

KITE Free

Circular ceiling diffuser for suspended mounting



QUICK FACTS

- Designed for installation in rooms without suspended ceiling.
- Low installation height.
- Spread pattern that can be blanked off with the accessory SECTOR.
- Smooth, unperforated front.
- Fixed lateral slot.
- If necessary, the air distribution plate can be dismantled for extract air systems, rectified easily in connection with installation/commissioning.
- Removable damper.
- Cleanable.
- Fast and simple installation and commissioning with the spring loaded Quick Access front.
- Standard colour White RAL 9003.
 - 5 alternative standard colours.
 - Other colours upon request.

KITE Free 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	53	191	64	230	76	274
160	74	266	88	317	105	378
200	105	378	128	461	156	562
250	136	490	162	583	193	695
315	181	652	216	778	258	929

Data presented for an open damper. The product's full working area in terms of pressure, flow and sound are evident from the sizing diagrams.

**) Lp10A = Sound pressure incl. A-filter with 4 dB room attenuation and 10 m² room absorption area*

Technical description

Version

The supply air diffuser consists of a circular commissioning box and a removable diffuser face. The diffuser face has a fixed slot height. The commissioning box contains a removable commissioning damper, fixed measurement tapping and sound absorbent insulation covered by a reinforced surface layer, rated to Fire resistance class B-s1, d0 conforming to EN ISO 11925-2.

Materials and surface layer treatment

The commissioning box is made of galvanised sheet steel, the face plate of sheet steel.

The entire diffuser is powder-coated.

- 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

Blanking plate

SECTOR KITE F

For blanking off a sector of the air distribution pattern (3-way).

Planning and design

Diffuser face with fixed slot height. The measurement method for the supply air diffuser is in accordance with the differential pressure method of measurement in the inlet air branch. This requires a length of straight duct upstream of the ceiling diffuser's measurement unit, as in table 1, so as not to exceed the specified measurement inaccuracy.

The measurement tapping for supply air is located in the duct connection of the air diffuser whereas the measurement tapping for extract air is located inside the commissioning box.

Assembly

The air diffuser is normally suspended from the ceiling. An M8 pop nut, i.e. a threaded grommet that facilitates installation, is provided at the top and in the centre of the air diffuser. On sizes 315 and 400, there are two M8 pop nuts for more stable mounting, see figure 1a.

Alternative installation in pre-punched Ø10 mm hole, see figure 1b.

Refer to the separate Installation-Commissioning-Maintenance document for detailed installation instructions.



Commissioning

Commissioning should be carried out with the diffuser face mounted. Pull the measuring tubes and damper adjustment cords out of the air diffuser through the slot.

The K-factor is specified on the product's identification label, as well as in the relevant commissioning instructions at www.swegon.com.

Maintenance

- The air diffuser can be cleaned, if necessary, using lukewarm water with dishwashing detergent.
- The duct system can be accessed by lightly pulling the spring-loaded diffuser face downwards and then tilting, see figure 2.
- Dismantle the perforated air distribution plate located on the inlet as shown in figure 3. Use in extract air version: If necessary, the perforated air distribution plate can be dismantled, performed in connection with installation or commissioning.
- Loosen the damper in the inlet from its bayonet fastening by rotating to the side.

Environment

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

Table 1

Type of obstruction upstream of KITE F	Straight section before KITE F	
	m ₂ = 5%	m ₂ = 10%
One 90° bend.	3 x Ød	2 x Ød
Two 90°bends in the same plane.	4 x Ød	2 x Ød
Two 90° bends in alignment at right angles to one another.	4 x Ød	2 x Ød
One 45° damper	6 x Ød	3 x Ød
One T-piece	4 x Ød	3 x Ød

