

SWIFT Ceiling

Square ceiling air diffuser for supply and extract air



QUICK FACTS

- Flush design
- Designed for modular suspended ceilings
- Quick Access
- Adapter for systemized false ceilings
- Can be combined with ALS commissioning box
- Rotational air discharge pattern
- Standard colour White RAL 9003
 - 5 alternative standard colours
 - Other colours upon request

AIR FLOW - SOUND PRESSURE ROOM (Lp10A) *)				
SWIFT Ceiling Size		25 dB(A) l/s	30 dB(A) l/s	35 dB(A) l/s
200-500		62	72	83
250-500		72	82	95
200-600		78	86	98
250-600		92	105	120
315-600		93	109	127
SWIFT Ceiling Size	ALS Size	25 dB(A) l/s	30 dB(A) l/s	35 dB(A) l/s
200-500	160-200	50	59	70
250-500	200-250	63	73	85
200-600	160-200	48	62	78
250-600	200-250	76	89	105
315-600	250-315	91	105	120

The data specified in the table is applicable to supply air and 50 Pa total pressure if an ALS commissioning box is used.

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

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Technical description

Design

The square SWIFT Ceiling air diffuser consists of a backing box and a diffuser face. The diffuser face has perforations designed for discharging high airflows. The diffuser face is hung on hinges on one side and is secured by springs on the opposite side. This Quick Access fastening system makes it simpler and quicker to open and close the diffuser face for installation, commissioning and cleaning.

Materials and finish

The backing box and diffuser face are made of sheet steel. The connection branch is made of galvanized sheet steel. The interior and exterior surfaces of the air diffuser are 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.

Accessories

Commissioning box:

ALS. The commissioning box is made of galvanized sheet steel and contains a removable commissioning damper, fixed measurement tapping and sound absorbing material*) with reinforced surface layer.

The ALS commissioning box is available with one change in dimension between the inlet and outlet.

*) Fire resistance rated to B-s1,d0 in accordance with EN ISO 11925-2

Frame:

SAR K. For aesthetic installation of a lowered diffuser.

Adapter:

ADAPTER, for adaptation to various variants and makes of systemized false ceilings: Ecophon, Gyproc, Dampa, etc. Used also for adaptation to alternative sizes of lay-in type ceilings, for example 625 x 625 or 675 x 675.

Project design

The SWIFT Ceiling is available with square dimensions of 595 x 595 mm in all the connection sizes. This makes the air diffuser very easy to install in modular suspended ceilings with modular dimensions of 600 x 600 mm.

Place the air diffuser onto the T-bar framework, and then secure it to the duct system, see Figure 2.

Installation

To dismantle the diffuser face, insert a thin object,



for example a Quick Access card or the equivalent, in between the diffuser face and the diffuser backing box in order to release the springs. Move the card from the centre out towards the corner, see Figure 1.

The inlet spigot of the diffuser backing box can be secured to the connecting duct by means of self-tapping screws or a blind rivets. For flush-mounting in fixed false ceiling constructions, secure the terminal by means of screws into place in the framework through either the sides or top of the diffuser backing box.

The SWIFT Ceiling is designed for installation in modular suspended ceilings. Place the air diffuser directly down in the T-bar framework, and then secure it to the duct system or to the commissioning box.

If an ALS commissioning box is used, it must be secured to the building structure by means of hangers or mounting brackets.

The distance between the commissioning box and the air diffuser can be increased with a circular duct having a length of up to 500 mm without having to lengthen the measuring tubes and damper adjustment cords, see Figure 2.

Commissioning

Commissioning should be carried out with the diffuser face mounted. Pull the measuring tubes and damper adjustment cords out through the diffuser face. Then connect the manometer to the correct measuring tube. The red tube from the ALS commissioning box is used for supply air. The transparent tube is always used for extract air. The rated coefficient of performance of the air diffuser can be used in a calculation to determine the required commissioning pressure. Finish by adjusting the damper to the correct blade position, tie a commissioning knot in the damper cords to indicate the damper position.

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

The air diffuser can be cleaned, if necessary, using luke-warm water with dishwashing detergent added or by vacuum cleaning using a brush nozzle. The duct system can be reached for cleaning after opening the diffuser face. If a type ALS commissioning box is used, swing the air distribution plate to the side on so that you then can grip the handle of the tubular damper casing and rotate it out of its holder. See Figure 3.

