

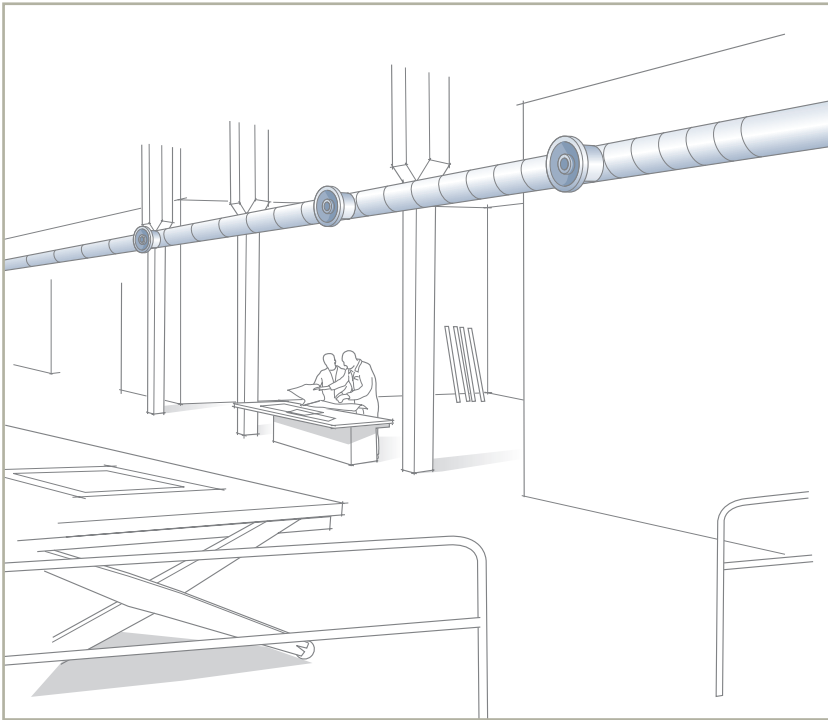
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# Swirl adjustable diffuser **UDZB**

TECHNICAL DATA





Swirl adjustable diffuser UDZB is intended for commercial and industrial buildings with a large room volume and high ceiling interiors, for example market halls, warehouses, factories etc.

Outlet angle change functionality enables diffuser to adapt to both summer and winter conditions (cooling or heating mode). Device can be adjusted manually or automatically with the help of an electric actuator within  $\pm 20$  degrees

UDZB provides also throw length manual control. Air diffusion pattern can be changed by opening or closing the damper situated on internal tube inlet. The maximum horizontal throw length is achieved when the damper is fully open.

#### QUICK SELECTION

Size	Air flow		Pressure drop Pa	Throw length m
	l/s	m <sup>3</sup> /h		
UDZB-31	111-555	400-2000	5-300	3-25
UDZB-40	278-972	1000-3500	10-300	6-35
UDZB-50	444-1528	1600-5500	13-400	7-40
UDZB-60	833-2222	3000-8000	30-300	6-29
UDZB-71	833-2777	3000-10000	20-300	6-29

#### SPECIFICATIONS

- Available in 5 sizes
- Throw length controlled manually
- Outlet angle adjustable manually or via electric actuator
- Supplies large amount of air

