Swirl diffuser RC15

Description

RC15 is a circular swirl diffuser with adjustable bars. The diffuser can be used for both supply and extract air. The swirl pattern ensures high induction and a large dynamic range, and is therefore ideal for the horizontal supply of very cold air.
The diffuser can also be set to a vertical supply air pattern, enabling supply of heated air.
Installing a RC15 diffuser in a plenum box type MB can help to achieve a stable flow of air 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

- Large dynamic range
- High induction
- Suitable for cooling at very low temperatures
- Horizontal or vertical supply air pattern
- Can be used for both supply air and extract
- Plenum box with several damper options

Maintenance

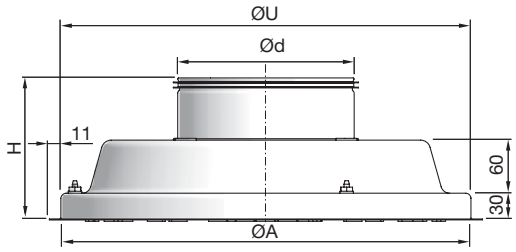
The face plate and swirl insert can be removed to enable cleaning of internal parts or to gain access to the duct or box. The visible parts of the diffuser can be wiped with a damp cloth.

Order code

Product	**RC15**	**a**	**bbb**
Type			
RC15			
Functional use			
S = Supply air			
E = Extract (Without bars)			
Connection dim.			
Ød 160-315			

Example: RC15-S-160

Dimensions



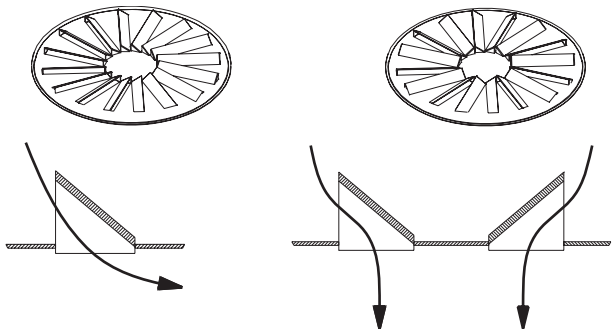
RC15 Ød	ØA	H	ØU*	m
mm	mm	mm	mm	kg
160	360	140	370	5.30
200	360	140	370	5.40
250	460	140	470	7.40
315	540	140	550	8.10

* ØU = ceiling grid opening

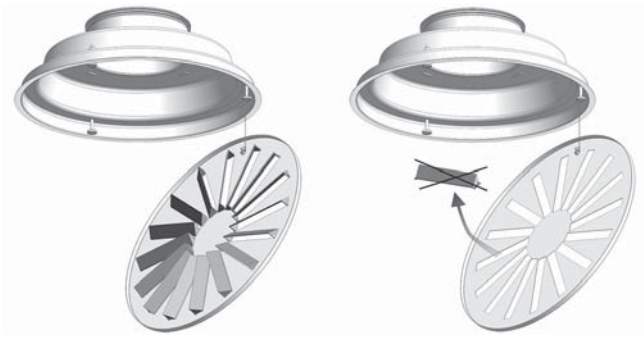
Ød 315, No mounting holes for MB !

Bar settings

Horizontal **Vertical**



RC15-S **RC15-E**



Materials and finish

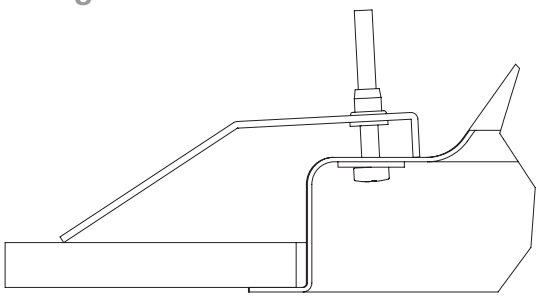
Material:	Galvanised steel
Standard finish:	Powder-coated
Standard colours:	RAL 9003 and RAL 9010, gloss 30
Bars (Only RC15-S):	Black ABS plastic

