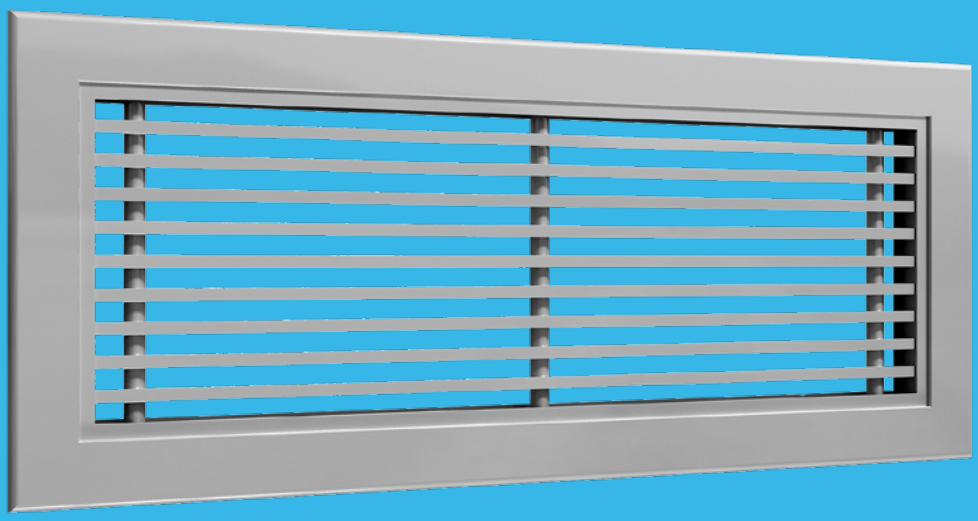
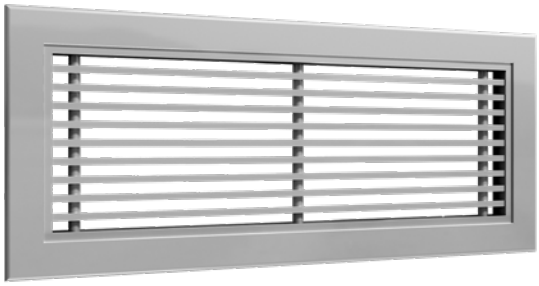


AL

Grilles Nordic version

Grille Nordic version AL



Description

The AL is a linear bar grille with fixed blades made of aluminum. With several frame and grid combinations, the AL grille is very flexible and suitable for various kind of applications.
The grille is available with several mounting options and can be delivered with mounting frame, opposed blade damper and plenum box accessories.
The AL can be delivered as a single grille in lengths up to the maximum size indicated in the following tables (Min.-max. dimensions).

Grilles are available in 2 versions:
- Global version: wall opening is L + 5 x H + 5
- Nordic version: wall opening is L x H

Order code - Nordic version

Product	AL	a	b	c	d	eeee x fff	gggg

Type
AL

Frame (See page 3)
0, 1, 2, 3, 4, 5, 6

Grid (See page 3)
0,1, 7, 8

Installation (See page 4)
-V, VMN, CN, CMN, H, HMN, B, F

Accessories (See page 4)
- DN

Size
L: 200 - 2000 mm
H: 75 - 600 mm
(For L longer than 2000 mm, see page 5).

Grilles standard finish:

-	Anodized aluminium
9003	RAL 9003, gloss 30
xxxx	On request, other RAL colour

Example 1: AL-1-1-CMN-800 x 200-9003
Example 2: AL-0-0-1000x100

Min. - max. dimensions

AL - 0, 1, 2, 3

H \ L	200 ← →	2000
75 ↕ 600		

AL - 4, 5

H \ L	200 ← →	1500
50 ↕ 400		

AL - 6

H \ L	200 ← →	1200
100 ↕ 300		

Standard grilles are available in 50 mm steps within the above min. and max. sizes.
Customized sizes available on request.
For the lengths bigger than the maximum indicated in the above tables, the AL can be delivered in multiple pieces as a linear continuous grille line (see details page 5).

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

Remove the grille to gain access to the plenum box or duct. External parts should be wiped with a damp cloth.

Accessories

Plenum box:	VBA, PBAN
Mounting frame:	MFAN
Opposed blade damper:	DGAN

Materials and finish

Grille frame and blades:	Anodized aluminium
Mounting frame:	Galvanized steel
Opposed blade damper:	Galvanized steel
Grilles standard finish:	
	- Aluminium anodized
	- RAL 9003, gloss 30

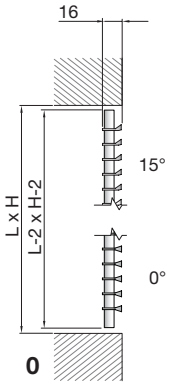
The grille is available in other colours. Please contact Lindab's sales department for further information.

