Lindab **PCA**

Formo - Perforated diffuser

Formo - Perforated diffuser PCA

Description

PCA is a circular diffuser with perforated face plate and can be used for both supply and extract air. PCA is suitable for horizontal supply of cooled air and can be equipped with accessories of various types in order to achieve optimal function.

Installing a PCA 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.

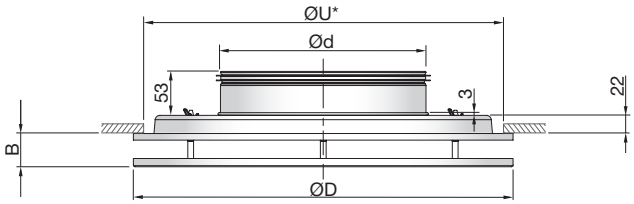
- Suitable for both supply and extract air
- Suitable for horizontal supply of cooled air
- Option of 1, 2 and 3-way supply air
- Plenum box with several damper options

Order Code

Product	**PCA**	**aaa**
Type PCA		
Connection dim Ød Ø100 - 400		

Example: PCA-200

Dimensions



PCA Ød mm	ØD mm	ØU* mm	B mm	Free area A m²	m kg
100	240	200	37	0.016	0.8
125	240	200	37	0.018	0.8
160	300	260	37	0.023	1.1
200	360	320	37	0.030	1.5
250	460	420	41	0.042	2.2
315	540	500	41	0.058	3.0
400	540	500	41	0,066	2.9

* ØU = Ceiling grid opening.

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

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

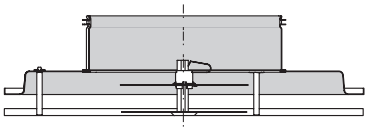
The diffuser is available in other colours. Please contact Lindab's sales department for further information.

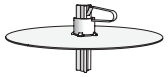
2024-12-10

Formo - Perforated diffuser PCA

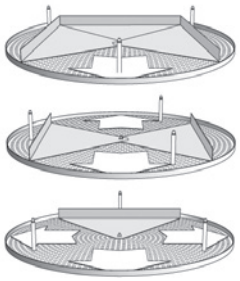
Accessories

DRZ - Balancing damper

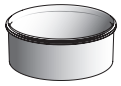




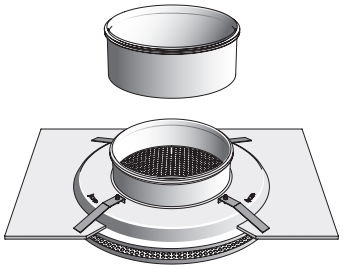
DAZ - Directional deflector (set)



MBZ - Extension piece



DDZ - Mounting brackets (set)

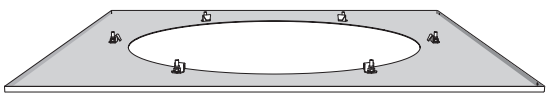


Order Code - accessories

Product	aaa	bbb
Type		
Size		

Example: DRZ-200

LM - Module plate



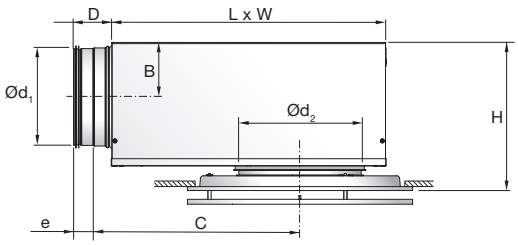
Order Code - module plate

Product	LM	a	PCA	ccc
Type				
Ceiling system				
Diffuser				
Size				

Example: LM-1-PCA-200

Formo - Perforated diffuser PCA

PCA + MB plenum box

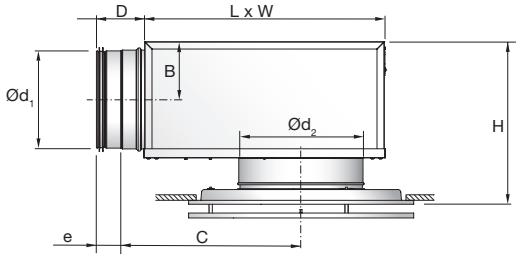


PCA + MB

Ød1	Ød2	B	C	D	e	H*	L	W
mm		mm						
100	100	62	245	78	40	197 - 237	310	260
100	125	62	245	78	40	197 - 237	310	260
100	160	62	245	78	40	197 - 237	310	260
125	125	75	291	78	40	222 - 262	376	310
125	160	75	291	78	40	222 - 262	376	310
125	200	75	291	78	40	222 - 262	376	310
160	160	92	352	78	40	256 - 296	459	380
160	200	92	352	78	40	256 - 296	459	380
160	250	92	352	78	40	256 - 296	459	380
200	200	112	425	78	40	297 - 337	565	460
200	250	112	425	78	40	297 - 337	565	460
200	315	112	425	78	40	297 - 337	565	460
250	250	137	534	118	60	347 - 387	698	540
250	315	137	534	118	60	347 - 387	698	540
250	400	137	534	118	60	347 - 387	698	540
315	315	170	695	118	60	412 - 452	858	540
315	400	170	695	118	60	412 - 452	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

PCA + CBC/CBE plenum box

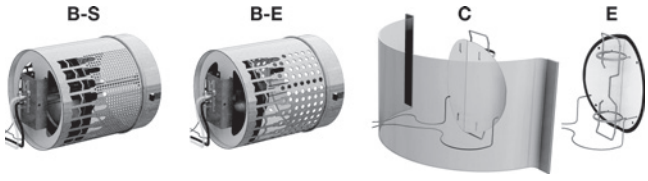


PCA + CBC/CBE

Ød1	Ød2	B	C	D	e	H*	L	W
mm		mm						
100	125	65	213	78	40	208 - 248	277	213
100	160	65	231	78	40	208 - 248	312	248
125	160	78	250	78	40	233 - 273	331	248
125	200	78	270	78	40	233 - 273	371	288
160	200	95	295	78	40	268 - 308	396	288
160	250	95	320	78	40	268 - 308	446	338
200	250	115	345	78	40	308 - 348	471	338
200	315	115	377	78	40	308 - 348	536	403
250	315	140	423	118	60	358 - 398	563	405
250	400	140	466	118	60	358 - 398	648	490
315	400	173	536	118	60	423 - 463	718	490

