



Lindab **LCA**

Formo - Ceiling diffuser



Formo - Ceiling diffuser

LCA



Description

LCA is a circular diffuser with unperforated face plate and can be used for both supply and extract air. LCA is suitable for horizontal supply of cooled air where a high impulse is required and can be equipped with accessories of various types in order to achieve optimal function.

Installing a LCA 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 a unique linear cone damper which allows to use the full operational area (0-100%) 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.

- Suitable for both supply and extract air
- Suitable for horizontal supply of cooled air
- High impulse
- Option of 1, 2 and 3-way supply air
- Plenum box with several damper options

Maintenance

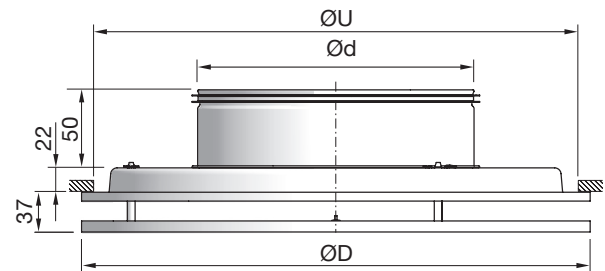
The face plate can be removed to enable cleaning of internal parts or to gain access to the duct or box. The visible parts of the diffuser can be wiped with a damp cloth.

Order code

Product	LCA	aaa
Type	LCA	
Connection dim. Ød	Ø100-400	

Example: LCA-200

Dimensions



LCA Ød mm	ØD mm	ØU* mm	Free area A m ²	m kg
100	240	200	0.010	0.8
125	240	200	0.011	0.8
160	300	260	0.0165	1.2
200	360	320	0.023	1.7
250	460	420	0.03	2.2
315	540	500	0.037	3.2
400	540	500	0.037	3.4

* ØU = Ceiling grid opening

Materials and finish

Upper part: Galvanised steel
 Standard finish: Powder-coated
 Standard colours: RAL 9003 or RAL 9010, gloss 30

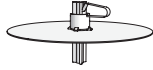
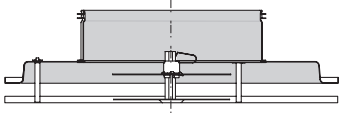
The diffuser is available in other colours. Please contact Lindab's sales department for further information.

Formo - Ceiling diffuser

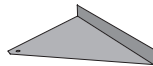
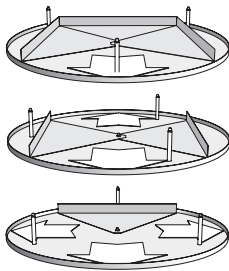
LCA

Accessories

DRZ - Balancing damper



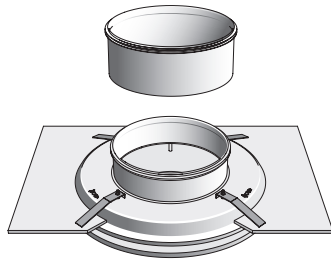
DAZ - Directional deflector (set)



MBZ - Extension piece



DDZ - Mounting brackets (set)



Order code - accessories

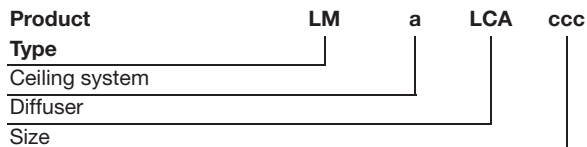


Example: DRZ-200

LM - Module plate

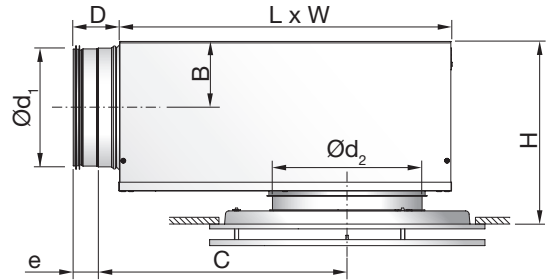


Order code - module plate



Example: LM-1-LCA-200

LCA + MB plenum box



Ød ₁ mm	Ød ₂ mm	B	C	D	e	H*	L	W
100	100	62	245	78	40	180 - 220	310	260
100	125	62	245	78	40	180 - 220	310	260
100	160	62	245	78	40	180 - 220	310	260
125	125	75	291	78	40	205 - 245	376	310
125	160	75	291	78	40	205 - 245	376	310
125	200	75	291	78	40	205 - 245	376	310
160	160	92	352	78	40	239 - 279	459	380
160	200	92	352	78	40	239 - 279	459	380
160	250	92	352	78	40	239 - 279	459	380
200	200	112	425	78	40	280 - 320	565	460
200	250	112	425	78	40	280 - 320	565	460
200	315	112	425	78	40	280 - 320	565	460
250	250	137	514	118	60	330 - 370	698	540
250	315	137	514	118	60	330 - 370	698	540
250	400	137	514	118	60	330 - 370	698	540
315	315	170	675	118	60	395 - 435	858	540
315	400	170	675	118	60	395 - 435	858	540

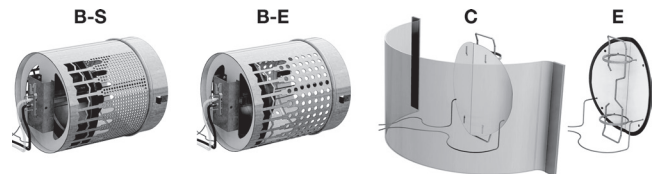
* Using accessory MBZ the H dimension will increase:

Ød₂ = 100 - 200 mm => H +40 mm

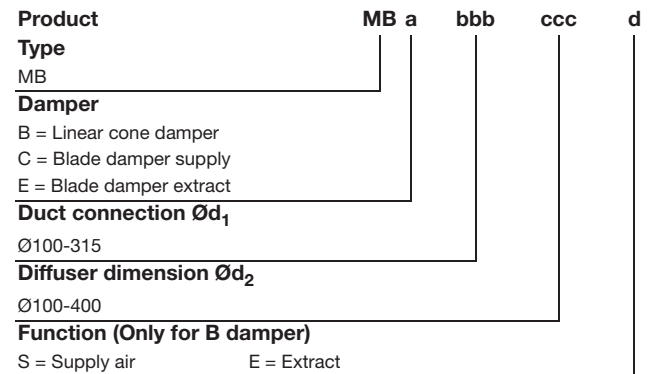
Ød₂ = 250 - 315 mm => H +60 mm

Ød₂ = 400 mm => H +80 mm

Damper options



Order code



Example 1: LCA-200+MBB-160-200-S

Example 2: LCA-200+MBC-125-200

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LCA

Technical data

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

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.

