

LOCKZONE Free

Circular air diffuser for supply air in rooms with visible duct work



QUICK FACTS

- Guide vane perforation
- Designed for rooms without suspended ceilings
- Short throw lengths
- Low installation height
- Removable damper
- Cleanable
- Standard colour White RAL 9003
 - 5 alternative standard colours
 - Other colours upon request

AIR FLOW - SOUND PRESSURE ROOM (L_{p10A} *)						
LOCKZONE Free 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
125	29	104	37	133	59	212
160	40	144	52	187	70	252
200	70	252	86	310	110	396
250	96	288	115	414	145	522
315	165	594	180	648	230	828

Data are valid for a total pressure drop of 50 Pa.

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

Technical description

Design

LOCKZONE F is a circular single-cone terminal for supply air. The terminal consists of two parts: a circular commissioning box containing a fixed measurement unit, a removable damper, and a removable diffuser face fixed measurement unit and acoustic lining with a reinforced surface layer, to Fire Resistance Class B-s1,d0 according to EN ISO 11925-2. The terminal is designed for flow-through functioning, with two duct connections and be called LOCKZONE F 2. See Figure 2.



Materials and surface treatment

The commissioning box is manufactured in galvanized sheet steel. The diffuser face is made in sheet steel.

The entire terminal 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.

Planning

LOCKZONE F is also available in a variant with two duct connections. This can be used when two terminal units are installed in the same duct branch. 1 x LOCKZONE F 2 and 1 x LOCKZONE F 1 are then used. The terminal is equipped with a measurement function that is independent of straight lengths before the duct connection.

To get the right air flow out of LOCKZONE F 2, the total air flow for the branch duct should be measurable. The best thing to do is to equip the duct with an (adjustable-) measurement unit, which is placed as in Figure 3.

The measurement unit is placed according to the manufacture's recommendations and not closer than six duct diameters from the LOCKZONE F 2.

Installation

The terminal is hung from the ceiling. In the centre of the upper side of the terminal there is an M8 pop nut, a threaded fitting to facilitate installation. See Figure 1.

Commissioning

Commissioning is to be carried out with the diffuser face in place. The measurement tube and damper cords are pulled out of the terminal through the slots.

The damper setting can be locked. The K-factor is stated on the product label, and is also available in the K-factor guide, which can be downloaded from www.swegon.com.

Maintenance

The terminal may be cleaned when necessary using luke-warm water with added detergent.

Accessibility of the duct system is possible by removing the diffuser face (see above under installation). The perforated distribution plate and damper are removed from the commissioning box by unscrewing the wing nuts on each side of the inlet $\frac{3}{4}$ turn.

Environment

The Declaration of construction materials is available on www.swegon.com.

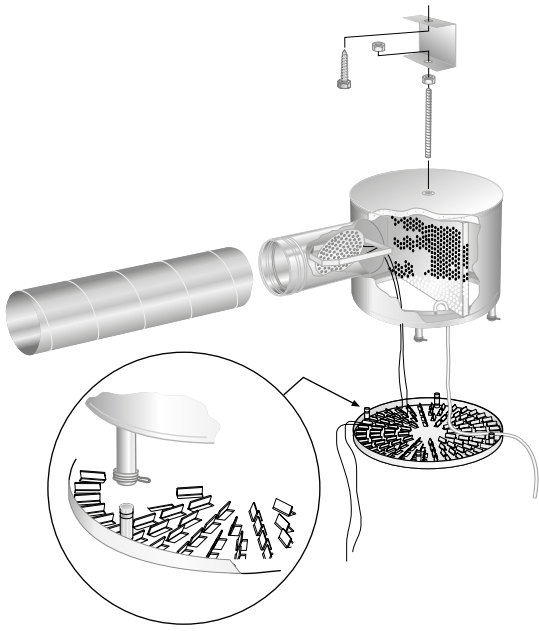


Figure 1. Installation LOCKZONE F 1.



Figure 2. Installation LOCKZONE F 2.