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

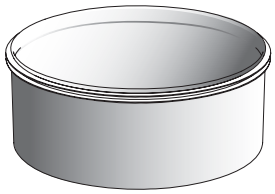
Swirl diffuser RC15

Accessories

Mounting brackets DCZ



Extension piece MBZ

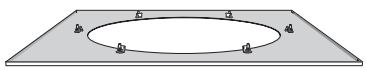


Order code - accessories

Product	aaa	bbb
Type		
Size		

Example: DCZ-160

Module plate LM

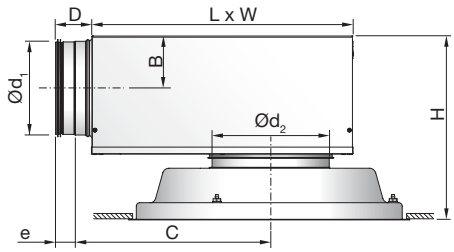


Order code - module plate

Product	LM	a	RC15	ccc
Type				
Ceiling system				
Diffuser				
Size				

Example: LM-1-RC15-160
Ceiling system - see introductory summary

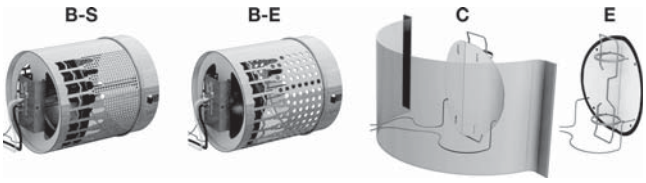
RC15 + MB plenum box



Ød1	Ød2	B	C	D	e	H*	L	W
mm		mm						
100	160	62	245	78	40	250 - 290	310	260
125	160	75	291	78	40	275 - 315	376	310
125	200	75	291	78	40	275 - 315	376	310
160	160	92	352	78	40	309 - 349	459	380
160	200	92	352	78	40	309 - 349	459	380
160	250	92	352	78	40	309 - 349	459	380
200	200	112	425	78	40	350 - 390	565	460
200	250	112	425	78	40	350 - 390	565	460
200	315	112	425	78	40	350 - 390	565	460
250	250	137	514	118	60	400 - 440	698	540
250	315	137	514	118	60	400 - 440	698	540
315	315	170	675	118	60	465 - 505	858	540

* Using accessory MBZ the H dimension will increase:
$Ød_2$ = 160 - 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 $Ød_2$					
Ø160-315					
Function (Only for B damper)					
S = Supply air E = Extract					

Example 1: RC15-S-250+MBB-200-250-S
Example 2: RC15-200+MBC-125-200

Swirl diffuser RC15

Technical data

Following RC15+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 [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

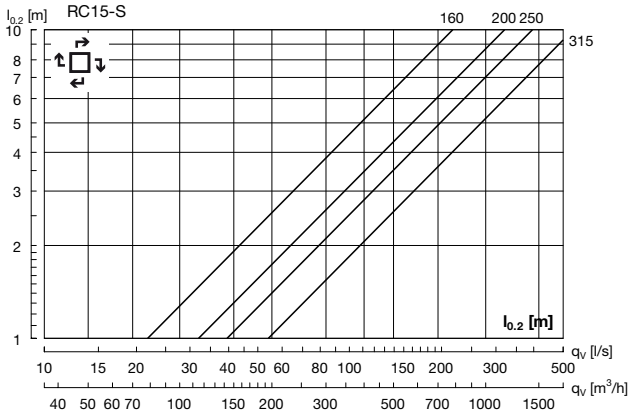
The sound power level in the frequency band is defined as $L_{WA}+K_{ok}$. K_{ok} values are specified in charts beneath the diagrams on the following pages.

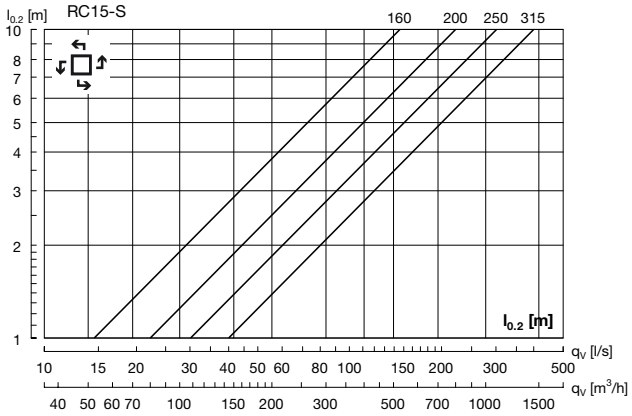
Quick selection, supply air

RC15 + MBB-S		$\Delta p_t \geq 50$ Pa		$\Delta p_t \geq 50$ Pa	
duct	RC15	30 dB(A)		35 dB(A)	
$Ød_1$	$Ød_2$	l/s	m^3/h	l/s	m^3/h
100	160	36	130	44	158
125	160	44	158	54	194
125	200	49	176	59	212
160	160	47	169	56	202
160	200	54	194	64	230
160	250	69	248	90	324
200	200	56	202	66	238
200	250	82	295	99	356
200	315	101	364	125	450
250	250	90	324	106	382
250	315	113	407	137	493
315	315	138	497	163	587

Throw $l_{0.2}$

Throw $l_{0.2}$ [m] is specified at a terminal velocity of 0.2 m/s.