LCA + MBB-S		$\Delta p_t \geq 50$ Pa 30 dB(A)		$\Delta p_t \geq 50$ Pa 35 dB(A)	
duct $\text{\O}d_1$	LCA $\text{\O}d_2$	l/s	m ³ /h	l/s	m ³ /h
100	100	27	97	33	119
100	125	31	112	38	137
100	160	40	144	49	176
125	125	42	151	50	180
125	160	53	191	64	230
125	200	59	212	70	252
160	160	60	216	73	263
160	200	70	252	88	317
160	250	94	338	115	414
200	200	98	353	118	425
200	250	106	382	129	464
200	315	133	479	159	572
250	250	116	418	141	508
250	315	136	490	167	601
250	400	139	500	182	655
315	315	153	551	183	659
315	400	169	608	200	720

Sound attenuation

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

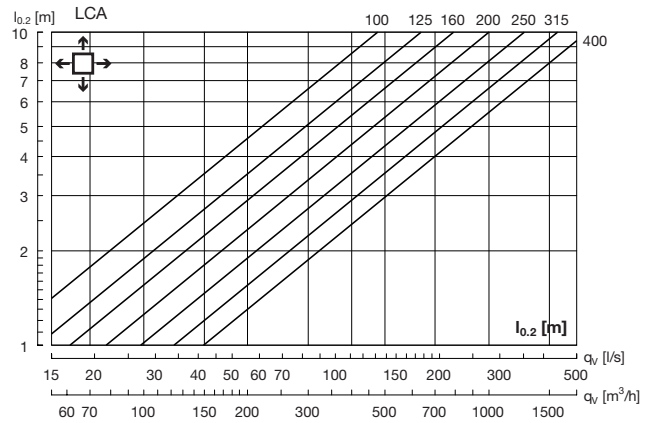
LCA + MBB-S/-E		Centre frequency Hz							
duct $\text{\O}d_1$	LCA $\text{\O}d_2$	63	125	250	500	1K	2K	4K	8K
100	100	18	17	9	19	20	23	22	23
100	125	20	17	6	16	19	20	18	22
100	160	21	17	5	12	19	20	18	21
125	125	17	14	9	19	15	21	18	20
125	160	13	13	9	18	18	18	18	20
125	200	14	12	7	15	16	18	17	19
160	160	18	17	11	16	21	19	20	21
160	200	15	14	9	20	21	20	20	20
160	250	16	16	7	17	13	18	19	20
200	200	14	11	8	15	21	18	20	18
200	250	13	10	8	16	20	17	19	17
200	315	15	9	6	14	17	17	18	17
250	250	16	9	9	17	20	19	19	19
250	315	15	8	9	16	18	16	18	18
250	400	13	6	6	14	16	17	17	17
315	315	8	10	10	16	20	19	18	23
315	400	8	10	10	13	19	19	17	21

Balancing

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

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.



Correction throw $l_{0,2}$

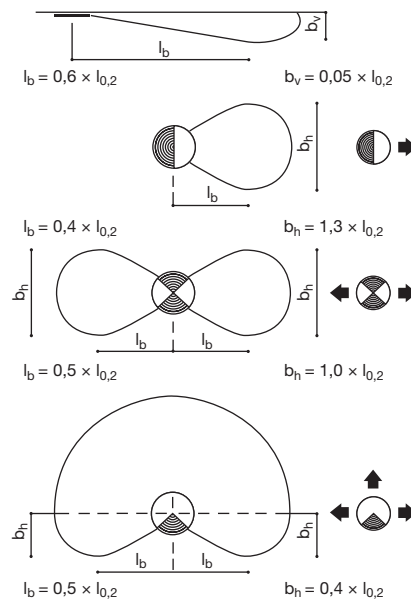
LCA $\text{\O}d$	1 - ways	2 - ways	3 - ways
100	2.4	1.8	1.4
125	2.3	1.8	1.3
160	2.3	1.8	1.3
200	2.3	1.9	1.3
250	2.3	2	1.3
315	2.3	2	1.3
400	2.2	2.1	1.3

Air jet distribution

l_b = Distance from the diffuser to the point where there is maximum dispersal.

b_v = Depth of the air jet on a vertical plane.

b_h = Width of the air jet on a horizontal plane.

