Lindab LCP

Integra - Ceiling diffuser

Integra - Ceiling diffuser LCP

Description

LCP is a flush-mounted square diffuser with a circular unperforated face plate for installation in ceiling systems.
LCP is suitable for the horizontal supply of cooled air and has a large dynamic range. Installing an LCP diffuser in a plenum box type MB or CB can help to achieve a stable airflow to the diffuser as well as realize the potential for individual adjustment.
MB box with damper type B is with a unique linear cone damper which allows to use the full operational working area and can balance with a high balancing pressure with low sound generation. Furthermore the construction of the damper provides a linear balancing characteristic, as well as an accurate and reliable measurement.
MB and CB box with damper type C or E are with rotating blade dampers for respectively supply and extract. Typically used in applications that do not require a high balancing pressure in the plenum box.
LCP can be used with VAV plenum box type MBV for use in DCV room control systems and potentially combined with Lindab Pascal System Management.
LCP can be ordered with a presence sensor (-P) and/or with temperature sensor (-T). The sensors are built into the faceplate.

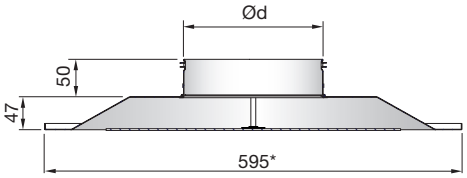
- Simple and stylish appearance
- Large dynamic range
- Can be used for both supply and extract air
- Can be adapted to most ceiling systems
- Plenum box with several damper options

Order code

Product		**LCP**	**aaa**	**bb**	**(-xx)**
Type					
LCP					
Connection dim.					
Ød 125-315					
Sensor type					
	No sensor				
(-P)	Presence sensor *				
(-T)	Temperature sensor *				
(-P-T)	Presence sensor / Temperature sensor *				
Ceiling system					
1 - 14					

Example: LCP-200-P-T-1
* Only size 200-315

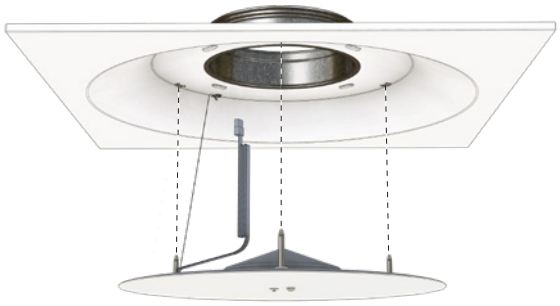
Dimensions



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

Ød mm	m kg
125	3.2
160	3.2
200	3.3
250	3.4
315	3.5

LCP-P, LCP-T, **LCP-P-T**



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

Grille box:	Galvanized steel
Face plate LCP:	Galvanized steel
Face plate finish:	Powder-coated
Standard colours:	RAL 9003, gloss 30

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

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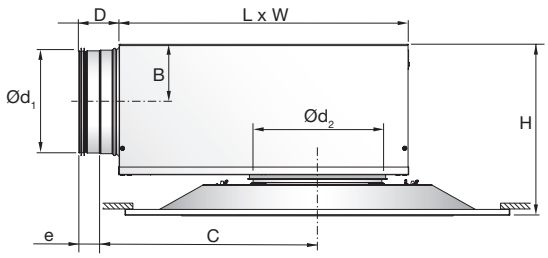
LCP + MB plenum box

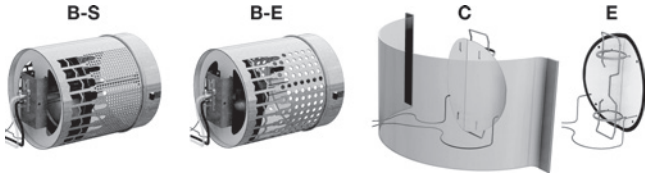


LCP + MB

Ød1	Ød2	B	C	D	e	H*	L	W
mm		mm						
100	125	62	245	78	40	213 - 253	310	260
100	160	62	245	78	40	213 - 253	310	260
125	125	75	291	78	40	238 - 278	376	310
125	160	75	291	78	40	238 - 278	376	310
125	200	75	291	78	40	238 - 278	376	310
160	160	92	352	78	40	273 - 313	459	380
160	200	92	352	78	40	273 - 313	459	380
160	250	92	352	78	40	273 - 313	459	380
200	200	112	425	78	40	313 - 353	565	460
200	250	112	425	78	40	313 - 353	565	460
200	315	112	425	78	40	313 - 353	565	460
250	250	137	534	118	60	363 - 403	698	540
250	315	137	534	118	60	363 - 403	698	540
315	315	170	695	118	60	428 - 468	858	540

* Using accessory MBZ the H dimension will increase:
$Ød_2$ = 125 - 200 mm => H +40 mm
$Ød_2$ = 250 - 315 mm => H +60 mm