Sound attenuation

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

RC15 + MBB-S/-E									
duct	RC15	Centre frequency Hz							
$Ød_1$	$Ød_2$	63	125	250	500	1K	2K	4K	8K
100	160	17	15	5	12	19	20	20	21
125	160	16	14	8	18	18	20	20	21
125	200	11	12	6	14	14	19	18	19
160	160	16	15	11	22	20	22	21	21
160	200	16	15	9	22	19	21	20	21
160	250	18	14	4	17	14	16	18	19
200	200	13	12	8	17	20	19	21	18
200	250	12	9	6	14	19	16	18	17
200	315	11	8	4	10	17	16	19	17
250	250	13	8	7	15	19	19	18	18
250	315	12	8	6	14	17	17	18	18
315	315	8	9	9	14	18	18	18	23

Balancing

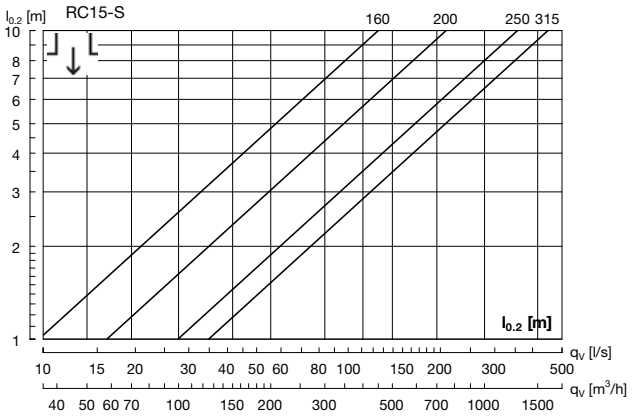
Balancing data is contained in a separate brochure.

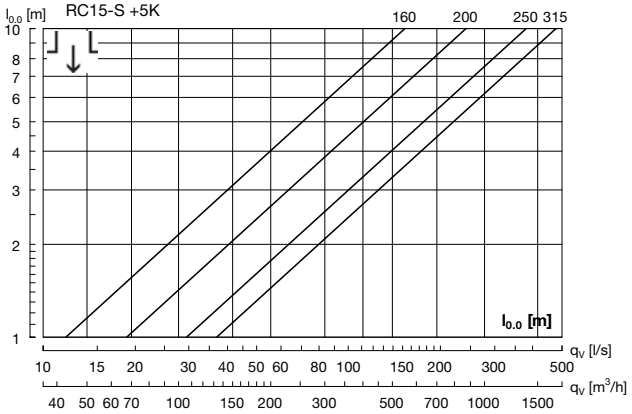
Swirl diffuser RC15

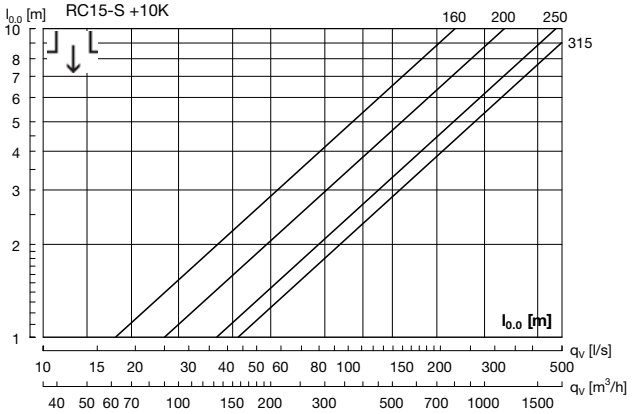
Technical data

Throws/Turning points

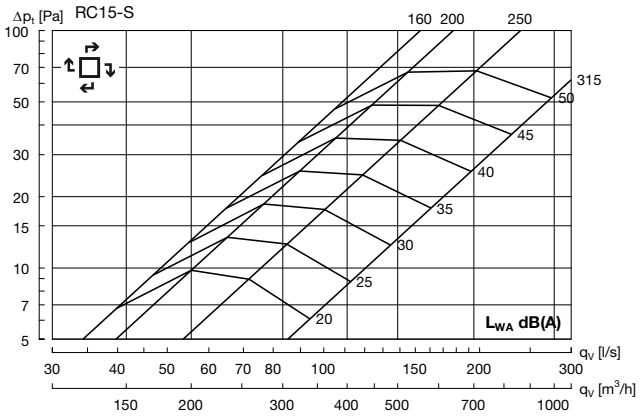
Throw $l_{0.2}$ [m] is specified at a terminal velocity of 0.2 m/s. Turning point $l_{0.0}$ [m] is specified for +5 K and +10 K respectively.