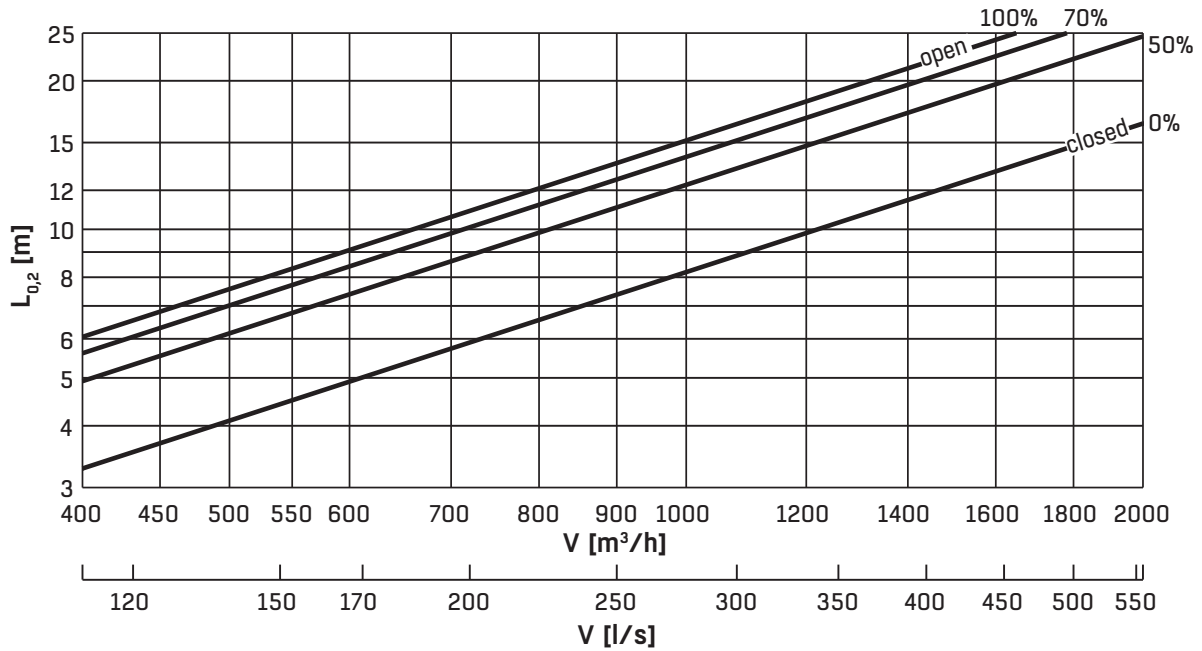
#### PRODUCT CODE EXAMPLE

##### Swirl diffuser UDZB-40-1-2-1

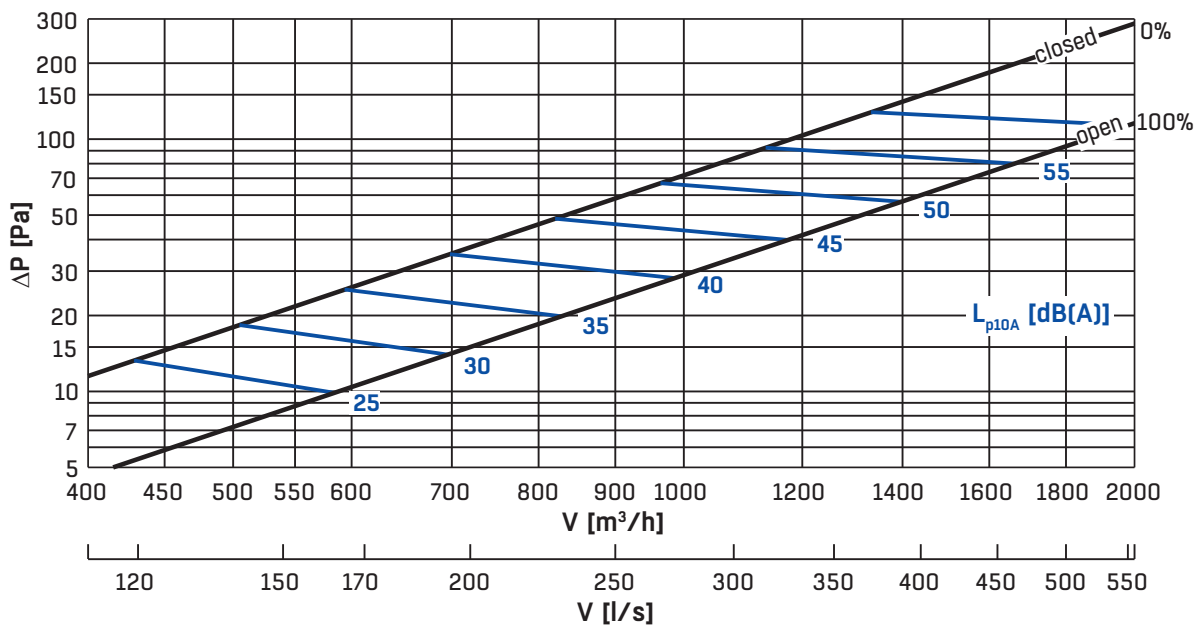
Terminal of size 40, manual throw length control, outlet angle adjustable by electric actuator, painted in RAL 9010 colour.

### THROW LENGTH, AIR FLOW, PRESSURE DROP, SOUND LEVEL

#### UDZB-31 – THROW LENGTH



#### UDZB-31 – AIR FLOW, PRESSURE DROP AND SOUND LEVEL

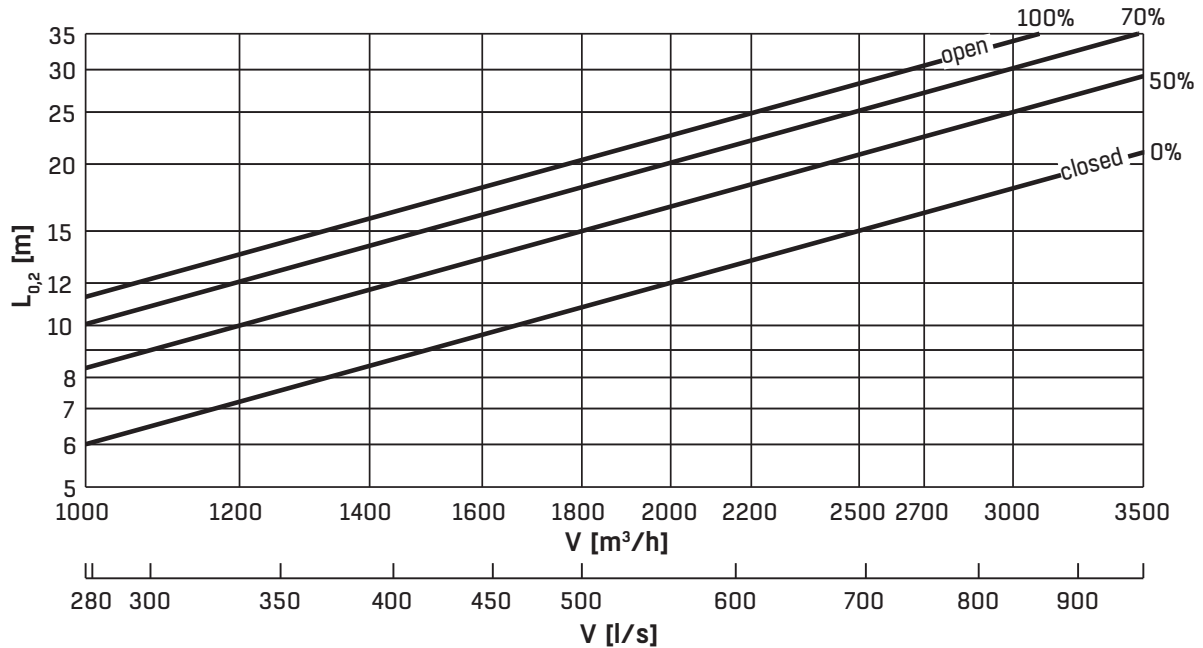


In the above graph, the sound pressure levels in dB(A) are indicated for a reference room with 10 m<sup>2</sup> Sabine room absorption, equivalent to 4 dB room attenuation.