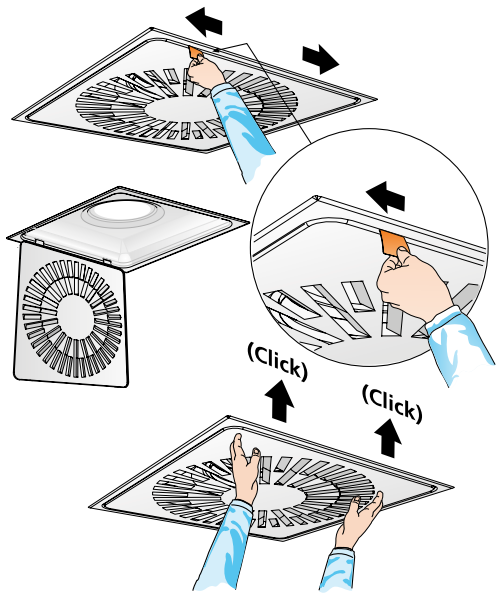


Figure 1. Quick Access, dismantling of the diffuser front.

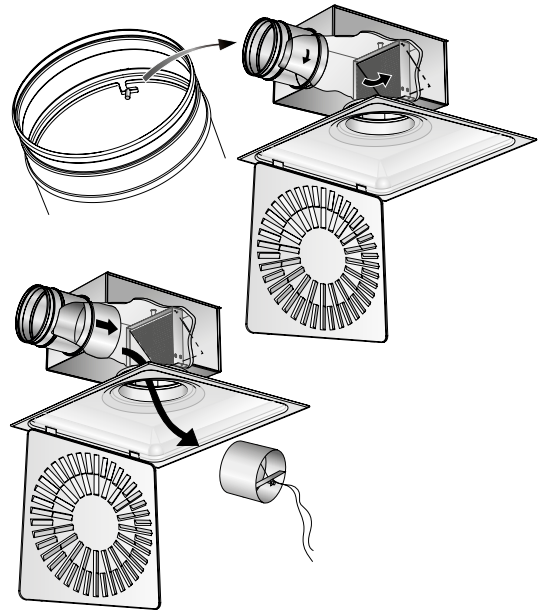


Figure 3. To dismantle the damper.

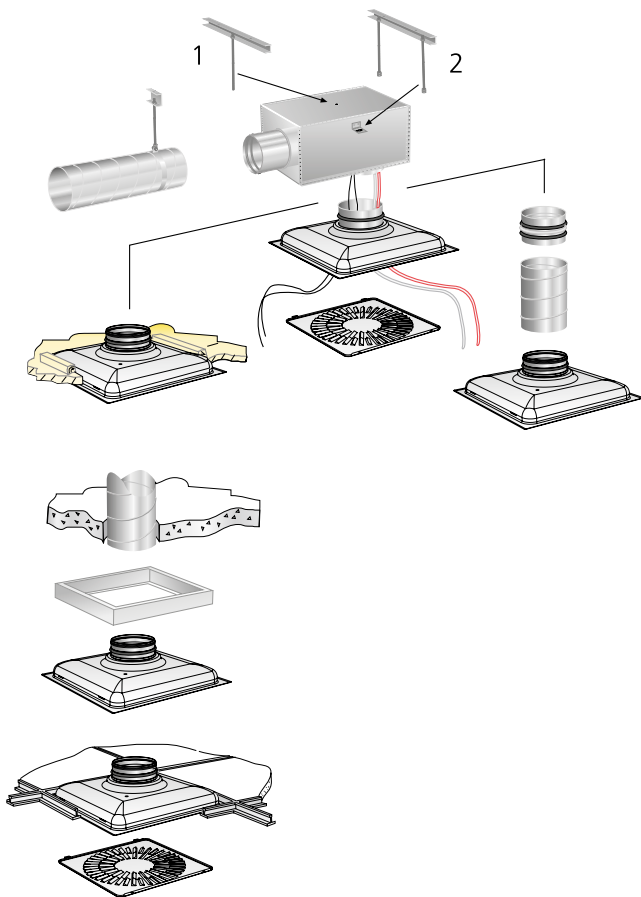


Figure 2. Installation alternatives.

