

# VAV diffuser

# PKV



## Description

PKV is a square PKA type diffuser with integrated motor for supply air of variable air volume (VAV). The integrated motorized damper ensures a constant throw so the Coanda effect always is maintained. The damper setting can be controlled by a room regulator, BMS or other 2-10 V control signal.

- Can vary the volume flow between 0-100 %
- Min. flow preset from factory \*)
- Max. flow to be set in MBB box based on k-value
- Settings can be changed with ZTH-GEN or Belimo PC-tool
- VAV zone pressure must be controlled
- The diffuser must be installed together with a MBB-S type plenum box
- For exhaust PKA can be used

\*) Min. setting and k-value are made from a pre-defined, available constant pressure in the air duct immediately before the diffuser. The diffuser is typically used at a constant pressure of 30-50 Pa.

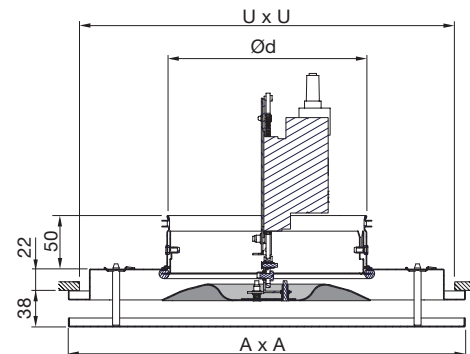
## Order code

Product	PKV	aaa	bb	cc	dd
Type	PKV				
Dimension		Ø160-315			
Flow settings			Min. airflow		
			Max. airflow		
			Pressure		

Example: PKV-200- 15 l/s - 60 l/s - 40 Pa

When ordering, MBB plenum type must be specified.

## Dimensions



PKV Ød	A	U *	Weight ( kg )
mm	mm	mm	(with Motor)
160	295	260	3,3
200	395	360	4,3
250	495	460	5,7
315	595	560	7,2

\* U x U = Ceiling grid opening

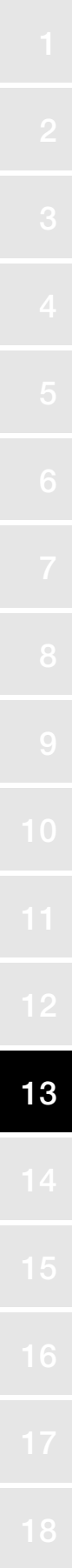
## Maintenance

The face plate and damper 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.

## Materials and finish

Diffuser:	Galvanised steel
Diffuser finish:	Powder-coated
Standard colour:	RAL 9010, gloss 30
Motor:	Manufact. Belimo type LH24A-MF

Other colours are available. Please contact Lindab's sales department for further information.



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## Accessories

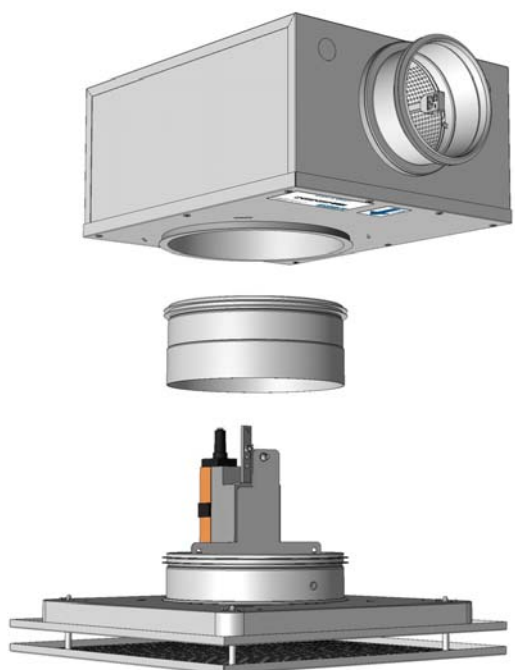
### MBZ - Extension piece



### Order code MBZ

<b>Product</b>	<b>MBZ</b>	<b>aaa</b>
<b>Type</b>	MBZ	
<b>Dimension</b>	Ø160-315	

Example: MBZ-200



When PKV is used with small MBB plenums:

**For the following MBB sizes, the MBZ extension piece must be used to ensure full movement of motor-rack.**

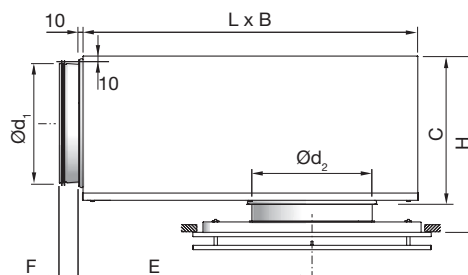
- Size: MBB-100-160-S  
 MBB-125-160-S  
 MBB-125-200-S

For other PKV accessories, see the section on Formo ceiling diffusers, PKA accessories.

