Grille

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.

Order code

Product	**AE**	**1**	**a**	**b**	**c**	**ddd**	**x**	**eee**	**ffff**

Type
AE

Frame
1 - 25 mm frame

Grid
1 - Eggcrate 0º
2 - Eggcrate 45º

Installation

-	Not prepared	
C	Clips	
CM	Clips + mounting frame	
V	Visible screw installation	
VM	Visible screws + mounting frame	
H	Hidden screw installation	Only grid 1
HM	Hidden screws + mounting frame	Only grid 1

Accessories

-	No accessories
D	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-CMD-400-200-9003
Example 2: AE-12-600 400

Min. - max. dimensions

H \ L	100 ↔ 1500
75 ↕ 1200	

Standard grilles are available with 50mm 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 grille to gain access to the plenum box or duct. External parts should be wiped with a damp cloth.

Accessories

Plenum box:	VBX, PBA
Mounting frame:	MFA
Opposed blade damper:	DGA

Materials and finish

Grille frame and eggcrate:	Aluminium
Mounting frame:	Galvanized steel
Opposed blade damper:	Galvanized steel

Grille standard finish:
- Aluminium anodized
- RAL 9010 gloss 30
- RAL 9003 gloss 30

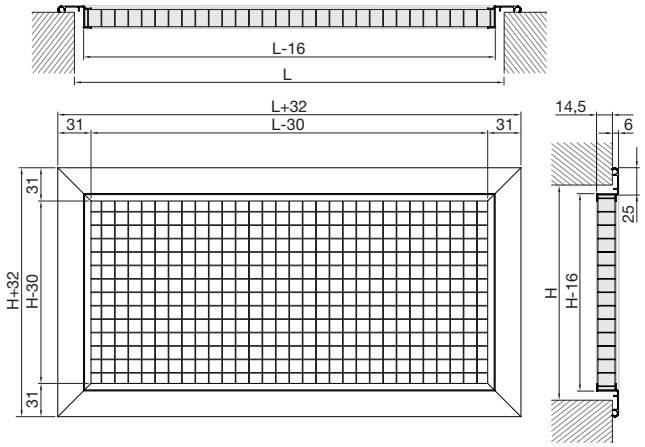
The grille is available in other colours. Please contact Lindab's sales department for further information.

