Plain diffuser

LKA

Description

LKA is a square diffuser with unperforated face plate and can be used for both supply and extract air. LKA 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 LKA 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 (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

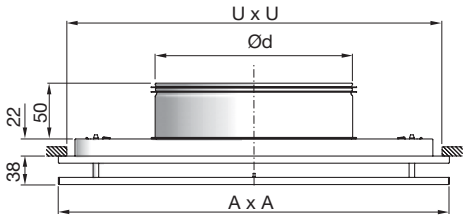
The face plate can be removed to enable cleaning of internal parts or to gain access to the duct or box. The visible parts of the diffuser can be wiped with a damp cloth.

Order code

Product	**LKA**	**aaa**
Type		
LKA		
Connection dim. Ød		
Ø125-400		

Example: LKA-200

Dimensions



LKA Ød	A	U*	Free area A	m
mm	mm	mm	m^2	kg
125	235	200	0,011	1,0
160	295	260	0,016	1,5
200	395	360	0,022	2,4
250	495	460	0,033	3,2
315	595	560	0,041	4,4
400	595	560	0,042	4,6

* U x U = Ceiling grid opening

Materials and finish

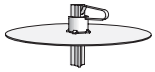
Material:	Galvanised steel
Standard finish:	Powder-coated
Standard colours:	RAL 9003 and RAL 9010, gloss 30

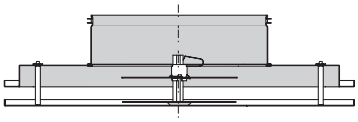
The diffuser is available in other colours. Please contact Lindab's sales department for further information.

Plain diffuser LKA

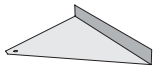
Accessories

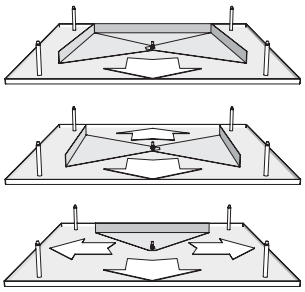
DRZ - Balancing damper



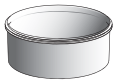


DAZ - Blending profiles (set)

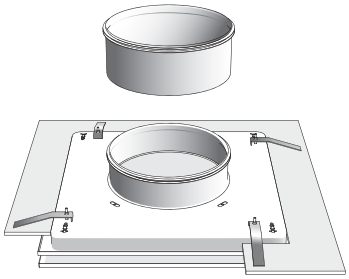




MBZ - Extension piece



DKZ - Mounting brackets (set)



Order code - accessories

Product	aaa	bbb
Type		
Size		

Example: DRZ-200

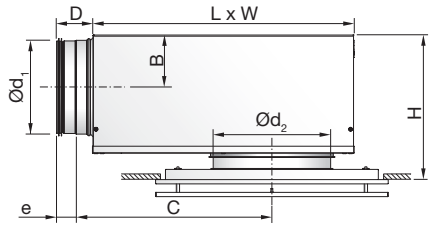
LM - Module plate

Order code - module plate

Product	LM	a	LKA	ccc
Type				
Ceiling system				
Diffuser				
Size				

Example: LM-1-LKA-200

LKA + MB plenum box

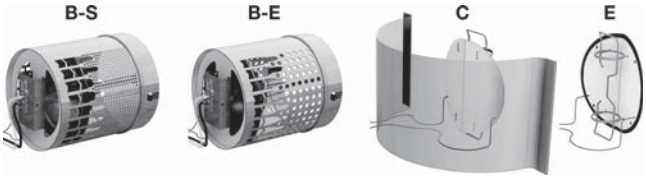


Ød1	Ød2	B	C	D	e	H*	L	W
mm		mm						
100	125	62	245	78	40	180 - 220	310	260
100	160	62	245	78	40	180 - 220	310	260
125	125	75	291	78	40	205 - 245	376	310
125	160	75	291	78	40	205 - 245	376	310
125	200	75	291	78	40	205 - 245	376	310
160	160	92	352	78	40	239 - 279	459	380
160	200	92	352	78	40	239 - 279	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:

$Ød_2$ = 125 - 200 mm => H +40 mm
$Ød_2$ = 250 - 315 mm => H +60 mm
$Ød_2$ = 400 mm => H +80 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 $Ød_2$					
Ø125-400					
Function (Only for B damper)					
S = Supply air E = Extract					

Example 1: LKA-200+MBB-160-200-S
Example 2: LKA-200+MBC-125-200

Plain diffuser

LKA

Technical data

Following LKA+plenum box data are valid for MBB-S/-E.
For MBC and MBE 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 effect level in the frequency band is defined as $L_{WA}+K_{ok}$. K_{ok} values are specified in chart beneath the diagrams on the following pages.

