

Lindab **LCC**

Integra - Ceiling diffuser



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LCC



Description

LCC is a flush-mounted round diffuser with a circular unperforated face plate for installation in ceiling systems. LCC is suitable for the horizontal supply of cooled air and has a large dynamic range.

Installing an LCC diffuser in a plenum box type MB can help to achieve a stable airflow to the diffuser as well as realise the potential for individual adjustment.

Damper type B is an unique linear cone damper which allows to use the full operational area and allows to balance with a high pressure drop over the box with low sound generation. Furthermore the construction of the damper gives an accurate and reliable measurement.

Damper type C and E are with rotating blade dampers for respectively supply and extract. Typically used in applications that don't require a high balancing pressure in the plenum box.

The LCC can with the plenum box MBV be used in a Pascal system. LCC can be ordered with a presence sensor (-P) and/or with temperature sensor (-T). The sensors are built into the Faceplate.

- Simple and stylish appearance
- Large dynamic range
- Can be used for both supply and extract air
- Can be adapted to most ceiling systems
- Plenum box with several damper options

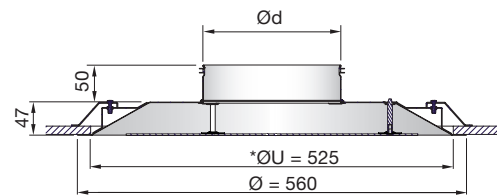
Order code

Product	LCC	aaa	(-xx)
Type	LCC		
Connection dim.	Ød 125-315		
Sensor type	No sensor		
	(-P) Presence sensor *		
	(-T) Temperature sensor *		
	(-P-T) Presence sensor / Temperature sensor *		

Example: LCC-200-P-T

* Only size 200-315

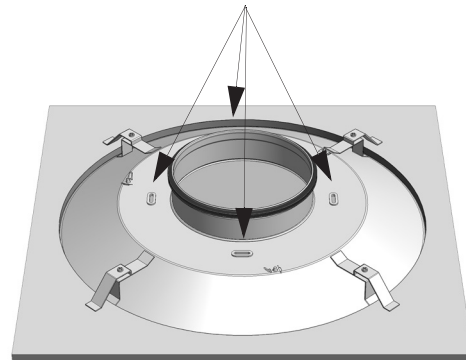
Dimensions



*ØU = Ceiling grid opening = 525 mm, all sizes.

LCC Ød	m
mm	kg
125	2.8
160	2.7
200	2.7
250	2.6
315	2.5

Ød = 125-250 => LCC has mounting holes for MB.



Ød = 315 => LCC has no mounting holes for MB !

Brackets included for LCC, for details, see the [LCC installation instruction](#)



The unique Puresound foam secures an optimal temperature measure in the diffuser without disturbance from the supply air.

Maintenance

The face plate can be removed to enable cleaning of internal parts or to gain access to the duct or box. The visible parts of the diffuser can be wiped with a damp cloth.

Materials and finish

Upper part: Galvanised steel
 Face plate: Aluminium
 Face plate finish: Powder-coated
 Standard colours: RAL 9003 and RAL 9010, gloss 30

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

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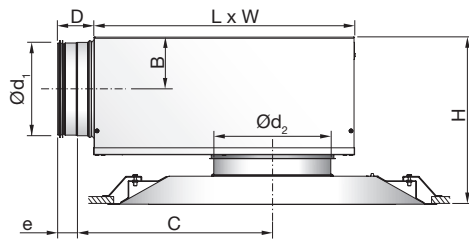
Accessories

Plenum box

MB



LCC + MB



LCC + MB

Ød ₁ mm	Ød ₂ mm	B	C	D	e	H*	L	W
100	125	62	245	78	40	206 - 246	310	260
100	160	62	245	78	40	206 - 246	310	260
125	125	75	291	78	40	231 - 271	376	310
125	160	75	291	78	40	231 - 271	376	310
125	200	75	291	78	40	231 - 271	376	310
160	160	92	352	78	40	265 - 305	459	380
160	200	92	352	78	40	265 - 305	459	380
160	250	92	352	78	40	265 - 305	459	380
200	200	112	425	78	40	306 - 346	565	460
200	250	112	425	78	40	306 - 346	565	460
200	315	112	425	78	40	306 - 346	565	460
250	250	137	514	118	60	356 - 396	698	540
250	315	137	514	118	60	356 - 396	698	540
315	315	170	675	118	60	421 - 461	858	540