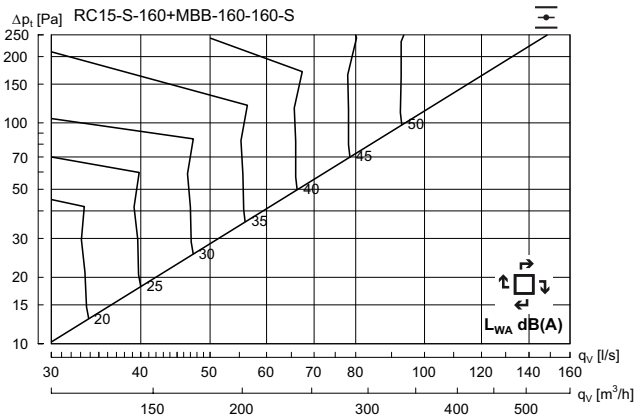
RC15 without box – supply air



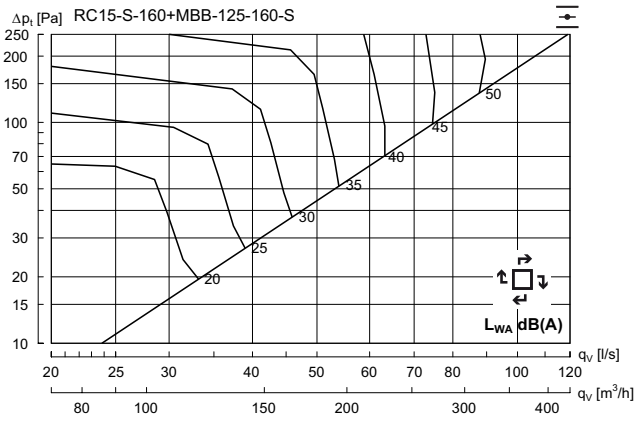
Swirl diffuser RC15

Technical data

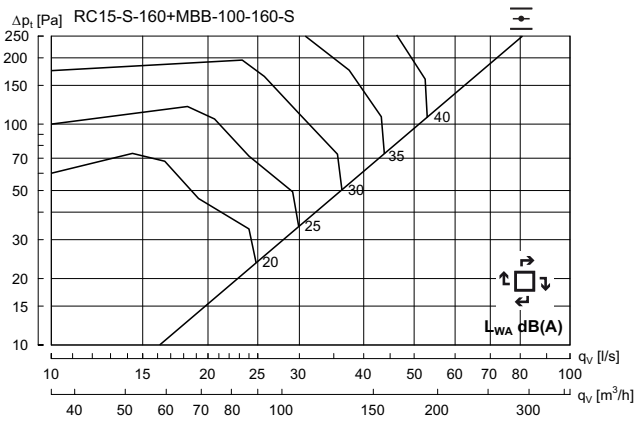
RC15 160 + MBB-S - Supply air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	10	2	-4	0	-5	-17	-23	-31