m₂ = Error of method according to NVG's Report T32:1982

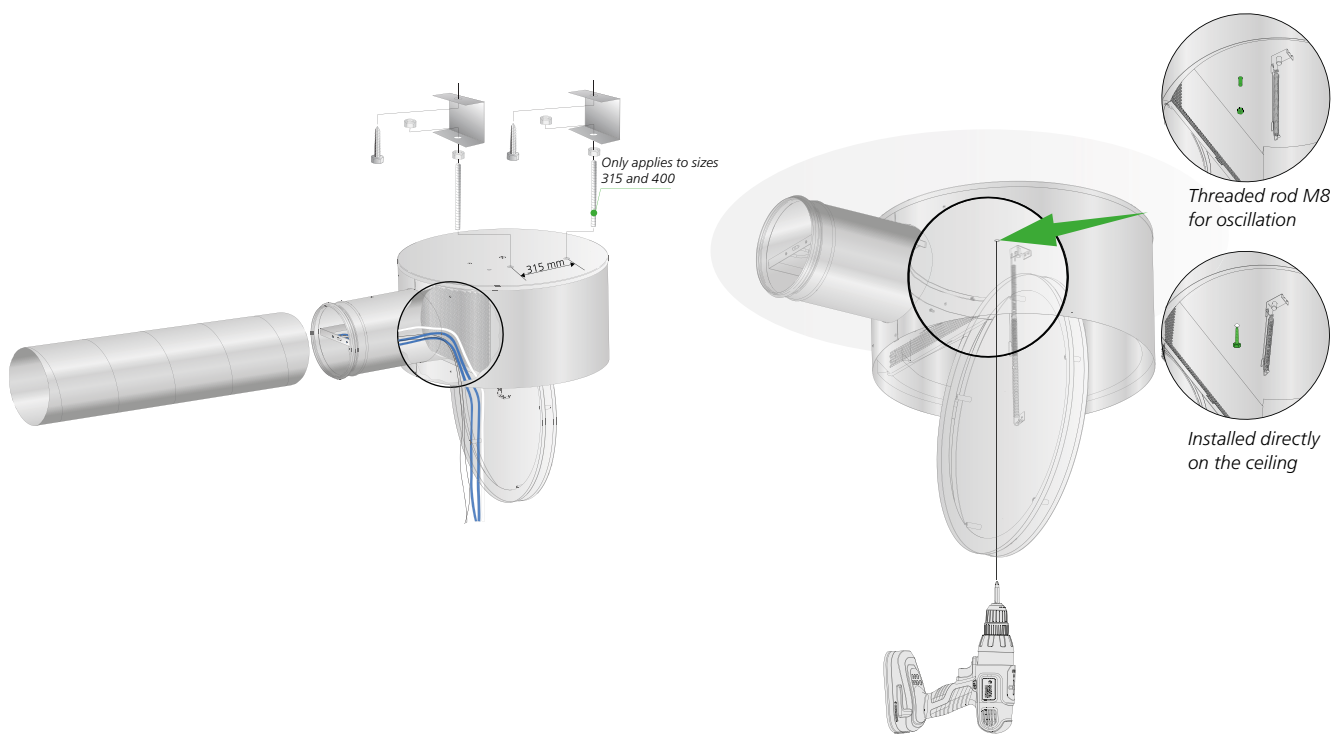


Figure 1a. Installation.

Figure 1b. Alternative installation in pre-punched Ø10 mm hole.

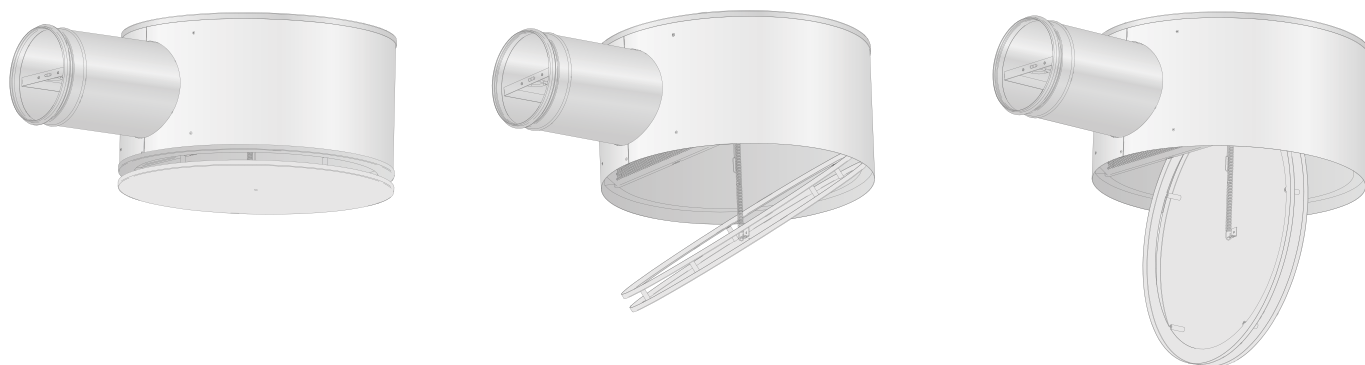


Figure 2. Spring-loaded front.