Damper options



Order code

Product MB a bbb ccc d

Type
MB

Damper
B = Linear cone damper
C = Blade damper supply
E = Blade damper extract

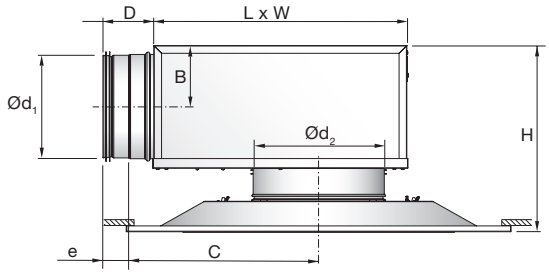
Duct connection $Ød_1$
Ø100-315

Diffuser dimension $Ød_2$
Ø125-315

Function (Only for B damper)
S = Supply air E = Extract

Example 1: LCP-200-P-T-1-MBB-160-200-S
Example 2: LCP-160-1+MBC-125-160

LCP + CBC/CBE plenum box



LCP + CBC/CBE

Ød1	Ød2	B	C	D	e	H*	L	W
mm		mm						
100	125	65	213	78	40	225 - 265	277	213
100	160	65	231	78	40	225 - 265	312	248
125	160	78	250	78	40	250 - 290	331	248
125	200	78	270	78	40	250 - 290	371	288
160	200	95	295	78	40	285 - 325	396	288
160	250	95	320	78	40	285 - 325	446	338
200	250	115	345	78	40	325 - 365	471	338
200	315	115	377	78	40	325 - 365	536	403
250	315	140	423	118	60	375 - 415	563	405

* Using accessory MBZ the H dimension will increase:
$Ød_2$ = 125 - 200 mm => H +40 mm
$Ød_2$ = 250 - 315 mm => H +60 mm

Damper options

Order code

Product CB a bbb ccc

Type
CB

Damper
C = Blade damper supply
E = Blade damper extract

Duct connection $Ød_1$
Ø100-315

Diffuser dimension $Ød_2$
Ø125-315

Example 1: LCP-200 + CBC-160-200
Example 2: LCP-160 + CBE-125-160

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Technical data LCP + MB

Following LCP + plenum box data are valid for MBB-S/-E. For MBC, MBE and MBV data, follow link below. For complete configuration of your LCP diffuser, go to the LindQST Airborne calculator.

Capacity

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

Quick selection, supply air

LCP+MBB-S		$\Delta p_t \geq 50$ Pa		$\Delta p_t \geq 50$ Pa	
duct	LCP	30dB(A)		35dB(A)	
$Ød_1$	$Ød_2$	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.

LCP+ MBB-S/-E		Centre frequency Hz							
duct	LCP								
$Ød_1$	$Ød_2$	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

Balancing

Balancing guide, see the MB installation instruction.

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Technical data LCP + CBC/CBE

Following LCP+plenum box data are valid for CBC.
For CBE data, follow link below. For complete configuration of your LCP diffuser, go to the LindQST Airborne calculator.

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.

Quick selection, supply air

LCP + CBC		$\Delta p_t \geq 50$ Pa 30dB(A)		$\Delta p_t \geq 50$ Pa 35 dB(A)	
duct	LCP				
Ød$_1$	Ød$_2$	l/s	m³/h	l/s	m³/h
100	125	21	77	51	182
100	160	27	97	62	222
125	160	40	145	77	278
125	200	43	153	91	326
160	200	71	254	104	373
160	250	74	265	124	448
200	250	120	433	152	548
200	315	137	493	166	599
250	315	118	424	163	588

Sound attenuation

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

LCP + CBC		Centre frequency Hz							
duct	LCP								
Ød$_1$	Ød$_2$	63	125	250	500	1K	2K	4K	8K
100	125	25	18	16	11	17	20	13	14
100	160	25	11	14	13	16	16	12	11
125	160	22	13	13	14	17	17	11	13
125	200	20	17	14	14	17	14	11	12
160	200	18	10	13	14	17	14	12	10
160	250	23	12	14	14	15	13	11	10
200	250	23	8	12	15	16	13	14	11
200	315	20	9	12	14	15	11	12	10
250	315	17	9	11	16	16	11	11	7

Balancing

Balancing guide, see the CBC/CBE installation instruction.