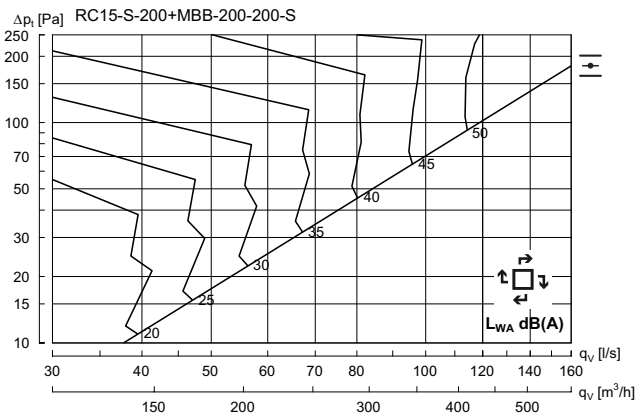


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	10	4	-1	0	-6	-13	-18	-24

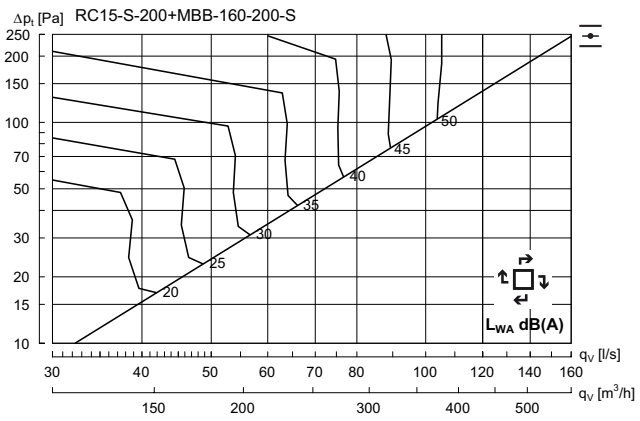


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	4	2	-1	-8	-12	-16	-19

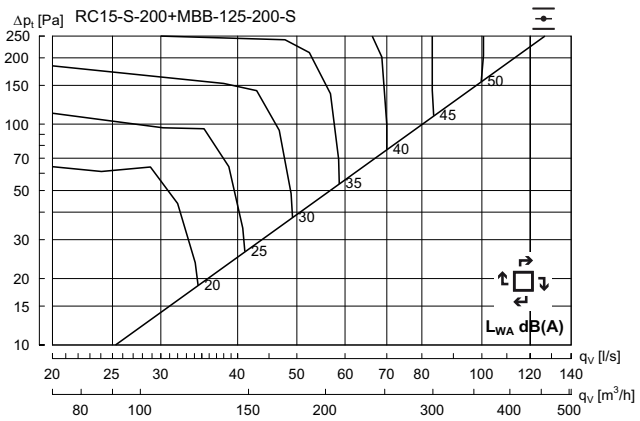
RC15 - 200 + MBB-S - Supply air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	8	3	-4	-1	-4	-15	-22	-31



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	9	3	-1	-2	-4	-14	-21	-29

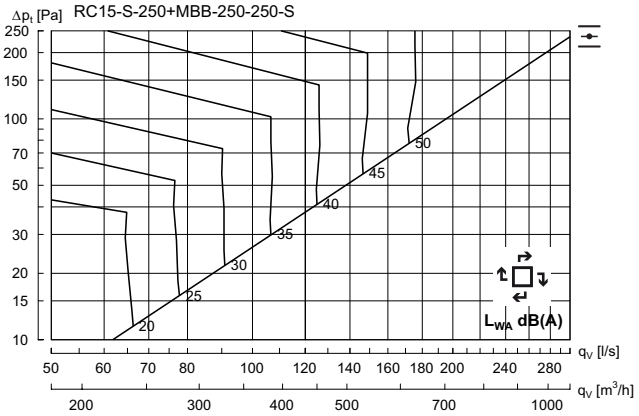


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	7	5	0	-1	-5	-13	-17	-24

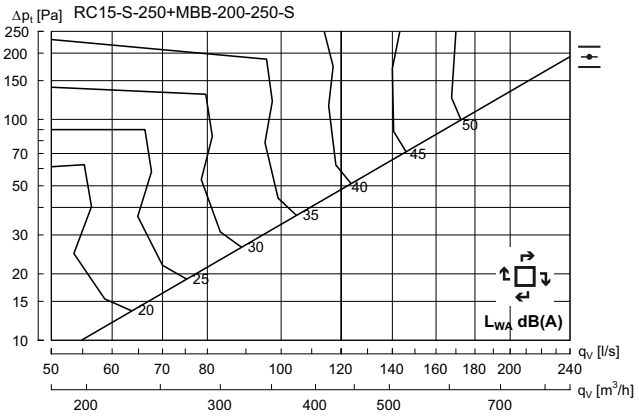
Swirl diffuser RC15

Technical data

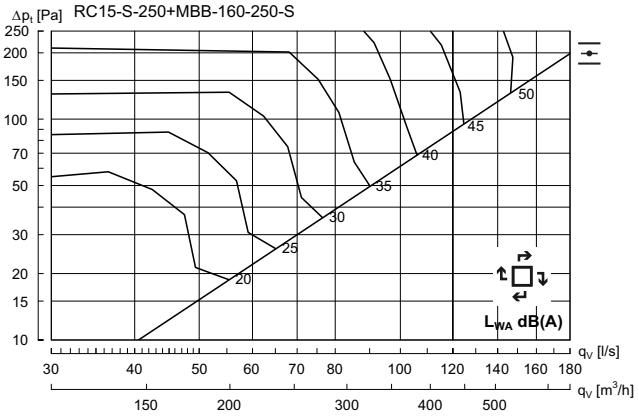
RC15 - 250 + MBB-S - Supply air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	1	-4	0	-4	-16	-24	-20

