

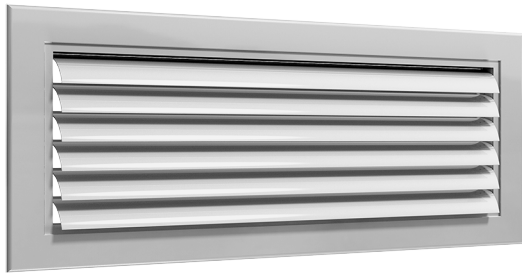
# AC

Grilles Global version



# Grille Global version

# AC



## Description

AC is a supply grille made from aluminum with curved adjustable blades, oriented 1-way or 2-way horizontal or vertical both for wall and ceiling installation. 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

Product	AC	1	a	b	c	ddd x eee	fff
<b>Type</b>							
AC							
<b>Frame</b>							
1 - 25 mm frame							
<b>Grid</b>							
1 -Horizontal curved blades-1 - way							
2 -Vertical curved blades-1 - way							
3 -Horizontal curved blades-2 - ways							
4 -Vertical curved blades-2 - ways							
<b>Installation</b>							
- Not prepared							
C Clips							
CM Clips + mounting frame							
V Visible screw holes							
VM Visible screw holes + mounting frame							
H Hidden screw installation							
HM Hidden screws + mounting frame							
<b>Accessories</b>							
- No accessories							
D Opposed blade damper							
<b>Size</b>							
L: 200 - 1500 mm							
H: 100 - 1200 mm						Only AC-11 / AC-13	
H: 150 - 1200 mm						Only AC-12 / AC-14	
<b>Grilles standard finish:</b>							
- Anodized aluminium							
9010 RAL 9010, gloss 30							
9003 RAL 9003, gloss 30							
xxxx On request, other RAL colour							

Example 1: AC-11-CM-D-400-200-9003  
 Example 2: AC-14-600-300

## Min. - max. dimensions

### AC-11 /AC13

H \ L	200	↔	1200	↔	1500
100					
↕					
500					
↕					
1200					

### AC-12 /AC14

H \ L	200	↔	1200	↔	1500
150					
↕					
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](http://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

- Plenum box: [PBA](#), [VBX](#)
- Mounting frame: [MFA](#)
- Opposed blade damper: [DGA](#)

## 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

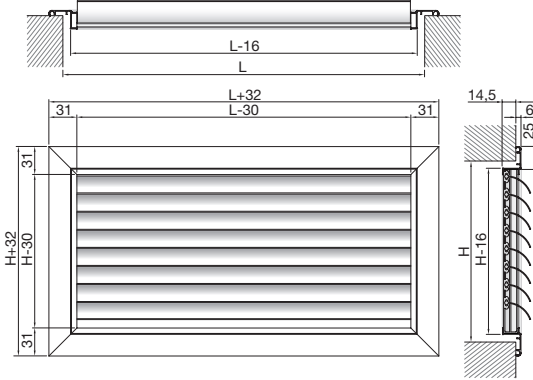
The grille is available in other colours. Please contact Lindab's sales department for further information.

