EIV

Circular single deflection grille for walls

QUICK FACTS

- Can be used with multi-function commissioning box ALS
- Adjustable deflectors
- Simple installation
- Cleanable
- Standard colour White RAL 9003
  - 5 alternative standard colours
  - Other colours upon request

AIR FLOW - SOUND PRESSURE ROOM (Lp10A) *)							
EIV Size		25 dB(A)		30 dB(A)		35 dB(A)	
		l/s	m³/h	l/s	m³/h	l/s	m³/h
100		36	130	43	155	50	180
125		53	191	61	220	72	259
160		53	191	61	220	72	259
EIV Size	ALS Size	25 dB(A)		30 dB(A)		35 dB(A)	
		l/s	m³/h	l/s	m³/h	l/s	m³/h
100	80-100	18	65	30	108	35	126
125	100-125	27	97	36	130	46	166
160	125-160	38	137	48	173	62	223

Data is valid for EIV in combination with ALS commissioning box, at a total pressure drop of 50 Pa.

**) L_{p10A} = Sound pressure incl. A-filter with 4 dB room attenuation and 10 m^2 room absorption area.*

Swegon

Technical description

Design

Circular grille consisting of three parts. Base plate, deflector core and face section. The base plate has a connection nipple with rubber seal. The deflector core is fixed in the base plate and has adjustable deflectors. The face section is placed over the bar core and base plate.

Materials and surface treatment

All parts of the grille is manufactured in sheet steel and are internally and externally 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.

Accessories

Commissioning box:
ALS. Manufactured in galvanized sheet steel. Contains removable commissioning damper, fixed measurement unit and acoustic lining with reinforced surface layer, to Fire Resistance Class B-s1,d0 according to EN ISO 11925-2. Tightness class C on the housing according to SS-EN 12237.

Installation

Hole making size is stated under the section dimension and weight. The face section is removed and the base plate is fixed to the wall or connecting duct using screws. The base plate position is adjusted before fixation for horizontal or vertical spread pattern. When the commissioning box ALS is used, the connection branch between ALS and EIV can be extended using normal circular ducting up to 500 mm long without having to extend the measuring tube or damper cords. See figure 1.

Commissioning with ALS

Commissioning must take place with the face section mounted in place. The measurement tubes and damper cords are pulled out through the grille. The damper setting is lockable. See figure 1.

Measurement accuracy and requirement on straight duct before the commisioning box, see Figure 1. The requirements of straigh duct depends on the type of disturbance before the commissioning box. Figure 1 shows a bend, a dimensional change and a T-piece. Other types of disturbances requires at least 2xD straight (D = connection dimension) for measurement accuracy of ± 10% of the flow.

The K factor is shown on the product label. The K-factor can also be found in the relevant K factor guide. This is available on our www.swegon.com.

Maintenance

The grille is cleaned when necessary using lukewarm water with detergent added. Access to the duct system is possible without using tools. The front section is removed and the bar core is pulled out. If the commissioning box ALS is used, the distribution plate is lowered out of the way and the damper unit twisted out of its mounting by a simple hand movement.

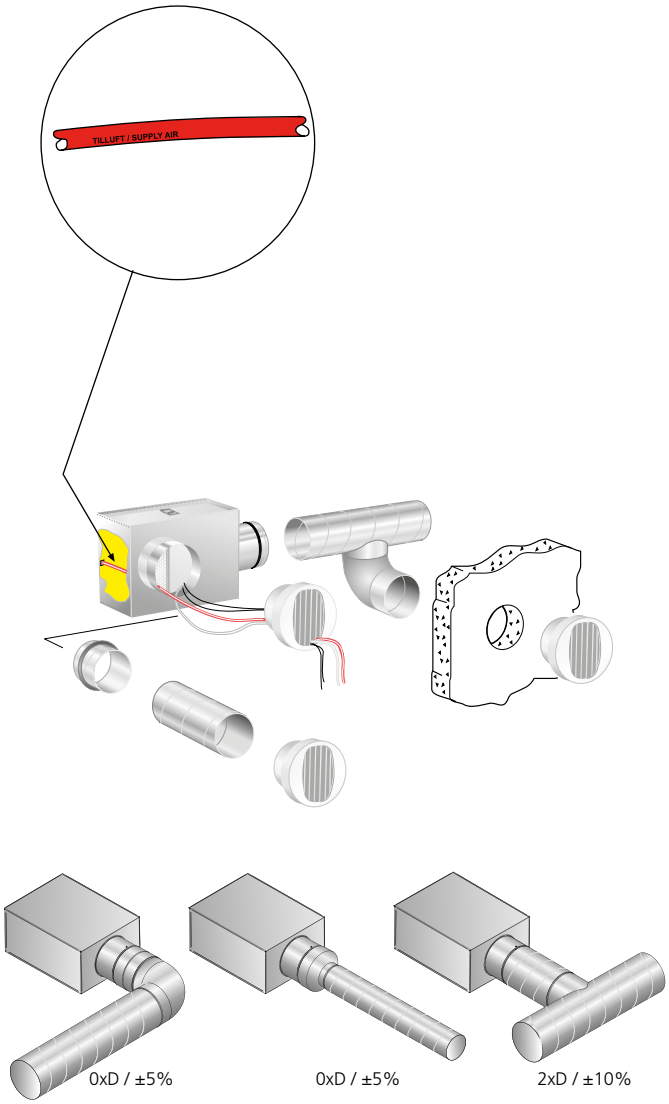


Figure 1. Installation. Commissioning.

