

FläktGroup[®]

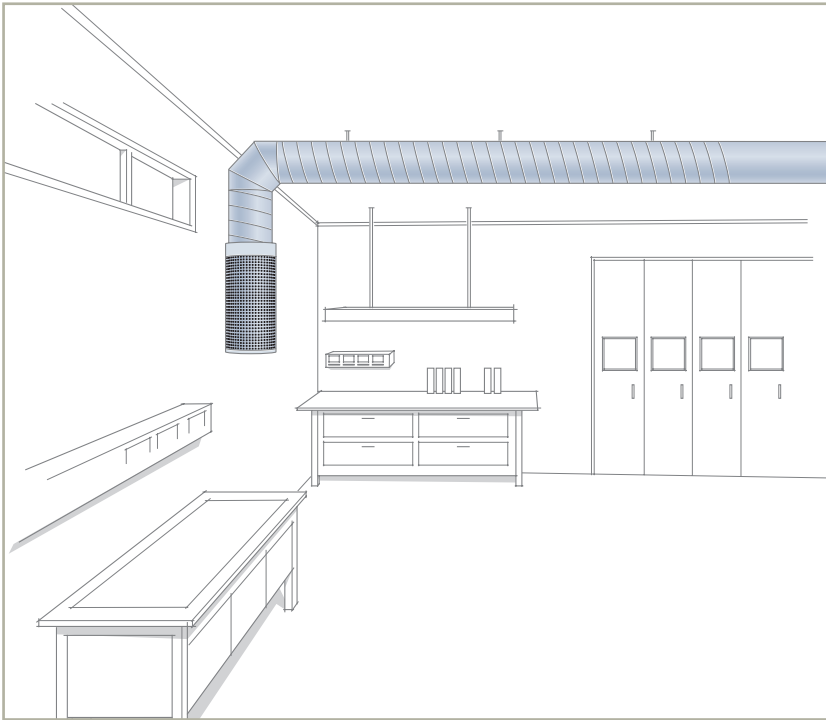
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Circular displacement diffuser

WOZB

TECHNICAL DATA





Circular displacement diffuser WOZB is designed for hanging installation and suitable for industrial rooms and applications where it is necessary to supply a large quantity of air directly into the working area. The low turbulence air flow, supplied through the entire surface of the diffuser, displaces the contaminated air including chemicals, dusts and odours directing them into the exhaust devices and outlets. It is also very effective in removing heat gains.

Diffuser consists of perforated tube with two orifices inside, which can be fixed or movable. In latter case, change of their position influence on air diffusion pattern. Air can be supplied downward or horizontally to adapt to local conditions. It is suitable for cooling and heating, reducing heating-up time when vertical discharge direction is selected.

WOZB offers two options for air diffusion pattern control: manual via pulling string or automatic via electric actuator. Diffusers is made of galvanized perforated steel sheet, which can be painted in RAL 9010.

QUICK SELECTION

Size	Air flow		Pressure drop Pa	Sound pressure level L_{p10A} dB(A)
	l/s	m ³ /h		
WOZB-31	278-694	1000-2500	5-200	40-70
WOZB-35	417-972	1500-3500	5-200	40-70
WOZB-40	528-1250	1900-4500	5-200	40-70
WOZB-45	694-1528	2500-5500	5-200	40-70
WOZB-50	833-1944	3000-7000	5-200	40-70
WOZB-63	1389-3056	5000-11000	5-200	40-70

SPECIFICATIONS

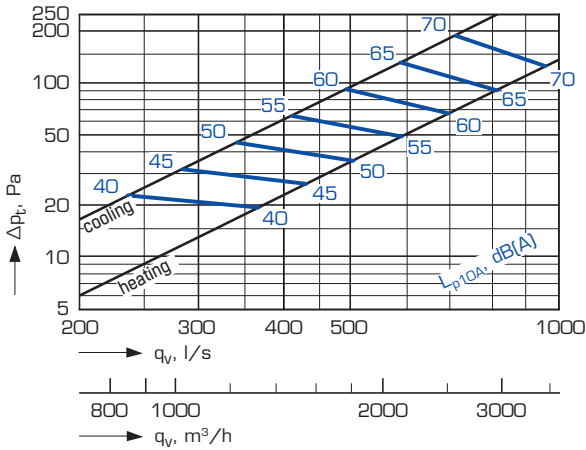
- Available in six sizes, connections from 315 to 630 mm
- Intended for hanging installation
- Two installation alternatives: freely hanging or mounted at the wall
- Manual or electric actuator control of diffusion pattern
- Made of galvanized steel sheet, also available in RAL 9010 finish.