Grille Nordic version

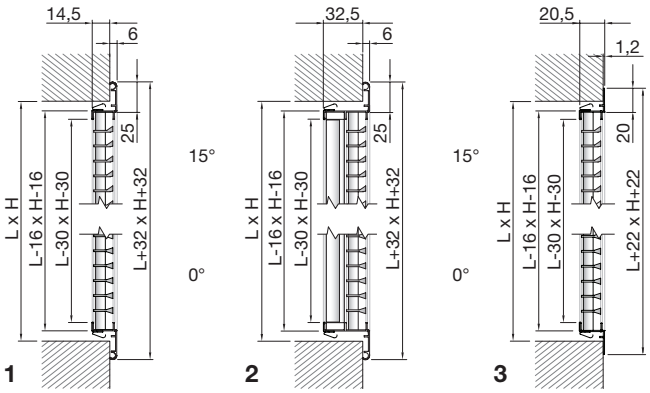
AL

Frame

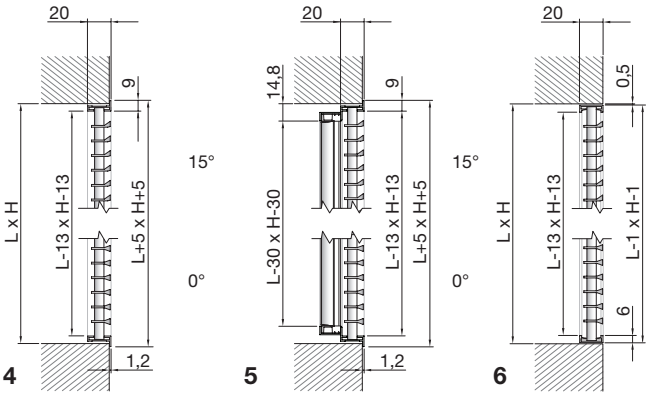
0 - No frame



1 - 25 mm frame
2 - 25 mm frame with direction
3 - 20 mm flat frame

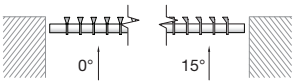


4 - 9 mm flat frame
5 - 9 mm flat frame with direction
6 - Frame with no flange

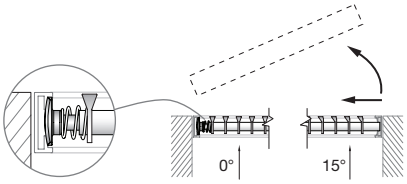


Grid

0 - Fixed grid 0º All frames
1 - Fixed grid 15º All frames



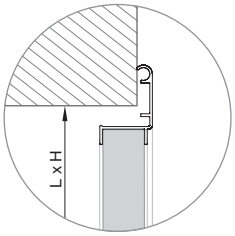
7 - Removable grid 0º Only frame 6
8 - Removable grid 15º Only frame 6



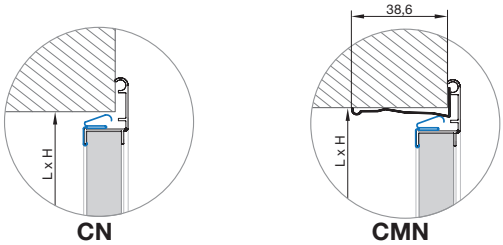
Grille Nordic version AL

Installation

- Not prepared

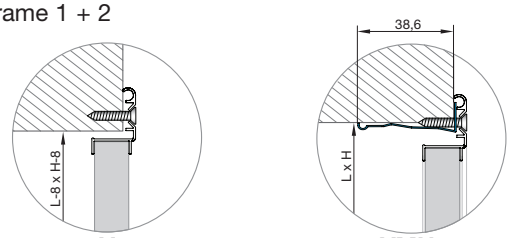


CN - Clips
CMN - Clips + mounting frame
Only frame 1 + 2



CN **CMN**

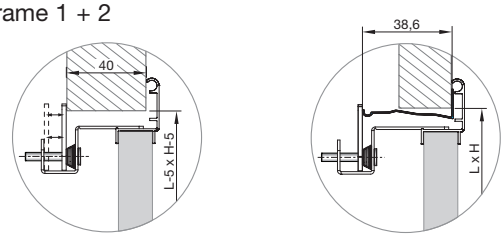
V* - Visible screw holes
VMN* - Visible screw holes + mounting frame
Only frame 1 + 2



V **VMN**

* Screws are not included.

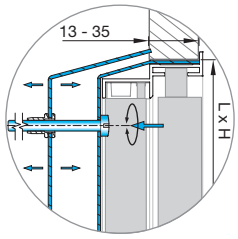
H - Hidden screws**
HMN - Hidden screws + mounting frame**
Only frame 1 + 2



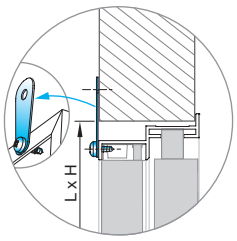
H** **HM****

** Limitation max. length: 1200 mm, max. height: 1000 mm.

B **Mounting bridge**
F **Fixing brackets**



B
Only frame 4 + 5

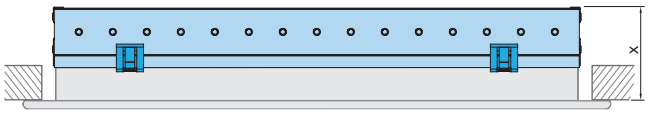


F
Only frame 4 + 5 + 6

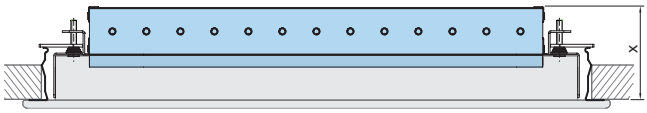
Accessories

- No damper

DN - Opposed blade damper DGAN



AL with frame type 1, 2, 3 and installation type CN, CMN, V and VMN.
A full length click-on DGAN-damper is available.



