

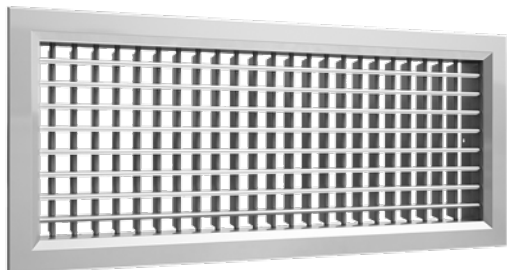
SD

Grilles



Grille

SD



Description

SD is an adjustable single or double deflection grille made of galvanized steel or powder painted black steel. With the adjustable blades, the grille is very suitable for air supply and is adaptable to the required throw and air spread pattern. The grille is available with several mounting options and can be delivered with mounting frame and opposed blade damper as accessories. Available in various standard dimensions. Customized sizes available on request.

Order code

Product	SD	a	b	c	d	eee	x	fff	gggg
Type	SD								
Frame	1 - Single deflection - 28 mm frame 2 - Double deflection - 28 mm frame								
Grid	1 - Horizontal 2 - Vertical								
Installation	- Not prepared C Clips CM Clips + mounting frame V Visible screw holes VM Visible screw holes + mounting frame H Hidden screw HM Hidden screw + mounting frame (H>225)								
Accessories	- No accessories D Opposed blade damper DGS								
Size	L: 150 - 1200 mm H: 100 - 500 mm								
Grilles standard finish:	- Galvanized steel 9010 RAL 9010, gloss 30 9003 RAL 9003, gloss 30 xxxx On request, other RAL colour								

Example 1: SD-11-CMD-400-200-9003
Example 2: SD-22-500-150

Min. - max. dimensions

H \ L	150	200	250	300	350	400	450	500 ↔ 1200
100								
150								
200								
250								
300								
350								
400								
450								
500								

Standard SD grilles are available within the above min. and max. sizes .

LindQST

Use the advanced Lindab web tool LindQST to calculate the full range of grilles and to find the suitable grille type and dimension for all applications. Product selection, room dimensioning and documentation search are easy available directly on web and mobile devices. Find this and much more on www.lindQST.com.

Maintenance

The grille should be removed to gain access to the plenum box or duct. The external parts should be wiped with a damp cloth.

Accessories

Mounting frame: MFS
Opposed blade damper: DGS

Materials and finish

Grille frame and blades: Steel
Mounting frame: Galvanized steel
Opposed blade damper: Casing in galvanized steel
Blades in plastic

Grilles standard finish:
- Galvanized steel
- RAL 9010, gloss 30
- RAL 9003, gloss 30

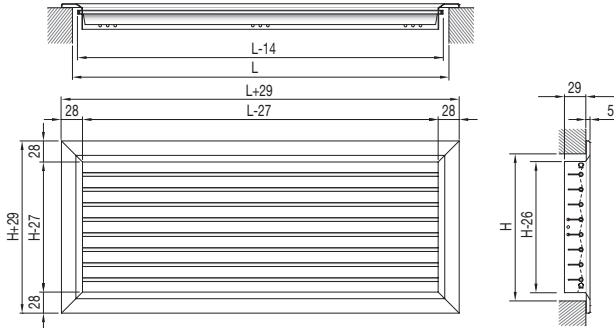
The grille is available in other colours. Please contact Lindab's sales department for further information.

Grille

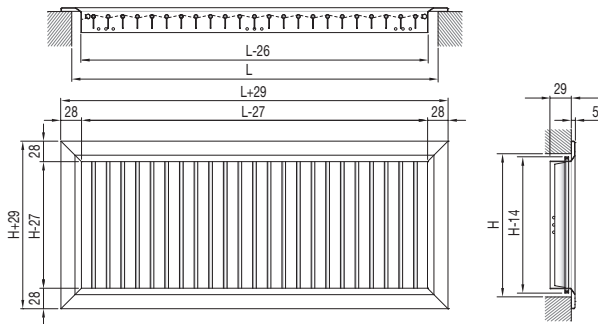
SD

Frame and grid

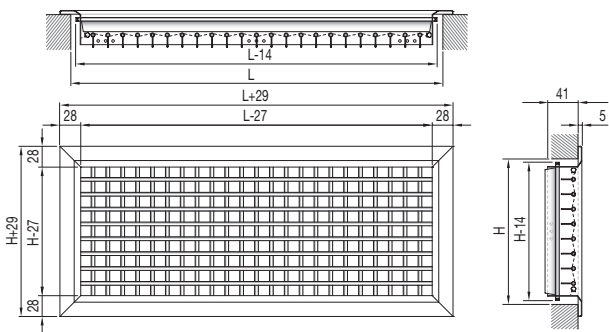
SD-11 Single deflection with horizontal blades.