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 under isothermal discharge conditions.
- The recommended max. permissible temperature below room temperature is 10 K.
- To calculate the air stream diffusion, air velocities in the occupied zone or sound levels in rooms with other dimensions, please refer to our ProAir web computer program, which is 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

Acoustic data

SWIFT Ceiling – Supply air – Air diffuser only

Sound power level L_w (dB)

Table K_{ok}

Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
SWIFT C	63	125	250	500	1000	2000	4000	8000
200-500	-11	-3	-1	2	2	-12	-28	-32
250-500	-6	-3	-2	0	3	-11	-28	-29
200-600	-7	-1	0	3	1	-14	-32	-29
250-600	-8	0	0	3	1	-13	-29	-28
315-600	-9	-1	0	1	2	-10	-26	-29
Tol. ±	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
SWIFT C	63	125	250	500	1000	2000	4000	8000
200-500	19	14	8	3	3	4	5	5
250-500	16	11	5	4	2	3	4	4
200-600	19	14	8	3	3	4	5	5
250-600	16	11	5	4	2	3	4	4
315-600	14	9	4	2	2	2	3	3
Tol. ±	2	2	2	2	2	2	2	2

SWIFT Ceiling + ALS – Supply air – One step

One change in dimension between the inlet and outlet of the commissioning box.

Sound power level L_w (dB)

Table K_{ok}

Size	Mid-frequency (Octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
SWIFT C + ALS	63	125	250	500	1000	2000	4000	8000
200-500	0	6	3	2	0	-10	-18	-22
250-500	-3	5	1	1	2	-10	-21	-17
200-600	1	5	5	0	-2	-8	-14	-18
250-600	-2	6	3	2	0	-9	-18	-21
315-600	-1	5	0	2	1	-11	-24	-25
Tol. ±	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
SWIFT C + ALS	63	125	250	500	1000	2000	4000	8000
200-500	16	11	8	16	18	12	11	11
250-500	13	8	8	16	17	12	12	13
200-600	16	11	8	16	18	12	11	11
250-600	13	8	8	16	17	12	12	13
315-600	11	6	7	19	14	10	10	13
Tol. ±	2	2	2	2	2	2	2	2

SWIFT Ceiling – Extract air – Air diffuser only

Sound power level L_w (dB)

Table K_{ok}

Size	Mid-frequency (Octave band) Hz							
SWIFT C	63	125	250	500	1000	2000	4000	8000
250-500	-5	4	1	0	1	-6	-20	-26
250-600	-5	4	1	0	1	-5	-18	-25
315-600	-7	5	3	0	2	-5	-16	-22
Tol. \pm	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB)

Table ΔL

Size	Mid-frequency (Octave band) Hz							
SWIFT C	63	125	250	500	1000	2000	4000	8000
250-500	16	11	5	4	2	3	4	4
250-600	16	11	5	4	2	3	4	4
315-600	14	9	4	2	2	2	3	3
Tol. \pm	2	2	2	2	2	2	2	2

SWIFT Ceiling + ALS – Extract air – One step

Sound power level L_w (dB)

Table K_{ok}

Size	Mid-frequency (Octave band) Hz							
SWIFT C	63	125	250	500	1000	2000	4000	8000
250-500	-3	8	4	-2	-1	-5	-14	-23
250-600	-1	9	3	-3	-3	-5	-12	-21
315-600	2	9	3	-2	0	-6	-18	-26
Tol. \pm	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB)

Tabell ΔL

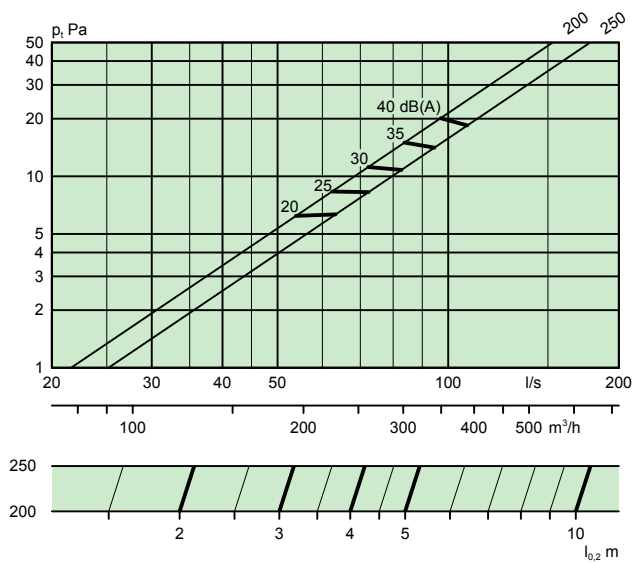
Size	Mid-frequency (Octave band) Hz							
SWIFT C	63	125	250	500	1000	2000	4000	8000
250-500	13	8	8	16	17	12	12	13
250-600	13	8	8	16	17	12	12	13
315-600	11	6	7	19	14	10	10	13
Tol. \pm	2	2	2	2	2	2	2	2