* Using accessory MBZ the H dimension will increase:

$$\text{Ød}_2 = 125 - 200 \text{ mm} \Rightarrow H + 40 \text{ mm}$$

$$\text{Ød}_2 = 250 - 315 \text{ mm} \Rightarrow H + 60 \text{ mm}$$

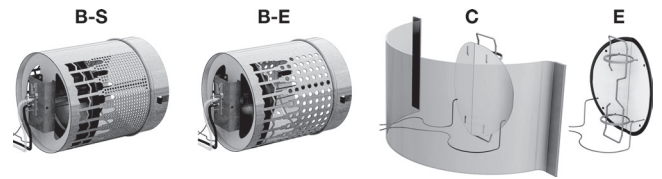
Order code

Product	MB	a	bbb	ccc	d
Type					
MB					
Damper					
B = Linear cone damper					
C = Blade damper supply					
E = Blade damper extract					
Duct connection Ød ₁					
Ø100-315					
Diffuser dimension Ød ₂					
Ø125-315					
Function (Only for B damper)					
S = Supply air					
E = Extract					

Example 1: LCC-200-P-T-MBB-160-200-S

Example 1: LCC-160+MBC-125-160

Damper options



LCC + MBV (Pascal)

LCC with integrated sensors only fits with MBV. Because of the inside cable connection.

Go to www.LindQST.com to find details about the MBV plenum box and the [Pascal solutions](#).

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Technical data

Following LCC+plenum box data are valid for MBB-S/-E. For MBC, MBE and MBV data, go to www.lindqst.com

For full configuration of your LCC diffuser, go to the [LindQST Airborne configurator](#).

Capacity

Air flow q_v [l/s] and [m³/h], total pressure Δp_t [Pa], throw $l_{0,2}$ [m] 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 $L_{WA} + K_{ok}$. K_{ok} values are specified in charts beneath the diagrams on the following pages.

LCC+MBB-S		$\Delta p_t \geq 50$ Pa 30 dB(A)		$\Delta p_t \geq 50$ Pa 35 dB(A)	
$\varnothing d_1$	$\varnothing d_2$	l/s	m ³ /h	l/s	m ³ /h
100	125	37	133	44	158
100	160	39	140	48	173
125	125	48	173	56	202
125	160	56	202	66	238
125	200	61	220	73	263
160	160	67	241	85	306
160	200	79	284	99	356
160	250	95	342	113	407
200	200	92	331	117	421
200	250	105	378	122	439
200	315	118	425	145	522
250	250	112	403	132	475
250	315	131	472	168	605
315	315	144	518	169	608

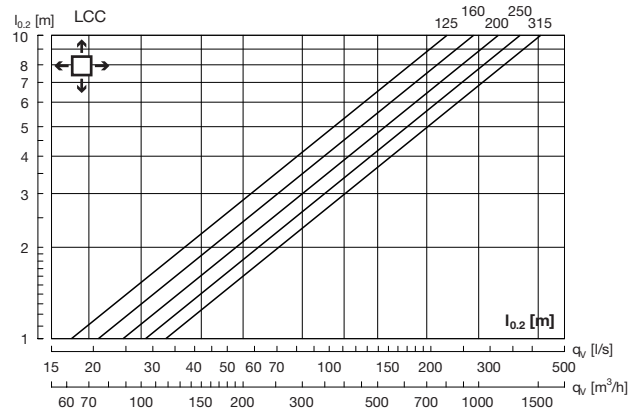
Sound attenuation

Sound attenuation of the diffusers ΔL from duct to room, including and reflection, see table below.

LCC + MBB-S/-E		Centre frequency Hz							
$\varnothing d_1$	$\varnothing d_2$	63	125	250	500	1K	2K	4K	8K
100	125	17	15	10	17	15	18	19	21
100	160	17	16	6	10	18	18	18	21
125	125	17	15	10	17	15	18	19	21
125	160	15	14	10	17	16	17	18	21
125	200	13	12	7	13	13	16	17	18
160	160	17	15	12	21	19	19	21	21
160	200	17	16	10	20	17	17	19	20
160	250	16	14	7	17	15	16	19	20
200	200	13	11	10	17	18	15	19	18
200	250	14	11	8	15	19	15	18	17
200	315	14	9	7	13	18	14	17	17
250	250	15	10	9	17	18	18	19	19
250	315	15	8	9	16	18	16	18	18
315	315	8	10	10	17	18	17	18	24

Throw $l_{0,2}$

Throw $l_{0,2}$ [m] can be seen in the diagram for isothermal air, at a terminal velocity of 0,2 m/s.



Balancing

Balancing guide, see the [MB installation instruction](#).

Accuracy of temperature measurement with integrated temperature sensor.

Product accuracy

The below accuracy only applies when supplying air to the room with up to 8K colder than the room temperature. The accuracy stated below is based on temperature difference between the integrated temperature sensor and a reference sensor 2 cm below the diffuser.

At flow > 20 l/s ±0.4°C
 At flow ≤ 20 l/s ±0.7°C

The accuracy of the temperature measurements will improve when supplying air closer to isothermal conditions.

