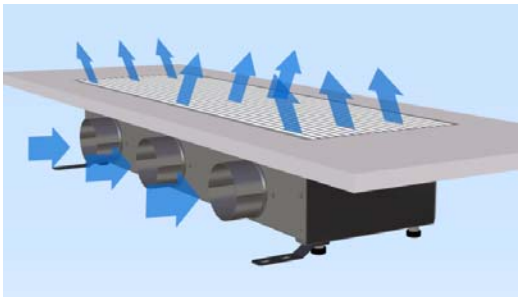
AIR TECH
SYSTEMS

Technical Brochure

LTG Air Diffusers

Linear diffusers LDU-W, LDU-W/H



Floor-mounted

www.LTG.net

Technical brochure • Linear diffusers LDU-W and LDU-W/H, floor mounted

LTG Comfort Air Technology

- Air-Water Systems
- **Air Diffusers**
- Air Distribution

Content

Notes

Dimensions stated in this brochure are in mm.

Dimensions stated in this brochure are subject to General Tolerances according to DIN ISO 2768-vL.

Straightness and twist tolerances for extruded aluminum profiles according to DIN EN 12020-2.

Length tolerance: ≤ 1,5 m ± 1,5 mm;
≥ 1,5 m ± 2,0 mm.

The surface finishes meet standard indoor use requirements, i.e. room climate requirements according to DIN EN ISO 7730. Other finishes meeting special use requirements are available on request.

The actual tender documentations are available in word format at your local dealership or at www.LTG.net.

Technical brochure • Linear diffusers LDU-W and LDU-W/H, floor mounted

Views of unit

Application

Ventilation, heating and cooling of offices, conference rooms and entrance halls requiring high temperature differences between supply air/indoor air (+15...-8K).

Installation, Positioning

Preferably alongside facades and interior walls, flush-mounted in false floors or floor cavities.

Installation example, with LTG aluminium roller grille

Advantages

- High thermal and acoustic comfort
- Variable appearance provided by a range of grilles
- Good optical integration as a continuous grid band thanks to wide range of accessory adapter and end pieces
- Excellent adaptation to false floors and floor cavities thanks to Integrated height-adjustable feet, easy fixation and alignment
- Easy cleaning cleaning via removable floor grille and air distribution plate
- Easy adjustment by integrated throttle damper
- Project-based adaptation of air diffusers, supply air flow and outlet impulse

Functionality

The high-induction linear diffuser splits the supply air in diverging individual jets in a localized manner in parallel to the facade.

Air speed and temperature differential are reduced rapidly.

In the cooling mode, the air jets' limited divergence creates a mixed air stream close to the facade or wall, forming a low level displacement flow in the occupied zone. This flow replaces air that "plumes" to high level from heat sources and occupants.

In the heating mode, the chilled indoor air close to the floor is rapidly mixed with the heated supply air thanks to high induction. The integrated heat exchanger (version including reheating, type LDU-W/H) has been optimized specifically for low water volumes and high caloric outputs.

Unlike traditional displacement systems, the vertical temperature gradient in the occupied zone is controlled within DIN EN ISO7030 guidelines, even with high cooling differentials.

Indoor air flow

Technical brochure • Linear diffusers LDU-W and LDU-W/H, floor mounted

Product overview, specifications

	LDU-W Without reheater Standard version	LDU-W/H With integrated reheater Standard version	Special version
Tray			
Length	800...1450 mm, lateral air connection sockets	850...1450 mm, lateral air connection sockets	—
Material	Sheet steel, galvanized		Coated black, stainless steel
Air connection	incl. throttle, lateral		incl. throttle, below
Support feet	4 integrated feet, height adjustable		—
Ventilation grille foot traffic resistant, installation in line in combination with fan coil units type VKB with same grille is possible			
Ventilation grille	Aluminum linear grille, anodized		LTG linear stainless steel grille
Support frame	Aluminium, anodized		Stainless steel
Air outlet plate	Coated black		—
Surface	The surface finishes meet standard indoor use requirements, i.e. room climate requirements according to DIN EN ISO 7730. Other finishes meeting special use requirements are available on request.		
Accessories	See price list		

Control

Control of type LDU-W/H works via standard radiator valves. The heat exchanger is provided with a bare pipe connection to connect flexible hoses via quick coupling.

