

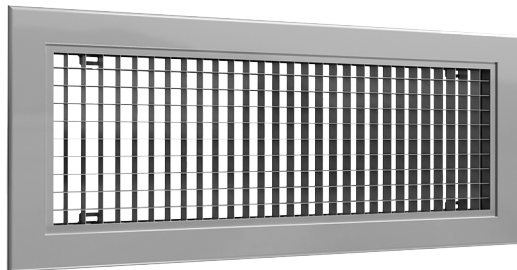
AE

Grilles Nordic version



Grille Nordic version

AE



Description

AE is an eggcrate grille for exhaust with mesh 0° or 45° inclination made of aluminum. The grille is available with several mounting options and can be delivered with mounting frame, opposed blade damper and plenum box accessories.

- 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	AE	1	a	b	c	ddd	x	eee	ffff
Type									
AE									
Frame									
1 - 25 mm frame									
Grid									
1 - Eggcrate 0°									
2 - Eggcrate 45°									
Installation									
- Not prepared									
CN Clips									
CMN Clips + mounting frame									
V Visible screw installation									
VMN Visible screws + mounting frame									
H Hidden screw installation Only grid 1									
HMN Hidden screws + mounting frame Only grid 1									
Accessories									
- No accessories									
DN Opposed blade damper									
Size									
L: 100 - 1500 mm									
H: 75 - 1200 mm									
Grilles standard finish:									
- Anodized aluminium									
9010 RAL 9010, gloss 30									
9003 RAL 9003, gloss 30									
xxxx On request, other RAL colour									

Example 1: AE-11-CMN-400-200-9003
 Example 2: AE-12-600 400

Min. - max. dimensions

H \ L	100	↔	1500
75			
↕			
1200			

Standard grilles are available with 50 mm pitch within the above min. and max. sizes. Customized sizes available on request.

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 9010, gloss 30
	- RAL 9003, gloss 30

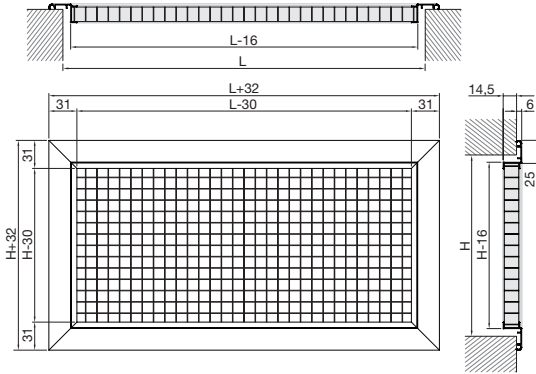
The grille is available in other colours. Please contact Lindab's sales department for further information.

Grille Nordic version

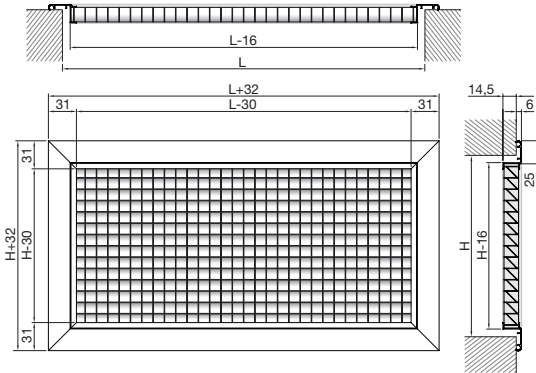
AE

Frame and grid

AE-11 25 mm frame with 0° eggcrate

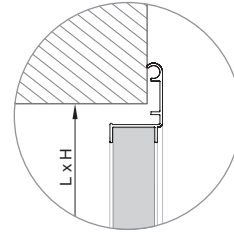


AE-12 25 mm frame with 45° eggcrate



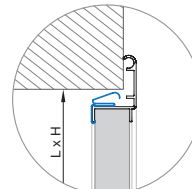
Installation

- Not prepared

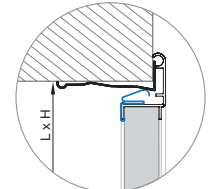


CN - Clips

CMN - Clips + mounting frame



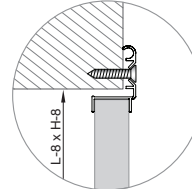
CN



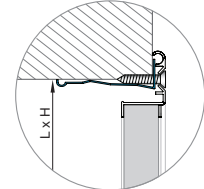
CMN

V* - Visible screw holes

VMN* - Visible screw holes + mounting frame



V*

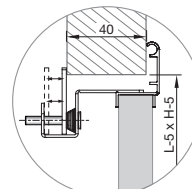


VMN*

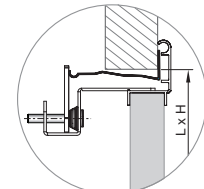
* Screws are not included.