Technical data

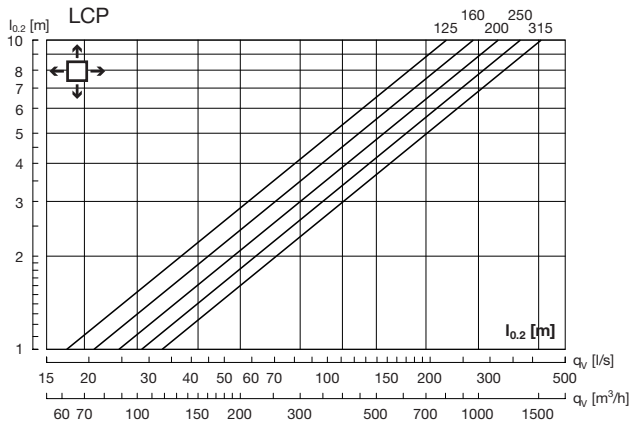
LCP + MBV (Pascal)

LCP with integrated sensors only fits with MBV. Because of the inside cable connection.
Go to LindQST to find out more about the MBV plenum box and the pascal solutions.

Technical data

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.



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.

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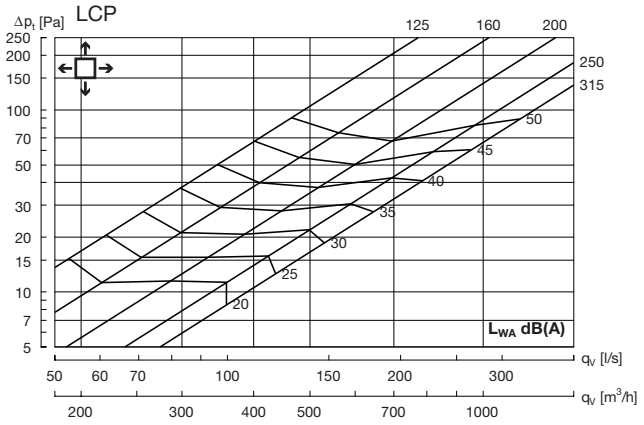
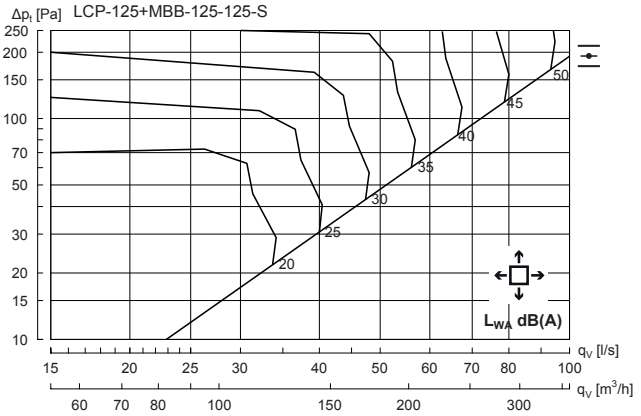
Technical data