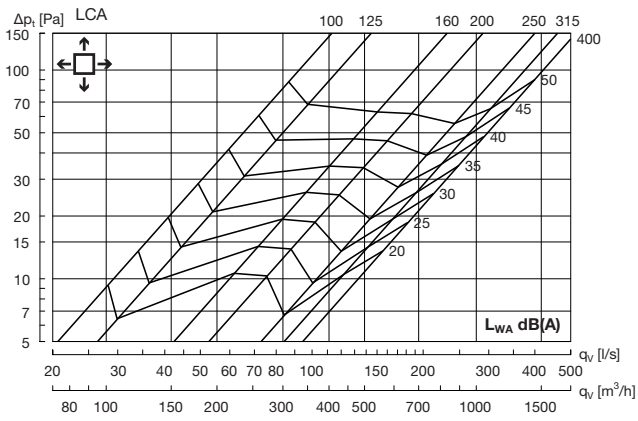


Formo - Ceiling diffuser

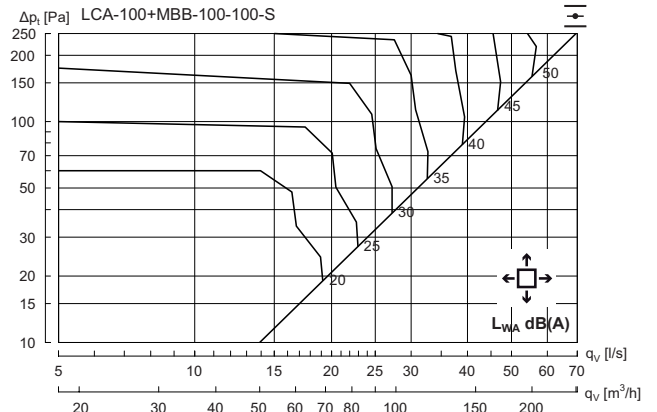
LCA

Technical data

LCA without box - supply air



LCA 100 + MBB-S - Supply air



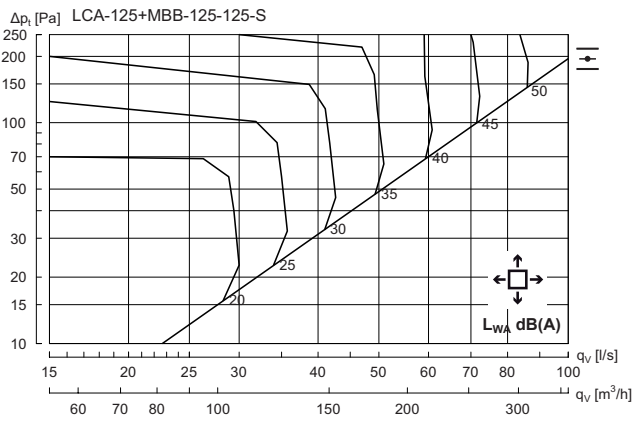
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	9	7	3	-5	-5	-12	-16	-23

Formo - Ceiling diffuser

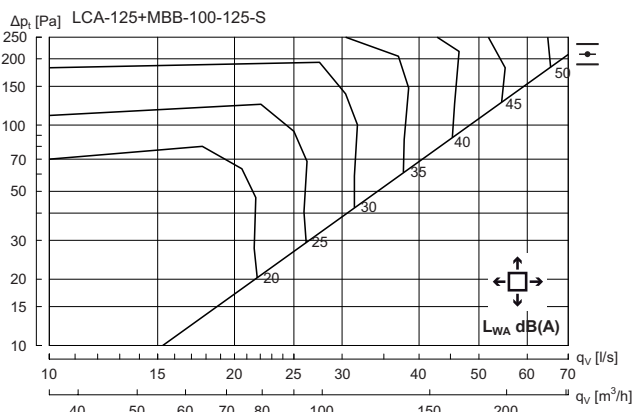
LCA

Technical data

LCA 125 + MBB-S - Supply air

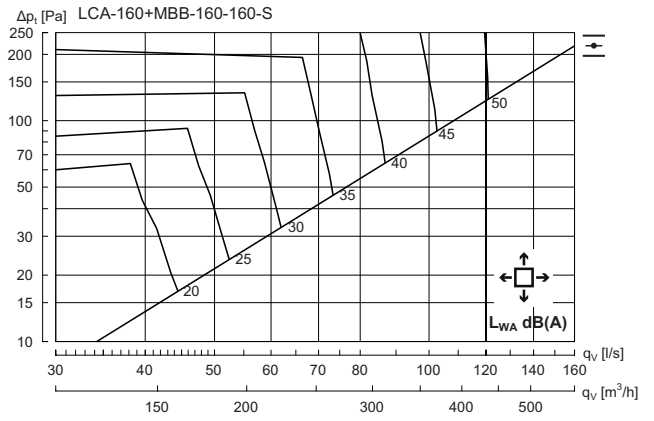


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	6	1	-4	-4	-13	-20	-28

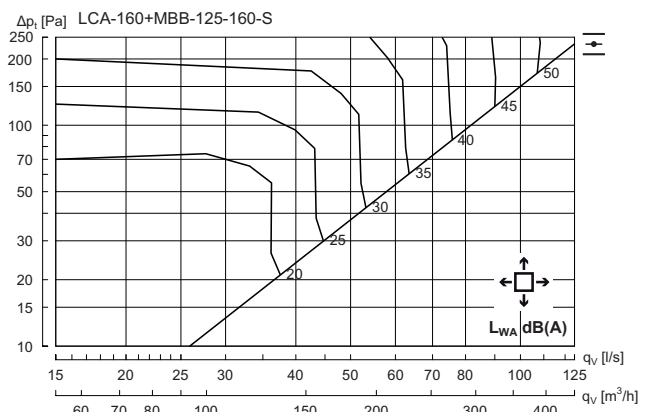


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	7	3	-4	-5	-14	-18	-24

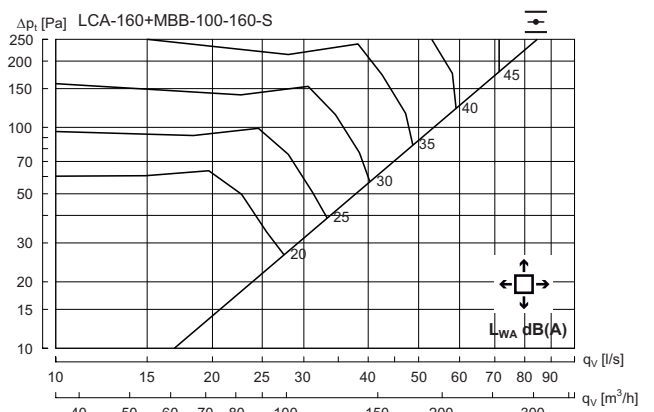
LCA 160 + MBB-S - Supply air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	11	0	-2	-7	-15	-22	-28



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	8	1	-3	-6	-12	-17	-25



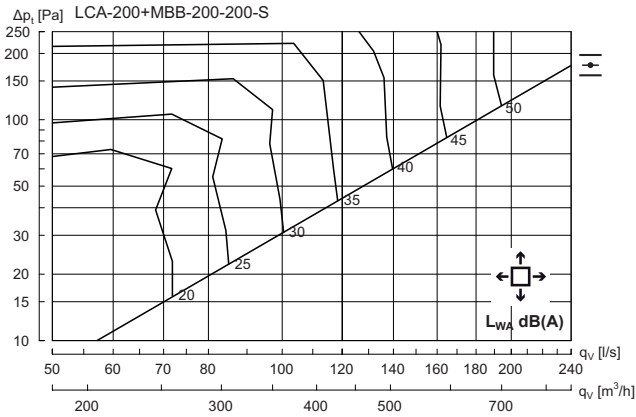
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	5	1	-2	-6	-10	-14	-20