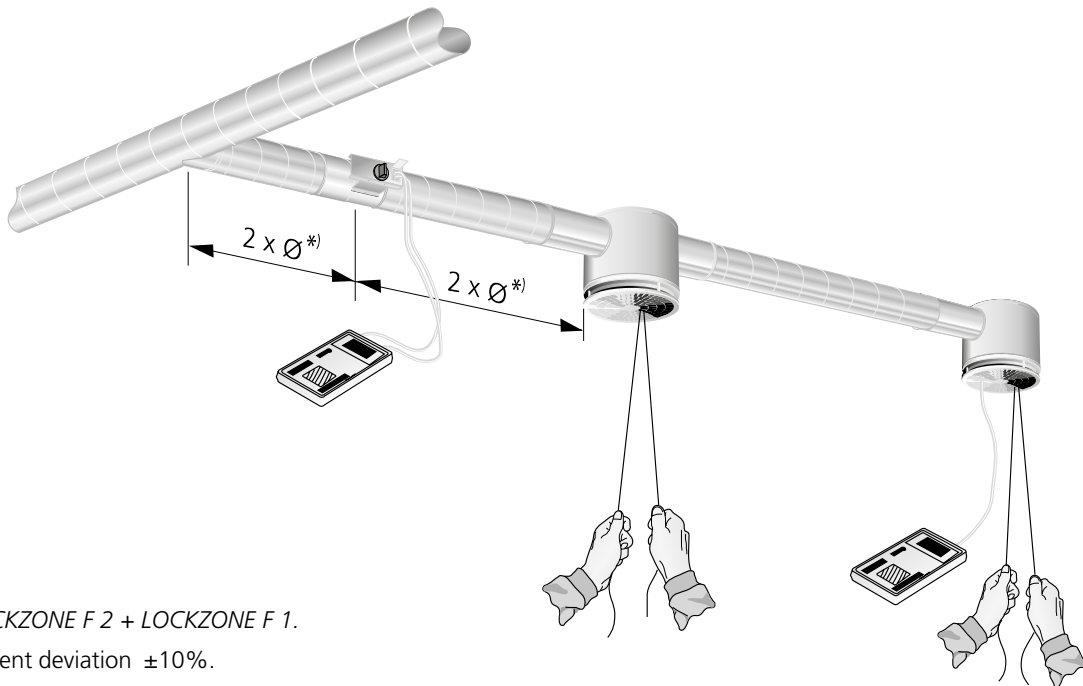


Figure 3. LOCKZONE F 2 + LOCKZONE F 1.

*) Measurement deviation $\pm 10\%$.

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 length $l_{0.2}$ is measured with isothermal supply air
- Recommended maximum under-temperature 12 K.
- All technical data are valid with a slot opening of 20 mm.
- Slot opening can be opened to 30 mm for all sizes. With 30 mm opening the throw length decreases by 10%.
- 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.
- All technical data are valid for a 360° spread pattern.

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

LOCKZONE F – Supply air

Sound power level L_w (dB)

Table K_{OK}

Size	Mid-frequency (Octave band) Hz							
LOCKZONE F 1	63	125	250	500	1000	2000	4000	8000
125	2	2	6	-3	-1	-7	-13	-15
160	0	0	5	-3	-1	-7	-9	-7
200	2	2	7	-2	-4	-8	-12	-14
250	4	4	3	2	-2	-7	-11	-9
315	5	5	2	1	-2	-8	-11	-15
Size	Mid-frequency (Octave band) Hz							
LOCKZONE F 2	63	125	250	500	1000	2000	4000	8000
250	12	10	5	-2	-4	-7	-12	-14
315	5	7	2	-1	-2	-8	-12	-15
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation ΔL(dB)

Table ΔL

Size	Mid-frequency (Octave band) Hz							
LOCKZONE F 1	63	125	250	500	1000	2000	4000	8000
125	20	13	8	12	10	8	9	8
160	19	13	6	11	9	6	7	7
200	16	12	8	11	9	6	7	9
250	14	8	7	8	6	5	6	8
315	10	4	6	8	5	5	5	8
Size	Mid-frequency (Octave band) Hz							
LOCKZONE F 2	63	125	250	500	1000	2000	4000	8000
250	10	4	8	12	8	9	10	12
315	10	4	10	11	7	9	9	12
Tol. ±	2	2	2	2	2	2	2	2

Engineering graphs

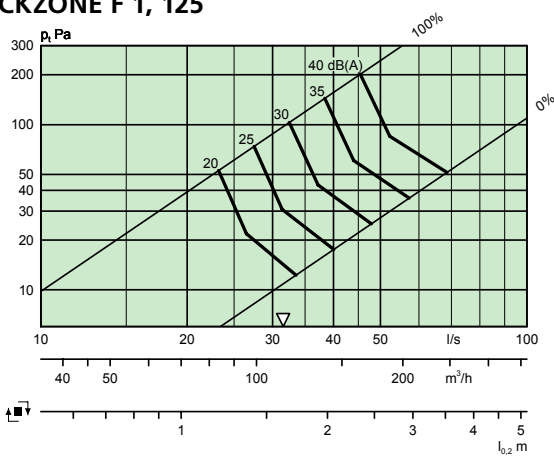
- Throw $l_{0,2}$ is measured under isothermal conditions.
- Recommended max. permissible temperature below room temperature is 10K.
- All technical data are valid with a slot opening of 20 mm.
- Slot opening can be opened to 30 mm for all sizes. With 30 mm opening the throw length decreases by 10%.
- 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.
- All technical data are valid for a 360° spread pattern.

