

# VAV diffuser

# LKPV



## Description

LKPV is an unperforated flush-mounted LKP 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 LKP can be used

\*) Min. settings 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.

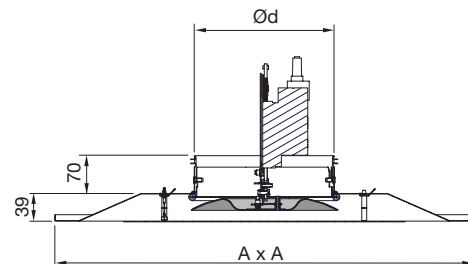
## Order code

Product	LKPV	aaa	bbb	cc	dd	ee
Type	LKPV					
Dimension		Ø160-315				
Flow settings						
Min. airflow						
Max. airflow						
Pressure						
Ceiling system						
						1 - 14

Example: LKPV-200 - 15 l/s - 60 l/s - 40 Pa -1

When ordering, MBB plenum type must be specified.

## Dimensions



LKPV Ød mm	A * mm	Weight ( kg ) (with Motor)
160	595	6,8
200	595	6,8
250	595	6,8
315	595	6,8

\* Ceiling system 1, other ceiling systems, see Integra chapter page 122 - 123.

No moduleplate, upper part adapted to ceiling systems.

## 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.



# VAV diffuser

# LKPV

## Accessories

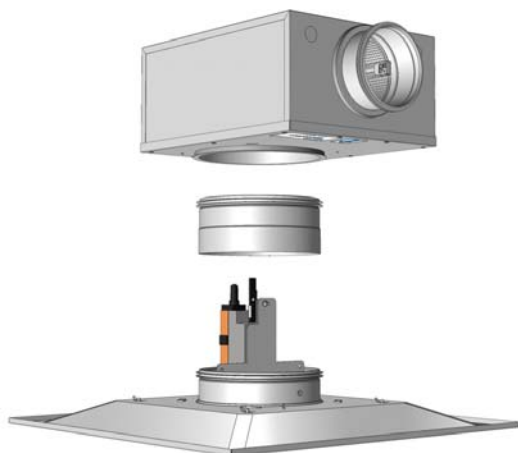
### MBZ - Extension piece



### 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 LKPV is used with small MBB plenums:

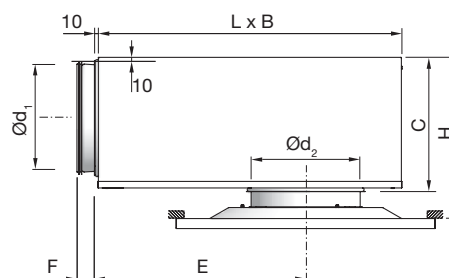
**For the following MBB sizes, the MBZ extension piece must be used to ensure full movement of motor-rack.**

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

## MBB - Plenum box



## LKPV+MBB-S



LKPV + MBB		B	C	E	F	H*	L
Duct Ød <sub>1</sub> mm	LKPV Ød <sub>2</sub> mm	mm	mm	mm	mm	mm	mm
100	160	260	159	216	50	230 - 270	310
125	160	310	184	262	50	255 - 295	376
125	200	310	184	262	50	255 - 295	376
160	160	380	220	323	50	289 - 329	459
160	200	380	220	322	50	289 - 329	459
160	250	380	220	323	50	289 - 329	459
200	200	460	259	396	70	330 - 370	565
200	250	460	259	396	70	330 - 370	565
200	315	460	259	396	70	330 - 370	565
250	250	540	309	486	70	380 - 420	698
250	315	540	309	486	70	380 - 420	698
315	315	540	376	646	70	445 - 485	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

# VAV diffuser

# LKPV

## Technical data

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

## Capacity

Max. volume flow [l/s], [m<sup>3</sup>/h], total pressure drop  $p_t$  [Pa], throw  $l_{0.2}$  [m] and sound effect level  $L_{WA}$  [dB(A)] can be seen in the diagrams.

## Quick selection, supply air

### Quick selection 30 dB(A)

LKPV + MBB		30 dB(A)					
Duct Ød <sub>1</sub>	LKPV 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	26	93	28	100	29	104
125	160	31	111	31	111	31	111
125	200	40	144	41	147	41	147
160	160	31	111	31	111	31	111
160	200	46	165	45	162	45	162
160	250	56	201	53	190	52	187
200	200	46	165	45	162	45	162
200	250	63	226	63	226	63	226
200	315	74	266	74	266	74	266
250	250	64	230	63	226	62	223
250	315	77	277	75	270	73	262
315	315	80	288	80	288	79	284