Formo - Ceiling diffuser

LCA

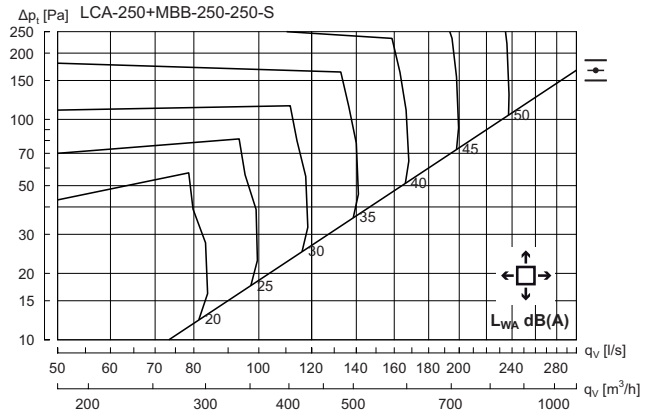
Technical data

LCA 200 + MBB-S - Supply air

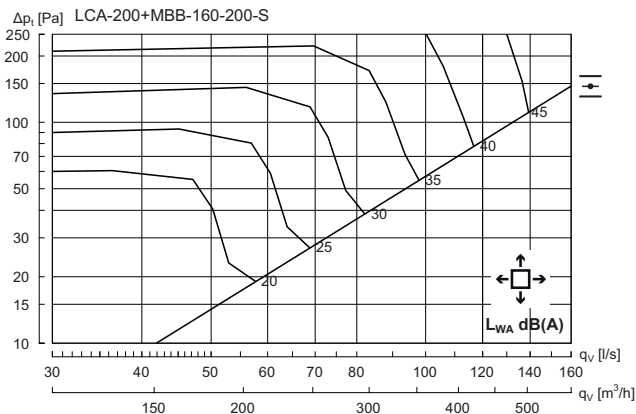


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	6	-1	-1	-5	-15	-21	-26

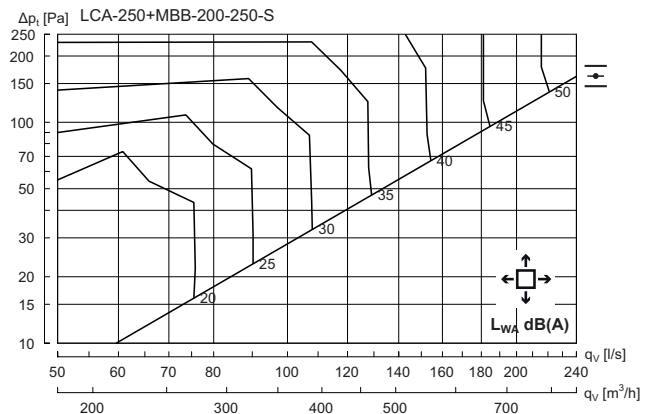
LCA 250 + MBB-S - Supply air



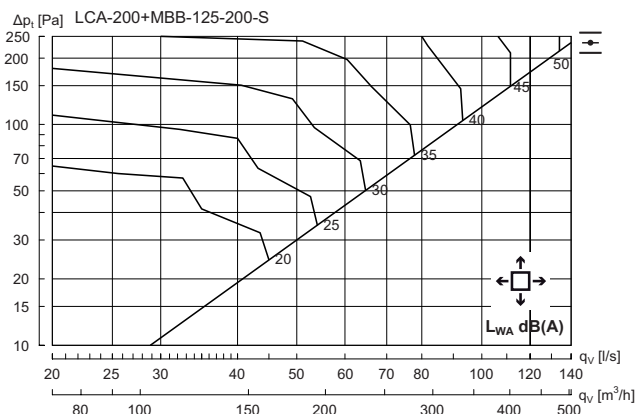
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	3	-4	0	-4	-17	-24	-31



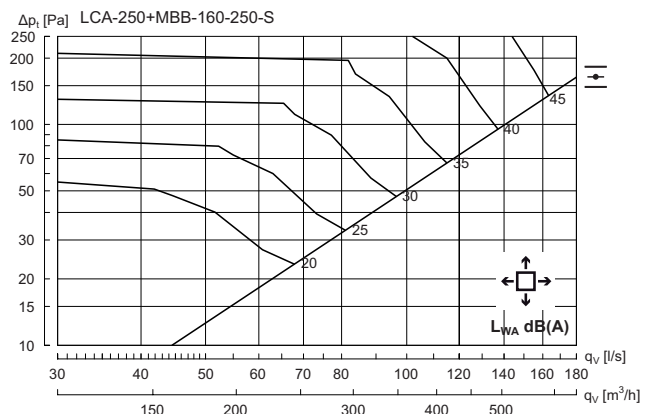
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	9	0	-2	-6	-12	-19	-24



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	6	-2	-1	-5	-14	-19	-23



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	7	1	-3	-6	-11	-15	-21



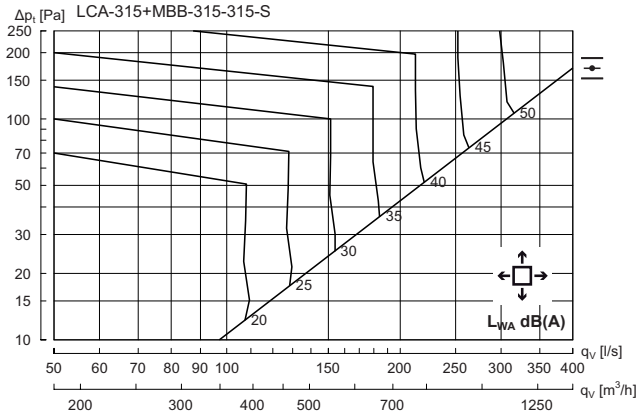
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	9	7	-2	-3	-5	-10	-15	-21