* 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



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 $Ød_2$
Ø100 - 400

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

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

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 - 400

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

Formo - Perforated diffuser PCA

Technical data

Following PCA+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 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

PCA + MBB-S		$\Delta p_t \geq 50$ Pa		$\Delta p_t \geq 50$ Pa	
Duct	PCA	30dB(A)		35dB(A)	
$Ød_1$	$Ød_2$	l/s	m³/h	l/s	m³/h
100	100	26	94	31	112
100	125	33	119	39	140
100	160	39	140	47	169
125	125	40	144	48	173
125	160	51	184	61	220
125	200	58	209	70	252
160	160	57	207	71	255
160	200	67	241	84	302
160	250	77	277	99	356
200	200	83	299	100	360
200	250	96	346	118	425
200	315	112	403	139	500
250	250	118	425	139	500
250	315	133	479	163	587
250	400	146	526	193	695
315	315	145	522	173	623
315	400	187	673	225	810

Sound attenuation

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

PCA + MBB-S/-E		Sound attenuation ΔL [dB]							
Duct	PCA	Centre frequency Hz							
$Ød_1$	$Ød_2$	63	125	250	500	1K	2K	4K	8K
100	100	18	17	8	20	19	20	19	23
100	125	19	16	7	19	18	18	18	21
100	160	21	16	5	15	17	18	16	19
125	125	18	13	9	20	13	19	18	19
125	160	12	13	8	19	13	16	17	19
125	200	16	11	5	16	13	15	15	17
160	160	17	17	11	19	18	17	20	20
160	200	14	14	7	21	15	16	18	19
160	250	15	15	5	17	13	15	16	18
200	200	15	10	6	16	17	15	19	18
200	250	12	9	5	14	17	15	17	17
200	315	12	7	4	11	15	14	16	15
250	250	14	8	8	14	16	17	17	18
250	315	12	6	6	15	15	15	16	17
250	400	13	5	4	13	14	14	15	15
315	315	7	9	8	14	17	16	17	21
315	400	7	8	8	12	16	16	16	18

Balancing

Balancing guide, see the MB installation instruction.

Formo - Perforated diffuser PCA

Technical data PCA + CBC/CBE

Following PCA+plenum box data are valid for CBC.
For CBE data, follow link below. For complete configuration of your PCA 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

PCA + CBC		$\Delta p_t \geq 50$ Pa		$\Delta p_t \geq 50$ Pa	
Duct	PCA	30dB(A)		35dB(A)	
$Ød_1$	$Ød_2$	l/s	m³/h	l/s	m³/h
100	125	25	91	44	159
100	160	25	89	57	206
125	160	40	146	64	229
125	200	41	146	78	279
160	200	52	188	86	311
160	250	54	196	118	426
200	250	73	264	126	453
200	315	- -	- -	142	512
250	315	- -	- -	164	589
250	400	- -	- -	192	690
315	400	- -	- -	219	787

Sound attenuation

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

PCA + CBC/CBE		Sound attenuation ΔL [dB]							
Duct	PCA	Centre frequency Hz							
$Ød_1$	$Ød_2$	63	125	250	500	1K	2K	4K	8K
100	125	25	17	15	16	16	18	12	13
100	160	25	13	13	15	15	16	10	9
125	160	22	13	10	15	16	17	11	11
125	200	20	17	11	14	17	15	10	11
160	200	21	10	10	15	17	13	11	9
160	250	21	9	10	14	14	12	9	8
200	250	23	8	9	13	15	12	11	9
200	315	19	6	8	14	14	11	11	9
250	315	16	9	7	14	15	9	9	6
250	400	17	8	9	13	11	9	9	7
315	400	19	3	10	15	11	11	9	11

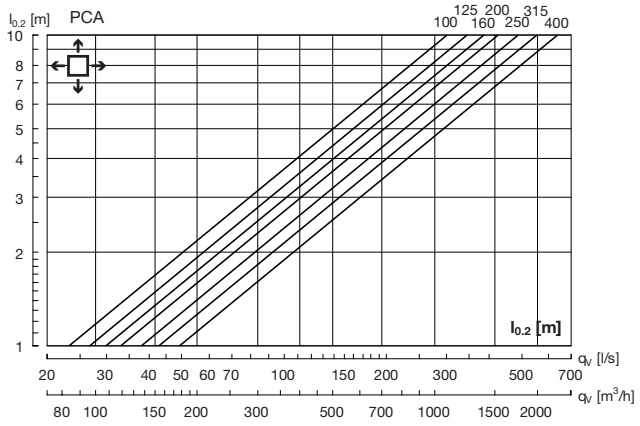
Balancing

Balancing guide, see the CBC/CBE installation instruction.

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.

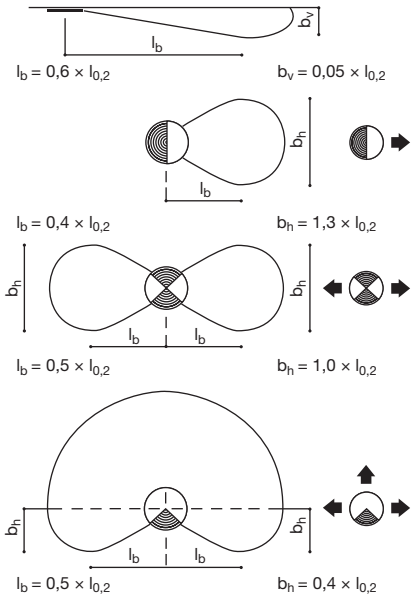


Correction throw $l_{0.2}$

PCA Ød	1 - ways	2 - ways	3 - ways
100	2.3	1.7	1.3
125	2.6	1.8	1.4
160	2.5	1.7	1.3
200	2.4	1.7	1.3
250	2.3	1.7	1.3
315	2.2	1.7	1.2
400	2.3	1.7	1.2