# Grille Global version

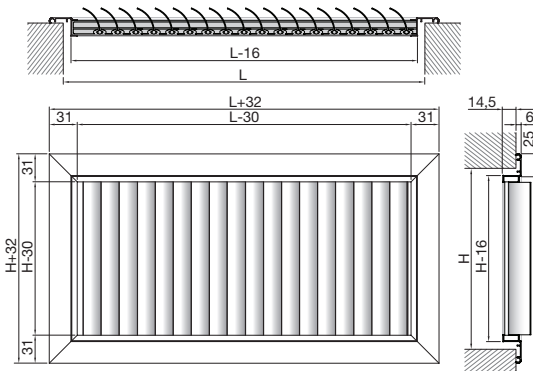
# AC

## Frame and grid

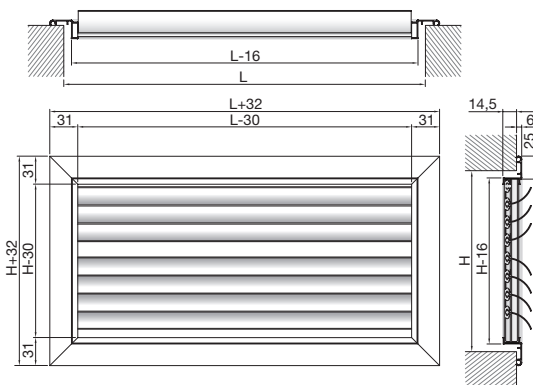
**AC-11** 25 mm frame with horizontal curved blades - 1 way.



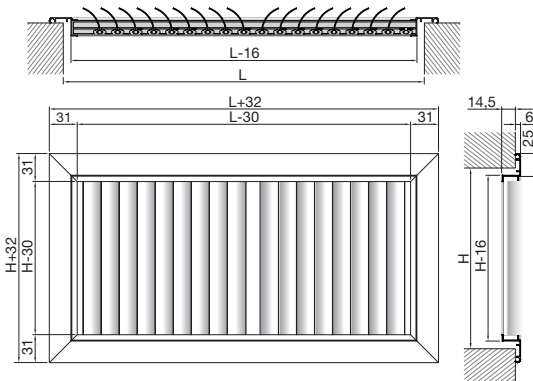
**AC-12** 25 mm frame with Vertical curved blades -1 way.



**AC-13** 25 mm frame with horizontal curved blades-2 ways.

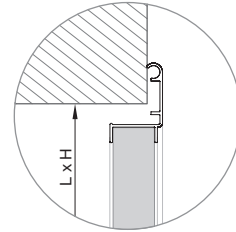


**AC-14** 25 mm frame with vertical curved blades - 2 ways.



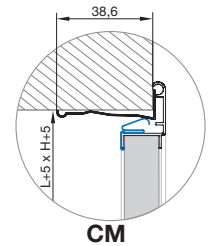
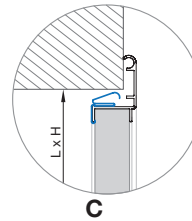
## Installation

- Not prepared



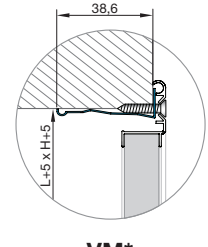
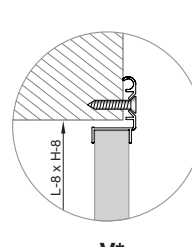
**C** - Clips

**CM** - Clips + mounting frame



**V\*** - Visible screw holes

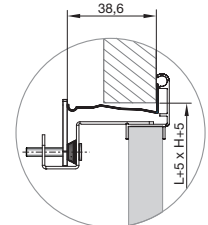
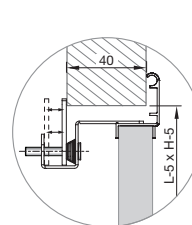
**VM\*** - Visible screw holes + mounting frame



\* Screws are not included.

**H\*\*** - Hidden screws

**HM\*\*** - Hidden screws + mounting frame



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

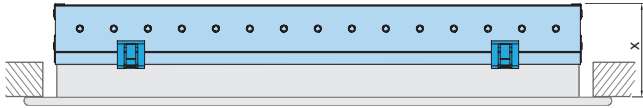
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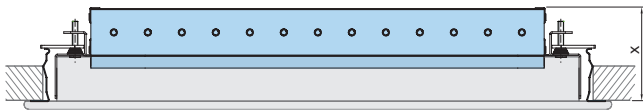
## Accessories

- No damper

### D - Opposed blade damper DGA



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



AC 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

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

DGA in combination with hidden screw installation.