Grille

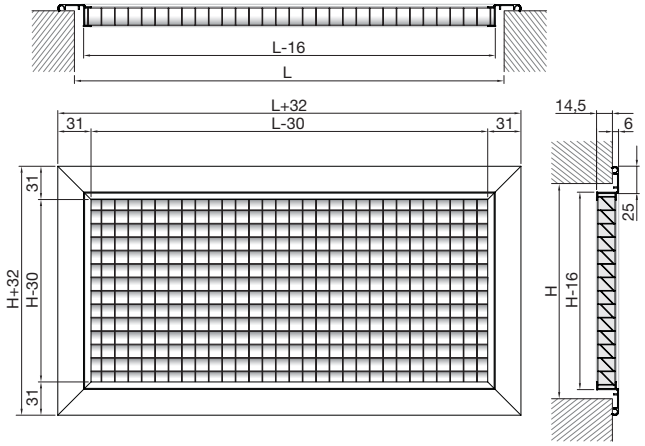
AE

Frame and grid

AE-11 25 mm frame with 0º eggcrate

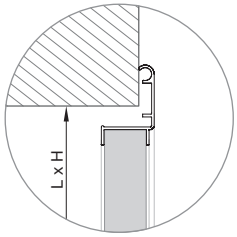


AE-12 25 mm frame with 45º eggcrate

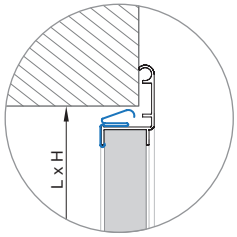


Installation

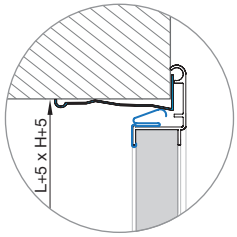
- Not prepared



C - Clips
CM - Clips + mounting frame

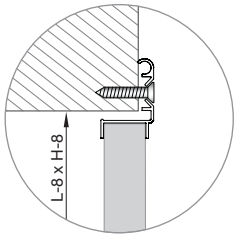


C

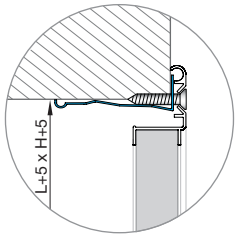


CM

V * - Visible screw holes
VM * - Visible screw holes + mounting frame



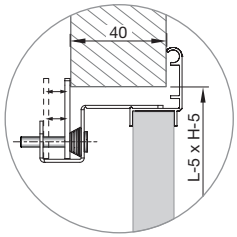
V*



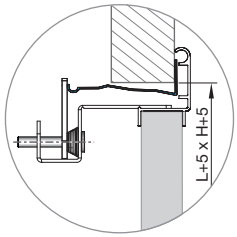
VM*

* Screws are not included

H - Hidden screw installation
HM - Hidden screws + mounting frame



H*



HM*

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

Grille

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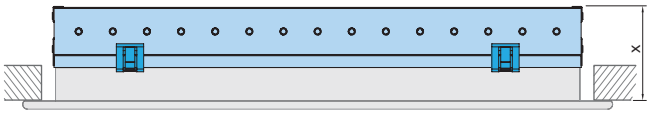
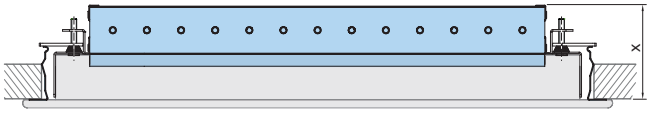
Accessories

- No damper

D - Opposed blade damper DGA



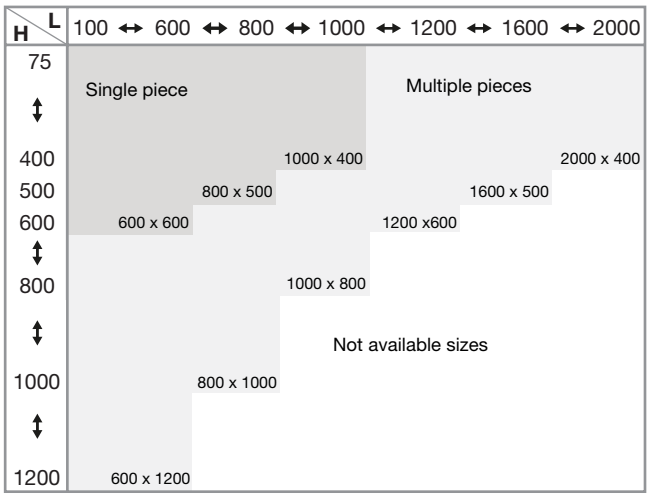
AE with installation type C, CM, V and VM.
A full length click-on DGA-damper is available.



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

x = 51 mm

Available DGA sizes



Grille AE

Free area

	AE-11 Eggcrate grille 0° $A_k(m^2)$														
H / L	**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

	AE-12 Eggcrate grille 45° $A_k(m^2)$														
H / L	**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 AE