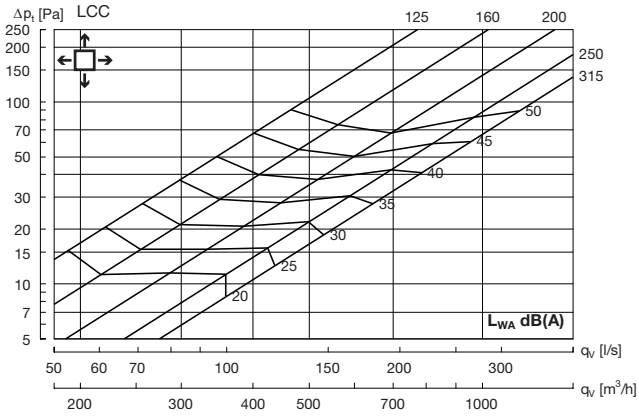
If heating with supply air, be aware of the effects of room temperature gradients.

Integra - Ceiling diffuser

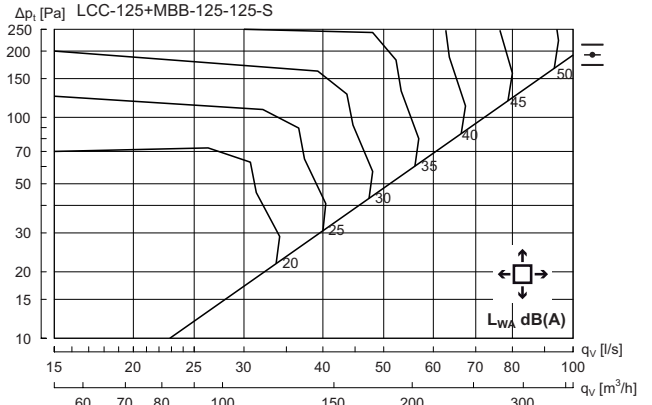
LCC

Technical data

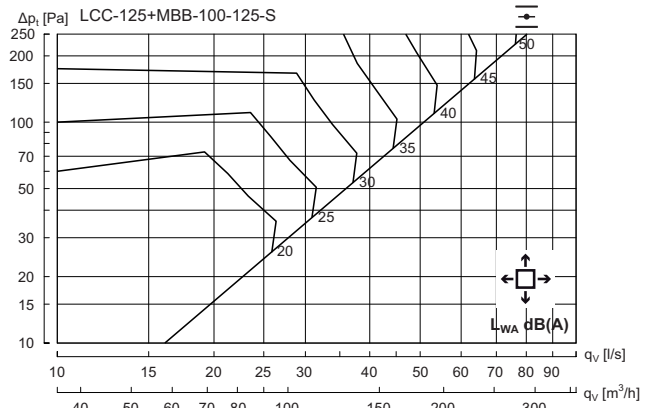
LCC without box - supply air



LCC 125 + MBB-S - Supply air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	7	1	-2	-6	-14	-20	-25



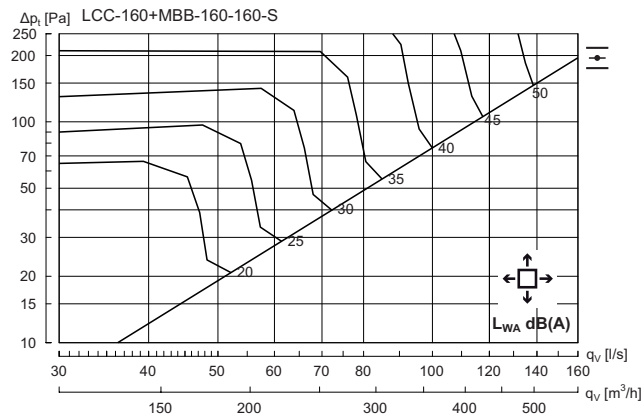
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	10	4	2	-2	-6	-10	-17	-23