Quick selection, supply air

LKA + MBB-S		$\Delta p_t \geq 50$ Pa		$\Delta p_t \geq 50$ Pa	
duct	LKA	30 dB(A)		35 dB(A)	
$Ød_1$	$Ød_2$	l/s	m³/h	l/s	m³/h
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	63	227	75	270
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 diffuser ΔL from duct to room, including end reflection, see table below

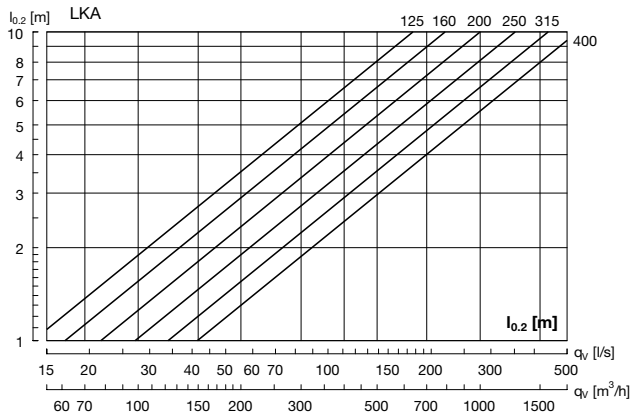
LKA + MBB-S/-E									
duct	LKA	Centre frequency Hz							
$Ød_1$	$Ød_2$	63	125	250	500	1K	2K	4K	8K
100	125	20	17	6	16	19	20	18	22
100	160	21	17	5	12	19	20	18	21
125	125	17	14	9	19	15	21	18	20
125	160	13	13	9	18	18	18	18	20
125	200	14	12	7	15	16	18	17	19
160	160	18	17	11	16	21	19	20	21
160	200	15	14	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 data is contained in a separate brochure.

Throw $l_{0.2}$

The throw is specified at a terminal velocity of 0.2 m/s.

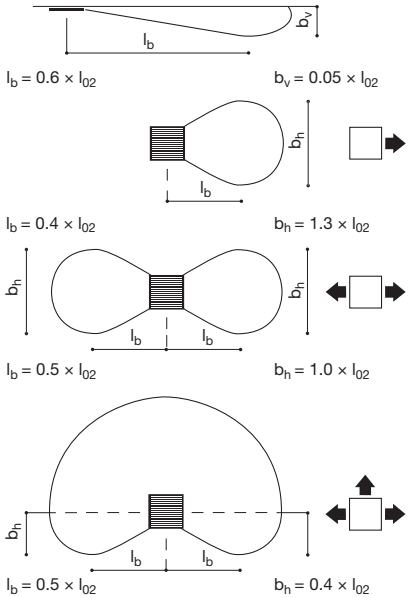


Correction throw $L_{0.2}$

LKA Ød	1 - ways	2 - ways	3 - ways
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

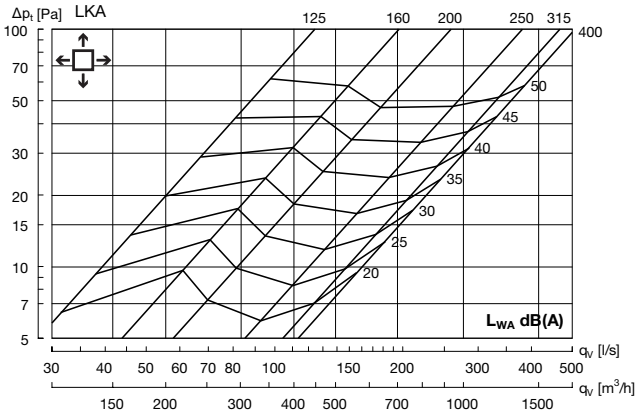
l_b = Distance from the diffuser to the point where there is maximum dispersal.
b_v = Depth of the air jet on a vertical plane.
b_h = Width of the air jet on a horizontal plane.