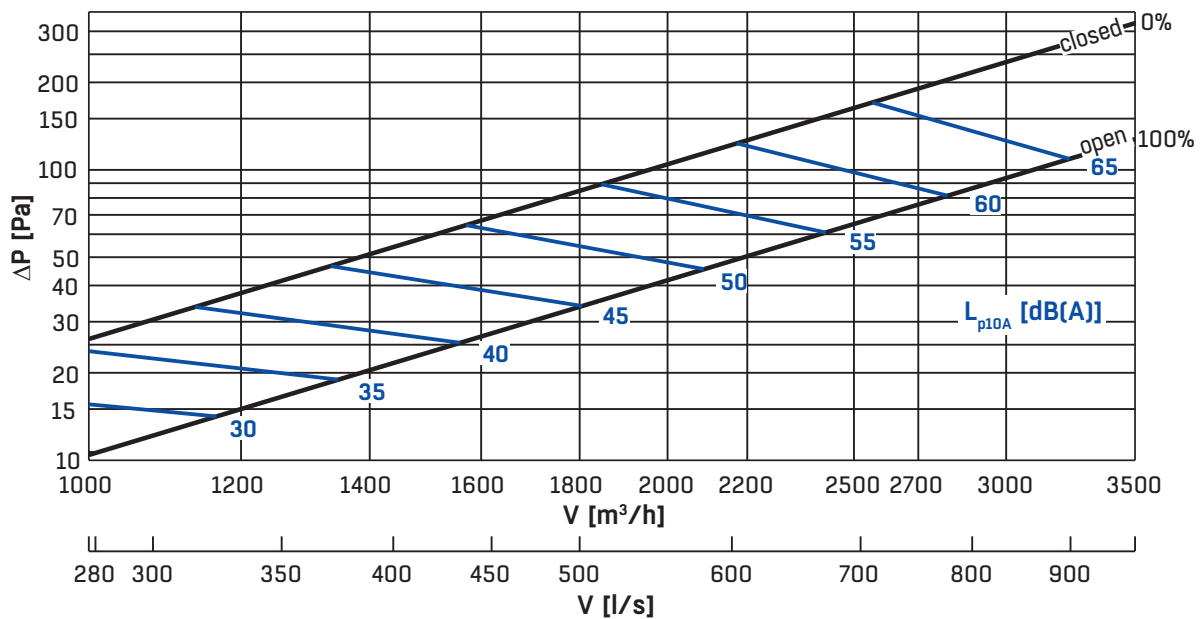
The graphs show diffuser performance depending on damper position, which is situated at the internal tube inlet.

## THROW LENGTH, AIR FLOW, PRESSURE DROP, SOUND LEVEL

### UDZB-40 – THROW LENGTH



### UDZB-40 – AIR FLOW, PRESSURE DROP AND SOUND LEVEL

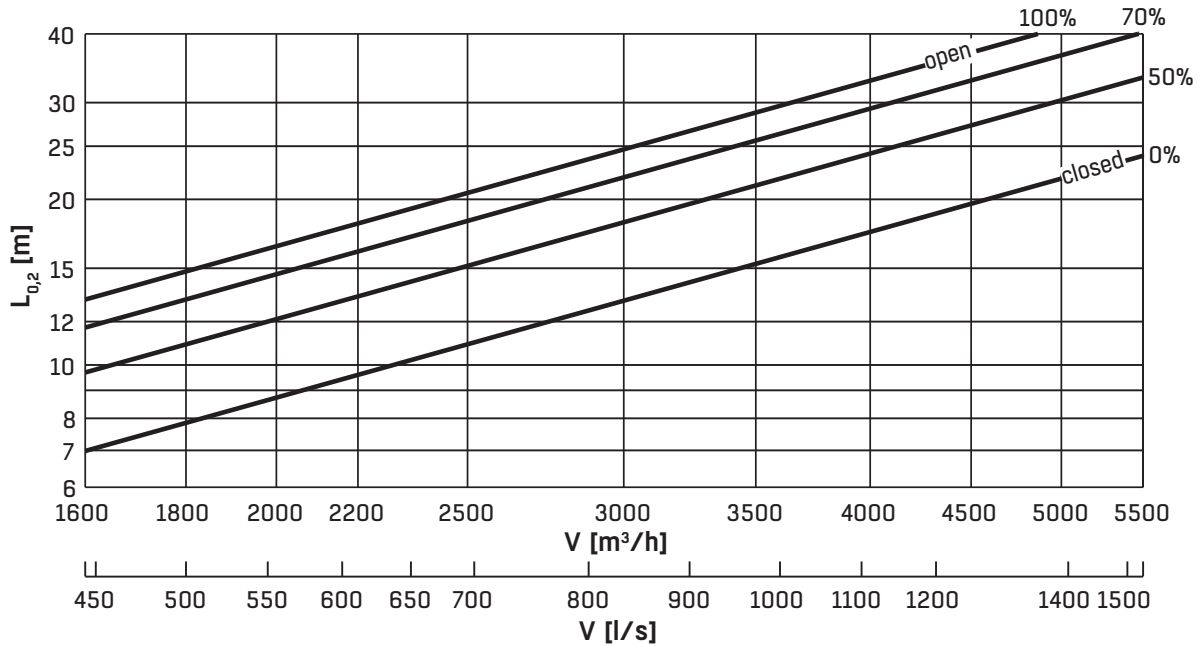


In the above graph, the sound pressure levels in dB(A) are indicated for a reference room with 10 m<sup>2</sup> Sabine room absorption, equivalent to 4 dB room attenuation.