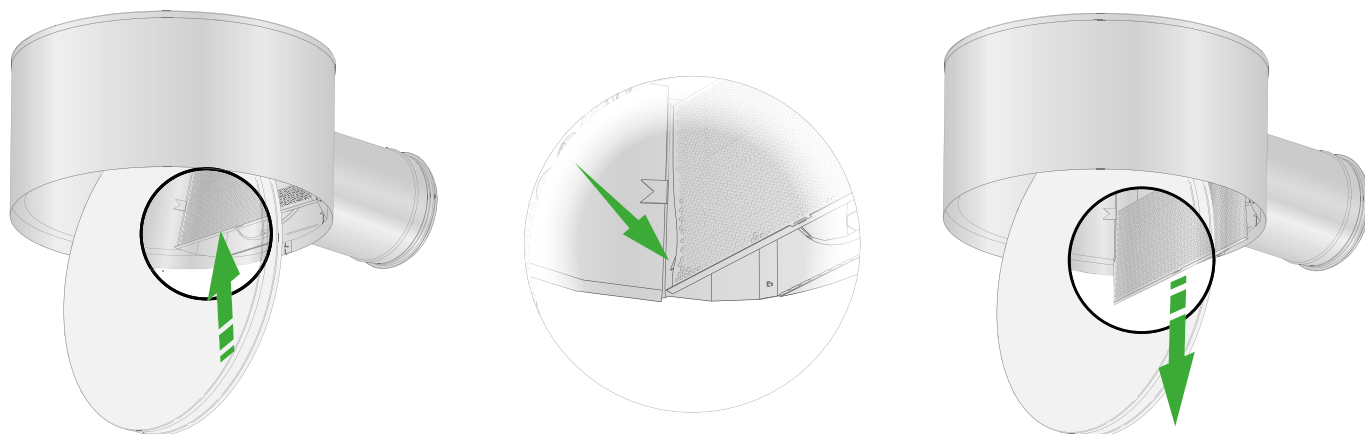



Figure 3. Dismantling the perforated air distribution plate.

Note: If necessary, the perforated air distribution plate can be dismantled for the extract air version.

 The use of gloves is recommended, as there is a risk of cuts to the hands/fingers