Sizing

- Sound pressure level dB(A) applies to rooms with 10 m^2 equivalent sound absorption area.
- Sound attenuation (ΔL) below is shown in the octave band. Orifice attenuation is included in the values.
- Throw length $l_{0.2}$ is measured with isothermal supply air.
- Recommended maximum under temperature 8 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 - EIV - Supply air

Sound attenuation ΔL (dB)
Table ΔL

Size	Mid-frequency (octave band) Hz							
EIV	63	125	250	500	1000	2000	4000	8000
100	-8	-1	-1	-1	0	-3	-17	-19
125	-3	-3	-1	0	-1	-2	-19	-21
160	-8	-8	4	3	-2	-6	-15	-20
Size	Mid-frequency (octave band) Hz							
EIV + ALS	63	125	250	500	1000	2000	4000	8000
100	0	14	8	-1	-4	-10	-15	-21
125	19	19	9	-1	-5	-8	-19	-23
160	19	19	10	-3	-7	-11	-22	-23
Tol. ±	2	2	2	2	2	2	2	2

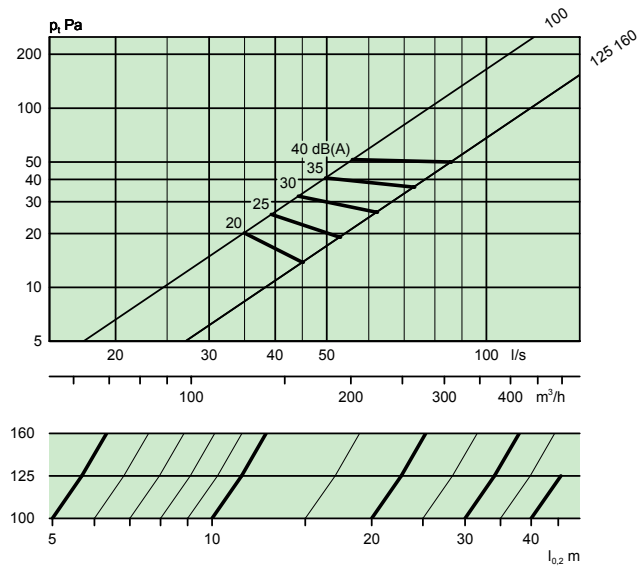
Sound power level L_w (dB)
Table K_{OK}

Size	Mid-frequency (octave band) Hz							
EIV	63	125	250	500	1000	2000	4000	8000
100	25	19	12	6	2	4	1	1
125	20	16	12	7	2	2	2	2
160	18	14	10	5	1	2	1	1
Size	Mid-frequency (octave band) Hz							
EIV + ALS	63	125	250	500	1000	2000	4000	8000
100	22	14	13	16	26	16	10	11
125	2	16	9	17	23	16	11	13
160	18	14	10	17	19	12	10	12
Tol. ±	2	2	2	2	2	2	2	2

Engineering graphs - EIV - Supply air
Air flow - Pressure drop - Sound level - Throw

- The graph is valid for the EIV placed in a wall, 200 mm below the ceiling with the deflectors in horizontal position and with a throw parallel with the ceiling.
- When the deflectors are set to a 30° angle of throw the length of throw is reduced by 50%.
- The graphs must not be used for commissioning.
- The dB(A) values are for rooms with normal acoustic absorption of 4 dB.
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.