H - Hidden screws**

HM - Hidden screws + mounting frame**



H**



HM**

** Installation type H and HM only possible when grid type 1 (0° eggcrate) is chosen.

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

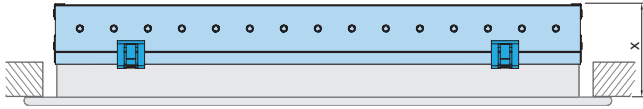
Grille Nordic version

AE

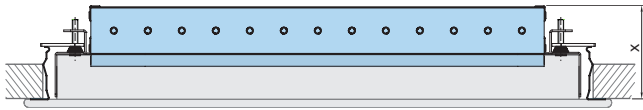
Accessories

- No damper

DN - Opposed blade damper DGAN



AE with installation type CN, CMN, V and VMN.
A full length click-on DGAN-damper is available.



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

x = 51 mm

Available DGAN sizes

H \ L	100 ↔ 600 ↔ 800 ↔ 1000 ↔ 1200 ↔ 1600 ↔ 2000
75	Single piece
↕	
400	Multiple pieces
500	1000 x 400
600	800 x 500
↕	
800	600 x 600
↕	
1000	1200 x 600
↕	
1200	1000 x 800
	Not available sizes
	800 x 1000
	600 x 1200

DGAN in combination with hidden screw installation.

H \ L	600 ↔ 1000 ↔ 1200
300	Compatible with DGAN
600	Not compatible with DGAN
1000	

- plenum box
- mounting frame

Details see website on www.lindQST.com

Grille Nordic version

AE

Free area

H / L	AE-11 Eggcrate grille 0° A _k (m ²)														
	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000
100	0,005	0,010	0,015	0,019	0,024	0,028	0,033	0,038	0,042	0,047	0,052	0,061	0,070	0,079	0,089
150	0,010	0,017	0,024	0,031	0,038	0,045	0,052	0,058	0,065	0,072	0,079	0,093	0,107	0,121	0,135
200	0,015	0,024	0,033	0,042	0,052	0,061	0,070	0,079	0,089	0,098	0,107	0,126	0,144	0,163	0,181
250	0,019	0,031	0,042	0,054	0,065	0,077	0,089	0,100	0,112	0,123	0,135	0,158	0,181	0,204	0,227
300	0,024	0,038	0,052	0,065	0,079	0,093	0,107	0,121	0,135	0,149	0,163	0,190	0,218	0,246	0,274
350	0,028	0,045	0,061	0,077	0,093	0,109	0,126	0,142	0,158	0,174	0,190	0,223	0,255	0,287	0,320
400	0,033	0,052	0,070	0,089	0,107	0,126	0,144	0,163	0,181	0,200	0,218	0,255	0,292	0,329	0,366
450	0,038	0,058	0,079	0,100	0,121	0,142	0,163	0,183	0,204	0,225	0,246	0,287	0,329	0,371	0,412
500	0,042	0,065	0,089	0,112	0,135	0,158	0,181	0,204	0,227	0,250	0,274	0,320	0,366	0,412	0,459
550	0,047	0,072	0,098	0,123	0,149	0,174	0,200	0,225	0,250	0,276	0,301	0,352	0,403	0,454	0,505
600	0,052	0,079	0,107	0,135	0,163	0,190	0,218	0,246	0,274	0,301	0,329	0,385	0,440	0,496	0,551
700	0,061	0,093	0,126	0,158	0,190	0,223	0,255	0,287	0,320	0,352	0,385	0,449	0,514	0,579	0,644
800	0,070	0,107	0,144	0,181	0,218	0,255	0,292	0,329	0,366	0,403	0,440	0,514	0,588	0,662	0,736
900	0,079	0,121	0,163	0,204	0,246	0,287	0,329	0,371	0,412	0,454	0,496	0,579	0,662	0,745	0,829
1000	0,089	0,135	0,181	0,227	0,274	0,320	0,366	0,412	0,459	0,505	0,551	0,644	0,736	0,829	0,921