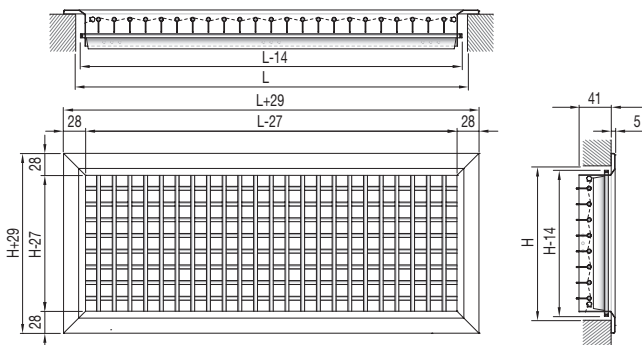
SD-12 Single deflection with vertical blades.



SD-21 Double deflection with horizontal front blades.

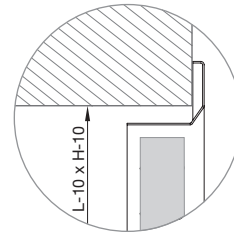


SD-22 Double deflection with vertical front blades.



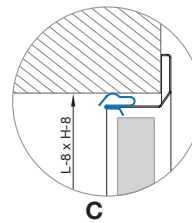
Installation

- Not prepared

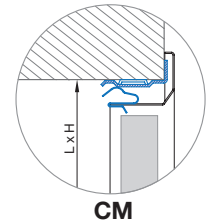


C - Clips

CM - Clips + mounting frame



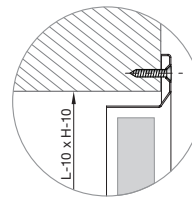
C



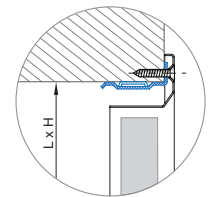
CM

V* - Visible screw holes

VM* - Visible screw holes + mounting frame



V*

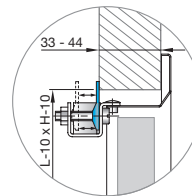


VM*

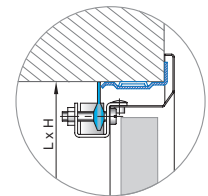
* Screws are not included.

H - Hidden screws

HM - Hidden screws + mounting frame



H



HM

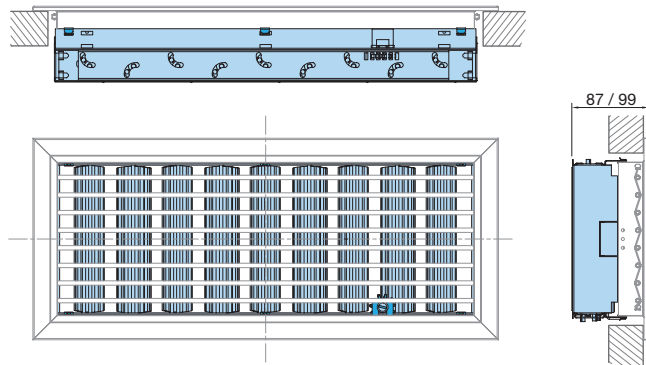
Grille

SD

Accessories

- No damper

D - Opposed blade damper DGS



A full length click on DGS damper is available for all SD variants.

The DGS is made of galvanized steel with wide counter directional blades made of plastic. These can be controlled with a screwdriver via the gear wheel to control the air flow rate.

SD + DGS depth, (See drawing above).

SD-11, SD-12, Single deflection: 87 mm.

SD-21, SD-22, Double deflection: 99 mm.