## MBB - Plenum box



### PKV+MBB-S



PKV + MBB		B mm	C mm	E mm	F mm	H* mm	L mm
duct Ød <sub>1</sub> mm	PKV Ød <sub>2</sub> mm						
100	160	260	159	216	50	180-220	310
125	160	310	184	262	50	205-245	376
125	200	310	184	262	50	205-245	376
160	160	380	220	323	50	239-279	459
160	200	380	220	323	50	239-279	459
160	250	380	220	323	50	239-279	459
200	200	460	259	396	70	280-320	565
200	250	460	259	396	70	280-320	565
200	315	460	259	396	70	280-320	565
250	250	540	309	486	70	330-370	698
250	315	540	309	486	70	330-370	698
315	315	540	373	646	70	395-435	858

\* Using accessory MBZ the H dimension will increase:

Ød<sub>2</sub> = 160 - 200 mm => H + 40 mm

Ød<sub>2</sub> = 250 - 315 mm => H + 60 mm

### Order code

<b>Product</b>	<b>MBB</b>	<b>aaa</b>	<b>bbb</b>	<b>S</b>
<b>Type</b>	MBB			
<b>Duct connection Ød<sub>1</sub></b>	Ø100-315			
<b>Diffuser dimension Ød<sub>2</sub></b>	Ø160-315			
<b>Function</b>	S = Supply air			

Example: MBB-160-200-S

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## Technical data

Diagrams on this page apply to PKV supply. For exhaust air and supplementary technical exhaust data, see the section on Forno ceiling diffusers.

### Capacity

Max. volume flow  $q_v$  [l/s], [m<sup>3</sup>/h], total pressure drop  $\Delta p_t$  [Pa], throw  $l_{02}$  [m] and sound effect level  $L_{WA}$  [dB(A)] can be seen in the diagrams.

### Quick selection, supply air

#### Quick selection 30 dB(A)

PKV + MBB		30 dB(A)					
duct Ød <sub>1</sub>	PKV Ød <sub>2</sub>	30 Pa q <sub>v</sub>		35 Pa q <sub>v</sub>		40 Pa q <sub>v</sub>	
		l/s	m <sup>3</sup> /h	l/s	m <sup>3</sup> /h	l/s	m <sup>3</sup> /h
100	160	28	100	28	100	29	104
125	160	37	133	37	133	37	133
125	200	45	162	48	172	49	176
160	160	42	151	42	151	42	151
160	200	64	230	62	223	62	223
160	250	73	262	73	262	73	262
200	200	67	241	66	237	65	234
200	250	85	306	84	302	83	298
200	315	99	356	100	360	99	356
250	250	91	327	91	327	91	327
250	315	112	403	112	403	112	403
315	315	115	414	112	403	110	396

#### Quick selection 35 dB(A)

PKV + MBB		35 dB(A)					
duct Ød <sub>1</sub>	PKV Ød <sub>2</sub>	30 Pa q <sub>v</sub>		35 Pa q <sub>v</sub>		40 Pa q <sub>v</sub>	
		l/s	m <sup>3</sup> /h	l/s	m <sup>3</sup> /h	l/s	m <sup>3</sup> /h
100	160	28	100	30	108	32	115
125	160	39	140	42	151	43	154
125	200	45	162	49	176	52	187
160	160	48	172	49	176	49	176
160	200	64	230	70	252	75	270
160	250	73	262	79	284	84	302
200	200	75	270	78	280	78	280
200	250	95	342	97	349	98	352
200	315	108	388	115	414	116	417
250	250	104	374	104	374	105	378
250	315	126	453	128	460	129	464
315	315	139	500	137	493	135	486

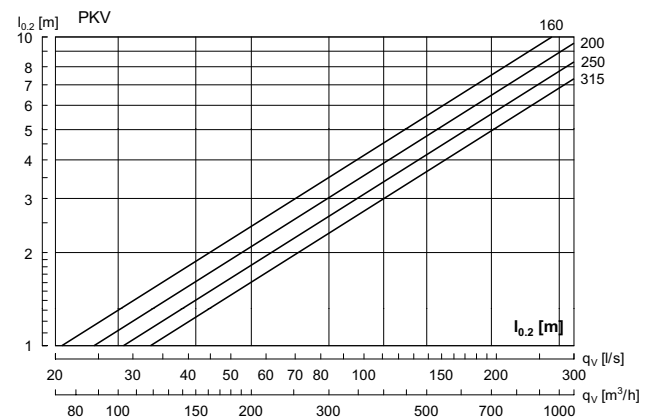
## Sound attenuation

Sound attenuation of the diffuser  $\Delta L$  from duct to room, including end reflection, see table below.