AL with installation type H, HMN or B has a shortend DGAN damper option due to the hidden screw and mounting bridge installation type.
The damper is mounted from factory and is not detachable.

Frame type	x mm
1	51
2	69
3	51
4	73.4
5	73.4
6	68

- plenum box
- mounting frame

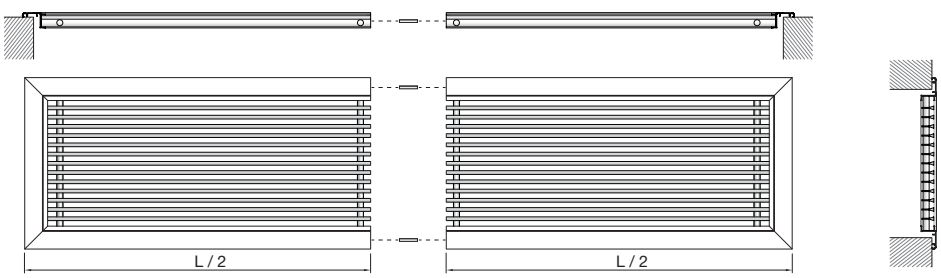
Details see website on www.lindQST.com.

Grille Nordic version AL

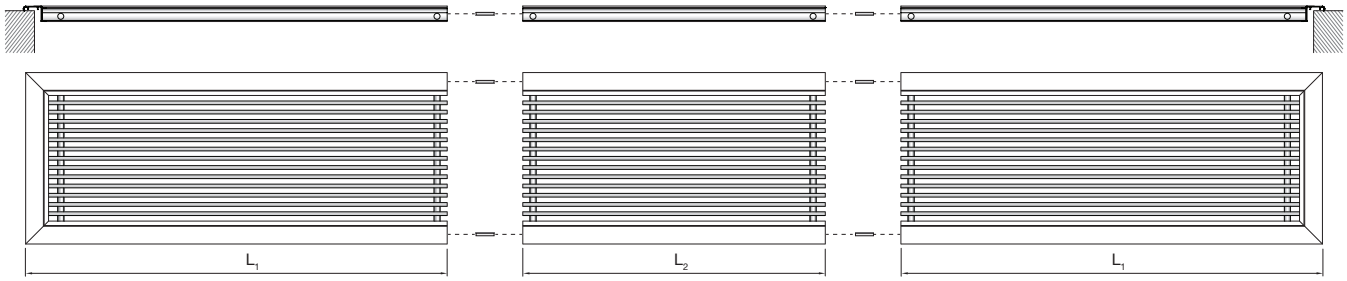
L longer than 2000 mm

REMARK: Maximum possible height is 250 mm

25 mm frame, 4000 ≥ L > 2000 mm



25 mm frame, 6000 ≥ L > 4001 mm



When the AL is ordered with:

a) 25 mm frame, 5000 ≥ L > 4001 mm , the grille always is delivered in whole pieces of 1500 mmm (L_1) and one piece (L_2) that will complete the desired length.

b) 25 mm frame, 6000 ≥ L > 5001 mm, the grille always is delivered in whole pieces of 2000 mm (L_1) and one piece (L_2) that will complete the desired length.

c) 25 mm frame, L > 6001 mm, like **b**).

For other frame types consult your local Lindab dealer.

Order code

Product	**AL**	**a**	**b**	**c**	**d**	**eeee x fff**	**gggg**

Type
AL

Frame (See page 3)
1, 2, 3, 4, 5, 6

Grid (See page 3)
0,1

Installation (See page 4)
- V, VMN, CN, CMN, H, HMN, B, F

Accessories (See page 4)
- DN

Size
L > 2000 mm
H: 75 - 250 mm (Frame 1, 2, 3)
H: 50 - 250 mm (Frame 4, 5, 6)

Grilles standard finish:
- Anodized aluminium
9003 RAL 9003, gloss 30
xxxx On request, other RAL colour