Air jet distribution

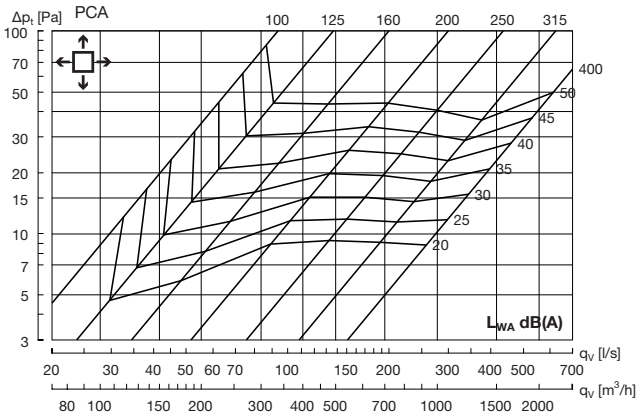
l_b = Distance from the diffuser to the point where there is maximum dispersal.
b_v = Depth of the air jet on a vertical plane.
b_h = Width of the air jet on a horizontal plane.



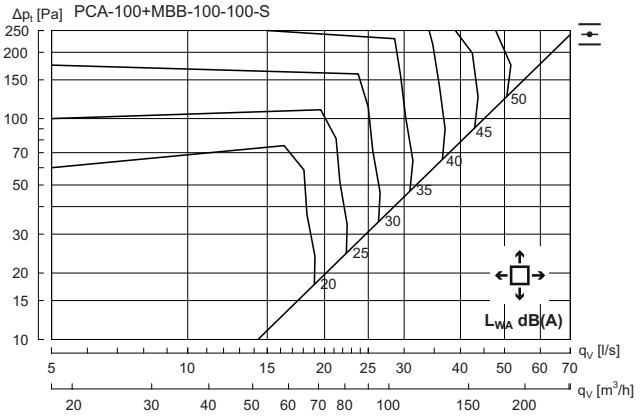
Formo - Perforated diffuser PCA

Technical data

PCA without box - supply air



PCA 100 + MBB-S - Supply air

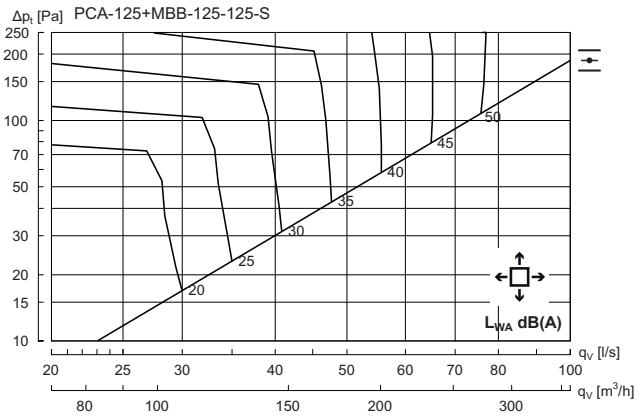


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	5	2	-5	-4	-11	-20	-26

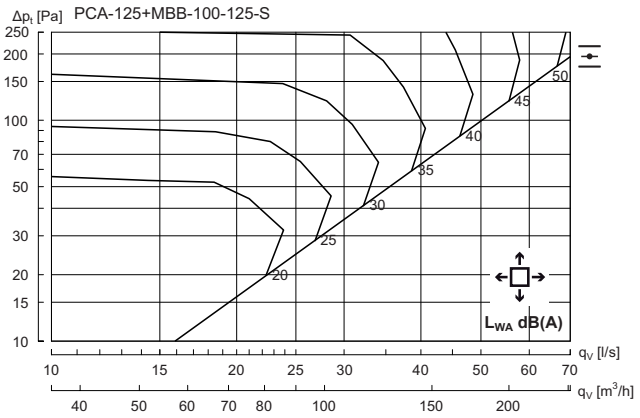
Formo - Perforated diffuser PCA

Technical data

PCA 125 + MBB-S - Supply air

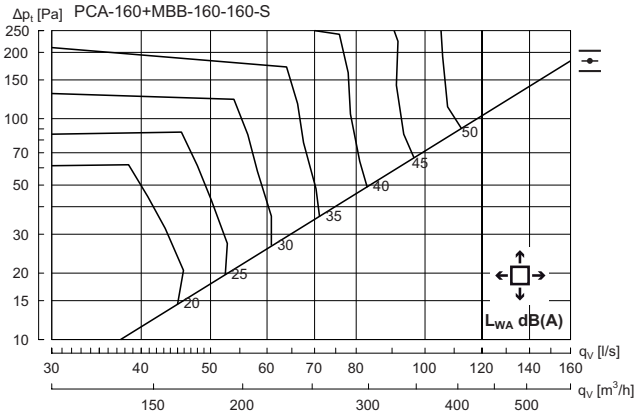


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	9	5	-1	-4	-3	-11	-20	-26

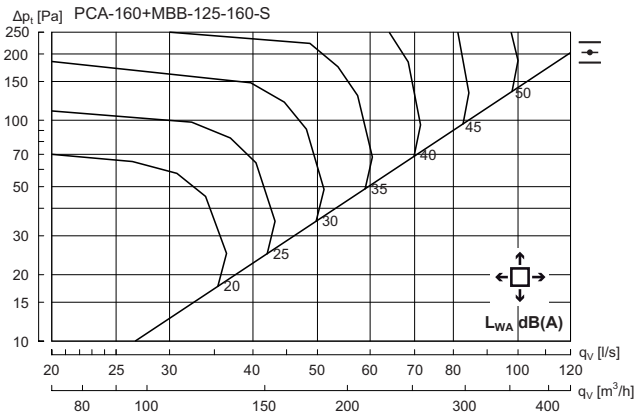


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	7	3	-5	-5	-11	-18	-25

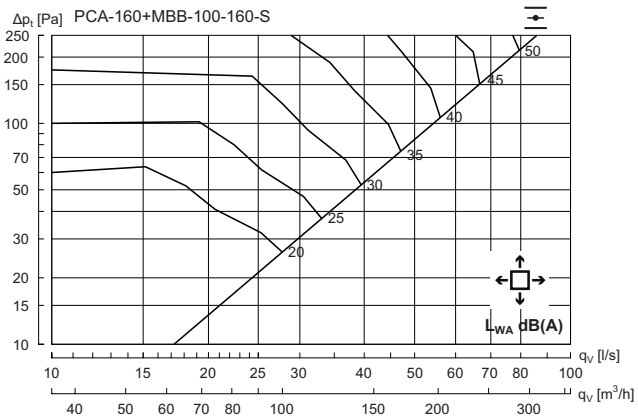