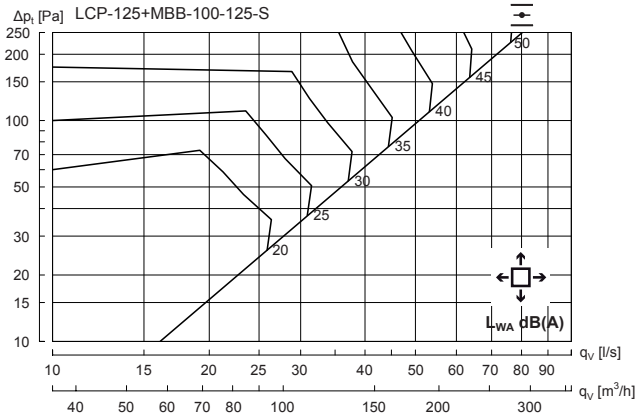
LCP without box - supply air



LCP 125 + MBB-S - Supply air



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

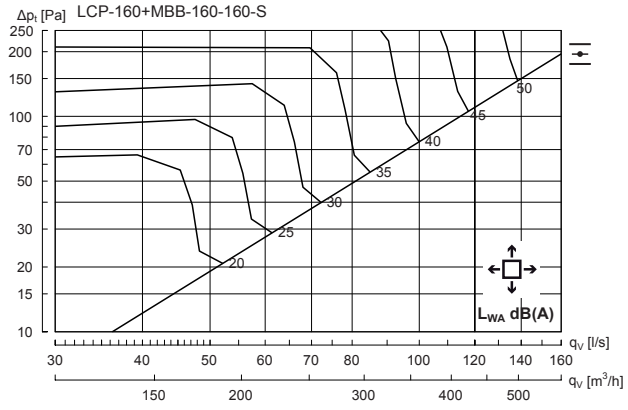


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	10	4	2	-2	-6	-10	-17	-23

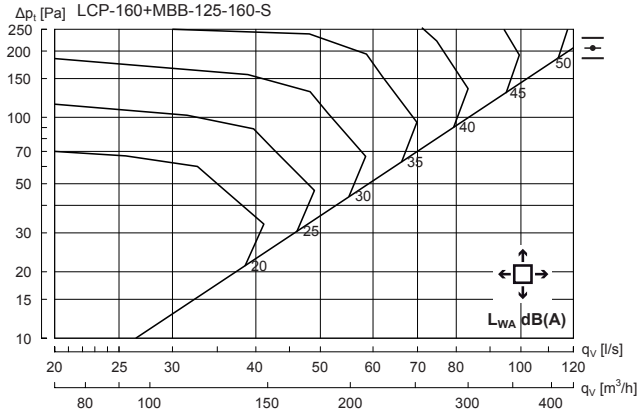
Integra - Ceiling diffuser LCP

Technical data

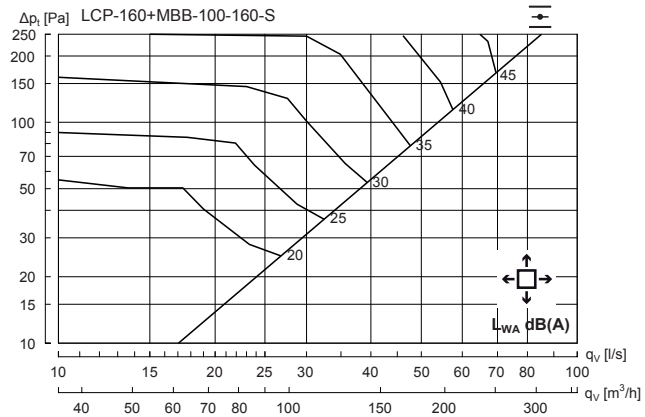
LCP 160 + MBB-S - Supply air



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

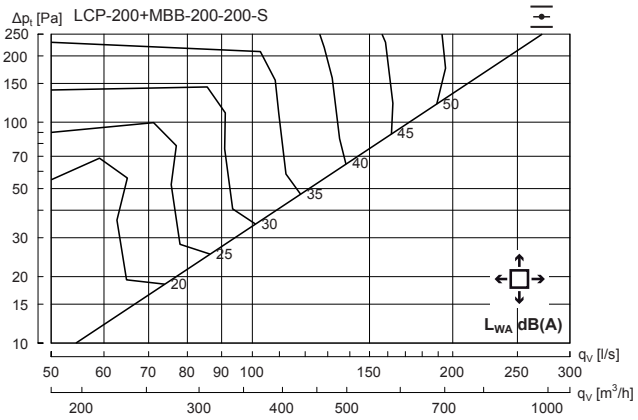


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	9	8	1	-3	-6	-11	-16	-22

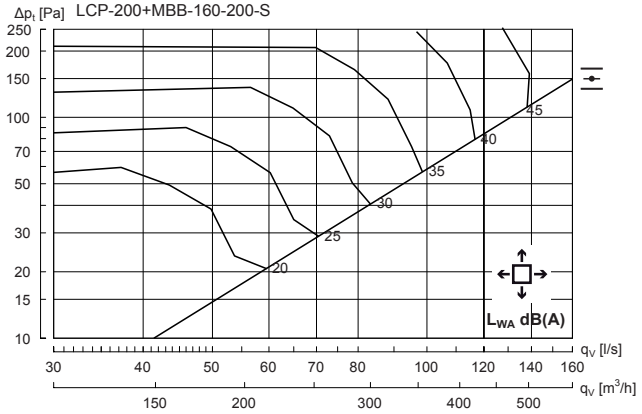


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	9	5	0	-1	-7	-10	-16	-21

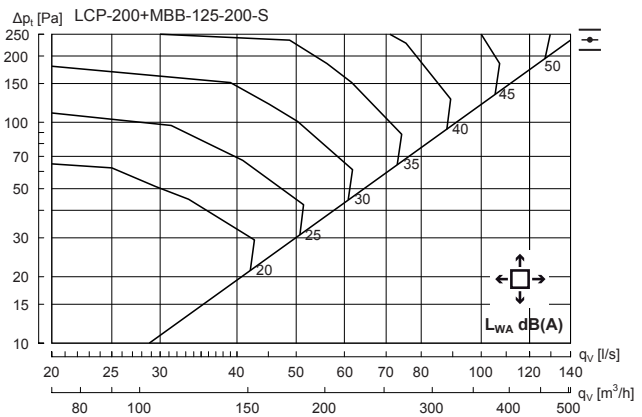
LCP 200 + MBB-S - Supply air



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}	12	7	-1	-3	-5	-10	-15	-21



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

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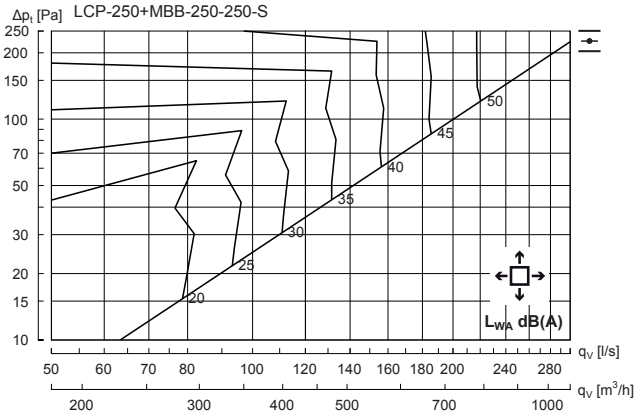
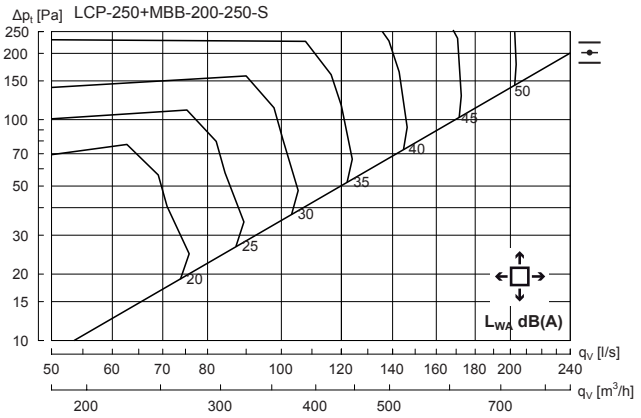
Technical data