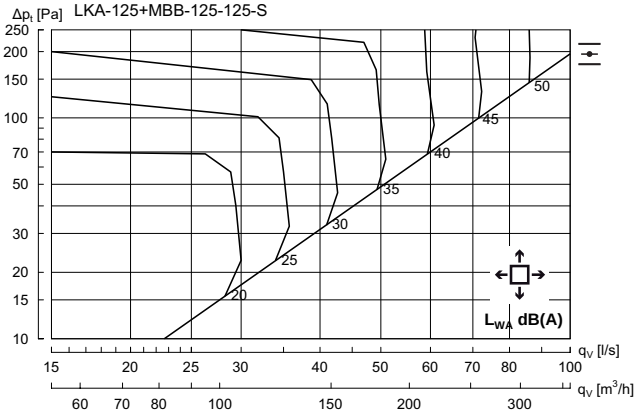
Plain diffuser LKA

Technical data

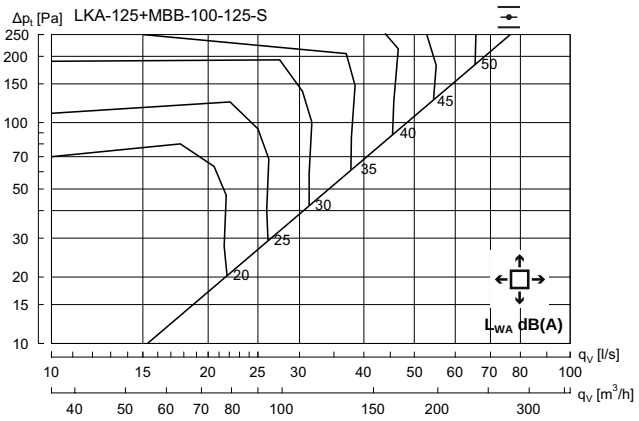
LKA without box - Supply air



LKA 125 + MBB-S - Supply air



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

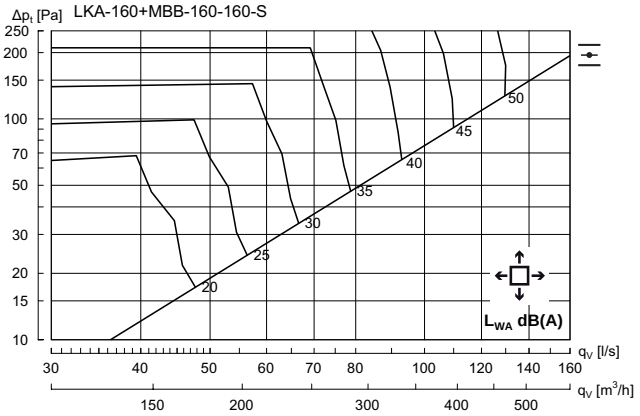


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	7	3	-4	-5	-14	-18	-24

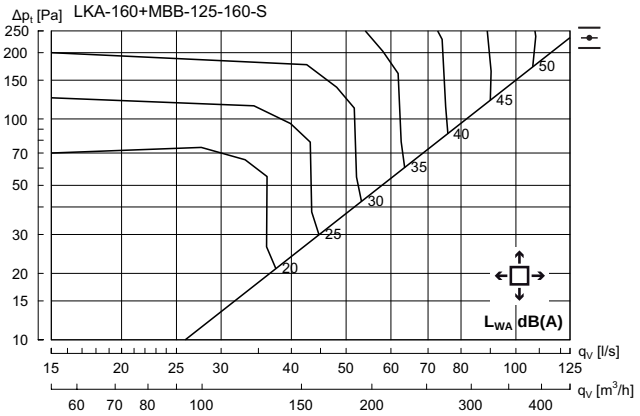
Plain diffuser LKA

Technical data

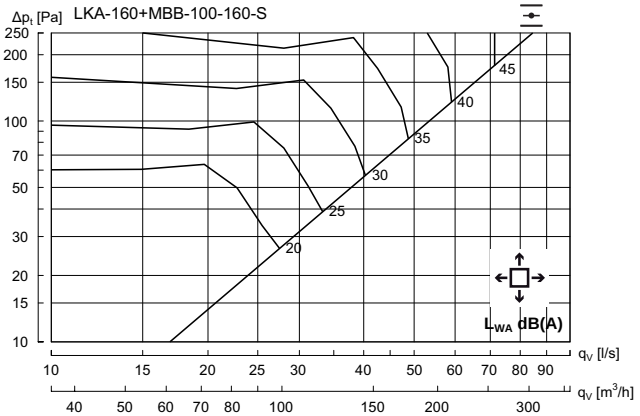
LKA 160 + MBB-S - Supply air



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

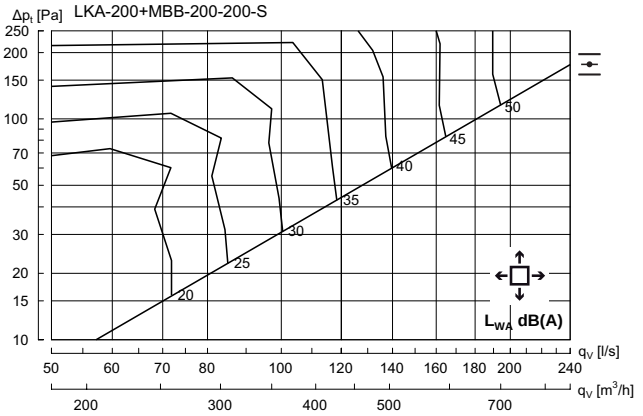


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	8	1	-3	-6	-12	-17	-25

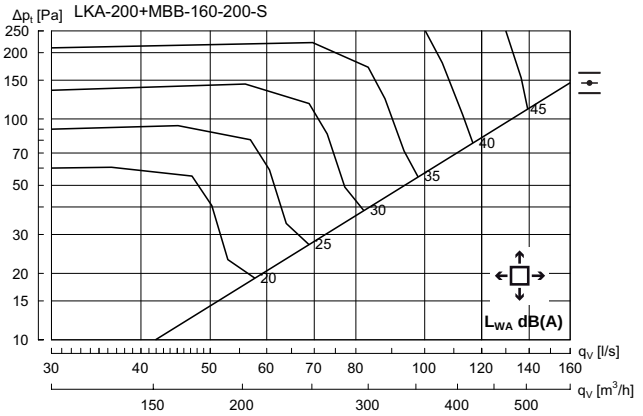


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	5	1	-2	-6	-10	-14	-20

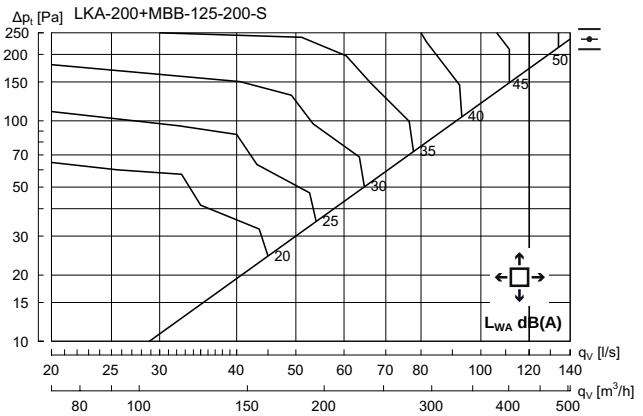
LKA 200 + MBB-S - Supply air



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



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

