SWAN

Linear slot air diffuser for ceilings

QUICK FACTS

- Modular length: 1200 mm
- Diffuser face of light aluminium design
- 2, 3 or 4 slots
- Horizontal/vertical air distribution
- Telescopic installation
- White-painted or natural anodized diffuser parts
- White or black air deflectors made of ABS plastic
- Removable damper
- Standard colour White RAL 9003
  - 5 alternative standard colours
  - Other colours upon request

AIR FLOW - SOUND PRESSURE ROOM (Lp10A) *)						
SWAN Size	25 dB(A)		30 dB(A)		35 dB(A)	
	l/s	m³/h	l/s	m³/h	l/s	m³/h
2-1200-160	66	238	79	284	95	342
2-1200-200	77	277	92	331	112	403
2-1200-250	81	292	96	346	121	436
3-1200-160	74	266	88	317	105	378
3-1200-200	99	356	117	421	139	500
3-1200-250	109	392	130	468	156	562
4-1200-160	81	292	94	338	108	389
4-1200-200	109	392	128	461	150	540
4-1200-250	131	472	157	565	188	677

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.

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

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Technical description

Design

Rectangular, linear supply air diffuser with two, three or four air slots. Each slot is equipped with air deflectors and the direction of air discharge can be adjusted. On delivery, the standard setting is 1-way diffusion for two and three air slots and 2-way diffusion for four air slots. For correct operation, the SWAN should be installed in a type SWAN T commissioning box, see under Accessories.

Materials and finish

The SWAN is made of aluminium. The air diffuser is painted, with white air deflectors or it can be supplied with a natural anodized finish with black air deflectors. The air deflectors are made of ABS plastic.

- 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:

SWAN T: Made of galvanised sheet steel. The commissioning box contains a commissioning damper and fixed measurement tapping. The box is supplied with a connection in the long side (L). Tightness class B on the housing according to SS-EN 12237.

Sound-absorbing material

Accessory for the commissioning box: Sound absorbing material with reinforced surface layer. Fire resistance rated to B-s1,d0 in accordance with EN ISO 11925-2.

Project design

The air deflectors can be removed and the direction of air discharge can be changed, see Figure 3. The air deflector settings for 1-way, 2-way and vertical air discharge are shown in Figure 4. Extract air and vertical air discharge have the same air deflector setting.

Installation

The commissioning box should be suspended by means of hangers from the ceiling. The box is equipped with mounting fastening points, see Figure 1. Secure the diffuser face to the commissioning box with screws through the crosspieces in the commissioning box as shown in Figure 2.

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 slots, blue measuring tube for supply air and transparent tube for extract air, see Figure 5. When you have finished measuring the air pressure and have determined the appropriate damper position, stretch both damper-adjustment cords and tie them together in a so-called commissioning knot.

K-factors are specified in the relevant commissioning instructions at www.swegon.com.

Maintenance

Clean the air diffuser if needed with lukewarm water and dishwashing detergent added. Or use a vacuum cleaner with a brush nozzle for cleaning. The duct system can be accessed after removing the diffuser face and the damper assembly, see Figures 2 and 5.

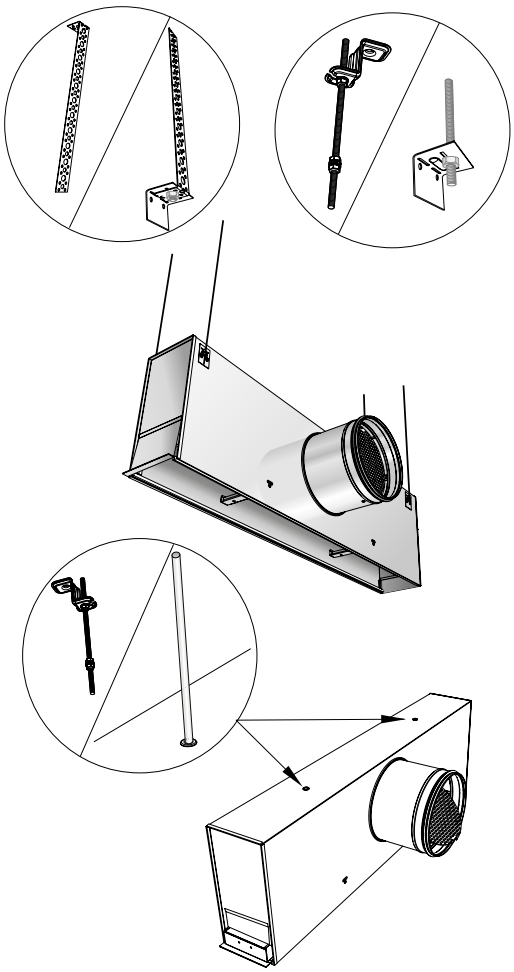


Figure 1. Alternative installation with threaded rods, mounting strips or wire.

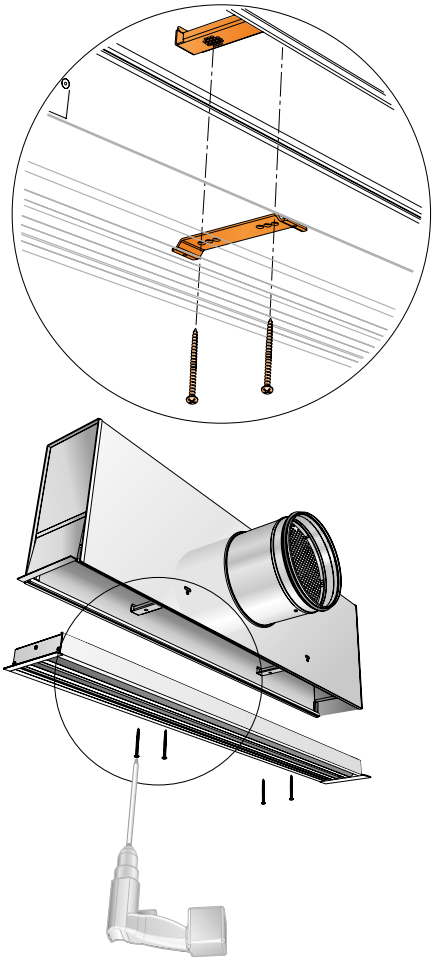


Figure 2. To install the SWAN in the SWAN T.