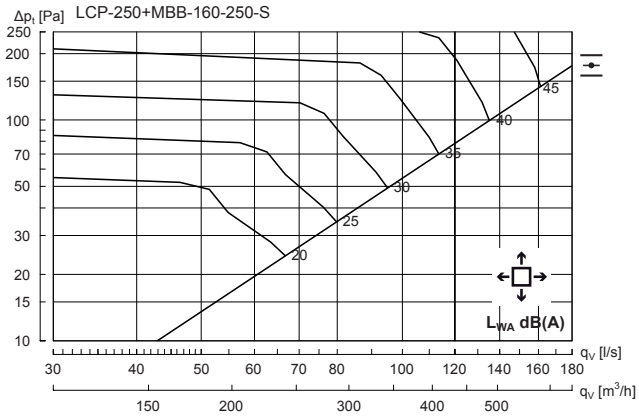
LCP 250 + MBB-S - Supply air



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

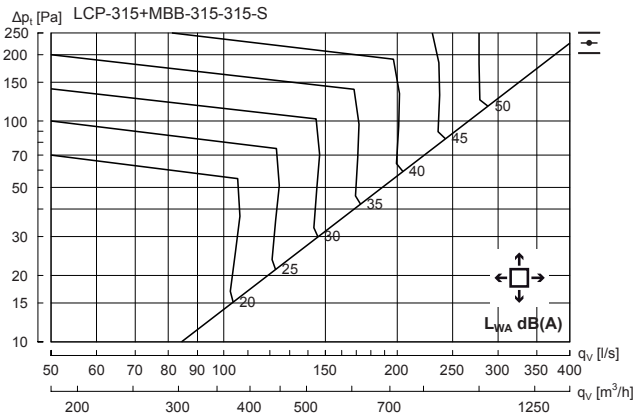


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	8	-1	-2	-5	-13	-20	-26

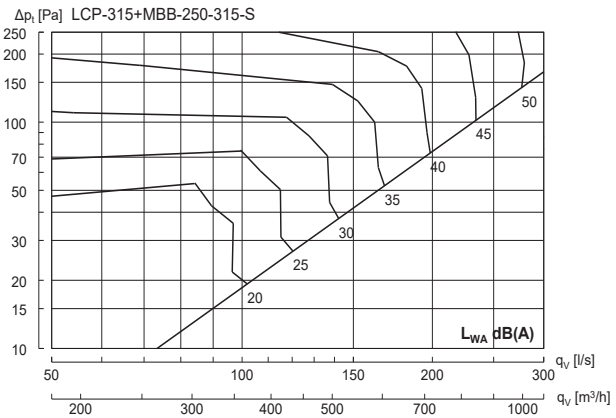


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	7	0	-4	-5	-11	-16	-22

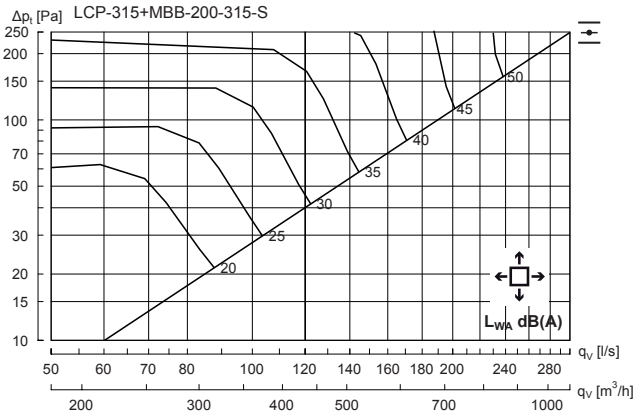
LCP 315 + MBB-S - Supply air



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	7	0	-2	-6	-10	-17	-23

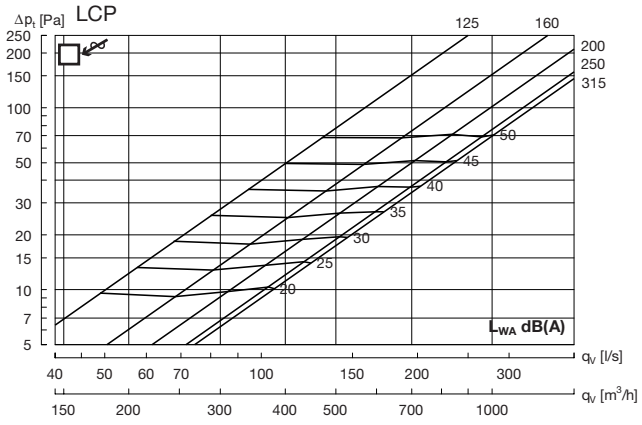


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	10	0	-3	-6	-12	-19	-24