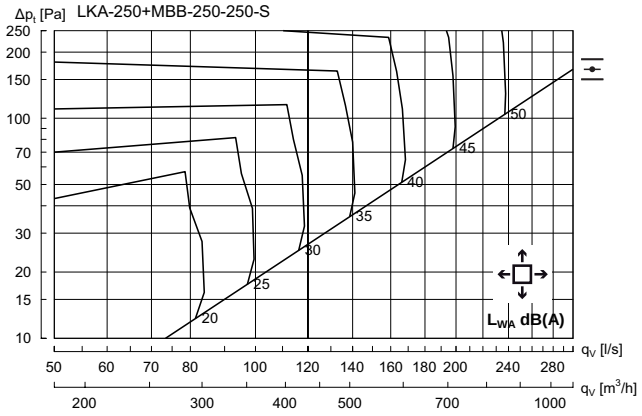


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	7	1	-3	-6	-11	-15	-21

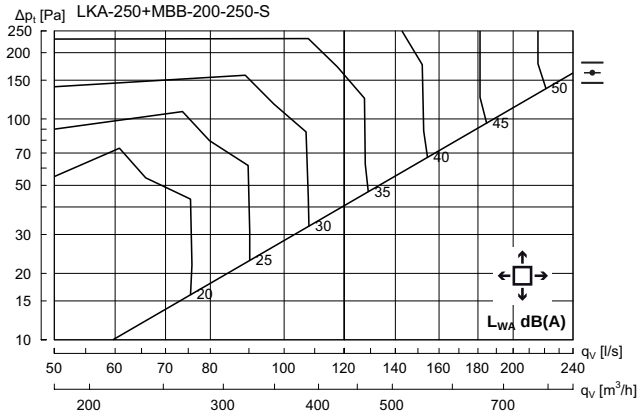
Plain diffuser LKA

Technical data

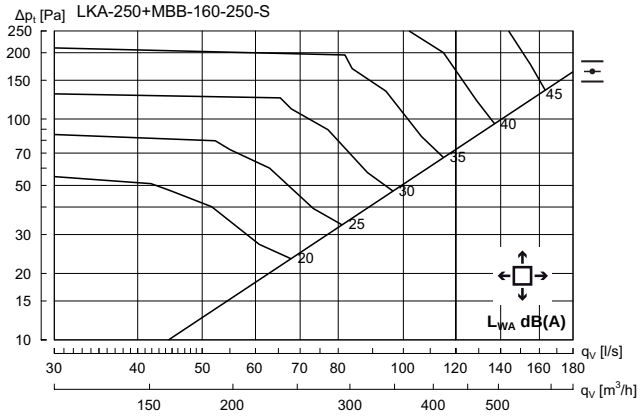
LKA 250 + MBB-S - Supply air



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

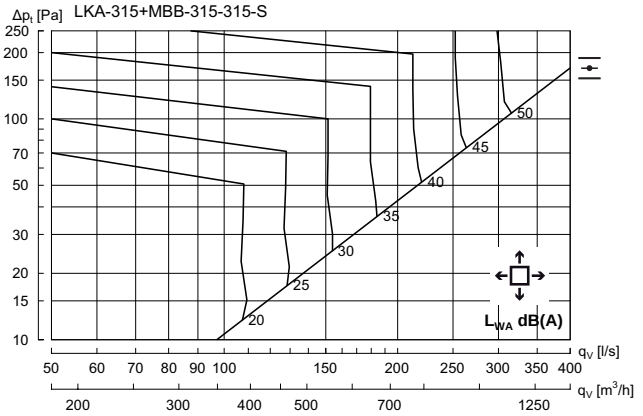


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	6	-2	-1	-5	-14	-19	-23

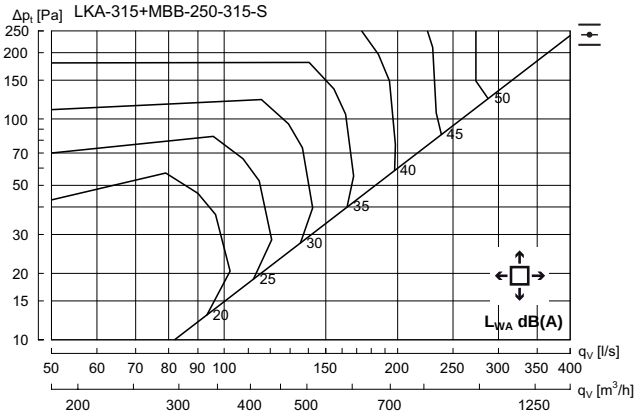


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	9	7	-2	-3	-5	-10	-15	-21

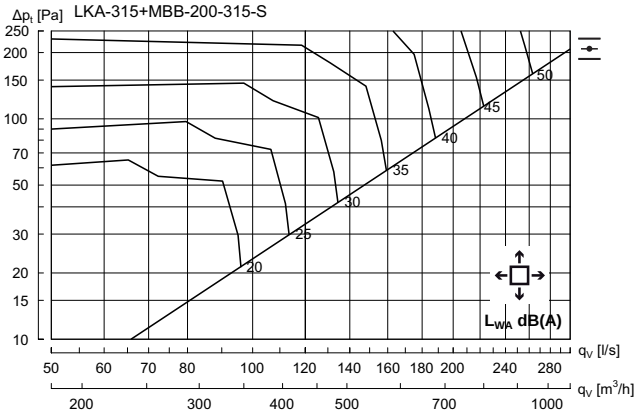
LKA 315 + MBB-S - Supply air



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



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

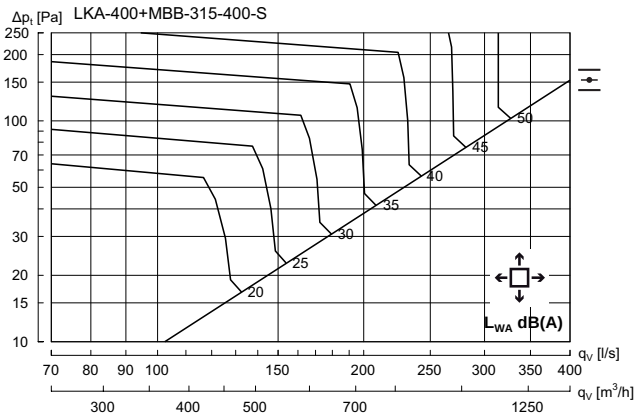


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	6	-2	-3	-4	-11	-17	-22

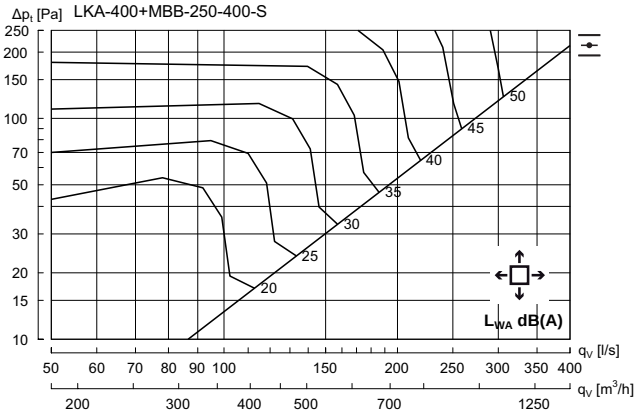
Plain diffuser LKA

Technical data

LKA 400 + MBB-S - Supply air



