

Grille

AR



Description

AR is an extract grille with fixed 45° angled blades made of aluminium. The AR is generally used for wall installation. The grille is available with several mounting options and can be delivered with mounting frame, opposed blade damper and plenum box accessories.

Min. - max. dimensions

H \ L	100	1200	1500
75			
500			
1200			

Standard grilles are available in steps of 50 mm 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 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

Order code

Product	AR	1	1	a	b	ccc x ddd	eeee
Type							
AR							
Frame							
1 - 25 mm frame							
Grid							
1 - Fixed 45° blades							
Installation							
- Not prepared							
C Clips							
CM Clips + mounting frame							
V Visible screw holes							
VM Visible screw holes + mounting frame							
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: AR-11-CMD-400-200-9003

Example 2: AR-11-600-400

Materials and finish

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

Grilles standard finish:

- Aluminium anodized
- RAL 9010 gloss 30
- RAL 9003 gloss 30

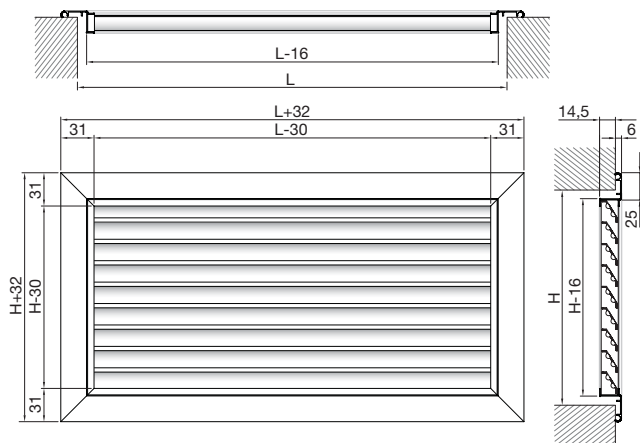
The grille is available in other colours. Please contact Lindab's sales department for further information.

Grille

AR

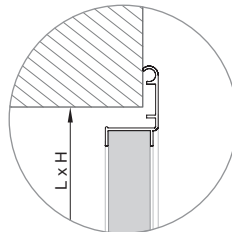
Frame and grid

AR-11 25 mm frame with fixed 45° angled blades



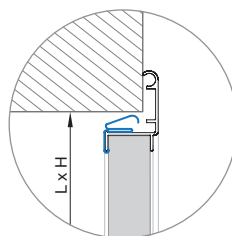
Installation

- Not prepared

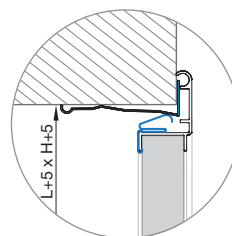


C - Clips

CM - Clips + mounting frame



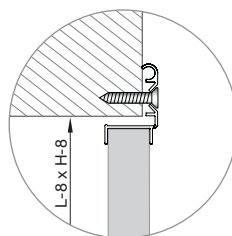
C



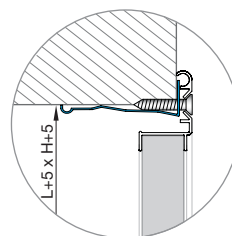
CM

V * - Visible screw holes

VM * - Visible screw holes + mounting frame



V *



VM *

* Screws are not included.

Accessories

- No damper

D - Opposed blade damper



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

x = 51 mm.