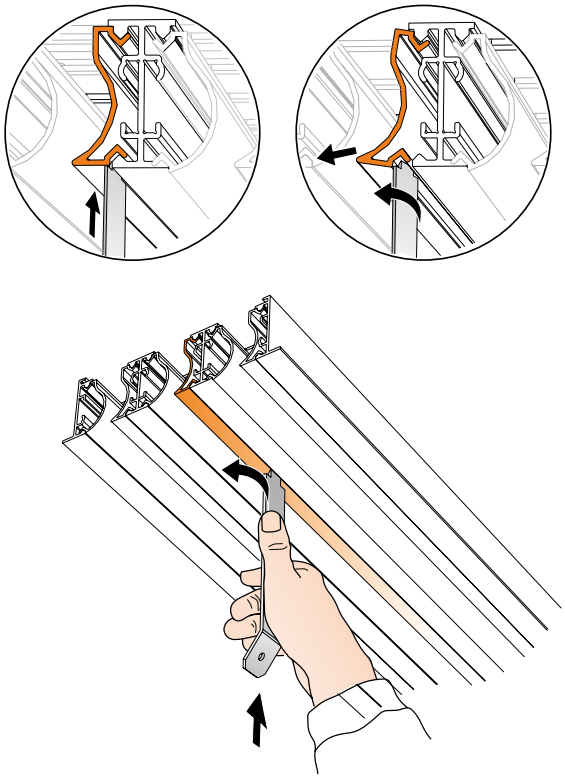


Figure 3a. To dismantle the air deflectors.

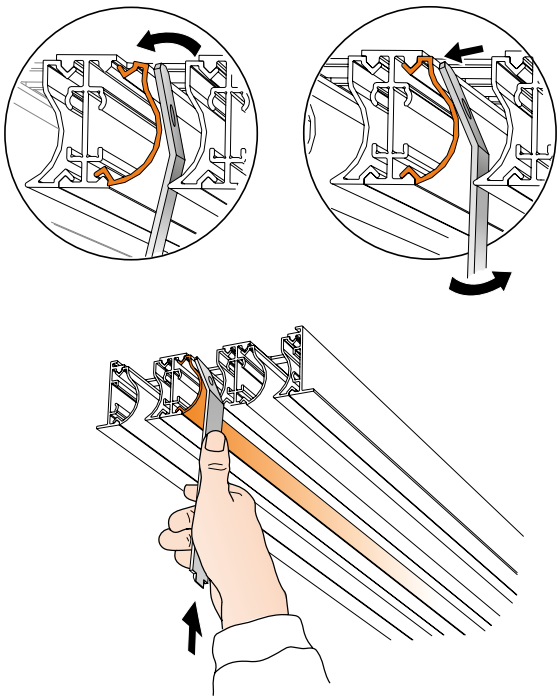


Figure 3b. To install the air deflectors.

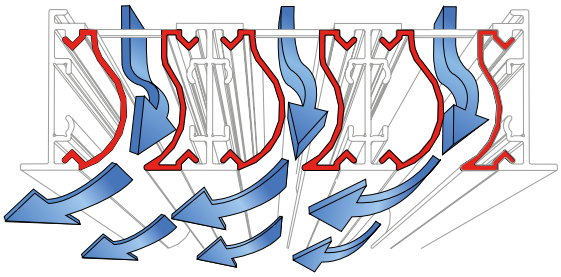


Figure 4a. 1-way air discharge.

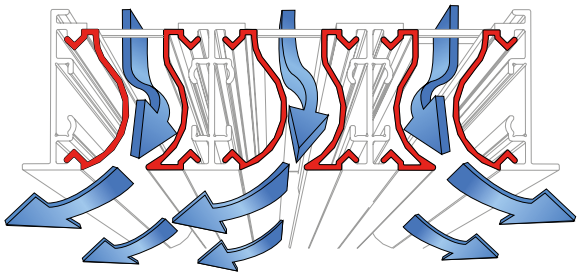


Figure 4b. 2-way air discharge.

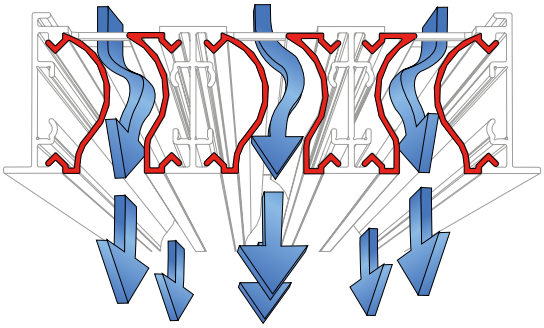


Figure 4c. Vertical air discharge.

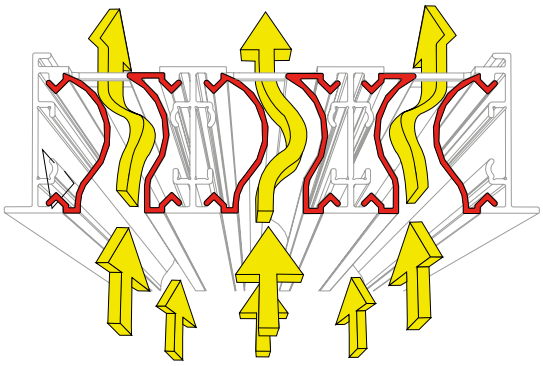


Figure 4d. Extract air.

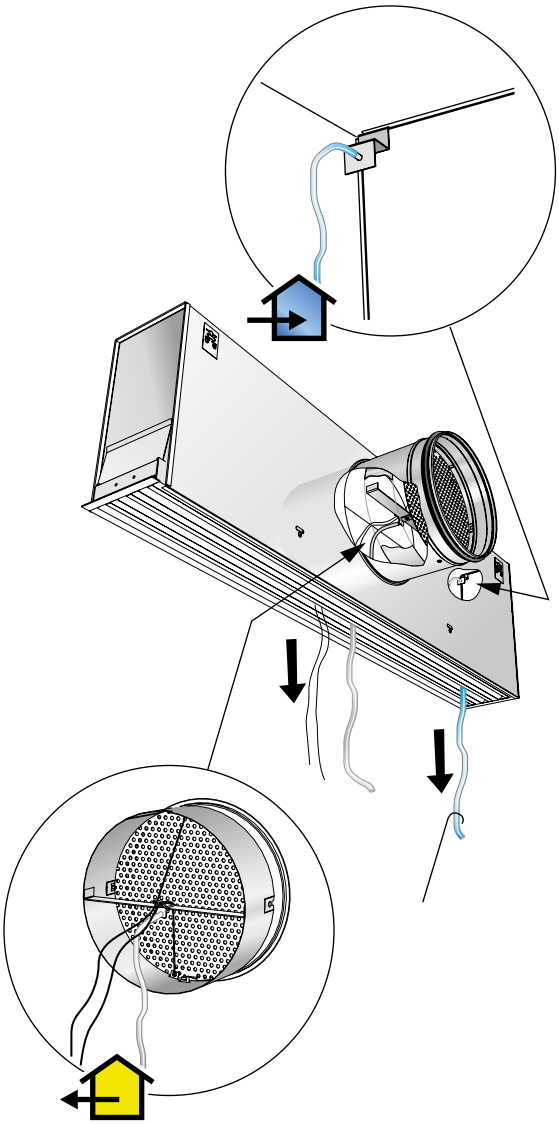


Figure 5. Location of the measurement tapping.