Sizing diagram

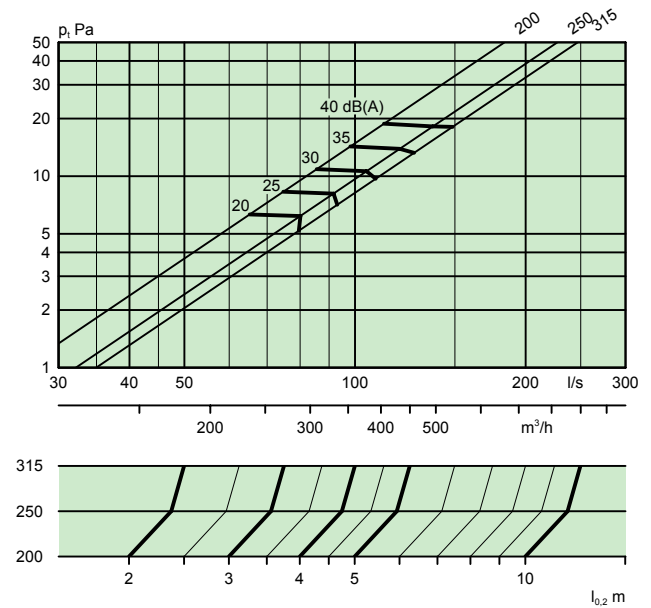
Airflow - Pressure drop - Sound level – Throw length

- The diagrams illustrate data for the SWIFT Ceiling recessed in a ceiling.
- The diagrams should not be used for commissioning.
- 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.

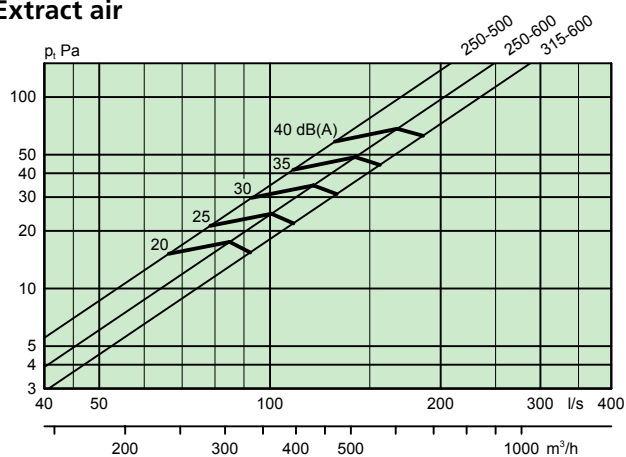
SWIFT Ceiling 200-500 – 250-500 – Supply air