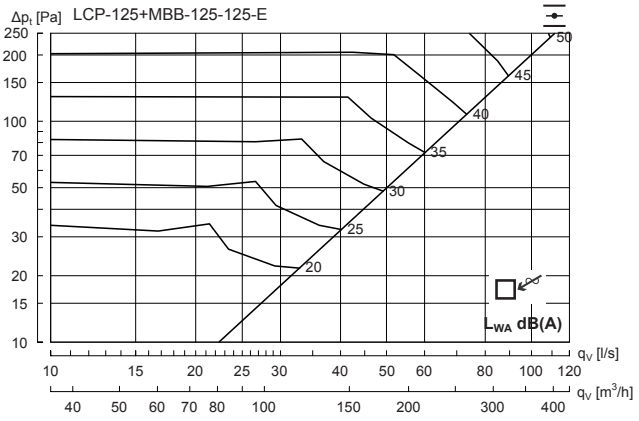
Integra - Ceiling diffuser LCP

Technical data

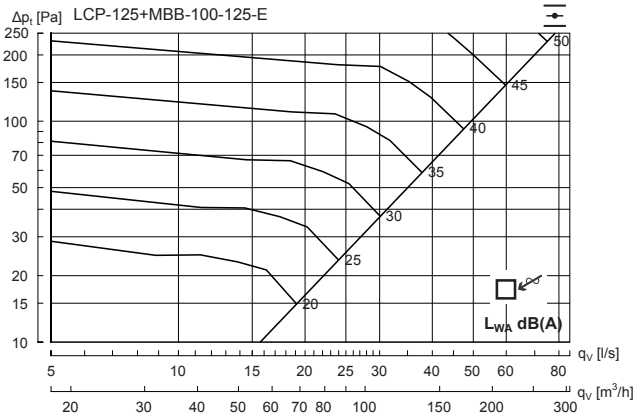
LCP without box - Extract



LCP 125 + MBB-E - Extract air



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

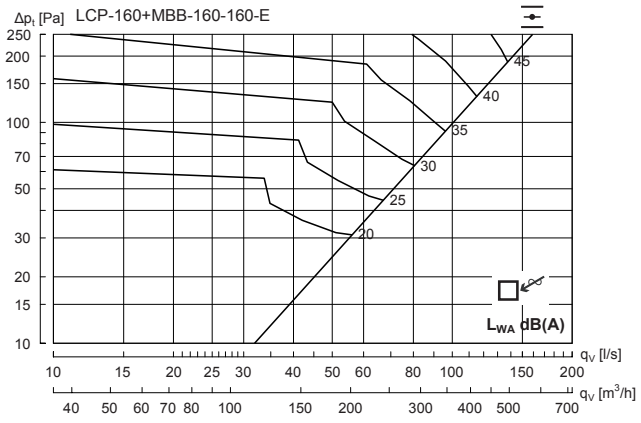


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	-1	3	-1	-9	-11	-17	-23

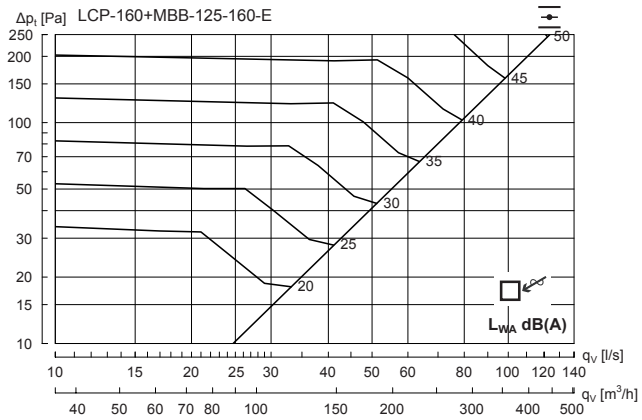
Integra - Ceiling diffuser LCP

Technical data

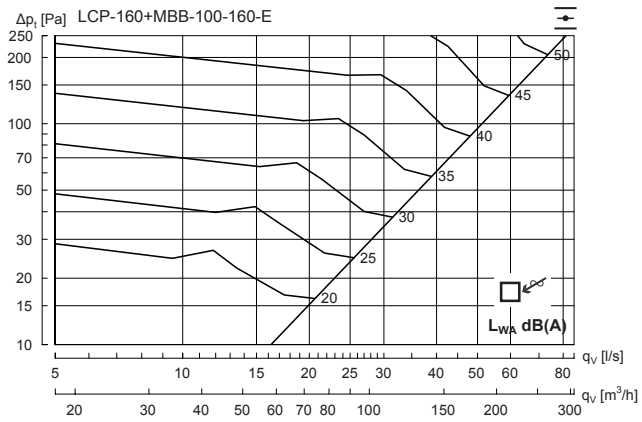
LCP 160 + MBB-E - Extract air



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