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.
- The throw $l_{0.2}$ is measured under isothermal discharge conditions.
- The recommended max. permissible temperature below room temperature is 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

Acoustic data

SWAN + SWAN T – Supply air (standard length: 1200 mm)

1-way and 2-way air discharge
Sound power level L_w (dB)
Table K_{ok}

Size	Mid-frequency (Octave band) Hz							
SWAN	63	125	250	500	1000	2000	4000	8000
2-160	-6	7	7	0	-5	-9	-15	-22
2-200	-5	7	8	0	-4	-9	-14	-19
2-250	-1	8	8	1	-3	-10	-16	-23
3-160	-6	7	7	-1	-4	-7	-13	-19
3-200	-3	6	6	-2	-4	-8	-13	-18
3-250	-1	7	8	0	-4	-9	-15	-20
4-160	-5	6	6	-3	-4	-7	-13	-20
4-200	-4	6	6	-2	-3	-8	-12	-18
4-250	-1	8	7	-2	-5	-9	-14	-19
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB), without sound absorbing material in the SWAN T
Table ΔL, 1-way,2-way and vertical

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

SWAN + SWAN T – Supply air (standard length: 1200 mm)

Vertical air discharge
Sound power level L_w (dB)
Table K_{ok}

Size	Mid-frequency (Octave band) Hz							
SWAN	63	125	250	500	1000	2000	4000	8000
2-160	-5	8	8	-1	-6	-9	-15	-22
2-200	-4	8	9	0	-3	-9	-14	-20
2-250	1	10	8	1	-3	-10	-16	-24
3-160	-7	7	8	-1	-4	-8	-13	-20
3-200	-4	7	8	-1	-4	-9	-13	-19
3-250	0	7	9	0	-3	-8	-14	-22
4-160	-5	6	7	-2	-5	-8	-15	-20
4-200	-3	6	8	-1	-4	-9	-13	-19
4-250	0	8	8	-1	-4	-9	-14	-20
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB), with sound absorbing material in the SWAN T
Table ΔL, 1-way,2-way and vertical

Size	Mid-frequency (Octave band) Hz							
SWAN	63	125	250	500	1000	2000	4000	8000
2-160	12	7	8	8	14	16	12	14
2-200	11	8	8	9	15	16	11	14
2-250	11	8	9	10	14	16	13	17
3-160	12	8	6	8	14	11	10	12
3-200	10	8	7	8	13	13	10	13
3-250	11	8	8	9	13	13	12	16
4-160	12	7	7	7	12	10	9	13
4-200	9	8	7	9	12	10	9	13
4-250	11	6	8	9	12	11	11	15
Tol. ±	2	2	2	2	2	2	2	2

SWAN + SWAN T – Extract air (standard length: 1200 mm)

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

Size	Mid-frequency (Octave band) Hz							
SWAN	63	125	250	500	1000	2000	4000	8000
2-160	-8	8	6	0	-3	-6	-11	-20
2-200	-4	7	6	-2	-4	-6	-13	-22
2-250	-4	7	6	-1	-3	-6	-17	-25
3-160	-8	5	4	0	-3	-4	-11	-20
3-200	-7	6	4	-1	-2	-5	-11	-19
3-250	-5	8	6	-2	-3	-6	-14	-23
4-160	-8	7	4	-2	-3	-4	-11	-20
4-200	-9	6	3	-2	-2	-5	-13	-22
4-250	-3	8	4	-2	-2	-6	-15	-23
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB), without sound absorbing material in the SWAN T
Table ΔL

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

Sound attenuation ΔL (dB), with sound absorbing material in the SWAN T
Table ΔL

Size	Mid-frequency (Octave band) Hz							
SWAN	63	125	250	500	1000	2000	4000	8000
2-160	12	7	8	8	14	16	12	14
2-200	11	8	8	9	15	16	11	14
2-250	11	8	9	10	14	16	13	17
3-160	12	8	6	8	14	11	10	12
3-200	10	8	7	8	13	13	10	13
3-250	11	8	8	9	13	13	12	16
4-160	12	7	7	7	12	10	9	13
4-200	9	8	7	9	12	10	9	13
4-250	11	6	8	9	12	11	11	15
Tol. ±	2	2	2	2	2	2	2	2

Sizing diagram

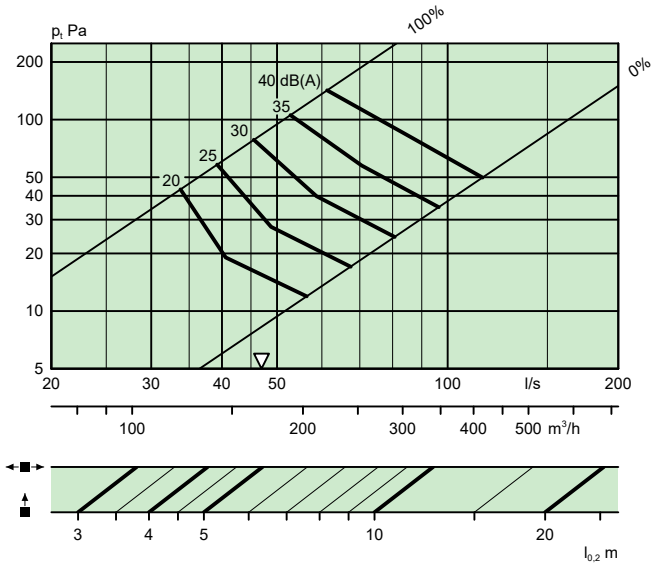
SWAN – Supply air

Airflow - Pressure drop - Sound level – Throw length

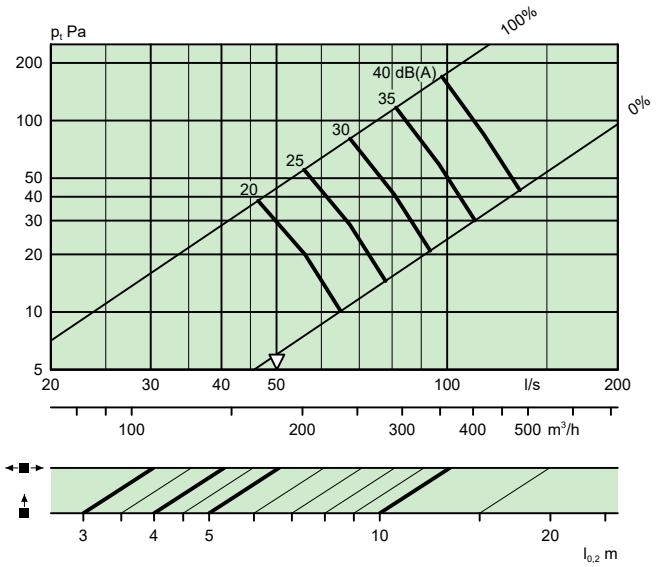
- The diagrams illustrate data for a SWAN recessed in a ceiling.
- The diagrams should not be used for commissioning.
- The dB(A) values are for rooms with normal acoustic absorption (4 dB room attenuation).
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.
- ∇ = Min. airflow required for obtaining sufficient commissioning pressure.