Grille

AR

Free area

H / L	AR-11 Return grille $A_k(m^2)$														
	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000
100	0,001	0,002	0,003	0,003	0,004	0,005	0,006	0,006	0,007	0,008	0,009	0,010	0,012	0,013	0,015
150	0,002	0,004	0,006	0,008	0,009	0,011	0,013	0,014	0,016	0,018	0,020	0,023	0,026	0,030	0,033
200	0,004	0,006	0,009	0,012	0,014	0,017	0,020	0,022	0,025	0,028	0,030	0,036	0,041	0,046	0,052
250	0,005	0,009	0,012	0,016	0,020	0,023	0,027	0,030	0,034	0,038	0,041	0,049	0,056	0,063	0,070
300	0,006	0,011	0,016	0,020	0,025	0,029	0,034	0,038	0,043	0,048	0,052	0,061	0,071	0,080	0,089
350	0,008	0,013	0,019	0,024	0,030	0,035	0,041	0,046	0,052	0,058	0,063	0,074	0,085	0,096	0,107
400	0,009	0,016	0,022	0,029	0,035	0,042	0,048	0,054	0,061	0,067	0,074	0,087	0,100	0,113	0,126
450	0,010	0,018	0,025	0,033	0,040	0,048	0,055	0,062	0,070	0,077	0,085	0,100	0,115	0,129	0,144
500	0,012	0,020	0,029	0,037	0,045	0,054	0,062	0,071	0,079	0,087	0,096	0,112	0,129	0,146	0,163
550	0,013	0,022	0,032	0,041	0,050	0,060	0,069	0,079	0,088	0,097	0,107	0,125	0,144	0,163	0,181
600	0,014	0,025	0,035	0,045	0,056	0,066	0,076	0,087	0,097	0,107	0,117	0,138	0,159	0,179	0,200
700	0,017	0,029	0,042	0,054	0,066	0,078	0,090	0,103	0,115	0,127	0,139	0,164	0,188	0,212	0,237
800	0,020	0,034	0,048	0,062	0,076	0,090	0,104	0,119	0,133	0,147	0,161	0,189	0,217	0,246	0,274
900	0,022	0,038	0,054	0,071	0,087	0,103	0,119	0,135	0,151	0,167	0,183	0,215	0,247	0,279	0,311
1000	0,025	0,043	0,061	0,079	0,097	0,115	0,133	0,151	0,169	0,186	0,204	0,240	0,276	0,312	0,348

Grille

AR

Quick selection, Extract air, AR-11

Grille size [mm]			Air flow rate																		
A _k [m ²]			m ³ /h	30	50	100	150	200	250	300	350	400	500	600	700	800	900	1000	1200	1400	1600
			l/s	(8)	(14)	(28)	(42)	(56)	(69)	(83)	(97)	(111)	(139)	(167)	(194)	(222)	(250)	(278)	(333)	(389)	(444)
H=100	200x100 (0,003)	L _{WA} [dB(A)]	29	43																	
		V _k [m/s]	3,1	5,4																	
		Δp _t [Pa]	4	12																	
	300x100 (0,004)	L _{WA} [dB(A)]	<20	32	48																
		V _k [m/s]	1,9	3,4	6,8																
		Δp _t [Pa]	2	6	25																
	400x100 (0,006)	L _{WA} [dB(A)]	<20	24	41	50															
		V _k [m/s]	1,4	2,5	5	7,4															
		Δp _t [Pa]	1	4	15	35															
	500x100 (0,007)	L _{WA} [dB(A)]		<20	35	44															
		V _k [m/s]		2	3,9	5,9															
		Δp _t [Pa]		3	11	24															
	600x100 (0,009)	L _{WA} [dB(A)]		<20	30	40	47														
		V _k [m/s]		1,6	3,2	4,8	6,4														
		Δp _t [Pa]		2	8	18	31														
H=150	300x150 (0,009)	L _{WA} [dB(A)]			23	33	40	45	49												
		V _k [m/s]			2,4	3,6	4,8	5,9	7,1												
		Δp _t [Pa]			5	11	19	29	42												
	400x150 (0,013)	L _{WA} [dB(A)]			<20	29	38	45	50												
		V _k [m/s]			1,5	3	4,5	6	7,4												
		Δp _t [Pa]			2	7	16	28	43												
	500x150 (0,016)	L _{WA} [dB(A)]				22	31	38	43	47											
		V _k [m/s]				2,2	3,3	4,4	5,4	6,5											
		Δp _t [Pa]				4	9	17	26	37											
	600x150 (0,02)	L _{WA} [dB(A)]				<20	26	32	37	41	45	48									
		V _k [m/s]				1,7	2,6	3,5	4,3	5,1	6	6,9									
		Δp _t [Pa]				3	6	11	17	25	34	44									
	800x150 (0,026)	L _{WA} [dB(A)]					<20	21	26	30	34	37	42	46	50						
		V _k [m/s]					1,6	2,1	2,6	3,1	3,7	4,2	5,3	6,3	7,3						
		Δp _t [Pa]					3	5	7	11	15	19	30	43	58						
H=200	400x200 (0,02)	L _{WA} [dB(A)]				<20	21	28	32	37	40	44	49								
		V _k [m/s]				1,4	2,1	2,8	3,5	4,2	4,9	5,6	7								
		Δp _t [Pa]				2	5	8	12	18	24	31	49								
	500x200 (0,025)	L _{WA} [dB(A)]					<20	22	27	31	35	38	43	47							
		V _k [m/s]					1,7	2,2	2,7	3,3	3,9	4,4	5,5	6,7							
		Δp _t [Pa]					3	5	8	12	16	21	33	47							
	600x200 (0,03)	L _{WA} [dB(A)]					<20	<20	22	27	30	33	39	43	47	50					
		V _k [m/s]					1,4	1,8	2,3	2,7	3,2	3,6	4,6	5,5	6,4	7,3					
		Δp _t [Pa]					2	4	6	8	11	15	23	34	46	60					
	800x200 (0,041)	L _{WA} [dB(A)]						<20	<20	20	23	26	32	36	40	43	45	48			
		V _k [m/s]						1,4	1,7	2	2,4	2,7	3,4	4,1	4,7	5,4	6,1	6,8			
		Δp _t [Pa]						2	3	5	7	9	14	20	27	35	45	56			
H=300	500x300 (0,043)	L _{WA} [dB(A)]							<20	<20	22	25	31	35	38	42	44	47			
		V _k [m/s]							1,6	1,9	2,3	2,6	3,2	3,9	4,5	5,2	5,8	6,5			
		Δp _t [Pa]							3	5	6	8	13	18	25	33	41	51			
	600x300 (0,052)	L _{WA} [dB(A)]							<20	<20	<20	21	26	30	34	37	40	42	47	50	
		V _k [m/s]							1,3	1,6	1,9	2,1	2,7	3,2	3,7	4,3	4,8	5,3	6,4	7,5	
		Δp _t [Pa]							2	3	4	6	9	13	18	23	29	36	52	71	
H=300	800x300 (0,071)	L _{WA} [dB(A)]								<20	<20	<20	23	27	30	33	35	40	43	46	
		V _k [m/s]								1,4	1,6	2	2,4	2,8	3,1	3,5	3,9	4,7	5,5	6,3	
		Δp _t [Pa]								3	3	5	8	10	14	17	21	31	42	55	