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

- plenum box
- mounting frame

Details see website on [www.lindQST.com](http://www.lindQST.com)

## Grille Global version

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## Free area

H / L	AC-11 / AC-12 Curved blade grille 1 - way												
	A <sub>k</sub> (m <sup>2</sup> )												
	200	250	300	350	400	450	500	550	600	700	800	900	1000
100	0,006	0,008	0,010	0,011	0,013	0,015	0,016	0,018	0,020	0,023	0,027	0,030	0,033
150	0,010	0,013	0,015	0,018	0,021	0,023	0,026	0,029	0,032	0,037	0,042	0,048	0,053
200	0,014	0,017	0,021	0,025	0,028	0,032	0,036	0,040	0,043	0,051	0,058	0,066	0,073
250	0,017	0,022	0,027	0,031	0,036	0,041	0,046	0,050	0,055	0,064	0,074	0,083	0,093
300	0,021	0,027	0,033	0,038	0,044	0,050	0,055	0,061	0,067	0,078	0,090	0,101	0,112
350	0,025	0,032	0,038	0,045	0,052	0,058	0,065	0,072	0,079	0,092	0,105	0,119	0,132
400	0,029	0,036	0,044	0,052	0,059	0,067	0,075	0,083	0,090	0,106	0,121	0,137	0,152
450	0,032	0,041	0,050	0,058	0,067	0,076	0,085	0,093	0,102	0,119	0,137	0,154	0,172
500	0,036	0,046	0,056	0,065	0,075	0,085	0,094	0,104	0,114	0,133	0,153	0,172	0,191
550	0,040	0,051	0,061	0,072	0,083	0,093	0,104	0,115	0,126	0,147	0,168	0,190	0,211
600	0,044	0,055	0,067	0,079	0,090	0,102	0,114	0,126	0,137	0,161	0,184	0,208	0,231
700	0,051	0,065	0,079	0,092	0,106	0,120	0,133	0,147	0,161	0,188	0,216	0,243	0,270
800	0,059	0,074	0,090	0,106	0,121	0,137	0,153	0,169	0,184	0,216	0,247	0,279	0,310
900	0,066	0,084	0,102	0,119	0,137	0,155	0,172	0,190	0,208	0,243	0,279	0,314	0,349
1000	0,074	0,093	0,113	0,133	0,152	0,172	0,192	0,212	0,231	0,271	0,310	0,350	0,389

H / L	AC-13 / AC-14 Curved blade grille 2 - ways												
	A <sub>k</sub> (m <sup>2</sup> )												
	200	250	300	350	400	450	500	550	600	700	800	900	1000
100	0,005	0,006	0,008	0,010	0,012	0,013	0,015	0,017	0,018	0,022	0,025	0,029	0,032
150	0,007	0,010	0,013	0,016	0,018	0,021	0,024	0,026	0,029	0,035	0,040	0,045	0,051
200	0,010	0,014	0,018	0,021	0,025	0,029	0,032	0,036	0,040	0,047	0,055	0,062	0,070
250	0,013	0,018	0,022	0,027	0,032	0,036	0,041	0,046	0,051	0,060	0,069	0,079	0,088
300	0,016	0,021	0,027	0,033	0,039	0,044	0,050	0,056	0,061	0,073	0,084	0,096	0,107
350	0,018	0,025	0,032	0,039	0,045	0,052	0,059	0,065	0,072	0,086	0,099	0,112	0,126
400	0,021	0,029	0,037	0,044	0,052	0,060	0,067	0,075	0,083	0,098	0,114	0,129	0,145
450	0,024	0,033	0,041	0,050	0,059	0,067	0,076	0,085	0,094	0,111	0,128	0,146	0,163
500	0,027	0,036	0,046	0,056	0,066	0,075	0,085	0,095	0,104	0,124	0,143	0,163	0,182
550	0,029	0,040	0,051	0,062	0,072	0,083	0,094	0,104	0,115	0,137	0,158	0,179	0,201
600	0,032	0,044	0,056	0,067	0,079	0,091	0,102	0,114	0,126	0,149	0,173	0,196	0,220
700	0,038	0,051	0,065	0,079	0,093	0,106	0,120	0,134	0,147	0,175	0,202	0,230	0,257
800	0,043	0,059	0,075	0,090	0,106	0,122	0,137	0,153	0,169	0,200	0,232	0,263	0,295
900	0,049	0,066	0,084	0,102	0,120	0,137	0,155	0,173	0,190	0,226	0,261	0,297	0,332
1000	0,054	0,074	0,094	0,113	0,133	0,153	0,172	0,192	0,212	0,251	0,291	0,330	0,370