SWAN – Supply air, 1-way and 2-way

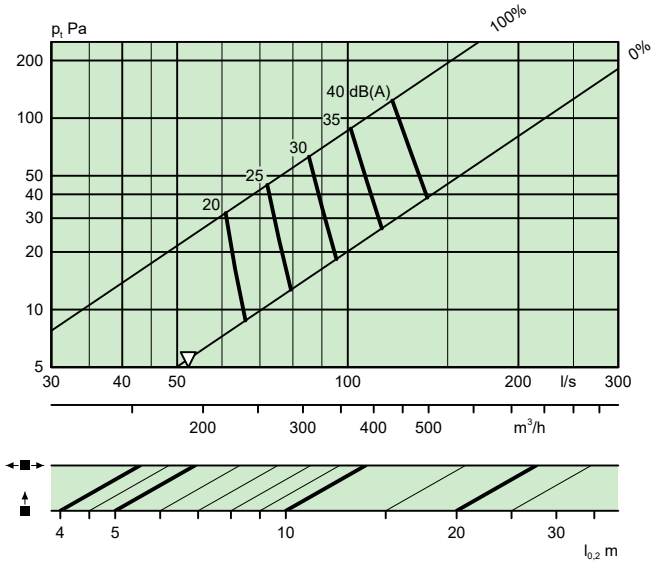
SWAN 2-1200 + SWAN T 2-160



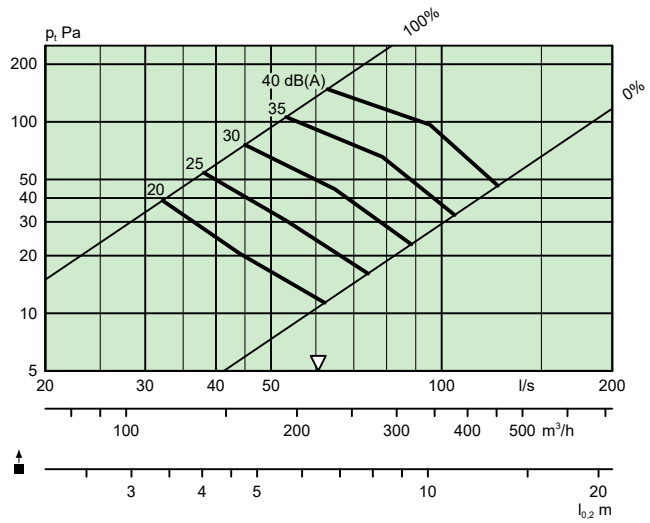
SWAN 2-1200 + SWAN T 2-200



SWAN 2-1200 + SWAN T 2-250



SWAN 3-1200 + SWAN T 3-160



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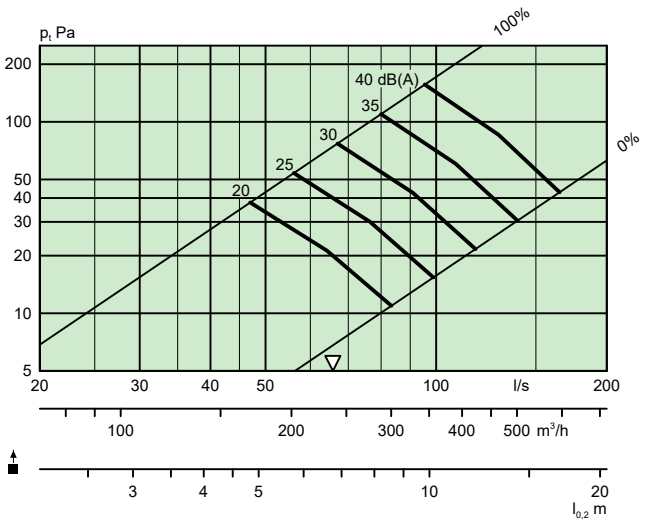

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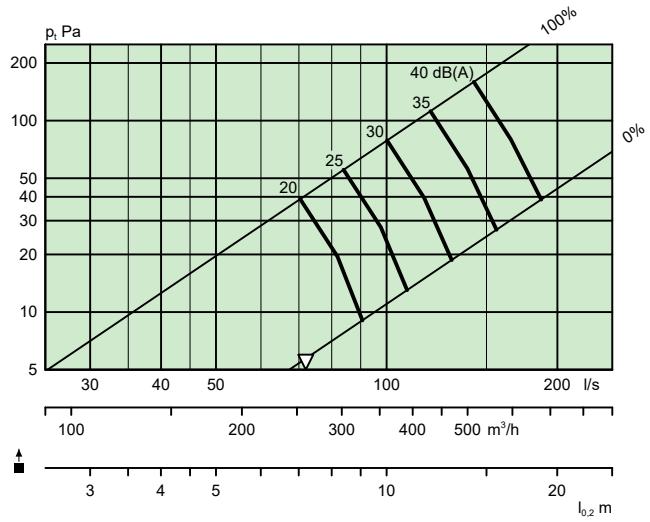
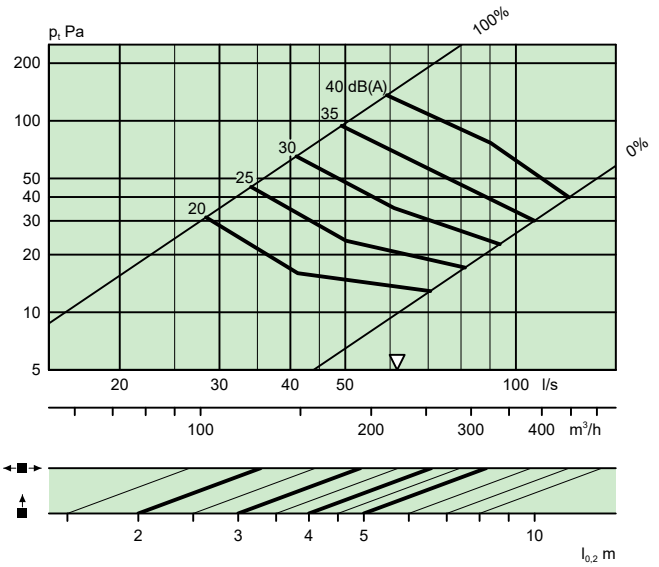


