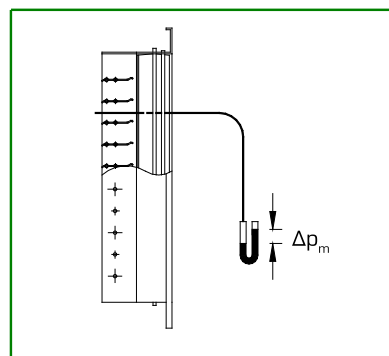


SVTS Industrial grille



The SVTS grille is designed for use as a supply air terminal device for large premises where a long throw or alternatively an effective mixing technique is desired. Flow pattern can be adjusted straight and narrow or short and mixing with vertical front blades. Horizontal back blades enable the adjustment of the flow pattern steplessly upwards and downwards

Quick Selection

Air flow up to 750 l/s (2700 m³/h) and 35 dB(A).

Product Facts

- Flow pattern can be adjusted
- Effective mixing technique

Product code example

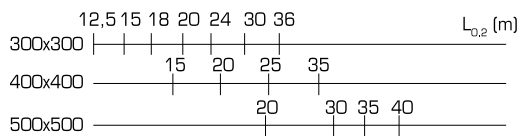
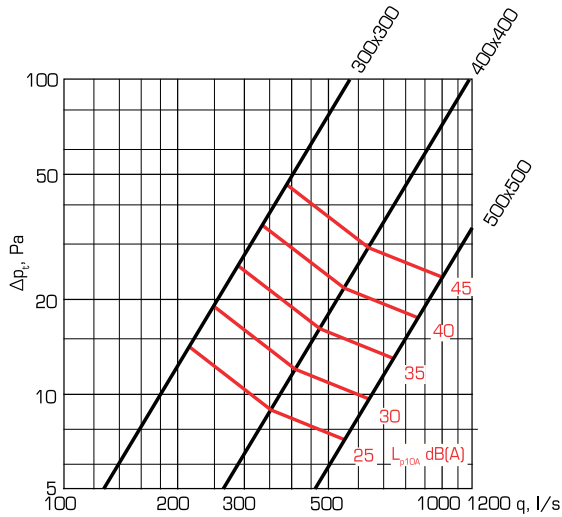
Industrial grille SVTS-300-300
Adjusting device S-300-300

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Selection diagrams, diffusion pattern, throw

Selection diagrams

Front blades straight, back blades straight

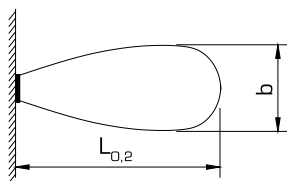


α	30°	20°
k_α	1,6	1,3
ΔL_α	+7	+3(dB)

$L_{0,3} = 0,67 \times L_{0,2}$

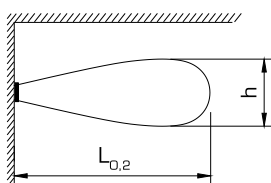
Diffusion pattern

From top



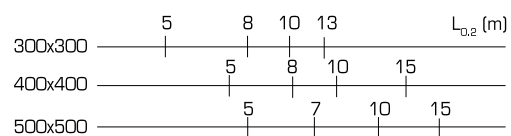
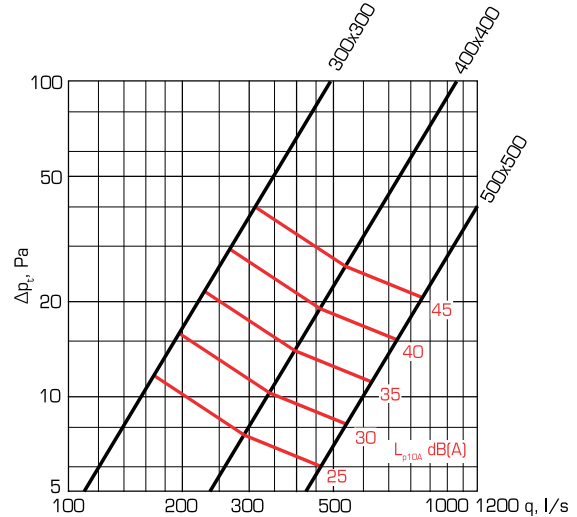
$b = 0,25 \times L_{0,2}$ (straight air jet)
 $b = 1,3 \times L_{0,2}$ (fan-shaped)