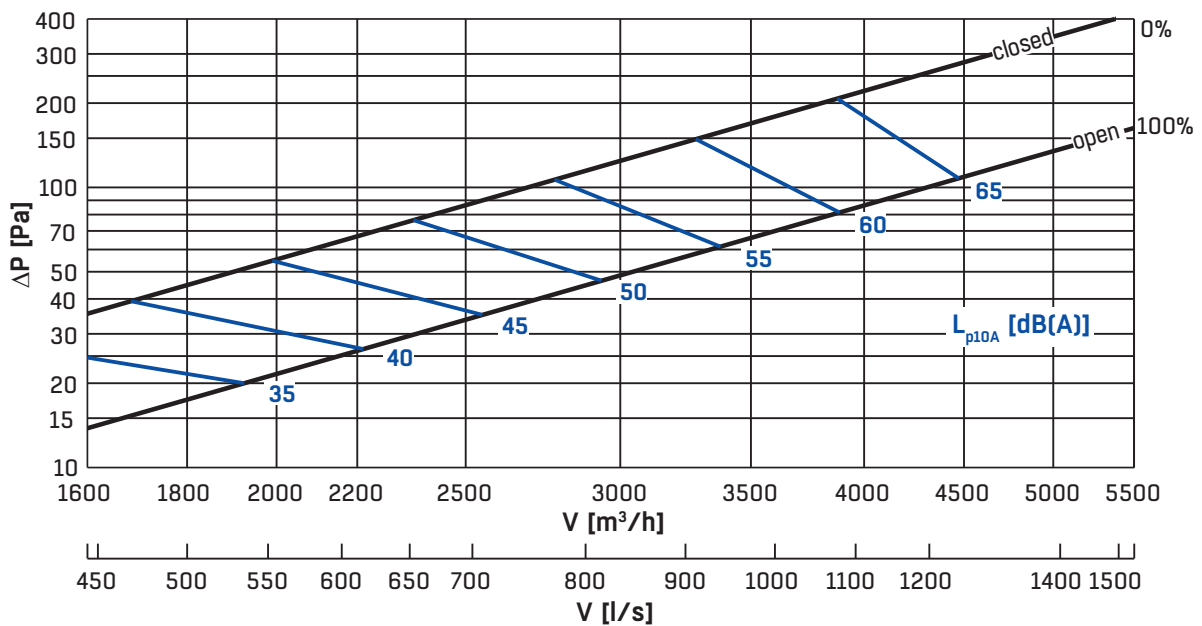
The graphs show diffuser performance depending on damper position, which is situated at the internal tube inlet.