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

AR

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 and apply for grilles without opposed damper.

Sound power level

Sound power level L_{WA} [dB(A)] can be seen in the diagrams and apply for grilles without an opposed blade damper.

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	-2	-7	-5	-2	-7	-18	-21	-19

Opposed blade damper DGA

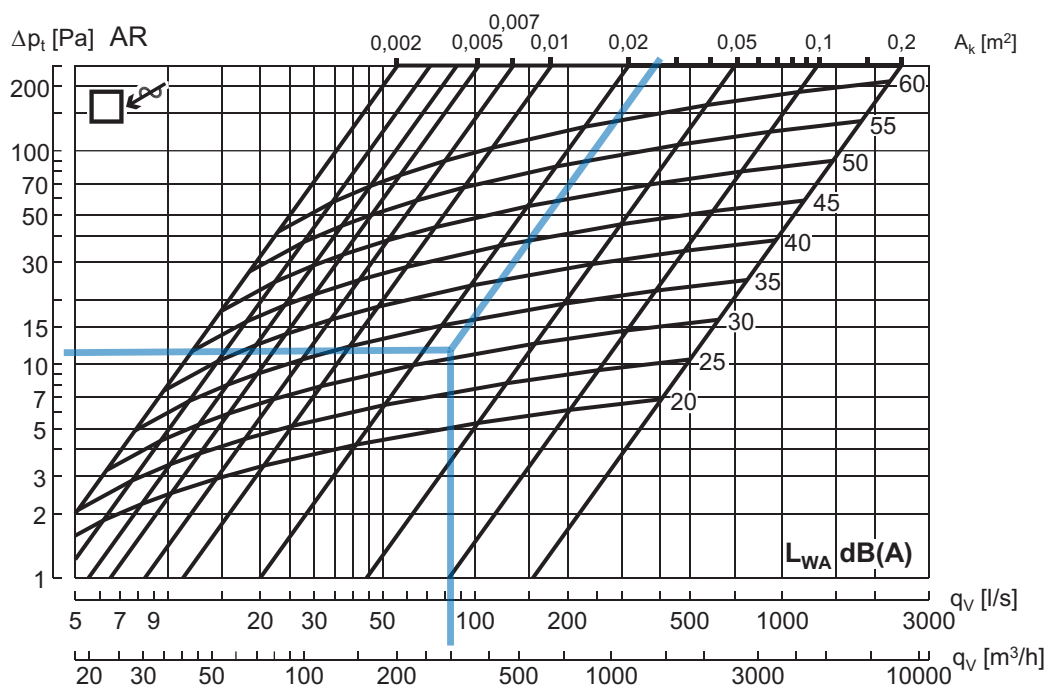
Correction of total pressure loss Δp_t [Pa] and sound power level L_{WA} [dB(A)] using a damper. See table below.