H / L	AE-12 Eggcrate grille 45° A _k (m ²)														
	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000
100	0,005	0,009	0,013	0,017	0,022	0,026	0,030	0,034	0,038	0,043	0,047	0,055	0,064	0,072	0,080
150	0,009	0,015	0,022	0,028	0,034	0,041	0,047	0,053	0,059	0,066	0,072	0,085	0,097	0,110	0,123
200	0,013	0,022	0,030	0,038	0,047	0,055	0,064	0,072	0,080	0,089	0,097	0,114	0,131	0,148	0,165
250	0,017	0,028	0,038	0,049	0,059	0,070	0,080	0,091	0,101	0,112	0,123	0,144	0,165	0,186	0,207
300	0,022	0,034	0,047	0,059	0,072	0,085	0,097	0,110	0,123	0,135	0,148	0,173	0,198	0,223	0,249
350	0,026	0,041	0,055	0,070	0,085	0,099	0,114	0,129	0,144	0,158	0,173	0,202	0,232	0,261	0,291
400	0,030	0,047	0,064	0,080	0,097	0,114	0,131	0,148	0,165	0,181	0,198	0,232	0,265	0,299	0,333
450	0,034	0,053	0,072	0,091	0,110	0,129	0,148	0,167	0,186	0,204	0,223	0,261	0,299	0,337	0,375
500	0,038	0,059	0,080	0,101	0,123	0,144	0,165	0,186	0,207	0,228	0,249	0,291	0,333	0,375	0,417
550	0,043	0,066	0,089	0,112	0,135	0,158	0,181	0,204	0,228	0,251	0,274	0,320	0,366	0,413	0,459
600	0,047	0,072	0,097	0,123	0,148	0,173	0,198	0,223	0,249	0,274	0,299	0,350	0,400	0,450	0,501
700	0,055	0,085	0,114	0,144	0,173	0,202	0,232	0,261	0,291	0,320	0,350	0,408	0,467	0,526	0,585
800	0,064	0,097	0,131	0,165	0,198	0,232	0,265	0,299	0,333	0,366	0,400	0,467	0,535	0,602	0,669
900	0,072	0,110	0,148	0,186	0,223	0,261	0,299	0,337	0,375	0,413	0,450	0,526	0,602	0,678	0,753
1000	0,080	0,123	0,165	0,207	0,249	0,291	0,333	0,375	0,417	0,459	0,501	0,585	0,669	0,753	0,837