### THROW LENGTH, AIR FLOW, PRESSURE DROP, SOUND LEVEL

#### UDZB-50 – THROW LENGTH



#### UDZB-50 – AIR FLOW, PRESSURE DROP AND SOUND LEVEL

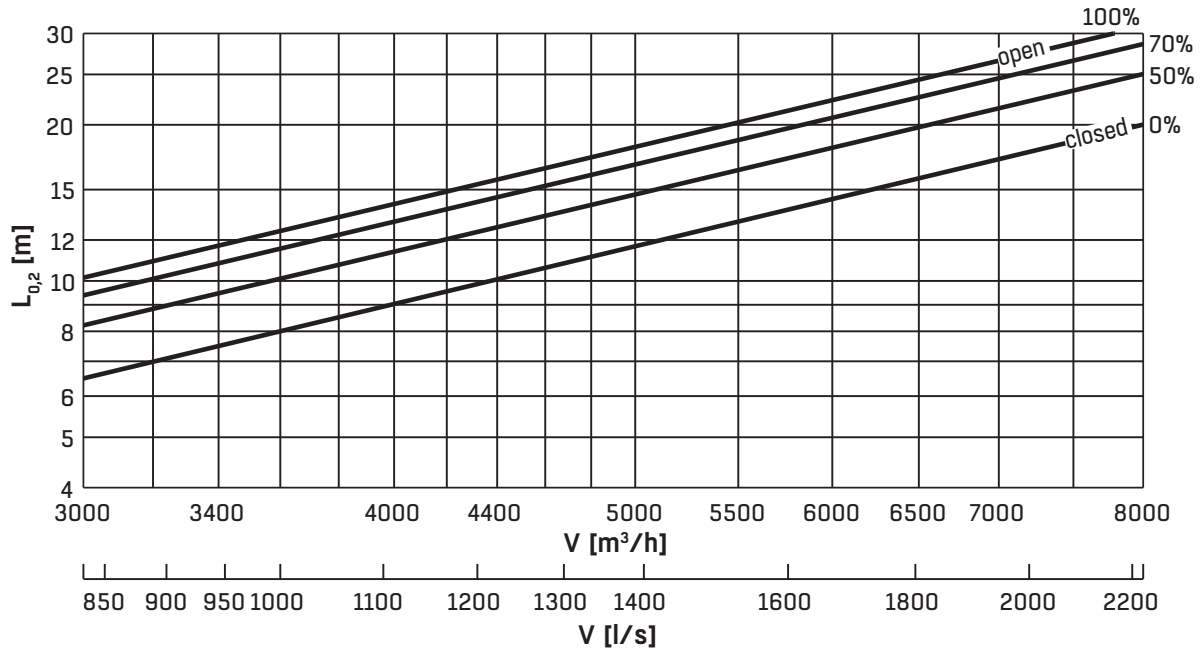


In the above graph, the sound pressure levels in dB(A) are indicated for a reference room with 10 m<sup>2</sup> Sabine room absorption, equivalent to 4 dB room attenuation.

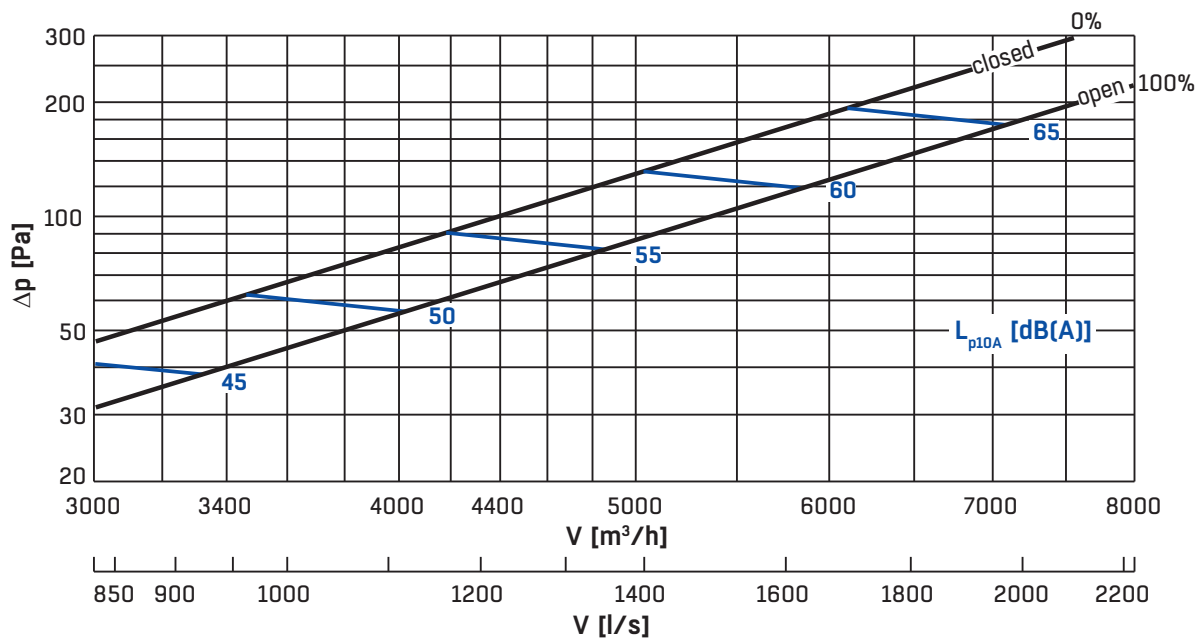
The graphs show diffuser performance depending on damper position, which is situated at the internal tube inlet.