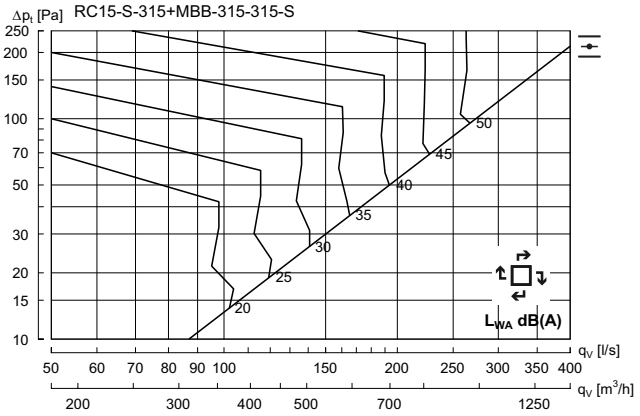


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	10	4	-3	-2	-3	-15	-21	-29

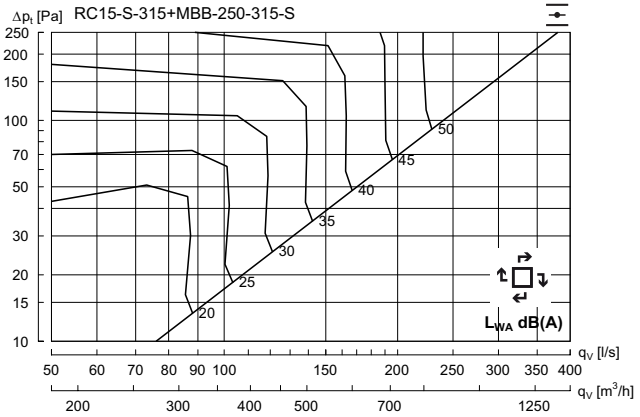


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	15	5	0	-3	-4	-13	-19	-25

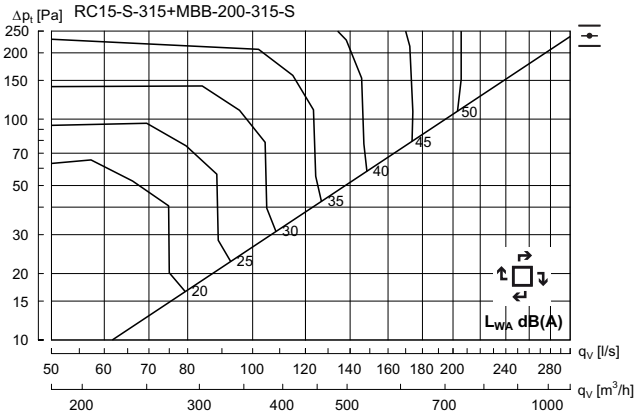
RC15 - 315 + MBB-S - Supply air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	14	3	-2	-2	-4	-13	-22	-31



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	3	-2	-1	-4	-13	-19	-28



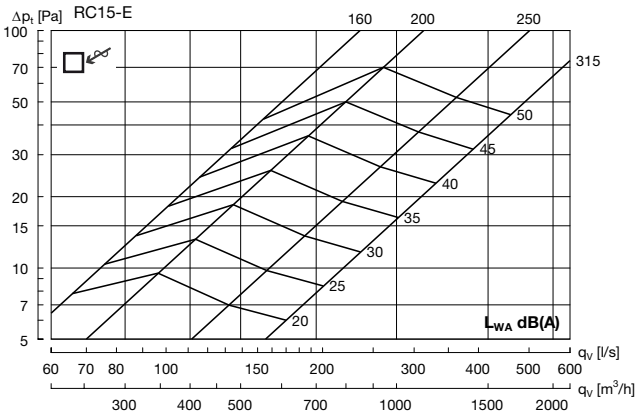
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	9	7	-1	-2	-5	-13	-19	-26