Grille Nordic version

AE

Quick selection, Extract air, AE-11

Grille size [mm]			Air flow rate																			
			m³/h l/s	100 (28)	200 (56)	300 (83)	400 (111)	500 (139)	600 (167)	700 (194)	800 (222)	900 (250)	1000 (278)	1100 (306)	1200 (333)	1400 (389)	1600 (444)	1800 (500)	2000 (556)	2500 (694)	3200 (889)	
H=100	200x100 (0,015)	L _{WA} [dB(A)]	<20	34	47																	
		V _k [m/s]	1,9	3,9	5,7																	
		Δp _t [Pa]	3	13	29																	
	300x100 (0,024)	L _{WA} [dB(A)]		20	33	42	50															
		V _k [m/s]		2,4	3,5	4,7	5,9															
		Δp _t [Pa]		5	11	20	31															
	400x100 (0,033)	L _{WA} [dB(A)]		<20	23	33	40	47														
V _k [m/s]			1,7	2,5	3,4	4,2	5,1															
Δp _t [Pa]			3	6	10	16	23															
500x100 (0,042)	L _{WA} [dB(A)]			<20	26	33	40	44	49													
	V _k [m/s]			2	2,6	3,3	4	4,6	5,3													
	Δp _t [Pa]			3	6	10	14	19	25													
600x100 (0,052)	L _{WA} [dB(A)]			<20	20	28	34	39	43	47												
	V _k [m/s]			1,6	2,2	2,7	3,2	3,8	4,3	4,9												
	Δp _t [Pa]			2	4	7	9	13	17	21												
800x100 (0,07)	L _{WA} [dB(A)]			<20	<20	25	30	35	38	42	45	48										
	V _k [m/s]			1,6	2	2,4	2,8	3,2	3,6	4	4,4	4,8										
	Δp _t [Pa]			2	4	5	7	9	11	14	17	20										
H=150	300x150 (0,038)	L _{WA} [dB(A)]			20	29	37	43	48													
		V _k [m/s]			2,2	3	3,7	4,4	5,2													
		Δp _t [Pa]			4	8	12	18	24													
	400x150 (0,052)	L _{WA} [dB(A)]			<20	20	28	34	39	43	47											
		V _k [m/s]			1,6	2,2	2,7	3,2	3,8	4,3	4,9											
		Δp _t [Pa]			2	4	7	9	13	17	21											
	500x150 (0,065)	L _{WA} [dB(A)]			<20	20	27	32	37	40	44	47	50									
V _k [m/s]				1,7	2,1	2,6	3	3,4	3,8	4,3	4,7	5,1										
Δp _t [Pa]				3	4	6	8	10	13	16	20	23										
600x150 (0,079)	L _{WA} [dB(A)]			<20	22	27	31	35	38	42	44	50										
	V _k [m/s]			1,8	2,1	2,4	2,8	3,2	3,5	3,9	4,2	4,9										
	Δp _t [Pa]			3	4	5	7	9	11	13	16	22										
800x150 (0,107)	L _{WA} [dB(A)]				<20	<20	22	26	30	33	36	41	45	49								
	V _k [m/s]				1,6	1,8	2,1	2,3	2,6	2,9	3,1	3,6	4,1	4,7								
	Δp _t [Pa]				2	3	4	5	6	7	9	12	15	20								
H=200	400x200 (0,07)	L _{WA} [dB(A)]			<20	<20	25	30	35	38	42	45	48									
		V _k [m/s]			1,6	2	2,4	2,8	3,2	3,6	4	4,4	4,8									
		Δp _t [Pa]			2	4	5	7	9	11	14	17	20									
	500x200 (0,089)	L _{WA} [dB(A)]			<20	<20	23	28	32	35	38	41	46									
		V _k [m/s]			1,6	1,9	2,2	2,5	2,8	3,1	3,5	3,8	4,4									
Δp _t [Pa]				2	3	4	6	7	9	11	13	17										
600x200 (0,107)	L _{WA} [dB(A)]			<20	<20	22	26	30	33	36	41	45	49									
	V _k [m/s]			1,6	1,8	2,1	2,3	2,6	2,9	3,1	3,6	4,1	4,7									
	Δp _t [Pa]			2	3	4	5	6	7	9	12	15	20									
800x200 (0,144)	L _{WA} [dB(A)]				<20	<20	20	23	27	29	34	39	43	44								
	V _k [m/s]				1,3	1,5	1,7	1,9	2,1	2,3	2,7	3,1	3,5	3,9								
	Δp _t [Pa]				2	2	3	3	4	5	7	9	11	13								
H=300	500x300 (0,135)	L _{WA} [dB(A)]				<20	<20	20	23	27	29	34	39	43	46							
		V _k [m/s]				1,4	1,6	1,9	2,1	2,3	2,5	2,9	3,3	3,7	4,1							
		Δp _t [Pa]				2	2	3	4	5	5	8	10	12	15							
	600x300 (0,163)	L _{WA} [dB(A)]				<20	<20	<20	21	24	29	33	37	41	48							
		V _k [m/s]				1,4	1,5	1,7	1,9	2	2,4	2,7	3,1	3,4	4,3							
Δp _t [Pa]					2	2	2	3	3	4	5	7	9	11	16							
800x300 (0,218)	L _{WA} [dB(A)]							<20	<20	<20	21	25	29	33	40	48						
	V _k [m/s]							1,3	1,4	1,5	1,8	2	2,3	2,6	3,2	4,1						
		Δp _t [Pa]						1	2	2	3	4	5	6	9	15						