PRODUCT CODE EXAMPLE

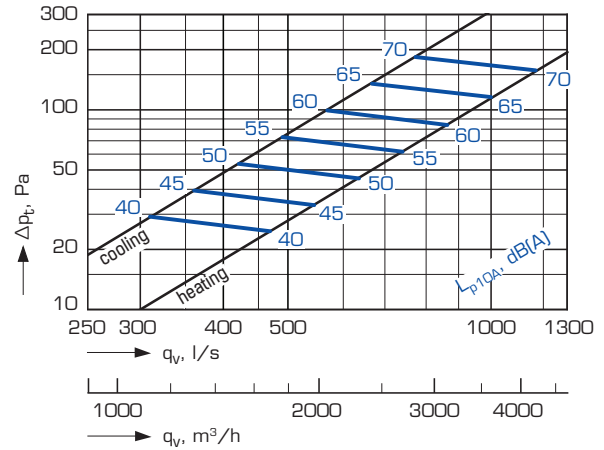
Displacement diffuser WOZB-31-1-1-1
Freely hanging diffuser of size 31, with manual change of the air flow direction, painted in RAL 9010 colour.

AIR FLOW, PRESSURE DROP, SOUND LEVEL

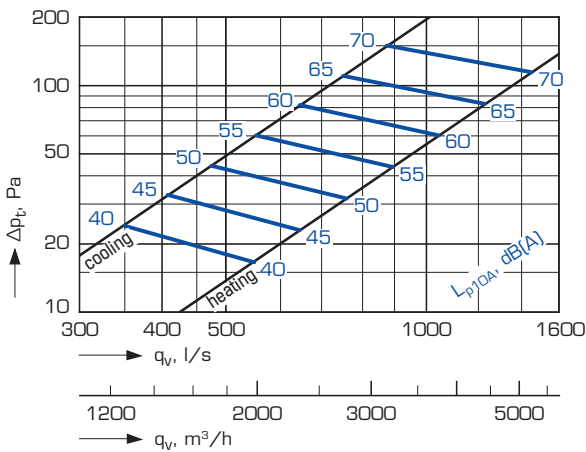
WOZB-31



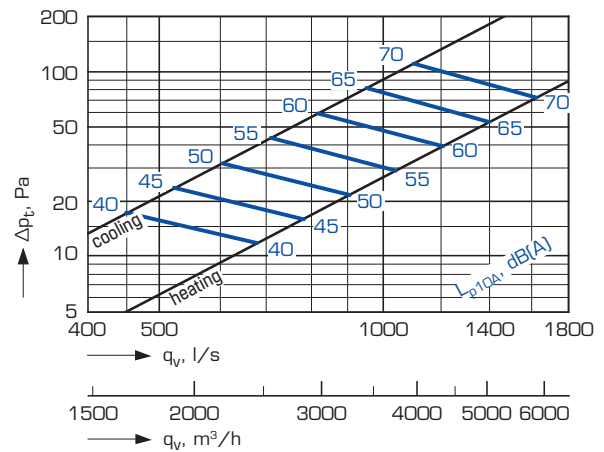
WOZB-35



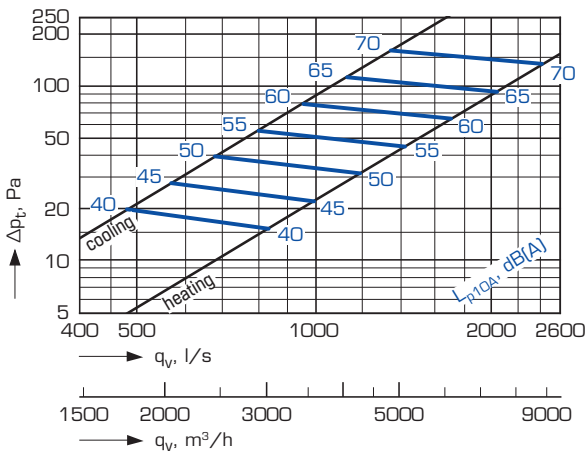
WOZB-40



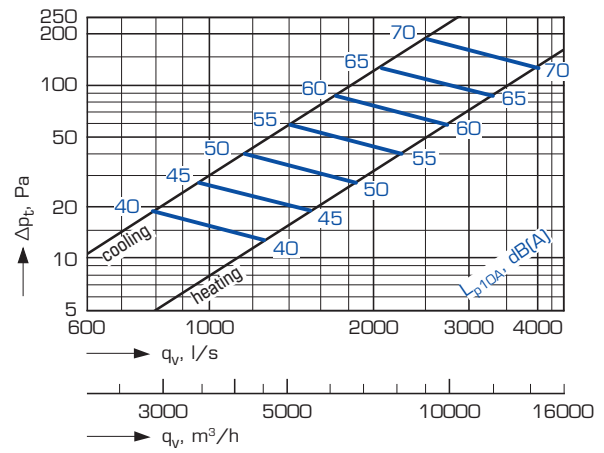
WOZB-45



WOZB-50



WOZB-63



In the above graph, the sound pressure levels in dB(A) are indicated for a reference room with 10 m² Sabine room absorption, equivalent to 4 dB room attenuation.

Cooling mode - orifices are lifted up.
Heating mode - orifices are dropped down.

ACOUSTICAL DATA, DEFINITIONS, THROW LENGTH

SOUND POWER LEVEL

Size	Correction of sound level K_{oct} in dB for octave bands, mean frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
31	1	-1	4	4	-1	-9	-21	-22
35	3	0	5	3	0	-8	-19	-24
40	2	-1	6	3	-1	-10	-22	-22
45	4	4	5	3	-1	-8	-18	-24
50	-4	0	6	3	-1	-8	-20	-24
63	1	1	5	4	-1	-10	-19	-24

The sound power levels for different octave bands are obtained by adding together the sound pressure level L_{p10A} in dB(A), and the corrections K_{oct} for the octave bands in the table with the help of the following formula:

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

Correction K_{oct} is the mean value for the range of application of WOZB.