Damper position	Open	25% Closed	50% Closed
Total pressure loss Δp_t	x 1.3	x 2.3	x 5
Sound power level L_{WA}	+ 1	+ 4	+ 12

Grille

AR

Technical data

**Example:**

Grille size (LxH): 500x200 mm
 Free area A_k : 0,025 m²
 Air flow rate q_v : 300 m³/h (83 l/s)

Result:

Sound power level L_{WA} : ~31 [dB(A)]
 Total pressure loss Δp_t : ~12 [Pa]

Data valid for:

- Extract air

For grilles with free area $>0,2$ 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

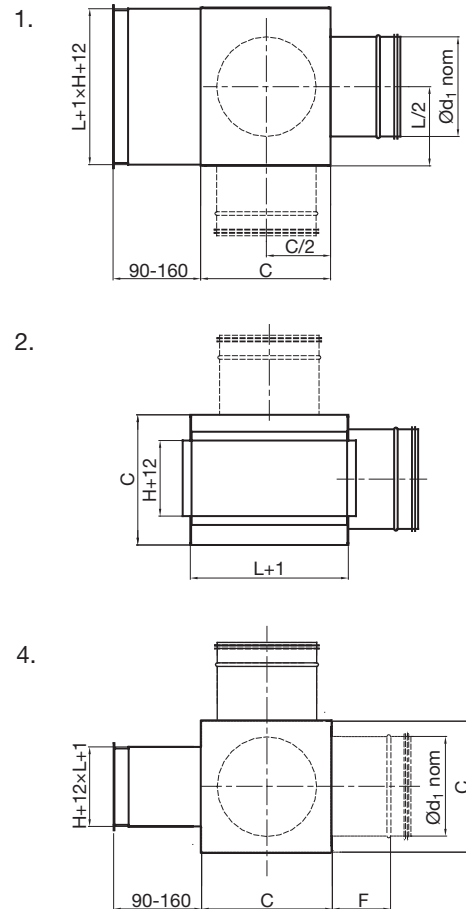
The grille can be removed in connection with cleaning of the internal parts of the plenum box.