## THROW LENGTH, AIR FLOW, PRESSURE DROP, SOUND LEVEL

### UDZB-60 – THROW LENGTH



### UDZB-60 – AIR FLOW, PRESSURE DROP AND SOUND LEVEL

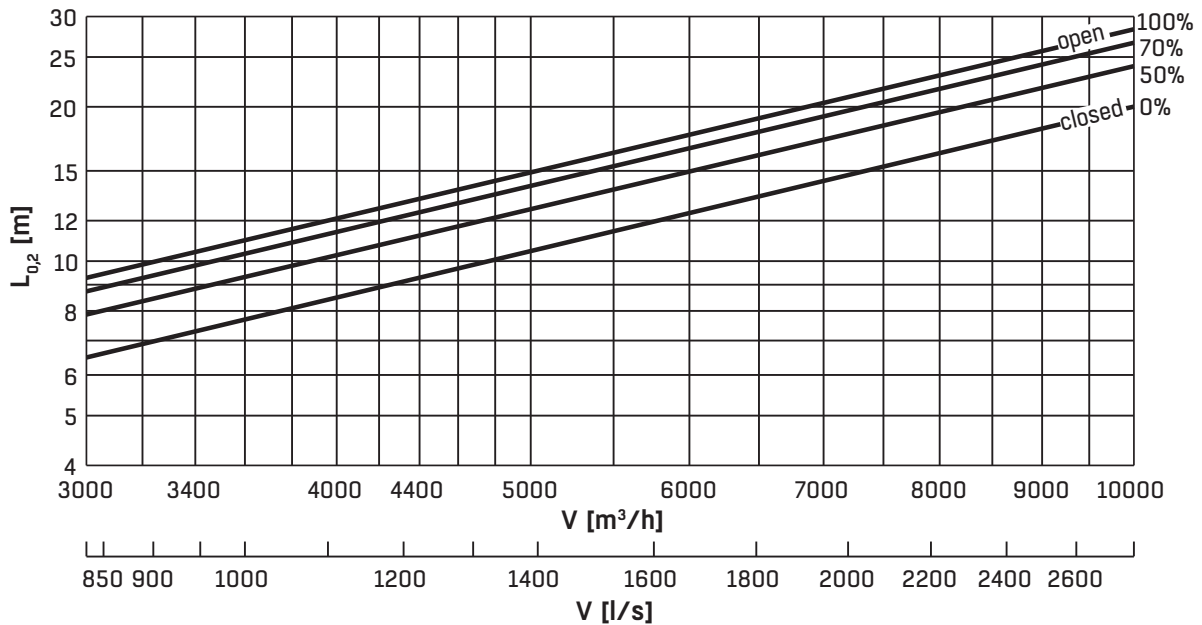


In the above graph, the sound pressure levels in dB(A) are indicated for a reference room with 10 m<sup>2</sup> Sabine room absorption, equivalent to 4 dB room attenuation.

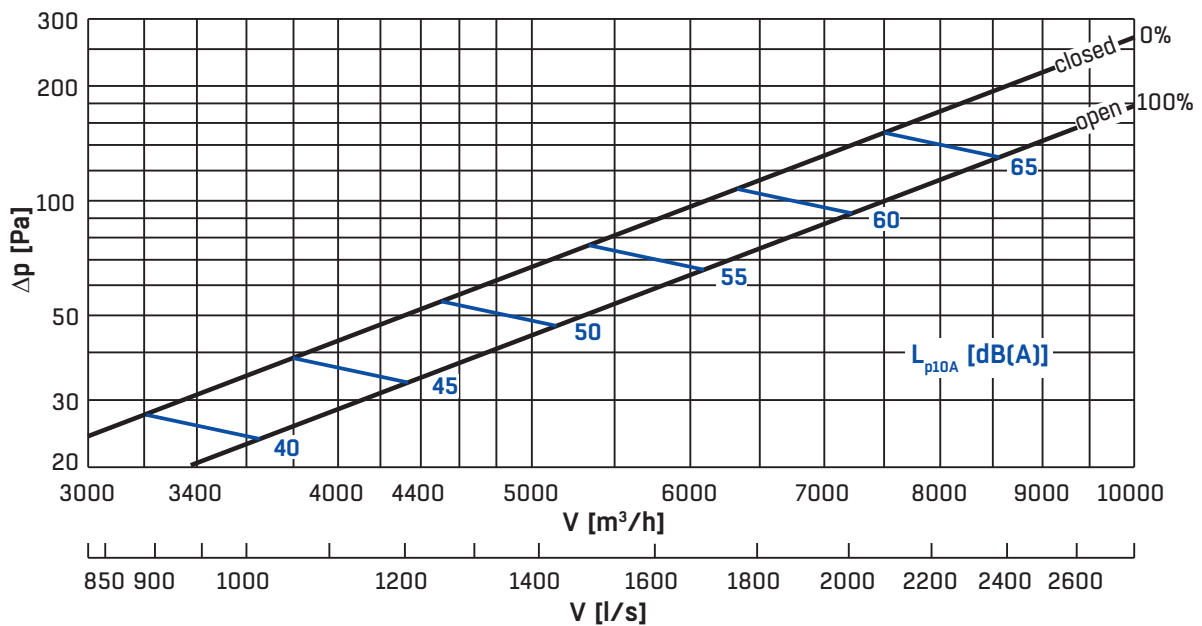
The graphs show diffuser performance depending on damper position, which is situated at the internal tube inlet.

### THROW LENGTH, AIR FLOW, PRESSURE DROP, SOUND LEVEL

#### UDZB-71 – THROW LENGTH



#### UDZB-71 – AIR FLOW, PRESSURE DROP AND SOUND LEVEL

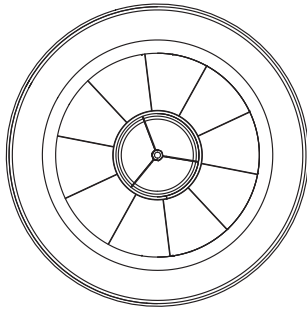


In the above graph, the sound pressure levels in dB(A) are indicated for a reference room with 10 m<sup>2</sup> Sabine room absorption, equivalent to 4 dB room attenuation.

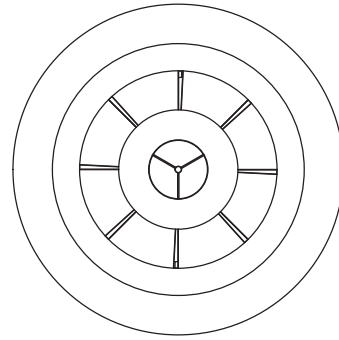
The graphs show diffuser performance depending on damper position, which is situated at the internal tube inlet.