### Quick selection 35 dB(A)

LKPV + MBB		35 dB(A)					
Duct Ød <sub>1</sub>	LKPV 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	26	93	28	100	30	108
125	160	32	115	35	126	36	129
125	200	40	144	43	154	46	165
160	160	37	133	37	133	37	133
160	200	50	180	54	194	54	194
160	250	58	208	63	226	68	244
200	200	54	194	54	194	54	194
200	250	67	241	72	259	75	270
200	315	81	291	88	316	88	316
250	250	71	255	76	273	76	273
250	315	87	313	93	334	91	327
315	315	91	327	94	338	94	338

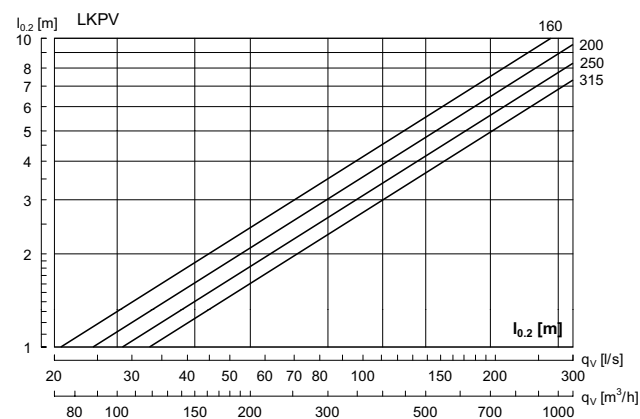
## Sound attenuation

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

LKPV + MBB		Centre frequency Hz							
Duct Ød <sub>1</sub>	LKPV Ød <sub>2</sub>	63	125	250	500	1K	2K	4K	8K
		100	160	18	13	9	20	16	24
125	160	18	13	9	20	16	24	22	24
125	200	20	15	8	18	14	19	20	23
160	160	18	13	9	20	16	24	22	24
160	200	18	13	9	16	20	17	20	22
160	250	18	13	7	15	20	15	18	21
200	200	19	15	11	18	18	17	20	21
200	250	18	14	9	17	15	15	19	21
200	315	16	12	6	16	14	14	18	19
250	250	15	11	8	17	15	19	22	22
250	315	10	7	7	15	8	14	17	21
315	315	10	7	7	15	8	14	17	21

## Throw

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



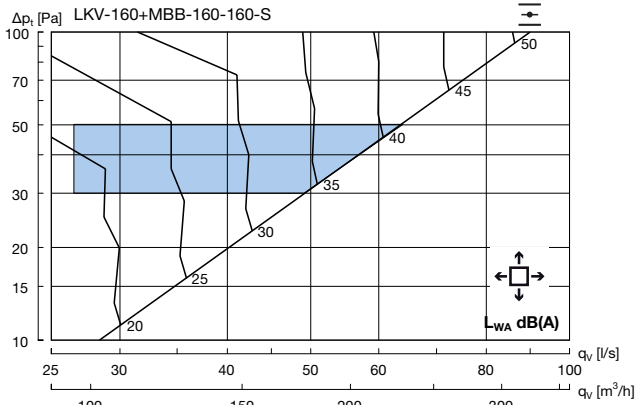
# VAV diffuser

# LKPV

## Technical data

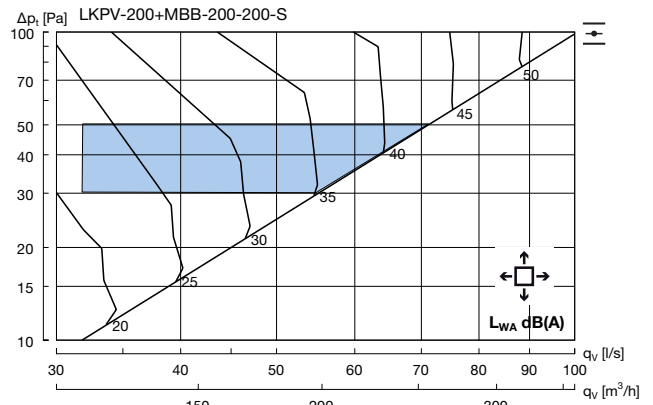
Setting range for max. volume flow.