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## Quick selection, Supply air, AC -11 / AC-12

Grille size [mm]		Air flow rate																				
		m³/h	50	80	120	200	250	300	350	400	500	600	700	800	900	1000	1250	1500	1800	2000		
A <sub>k</sub> [m²]		l/s	(14)	(22)	(33)	(56)	(69)	(83)	(97)	(111)	(139)	(167)	(194)	(222)	(250)	(278)	(347)	(417)	(500)	(556)		
H=100	200x100 (0,006)	L <sub>WA</sub> [dB(A)]	26	38	48																	
		V <sub>k</sub> [m/s]	2,3	3,6	5,4																	
		Δp <sub>t</sub> [Pa]	4	9	20																	
		L <sub>0,2</sub> [m]	1,6	2,5	3,7																	
	300x100 (0,01)	L <sub>WA</sub> [dB(A)]	<20	26	36	50																
		V <sub>k</sub> [m/s]	1,5	2,3	3,5	5,9																
Δp <sub>t</sub> [Pa]		1	4	8	24																	
L <sub>0,2</sub> [m]		1,3	2	3	5																	
400x100 (0,013)	L <sub>WA</sub> [dB(A)]		<20	28	42	47																
	V <sub>k</sub> [m/s]		1,7	2,6	4,3	5,3																
	Δp <sub>t</sub> [Pa]		2	4	13	20																
	L <sub>0,2</sub> [m]		1,7	2,6	4,3	5,2																
500x100 (0,016)	L <sub>WA</sub> [dB(A)]		<20	22	36	41	46	50														
	V <sub>k</sub> [m/s]		1,3	2	3,4	4,2	5,1	5,9														
	Δp <sub>t</sub> [Pa]		1	3	8	12	18	24														
	L <sub>0,2</sub> [m]		1,6	2,3	3,8	4,7	5,6	6,5														
600x100 (0,02)	L <sub>WA</sub> [dB(A)]			<20	31	36	41	45	48													
	V <sub>k</sub> [m/s]			1,7	2,8	3,5	4,2	4,9	5,6													
	Δp <sub>t</sub> [Pa]			2	6	8	12	17	22													
	L <sub>0,2</sub> [m]			2,1	3,5	4,2	5,1	5,9	6,7													
800x100 (0,027)	L <sub>WA</sub> [dB(A)]				23	28	33	37	40	46												
	V <sub>k</sub> [m/s]				2,1	2,6	3,1	3,6	4,2	5,2												
	Δp <sub>t</sub> [Pa]				3	5	7	9	12	19												
	L <sub>0,2</sub> [m]				3	3,7	4,4	5,1	5,8	7,2												
H=150	300x150 (0,015)	L <sub>WA</sub> [dB(A)]		<20	24	38	43	48														
		V <sub>k</sub> [m/s]		1,4	2,2	3,7	4,5	5,4														
		Δp <sub>t</sub> [Pa]		1	3	9	14	20														
		L <sub>0,2</sub> [m]		1,6	2,4	3,9	4,8	5,8														
	400x150 (0,021)	L <sub>WA</sub> [dB(A)]			<20	29	35	40	44	47												
		V <sub>k</sub> [m/s]			1,6	2,7	3,3	4	4,7	5,4												
Δp <sub>t</sub> [Pa]				2	5	8	11	15	20													
L <sub>0,2</sub> [m]				2	3,4	4,2	5	5,8	6,6													
500x150 (0,026)	L <sub>WA</sub> [dB(A)]				23	29	33	37	41	47												
	V <sub>k</sub> [m/s]				2,1	2,6	3,2	3,7	4,3	5,3												
	Δp <sub>t</sub> [Pa]				3	5	7	9	12	19												
	L <sub>0,2</sub> [m]				3	3,7	4,4	5,1	5,8	7,3												