## DIMENSIONS AND WEIGHT

### UDZB SWIRL DIFFUSER - SIZES 31, 40, 50



### UDZB SWIRL DIFFUSER - SIZES 60, 71

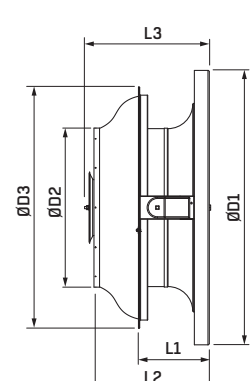
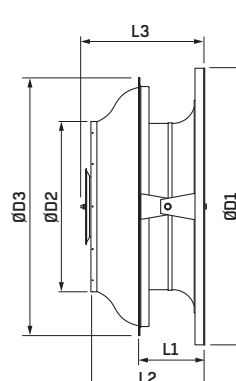
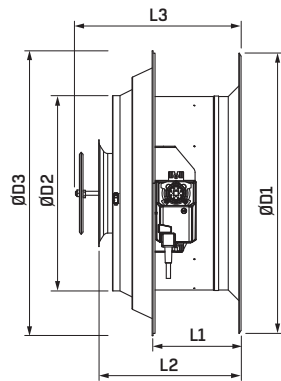
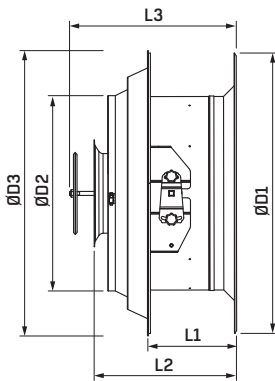


#### MANUAL

#### ELECTRIC ACTUATOR

#### MANUAL

#### ELECTRIC ACTUATOR

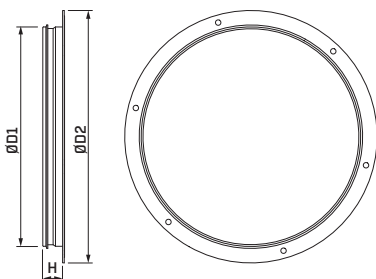


Size	ØD1 (mm)	ØD2 (mm)	ØD3 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	Weight (kg)
31	460	305	460	149	245	320	7,2/8,0
40	560	385	560	176	285	380	10,0/10,8
50	660	488	660	187	324	444	13,4/14,2

Size	ØD1 (mm)	ØD2 (mm)	ØD3 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	Weight (kg)
60	998	600	930	240	620	746	28,0/29,0
71	1246	710	960	310	690	865	38,0/39,0

L3 = maximum length when the damper is fully open

### UDZZ INSTALLATION FLANGE - SIZES 31, 40, 50



Size	ØD1 (mm)	ØD2 (mm)	H (mm)	Weight (kg)
UDZZ-1-31	399	460	39,5	1,2
UDZZ-1-40	499	560	64,5	1,8
UDZZ-1-50	599	660	64,5	2,2



## ACOUSTICAL DATA, DIFFUSION PATTERNS, DEFINITIONS

### SOUND POWER LEVEL

Size	Correction of sound level $K_{\text{oct}}$ in dB for octave bands, mean frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
31	4	-2	-4	1	1	-7	-14	-16
40	5	-4	-3	2	1	-7	-16	-18
50	11	3	2	4	-2	-9	-14	-10
60	4	3	3	1	-1	-5	-11	-21
71	6	5	4	0	-2	-6	-12	-22
+/-	6	3	2	2	2	2	2	3

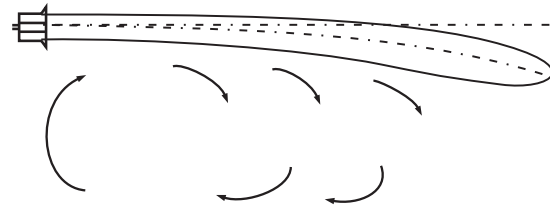
The sound power levels for different octave bands are obtained by adding together the sound pressure level  $L_{\text{AID}'}'$  in dB(A), and the corrections  $K_{\text{oct}}$  for the octave bands in the table with the help of the following formula:

$$L_W = L_{\text{p10A}} + K_{\text{oct}}$$

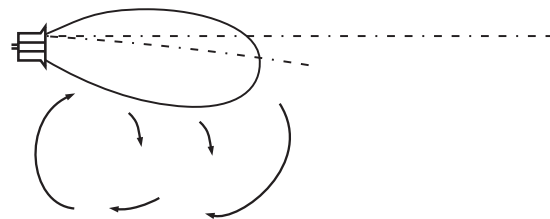
Correction  $K_{\text{oct}}$  is the mean value for the range of application of UDZB.

Size	Sound attenuation $\Delta L$ in dB at [Hz] octave bands, mean frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
31	15	12	8	4	4	4	3	5
40	14	9	4	2	3	4	3	4
50	16	8	3	5	2	3	3	3
60	6	3	4	6	8	5	5	4
71	4	2	3	5	6	7	4	4
+/-	6	3	2	2	2	2	2	3

### DIFFUSION PATTERNS



Diffusion pattern for diffuser working with open damper (positioned at 100%).