PKV + MBB		Centre frequency Hz							
duct Ød <sub>1</sub>	PKV Ød <sub>2</sub>	63	125	250	500	1K	2K	4K	8K
		100	160	12	13	8	19	13	16
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
315	315	7	9	8	14	17	16	17	21

## Throw

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



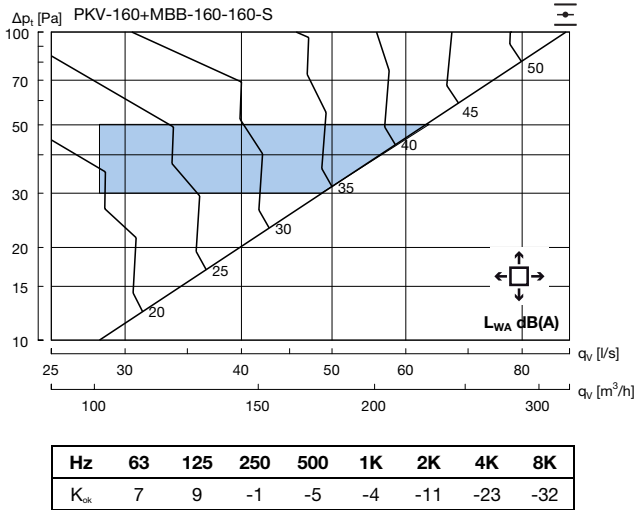
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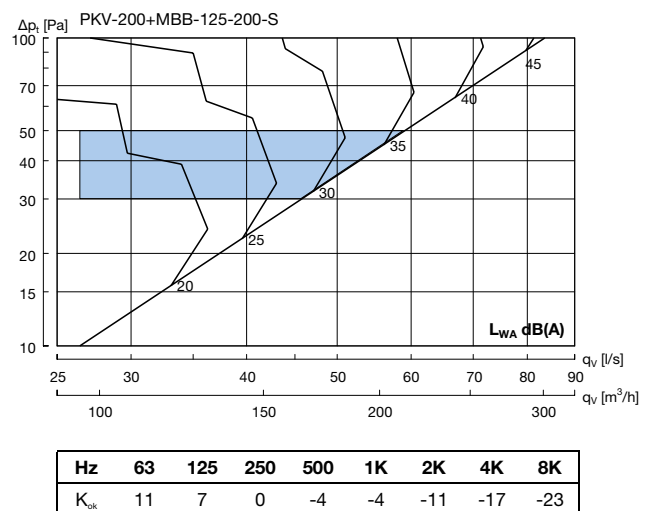
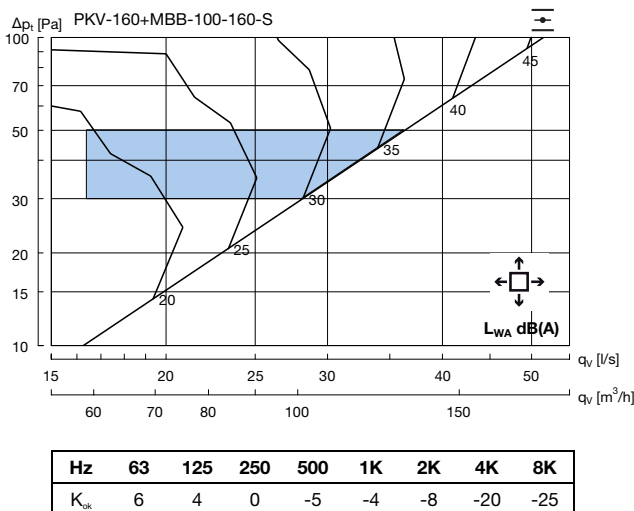
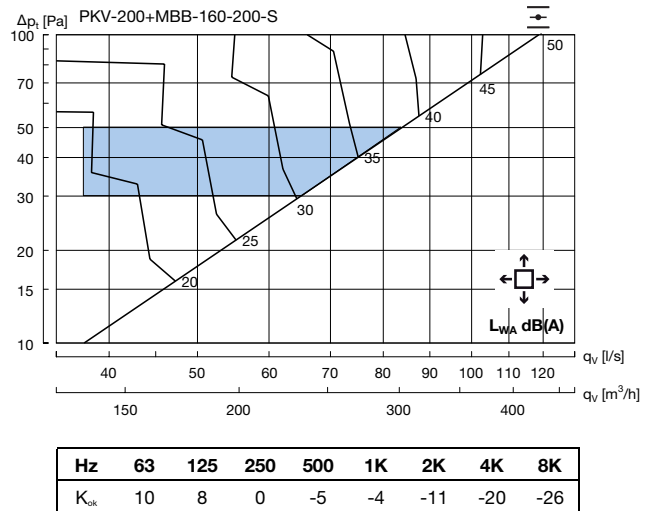
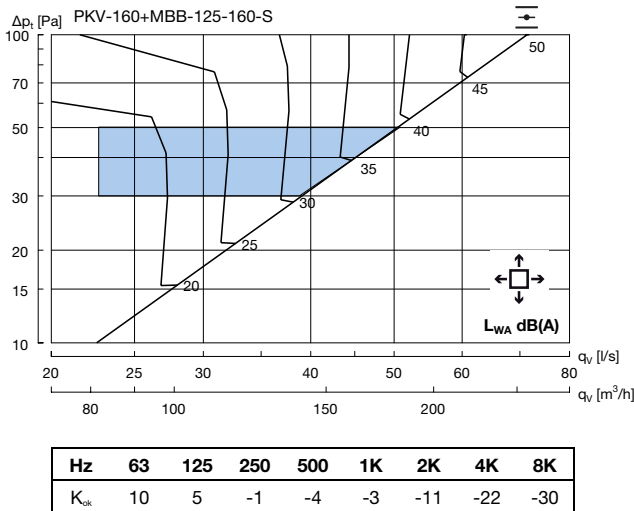
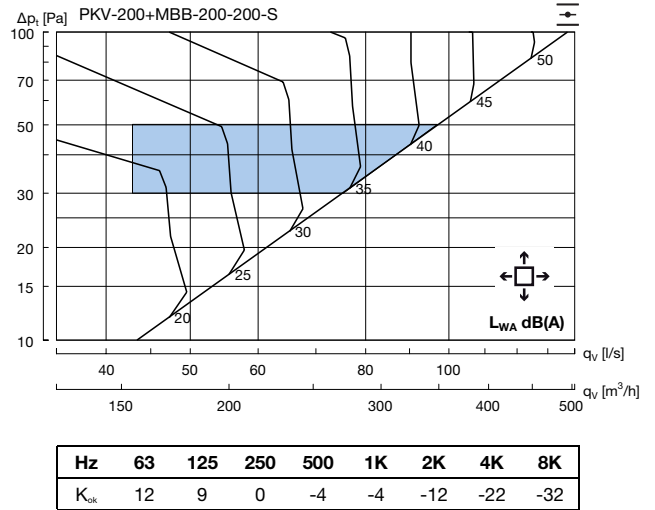
## Technical data