Formo - Ceiling diffuser

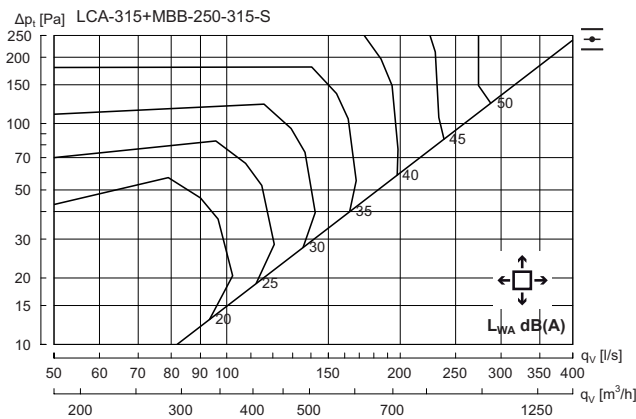
LCA

Technical data

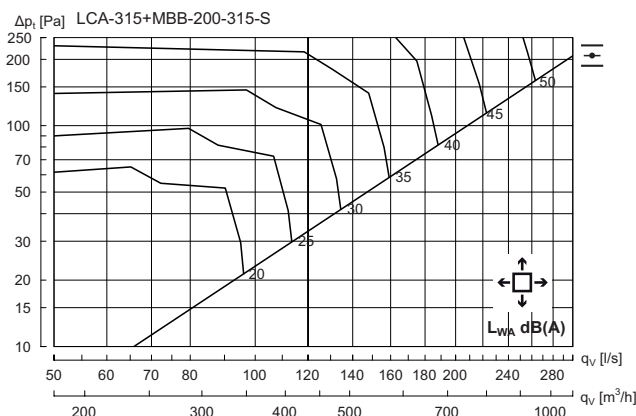
LCA 315 + MBB-S - Supply air



Hz	63	125	250	500	1K	2K	4K	8K
K_{sk}	13	5	-2	-1	-4	-17	-25	-36

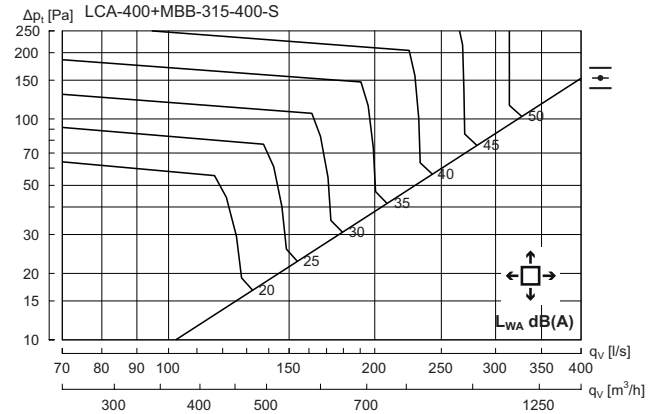


Hz	63	125	250	500	1K	2K	4K	8K
K_{sk}	14	5	-2	-2	-4	-13	-19	-26

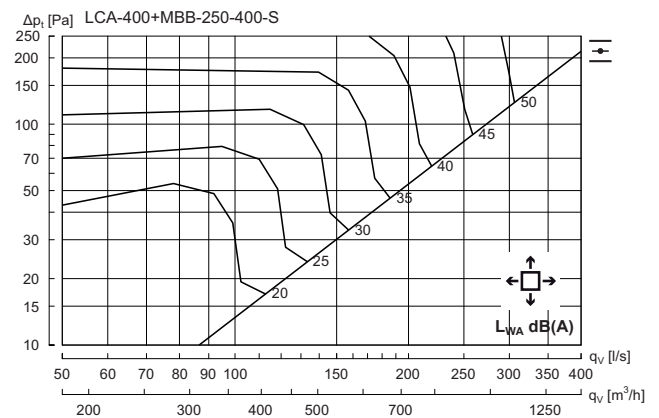


Hz	63	125	250	500	1K	2K	4K	8K
K_{sk}	13	6	-2	-3	-4	-11	-17	-22

LCA 400 + MBB-S - Supply air



Hz	63	125	250	500	1K	2K	4K	8K
K_{sk}	14	6	1	-1	-6	-16	-21	-27



Hz	63	125	250	500	1K	2K	4K	8K
K_{sk}	12	7	0	-2	-6	-12	-19	-26

Correction sound power level (L_{WA}) and pressure loss (Δp_t)

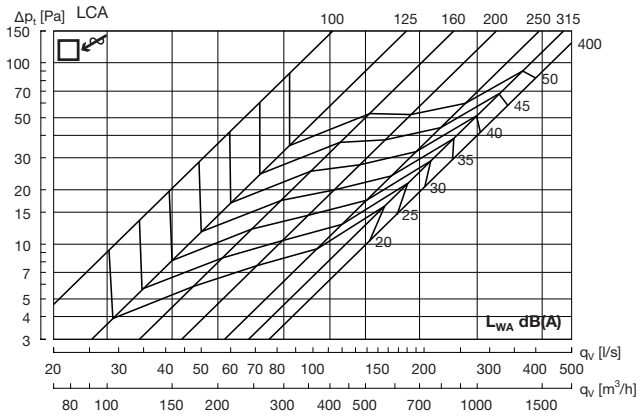
LCA + MBB-S		1 - ways		2 - ways		3 - ways	
duct $\varnothing d_1$	LCA $\varnothing d_2$	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t
100	100	+ 12	x 1.5	+ 8	x 1.2	+ 4	x 1.1
100	125	+ 10	x 1.3	+ 4	x 1.1	+ 2	x 1.05
100	160	+ 9	x 1.3	+ 2	x 1.1	+ 1	x 1
125	125	+ 12	x 1.5	+ 8	x 1.2	+ 4	x 1.1
125	160	+ 14	x 1.5	+ 7	x 1.2	+ 2	x 1.1
125	200	+ 9	x 1.4	+ 6	x 1.2	+ 3	x 1.1
160	160	+ 16	x 1.8	+ 9	x 1.3	+ 4	x 1.1
160	200	+ 21	x 1.9	+ 10	x 1.3	+ 4	x 1.1
160	250	+ 12	x 1.4	+ 6	x 1.1	+ 2	x 1.05
200	200	+ 24	x 2.5	+ 10	x 1.5	+ 5	x 1.2
200	250	+ 18	x 1.9	+ 7	x 1.2	+ 2	x 1.05
200	315	+ 17	x 1.6	+ 9	x 1.2	+ 3	x 1.1
250	250	+ 21	x 2.3	+ 10	x 1.4	+ 5	x 1.1
250	315	+ 20	x 1.9	+ 11	x 1.2	+ 5	x 1.2
250	400	+ 10	x 1.5	+ 6	x 1.2	+ 0	x 1
315	315	+ 21	x 2.4	+ 12	x 1.6	+ 6	x 1.2
315	400	+ 21	x 1.8	+ 8	x 1.5	+ 3	x 1.2