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



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

LKA + MBB-S - Supply air

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

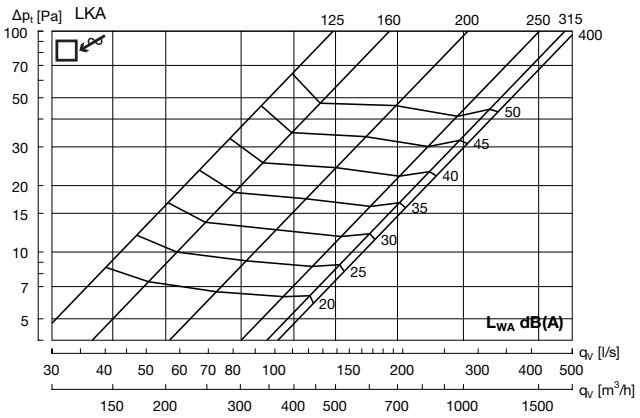
LKA + MBB-S							
duct	PKA	1 - ways		2 - ways		3 - ways	
$Ød_1$	$Ød_2$	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t
100	125	+ 10	x 1.3	+ 4	x 1.1	+ 2	x 1,05
100	160	+ 5	x 1.1	+ 2	x 1.05	+ 1	x 1
125	125	+ 10	x 1,35	+ 6	x 1,1	+ 4	x 1,05
125	160	+ 10	x 1,4	+ 4	x 1,1	+ 1	x 1
125	200	+ 4	x 1,2	+ 2	x 1,05	+ 1	x 1
160	160	+ 16	x 1,8	+ 9	x 1,3	+ 4	x 1,1
160	200	+ 16	x 1,7	+ 10	x 1,2	+ 4	x 1,05
160	250	+ 10	x 1,3	+ 6	x 1,1	+ 3	x 1
200	200	+ 17	x 2,3	+ 11	x 1,4	+ 7	x 1,1
200	250	+ 13	x 1,8	+ 6	x 1,2	+ 4	x 1,1
200	315	+ 9	x 1,5	+ 4	x 1,1	+ 0	x 1,05
250	250	+ 21	x 2,1	+ 11	x 1,4	+ 7	x 1,2
250	315	+ 19	x 1,8	+ 7	x 1,2	+ 3	x 1,1
250	400	+ 10	x 1,5	+ 6	x 1,2	+ 0	x 1
315	315	+ 21	x 2,1	+ 10	x 1,3	+ 4	x 1,1
315	400	+ 21	x 1,8	+ 8	x 1,5	+ 3	x 1,2