PCA 160 + MBB-S - Supply air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	8	5	-2	-4	-3	-11	-21	-29



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	9	5	1	-4	-4	-10	-17	-25

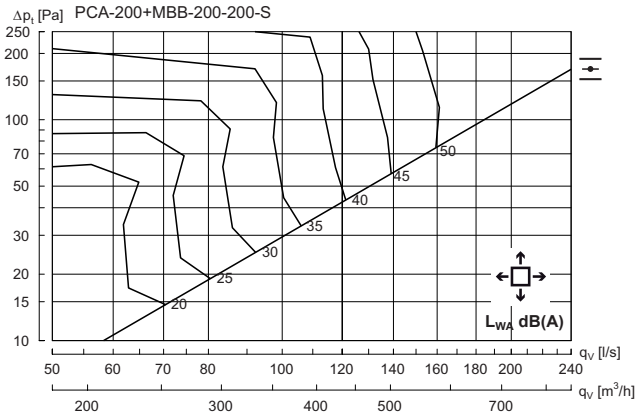


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	9	4	1	-3	-5	-10	-15	-19

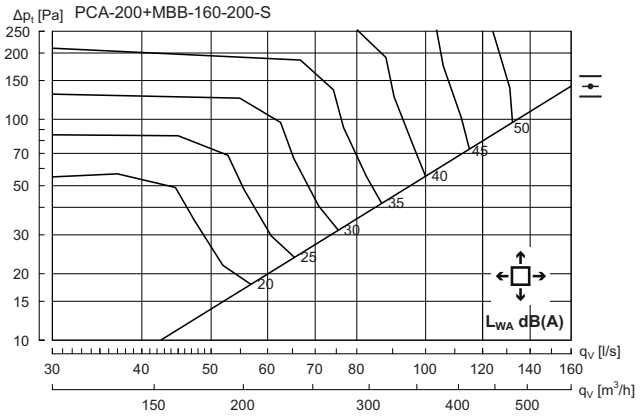
Formo - Perforated diffuser PCA

Technical data

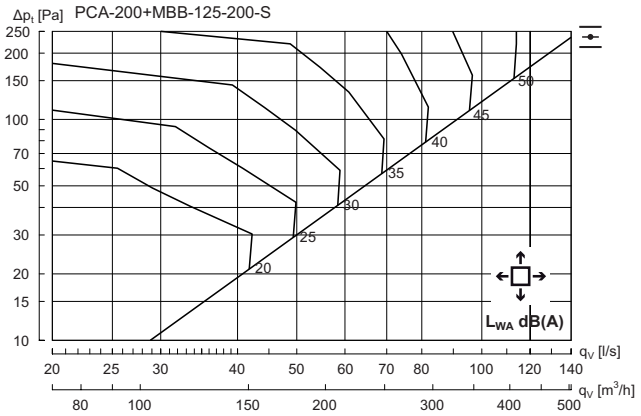
PCA 200 + MBB-S - Supply air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	5	-3	-3	-3	-11	-22	-29

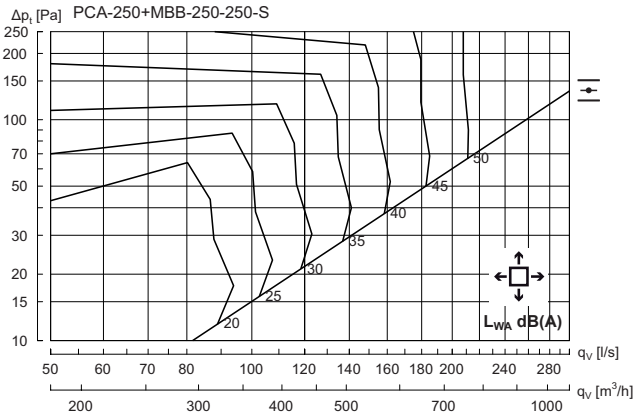


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	10	5	-2	-4	-3	-10	-20	-26

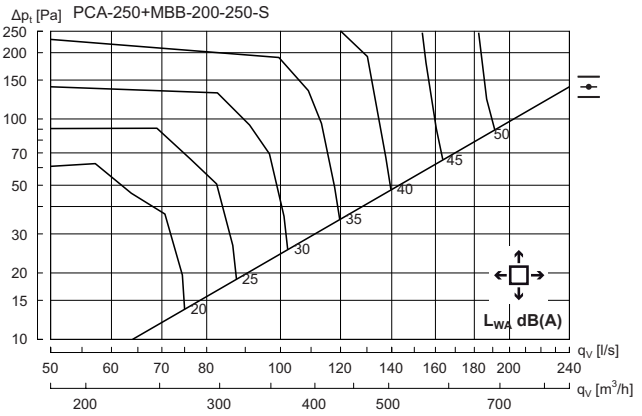


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	10	5	1	-4	-5	-10	-15	-22

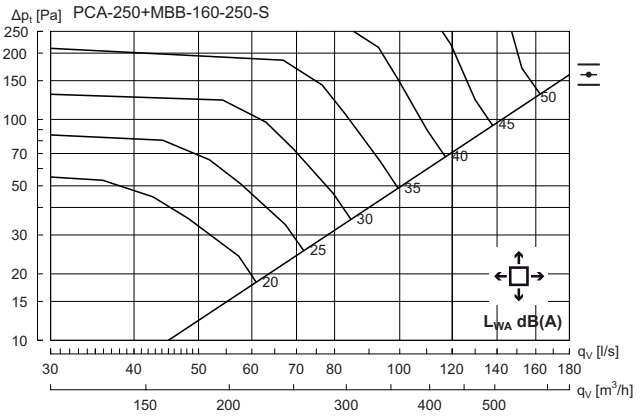
PCA 250 + MBB-S - Supply air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	3	-4	-3	-3	-12	-22	-30