### LKPV-160 + MBB - Supply air

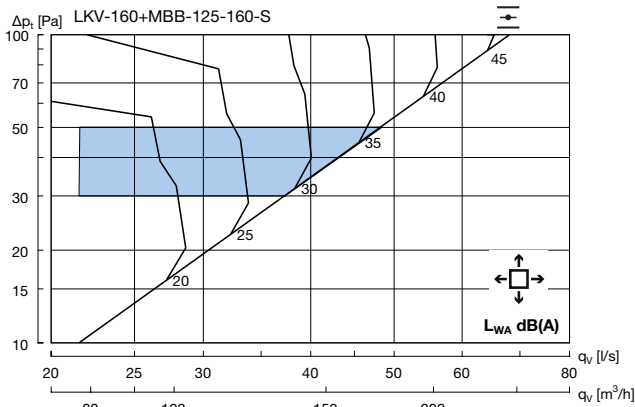


Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	10	8	0	-5	-4	-11	-26	-34

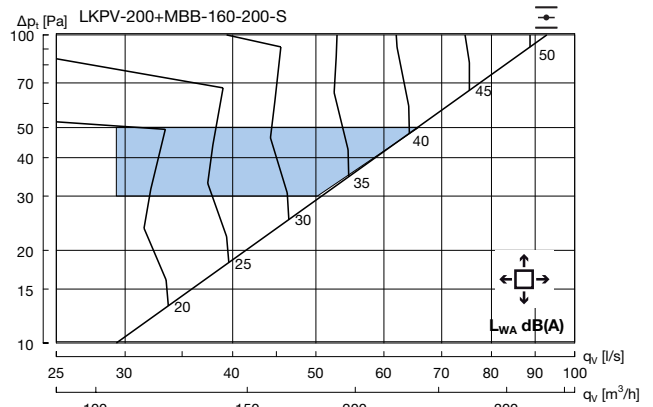
### LKPV-200 + MBB - Supply air



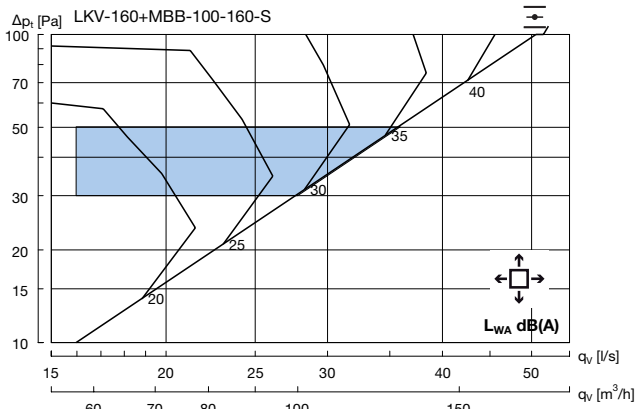
Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	9	5	-2	-4	-2	-16	-24	-29



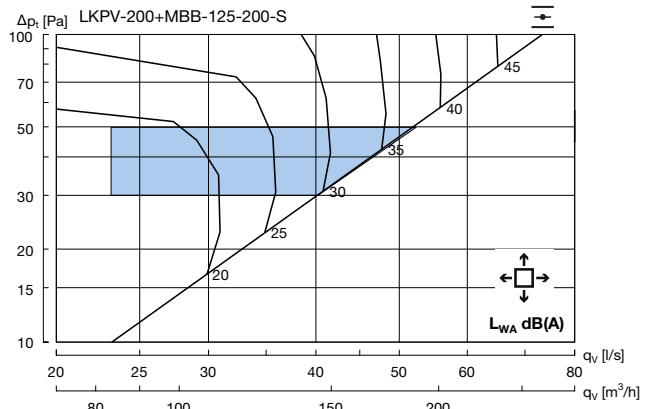
Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	8	5	-1	-5	-3	-11	-23	-29



Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	7	8	-1	-4	-3	-16	-24	-28



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



Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	9	5	-2	-5	-2	-15	-20	-26

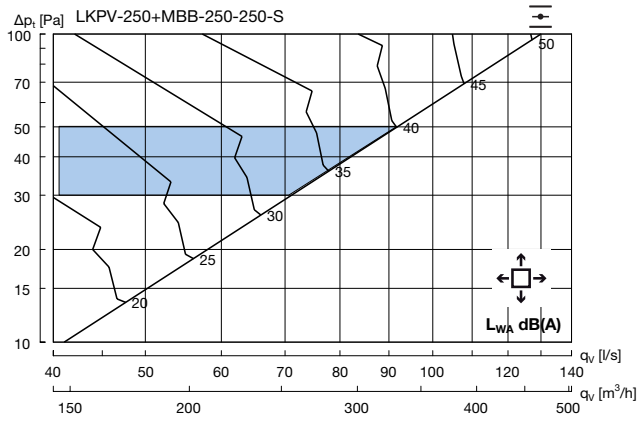
# VAV diffuser

# LKPV

## Technical data

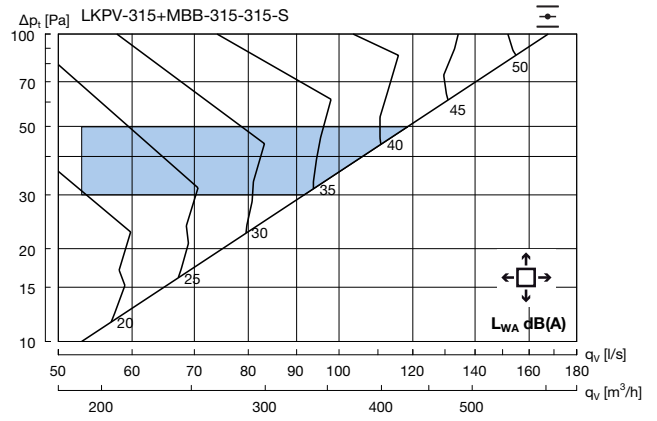
Setting range for max. volume flow.