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

AE

Quick selection, Extract air, AE-12

Grille size [mm]		Air flow rate																				
		m ³ /h	100	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2500	3200		
A _k [m ²]		l/s	(28)	(56)	(83)	(111)	(139)	(167)	(194)	(222)	(250)	(278)	(306)	(333)	(389)	(444)	(500)	(556)	(694)	(889)		
H=100	200x100 (0,0132)	L _{WA} [dB(A)]	<20	37	50																	
		V _k [m/s]	2,1	4,2	6,3																	
		Δp _t [Pa]	4	16	36																	
		L _{WA} [dB(A)]		22	36	45																
		V _k [m/s]		2,6	3,8	5,1																
		Δp _t [Pa]		6	13	24																
		400x100 (0,03)	L _{WA} [dB(A)]	<20	26	36	43	49														
		V _k [m/s]		1,9	2,8	3,7	4,6	5,6														
	Δp _t [Pa]		3	7	12	19	28															
	500x100 (0,0384)	L _{WA} [dB(A)]		<20	29	36	42	47														
	V _k [m/s]			2,2	2,9	3,6	4,3	5,1														
	Δp _t [Pa]			4	8	12	17	23														
	600x100 (0,0468)	L _{WA} [dB(A)]		<20	23	31	37	42	46	50												
	V _k [m/s]			1,8	2,4	3	3,6	4,1	4,7	5,3												
	Δp _t [Pa]			3	5	8	11	15	20	26												
	800x100 (0,0636)	L _{WA} [dB(A)]			<20	22	28	33	37	41	45	48										
	V _k [m/s]				1,7	2,2	2,6	3	3,5	3,9	4,4	4,8										
	Δp _t [Pa]				3	4	6	8	11	14	17	21										
H=150	300x150 (0,0342)	L _{WA} [dB(A)]			22	32	39	46	50													
		V _k [m/s]			2,4	3,2	4,1	4,9	5,7													
		Δp _t [Pa]			5	9	15	21	29													
		400x150 (0,0468)	L _{WA} [dB(A)]		<20	23	31	37	42	46	50											
		V _k [m/s]			1,8	2,4	3	3,6	4,1	4,7	5,3											
		Δp _t [Pa]			3	5	8	11	15	20	26											
		500x150 (0,0594)	L _{WA} [dB(A)]			<20	24	30	35	39	43	47	50									
		V _k [m/s]				1,9	2,3	2,8	3,3	3,7	4,2	4,7	5,1									
	Δp _t [Pa]				3	5	7	10	13	16	20	24										
	600x150 (0,072)	L _{WA} [dB(A)]			<20	<20	24	29	34	38	41	44	47									
	V _k [m/s]				1,5	1,9	2,3	2,7	3,1	3,5	3,9	4,2	4,6									
	Δp _t [Pa]				2	3	5	7	9	11	13	16	19									
	800x150 (0,0973)	L _{WA} [dB(A)]				<20	<20	21	25	29	33	36	39	44	48							
	V _k [m/s]					1,4	1,7	2	2,3	2,6	2,9	3,1	3,4	4	4,6							
	Δp _t [Pa]					2	3	4	5	6	7	9	11	14	19							
H=200	400x200 (0,0636)	L _{WA} [dB(A)]				<20	22	28	33	37	41	45	48									
		V _k [m/s]				1,7	2,2	2,6	3	3,5	3,9	4,4	4,8									
		Δp _t [Pa]				3	4	6	8	11	14	17	21									
		500x200 (0,0805)	L _{WA} [dB(A)]				<20	21	26	31	35	38	41	44	49							
		V _k [m/s]				1,7	2,1	2,4	2,8	3,1	3,5	3,8	4,1	4,8								
		Δp _t [Pa]				3	4	5	7	9	11	13	15	21								
		600x200 (0,0973)	L _{WA} [dB(A)]				<20	<20	21	25	29	33	36	39	44	48						
		V _k [m/s]				1,4	1,7	2	2,3	2,6	2,9	3,1	3,4	4	4,6							
	Δp _t [Pa]				2	3	4	5	6	7	9	11	14	19								
	800x200 (0,1309)	L _{WA} [dB(A)]						<20	<20	21	24	27	30	35	40	44	47					
	V _k [m/s]							1,5	1,7	1,9	2,1	2,3	2,5	3	3,4	3,8	4,2					
	Δp _t [Pa]							2	3	3	4	5	6	8	10	13	16					
H=300	500x300 (0,1225)	L _{WA} [dB(A)]						<20	<20	23	26	29	32	37	42	45	49					
		V _k [m/s]						1,6	1,8	2	2,3	2,5	2,7	3,2	3,6	4,1	4,5					
		Δp _t [Pa]						2	3	4	5	6	7	9	12	15	19					
		600x300 (0,1477)	L _{WA} [dB(A)]						<20	<20	21	24	27	32	36	40	44					
		V _k [m/s]							1,5	1,7	1,9	2,1	2,3	2,6	3	3,4	3,8					
		Δp _t [Pa]							2	3	3	4	5	6	8	10	13					
		800x300 (0,1982)	L _{WA} [dB(A)]								<20	<20	<20	23	28	32	35	43				
		V _k [m/s]									1,4	1,5	1,7	2	2,2	2,5	2,8	3,5				
	Δp _t [Pa]									2	2	3	3	5	6	7	11					