SWAN 4-1200 + SWAN T 4-160



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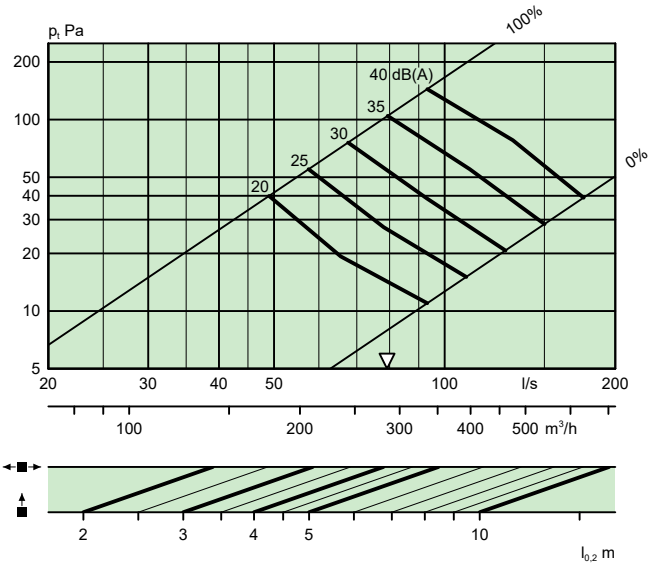

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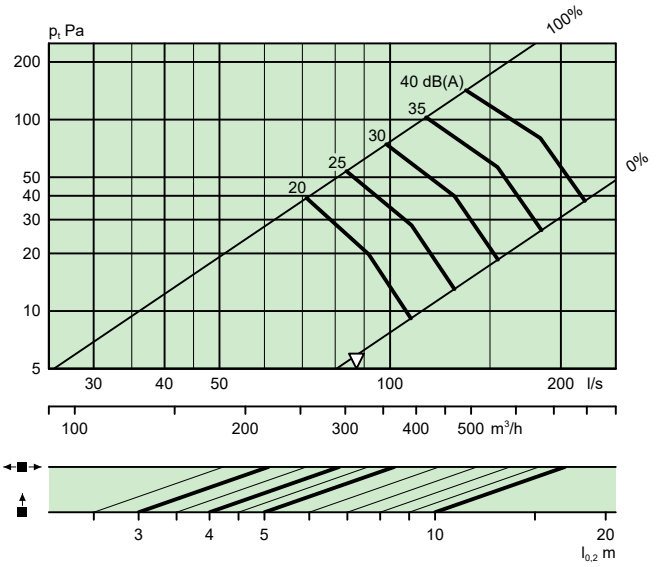
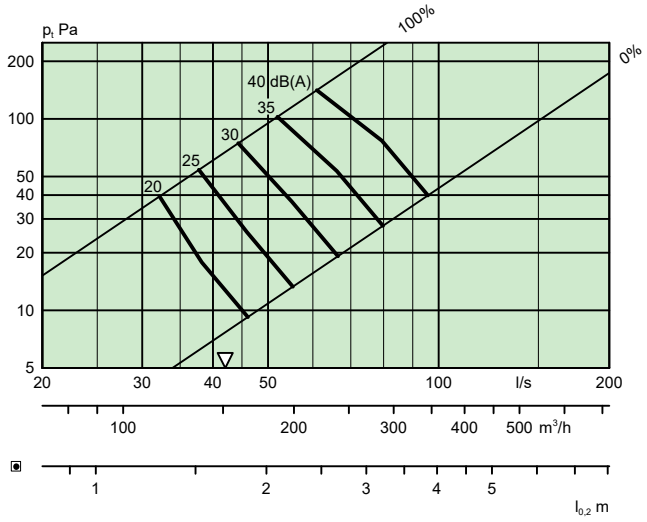
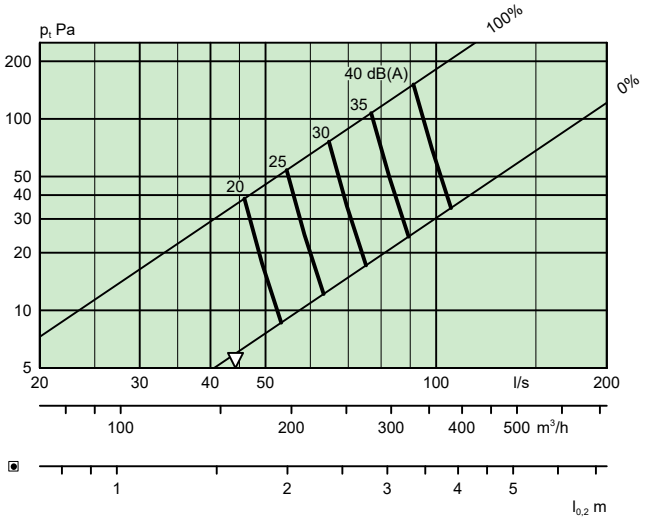


SWAN – Supply air, vertical air discharge

SWAN 2-1200 + SWAN T 2-160



SWAN 2-1200 + SWAN T 2-200



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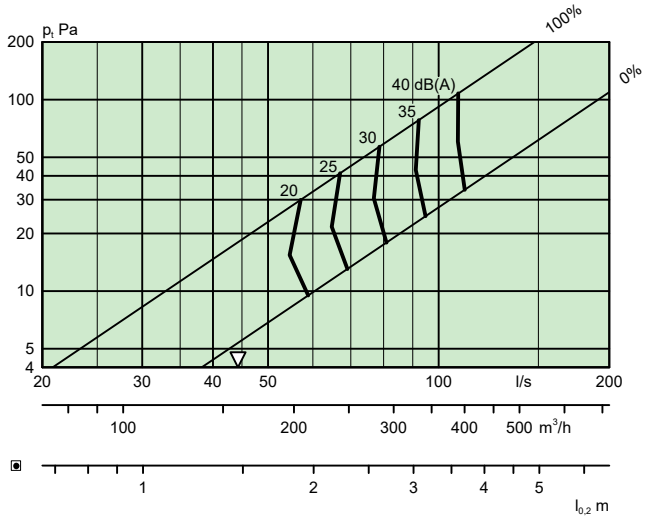
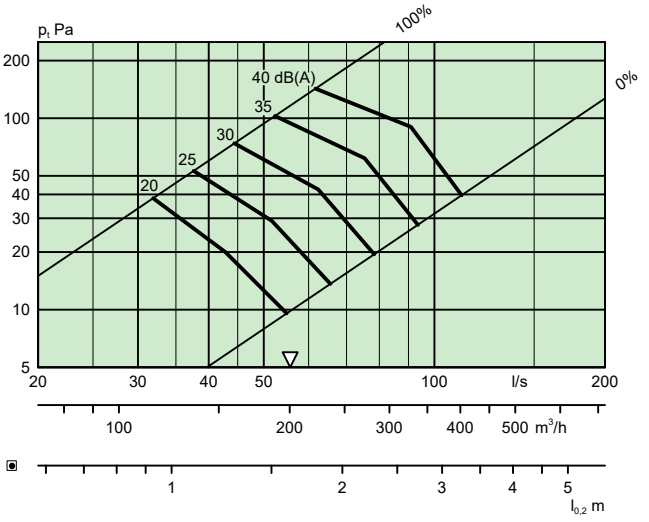
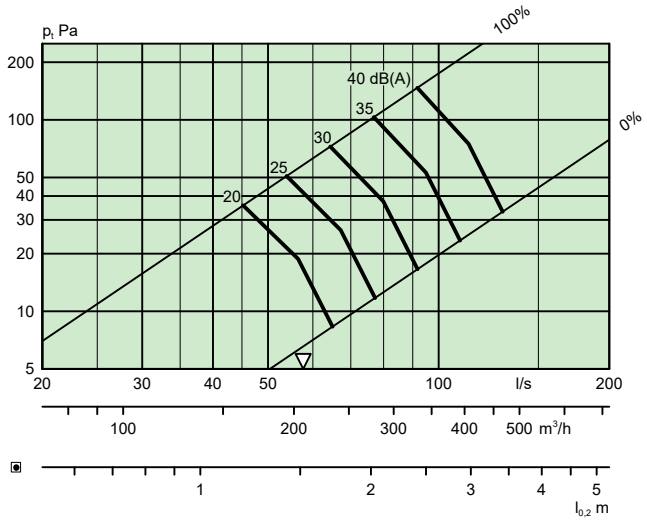