### LKPV-250 + MBB - Supply air

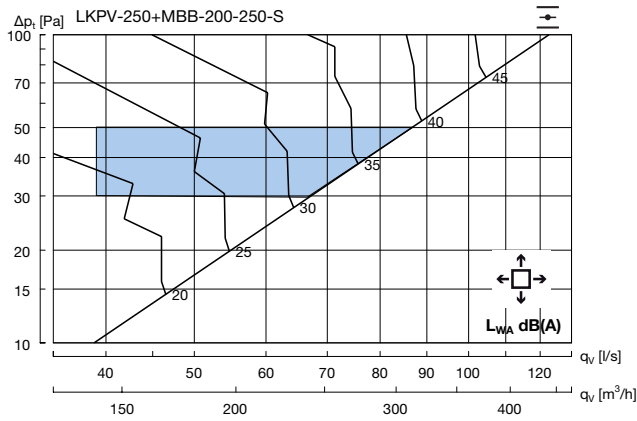


Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	12	7	-1	-2	-4	-18	-33	-47

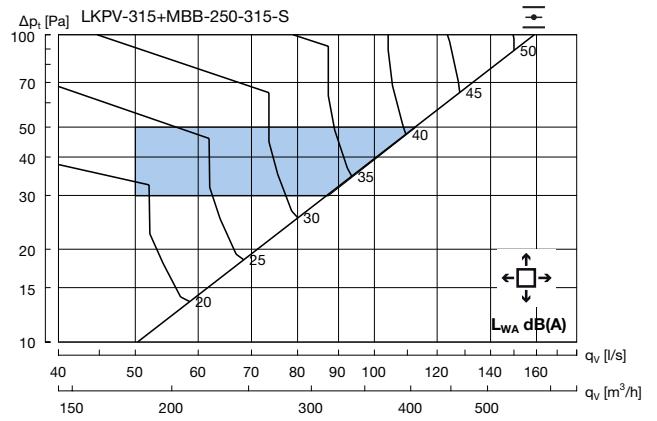
### LKPV-315 + MBB - Supply air



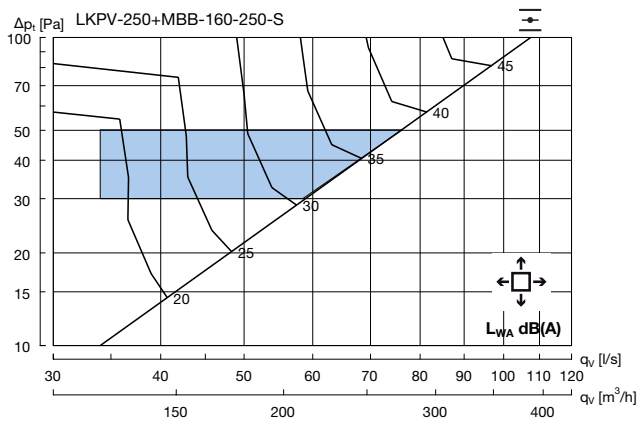
Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	11	8	1	-3	-4	-14	-25	-34



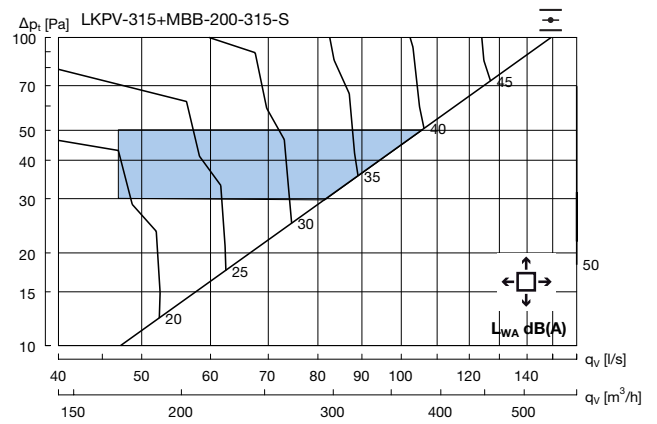
Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	7	8	-1	-4	-3	-15	-24	-31



Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	11	8	1	-3	-5	-14	-25	-31



Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	9	6	-3	-5	-2	-15	-23	-29



Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	10	8	1	-4	-4	-13	-23	-32





# VAV diffuser

# LCPV



## Description

LCPV is an unperforated flush-mounted LCP 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 LCP can be used

\*) Min. settings 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.