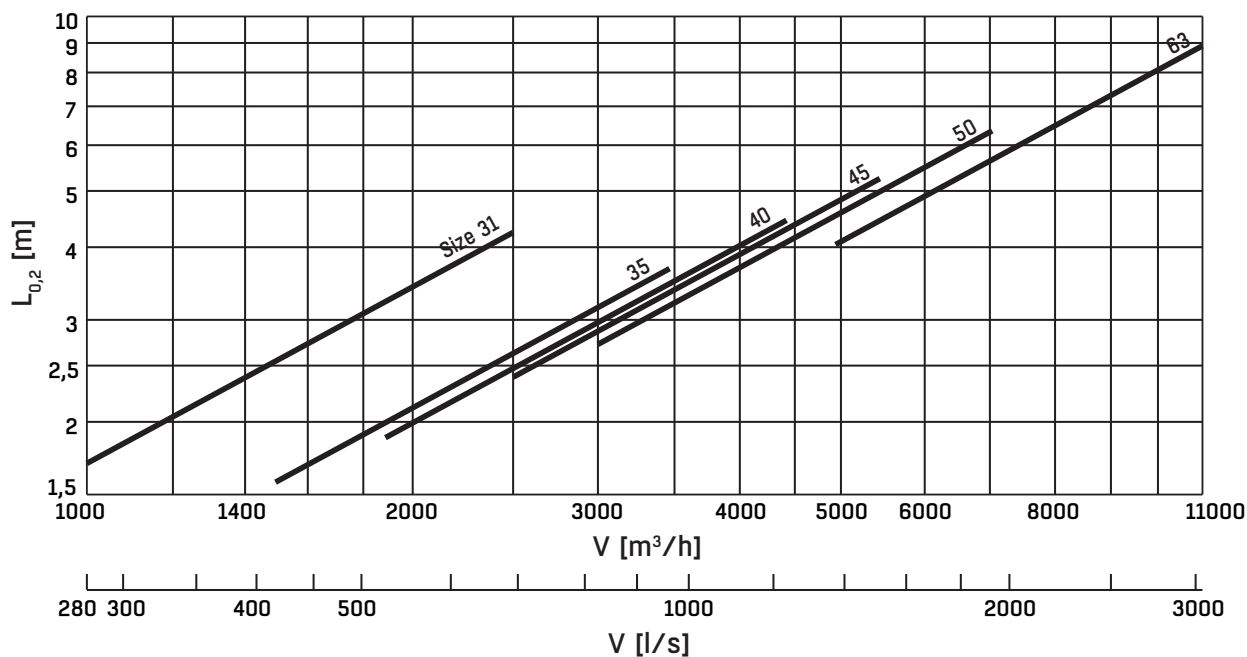
SOUND ATTENUATION

Size	Sound attenuation ΔL in dB for octave bands, mean frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
31	14	9	4	2	0	0	1	2
35	12	9	5	4	1	2	3	2
40	12	7	3	1	1	0	1	1
45	10	5	3	0	0	0	1	2
50	11	6	2	1	1	1	1	2
63	10	5	2	1	0	0	1	2

DEFINITIONS

q	air flow	l/s, m ³ /h
Δp_t	total pressure drop	Pa
$L_{0,2}$	throw	m
L_{p10A}	sound pressure level with a room attenuation of 4 dB (10 m ² room absorption area)	dB(A)
L_W	sound power level	dB
K_{oct}	octave band correction	dB
ΔL	sound attenuation from the duct to the room	dB

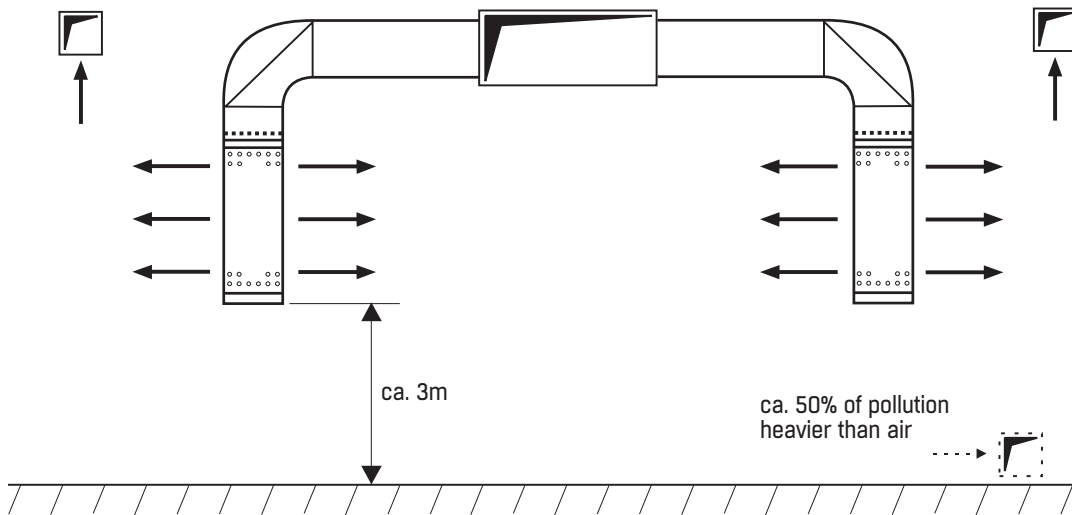
THROW LENGTH



$L_{0,2}$ values are given for the diffuser working with orifices in upper position (horizontal diffusion pattern) and for isothermal air supply.

APPLICATION, DIFFUSION PATTERNS, INSTALLATION ALTERNATIVES

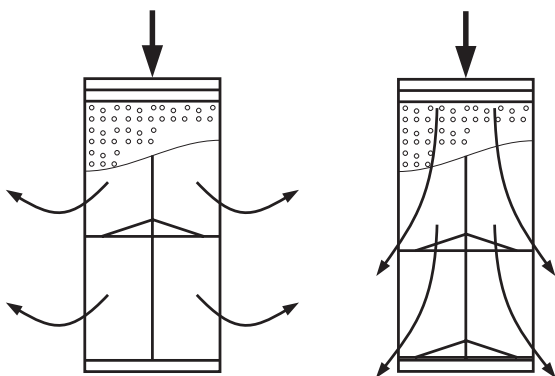
APPLICATION



WOZB hanging diffusers are designed to be used in places where low heat loads are produced (lower than 150 W/m²) and where the harmful substances emitted are heavier than the air. The throw length of diffuser covers in the range of 1,5-9 m and depends on the quantity and the temperature of the supplied air flow. Recommended mounting height of the diffuser 3-4 m above floor.