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	10	5	-2	-3	-3	-11	-20	-28

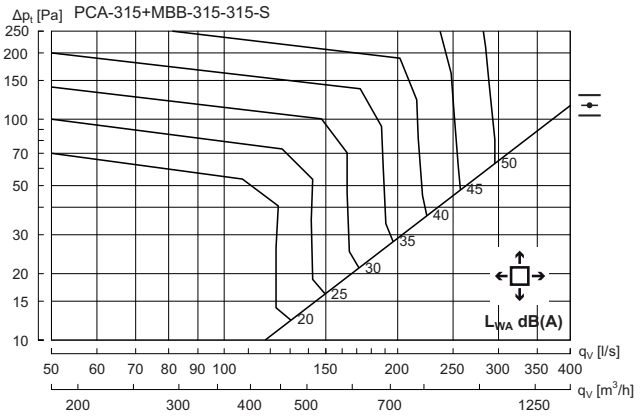


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	8	5	0	-4	-4	-10	-17	-23

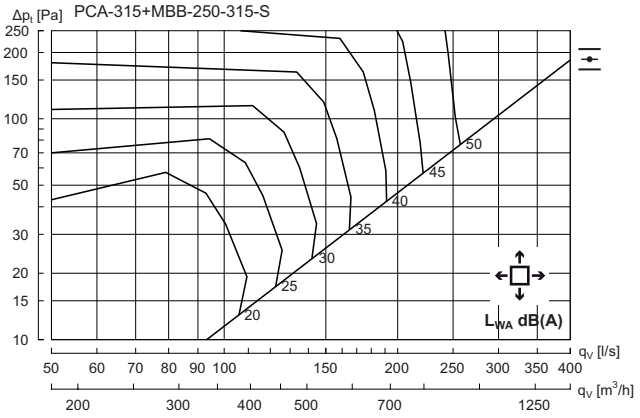
Formo - Perforated diffuser PCA

Technical data

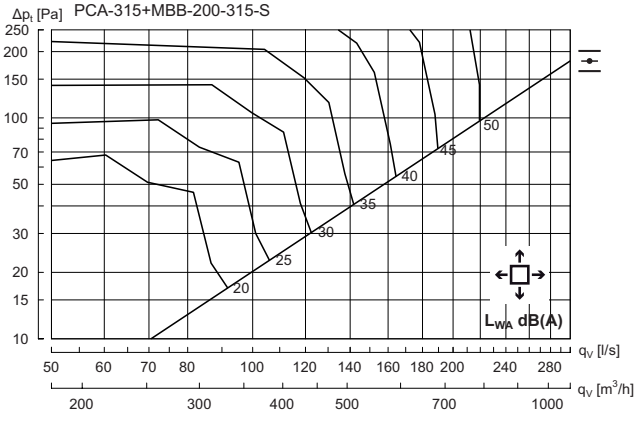
PCA 315 + MBB-S - Supply air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	2	-3	-2	-3	-13	-23	-33

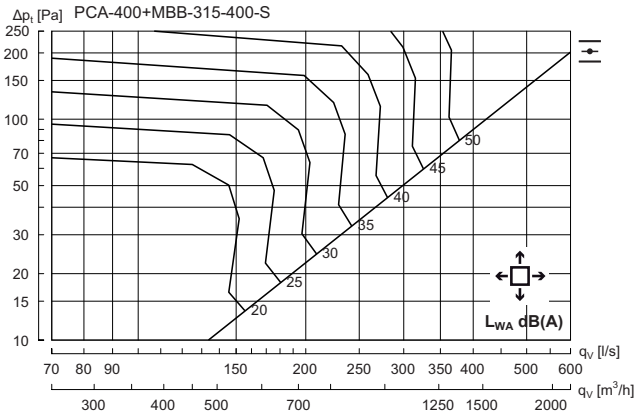


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	3	-2	-3	-4	-11	-18	-27

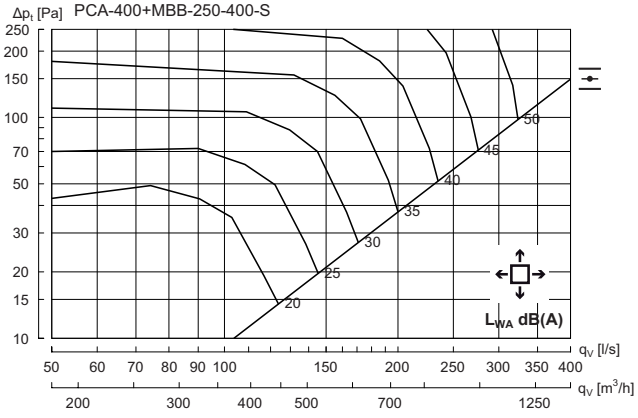


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	10	5	-1	-3	-4	-11	-19	-25

PCA 400 + MBB-S - Supply air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	14	2	0	-2	-5	-13	-17	-26



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	10	4	0	-2	-4	-11	-17	-24

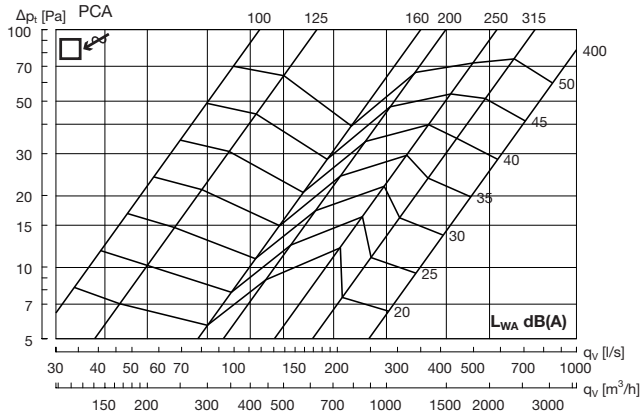
Correction sound power level (L_{WA}) and pressure loss (ΔP_t).