Example 1: AL-1-1-CMN-4000-200-9003
Example 2: AL-4-0-5000-200

Grille Nordic version AL

Free area

	AL - 1x Linear bar grille with 25 mm frame A_k (m^2)																	
H \ L	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400	1500
75	0,007	0,008	0,010	0,012	0,014	0,016	0,018	0,020	0,022	0,026	0,030	0,034	0,038	0,042	0,046	0,049	0,053	0,057
100	0,010	0,014	0,017	0,020	0,023	0,026	0,029	0,032	0,035	0,042	0,048	0,054	0,060	0,066	0,073	0,079	0,085	0,091
150	0,018	0,024	0,029	0,034	0,040	0,045	0,051	0,056	0,062	0,073	0,083	0,094	0,105	0,116	0,127	0,138	0,149	0,160
200	0,026	0,034	0,041	0,049	0,057	0,065	0,073	0,080	0,088	0,104	0,119	0,135	0,150	0,166	0,181	0,197	0,212	0,228
250	0,034	0,044	0,054	0,064	0,074	0,084	0,094	0,104	0,114	0,135	0,155	0,175	0,195	0,215	0,236	0,256	0,276	0,296
300	0,041	0,054	0,066	0,079	0,091	0,104	0,116	0,128	0,141	0,166	0,190	0,215	0,240	0,265	0,290	0,315	0,339	0,364
350	0,049	0,064	0,079	0,093	0,108	0,123	0,138	0,152	0,167	0,197	0,226	0,256	0,285	0,315	0,344	0,374	0,403	0,432
400	0,057	0,074	0,091	0,108	0,125	0,142	0,159	0,176	0,194	0,228	0,262	0,296	0,330	0,364	0,398	0,432	0,467	0,501
450	0,065	0,084	0,104	0,123	0,142	0,162	0,181	0,200	0,220	0,259	0,297	0,336	0,375	0,414	0,453	0,491	0,530	0,569
500	0,073	0,094	0,116	0,138	0,159	0,181	0,203	0,225	0,246	0,290	0,333	0,377	0,420	0,463	0,507	0,550	0,594	0,637
550	0,080	0,104	0,128	0,152	0,176	0,200	0,225	0,249	0,273	0,321	0,369	0,417	0,465	0,513	0,561	0,609	0,657	0,705
600	0,088	0,114	0,141	0,167	0,194	0,220	0,246	0,273	0,299	0,352	0,404	0,457	0,510	0,563	0,615	0,668	0,721	0,774

	AL - 0x Linear bar grille with no frame A_k (m^2)																	
H \ L	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400	1500
75	0,014	0,017	0,021	0,024	0,028	0,031	0,035	0,038	0,042	0,049	0,056	0,063	0,070	0,077	0,084	0,091	0,098	0,105
100	0,019	0,023	0,028	0,033	0,037	0,042	0,047	0,051	0,056	0,065	0,074	0,084	0,093	0,102	0,112	0,121	0,130	0,140
150	0,028	0,035	0,042	0,049	0,056	0,063	0,070	0,077	0,084	0,098	0,112	0,126	0,140	0,153	0,167	0,181	0,195	0,209
200	0,037	0,047	0,056	0,065	0,074	0,084	0,093	0,102	0,112	0,130	0,149	0,167	0,186	0,205	0,223	0,242	0,260	0,279
250	0,047	0,058	0,070	0,081	0,093	0,105	0,116	0,128	0,140	0,163	0,186	0,209	0,233	0,256	0,279	0,302	0,326	0,349
300	0,056	0,070	0,084	0,098	0,112	0,126	0,140	0,153	0,167	0,195	0,223	0,251	0,279	0,307	0,335	0,363	0,391	0,419
350	0,065	0,081	0,098	0,114	0,130	0,146	0,163	0,179	0,195	0,228	0,260	0,293	0,326	0,358	0,391	0,423	0,456	0,488
400	0,074	0,093	0,112	0,130	0,149	0,167	0,186	0,205	0,223	0,260	0,298	0,335	0,372	0,409	0,446	0,484	0,521	0,558
450	0,084	0,105	0,126	0,146	0,167	0,188	0,209	0,230	0,251	0,293	0,335	0,377	0,419	0,460	0,502	0,544	0,586	0,628
500	0,093	0,116	0,140	0,163	0,186	0,209	0,233	0,256	0,279	0,326	0,372	0,419	0,465	0,512	0,558	0,605	0,651	0,698
550	0,102	0,128	0,153	0,179	0,205	0,230	0,256	0,281	0,307	0,358	0,409	0,460	0,512	0,563	0,614	0,665	0,716	0,767
600	0,112	0,140	0,167	0,195	0,223	0,251	0,279	0,307	0,335	0,391	0,446	0,502	0,558	0,614	0,670	0,725	0,781	0,837