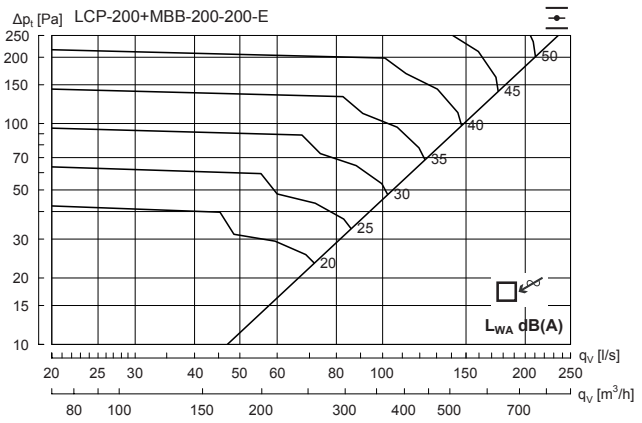


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	14	5	0	-1	-6	-11	-15	-21

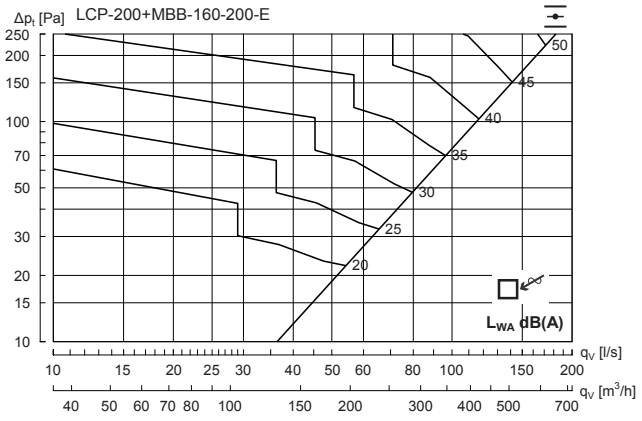


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	3	2	0	-8	-13	-17	-23

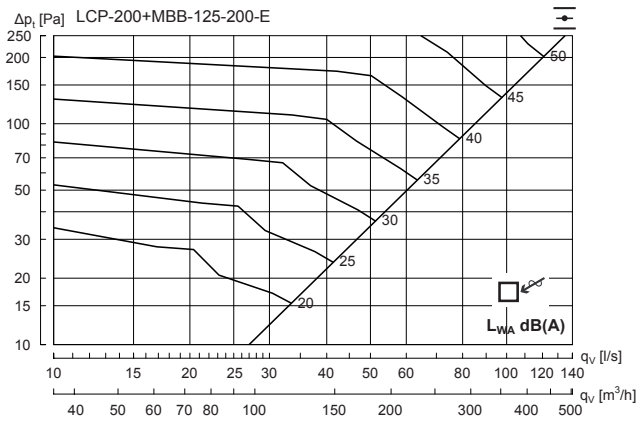
LCP 200 + MBB-E - Extract air



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

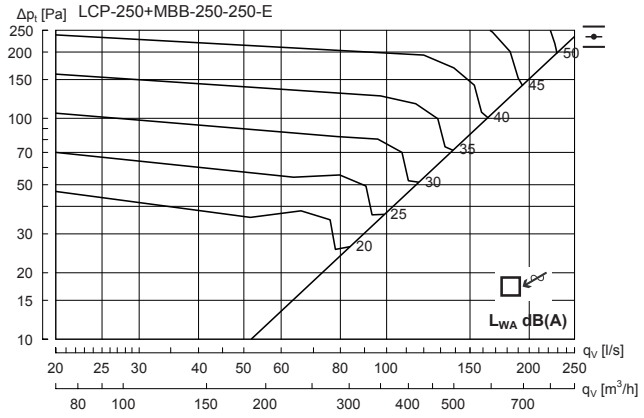


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	3	-1	-2	-5	-10	-16	-22

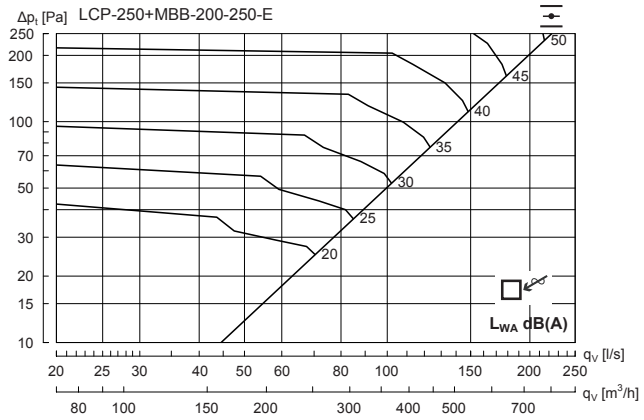
Integra - Ceiling diffuser LCP

Technical data

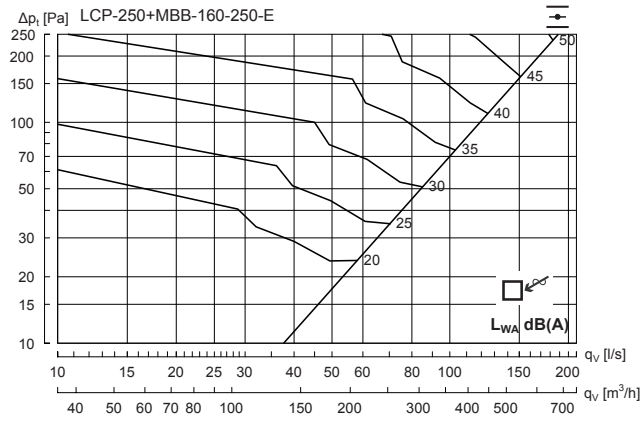