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



L	x	H	Ød ₁ mm	C	F
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

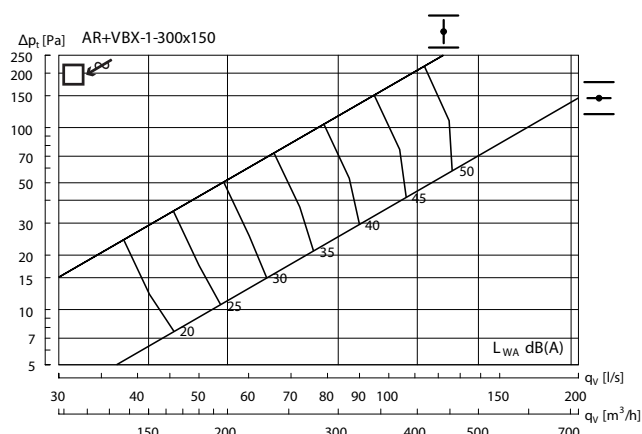
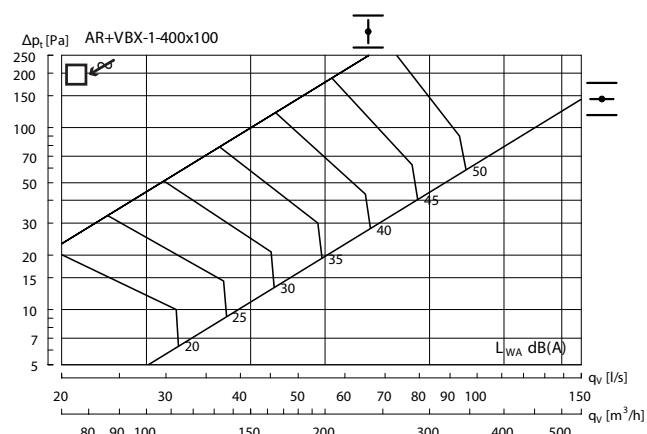
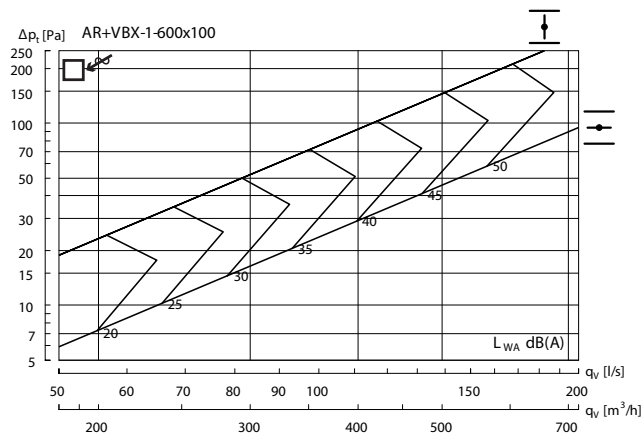
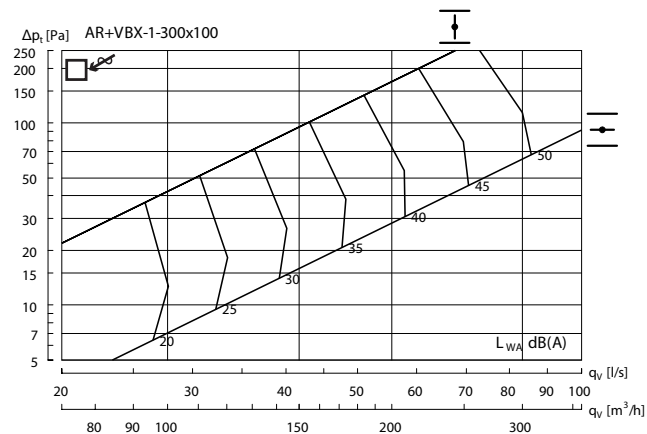
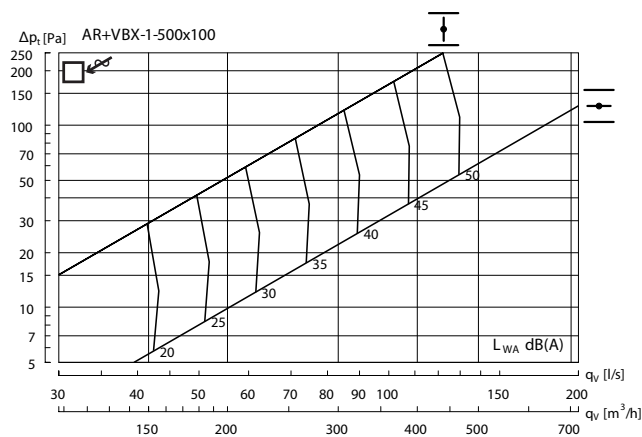
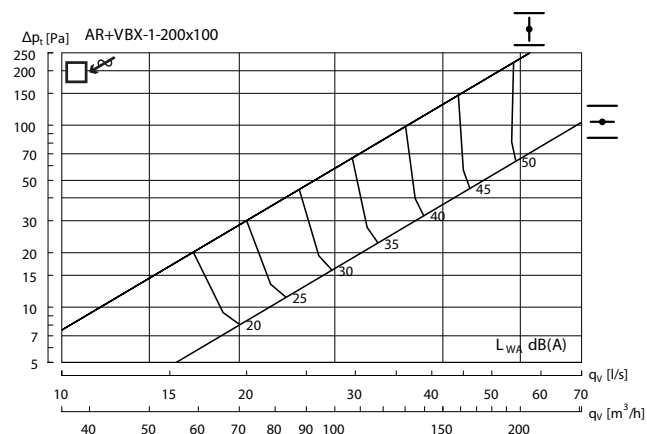
Box, plenum plate and damper are made of hot-galvanised steel plate.

Grille

AR + VBX

Technical data

Extract air



Grille

AR + VBX

Technical data

Extract air