PCA + MBB-S		1 - ways		2 - ways		3 - ways	
Duct	PCA						
$Ød_1$	$Ød_2$	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t
100	100	+ 10	x 1.35	+ 6	x 1.1	+ 4	x 1.05
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	+ 13	x 1.8	+ 6	x 1.3	+ 2	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

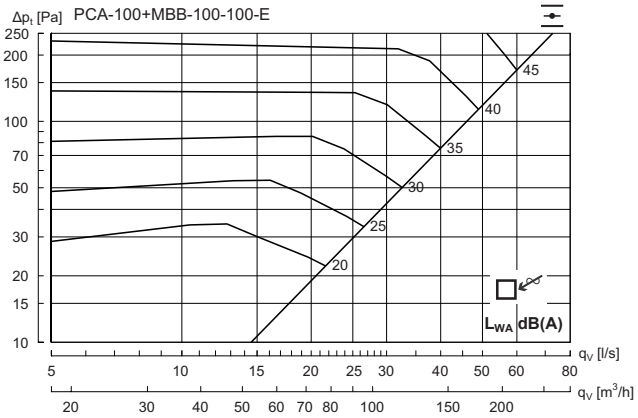
Formo - Perforated diffuser PCA

Technical data

PCA without box - Extract air



PCA 100 + MBB-E - Extract air

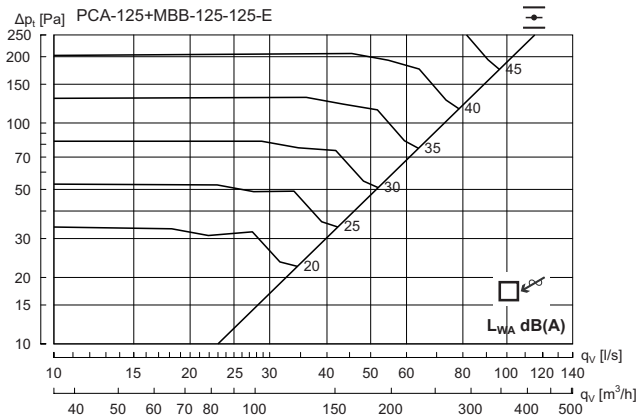


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	0	3	-3	-6	-10	-15	-22

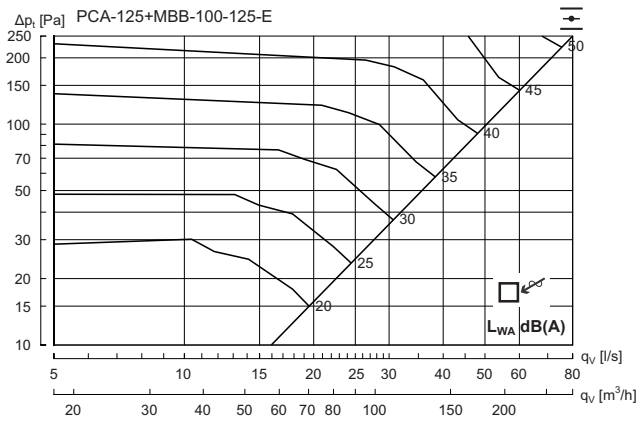
Formo - Perforated diffuser PCA

Technical data

PCA 125 + MBB-E - Extract air

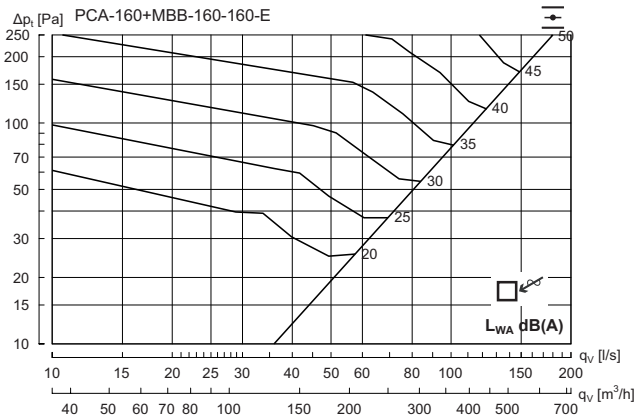