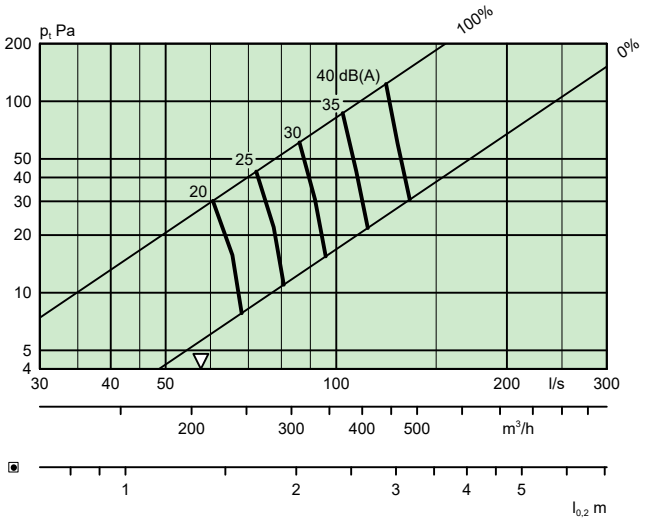
SWAN 3-1200 + SWAN T 3-160



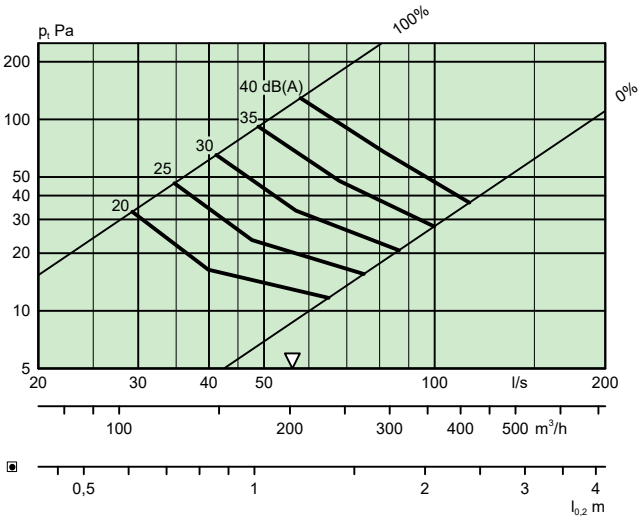
SWAN 3-1200 + SWAN T 3-200



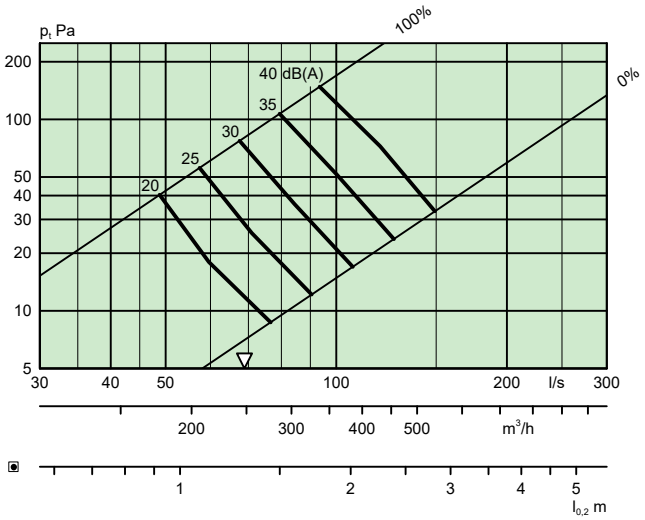
SWAN 3-1200 + SWAN T 3-250



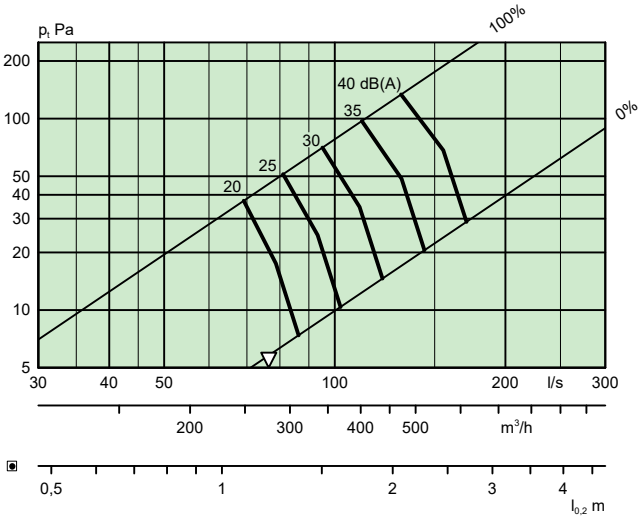
SWAN 4-1200 + SWAN T 4-160



SWAN 4-1200 + SWAN T 4-200



SWAN 4-1200 + SWAN T 4-250

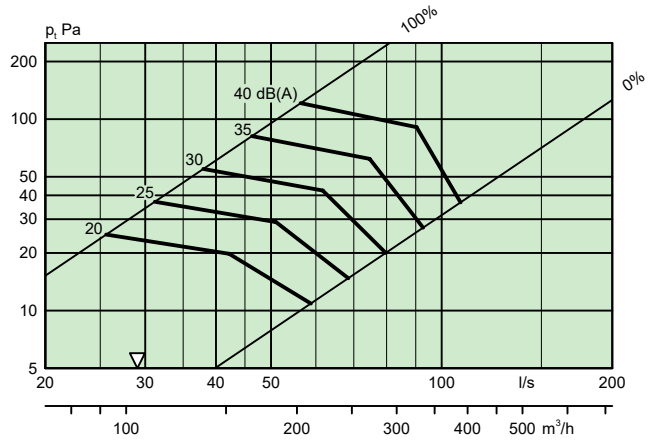


Sizing Diagram – SWAN – Extract air

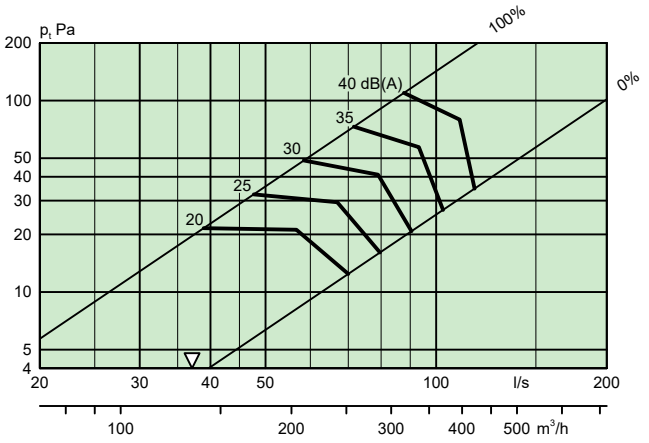
Airflow - Pressure drop - Sound level

- The diagrams illustrate data for a SWAN 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.
- ∇ = Min. airflow required for obtaining sufficient commissioning pressure.