600x150 (0,032)	L <sub>WA</sub> [dB(A)]				<20	23	28	32	36	42	46	50										
	V <sub>k</sub> [m/s]				1,8	2,2	2,6	3,1	3,5	4,4	5,3	6,2										
	Δp <sub>t</sub> [Pa]				2	3	5	6	9	13	19	26										
	L <sub>0,2</sub> [m]				2,7	3,4	4	4,7	5,3	6,6	7,9	9,1										
800x150 (0,042)	L <sub>WA</sub> [dB(A)]				<20	<20	20	24	28	34	38	42	46	49								
	V <sub>k</sub> [m/s]				1,3	1,6	2	2,3	2,6	3,3	3,9	4,6	5,2	5,9								
	Δp <sub>t</sub> [Pa]				1	2	3	4	5	7	11	14	19	24								
	L <sub>0,2</sub> [m]				2,4	2,9	3,4	4	4,5	5,6	6,7	7,8	8,9	9,9								
H=200	400x200 (0,028)	L <sub>WA</sub> [dB(A)]				21	26	31	35	39	44	49										
		V <sub>k</sub> [m/s]				2	2,4	2,9	3,4	3,9	4,9	5,9										
		Δp <sub>t</sub> [Pa]				3	4	6	8	10	16	24										
		L <sub>0,2</sub> [m]				2,9	3,5	4,2	4,9	5,6	6,9	8,3										
	500x200 (0,036)	L <sub>WA</sub> [dB(A)]				<20	20	25	29	32	38	43	47	50								
		V <sub>k</sub> [m/s]				1,6	1,9	2,3	2,7	3,1	3,9	4,7	5,4	6,2								
Δp <sub>t</sub> [Pa]					2	3	4	5	7	10	15	20	26									
L <sub>0,2</sub> [m]					2,6	3,1	3,8	4,4	5	6,2	7,4	8,5	9,7									
600x200 (0,043)	L <sub>WA</sub> [dB(A)]				<20	<20	20	24	27	33	38	42	45	48								
	V <sub>k</sub> [m/s]				1,3	1,6	1,9	2,2	2,6	3,2	3,9	4,5	5,1	5,8								
	Δp <sub>t</sub> [Pa]				1	2	3	3	5	7	10	14	18	23								
	L <sub>0,2</sub> [m]				2,3	2,8	3,4	4	4,5	5,6	6,7	7,7	8,8	9,8								
800x200 (0,058)	L <sub>WA</sub> [dB(A)]						<20	<20	25	30	34	37	40	43	49							
	V <sub>k</sub> [m/s]						1,4	1,7	1,9	2,4	2,9	3,3	3,8	4,3	4,8	6						
	Δp <sub>t</sub> [Pa]						1	2	3	4	6	8	10	13	16	24						
	L <sub>0,2</sub> [m]						2,9	3,4	3,8	4,8	5,7	6,5	7,5	8,4	9,3	11,5						
H=300	500x300 (0,055)	L <sub>WA</sub> [dB(A)]						<20	<20	21	27	31	35	39	42	44	50					
		V <sub>k</sub> [m/s]						1,5	1,8	2	2,5	3	3,5	4	4,5	5	6,3					
		Δp <sub>t</sub> [Pa]						2	2	3	4	6	8	11	14	17	27					
		L <sub>0,2</sub> [m]						3	3,5	3,9	4,9	5,8	6,7	7,7	8,6	9,5	11,8					
	600x300 (0,067)	L <sub>WA</sub> [dB(A)]								<20	<20	21	26	30	34	37	39	45	50			
		V <sub>k</sub> [m/s]								1,5	1,7	2,1	2,5	2,9	3,3	3,7	4,2	5,2	6,2			
Δp <sub>t</sub> [Pa]									1	2	3	4	6	8	10	12	19	27				
L <sub>0,2</sub> [m]									3,1	3,5	4,4	5,2	6,1	6,9	7,7	8,6	10,6	12,6				
800x300 (0,09)	L <sub>WA</sub> [dB(A)]										<20	<20	22	26	29	32	37	42	47	49		
	V <sub>k</sub> [m/s]										1,6	1,9	2,2	2,5	2,8	3,1	3,9	4,7	5,6	6,2		
	Δp <sub>t</sub> [Pa]										2	2	3	4	5	7	10	15	21	26		
	L <sub>0,2</sub> [m]										3,7	4,4	5,1	5,8	6,5	7,2	8,9	10,6	12,6	14		