From side (free space mounting)



$h = 0,13 \times L_{0,2}$ (straight air jet)
 $h = 0,13 \times L_{0,2}$ (fan-shaped)

Front blades in fan-shaped position, back blades straight

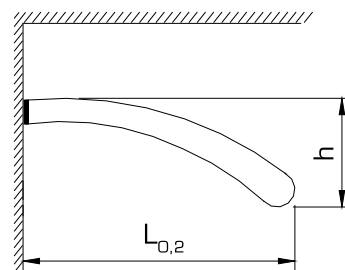


α	30°	20°
k_α	1,6	1,3
ΔL_α	+7	+3(dB)

$L_{0,3} = 0,67 \times L_{0,2}$

Throw

Non-isothermal, air flow fan-shaped, back blades straight



Δt	$L_{0,2}$ (Non-isothermal)	
-4	$0,9 \times L_{0,2}$ isothermic	$h = 0,5 \times L_{0,2} (\Delta t = -4)$
-6	$0,8 \times L_{0,2}$ isothermic	$h = 0,7 \times L_{0,2} (\Delta t = -6)$
-8	$0,7 \times L_{0,2}$ isothermic	$h = 0,9 \times L_{0,2} (\Delta t = -8)$

Sound data, definitions

Sound power level L_w

front blades straight

SVTS	Correction K_{oct} Middle frequency of octave band (Hz)							
	63	125	250	500	1000	2000	4000	8000
300x300	0	-2	4	4	-2	-9	-21	-31
400x400	1	0	5	5	-3	-11	-16	-23
500x500	3	2	6	5	-4	-13	-21	-30
Toler	+/-	6	3	2	2	2	2	3

front blades fan-shaped

SVTS	Correction K_{oct} Middle frequency of octave band (Hz)							
	63	125	250	500	1000	2000	4000	8000
300x300	2	-2	3	5	-2	-11	-26	-38
400x400	3	1	4	5	-3	-13	-19	-23
500x500	-2	-1	0	4	0	-7	-16	-23
Toler	+/-	6	3	2	2	2	2	3

The sound power levels in each octave band are obtained by adding the sound power level L_{p10A} , dB(A) to the correction factors K_{oct} in the table with help of the following formula:

$$L_{Woct} = L_{p10A} + K_{oct}$$

Sound attenuation ΔL

SVTS	Sound attenuation ΔL (dB) Middle frequency of octave band (Hz)							
	63	125	250	500	1000	2000	4000	8000
300x300	14	9	4	1	0	0	0	0
400x400	12	7	3	1	0	0	0	0
500x500	10	5	2	1	0	0	0	0
Toler	+/-	6	3	2	2	2	2	3

The average sound attenuation ΔL from duct to room including the orifice attenuation of the connecting duct in free space mounting is obtained in the table above.