Grille

SD

Free area

L: 150 - 650 mm

H / L	SD-2 Steel deflection grille A_k [m ²]										
	150	200	250	300	350	400	450	500	550	600	650
100	0.007	0.009	0.012	0.015	0.018	0.020	0.023	0.026	0.028	0.031	0.034
150	0.011	0.016	0.020	0.025	0.030	0.034	0.039	0.043	0.048	0.053	0.057
200		0.022	0.029	0.035	0.042	0.048	0.055	0.061	0.067	0.074	0.080
250			0.037	0.045	0.054	0.062	0.070	0.079	0.087	0.095	0.104
300				0.056	0.066	0.076	0.086	0.096	0.106	0.117	0.127
350					0.078	0.090	0.102	0.114	0.126	0.138	0.150
400						0.104	0.118	0.131	0.145	0.159	0.173
450							0.133	0.149	0.165	0.181	0.196
500								0.167	0.184	0.202	0.220

L: 700 - 1200 mm

H / L	SD-2 Steel deflection grille A_k [m ²]										
	700	750	800	850	900	950	1000	1050	1100	1150	1200
100	0.037	0.039	0.042	0.045	0.047	0.050	0.053	0.056	0.058	0.061	0.064
150	0.062	0.066	0.071	0.075	0.080	0.085	0.089	0.094	0.098	0.103	0.107
200	0.087	0.093	0.100	0.106	0.113	0.119	0.125	0.132	0.138	0.145	0.151
250	0.112	0.120	0.128	0.137	0.145	0.153	0.162	0.170	0.178	0.187	0.195
300	0.137	0.147	0.157	0.167	0.178	0.188	0.198	0.208	0.218	0.228	0.239
350	0.162	0.174	0.186	0.198	0.210	0.222	0.234	0.246	0.258	0.270	0.282
400	0.187	0.201	0.215	0.229	0.243	0.256	0.270	0.284	0.298	0.312	0.326
450	0.212	0.228	0.244	0.259	0.275	0.291	0.307	0.322	0.338	0.354	0.370
500	0.237	0.255	0.272	0.290	0.308	0.325	0.343	0.360	0.378	0.396	0.413