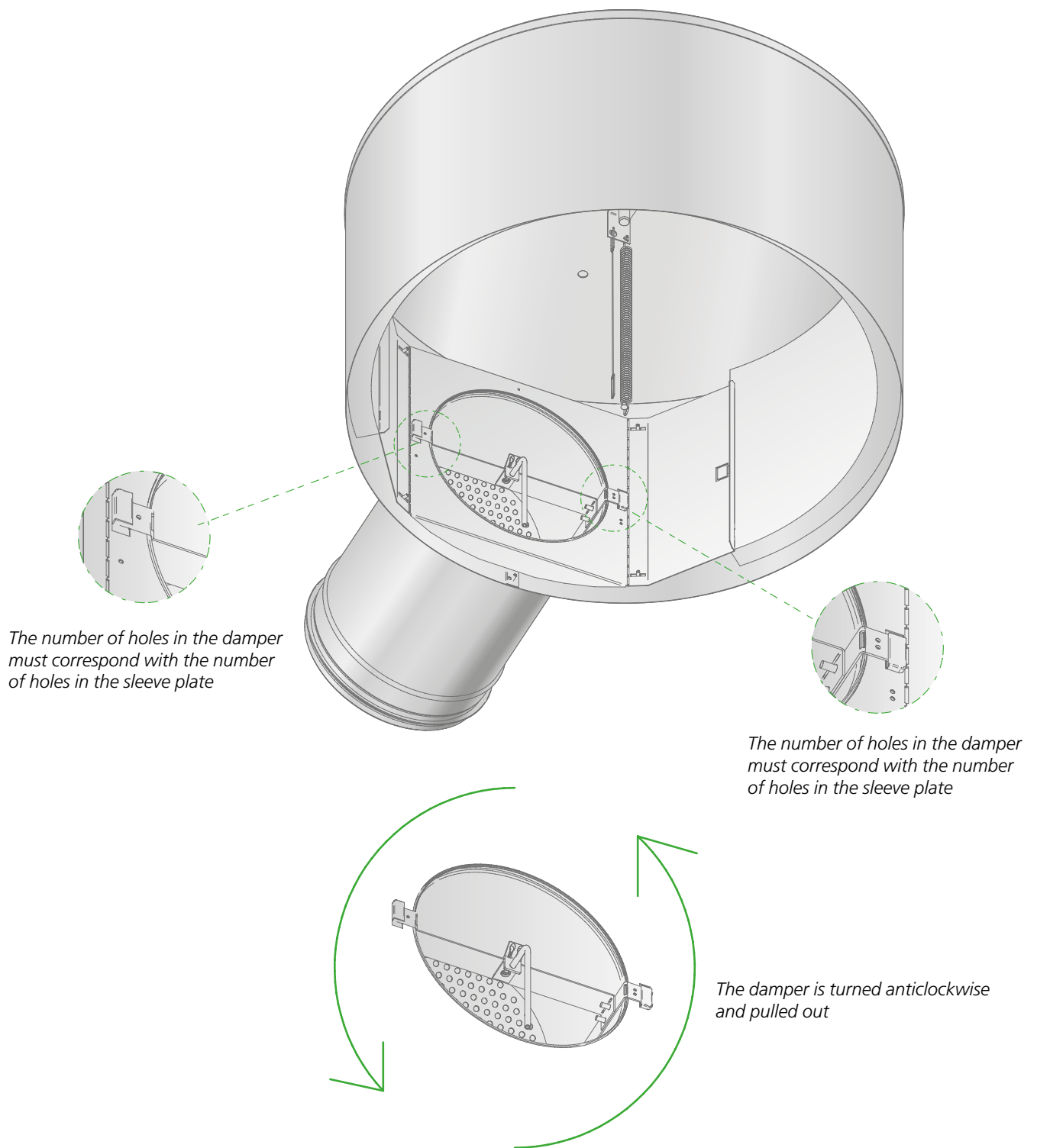



Figure 4. Damper installation and dismantling.

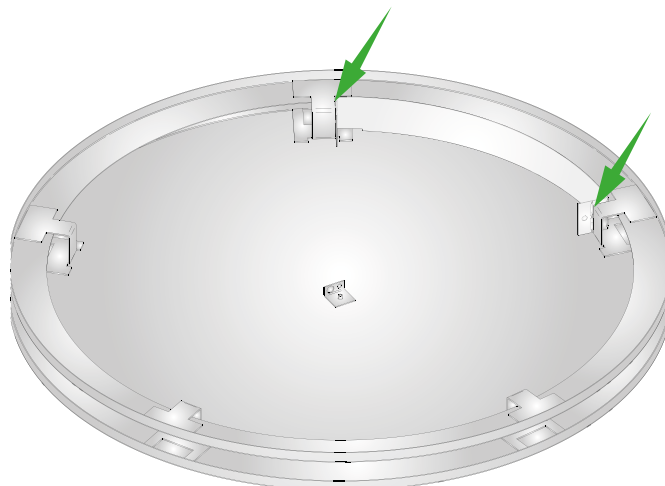
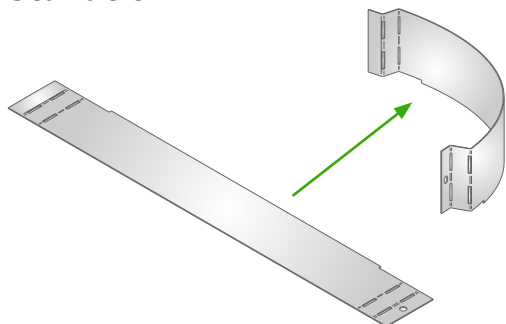
 The use of gloves is recommended, as there is a risk of cuts to the hands/fingers

Blanking off the air distribution pattern

Note: A maximum of 1 blanking plate may be used.