Quick selection, Extract air, AE-11

Grille size [mm]			Air flow rate																		
		m³/h	100	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2500	3200
	A_k [m²]	l/s	(28)	(56)	(83)	(111)	(139)	(167)	(194)	(222)	(250)	(278)	(306)	(333)	(389)	(444)	(500)	(556)	(694)	(889)
H=100		L_{WA} [dB(A)]	<20	34	47																
	200x100	V_k [m/s]	1,9	3,9	5,7																
	(0,015)	Δp_t [Pa]	3	13	29																
		L_{WA} [dB(A)]		20	33	42	50														
	300x100	V_k [m/s]		2,4	3,5	4,7	5,9														
	(0,024)	Δp_t [Pa]		5	11	20	31														
		L_{WA} [dB(A)]		<20	23	33	40	47													
	400x100	V_k [m/s]		1,7	2,5	3,4	4,2	5,1													
	(0,033)	Δp_t [Pa]		3	6	10	16	23													
		L_{WA} [dB(A)]			<20	26	33	40	44	49											
	500x100	V_k [m/s]			2	2,6	3,3	4	4,6	5,3											
	(0,042)	Δp_t [Pa]			3	6	10	14	19	25											
		L_{WA} [dB(A)]			<20	20	28	34	39	43	47										
	600x100	V_k [m/s]			1,6	2,2	2,7	3,2	3,8	4,3	4,9										
	(0,052)	Δp_t [Pa]			2	4	7	9	13	17	21										
		L_{WA} [dB(A)]				<20	<20	25	30	35	38	42	45	48							
	800x100	V_k [m/s]				1,6	2	2,4	2,8	3,2	3,6	4	4,4	4,8							
	(0,07)	Δp_t [Pa]				2	4	5	7	9	11	14	17	20							
H=150		L_{WA} [dB(A)]			20	29	37	43	48												
	300x150	V_k [m/s]			2,2	3	3,7	4,4	5,2												
	(0,038)	Δp_t [Pa]			4	8	12	18	24												
		L_{WA} [dB(A)]			<20	20	28	34	39	43	47										
	400x150	V_k [m/s]			1,6	2,2	2,7	3,2	3,8	4,3	4,9										
	(0,052)	Δp_t [Pa]			2	4	7	9	13	17	21										
		L_{WA} [dB(A)]				<20	21	27	32	37	40	44	47	50							
	500x150	V_k [m/s]				1,7	2,1	2,6	3	3,4	3,8	4,3	4,7	5,1							
	(0,065)	Δp_t [Pa]				3	4	6	8	10	13	16	20	23							
		L_{WA} [dB(A)]					<20	22	27	31	35	38	42	44	50						
	600x150	V_k [m/s]					1,8	2,1	2,4	2,8	3,2	3,5	3,9	4,2	4,9						
	(0,079)	Δp_t [Pa]					3	4	5	7	9	11	13	16	22						
		L_{WA} [dB(A)]						<20	<20	22	26	30	33	36	41	45	49				
	800x150	V_k [m/s]						1,6	1,8	2,1	2,3	2,6	2,9	3,1	3,6	4,1	4,7				
	(0,107)	Δp_t [Pa]						2	3	4	5	6	7	9	12	15	20				
H=200		L_{WA} [dB(A)]				<20	<20	25	30	35	38	42	45	48							
	400x200	V_k [m/s]				1,6	2	2,4	2,8	3,2	3,6	4	4,4	4,8							
	(0,07)	Δp_t [Pa]				2	4	5	7	9	11	14	17	20							
		L_{WA} [dB(A)]					<20	<20	23	28	32	35	38	41	46						
	500x200	V_k [m/s]					1,6	1,9	2,2	2,5	2,8	3,1	3,5	3,8	4,4						
	(0,089)	Δp_t [Pa]					2	3	4	6	7	9	11	13	17						
		L_{WA} [dB(A)]						<20	<20	22	26	30	33	36	41	45	49				
	600x200	V_k [m/s]						1,6	1,8	2,1	2,3	2,6	2,9	3,1	3,6	4,1	4,7				
	(0,107)	Δp_t [Pa]						2	3	4	5	6	7	9	12	15	20				
		L_{WA} [dB(A)]							<20	<20	<20	21	25	27	33	37	41	44			
	800x200	V_k [m/s]							1,3	1,5	1,7	1,9	2,1	2,3	2,7	3,1	3,5	3,9			
	(0,144)	Δp_t [Pa]							2	2	3	3	4	5	7	9	11	13			
H=300		L_{WA} [dB(A)]							<20	<20	20	23	27	29	34	39	43	46			
	500x300	V_k [m/s]							1,4	1,6	1,9	2,1	2,3	2,5	2,9	3,3	3,7	4,1			
	(0,135)	Δp_t [Pa]							2	2	3	4	5	5	8	10	12	15			
		L_{WA} [dB(A)]								<20	<20	<20	21	24	29	33	37	41	48		
	600x300	V_k [m/s]								1,4	1,5	1,7	1,9	2	2,4	2,7	3,1	3,4	4,3		
	(0,163)	Δp_t [Pa]								2	2	3	3	4	5	7	9	11	16		
		L_{WA} [dB(A)]										<20	<20	<20	21	25	29	33	40	48	
	800x300	V_k [m/s]										1,3	1,4	1,5	1,8	2	2,3	2,6	3,2	4,1	
	(0,218)	Δp_t [Pa]										1	2	2	3	4	5	6	9	15	