- Maximum temperature difference at heating $t_v \leq 10K$
- Maximum temperature difference at cooling $t_k \leq 8K$

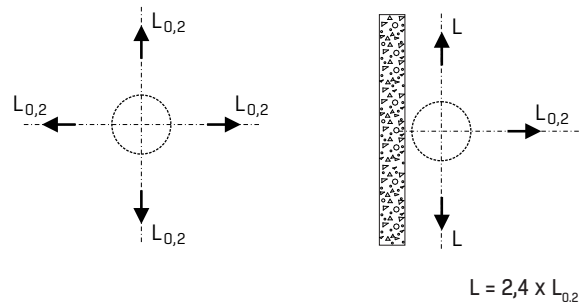
DIFFUSION PATTERNS



COOLING Function
Movable orifices lifted up

HEATING Function
Movable orifices dropped down

INSTALLATION ALTERNATIVES

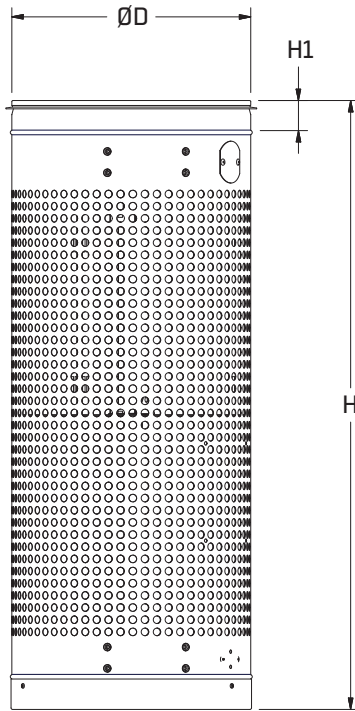


Freely hanging

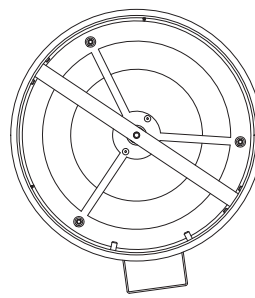
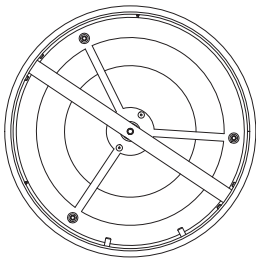
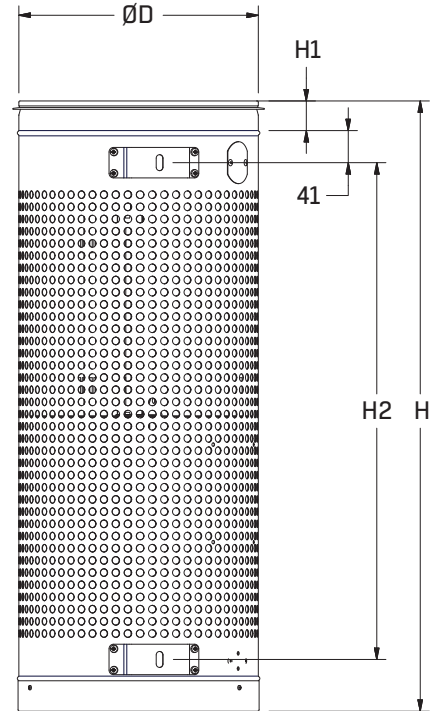
Mounted at the wall