Grille Nordic version AL

Quick selection, Supply air, AL - 10

Grille size [mm]			Air flow rate																		
		m³/h	100	150	200	250	300	350	400	500	600	700	800	900	1000	1250	1500	2000	2500	3000
A_k [m²]		l/s	(28)	(42)	(56)	(69)	(83)	(97)	(111)	(139)	(167)	(194)	(222)	(250)	(278)	(347)	(417)	(556)	(694)	(833)
H=100	L_{WA} [dB(A)]		24	36	46															
200x100	V_k [m/s]		2,7	4	5,4															
(0,01)	Δp_t [Pa]		8	18	31															
	$L_{0,2}$ [m]		4,2	6,3	8,4															
	L_{WA} [dB(A)]		<20	23	32	38	44	49												
300x100	V_k [m/s]		1,7	2,5	3,4	4,1	5	5,8												
(0,017)	Δp_t [Pa]		3	7	12	19	27	37												
	$L_{0,2}$ [m]		3,3	5	6,6	8,2	9,8	11,5												
	L_{WA} [dB(A)]			<20	22	29	35	40	44											
400x100	V_k [m/s]			1,8	2,4	3	3,6	4,2	4,9											
(0,023)	Δp_t [Pa]			4	6	10	14	19	25											
	$L_{0,2}$ [m]			4,3	5,7	7	8,4	9,8	11,2											
	L_{WA} [dB(A)]				<20	22	28	33	37	44	50									
500x100	V_k [m/s]				1,9	2,4	2,9	3,3	3,8	4,8	5,7									
(0,029)	Δp_t [Pa]				4	6	9	12	16	25	36									
	$L_{0,2}$ [m]				5	6,2	7,4	8,7	10	12,5	15									
	L_{WA} [dB(A)]					<20	22	27	31	38	44	49								
600x100	V_k [m/s]					2	2,3	2,7	3,1	3,9	4,7	5,5								
(0,035)	Δp_t [Pa]					4	6	8	11	17	24	33								
	$L_{0,2}$ [m]					5,6	6,8	7,9	9	11,3	13,6	15,8								
	L_{WA} [dB(A)]						<20	<20	22	29	35	40	44	48						
800x100	V_k [m/s]						1,7	2	2,3	2,9	3,5	4,1	4,6	5,2						
(0,048)	Δp_t [Pa]						3	4	6	9	13	18	23	30						
	$L_{0,2}$ [m]						5,8	6,8	7,8	9,7	11,7	13,6	15,5	17,5						
H=150	L_{WA} [dB(A)]				<20	22	28	33	37	44	50									
300x150	V_k [m/s]				1,9	2,4	2,9	3,3	3,8	4,8	5,7									
(0,029)	Δp_t [Pa]				4	6	9	12	16	25	36									
	$L_{0,2}$ [m]				5	6,2	7,5	8,7	10	12,5	15									
	L_{WA} [dB(A)]					<20	<20	23	27	35	40	45	50							
400x150	V_k [m/s]					1,7	2,1	2,4	2,8	3,5	4,2	4,9	5,6							
(0,04)	Δp_t [Pa]					3	5	6	8	13	19	25	33							
	$L_{0,2}$ [m]					5,3	6,4	7,4	8,5	10,6	12,8	14,9	17							
	L_{WA} [dB(A)]						<20	<20	20	27	33	38	42	46	50					
500x150	V_k [m/s]						1,6	1,9	2,2	2,7	3,3	3,8	4,4	4,9	5,5					
(0,051)	Δp_t [Pa]						3	4	5	8	12	16	21	26	32					
	$L_{0,2}$ [m]						5,6	6,6	7,5	9,4	11,3	13,2	15,1	17	18,9					
	L_{WA} [dB(A)]							<20	<20	22	28	32	37	40	44					
600x150	V_k [m/s]							1,6	1,8	2,3	2,7	3,1	3,6	4,1	4,5					
(0,062)	Δp_t [Pa]							3	3	5	8	11	14	18	22					
	$L_{0,2}$ [m]							6	6,8	8,6	10,3	12	13,7	15,4	17,1					
	L_{WA} [dB(A)]									<20	<20	23	28	31	35	42	48			
800x150	V_k [m/s]									1,7	2	2,3	2,7	3	3,3	4,2	5			
(0,083)	Δp_t [Pa]									3	4	6	8	10	12	19	27			
	$L_{0,2}$ [m]									7,4	8,8	10,3	11,8	13,2	14,7	18,4	22,1			
H=200	L_{WA} [dB(A)]							<20	<20	24	30	35	39	43	46					
400x200	V_k [m/s]							1,7	1,9	2,4	2,9	3,4	3,9	4,4	4,9					
(0,057)	Δp_t [Pa]							3	4	6	9	13	16	21	26					
	$L_{0,2}$ [m]							6,2	7,1	8,9	10,7	12,4	14,2	16	17,8					
	L_{WA} [dB(A)]								<20	<20	23	27	32	36	39	46				
500x200	V_k [m/s]								1,5	1,9	2,3	2,7	3,1	3,4	3,8	4,8				
(0,073)	Δp_t [Pa]								3	4	6	8	10	13	16	25				
	$L_{0,2}$ [m]								6,3	7,9	9,5	11	12,6	14,2	15,8	19,7				
	L_{WA} [dB(A)]									<20	<20	22	26	30	33	40	46			
600x200	V_k [m/s]									1,6	1,9	2,2	2,5	2,8	3,2	3,9	4,7			
(0,088)	Δp_t [Pa]									3	4	5	7	9	11	17	24			
	$L_{0,2}$ [m]									7,2	8,6	10	11,4	12,9	14,3	17,9	21,5			
	L_{WA} [dB(A)]											<20	<20	21	24	31	37	46		
800x200	V_k [m/s]											1,6	1,9	2,1	2,3	2,9	3,5	4,7		
(0,119)	Δp_t [Pa]											3	4	5	6	9	13	24		
	$L_{0,2}$ [m]											8,6	9,8	11,1	12,3	15,4	18,5	24,7		
H=300	L_{WA} [dB(A)]											<20	<20	22	25	32	38	47		
500x300	V_k [m/s]											1,7	1,9	2,2	2,4	3	3,6	4,8		
(0,116)	Δp_t [Pa]											3	4	5	6	10	14	25		
	$L_{0,2}$ [m]											8,7	10	11,2	12,5	15,6	18,7	25		
	L_{WA} [dB(A)]												<20	<20	<20	26	32	41	48	
600x300	V_k [m/s]												1,6	1,8	2	2,5	3	3,9	4,9	
(0,141)	Δp_t [Pa]												3	3	4	7	9	17	26	
	$L_{0,2}$ [m]												9,1	10,2	11,3	14,2	17	22,7	>25	
	L_{WA} [dB(A)]														<20	<20	23	32	39	45
800x300	V_k [m/s]														1,5	1,8	2,2	2,9	3,6	4,4
(0,19)	Δp_t [Pa]														2	4	5	9	14	21
	$L_{0,2}$ [m]														9,7	12,2	14,6	19,5	24,3	>25