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LCC

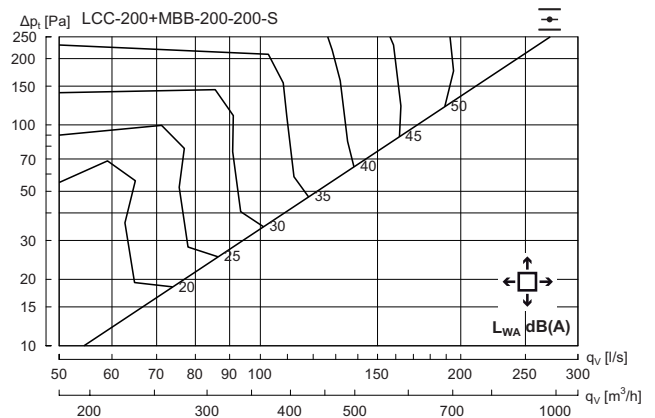
Technical data

LCC 160 + MBB-S - Supply air

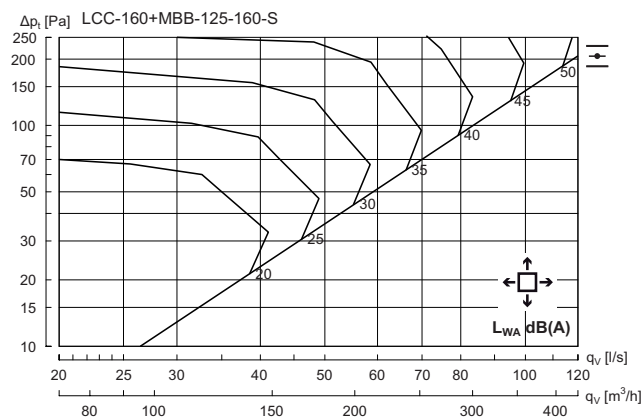


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	8	0	-3	-6	-10	-19	-25

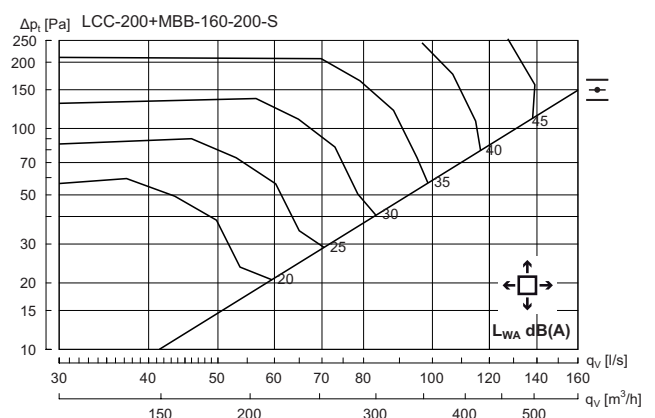
LCC 200 + MBB-S - Supply air



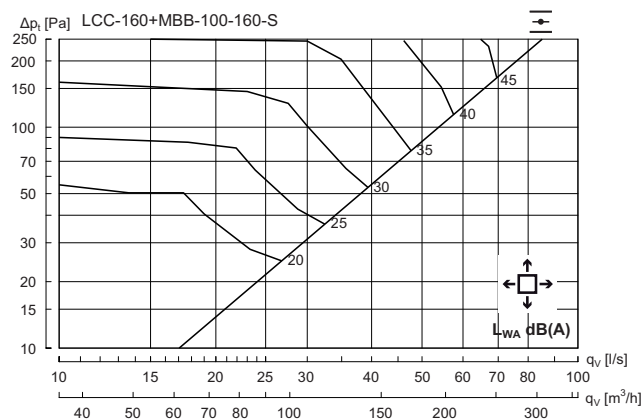
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	8	0	-3	-5	-14	-21	-24



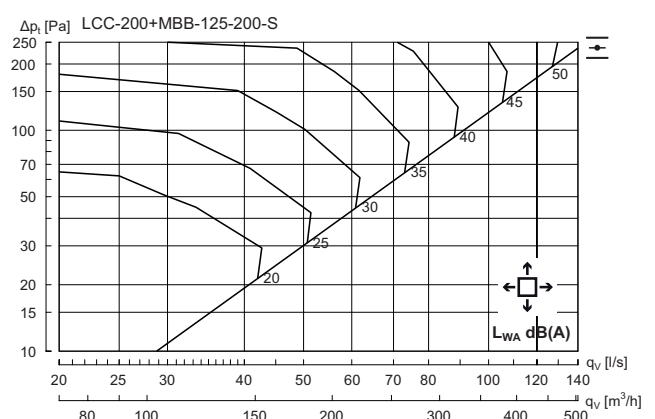
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	9	8	1	-3	-6	-11	-16	-22



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	7	-1	-3	-5	-10	-15	-21



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	9	5	0	-1	-7	-10	-16	-21



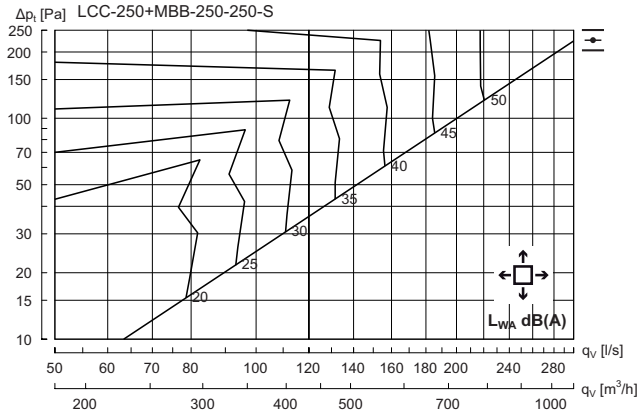
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	6	6	0	-3	-5	-9	-16	-21