Formo - Ceiling diffuser

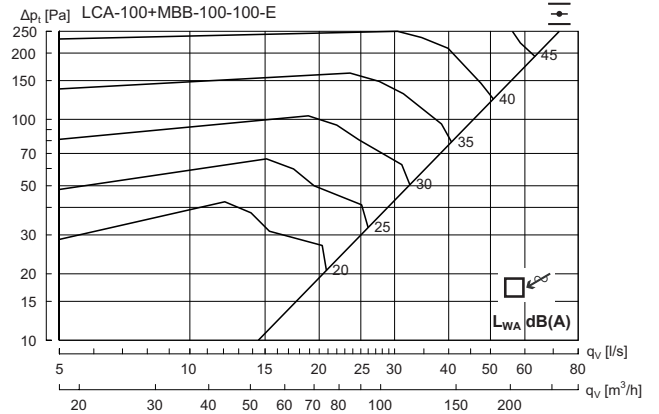
LCA

Technical data

LCA without box - Extract air



LCA 100 + MBB-E - Extract air



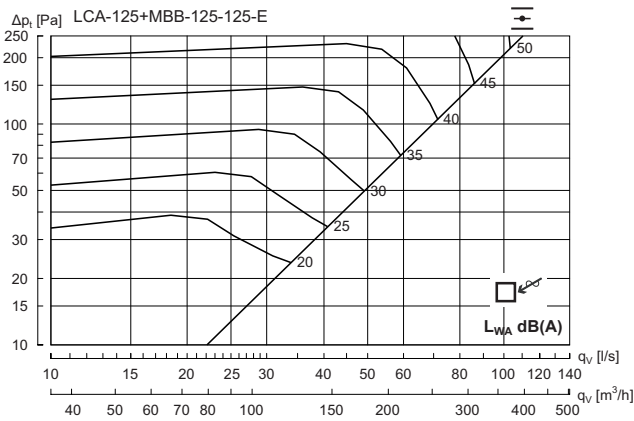
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	1	3	-2	-7	-10	-15	-22