DIMENSIONS AND WEIGHT

WITHOUT REGULATION - FREELY HANGING



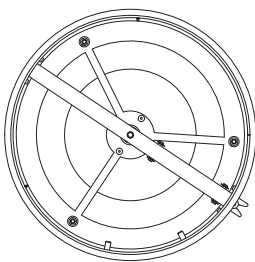
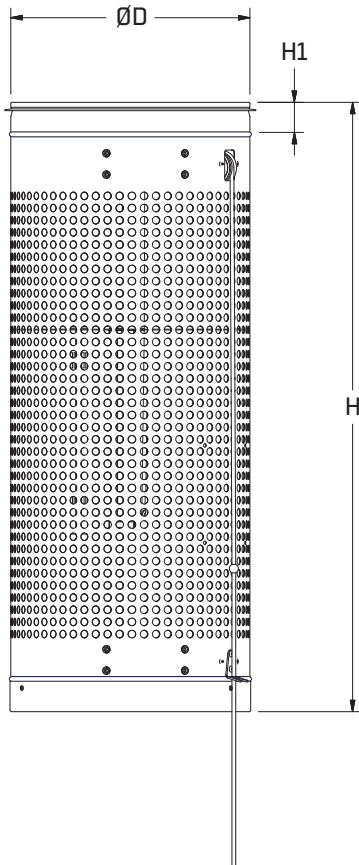
WITHOUT REGULATION - WALL MOUNTED



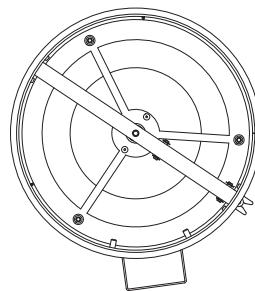
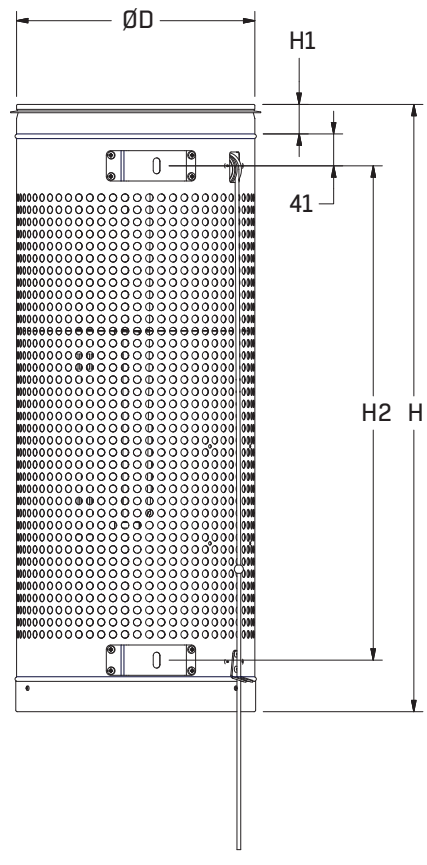
Size	ØD (mm)	H (mm)	H1 (mm)	H2 (mm)	Weight (kg)
31	315	800	40	652	5,1
35	355	1150	65	952	8,3
40	400	1150	65	952	9,5
45	450	1167	65	952	10,5
50	500	1167	65	952	12,4
63	630	1167	65	952	16,1