Swirl diffuser

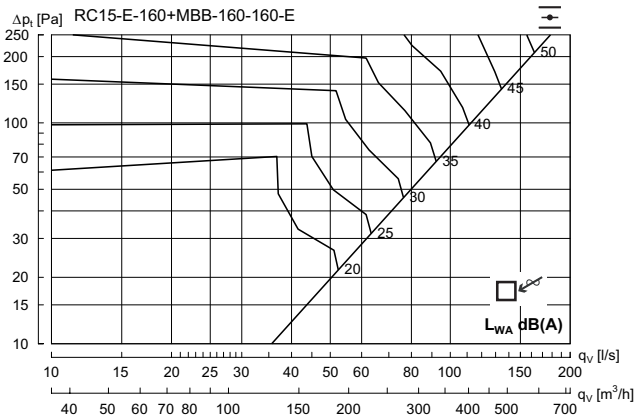
RC15

Technical data

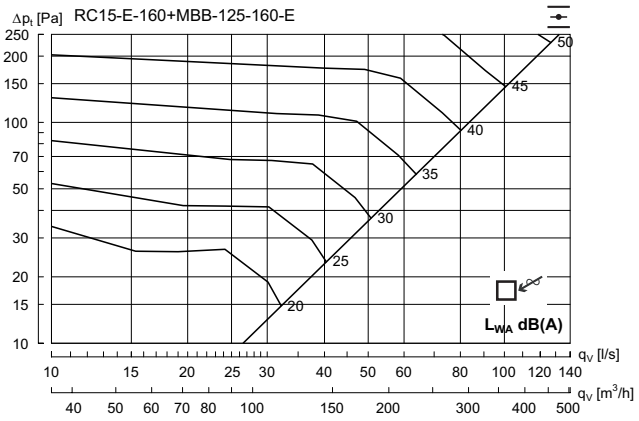
RC15 without box – Extract air



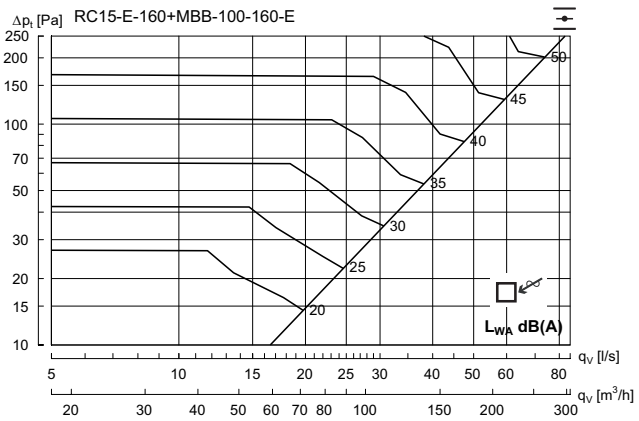
RC15 160 + MBB-E - Extract air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	16	6	0	-3	-6	-11	-16	-21



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	6	1	-2	-7	-12	-14	-22

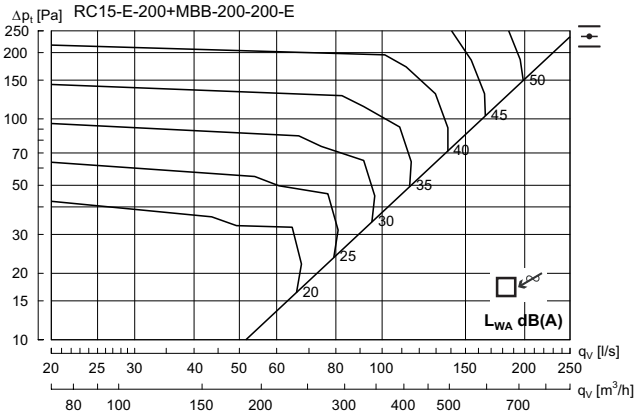


Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	11	4	3	0	-9	-13	-17	-23

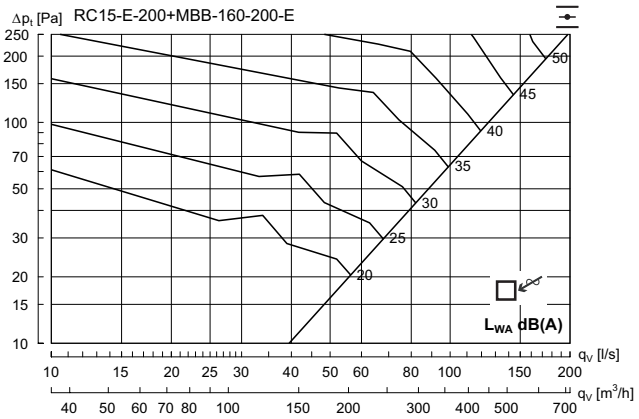
Swirl diffuser RC15

Technical data

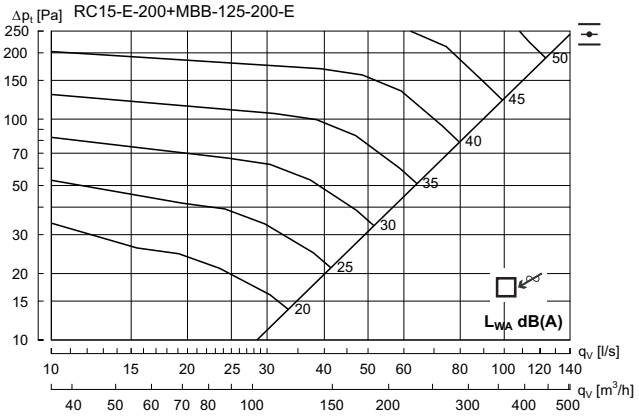
RC15 200 + MBB-E - Extract air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	14	5	0	-2	-5	-11	-16	-24



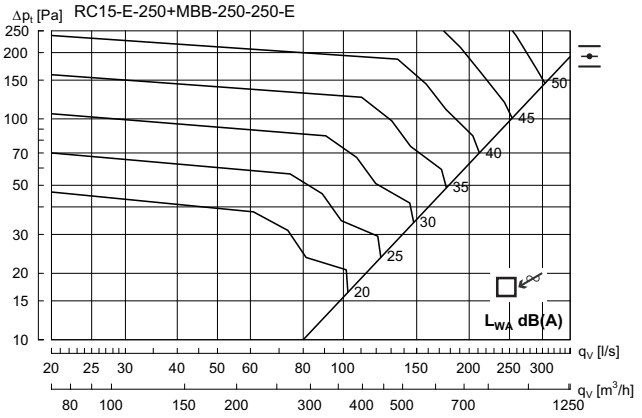
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	17	6	-1	-3	-6	-10	-14	-19