EIV 100, 125, 160

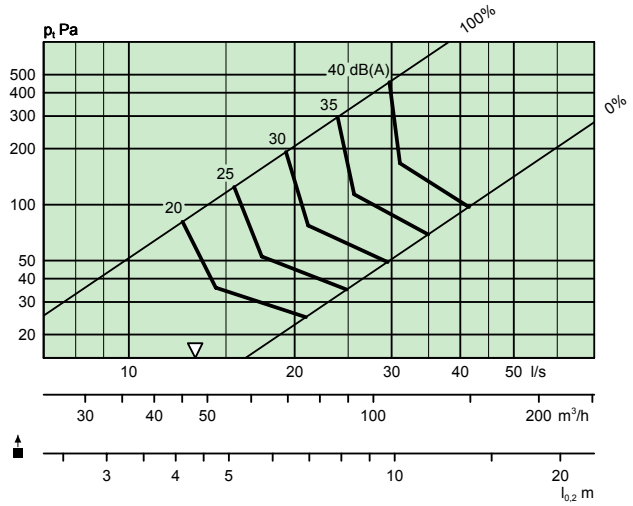


Engineering graphs - EIV with ALS - Supply air

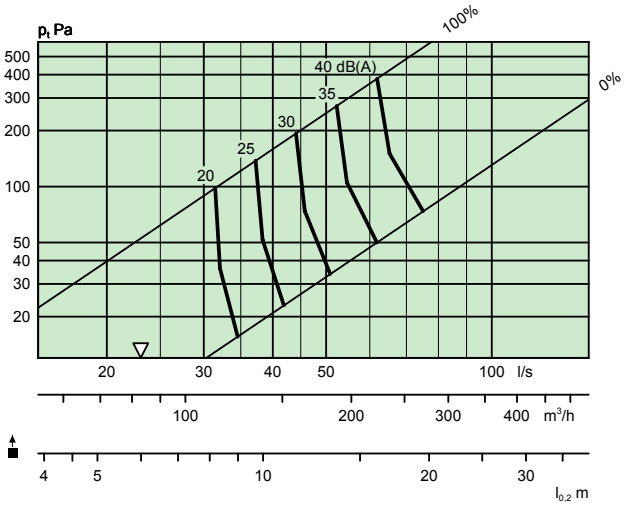
Air flow - Pressure drop - Sound level - Throw

- The graphs must not be used for commissioning.
- ∇ = Min. flow 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 higher than the dB(A) value.

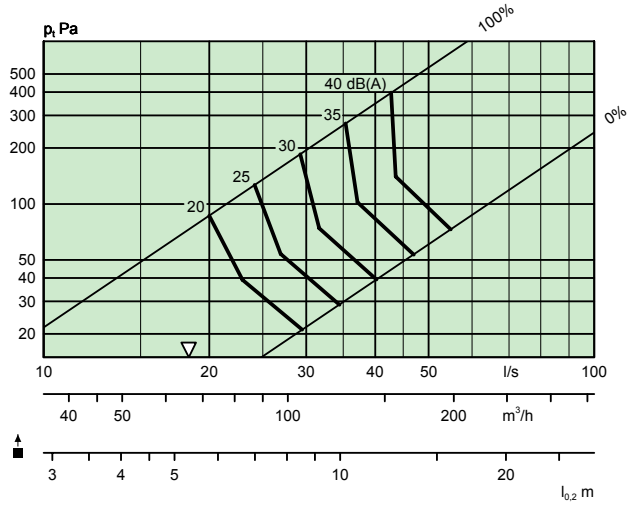
EIV 100 + ALS 80-100



EIV 125 + ALS 100-125



EIV 160 + ALS 125-160



Dimensions and weights

EIV

Size	ØD	Hole making size Ø mm
100	99	105
125	124	130
160	159	165

EIV with ALS

Size	B	C	ØD	Ød	F
100	227	192	79	100	120
125	282	217	99	125	140
160	342	252	124	160	164

Size	G	H	K	Weight, kg
100	90	200	50	1.6
125	100	277	80	2.7
160	112	320	80	3.7

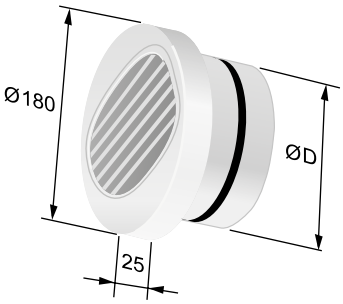


Figure 2. EIV.

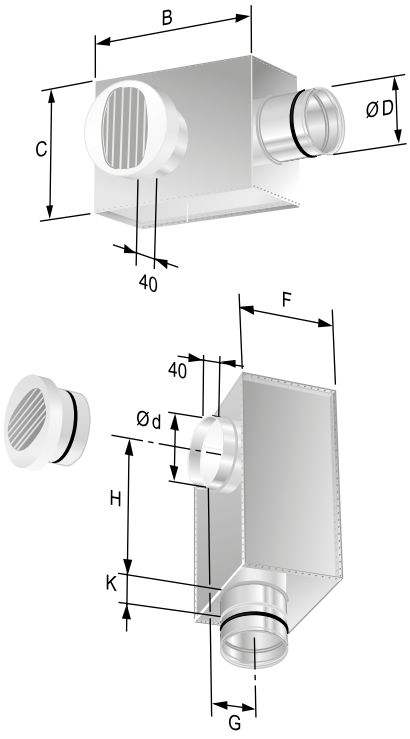


Figure 3. EIV with ALS.

Ordering key

Product

Circular single deflection grille	EIV	a	-aaa
Version:			
Size: 100, 125, 160			

Accessories

Commissioning box			ALS	d	-aaa - bbb
Version:					
For EIV	100	ALS	80-100		
	125		100-125		
	160		125-160		

Specification example

Swegons circular single deflection grille for wall type EIV, with commissioning box ALS and the following functions:

- Adjustable deflectors
- Powder coated in white, RAL 9003/NCS S 0500-N
- Cleanable commissioning box ALS with removable commissioning damper including a lockable adjustment, measurement function with low method error, and internal acoustic attenuation with reinforced surface layer

Size: EIVa aaa with ALSd aaa-bbb xx items