$10 \le L_{WA} < 30$ $30 \le L_{WA} < 40$ $40 \le L_{WA} < 50$

Data valid for:

- Supply air
- 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 Nordic version AL

Quick selection, Extract air, AL - 10/11

Grille size [mm]			Air flow rate																		
		m³/h	100	150	200	250	300	350	400	500	600	700	800	900	1000	1250	1500	2000	2500	3500
A_k [m²]		l/s	(28)	(42)	(56)	(69)	(83)	(97)	(111)	(139)	(167)	(194)	(222)	(250)	(278)	(347)	(417)	(556)	(694)	(972)
H=100	L_{WA} [dB(A)]		30	42																
200x100	V_k [m/s]		2,7	4																
(0,01)	Δp_t [Pa]		13	30																
	L_{WA} [dB(A)]		<20	30	39	45														
300x100	V_k [m/s]		1,7	2,5	3,4	4,1														
(0,017)	Δp_t [Pa]		5	12	21	31														
	L_{WA} [dB(A)]		<20	22	31	37	43	47												
400x100	V_k [m/s]		1,2	1,8	2,4	3	3,6	4,2												
(0,023)	Δp_t [Pa]		3	6	11	17	24	33												
	L_{WA} [dB(A)]			<20	25	31	36	41	45											
500x100	V_k [m/s]			1,4	1,9	2,4	2,9	3,3	3,8											
(0,029)	Δp_t [Pa]			4	7	10	15	20	27											
	L_{WA} [dB(A)]			<20	20	26	31	36	40	47										
600x100	V_k [m/s]			1,2	1,6	2	2,3	2,7	3,1	3,9										
(0,035)	Δp_t [Pa]			3	5	7	10	14	18	28										
	L_{WA} [dB(A)]				<20	<20	24	28	32	39	45	49								
800x100	V_k [m/s]				1,2	1,4	1,7	2	2,3	2,9	3,5	4,1								
(0,048)	Δp_t [Pa]				3	4	6	8	10	15	22	30								
H=150	L_{WA} [dB(A)]			<20	25	31	36	41	45											
300x150	V_k [m/s]			1,4	1,9	2,4	2,9	3,3	3,8											
(0,029)	Δp_t [Pa]			4	7	10	15	20	27											
	L_{WA} [dB(A)]				<20	23	28	33	37	44	49									
400x150	V_k [m/s]				1,4	1,7	2,1	2,4	2,8	3,5	4,2									
(0,04)	Δp_t [Pa]				4	5	8	11	14	22	32									
	L_{WA} [dB(A)]				<20	<20	22	27	31	38	43	47								
500x150	V_k [m/s]				1,1	1,4	1,6	1,9	2,2	2,7	3,3	3,8								
(0,051)	Δp_t [Pa]				2	3	5	7	9	14	20	27								
	L_{WA} [dB(A)]					<20	<20	22	26	33	38	43	47	50						
600x150	V_k [m/s]					1,1	1,3	1,6	1,8	2,3	2,7	3,1	3,6	4,1						
(0,062)	Δp_t [Pa]					2	3	5	6	9	13	18	24	30						
	L_{WA} [dB(A)]							<20	<20	25	30	35	39	42	46					
800x150	V_k [m/s]							1,2	1,3	1,7	2	2,3	2,7	3	3,3					
(0,083)	Δp_t [Pa]							2	3	5	7	10	13	16	20					
H=200	L_{WA} [dB(A)]					<20	<20	24	28	35	40	45	49							
400x200	V_k [m/s]					1,2	1,5	1,7	1,9	2,4	2,9	3,4	3,9							
(0,057)	Δp_t [Pa]					3	4	5	7	11	16	21	28							
	L_{WA} [dB(A)]						<20	<20	22	28	34	38	42	46	49					
500x200	V_k [m/s]						1,1	1,3	1,5	1,9	2,3	2,7	3,1	3,4	3,8					
(0,073)	Δp_t [Pa]						2	3	4	7	10	13	17	22	27					
	L_{WA} [dB(A)]							<20	<20	24	29	33	37	41	44					
600x200	V_k [m/s]							1,1	1,3	1,6	1,9	2,2	2,5	2,8	3,2					
(0,088)	Δp_t [Pa]							2	3	5	7	9	12	15	18					
	L_{WA} [dB(A)]									<20	21	26	30	33	36	43	49			
800x200	V_k [m/s]									1,2	1,4	1,6	1,9	2,1	2,3	2,9	3,5			
(0,1191)	Δp_t [Pa]									2	4	5	6	8	10	16	22			
H=300	L_{WA} [dB(A)]								<20	<20	22	26	30	34	37	44	49			
500x300	V_k [m/s]								1	1,2	1,4	1,7	1,9	2,2	2,4	3	3,6			
(0,116)	Δp_t [Pa]								2	3	4	5	7	9	11	16	24			
	L_{WA} [dB(A)]									<20	<20	21	26	29	32	39	44			
600x300	V_k [m/s]									1	1,2	1,4	1,6	1,8	2	2,5	3			
(0,141)	Δp_t [Pa]									2	3	3	5	6	7	11	16			
	L_{WA} [dB(A)]											<20	<20	21	25	31	37	45		
800x300	V_k [m/s]											1	1,2	1,3	1,5	1,8	2,2	2,9		
(0,19)	Δp_t [Pa]											2	2	3	4	6	9	16		