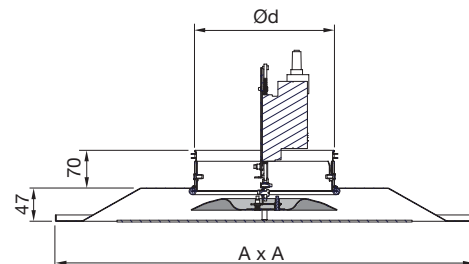
## Order code

Product	LCPV	aaa	bbb	cc	dd	ee
Type	LCPV					
Dimension		Ø160-315				
Flow settings						
Min. airflow						
Max. airflow						
Pressure						
Ceiling system						
						1 - 14

Example: LCPV-200 - 15 l/s - 60 l/s - 40 Pa - 1

When ordering, MBB plenum type must be specified.

## Dimensions



LCPV Ød	A *	Weight ( kg )
mm	mm	(with Motor)
160	595	6,8
200	595	6,8
250	595	6,8
315	595	6,8

\* Ceiling system 1, other ceiling systems, see Integra chapter page 122 - 123.

No moduleplate, upper part adapted to ceiling systems.

## 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

Upper part:	Galvanised steel
Face plate:	Aluminium
Face plate 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.

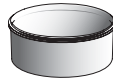
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13**
- 14
- 15
- 16
- 17
- 18

# VAV diffuser

# LCPV

## Accessories

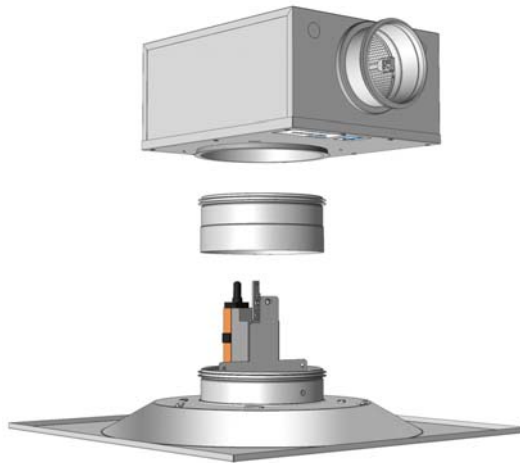
### MBZ - Extension piece



### 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 LCPV is used with small MBB plenums:

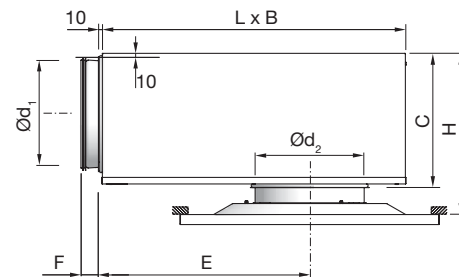
**For the following MBB sizes, the MBZ extension piece must be used to ensure full movement of motor-rack.**

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

## MBB - Plenum box



### LCPV+MBB-S



LCPV + MBB		B mm	C mm	E mm	F mm	H* mm	L mm
Duct Ød <sub>1</sub> mm	LCPV Ød <sub>2</sub> mm						
100	160	260	159	216	50	230 - 270	310
125	160	310	184	262	50	255 - 295	376
125	200	310	184	262	50	255 - 295	376
160	160	380	220	323	50	289 - 329	459
160	200	380	220	323	50	289 - 329	459
160	250	380	220	323	50	289 - 329	459
200	200	460	259	396	70	330 - 370	565
200	250	460	259	396	70	330 - 370	565
200	315	460	259	396	70	330 - 370	565
250	250	540	309	486	70	380 - 420	698
250	315	540	309	486	70	380 - 420	698
315	315	540	373	646	70	445 - 485	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



# VAV diffuser

# LCPV

## Technical data

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

### Capacity

Max. volume flow [l/s], [m<sup>3</sup>/h], total pressure drop p<sub>t</sub> [Pa], throw l<sub>0.2</sub> [m] and sound effect level L<sub>WA</sub> [dB(A)] can be seen in the diagrams.

### Quick selection, supply air

#### Quick selection 30 dB(A)

LCPV + MBB		35 dB(A)					
Duct Ød <sub>1</sub>	LCPV 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	26	93	28	100	29	104
125	160	36	129	36	129	36	129
125	200	42	151	44	158	45	162
160	160	39	140	39	140	39	140
160	200	53	190	55	198	54	194
160	250	64	230	69	248	69	248
200	200	53	190	53	190	52	187
200	250	75	270	74	266	74	266
200	315	91	327	91	327	90	324
250	250	79	284	80	288	80	288
250	315	99	356	97	349	96	345
315	315	105	378	106	381	106	381

#### Quick selection 35 dB(A)

LCPV + MBB		35 dB(A)					
Duct Ød <sub>1</sub>	LCPV 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	26	93	28	100	30	108
125	160	36	129	39	140	41	147
125	200	42	151	46	165	49	176
160	160	42	151	46	165	46	165
160	200	53	190	57	205	61	219
160	250	64	230	69	248	74	266
200	200	64	230	64	230	64	230
200	250	78	280	84	302	89	320
200	315	91	327	98	352	105	378
250	250	84	302	91	327	93	334
250	315	99	356	107	385	115	414
315	315	109	392	118	424	124	446