10 ≤ L<sub>WA</sub> < 30      30 ≤ L<sub>WA</sub> < 40      40 ≤ L<sub>WA</sub> < 50

**Data valid for:**

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

**Terminology:**

- A<sub>k</sub> = effective free area
- V<sub>k</sub> = effective face velocity
- Δp<sub>t</sub> = total pressure loss
- L<sub>WA</sub> = sound power level
- l<sub>0,2</sub> = throw to terminal velocity at 0.2 m/s

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AC

## Technical data

### Capacity

Air flow rate  $q_v$  [l/s] and [m<sup>3</sup>/h], total pressure loss  $\Delta p_t$  [Pa], throw  $l_{0,2}$  [m] and sound power level  $L_{WA}$  [dB(A)] can be seen in the diagrams and apply for grilles without an opposed blade damper.

### 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 a opposed blade damper. See the table below for correction of sound power level on blade 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	-2	-1	-1	-2	-7	-11	-16	-18
Extract	-1	-2	-1	-4	-3	-6	-12	-20

### Opposed blade damper DGA

Correction of total pressure loss  $\Delta p_t$  [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 $\Delta p_t$	x 1.15	x 1.3
Sound power level $L_{WA}$	+ 2	+ 6	+ 14

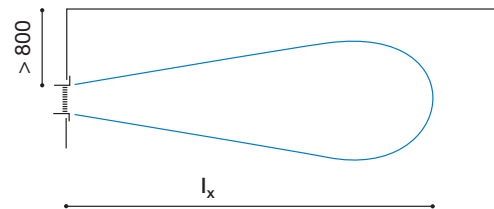
### Extract air

Total pressure loss $\Delta p_t$	x 0.74
Sound power level $L_{WA}$	- 2

## Throw and air jet dispersal

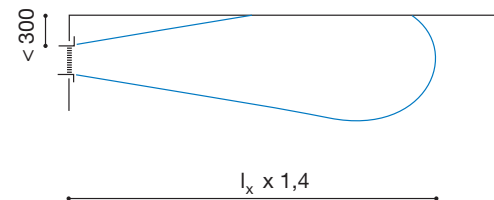
### Throw

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



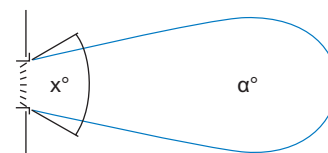
For grilles installed less than 300 mm from the ceiling, the air throw is extended by 40% so that:

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



### Air jet dispersal

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



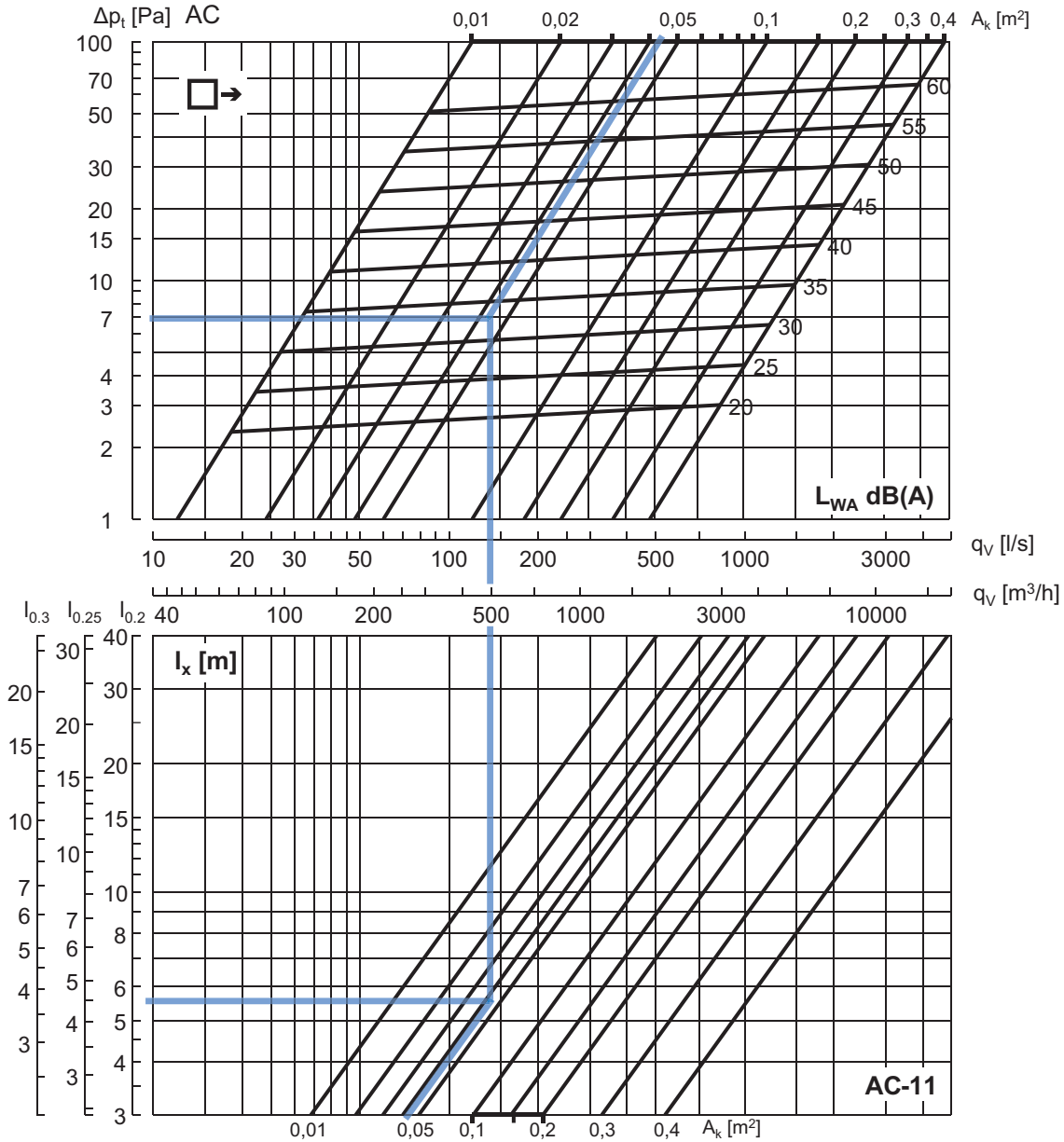
$$X = 45^\circ = \alpha = 35^\circ$$

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

# Grille Global version

AC

## Technical data



**Example:**

Grille size (LxH): 600x200 mm  
 Free area  $A_k$ : 0.043 m<sup>2</sup>  
 Air flow rate  $q_v$ : 500 m<sup>3</sup>/h (139 l/s)  
 Result:  
 Sound power level  $L_{WA}$ : ~33 [dB(A)]  
 Total pressure loss  $\Delta p_t$ : ~7 [Pa]  
 Throw  $l_{0.2}$ : ~5.6 [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 m<sup>2</sup>, we refer to use Lindabs online calculation tool on [www.lindab.com](http://www.lindab.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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