 Setting range for max. volume flow.

### PKV-160 + MBB - Supply air



### PKV-200 + MBB - Supply air



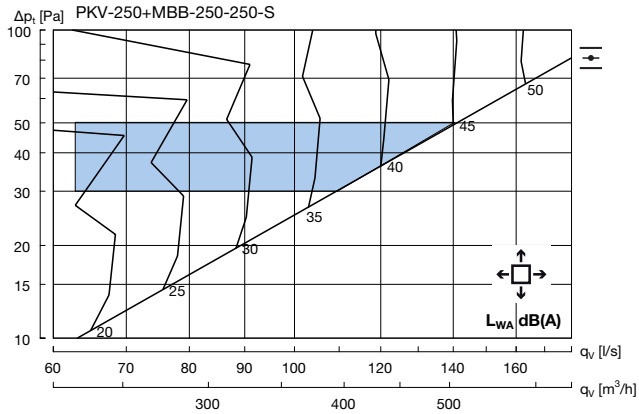
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## Technical data

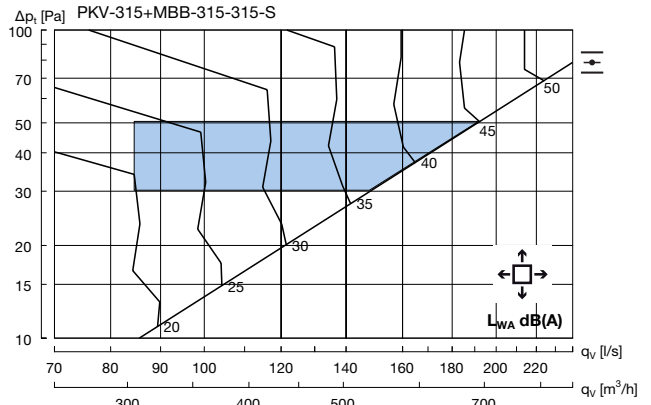
 Setting range for max. volume flow.