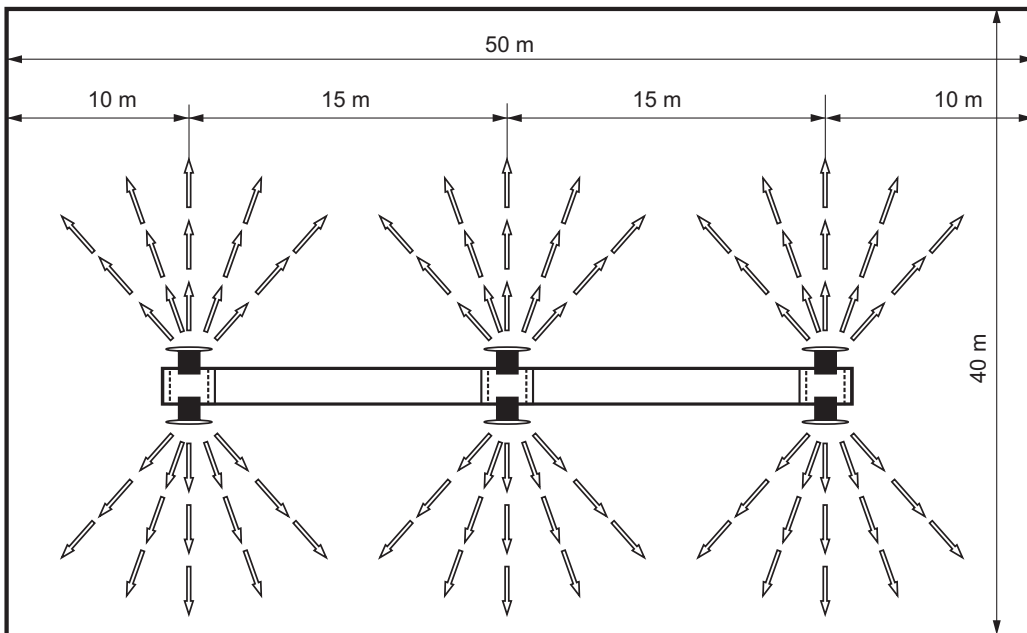
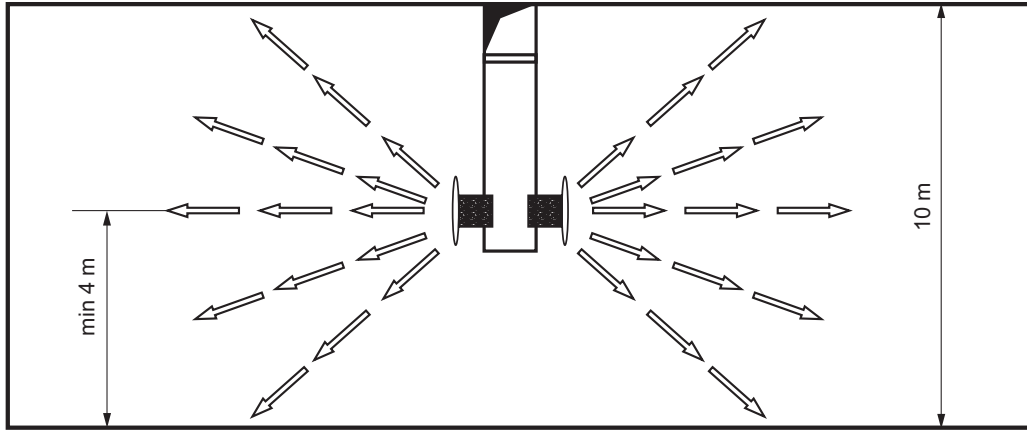


Diffusion pattern for diffuser working with closed damper (positioned at 0%).

### DEFINITIONS

$q_v$	air flow	l/s, m <sup>3</sup> /h
$\Delta p$	total pressure drop	Pa
$L_{\text{O2}}$	throw	m
$L_{\text{p10A}}$	sound pressure level with a room attenuation of 4 dB (10 m <sup>2</sup> room absorption area)	dB(A)
$L_W$	sound power level	dB
$K_{\text{oct}}$	octave band correction	dB
$\Delta L$	sound attenuation from the duct to the room	dB

## INSTALLATION GUIDELINES



Size	Installation height above the floor, (m)	Minimum distance between diffusers, (m)
31	4-6	1,2
40	4-6	1,5
50	4-6	1,8
60	4-6	2,1
71	4-6	2,5

## GENERAL, PRODUCT CODE, ACCESSORIES

### CONSTRUCTION AND FUNCTION

UDZB is a swirl adjustable supply air terminal that is recommended to be mounted at the wall or in the ductwork in order to provide horizontal air stream. It consists of external casing with fixed blades and internal tube supplied with regulation damper on inlet that provides throw length control. Perforated plate at the diffuser inlet equalizes the airflow. Diffuser outlet angle can be adjusted manually or automatically within  $\pm 20$  degrees in order to adapt to summer or winter conditions.

Installation flange UDZZ-1 enables easy installation at the end of circular ducts (except sizes 60 and 71).

### MATERIAL AND SURFACE FINISH

Diffuser is made from steel and aluminium sheet.

UDZB is powder-coated for a high surface finish. The standard colour is RAL 9010, 70% of gloss. Elastic connection is made of polyester with PVC protective layer.

Electric actuators used in automatic version comply with RoHS directive.

### INSTALLATION, ADJUSTMENT AND MAINTENANCE

The instructions for installation, adjustment and maintenance are available at [www.flaktgroup.com](http://www.flaktgroup.com).

### TECHNICAL DATA AND DIMENSIONING

For complete design details, please see the Fläktgroup product selection program SELECT. The program can be found on the Internet at [www.flaktgroup.com](http://www.flaktgroup.com).

### SPECIFICATIONS TEXT EXAMPLE

UDZB is a swirl adjustable supply air terminal that can supplied large amount of air into room indoor. It provides control of both air direction and throw length. Those functions can be carried out manually or automatically via electric actuator.

### PRODUCT CODE

**Swirl diffuser**

**UDZB-aa-b-c-d**

**Size (aa)**

31, 40, 50, 60, 71

**Throw length adjustment (b)**

1 = manual

**Outlet angle adjustment (c)**

1 = manual

2 = electric actuator

**Colour (d)**

1 = standard RAL 9010

X = any other colour from RAL palette

### ACCESSORIES

**Installation flange**

**UDZZ-1-aa**

**Size (aa)**

31, 40, 50

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