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

Data valid for:
- Extract air

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

Grille AE

Quick selection, Extract air, AE-12

Grille size [mm]			Air flow rate																	
		m³/h	100	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2500	3200
	A_k [m²]	l/s	(28)	(56)	(83)	(111)	(139)	(167)	(194)	(222)	(250)	(278)	(306)	(333)	(389)	(444)	(500)	(556)	(694)	(889)
H=100		L_{WA} [dB(A)]	<20	37	50															
	200x100	V_k [m/s]	2,1	4,2	6,3															
	(0,0132)	Δp_t [Pa]	4	16	36															
		L_{WA} [dB(A)]		22	36	45														
	300x100	V_k [m/s]		2,6	3,8	5,1														
	(0,0216)	Δp_t [Pa]		6	13	24														
		L_{WA} [dB(A)]		<20	26	36	43	49												
	400x100	V_k [m/s]		1,9	2,8	3,7	4,6	5,6												
	(0,03)	Δp_t [Pa]		3	7	12	19	28												
		L_{WA} [dB(A)]			<20	29	36	42	47											
	500x100	V_k [m/s]			2,2	2,9	3,6	4,3	5,1											
	(0,0384)	Δp_t [Pa]			4	8	12	17	23											
		L_{WA} [dB(A)]			<20	23	31	37	42	46	50									
	600x100	V_k [m/s]			1,8	2,4	3	3,6	4,1	4,7	5,3									
	(0,0468)	Δp_t [Pa]			3	5	8	11	15	20	26									
		L_{WA} [dB(A)]				<20	22	28	33	37	41	45	48							
	800x100	V_k [m/s]				1,7	2,2	2,6	3	3,5	3,9	4,4	4,8							
	(0,0636)	Δp_t [Pa]				3	4	6	8	11	14	17	21							
H=150		L_{WA} [dB(A)]			22	32	39	46	50											
	300x150	V_k [m/s]			2,4	3,2	4,1	4,9	5,7											
	(0,0342)	Δp_t [Pa]			5	9	15	21	29											
		L_{WA} [dB(A)]			<20	23	31	37	42	46	50									
	400x150	V_k [m/s]			1,8	2,4	3	3,6	4,1	4,7	5,3									
	(0,0468)	Δp_t [Pa]			3	5	8	11	15	20	26									
		L_{WA} [dB(A)]				<20	24	30	35	39	43	47	50							
	500x150	V_k [m/s]				1,9	2,3	2,8	3,3	3,7	4,2	4,7	5,1							
	(0,0594)	Δp_t [Pa]				3	5	7	10	13	16	20	24							
		L_{WA} [dB(A)]				<20	<20	24	29	34	38	41	44	47						
	600x150	V_k [m/s]				1,5	1,9	2,3	2,7	3,1	3,5	3,9	4,2	4,6						
	(0,072)	Δp_t [Pa]				2	3	5	7	9	11	13	16	19						
		L_{WA} [dB(A)]					<20	<20	21	25	29	33	36	39	44	48				
	800x150	V_k [m/s]					1,4	1,7	2	2,3	2,6	2,9	3,1	3,4	4	4,6				
	(0,0973)	Δp_t [Pa]					2	3	4	5	6	7	9	11	14	19				
H=200		L_{WA} [dB(A)]				<20	22	28	33	37	41	45	48							
	400x200	V_k [m/s]				1,7	2,2	2,6	3	3,5	3,9	4,4	4,8							
	(0,0636)	Δp_t [Pa]				3	4	6	8	11	14	17	21							
		L_{WA} [dB(A)]					<20	21	26	31	35	38	41	44	49					
	500x200	V_k [m/s]					1,7	2,1	2,4	2,8	3,1	3,5	3,8	4,1	4,8					
	(0,0805)	Δp_t [Pa]					3	4	5	7	9	11	13	15	21					
		L_{WA} [dB(A)]					<20	<20	21	25	29	33	36	39	44	48				
	600x200	V_k [m/s]					1,4	1,7	2	2,3	2,6	2,9	3,1	3,4	4	4,6				
	(0,0973)	Δp_t [Pa]					2	3	4	5	6	7	9	11	14	19				
		L_{WA} [dB(A)]							<20	<20	21	24	27	30	35	40	44	47		
	800x200	V_k [m/s]							1,5	1,7	1,9	2,1	2,3	2,5	3	3,4	3,8	4,2		
	(0,1309)	Δp_t [Pa]							2	3	3	4	5	6	8	10	13	16		
H=300		L_{WA} [dB(A)]							<20	<20	23	26	29	32	37	42	45	49		
	500x300	V_k [m/s]							1,6	1,8	2	2,3	2,5	2,7	3,2	3,6	4,1	4,5		
	(0,1225)	Δp_t [Pa]							2	3	4	5	6	7	9	12	15	19		
		L_{WA} [dB(A)]								<20	<20	21	24	27	32	36	40	44		
	600x300	V_k [m/s]								1,5	1,7	1,9	2,1	2,3	2,6	3	3,4	3,8		
	(0,1477)	Δp_t [Pa]								2	3	3	4	5	6	8	10	13		
		L_{WA} [dB(A)]										<20	<20	<20	23	28	32	35	43	
	800x300	V_k [m/s]										1,4	1,5	1,7	2	2,2	2,5	2,8	3,5	
	(0,1982)	Δp_t [Pa]										2	2	3	3	5	6	7	11	