SWIFT Ceiling 200-600 – 315-600 - Supply air



SWIFT Ceiling 250-500, 250-600 and 315-600 – Extract air

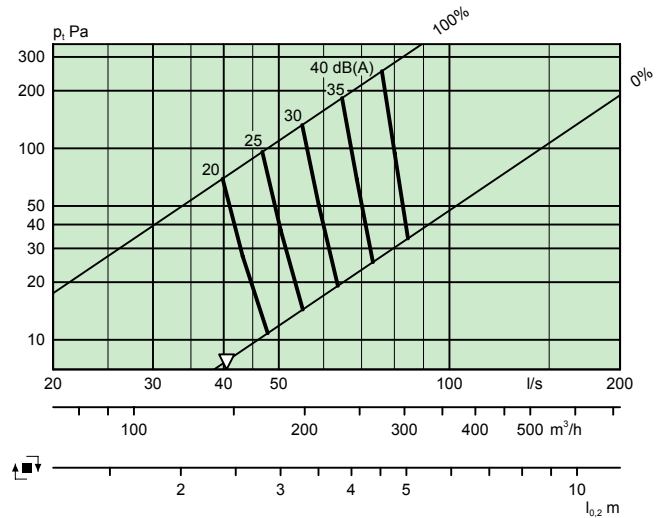


SWIFT Ceiling + ALS – Supply air

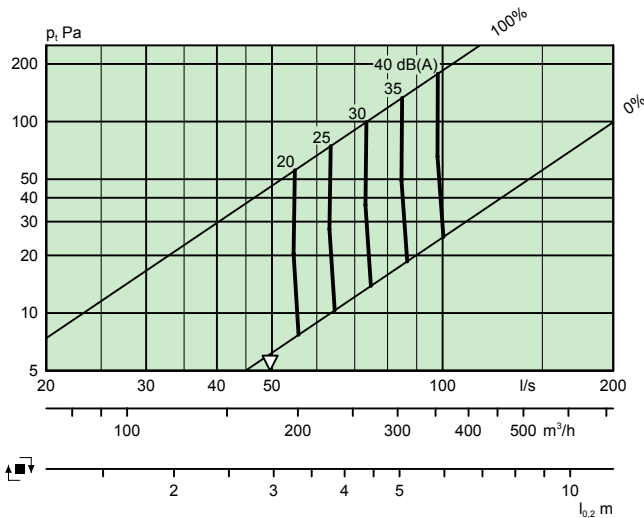
Airflow - Pressure drop - Sound level – Throw length

- The diagrams illustrate data for the SWIFT Ceiling recessed in a ceiling.
- 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.