Quick selection, Supply air, SD-2

Grille size [mm]		Air flow rate																			
		m ³ /h l/s	100 (28)	150 (42)	200 (56)	250 (69)	300 (83)	350 (97)	400 (111)	500 (139)	600 (167)	700 (194)	800 (222)	900 (250)	1000 (278)	1250 (347)	1500 (417)	2000 (556)	2500 (694)	3000 (833)	
H=100	200x100 (0,009)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 3 5,5 7,5	23 4,4 12,5 11,1	31 5,9 22,1 14,6	38 7,4 34,6 18,1	43 8,9 49,8 21,5	48 10,3 67,8 25,0													
	300x100 (0,015)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 2,8 5 9,0	<20 3,7 8,9 11,8	26 4,7 13,9 14,6	32 5,6 20 17,5	36 6,5 27,2 20,2	40 7,5 35,6 23,0	47 9,4 55,6 >25												
	400x100 (0,02)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 2,7 4,8 10,2	<20 3,4 7,4 10,2	<20 4,1 10,7 15,1	24 4,8 14,6 17,5	28 5,5 19,1 19,9	32 6,2 29,8 24,7	39 8,2 42,9 >25	44 9,6 58,3 >25	49										
	500x100 (0,026)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 2,7 4,6 11,4	<20 3,2 6,7 11,4	<20 4,6 13,6 15,7	22 3,8 9,1 17,9	26 4,3 11,8 22,1	33 5,4 18,5 22,1	38 6,5 26,7 >25	43 7,6 36,3 >25	47 8,6 47,4 >25	50 9,7 60 >25									
	600x100 (0,031)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 2,7 4,5 12,4	<20 3,1 6,2 14,4	<20 3,6 8,1 16,4	22 3,6 8,1 20,3	28 4,5 12,6 20,3	33 5,3 18,2 24,1	38 6,2 24,7 >25	42 7,1 32,3 >25	45 8 40,9 >25	49 8,9 50,5 >25									
	800x100 (0,042)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 2,3 3,4 12,5	<20 3,1 4,4 14,3	<20 3,6 6,9 17,7	22 3,6 8,1 21,0	26 4,5 12,6 21,0	31 5,4 18,5 24,4	36 6,2 24,7 >25	41 7,1 32,3 >25	44 8,9 50,5 >25	48 10,3 67,8 25,0									
H=150	300x150 (0,025)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 2,8 4,9 11,5	<20 3,3 7 13,7	<20 3,9 9,6 15,9	23 4,4 12,5 18,1	27 5,6 19,6 22,4	34 6,7 28,2 22,4	39 7,8 38,4 >25	44 8,9 50,1 >25	48										
	400x150 (0,034)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 2,4 3,8 11,9	<20 2,8 5,1 13,8	<20 3,3 6,7 15,7	26 4,1 10,5 19,4	31 4,9 15,1 23,1	36 5,7 20,6 >25	40 6,5 26,8 >25	43 7,3 34 >25	46 8,1 41,9 >25										
	500x150 (0,043)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 2,6 4,2 14,1	<20 3,2 6,5 17,4	<20 3,8 9,4 20,7	25 3,8 12,8 24,0	29 4,5 16,7 24,0	30 5,1 21,1 >25	35 5,8 26,1 >25	40 6,4 40,8 >25	47										
	600x150 (0,053)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 2,6 4,4 15,9	<20 3,2 6,4 19,0	<20 3,7 8,7 22,0	25 3,7 11,4 22,0	29 4,8 14,4 22,0	30 5,3 17,8 >25	35 6,6 27,8 >25	40 7,9 40 >25	47										
	800x150 (0,071)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 2,4 3,5 16,5	<20 2,7 4,8 19,2	<20 3,1 6,2 24,4	21 2,7 8,7 24,4	25 3,5 11,4 24,4	28 4,9 15,3 >25	34 5,9 22 >25	40 7,8 39,1 >25	48										
H=200	400x200 (0,048)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 2,3 3,4 13,4	<20 2,9 5,3 16,6	<20 3,5 7,6 19,8	23 4 10,4 22,9	27 4,6 13,6 22,9	31 5,2 17,2 >25	35 5,8 21,2 >25	38 7,2 33,1 >25	44 8,7 47,7 >25										
	500x200 (0,061)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 2,3 3,3 14,9	<20 2,7 4,7 17,7	<20 3,2 6,5 20,6	21 2,7 8,4 20,6	25 3,6 10,7 23,4	29 4,6 13,2 >25	32 5,7 20,6 >25	38 6,8 29,7 >25	44										
	600x200 (0,074)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 2,3 3,2 16,2	<20 2,6 4,4 18,8	<20 3 5,7 21,4	20 3 9 24,0	24 3,8 14 24,0	27 4,7 20,2 >25	33 5,6 25,9 >25	39 7,5 35,9 >25	47										
	800x200 (0,1)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 2,2 3,2 18,6	<20 2,5 4 20,9	<20 2,8 7,7 23,1	26 3,1 11,1 23,1	31 4,2 19,7 >25	36 5,6 25,9 >25	41 7,8 39,1 >25	46 9,7 50,5 >25											
	500x300 (0,096)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 2 2,6 16,7	<20 2,3 3,4 18,9	<20 2,6 4,3 21,2	20 2,9 5,3 23,5	27 3,6 8,3 >25	31 4,3 11,9 >25	36 5,8 21,2 >25	41 7,2 33,1 >25	47										
H=300	600x300 (0,117)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 2,1 2,9 19,4	<20 2,4 3,6 21,5	<20 3 5,6 25	22 2,7 8,4 25	27 3,6 11,4 25	31 4,8 14,4 >25	36 6 22,5 >25	42 7,2 33,1 >25	48										
	800x300 (0,157)	L _{WA} [dB(A)] V _k [m/s] Δp _t [Pa] L _{0.2} [m]	<20 2,2 3,1 23,2	<20 2,7 4,5 >25	<20 3,5 7,9 >25	28 3,5 12,4 >25	35 4,4 17,8 >25	40 5,3 22,5 >25	46 6,8 30,9 >25	52 9,7 50,5 >25											

10 ≤ LWA < 30 30 ≤ LWA < 40 40 ≤ LWA < 50

Data valid for:

- Supply air
- Blade setting 0°
- Isotherm conditions
- Throw without ceiling effect (distance >800 mm. to ceiling)

Terminology:

- A_k = effective free area
- V_k = effective face velocity
- Δp_t = total pressure loss
- L_{WA} = sound power level
- l_{0.2} = throw to terminal velocity at 0.2 m/s.