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
- l_{0,2} = throw to terminal velocity at 0,2 m/s

Grille Nordic version

AE

Technical data

Capacity

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

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
Extract	-5	-5	-2	-3	-4	-14	-21	-19

Opposed blade damper DGAN

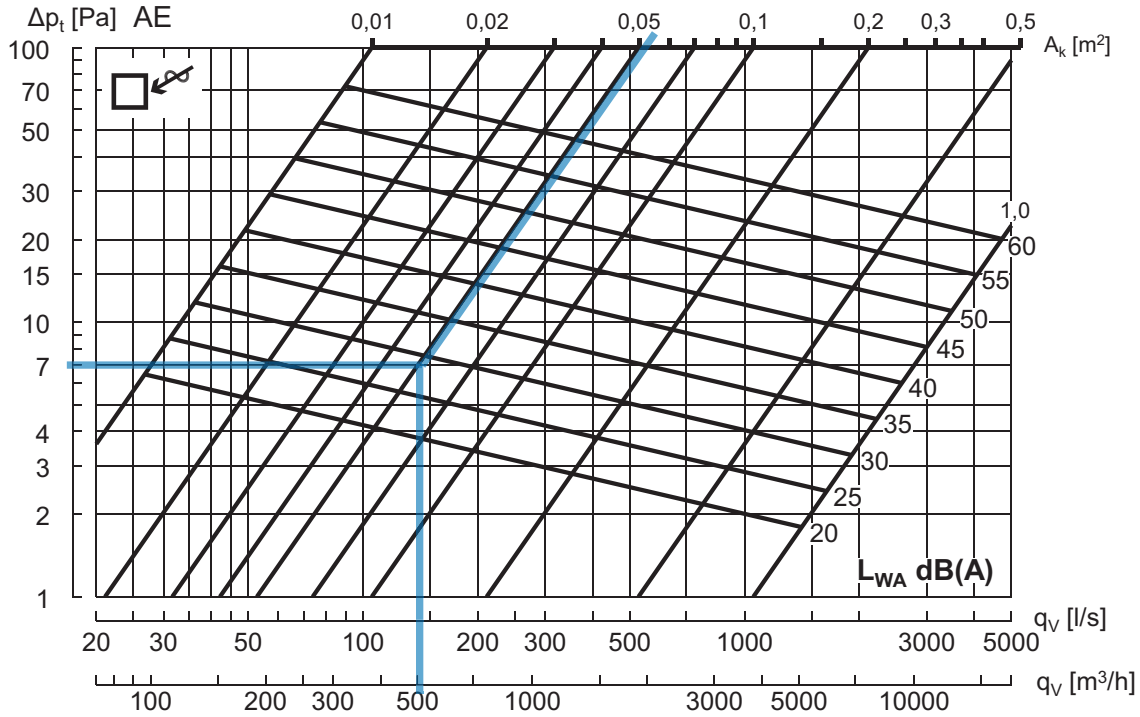
Correction of total pressure loss Δp_t [Pa] and sound power level L_{WA} [dB(A)] using a damper. See table below.

Damper position	Open	25%	50%
		Closed	Closed
Total pressure loss Δp_t	x 1.18	x 2.3	x 12
Sound power level L_{WA}	+ 2	+ 10	+ 24

Grille Nordic version

AE

Technical data



Example: AE-11

Grille size (LxH): 400x150 mm
 Free area A_k : 0,052 m²
 Air flow rate q_v : 500 m³/h (139 l/s)
 Result:
 Sound power level L_{WA} : ~28 [dB(A)]
 Total pressure loss Δp_t : ~7 [Pa]

Data valid for:

- Extract air

For grilles with free area > 1,0 m², we refer to use Lindabs online calculation tool on www.lindqst.com



Good Thinking

At Lindab, good thinking is a philosophy that guides us in everything we do. We have made it our mission to create a healthy indoor climate – and to simplify the construction of sustainable buildings. We do that by designing innovative products and solutions that are easy to use, as well as offering efficient availability and logistics. We are also working on ways to reduce our impact on our environment and climate. We do that by developing methods to produce our solutions using a minimum of energy and natural resources, and by reducing negative effects on the environment. We use steel in our products. It's one of few materials that can be recycled an infinite number of times without losing any of its properties. That means less carbon emissions in nature and less energy wasted.

We simplify construction