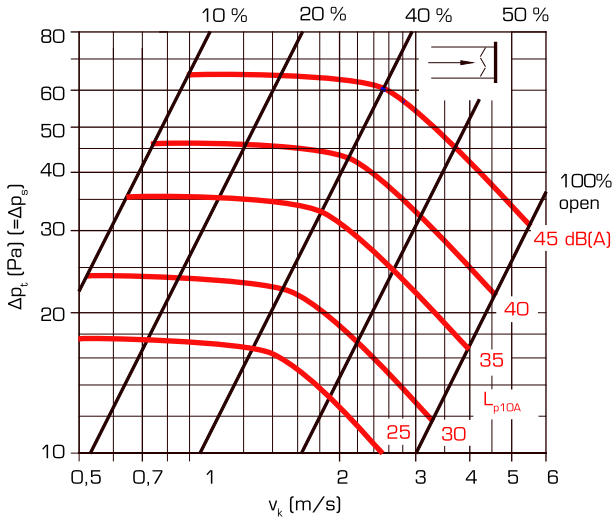
Definitions

q_v	air flow	(l/s)
Δp_t	total pressure drop	(Pa)
L_{p10A}	sound pressure level with 10m ² sab room attenuation (=4 dB)	[dB(A)]
$L_{0,2}$	throw corresponding final velocity 0,2 m/s	(m)
α	adjustment angle of the back blades	(°)
k_α	factor of the rise of pressure drop caused by the adjustment α of the back blades	
ΔL_α	the rise of the sound pressure level caused by the adjustment α of the back blades	(dB)
Δt	temperature difference between the supply air and the room air	(°C)
v_k	front face velocity	(m/s)
A_k	front face area (B x H)	(m ²)
K_A	increase to the sound pressure level caused by A_k	(dB)
m_2	measuring tolerance (error of methode)	(%)

Adjusting device S, measurement of the air flow

Adjusting device S (accessory)

Supply air



Sound level of adjusting device:

$$L_{p10As} = L_{p10A} + K_A$$

$$v_k = \frac{q_v}{(B-50) \times H} \left[\frac{m^3/s}{m^2} \right]$$

Effect of the front face area (A_k) to the sound level

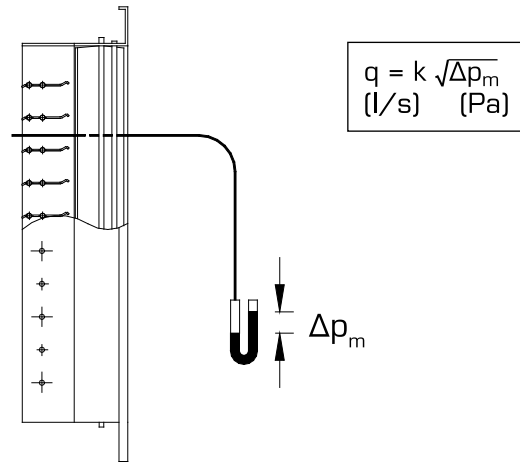
$A_k = B \times H$	300x300	400x400	500x500
K_A	+4	+7	+9

Total sound level of grille and adjusting device

Difference of sound levels between grille and adjustment device	0...1	2...3	4...9	>10	dB
Addition to the higher sound pressure level	3	2	1	0	dB

Measurement of the air flow

The air flow is measured as a pressure difference measurement by taking the hose pipe of the differential pressure instrument behind the back blades of the grille.