Integra - Ceiling diffuser

LCC

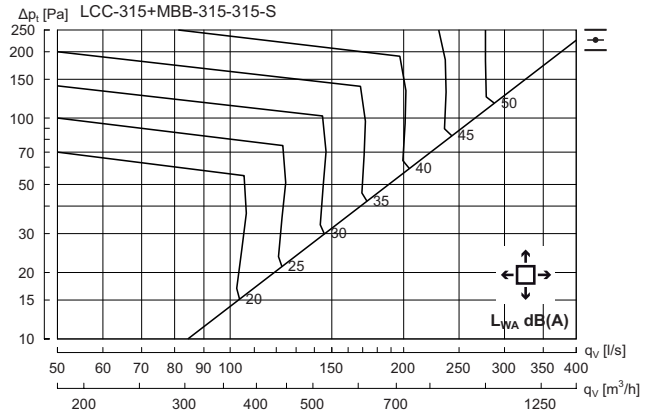
Technical data

LCC 250 + MBB-S - Supply air

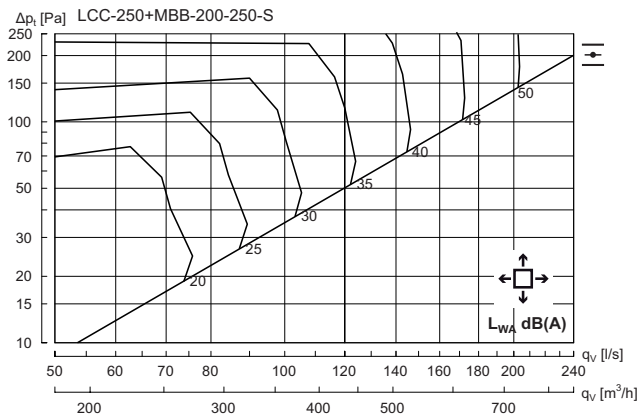


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	15	6	-1	-1	-5	-15	-23	-29

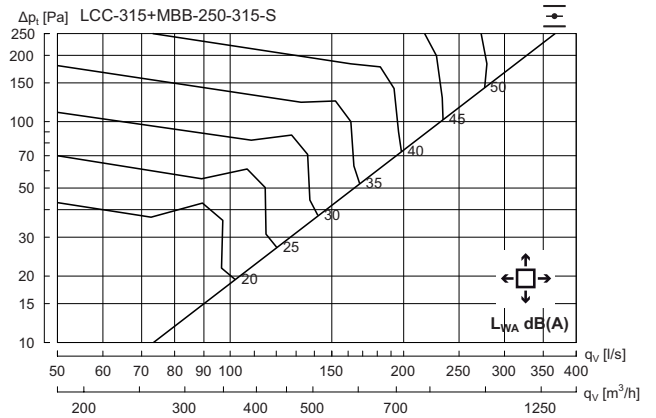
LCC 315 + MBB-S - Supply air



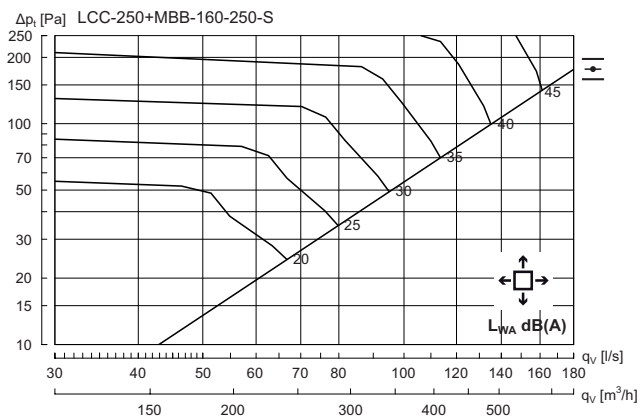
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	4	0	-2	-4	-14	-19	-27



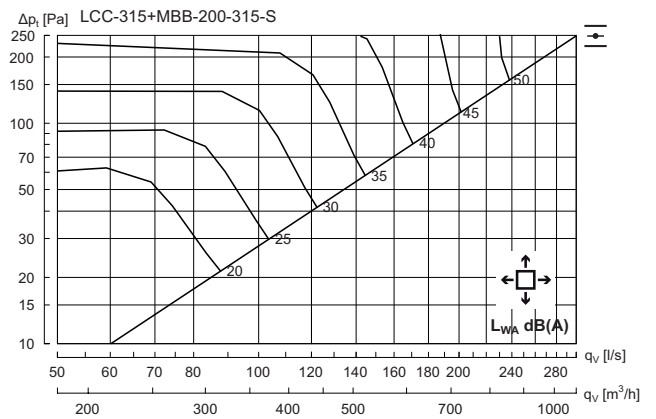
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	8	-1	-2	-5	-13	-20	-26