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

Data valid for:
- Extract air

Terminology:
- A_k = effective free area
- V_k = effective face velocity
- Δpt = total pressure loss
- L_{WA} = sound power level
- $l_{0,2}$ = throw to terminal velocity at 0,2 m/s

Grille

AE

Technical data

Capacity

Air flow rate q_v [l/s] and [m^3/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

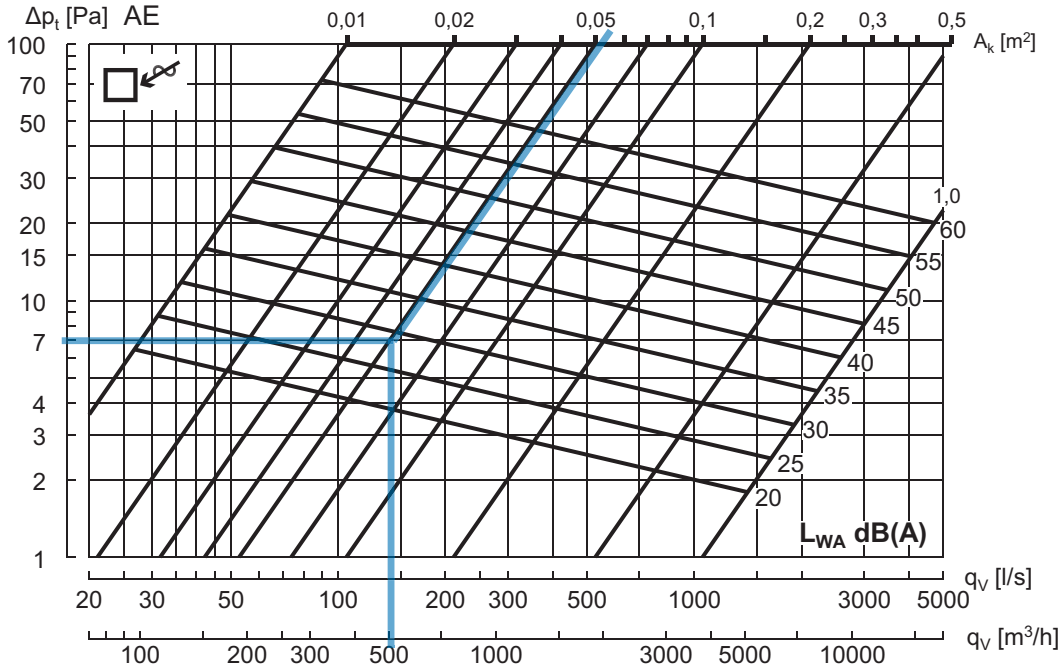
Opposed blade damper DGA

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 1.18	x 2.3	x 12
Sound power level L_{WA}	+ 2	+ 10	+ 24

Grille AE

Technical data



Example: AE-11

Grille size (LxH):	400×150 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

Plenum box

VBX

Description

VBX is a plenum box for supply and extract air intended to achieve a stable flow to a rectangular grille or other types of face plates. VBX is equipped with an adjustment damper and pressure measurement device. The plenum box can be connected from the side, the top or the back. The adjustment damper is operated from the front of the box by means of a graduated handle with integrated locking mechanism. VBX is equipped with a telescopic connection for easy installation.

- Can be used for both supply and extract air
- Easy-to-detach face plate for access to duct
- Same box used for all front grilles (AD, AE, AL, AR)

Maintenance

The grille can be removed in connection with cleaning of the internal parts of the plenum box.