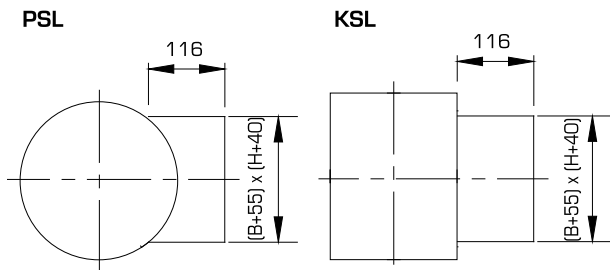
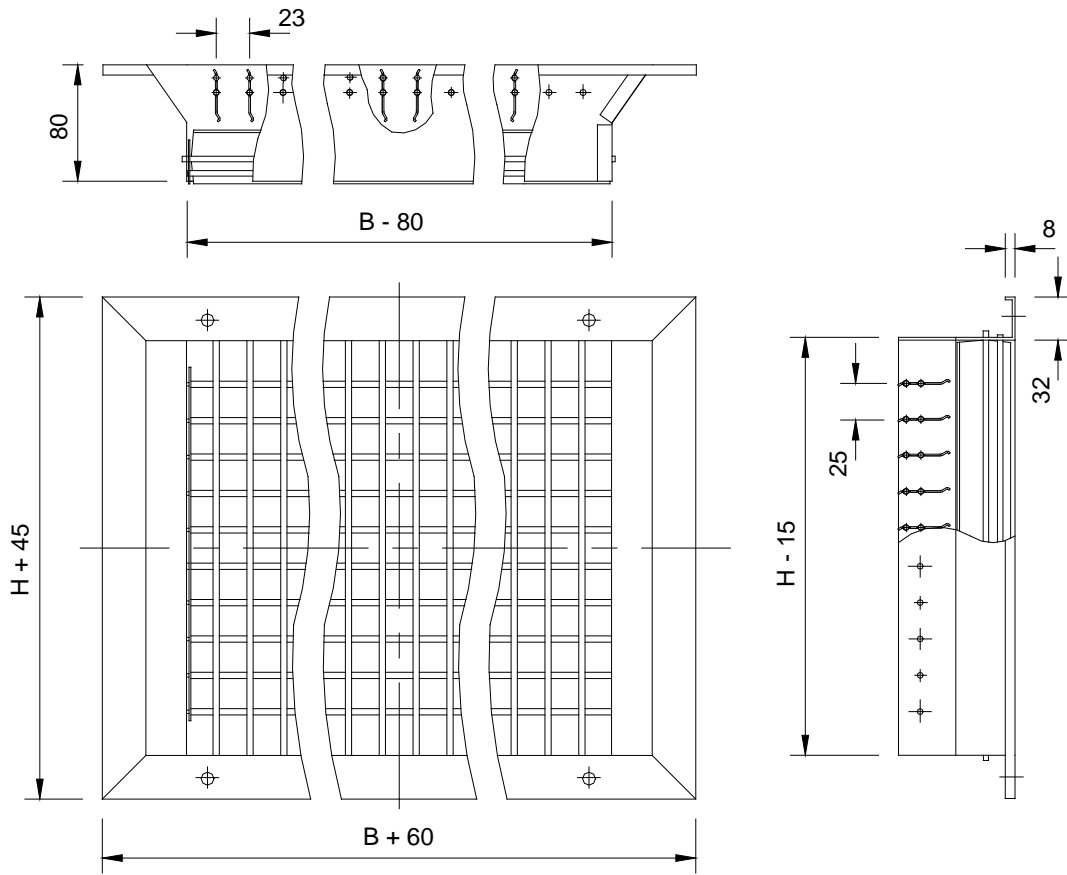
Size	K-values		
	Front blades straight back blades 0°	Front blades straight back blades 20°	Front blades straight back blades 30°
300x300	71	64	58
400x400	145	112	98
500x500	269	226	205
Size	K-values		
	Front blades fan-shaped back blades 0°	Front blades fan-shaped back blades 20°	Front blades fan-shaped back blades 30°
300x300	57	54	50
400x400	123	102	87
500x500	239	206	152

K-value is obtained by measuring Δp_m (Pa) in duct behind the grille.

$$m_2 = \pm 10 \%$$

Dimension and weight

Dimension and weight



B x H	Weight (kg)
300 x 300	2,2
400 x 400	3,4
500 x 500	5,0

The cut-out = nominal size

General, construction, installation, product code

General

The SVTS grille is designed for use as a supply air terminal device for large premises where a long throw or alternatively an effective mixing technique is desired.

Construction

Vertical, directional front blades. Flow pattern can be adjusted straight and narrow (front blades in a straight position) or short and mixing (front blades in a fan-shaped position). Horizontal, directional, back blades that turn together, enable the adjustment of the flow pattern steplessly upwards and downwards.

The blades of the grille are manufactured from aluminium profile and the frame from hot galvanized sheet steel. On special order the grille is also available in white or gray colour (the back blades not painted).

Installation

The grille is fitted direct to the end of a rectangular duct with screws through the front face of the flange. Another possibility is to install the grille to the side of a circular duct with help of a side adapter which is available as an extra fitting.

Descriptive text

Industrial air grille SVTS manufactured by Flåkt Woods, e.g in size 300 x 300.

Product code

Industrial air grille SVTS-aaa-bbb

Size, width-height, mm (aaa-bbb)
300-300, 400-400, 500-500

Accessories

Adjusting device S-aaa-bbb

Size, width-height, mm (aaa-bbb)
300-300, 400-400, 500-500

Side adapter for a circular duct PSL-aaa-bbb-ccc

Duct diameter (aaa)
400, 500, 630

Size, width-height, mm (bbb-ccc)
300-300, 400-400, 500-500

Side adapter for a rectangular duct KSL-aaa-bbb

Size, width-height, mm (aaa-bbb)
300-300, 400-400, 500-500