Formo - Ceiling diffuser

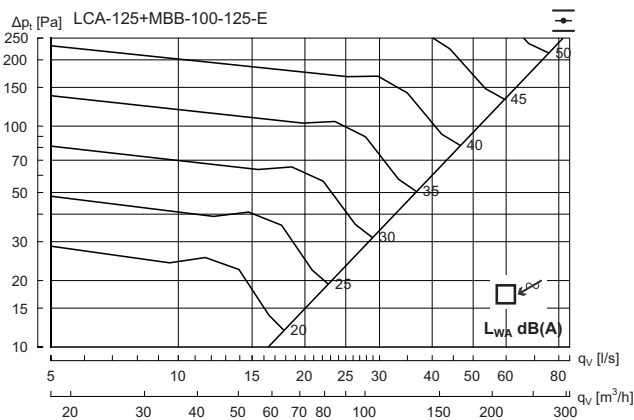
LCA

Technical data

LCA 125 + MBB-E - Extract air

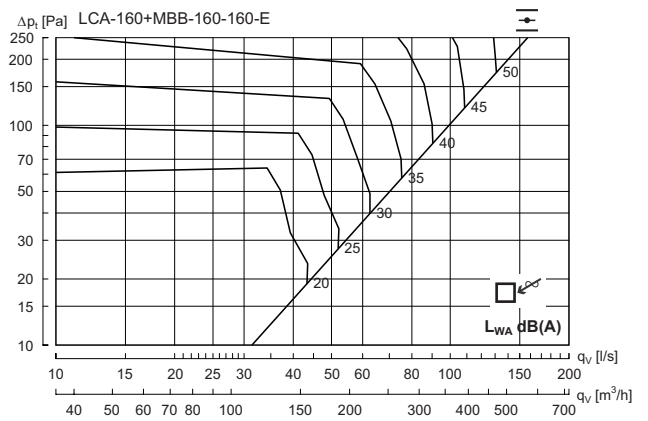


Hz	63	125	250	500	1K	2K	4K	8K
K_{sk}	13	4	1	-2	-5	-12	-15	-22

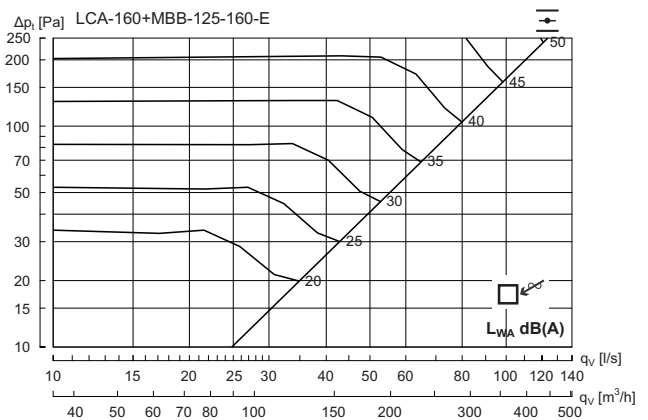


Hz	63	125	250	500	1K	2K	4K	8K
K_{sk}	13	0	4	-2	-8	-11	-16	-22

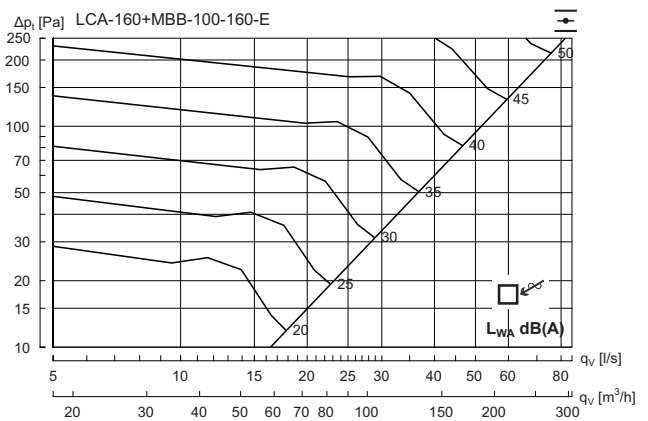
LCA 160 + MBB-E - Extract air



Hz	63	125	250	500	1K	2K	4K	8K
K_{sk}	16	6	1	-4	-5	-11	-17	-24



Hz	63	125	250	500	1K	2K	4K	8K
K_{sk}	12	6	2	-2	-7	-12	-14	-19



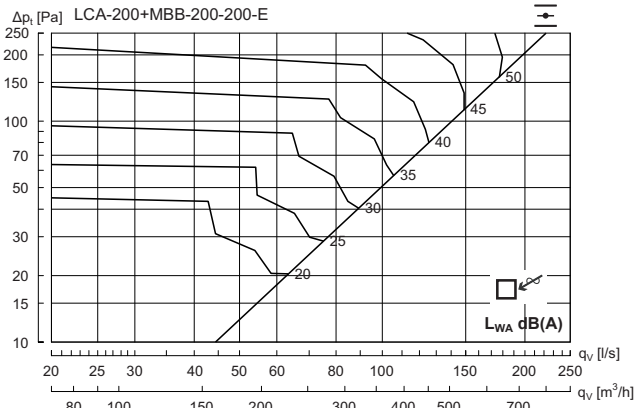
Hz	63	125	250	500	1K	2K	4K	8K
K_{sk}	11	-1	5	-2	-9	-13	-18	-24

Formo - Ceiling diffuser

LCA

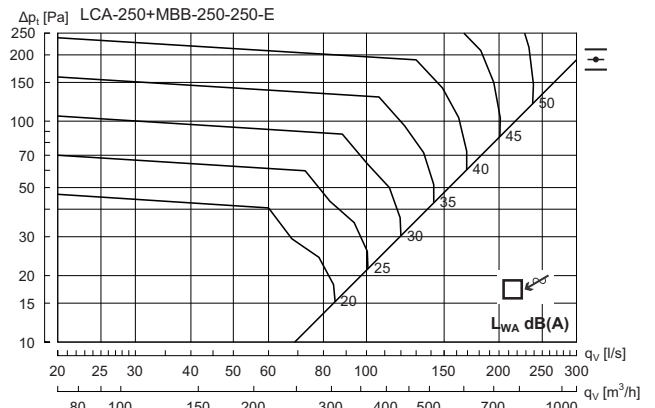
Technical data

LCA 200 + MBB-E - Extract air

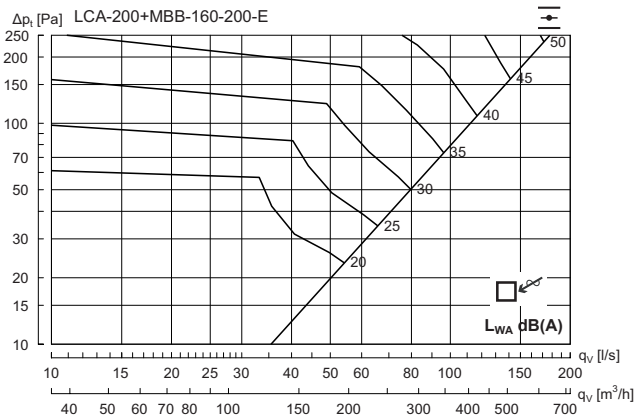


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	14	6	0	-3	-5	-10	-19	-27

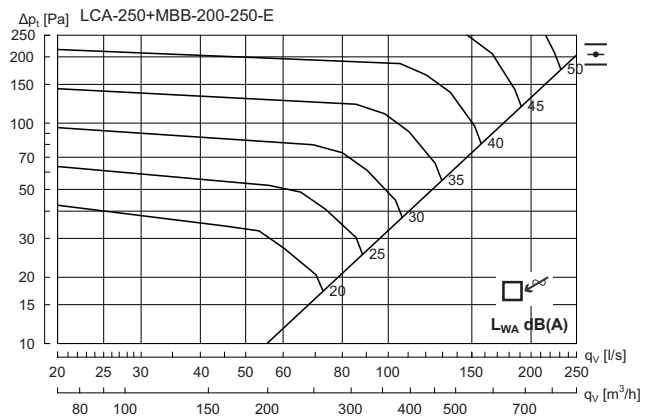
LCA 250 + MBB-E - Extract air



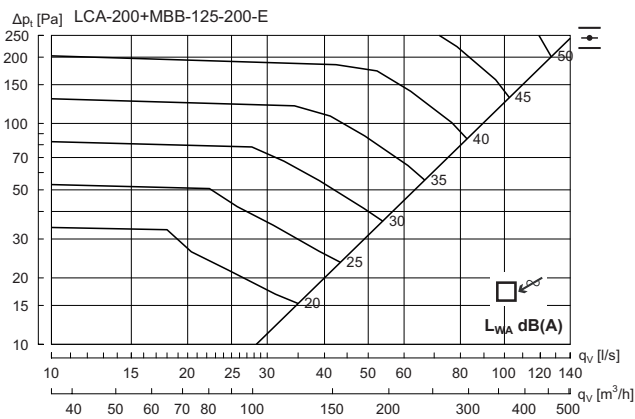
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	4	-1	-3	-3	-12	-19	-30