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	7	0	-2	-6	-10	-17	-23



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	7	0	-4	-5	-11	-16	-22



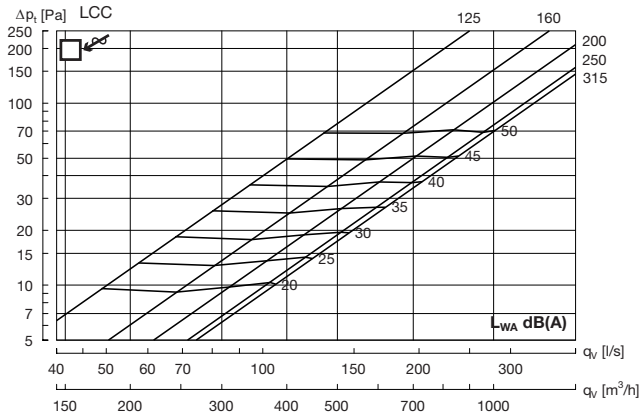
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	10	0	-3	-6	-12	-19	-24

Integra - Ceiling diffuser

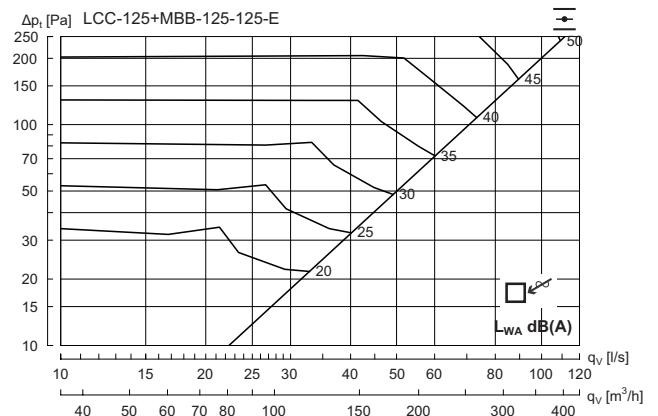
LCC

Technical data

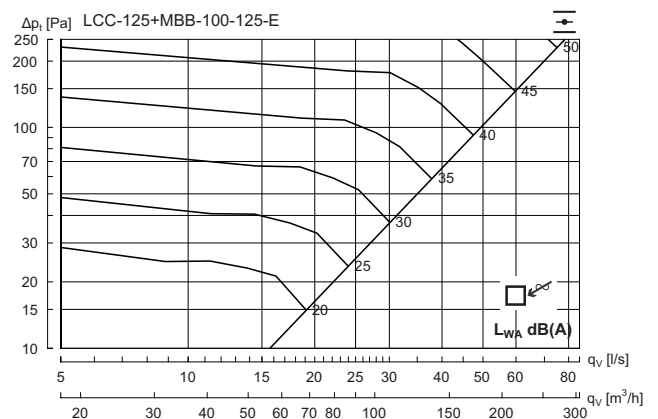
LCC without box - Extract



LCC 125 + MBB-E - Extract air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	4	-1	-1	-6	-12	-16	-22



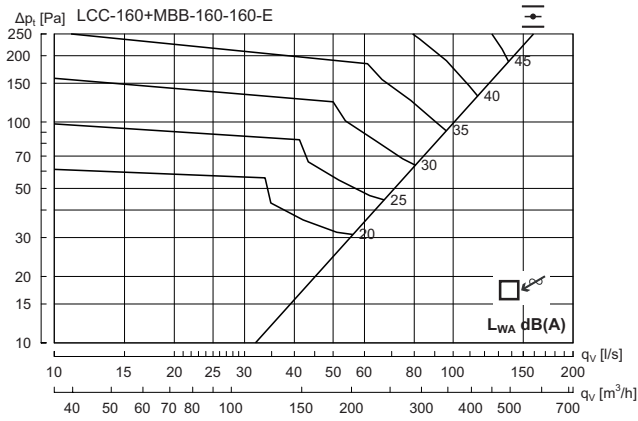
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	-1	3	-1	-9	-11	-17	-23