LCP 250 + MBB-E - Extract air



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

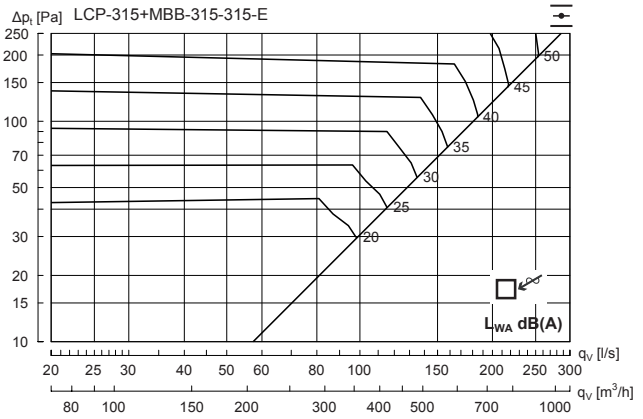


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	14	4	0	-2	-6	-11	-16	-25

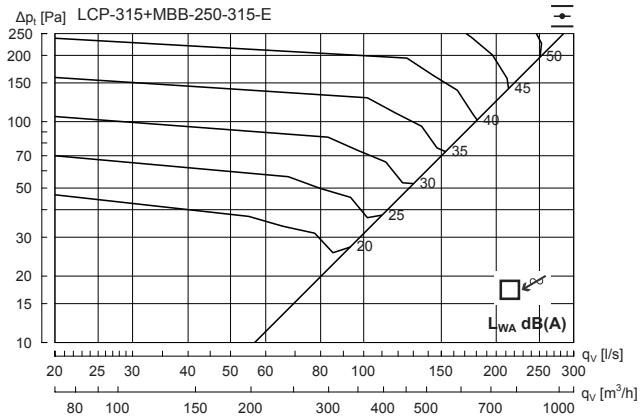


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	19	6	-1	-4	-5	-12	-18	-26

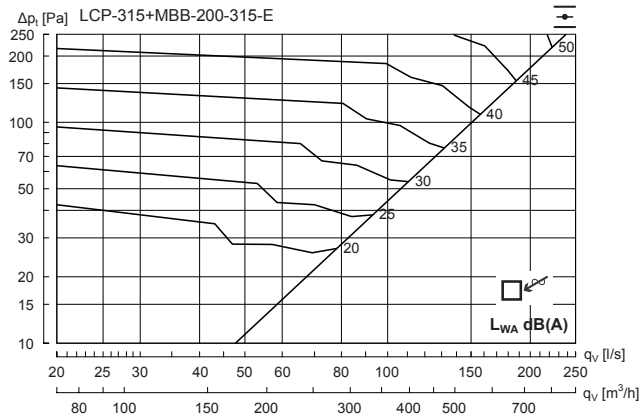
LCP 315 + MBB-E - Extract air



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}	12	5	2	-3	-6	-10	-17	-24



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

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.

Lindab | For a better climate