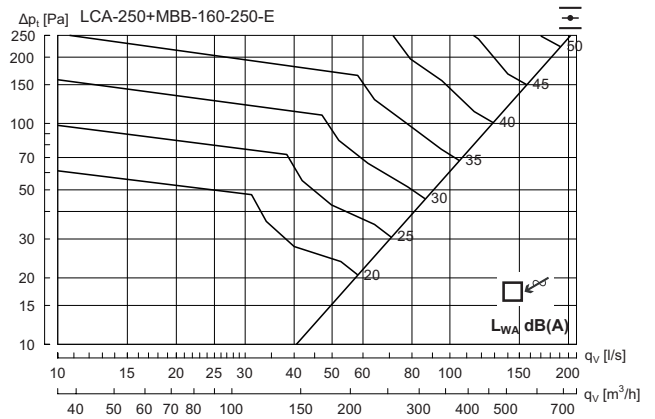
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	16	7	-1	-4	-6	-10	-14	-20



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	3	-1	-3	-4	-11	-15	-24



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	3	0	-2	-5	-11	-14	-21



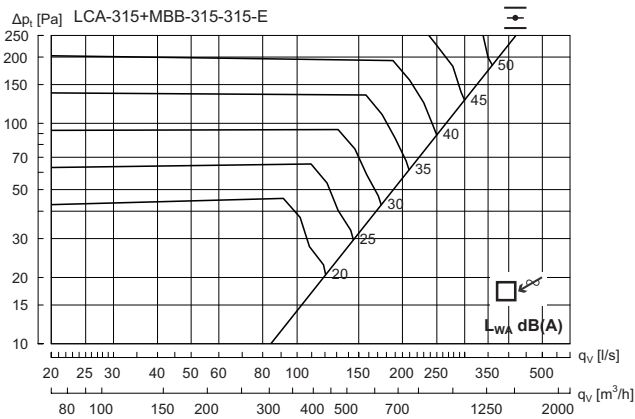
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	14	6	0	-3	-5	-11	-15	-19

Formo - Ceiling diffuser

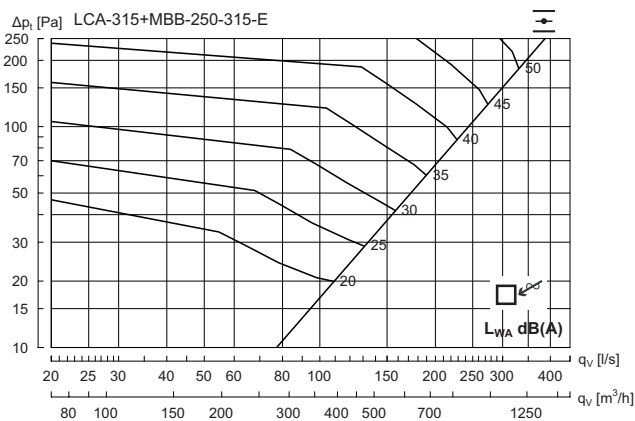
LCA

Technical data

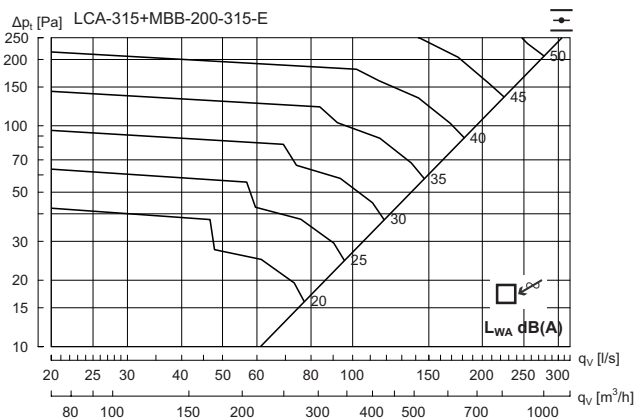
LCA 315 + MBB-E - Extract air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	5	2	-2	-6	-12	-17	-27

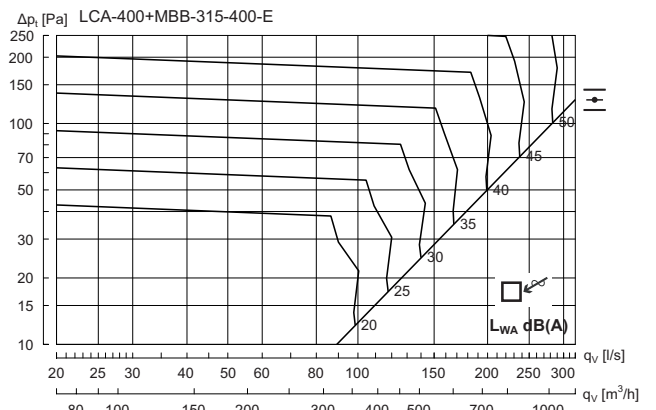


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	10	5	1	-2	-6	-10	-16	-24

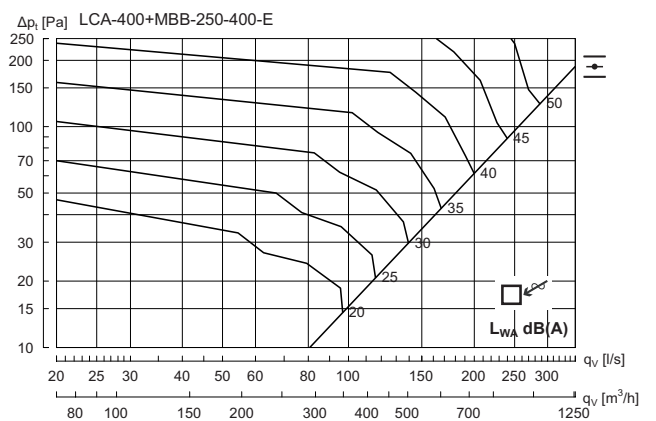


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	14	5	0	-2	-6	-12	-14	-22

LCA 400 + MBB-E - Extract air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	10	5	0	0	-6	-15	-20	-27



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	5	1	-1	-7	-12	-16	-24



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](#)