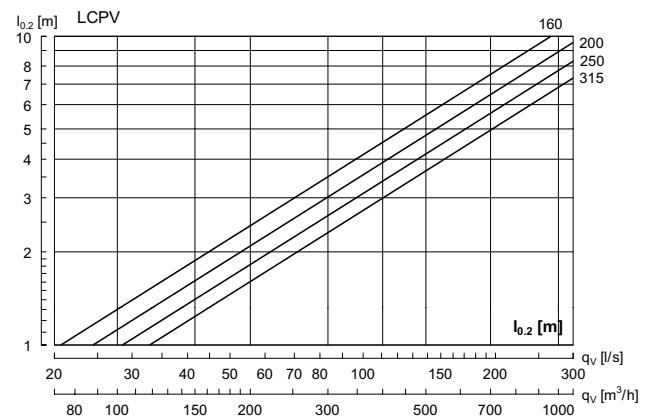
## Sound attenuation

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

LCPV + MBB		Centre frequency Hz							
Duct Ød <sub>1</sub>	LCPV Ød <sub>2</sub>	63	125	250	500	1K	2K	4K	8K
		100	160	17	16	6	10	18	18
125	160	15	14	10	17	16	17	18	21
125	200	13	12	7	13	13	16	17	18
160	160	17	15	12	21	19	19	21	21
160	200	17	16	10	20	17	17	19	20
160	250	16	14	7	17	15	16	19	20
200	200	13	11	10	17	18	15	19	18
200	250	14	11	8	15	19	15	18	17
200	315	14	9	7	13	18	14	17	17
250	250	15	10	9	17	18	18	19	19
250	315	15	8	9	16	18	16	18	18
315	315	8	10	10	17	18	17	18	24