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	5	-1	-4	-4	-11	-15	-20

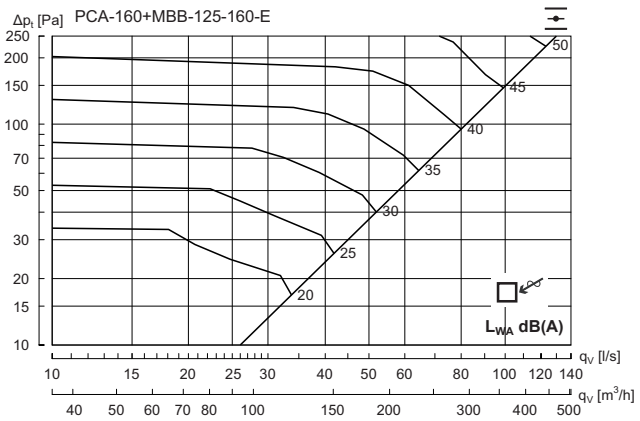


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	-1	3	-3	-6	-10	-16	-19

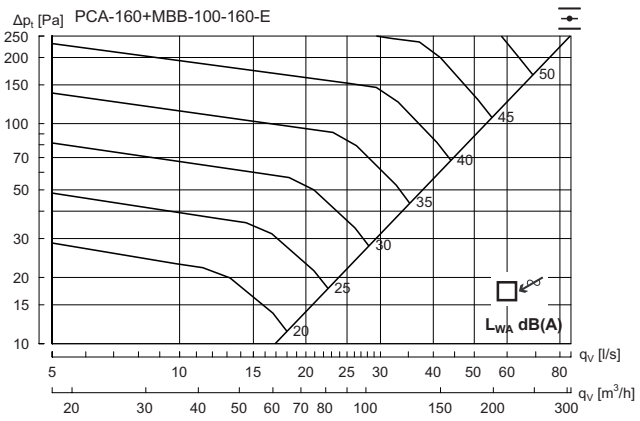
PCA 160 + MBB-E - Extract air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	16	6	-1	-5	-4	-10	-15	-19



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	5	0	-3	-5	-11	-15	-22

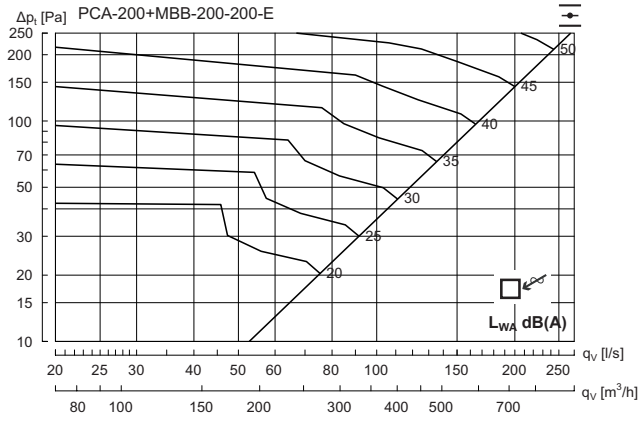


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	10	-1	5	-3	-8	-11	-18	-25

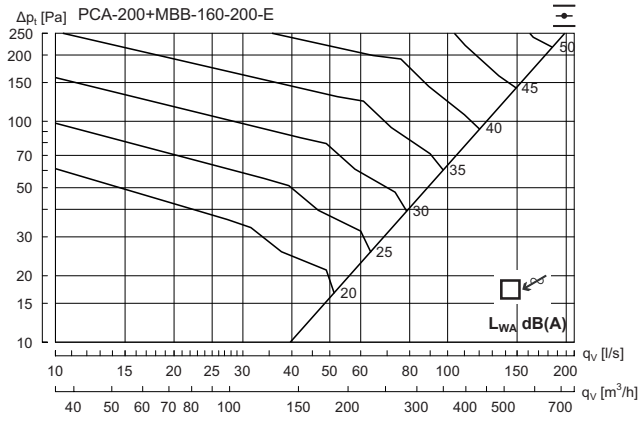
Formo - Perforated diffuser PCA

Technical data

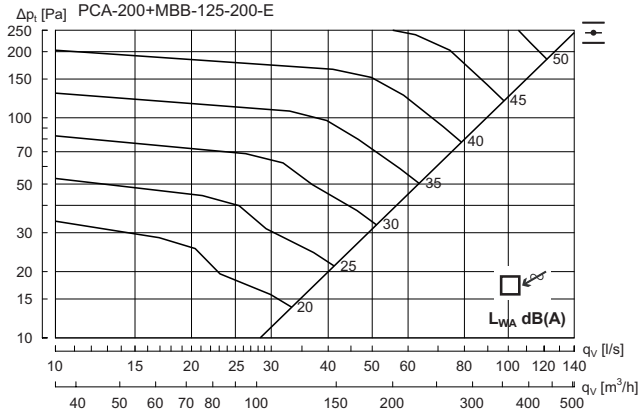
PCA 200 + MBB-E - Extract air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	15	4	-1	-4	-5	-9	-16	-25