To calculate the air stream diffusion, air velocities in the occupied zone or sound levels in rooms where blanking off is performed, please refer to our calculation software available on www.swegon.com.

Installation



Figur 5. Installation of blanking plate.

Sizes

Size
125
160
200
250
315

Air distribution pattern with blanking plate installed

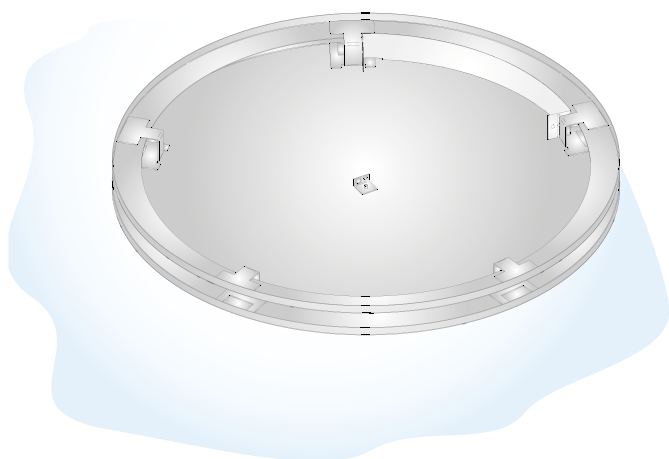


Figure 6. 3-way.
Blanking plate installed on optional side of the air diffuser.



The use of gloves is recommended, as there is a risk of cuts to the hands/fingers

Sizing

- Sound pressure level dB(A) applies to rooms with an equivalent sound absorption area of 10 m².
- Sound attenuation (ΔL) below is shown in the octave band. Orifice attenuation is included in the values.
- The throw length $l_{0.2}$ is measured under isothermal discharge conditions.
- The recommended max. permissible temperature below room temperature is 10 K.
- All technical data applies for the following slot openings:
20 mm for sizes 125, 160 and 200.
30 mm for sizes 250 and 315.
- For diagram and acoustic data with blanking plate, refer to our calculation programs.
- 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.

L_w = Sound power level

L_{p10A} = Sound pressure level dB (A)

K_{ok} = Correction for producing the L_w values in the octave band

$L_w = L_{p10A} + K_{ok}$ gives the frequency divided octave band

Acoustic data

KITE F – Supply air

Sound power level L_w (dB)

Table K_{ok}

Size KITE F	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
125	-3	11	8	-3	-5	-4	-9	-17
160	-1	13	5	-3	-5	-7	-11	-17
200	-1	14	3	-3	-6	-10	-15	-19
250	6	15	4	-3	-6	-10	-15	-19
315	11	15	4	-3	-6	-10	-16	-21
Tot ±	2	2	2	2	2	2	2	2

Sound attenuation ΔL(dB)

Table ΔL

Size KITE F	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
125	25	14	10	14	12	9	8	12
160	21	13	11	12	10	8	9	11
200	18	12	11	11	8	7	8	12
250	18	10	10	10	6	6	9	11
315	15	7	7	8	6	6	8	11
Tot ±	2	2	2	2	2	2	2	2

KITE F – Extract air

Sound power level L_w (dB)

Table K_{ok}

Size KITE F	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
125	-10	10	7	-1	-6	-5	-11	-17
160	-6	12	3	-2	-4	-6	-11	-17
200	-5	12	0	-1	-4	-6	-10	-18
250	-2	13	2	0	-3	-7	-13	-18
315	3	12	6	-1	-6	-10	-16	-20
Tot ±	2	2	2	2	2	2	2	2

Sound attenuation ΔL(dB)

Table ΔL

Size KITE F	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
125	25	14	10	14	12	9	8	12
160	21	13	11	12	10	8	9	11
200	18	12	11	11	8	7	8	12
250	18	10	10	10	6	6	9	11
315	15	7	7	8	6	6	8	11
Tot ±	2	2	2	2	2	2	2	2