## Throw

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



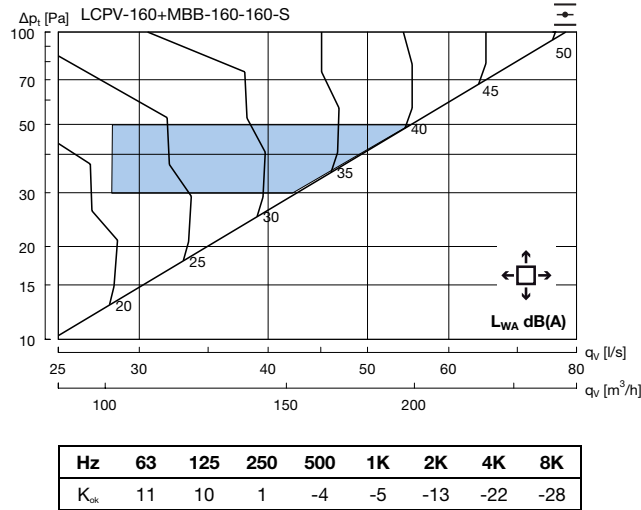
# VAV diffuser

# LCPV

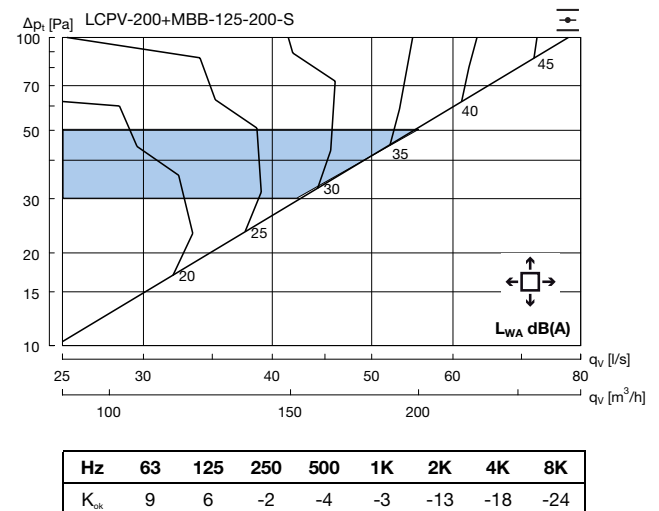
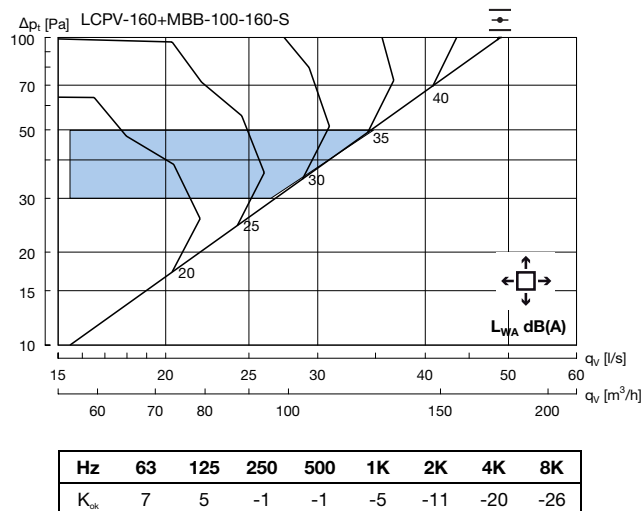
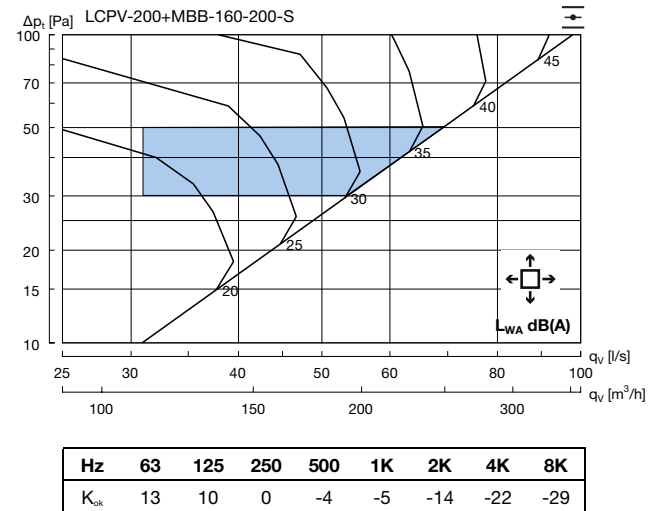
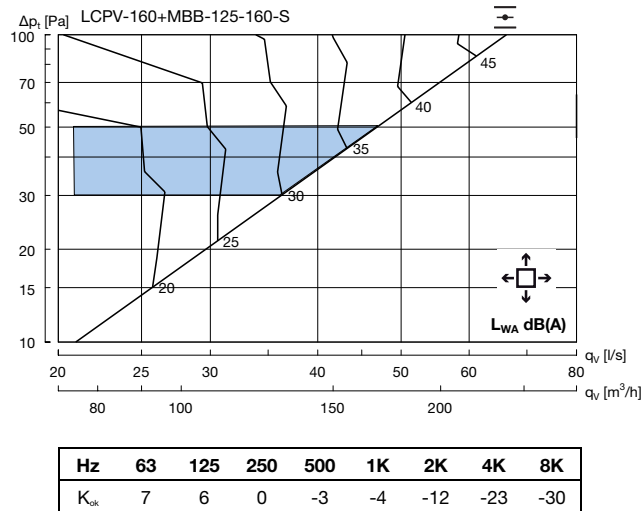
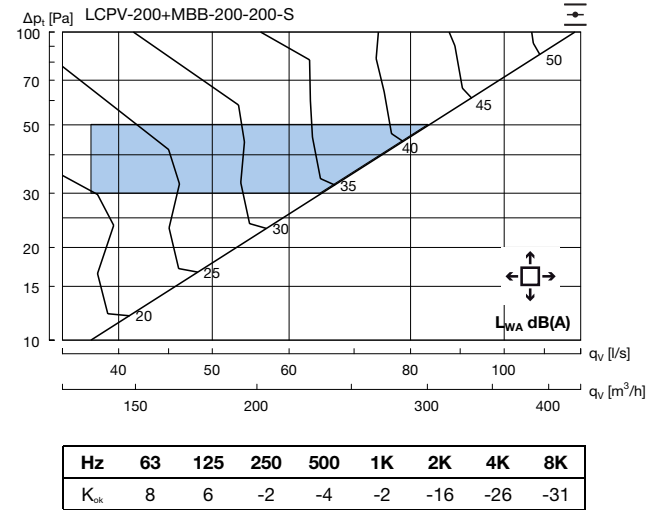
## Technical data

Setting range for max. volume flow.