LOCKZONE F 1 – Supply air

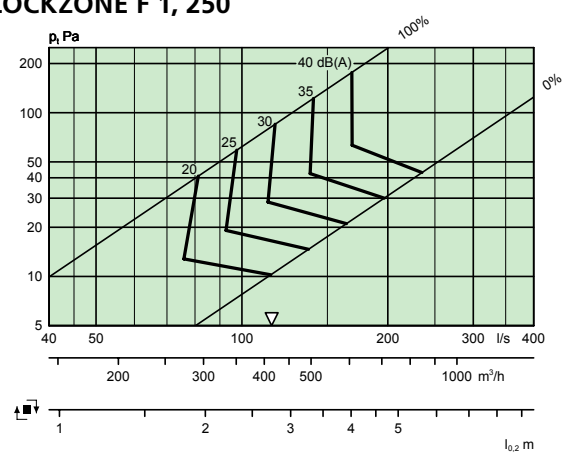
Air flow - Pressure drop - Sound level - Throw

- The diagrams are not to be used for commissioning.
- ∇ = Min. airflow required to obtain sufficient commissioning pressure.
- The dB(A) values are for rooms with normal acoustic absorption of 4 dB.
- dB(C) values are normally 6-9 higher than dB(A) values.
- All data in graphs are valid for a 360° spread pattern.