Sizing diagram

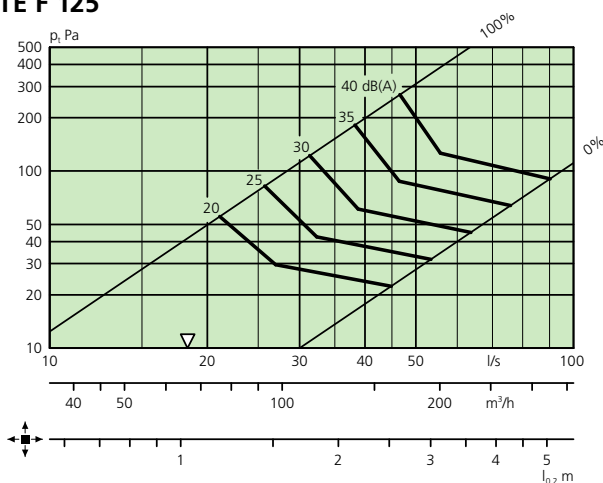
- The throw length $l_{0,2}$ is measured under isothermal discharge conditions.
- The recommended max. permissible temperature below room temperature is 10 K.
- All sizing data applies for the following slot openings:
20 mm for sizes 125, 160 and 200.
30 mm for sizes 250 and 315.
- All sizing data applies for 360° distribution pattern.
- For diagrams with blanking plate, refer to our calculation programs.
- 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.

KITE F – Supply air

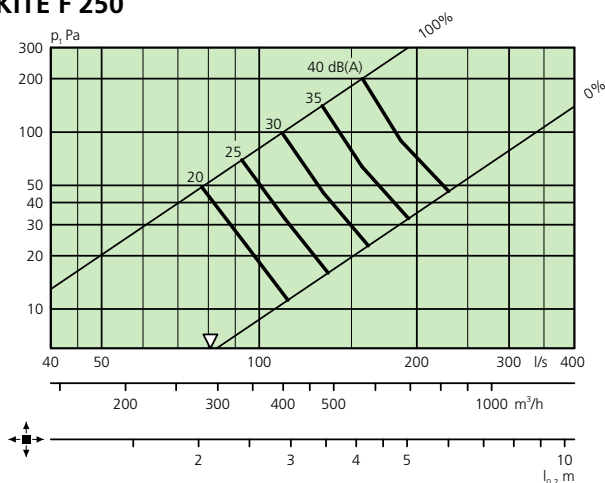
Air flow – Pressure drop – Sound level – Throw length

- The diagrams should not be used for commissioning.
- ∇ = Min. airflow required for obtaining sufficient commissioning pressure.
- The dB(A) values apply to rooms with normal acoustic absorption, 4 dB room attenuation/10 m² equivalent room absorption area.
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.