### LCPV-160 + MBB - Supply air



### LCPV-200 + MBB - Supply air



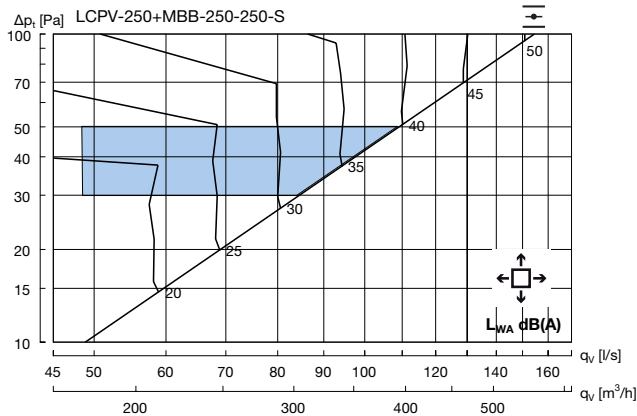
# VAV diffuser

# LCPV

## Technical data

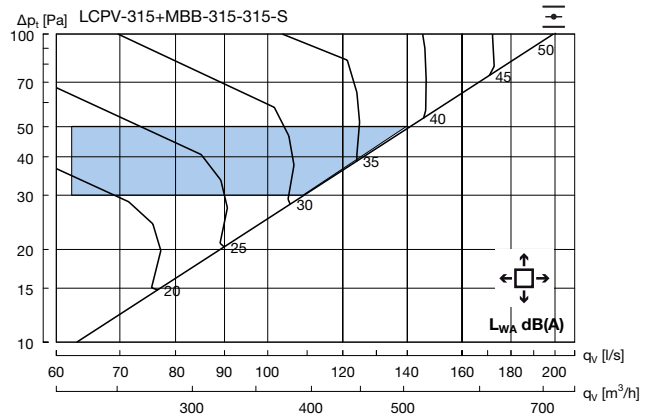
Setting range for max. volume flow.

### LCPV-250 + MBB - Supply air

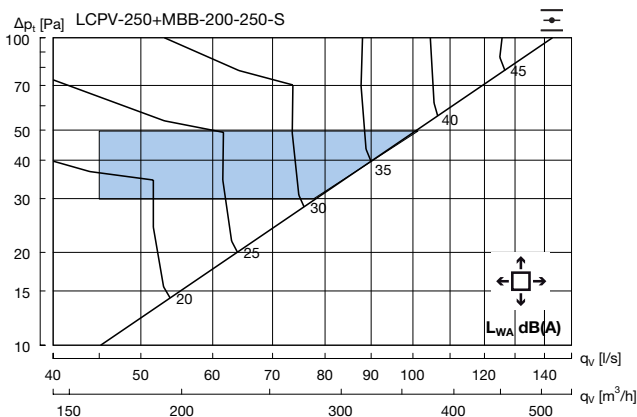


Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	11	7	0	-3	-4	-15	-26	-31

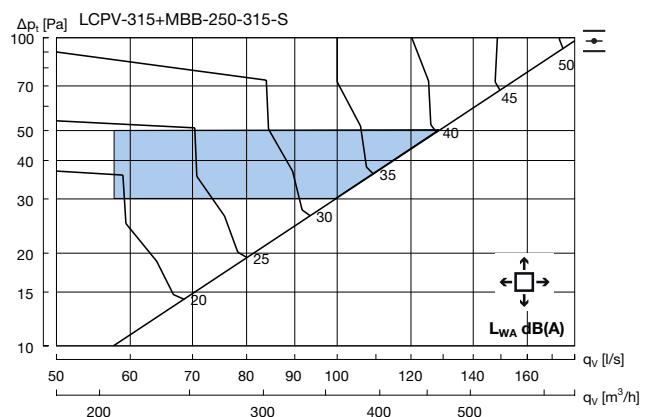
### LCPV-315 + MBB - Supply air



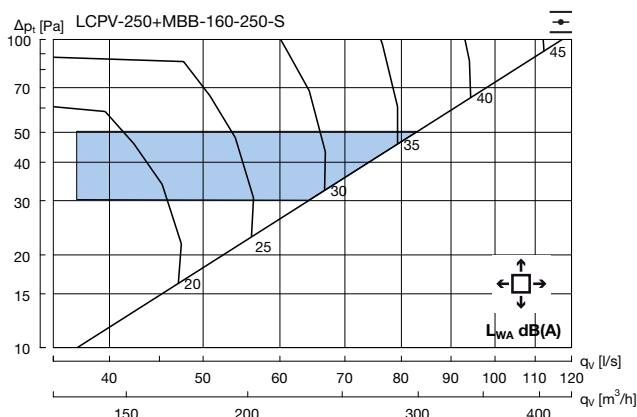
Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	9	6	1	-1	-5	-14	-25	-32



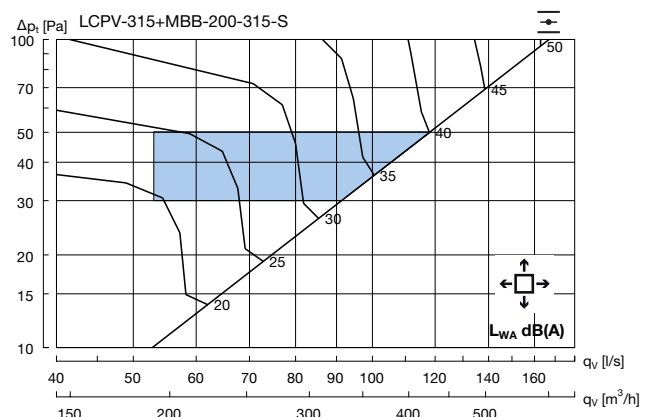
Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	11	10	1	-3	-5	-16	-25	-32



Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	10	9	1	-2	-5	-13	-24	-32



Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	10	9	0	-4	-4	-13	-18	-22



Hz	63	125	250	500	1K	2K	4K	8K
$K_{ok}$	10	9	0	-3	-5	-13	-20	-25