DIMENSIONS AND WEIGHT

MANUAL REGULATION - FREELY HANGING



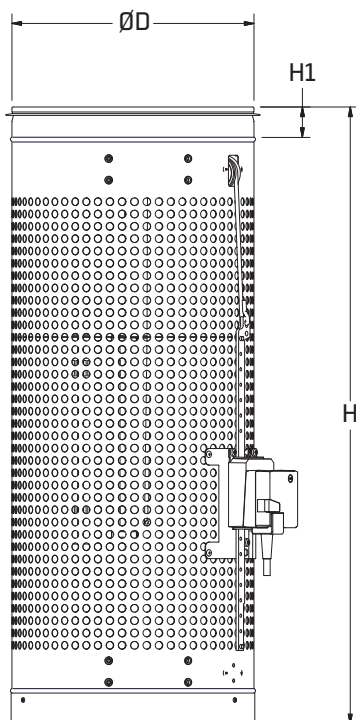
MANUAL REGULATION - WALL MOUNTED



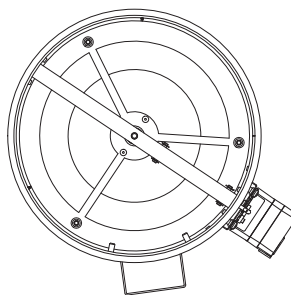
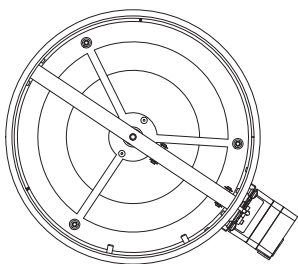
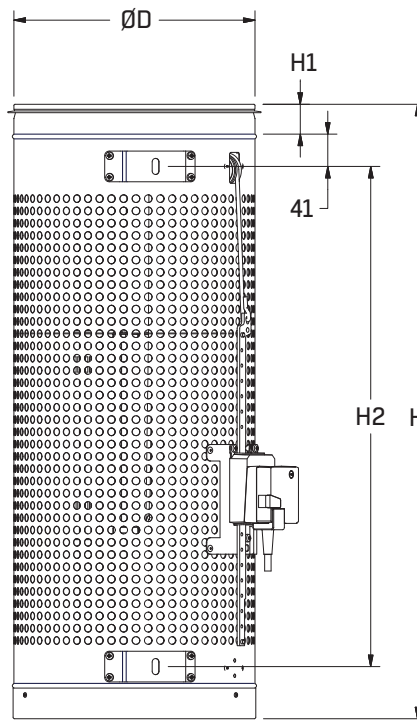
Size	ØD (mm)	H (mm)	H1 (mm)	H2 (mm)	Weight (kg)
31	315	800	40	652	5,2
35	355	1150	65	952	8,4
40	400	1150	65	952	9,6
45	450	1167	65	952	10,6
50	500	1167	65	952	12,5
63	630	1167	65	952	16,2

DIMENSIONS AND WEIGHT

ELECTRIC ACTUATOR REGULATION - FREELY HANGING



ELECTRIC ACTUATOR REGULATION - WALL MOUNTED



Size	ØD (mm)	H (mm)	H1 (mm)	H2 (mm)	Weight (kg)
31	315	800	40	652	5,8
35	355	1150	65	952	9,0
40	400	1150	65	952	10,2
45	450	1167	65	952	11,2
50	500	1167	65	952	13,1
63	630	1167	65	952	16,8

GENERAL, PRODUCT CODE

CONSTRUCTION AND FUNCTION

Circular displacement diffuser WOZB consists of perforated tube with two orifices inside, which can be fixed or movable. In latter case, change of their position influence on air diffusion pattern. Air can be supplied downward or horizontally to adapt to local conditions. It is suitable for cooling and heating, reducing heating-up time when vertical discharge direction is selected. WOZB offers two options for air diffusion pattern control: manual via pulling string or automatic via electric actuator.

There are two installation alternatives available: freely hanging and wall mounted. In order to make installation at the wall/pillar easier, diffuser is equipped with additional handles.

WOZB is designed to supply a large quantity of air directly into the working area. The low turbulence air flow, supplied through the entire surface of the diffuser, displaces the contaminated air including chemicals, dusts and odours.

MATERIAL AND SURFACE FINISH

Diffuser is made of galvanised perforated steel sheet. For painted version the standard colour is RAL 9010, 70% of gloss. Components in contact with the ventilation air conform to corrosivity classes C3 in accordance with EN-ISO 12944-2. 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.

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.

SPECIFICATIONS TEXT EXAMPLE

Circular displacement diffuser WOZB is designed for industrial applications to be hung over the floor level. It delivers large amount of air directly into the working centre, in order to dilute the contaminants. Diffuser consists of perforated tube with two orifices inside, which can be fixed or movable. In latter case, change of their position influence on air diffusion pattern. Air can be supplied slightly downward or upward to adapt to actual conditions.

PRODUCT CODE

Circular displacement diffuser

WOZB-aa-b-c-d

Size (a)

31, 35, 40, 45, 50, 63

Installation alternative (b)

1 = freely hanging

2 = wall mounted

Regulation of airflow direction (c)

0 = without

1 = manual

2 = electric actuator

Finish (d)

0 = galvanised steel sheet

1 = standard RAL 9010

X = any other colour RAL palette

EXCELLENCE IN SOLUTIONS

FläktGroup is the European market leader for smart and energy efficient Indoor Air and Critical Air solutions to support every application area. We offer our customers innovative technologies, high quality and outstanding performance supported by more than a century of accumulated industry experience. The widest product range in the market, and strong market presence in 65 countries worldwide, guarantee that we are always by your side, ready to deliver Excellence in Solutions.

PRODUCT FUNCTIONS BY FLÄKTGROUP

Air Treatment | Air Movement | Air Diffusion | Air Distribution | Air Filtration
Air Management & ATD's | Air Conditioning & Heating | Controls | Service

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