10 ≤ L_{WA} < 30 30 ≤ L_{WA} < 40 40 ≤ L_{WA} < 50

Data valid for:

- Extract air

Terminology:

- A_k = effective free area
- V_k = effective face velocity
- Δp_t = total pressure loss
- L_{WA} = sound power level

Grille Nordic version AL

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_{xx} [m] at an average speed of 0.2, 0.25 and 0.3 m/s, frontal fixed blades at 0° and, (if present), a second row of adjustable blades settled at 0°, without ceiling effect, (distance from grille to ceiling over 800 mm), can be seen in the diagrams.

Sound power level L_{WA}

Sound power level L_{WA} [dB(A)] for frontal fixed blades at 0° and, (If present), a second row of adjustable blades settled at 0°, 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 levels on damper settings [dB].

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	6	5	1	-3	-9	-14	-12	-8
Extract air	8	6	0	-4	-7	-12	-10	-9

Opposed blade damper DGAN

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 1.2	x 1.9	x 10
Sound power level L_{WA}	+ 1	+ 9	+ 27

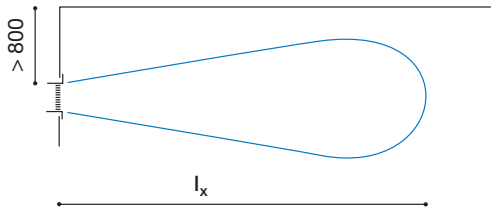
Extract air

Total pressure loss Δp_t	x 0.83
Sound power level L_{WA}	- 2

Throw and air jet dispersal

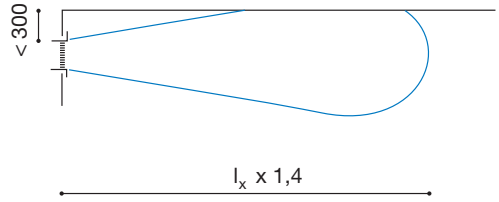
Throw

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



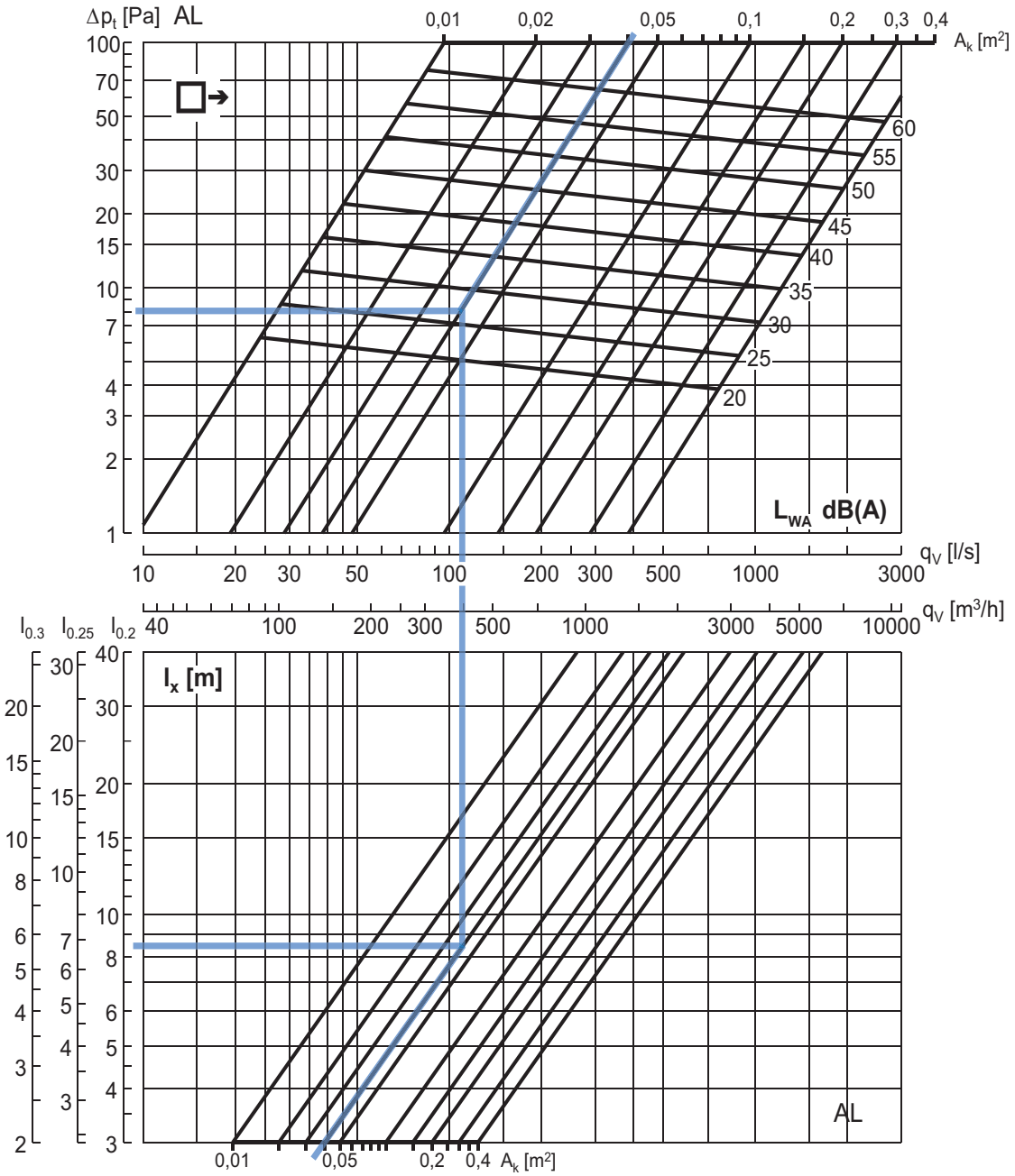
For grilles installed less than 300 mm from the ceiling, the air throw is extended by 40% so that:

$l_{x\ result} = 1,4 \times l_{x\ diagram\ value}$



Grille Nordic version AL

Technical data - Supply air



Example:

Grille size (LxH):	400×150 mm
Free area A_k:	0.004 m²
Air flow rate q_v:	400 m³/h (111 l/s)
Result:	
Sound power level L_{WA}:	~27 [dB(A)]
Total presure loss Δp_t	~8 [Pa]
Throw $l_{0.2}$:	~8.5 [m]

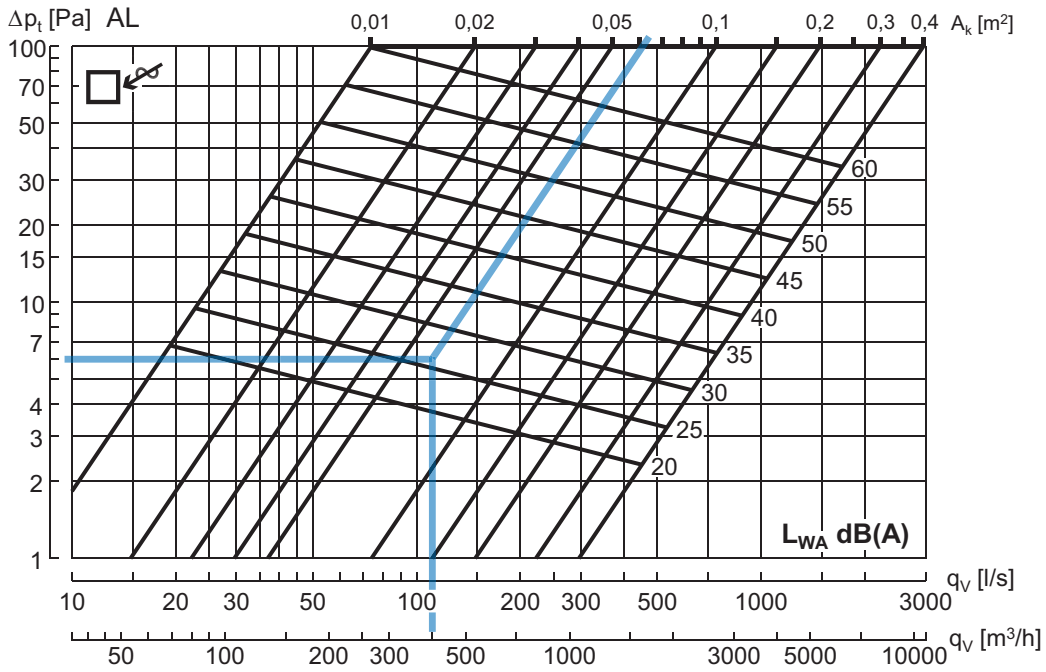
Data valid for:

- 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.

Grille Nordic version AL

Technical data - Extract



Example:

Grille size (LxH):	600×150 mm
Free area A_k:	0.062 m²
Air flow rate q_v:	400 m³/h (111 l/s)
Result:	
Sound power level L_{WA}:	~26 [dB(A)]
Total presure loss Δp_t	~6 [Pa]

Data valid for:

- Extract air

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.

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