Grille

SD

Technical data

Capacity

Air flow rate q_v [l/s] and [m³/h], total pressure loss Δp_t [Pa], throw $l_{0.2}$ [m] and sound power level L_{WA} [dB(A)] can be seen in the diagrams.

Air Jet Dispersal

Throw l_x [m] at an average speed of 0.2; 0.25 and 0.3 m/s, 0° blade setting without ceiling effect (distance from grille to ceiling over 800 mm) can be seen in the diagrams. Correction for dispersal - see table below.

Sound power level L_{WA}

Sound power level L_{WA} [dB(A)] at 0° blade setting can be seen in the diagrams. The sound power levels apply for grilles without an opposed blade damper. See the table below for correction of sound power level on blade settings [dB].

Correction values for sound power levels and total pressure loss below are valid for SD-21 and SD-22, (grilles with double deflection). For SD-11 and SD-12, (single deflection), go to www.lindQST.com.

Blade settings	45°	90°
Throw l_x	x 0.81	x 0.61
Sound power level L_{WA} *	+ 3	+ 7
Total pressure loss Δp_t *	x 1.13	x 1.40

Frequency-related sound power level

The sound power level in the frequency band is defined as $L_{Wf} = L_{WA} + K_{ok}$.

K_{ok} values are given in the table below.

	Centre frequency Hz							
	63	125	250	500	1K	2K	4K	8K
Supply air	-1	-1	-1	-2	-7	-12	-16	-16
Extract air	-5	-5	-2	-3	-4	-14	-21	-19

Opposed blade damper DGS

Correction of total pressure loss Δp_t [Pa] and sound power level L_{WA} [dB(A)] using a damper. See table below.

Damper position	Open	25% Closed	50% Closed
	Total pressure loss Δp_t	x 1.16	x 1.34
Sound power level L_{WA}	+ 2	+ 7	+ 14

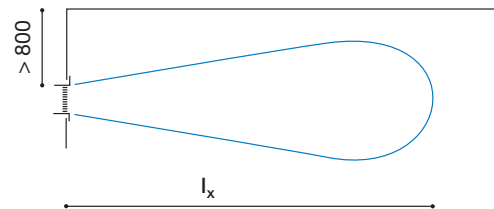
Extract air

Sound power level L_{WA}	- 2
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Throw and air jet dispersal

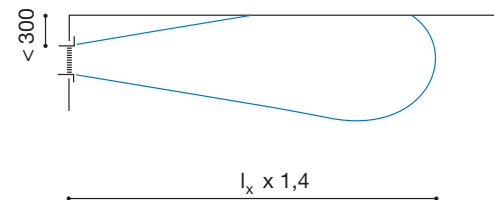
Throw

All given throw data applies for installation more than 800 mm from the ceiling.



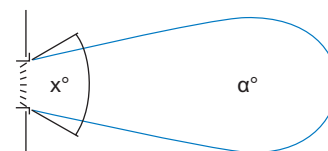
For grilles installed less than 300 mm from the ceiling, the air throw is extended by 40% so that:

$$l_{x \text{ result}} = 1.4 \times l_{x \text{ diagram value}}$$



Air jet dispersal

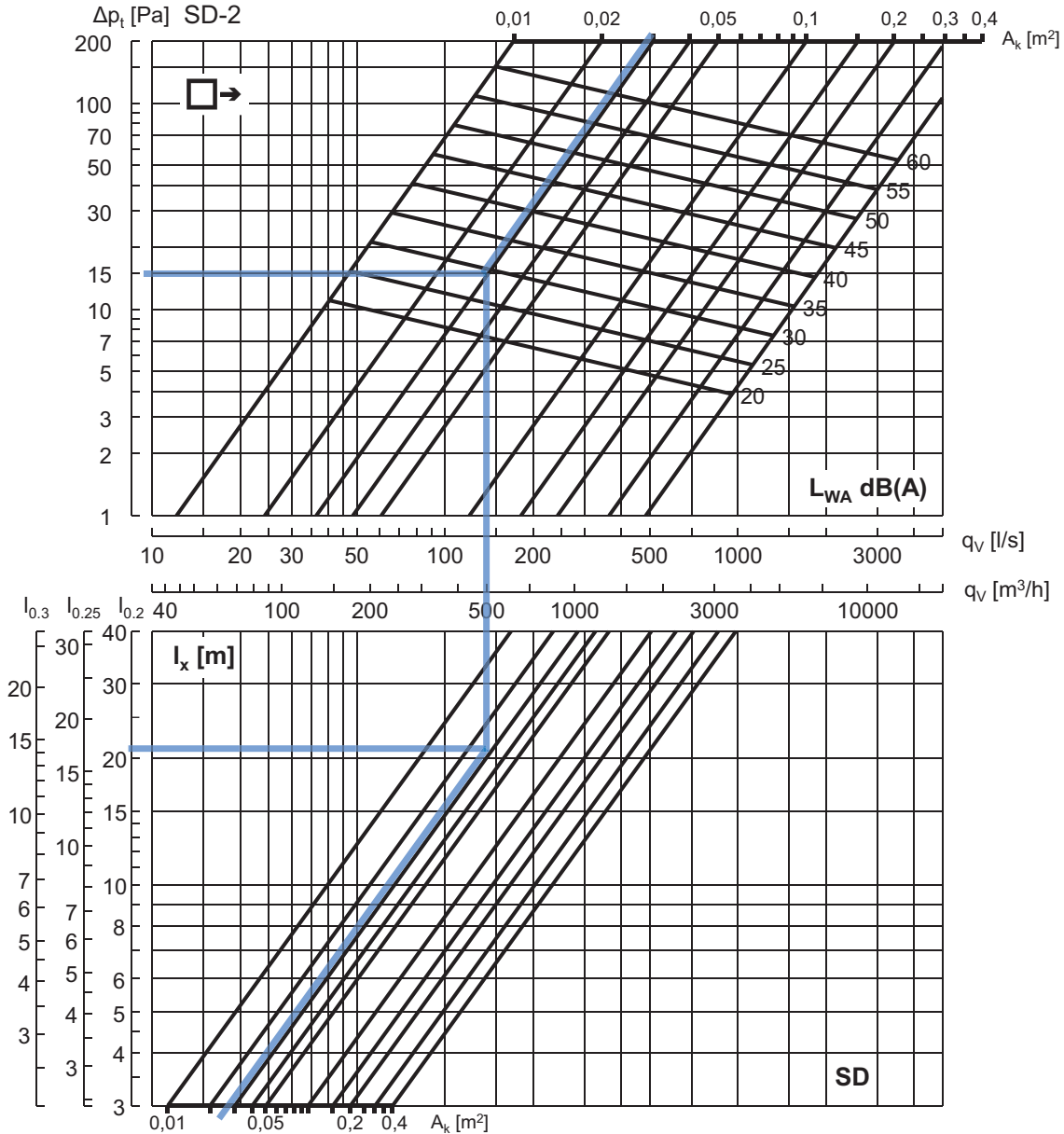
Adjustable blade settings for various jet dispersals, correction values can be seen in the table.



$$X = 45^\circ = \alpha = 35^\circ$$

$$X = 90^\circ = \alpha = 60^\circ$$

Technical data



Example: SD-22

Grille size (LxH): 400x150 mm
 Free area A_k : 0.034 m²
 Air flow rate q_v : 500 m³/h (139 l/s)

Result:

Sound power level L_{WA} : ~26 [dB(A)]
 Total pressure loss Δp_t : ~11 [Pa]
 Throw $l_{0.2}$: ~19 [m]

Data valid for:

- Supply air
- Blade setting 0°
- Isotherm conditions
- Throw without ceiling effect (distance >800 mm. to ceiling)

For grilles with free area > 0.4 m², we refer to use Lindabs online calculation tool on www.lindqst.com.



Most of us spend the majority of our time indoors. Indoor climate is crucial to how we feel, how productive we are and if we stay healthy.

We at Lindab have therefore made it our most important objective to contribute to an indoor climate that improves people's lives. We do this by developing energy-efficient ventilation solutions and durable building products. We also aim to contribute to a better climate for our planet by working in a way that is sustainable for both people and the environment.

Lindab | For a better climate