Plain diffuser

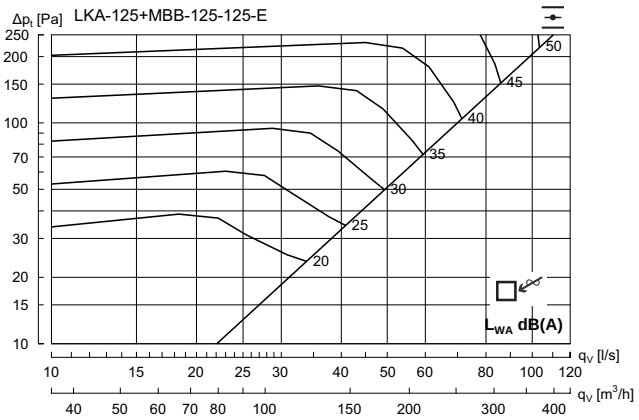
LKA

Technical data

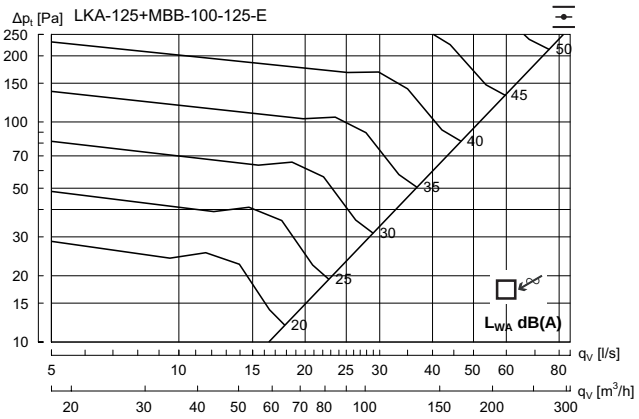
LKA without box - Extract air



LKA 125 + MBB-E - Extract air



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



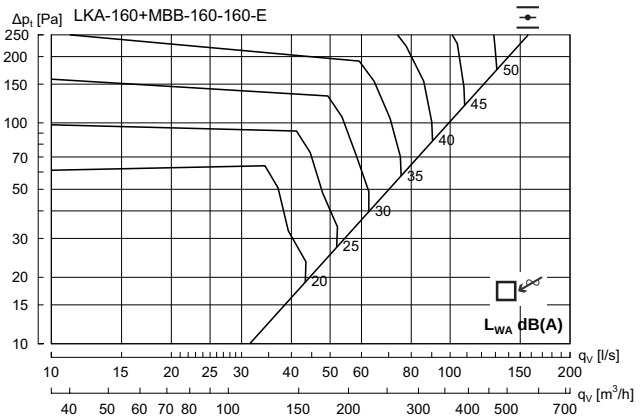
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	0	4	-2	-8	-11	-16	-22