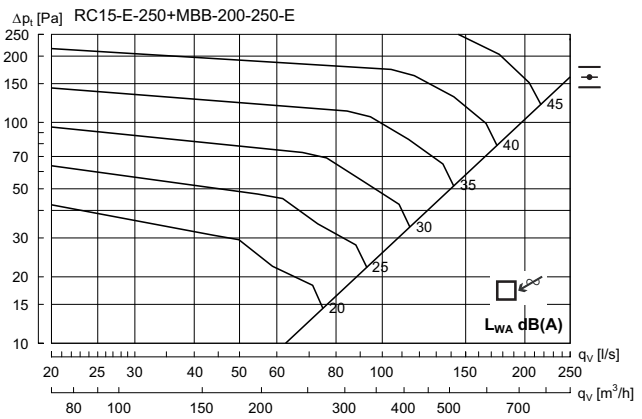
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	14	3	1	-1	-6	-12	-15	-22

Technical data

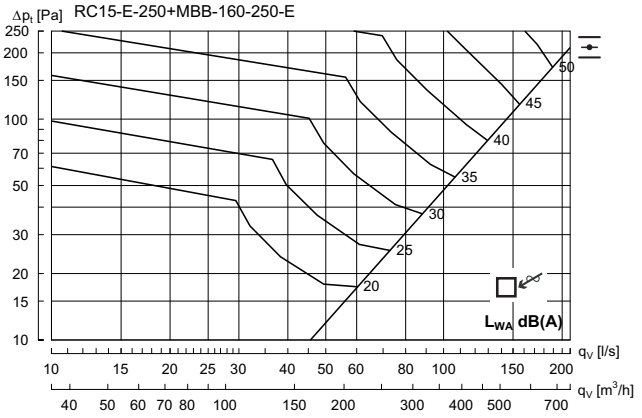
RC15 - 250 + MBB-E - Extract air



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



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	5	0	-3	-6	-10	-14	-23



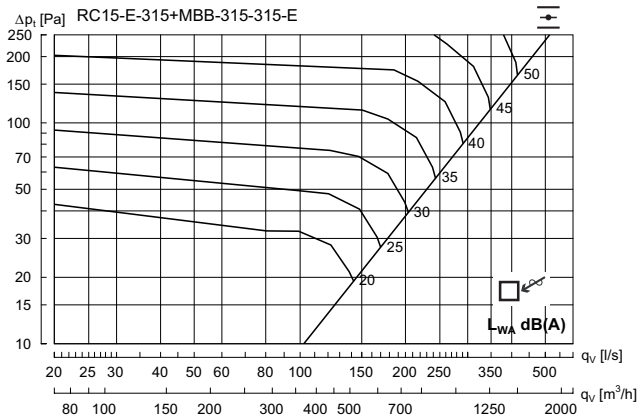
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	13	7	0	-3	-6	-10	-15	-19

Swirl diffuser

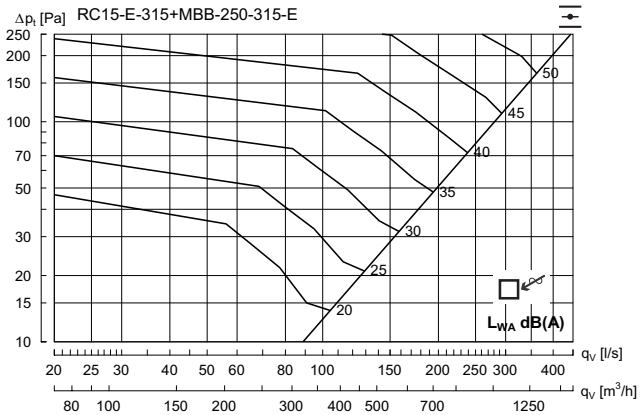
RC15

Technical data

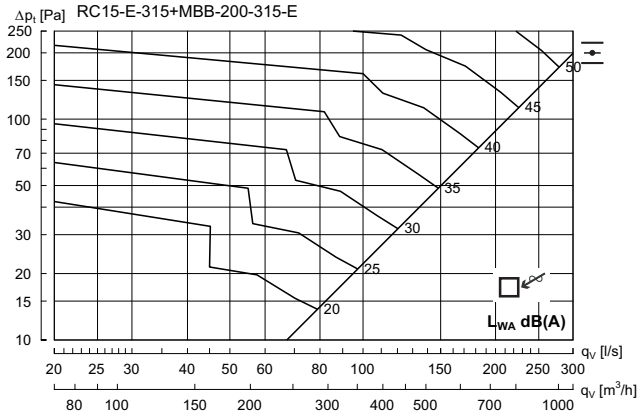
RC15 - 315 + MBB-E - Extract air



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	12	5	3	-3	-6	-11	-16	-25



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	9	5	2	-3	-5	-11	-17	-25



Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	15	5	1	-3	-5	-10	-15	-23