### PKV-250 + MBB - Supply air

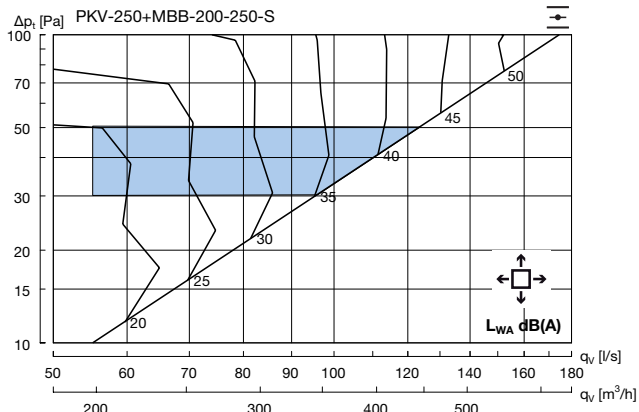


Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	10	6	-2	-3	-4	-11	-23	-31

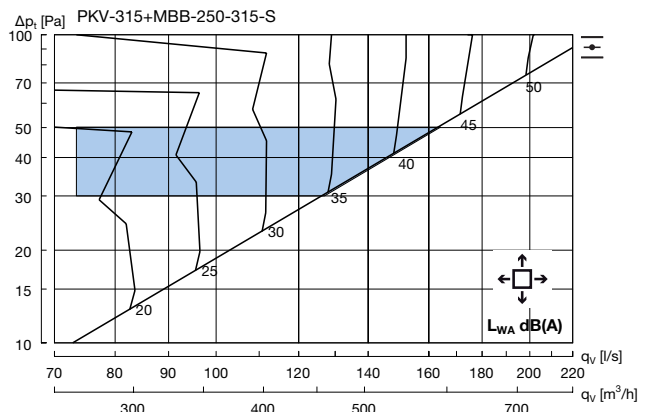
### PKV-315 + MBB - Supply air



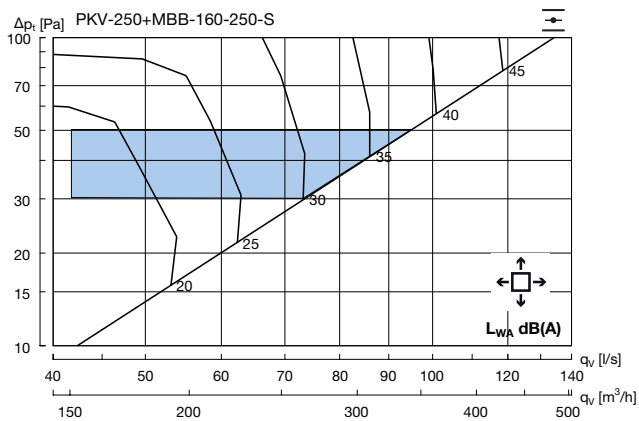
Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	10	4	-2	-2	-4	-11	-23	-32



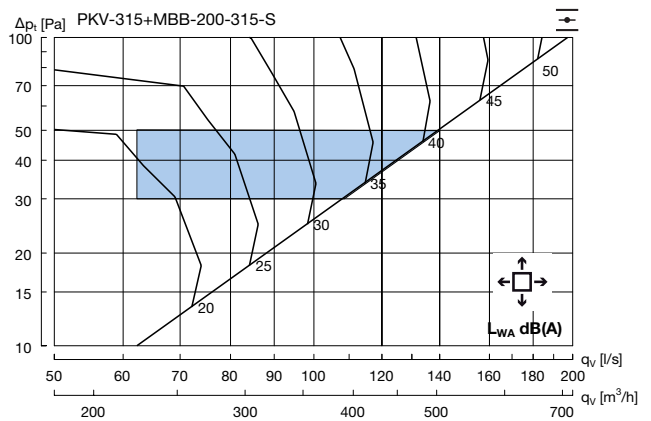
Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	11	8	-2	-3	-4	-11	-22	-29



Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	13	7	-2	-2	-4	-12	-22	-30



Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	9	7	-1	-4	-4	-11	-18	-22



Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	12	9	-2	-4	-5	-10	-18	-26