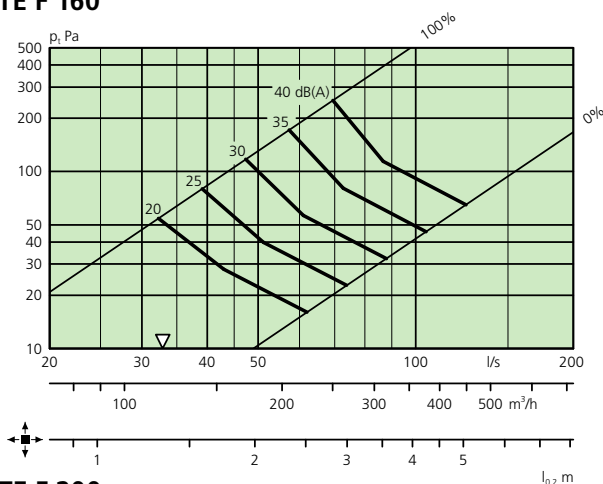
KITE F 125



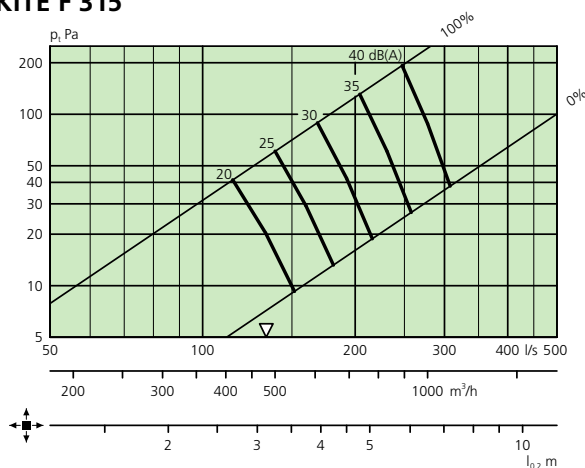
KITE F 250



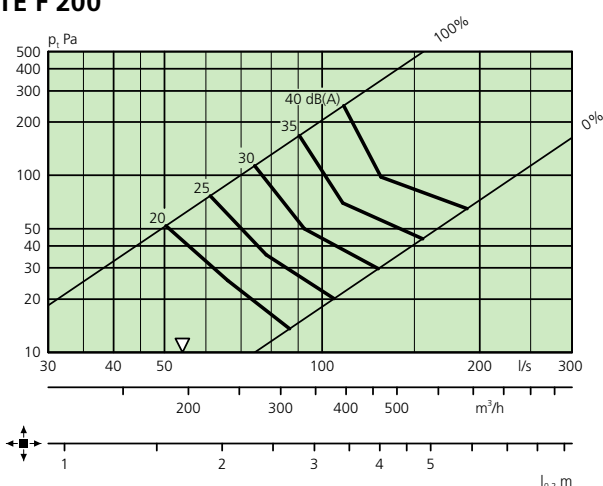
KITE F 160



KITE F 315



KITE F 200

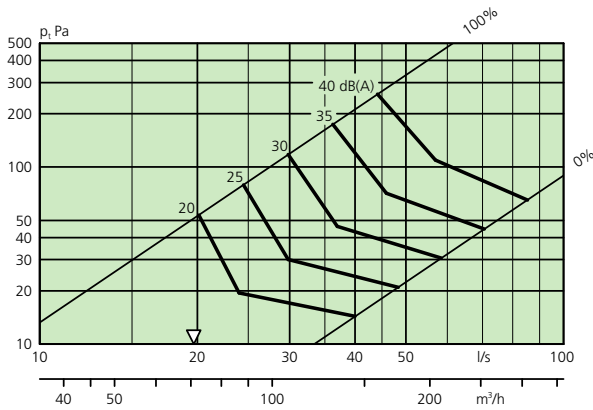


KITE F – Extract air

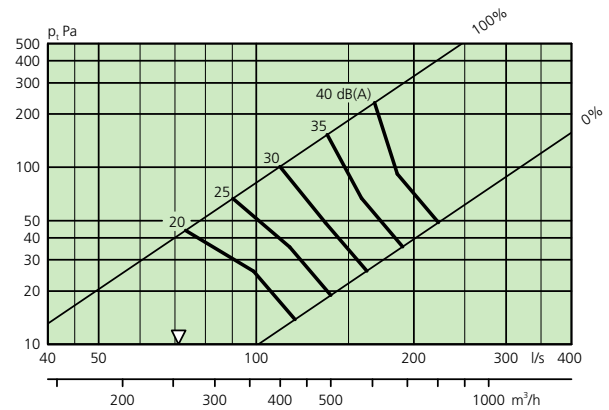
Air flow – Pressure drop – Sound level

- The diagrams should not be used for commissioning.
- ∇ = Min. airflow required for obtaining sufficient commissioning pressure.
- The dB(A) values apply to rooms with normal acoustic absorption, 4 dB room attenuation/10 m² equivalent room absorption area.
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.
- In the extract air version, the air distribution plate can be dismantled to reduce blockage. K-factor and sound are not affected.