Order code

Product	**VBX**	**a**	**bbb**	**x**	**ccc**

Type
VBX

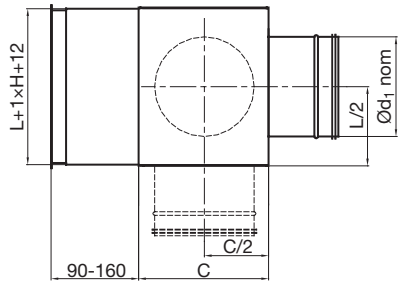
Connection
1 - Back connection
2 - Side connection
4 - Top connection

Size
L : 200 - 800 mm
H : 100 - 300 mm

Example: VBX-2-600-200

Dimensions

1.



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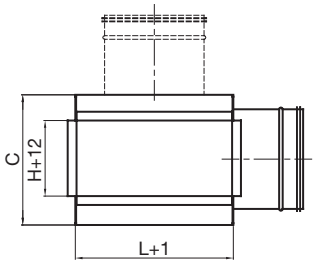

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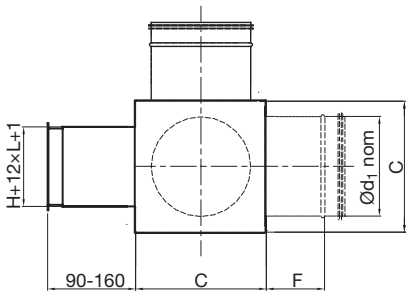


L	x	H	Ød$_1$	C	F
			mm		
200	x	100	125	165	90
300	x	100	160	200	110
300	x	150	200	240	130
400	x	100	160	200	110
400	x	150	250	290	155
400	x	200	250	290	155
500	x	100	200	240	130
500	x	150	250	290	155
500	x	200	315	355	190
500	x	300	400	440	215
600	x	100	250	290	155
600	x	150	250	290	155
600	x	200	315	355	190
600	x	300	400	440	215
800	x	100	250	290	155
800	x	150	315	355	190
800	x	200	315	355	190
800	x	300	400	440	215

Materials and finish

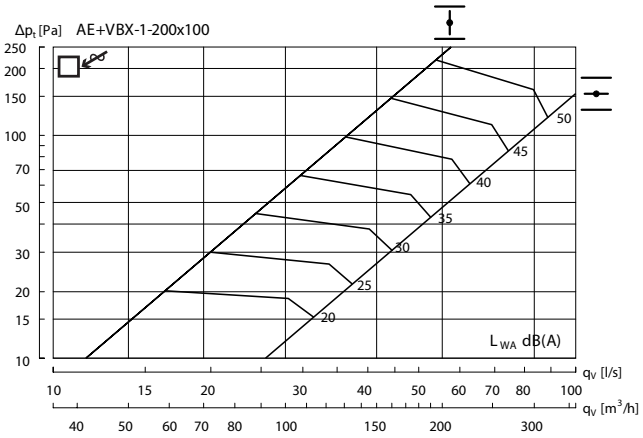
Box, plenum plate and damper are made of hot-galvanised steel plate.