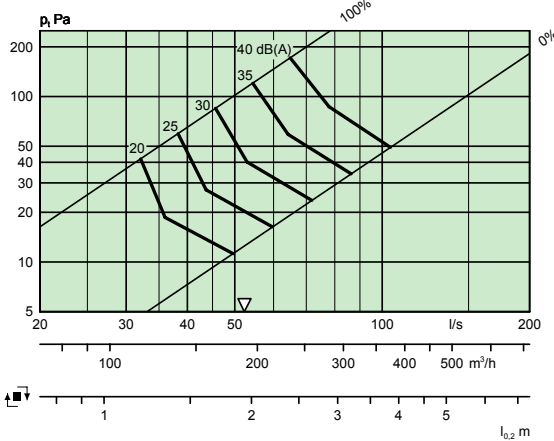
LOCKZONE F 1, 125



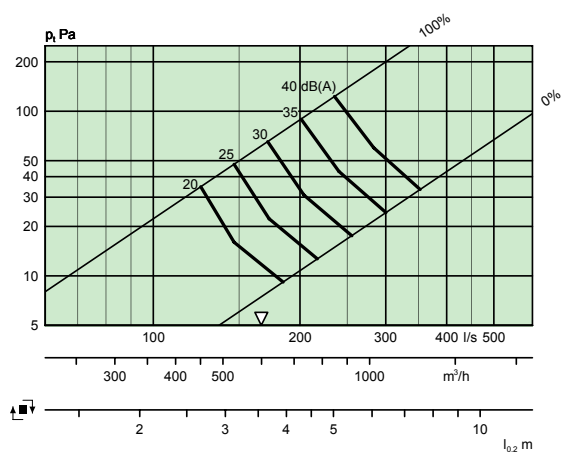
LOCKZONE F 1, 250



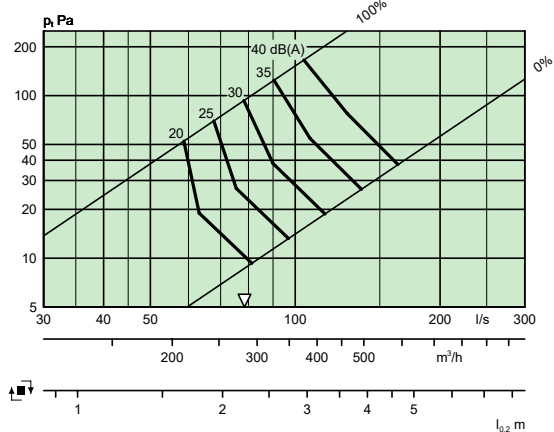
LOCKZONE F 1, 160



LOCKZONE F 1, 315



LOCKZONE F 1, 200

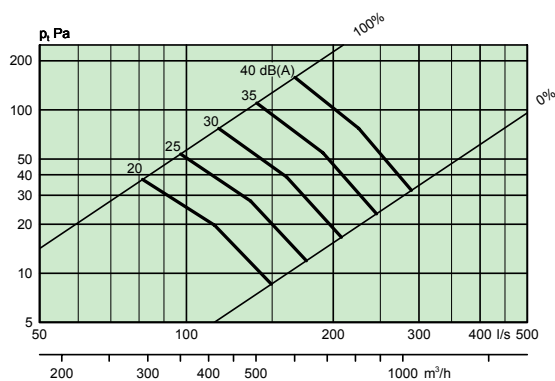


LOCKZONE F 2 – Supply air

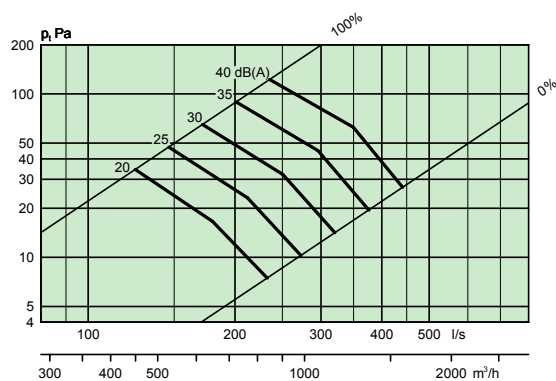
Air flow - Pressure drop - Sound level - Throw

- The diagrams are not to be used for commissioning.
- ∇ = Min. airflow required to obtain sufficient commissioning pressure.
- The dB(A) values are for rooms with normal acoustic absorption of 4 dB/10 m² equivalent absorption area.
- For throw lengths, see LOCKZONE F 1.
- The sound values in the graphs below are valid for the combination of LOCKZONE F 2 through-flow diffuser and LOCKZONE F 1 standard diffuser.
- dB(C) values are normally 6-9 higher than dB(A) values.
- All data in graphs are valid for a 360° spread pattern.

LOCKZONE F 2, 250 + LOCKZONE F 1, 250



LOCKZONE F 2, 315 + LOCKZONE F 1, 315



Dimensions and weights Order key

LOCKZONE F 1

Size	ØA	B	C	ØD	E	F	Weight (kg)
125	228	217	78	124	117	20-30	3,0
160	304	262	115	159	135	20-30	5,0
200	380	315	148	199	155	20-30	6,0
250	456	382	195	249	180	20-30	9,0
315	568	467	235	314	213	20-30	14,0

LOCKZONE F 2

Size	ØA	B	C	ØD	E	F	Weight (kg)
250	456	382	195	249	180	20-30	10,0
315	568	467	235	314	213	20-30	16,0

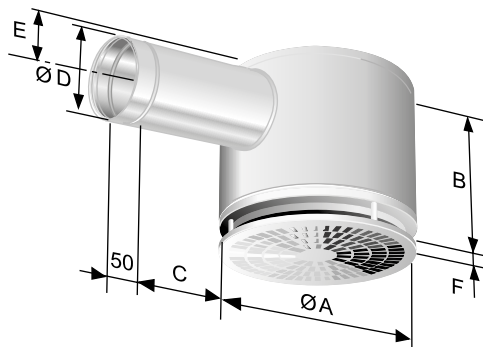


Figure 4. LOCKZONE F 1.

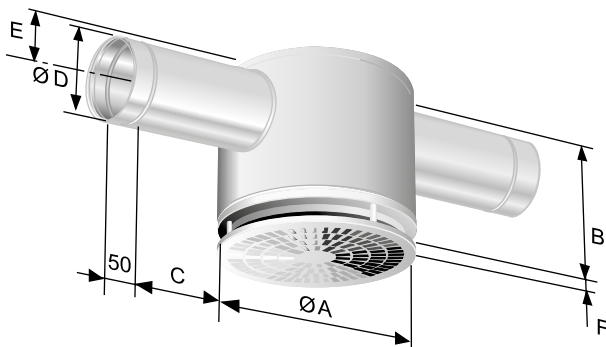


Figure 5. LOCKZONE F 2.

Product

Circular perforated ceiling diffuser LOCKZONE F a -a -bbb

Version:

Measurements:

Standard: 1

With flow-through function: 2

Nominal connection dimension mm

Standard range:

Size 125
160
200
250
315

Specification example

Swegon's complete circular ceiling diffuser of type LOCKZONE F for visible installation in ceiling, with the following functions:

- Complete, round, painted unit
- Guide vane perforated lower section, LockZone
- Removable commissioning damper with lockable controls
- Measurement function with low method error
- Internal acoustic lining with reinforced surface layer
- Cleanable
- Powder painted in white, RAL 9003/NCS S 0500-N

Size: LOCKZONE Fa - bbb

xx items