Plain diffuser

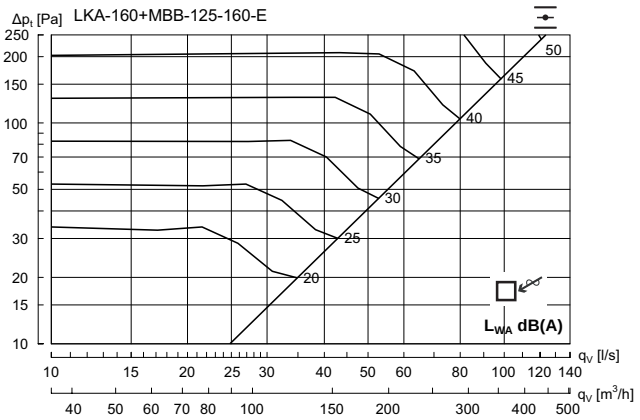
LKA

Technical data

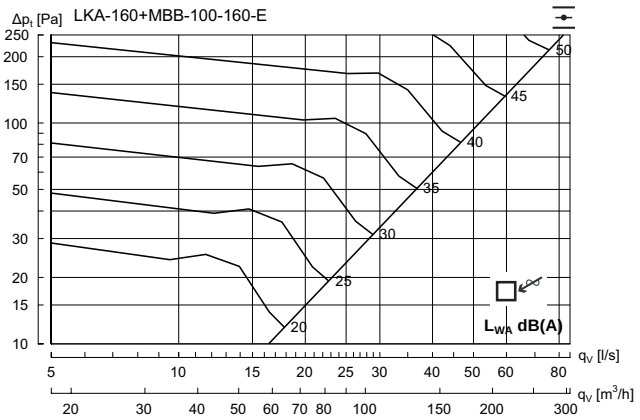
LKA 160 + MBB-E - Extract air



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

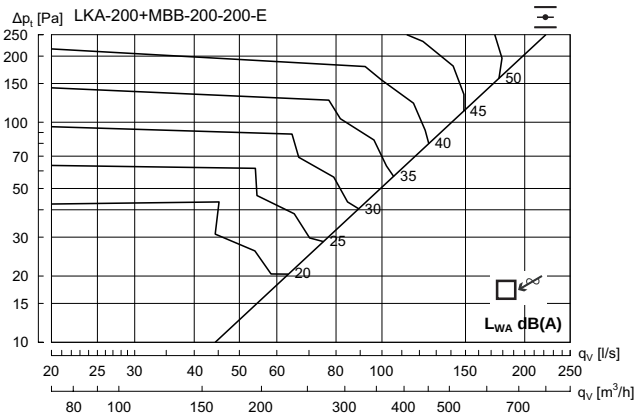


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	6	2	-2	-7	-12	-14	-19

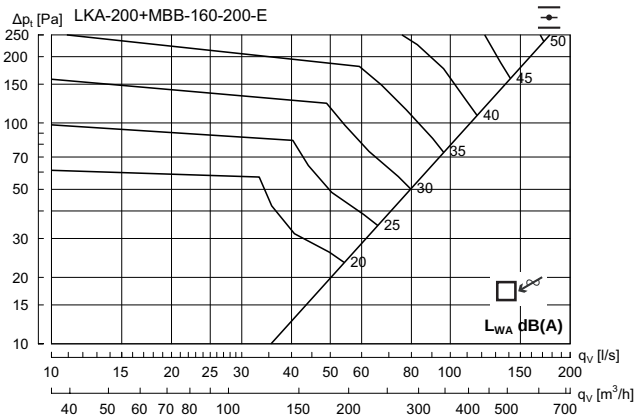


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	-1	5	-2	-9	-13	-18	-24

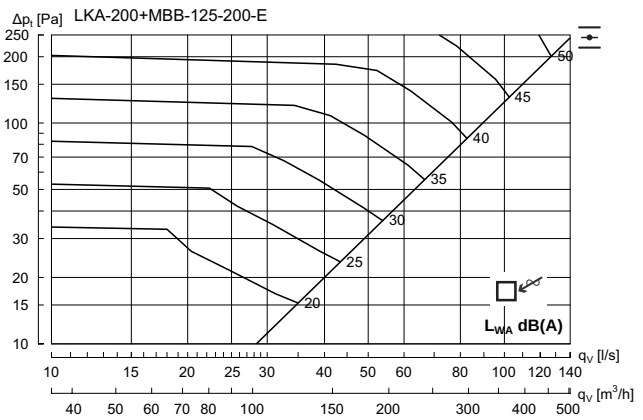
LKA 200 + MBB-E - Extract air



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



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

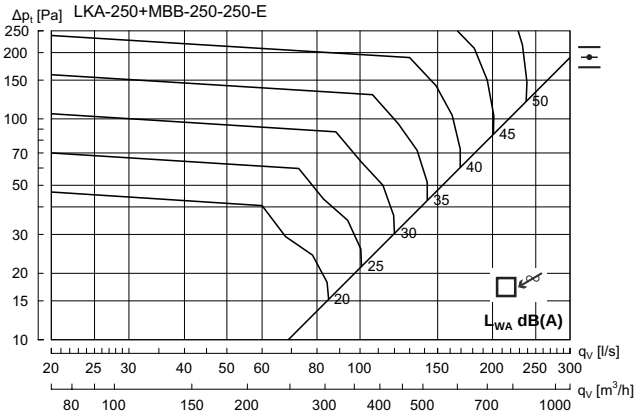


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	3	0	-2	-5	-11	-14	-21

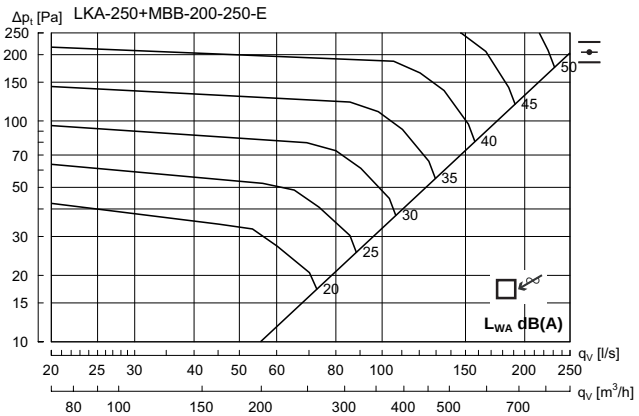