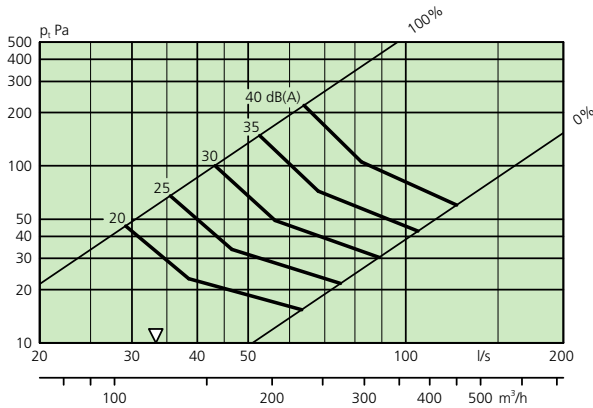
KITE F 125



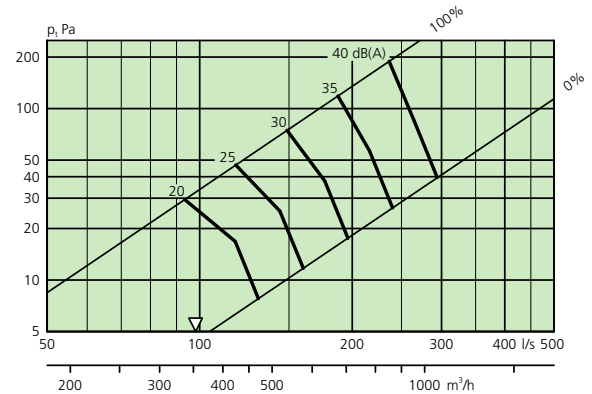
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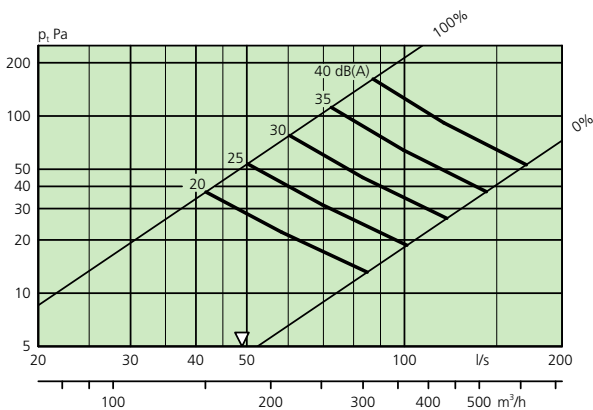
KITE F 160



KITE F 315



KITE F 200



Dimensions and weight Specification

KITE F

Size	ØA	B	C	ØD	E	F	Weight (kg)
125	380	215	210	124	108	30	4,5
160	456	250	220	159	126	30	5,7
200	568	285	230	199	144	30	8,5
250	568	335	275	249	169	40	9,7
315	700	385	330	314	194	40	14,1

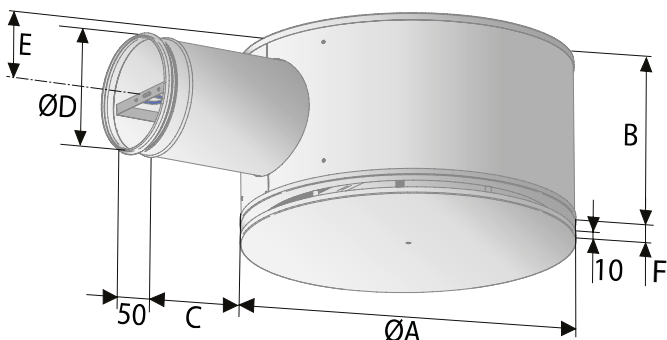


Figure 7. KITE F.

Product

Circular ceiling diffuser KITE F a -bbb

Version:

Nom. connection dimension, mm:

Standard range:

Size
125
160
200
250
315

Accessory

Blanking plate SECTOR KITE F aaa

Size:
125, 160, 200, 250, 315

Specification text

Swegon's complete circular slot air diffuser type KITE Free for visible installation in ceilings with the following functions:

- Complete round painted unit.
- Removable commissioning damper with lockable setting.
- Measurement function with low error of method.
- Interior sound absorbing lining with reinforced surface layer.
- Potential to change air distribution pattern with the accessory SECTOR.
- The perforated air distribution plate can be dismantled for the extract air version.
- Cleanable.
- Powder-painted and baked white finish, RAL 9003/NCS S 0500-N.

Size: KITE Fa - bbb xx pcs

Accessory: SECTOR KITE F aaa xx pcs