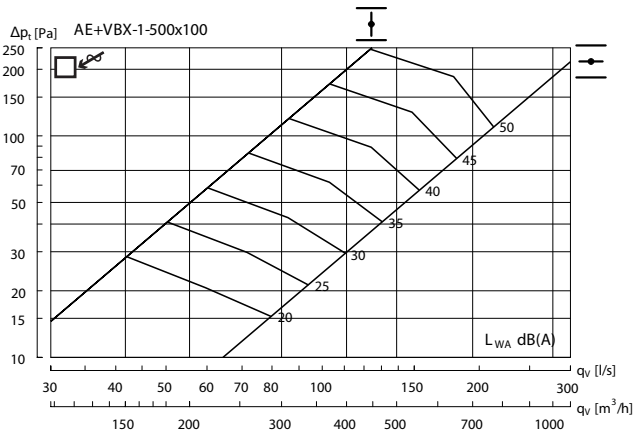
Grille

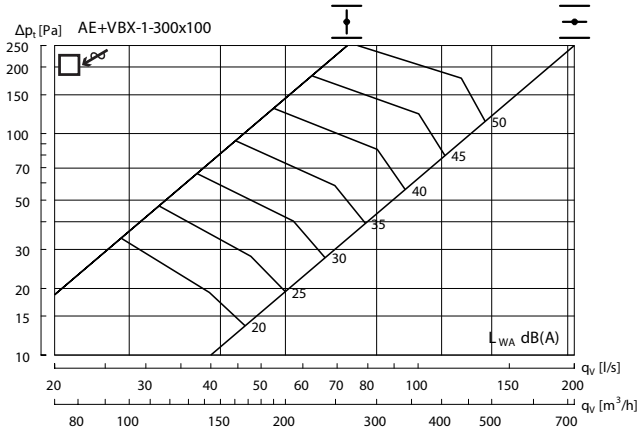
AE + VBX

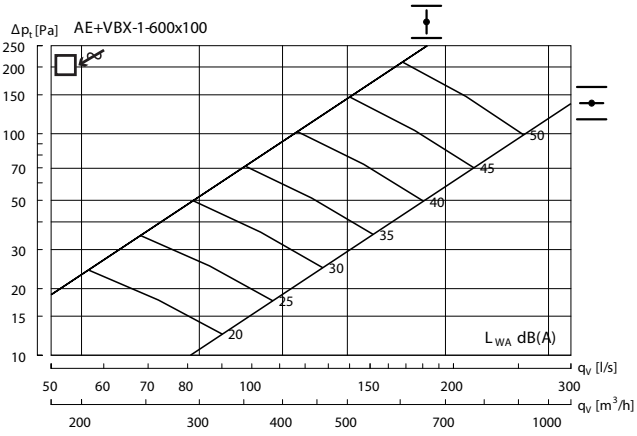
Technical data

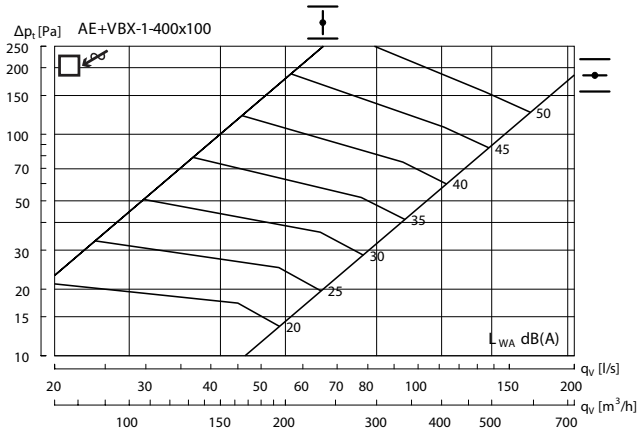
Extract air

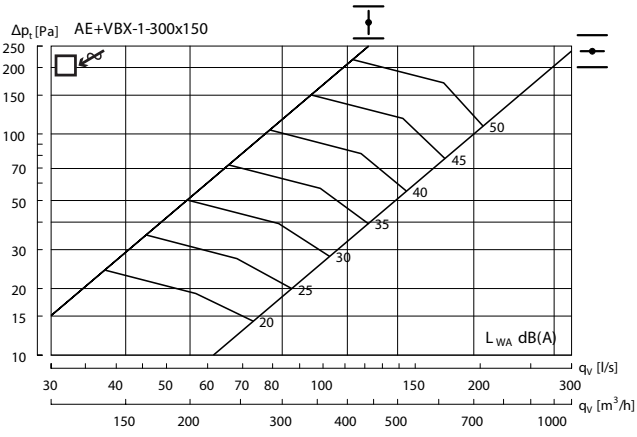










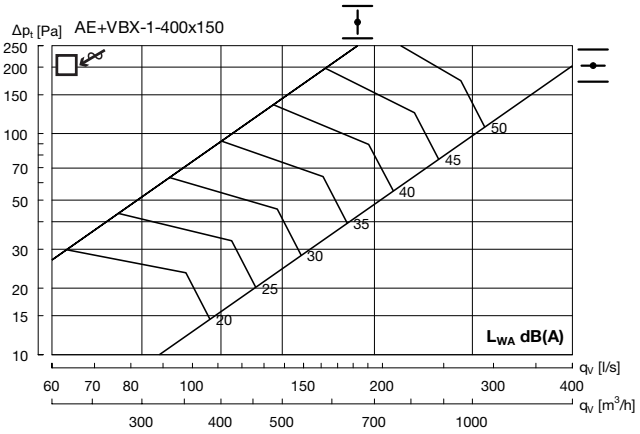