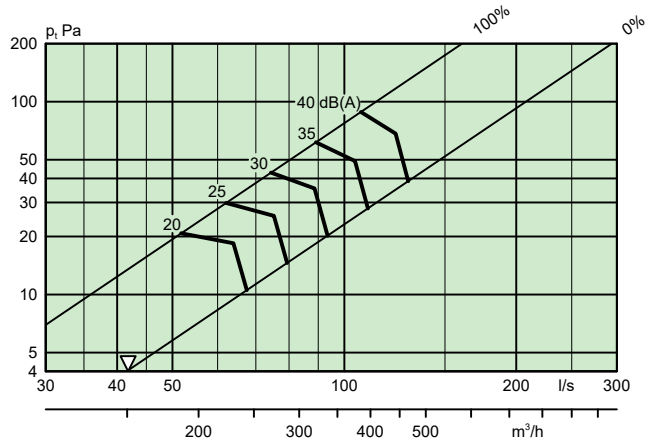
SWAN 2-1200 + SWAN T 2-160



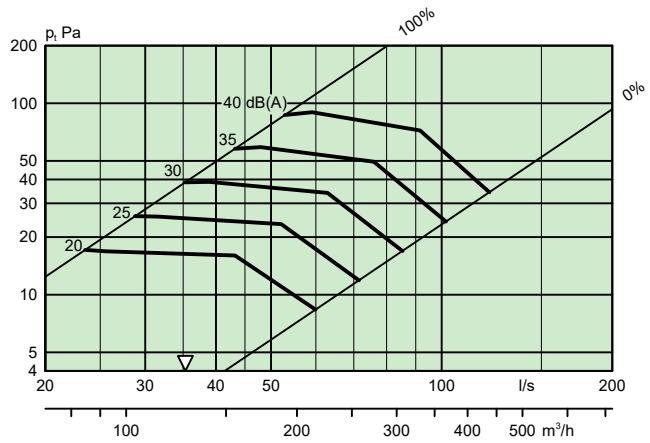
SWAN 2-1200 + SWAN T 2-200



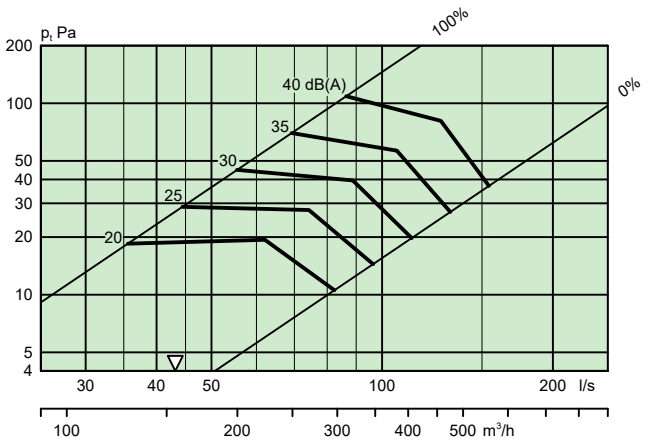
SWAN 2-1200 + SWAN T 2-250



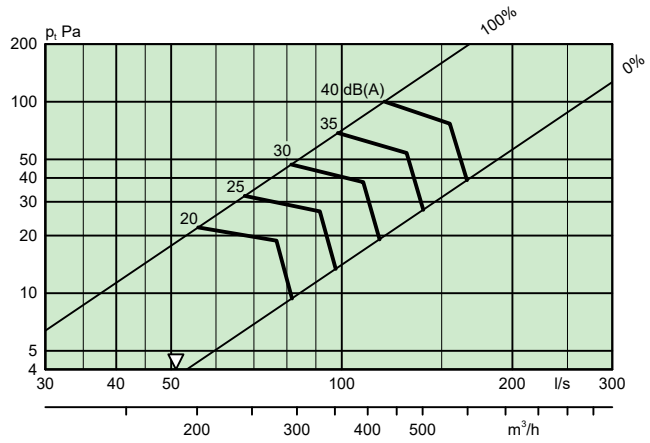
SWAN 3-1200 + SWAN T 3-160



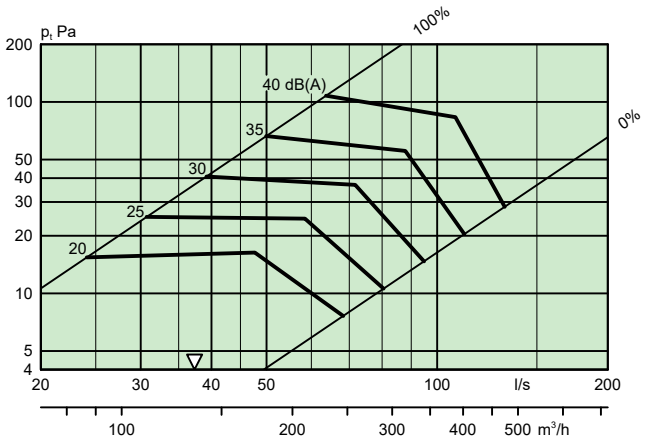
SWAN 3-1200 + SWAN T 3-200



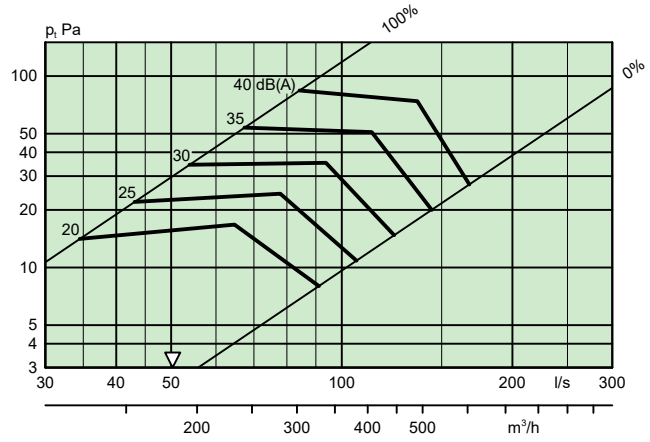
SWAN 3-1200 + SWAN T 3-250



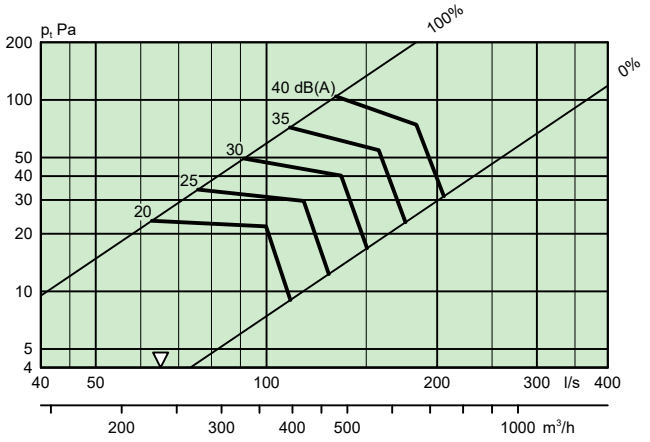
SWAN 4-1200 + SWAN T 4-160



SWAN 4-1200 + SWAN T 4-200



SWAN 4-1200 + SWAN T 4-250



Dimensions and Weights

SWAN standard including SWAN T commissioning box

Size	A	B	ØD	H - (H+25)	J	K	L	Weight, kg
2-1200-160	1190	107	159	265-290	124	1151	146	7.2
2-1200-200	1190	107	199	304-329	124	1151	166	7.9
2-1200-250	1190	107	249	354-379	124	1151	194	8.9
3-1200-160	1190	153	159	265-290	170	1151	146	8.8
3-1200-200	1190	153	199	304-329	170	1151	166	9.4
3-1200-250	1190	153	249	354-379	170	1151	194	10.3
4-1200-160	1190	198	159	265-290	215	1151	146	10.1
4-1200-200	1190	198	199	304-329	215	1151	166	10.8
4-1200-250	1190	198	249	354-379	215	1151	194	11.8

Size of the opening: A-20, B-12

SWAN T – Position of the duct connection

SWAN T	P	R	S
Ø160	102	22	163
Ø200	122	22	182
Ø250	147	22	207