Plain diffuser LKA

Technical data

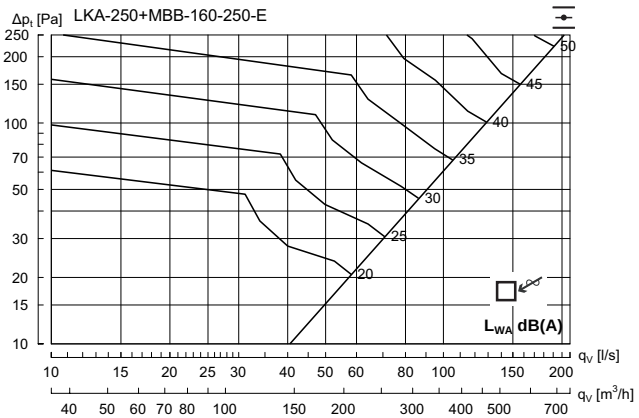
LKA 250 + MBB-E - Extract air



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

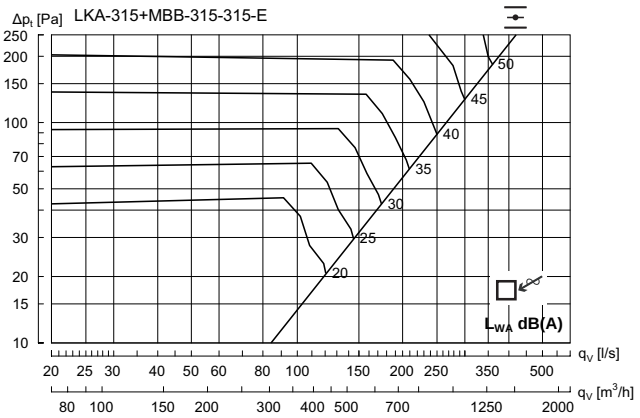


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	3	-1	-3	-4	-11	-15	-24

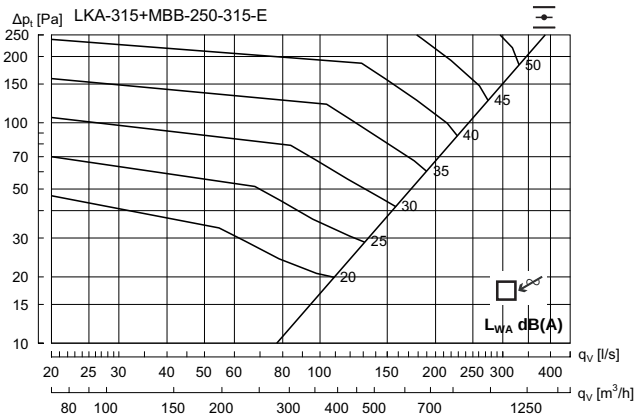


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	14	6	0	-3	-5	-11	-15	-19

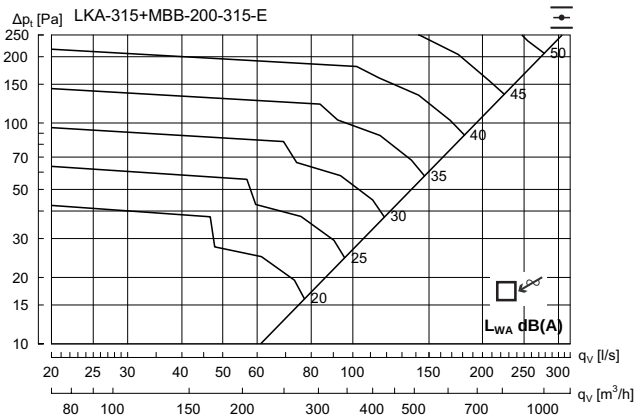
LKA 315 + MBB-E - Extract air



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



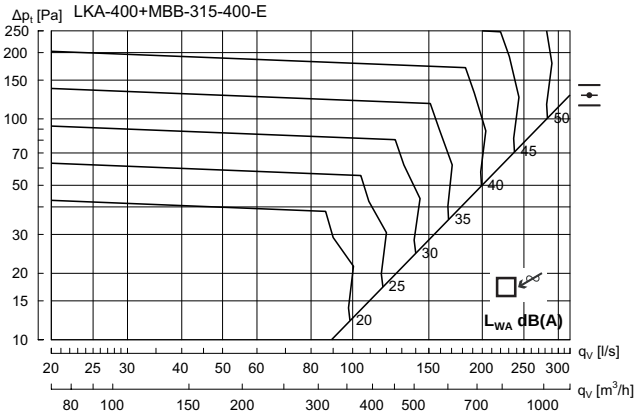
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	14	5	0	-2	-6	-12	-14	-22

Plain diffuser

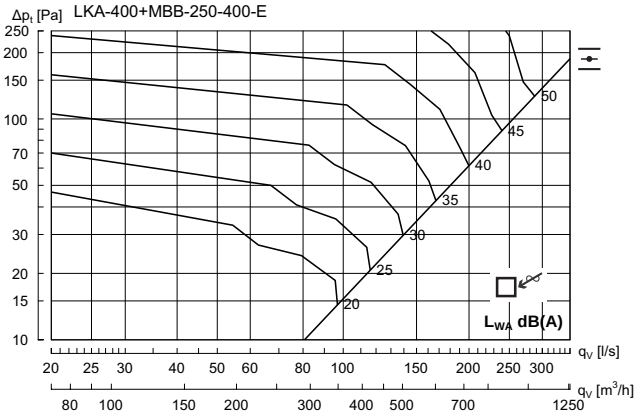
LKA

Technical data

LKA 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