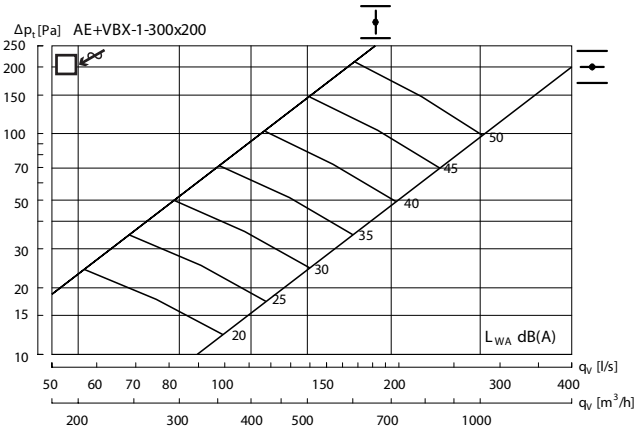
Grille

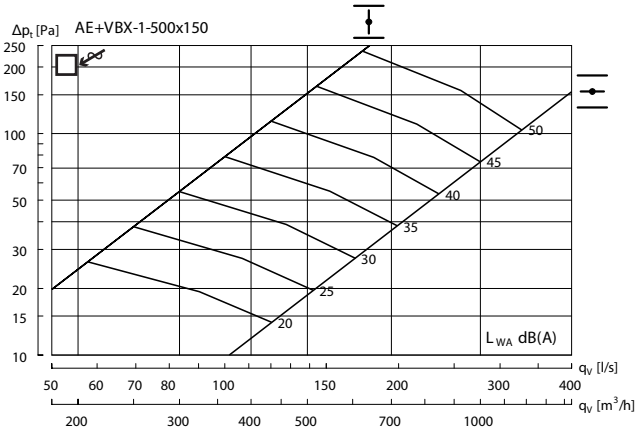
AE + VBX

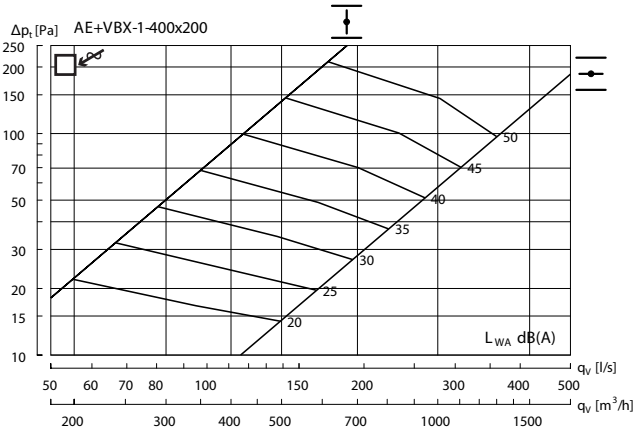
Technical data

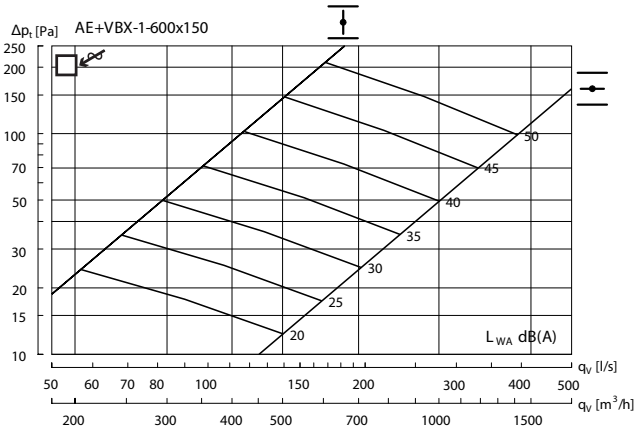
Extract air

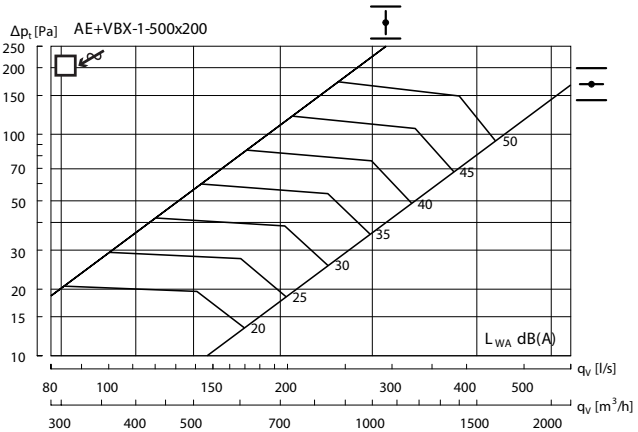












Grille

AE + VBX

Technical data

Extract air