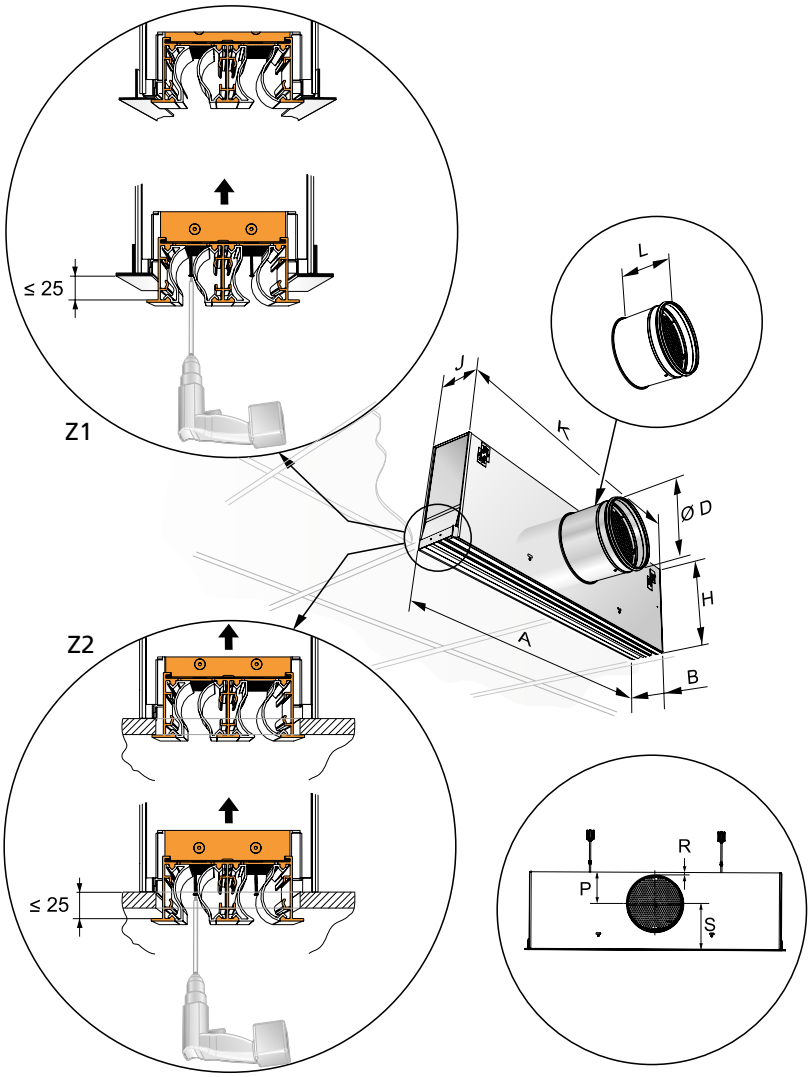


Figure 6. SWAN with SWAN T commissioning damper.

Ordering key

Product

Linear slot air diffuser	SWAN	a	-a	-bbbb	-c
Version					
Number of slots: 2, 3, 4					
Length, mm: 1200					
Version: W = white A = natural anodized					

Standard range

SWAN	2-1200
	3-1200
	4-1200

Accessory

Standard commissioning box	SWAN T	a	-a	-bbb
Version				
Number of slots: 2, 3, 4				
Size of duct to be connected: 160, 200, 250				

Without sound absorbing material, in standard version.
With sound absorbing material: to be specified in plain text in the order.

Standard range

For SWAN	2-1200-W	SWAN T	2-160
			2-200
			2-250
SWAN	3-1200-W	SWAN T	3-160
			3-200
			3-250
SWAN	4-1200-W	SWAN T	4-160
			4-200
			4-250

Specification text

Swegon's type SWAN linear slot air diffuser for ceiling installation complete with commissioning box containing the following functions:

- Individually adjustable air deflectors made of ABS plastic
- Natural anodized or white powder paint sprayed and baked white finish, RAL 9003/NCS S 0500-N
- Cleanable
- Commissioning box with removable commissioning damper, with lockable damper assembly, measuring method with low systematic error.

Size	SWAN a 3-1200-W	xx items
	SWAN Ta 3-200	xx items