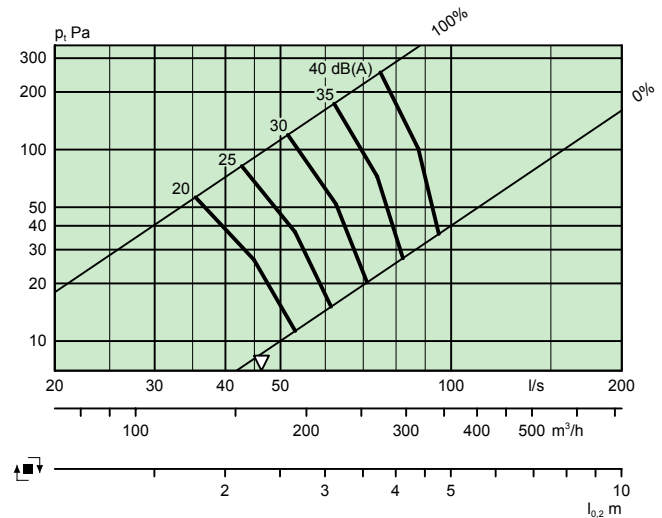
SWIFT Ceiling 200-500 + ALS 160-200



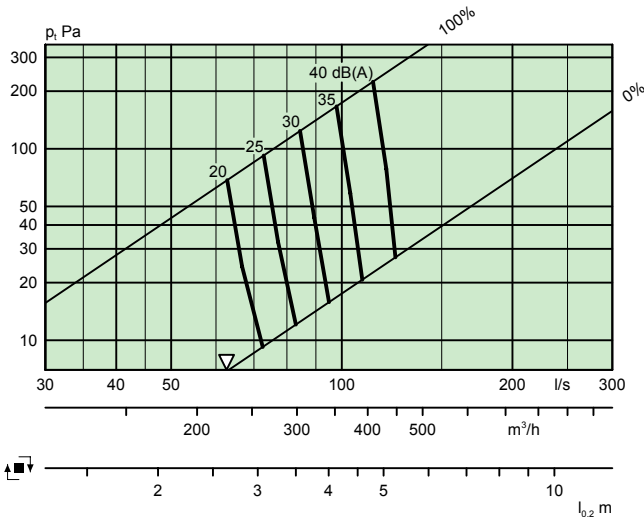
SWIFT Ceiling 250-500 + ALS 200-250



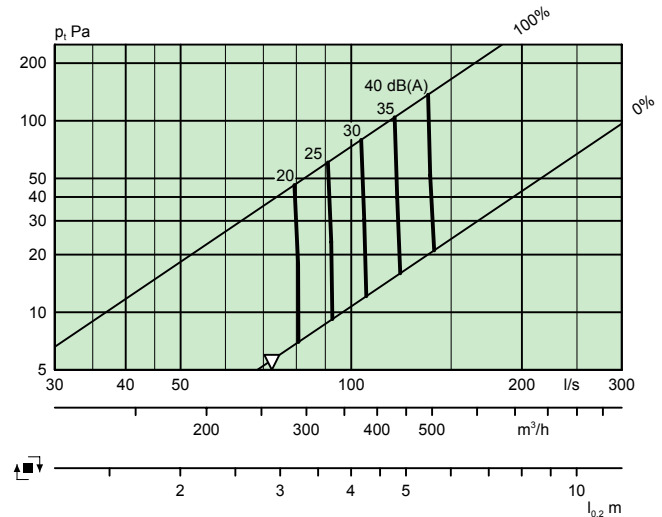
SWIFT Ceiling 200-600 + ALS 160-200



SWIFT Ceiling 250-600 + ALS 200-250



SWIFT Ceiling 315-600 + ALS 250-315

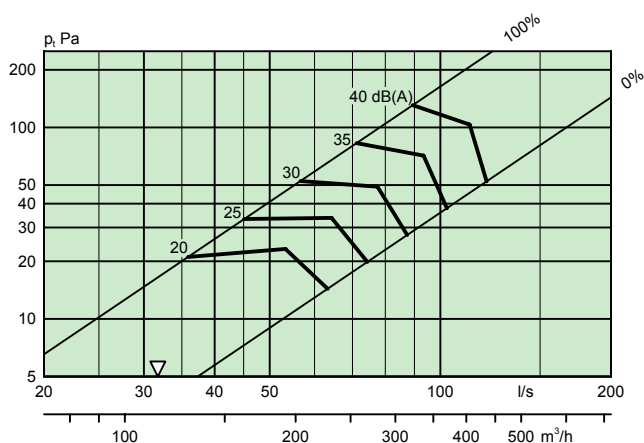


SWIFT Ceiling + ALS – Extract air

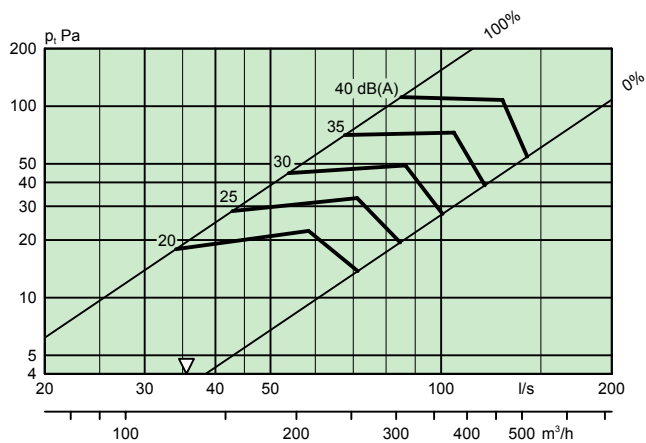
Airflow - Pressure drop - Sound level

- Sound level dB(A) applies to rooms of 10 m² equivalent sound absorption area.
- ∇ = Min. airflow required for obtaining sufficient commissioning pressure.
- To calculate the sound levels in rooms with other dimensions, please refer to our ProAir web computer program, which is at www.swegon.com.

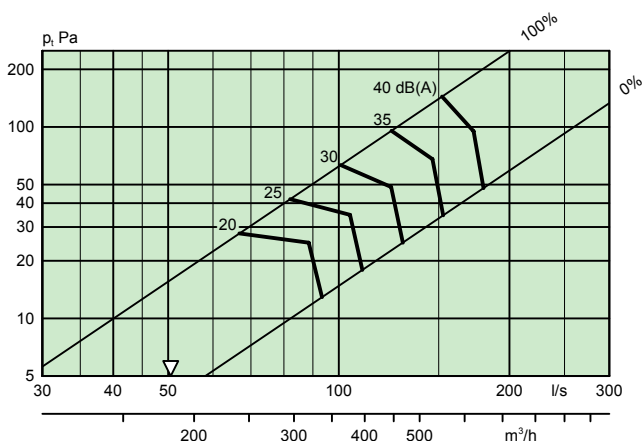
SWIFT Ceiling 250-500 + ALS 200-250



SWIFT Ceiling 250-600 + ALS 200-250



SWIFT Ceiling 315-600 + ALS 250-315



Dimensions and weights

SWIFT Ceiling

Size	A	Ød	l	M	Weight, kg
200-500	495	199	475	70	2.5
250-500	495	249	475	70	2.5
200-600	595	199	575	70	3.6
250-600	595	249	575	70	3.6
315-600	595	314	575	50	3.6