Integra - Ceiling diffuser

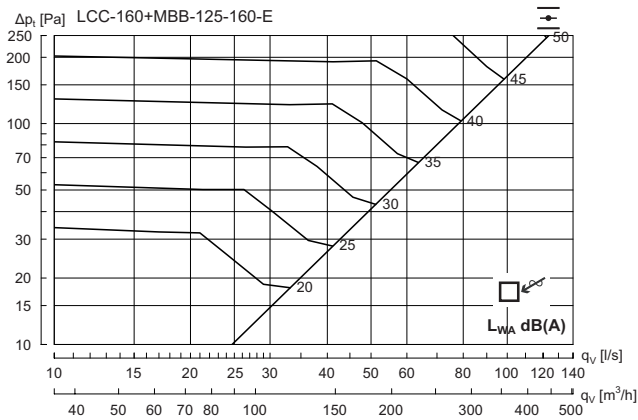
LCC

Technical data

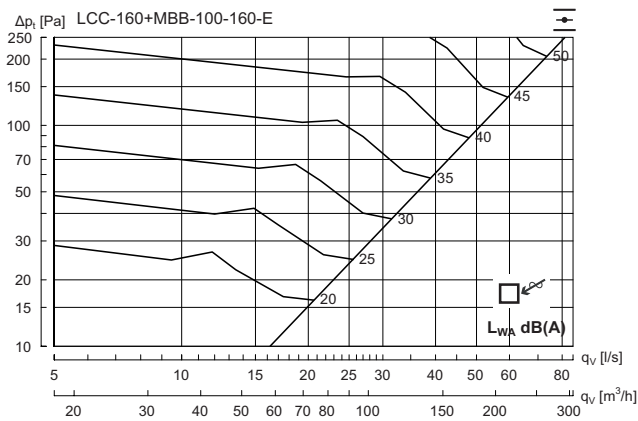
LCC 160 + MBB-E - Extract air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	16	4	-1	-2	-5	-10	-16	-21

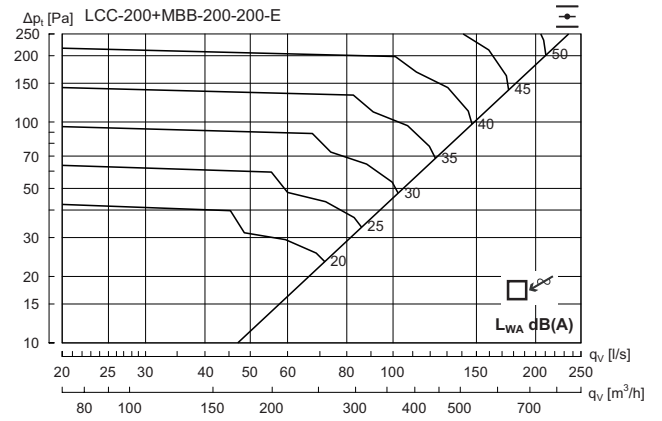


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	14	5	0	-1	-6	-11	-15	-21

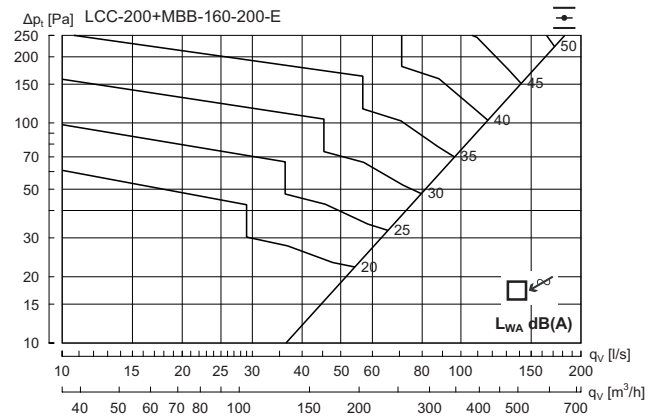


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	3	2	0	-8	-13	-17	-23

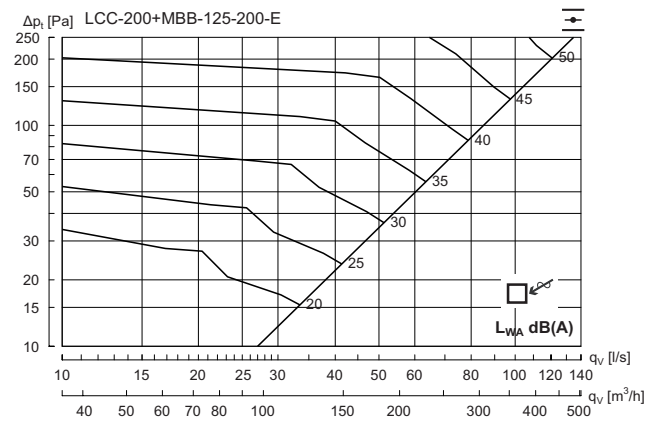
LCC 200 + MBB-E - Extract air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	15	5	0	-2	-6	-10	-15	-23



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	16	5	-1	-3	-5	-10	-15	-21



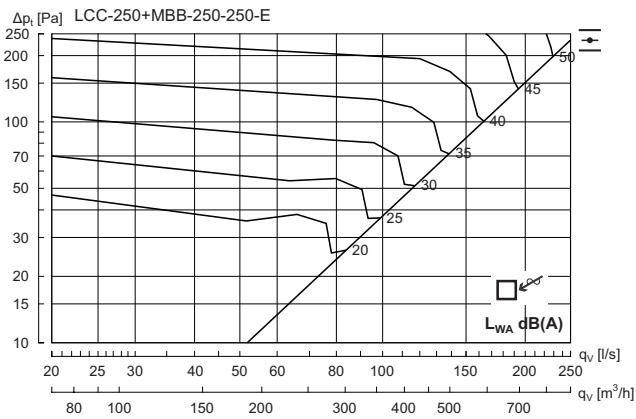
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	3	-1	-2	-5	-10	-16	-22

