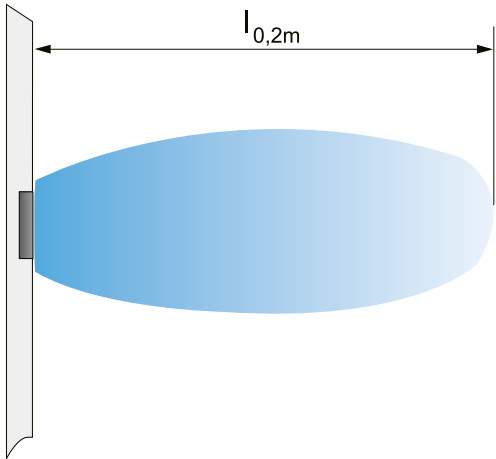


Figure 8. Isovel. Distribution pattern, long throw length.

Order key

Product

Rectangular wall diffuser
with nozzles

EAGLE W c aaa -bbb

Version

Nom. Width in mm:
300, 400, 550

Nom. height in mm:
150, 200, 250, 300

Standard range

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

Accessories

ALV

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:

B = Rear
K = Short side

Cover plate

Cover plate ALVT 1 e aaa-bbb -d

Version:

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

Connection alternatives:

B = Rear
K = Short side

Specification example

Swegon's complete rectangular type EAGLE W nozzle air diffusers for wall mounting with type ALV commissioning box and the following functions:

- 100% flexible distribution pattern
- Individually adjustable nozzles
- Powder paint sprayed and baked white finish
- Cleanable ALV commissioning box with removable adjustment damper, measuring method with low systematic error.

Size: EAGLE Wc aaa-bbb with xx items
ALVe aaa-bbb-ccc-d

Accessories:

Cover plate: ALVT 1e aaa-bbb-d xx items