Dimensions of opening in ceiling = l x l
CL = Centre line

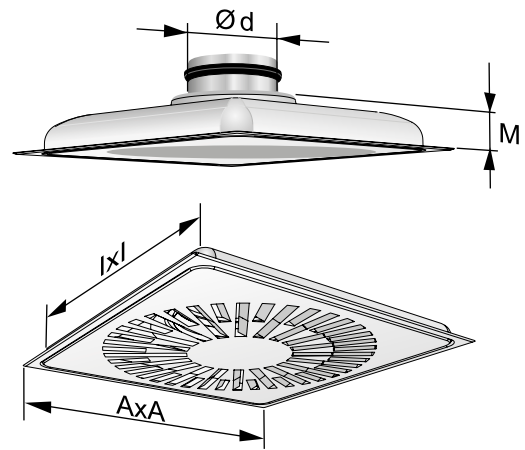


Figure 4. SWIFT Ceiling.

SWIFT Ceiling with ALS - 1 step

Size	A	B	C	ØD	Ød	E1
200-500	495	404	288	159	200	314
250-500	495	504	332	199	250	354
200-600	595	404	288	159	200	314
250-600	595	504	332	199	250	354
315-600	595	622	388	249	315	395

Size	F1	G1	H	K	Weight, kg
200-500	113	205	375	100	6.0
250-500	113	225	465	115	6.5
200-600	113	205	375	100	7.0
250-600	113	225	465	115	8.7
315-600	93	230	575	140	11.8

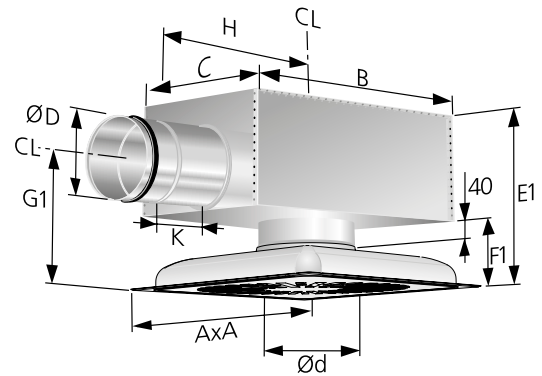


Figure 5. SWIFT Ceiling. CL = Centerline.

SAR K Frame

Size	L	Weight, kg
500	495	1.0
600	595	1.0

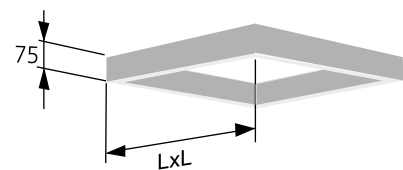


Figure 6. SAR K frame.

Ordering key

Product

Square ceiling air diffuser for supply air SWIFT C a aaa -bbb

Version

Nominal connection size, mm: 200, 250, 315

Nom. square dimension, mm: 500, 600

Standard range

Size: 200-500
250-500
200-600
250-600
315-600

Accessories

Commissioning box ALS d aaa-bbb

Version:

For SWIFT C:	ALS:
200-500	160-200
250-500	200-250
200-600	160-200
250-600	200-250
315-600	250-315

Frame SAR b K aaa

Version:

Square:

Size: 200-500: 500
250-500: 500
200-600: 600
250-600: 600
315-600: 600

Specification text

Swegons complete square perforated type SWIFT Ceiling air diffuser, with ALS commissioning box and the following functions:

- Designed for modular suspended ceilings (600x600 mm).
- Quick Access for quick access to the commissioning box and the duct system.
- Method of measurement with low systematic error.
- White powder paint sprayed and baked finish, RAL 9003/NCS S 0500-N.
- Cleanable ALS commissioning box with removable commissioning damper, measuring method with low systematic error and lined inside with sound absorbing material covered with woven surface layer that prevents fibre migration.

Size: SWIFT Ca aaa-bbb with ALSd aaa-bbb-c xx items

Accessory:

Frame: SARb K aaa xx items