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LCC

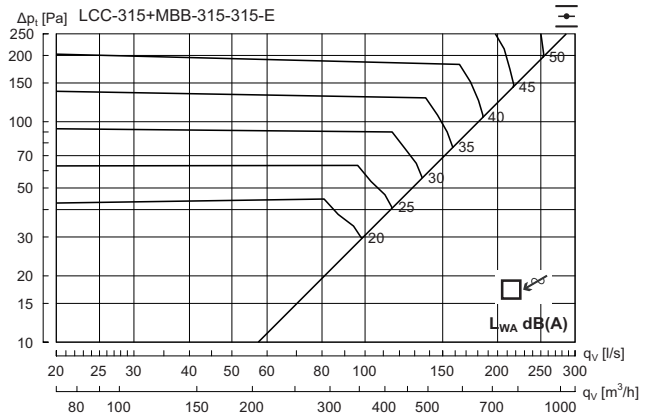
Technical data

LCC 250 + MBB-E - Extract air

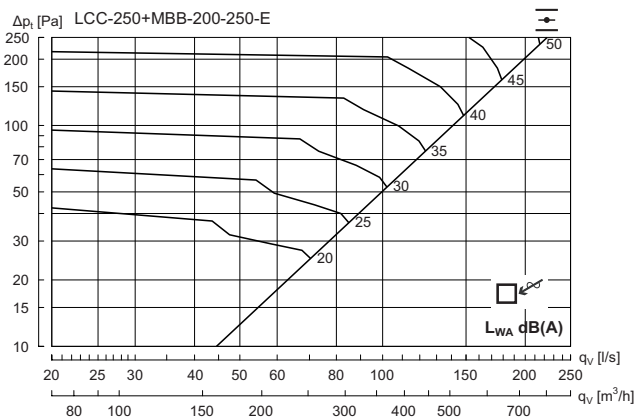


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	4	1	-2	-5	-11	-17	-25

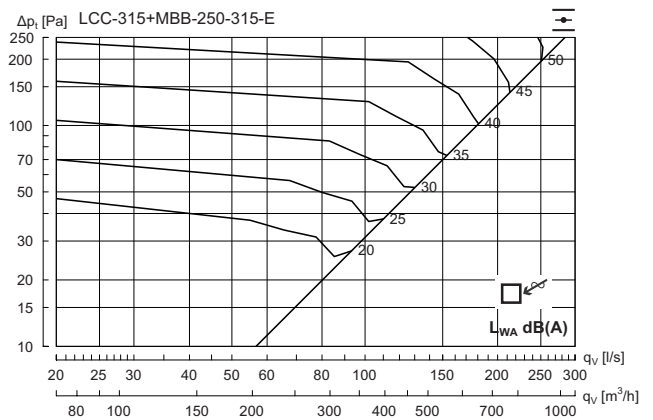
LCC 315 + MBB-E - Extract air



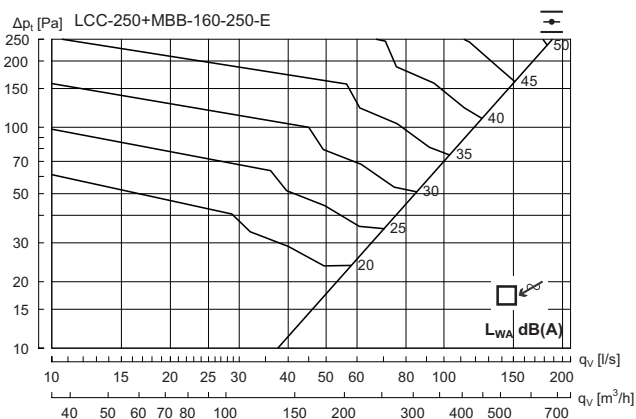
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	4	2	-3	-6	-9	-18	-27



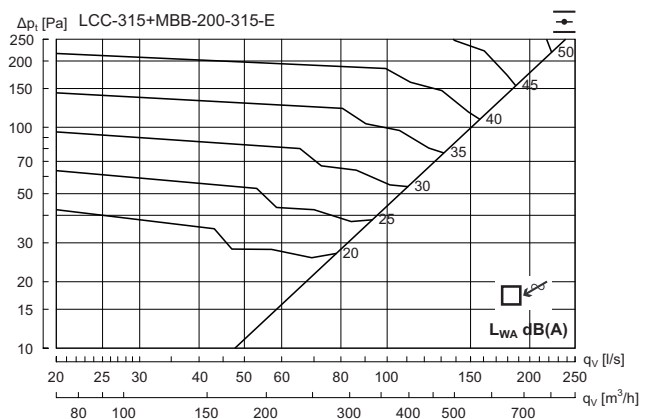
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	14	4	0	-2	-6	-11	-16	-25



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	5	2	-3	-6	-10	-17	-24



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	19	6	-1	-4	-5	-12	-18	-26



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	14	5	0	-3	-5	-10	-16	-25



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