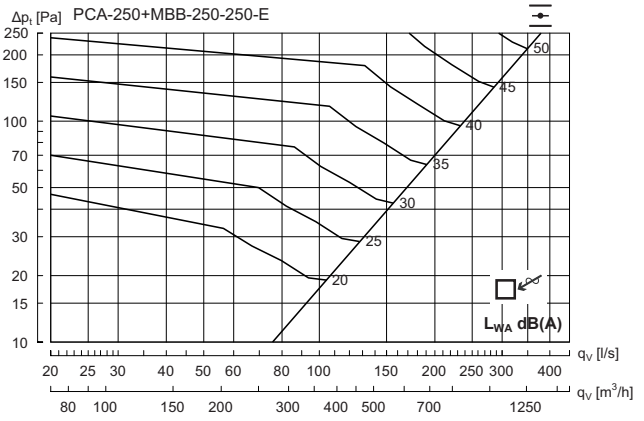


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	15	6	-1	-5	-5	-9	-14	-20

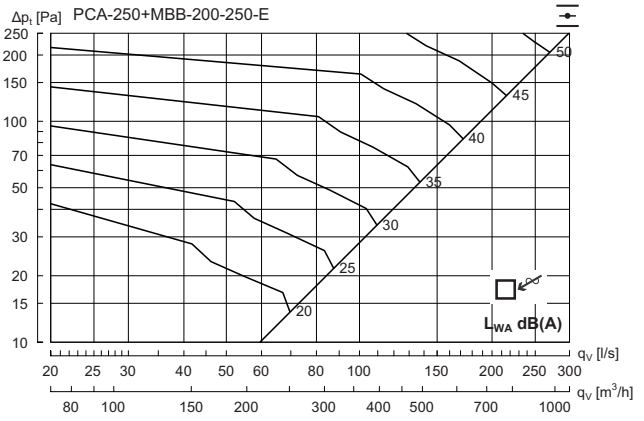


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	9	3	1	-4	-5	-10	-14	-21

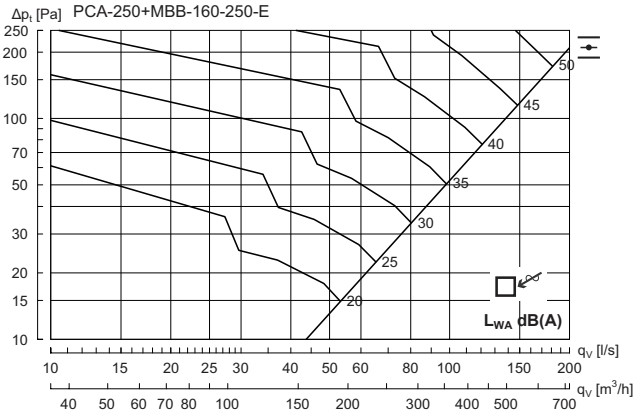
PCA 250 + MBB-E - Extract air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	10	5	2	-3	-5	-11	-16	-25



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	5	0	-3	-5	-10	-14	-23

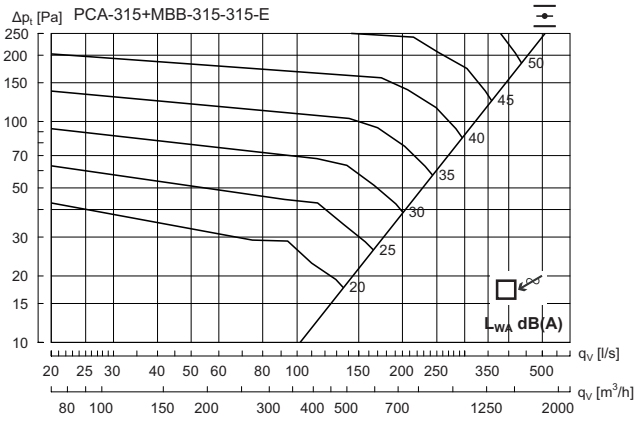


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	16	6	0	-5	-5	-9	-15	-21

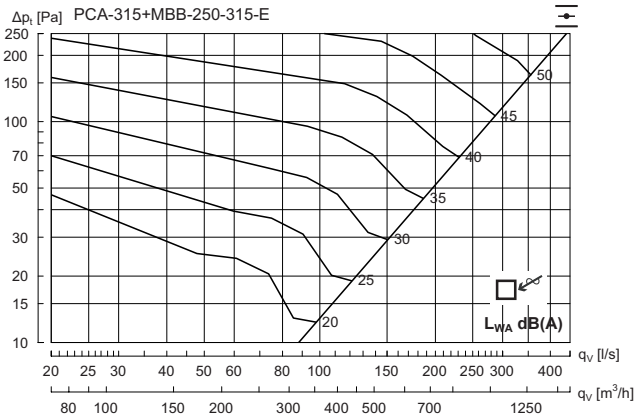
Formo - Perforated diffuser PCA

Technical data

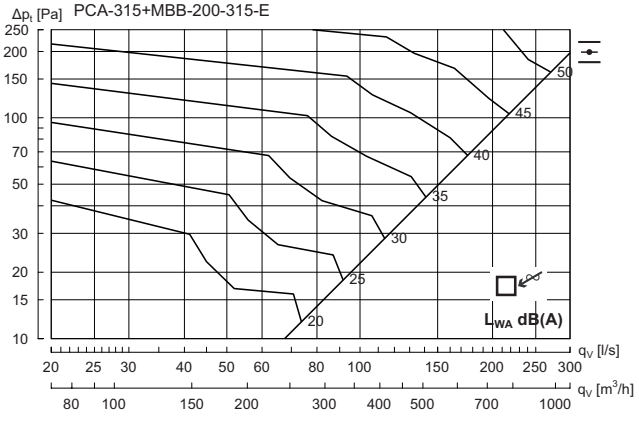
PCA 315 + MBB-E - Extract air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	5	3	-4	-6	-10	-16	-26

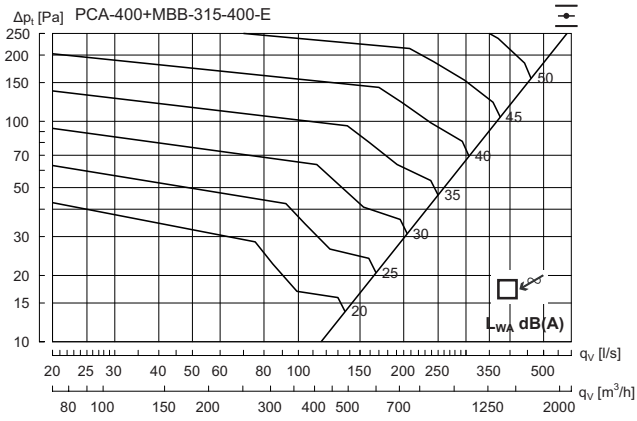


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	7	5	2	-3	-6	-10	-16	-24

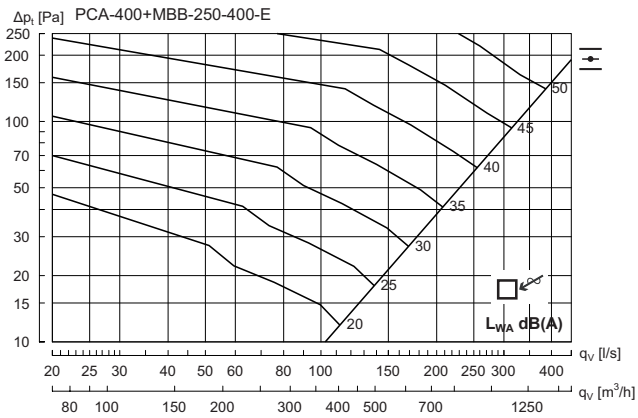


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	5	0	-3	-5	-9	-15	-23

PCA 400 + MBB-E - Extract air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	10	4	2	-3	-6	-9	-14	-25



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

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