Assembly, Installation

Prior to false or cavity floor installation, the air diffusers are mounted to the unfinished floor. On-site tolerances of position may be compensated via height-adjustable feet integrated in the floor-mounted air diffusers. Having completed the work on the floor and the flooring, the pre-mounted protective panel (chipboard) is removed to insert the ventilation grill.

Please observe the Installation, Operating and Maintenance Instructions included in the delivery!

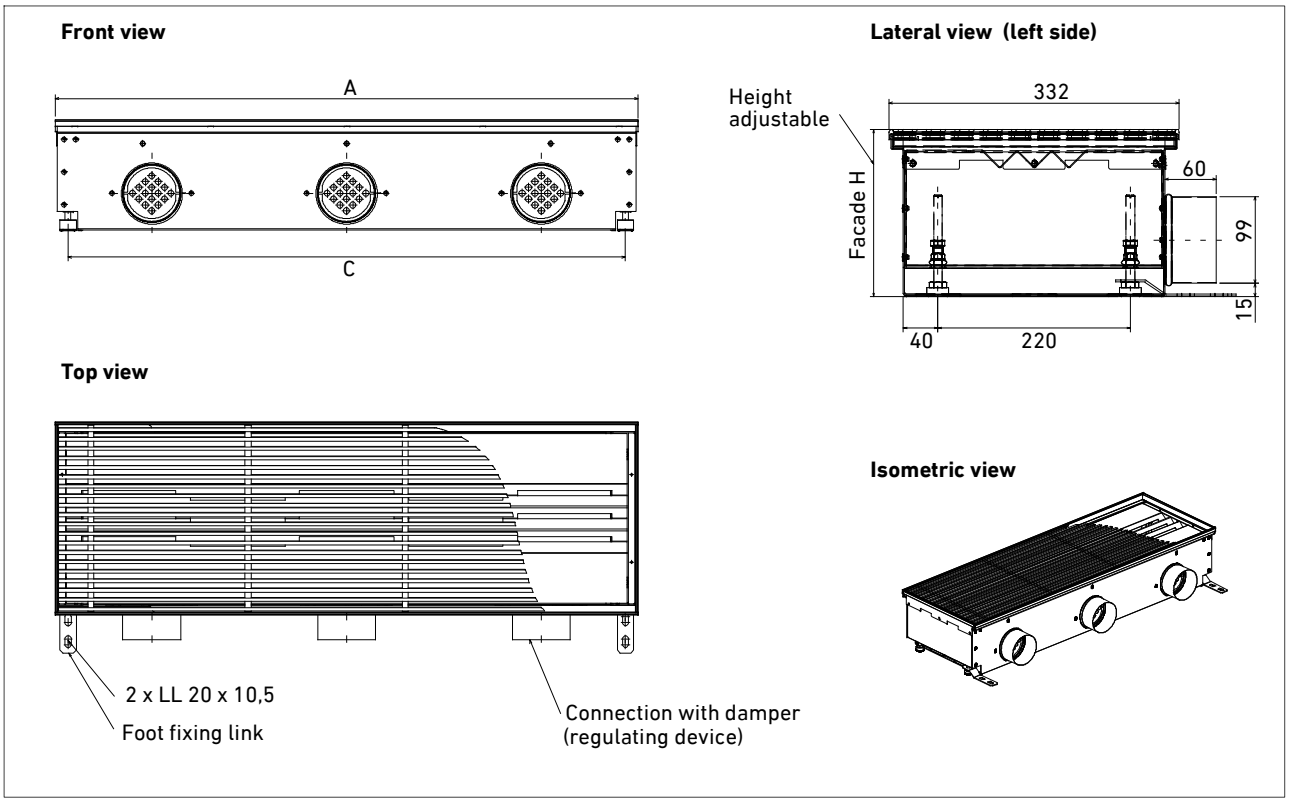
Maintenance

Cleaning of the tray acc. to VDI 6022 by easy removal of ventilation grille and and air outlet plate.

Please observe the Installation, Operating and Maintenance Instructions included in the delivery!

Technical brochure • Linear diffusers LDU-W and LDU-W/H, floor mounted Type LDU-W/-

Dimensions, lateral air connection

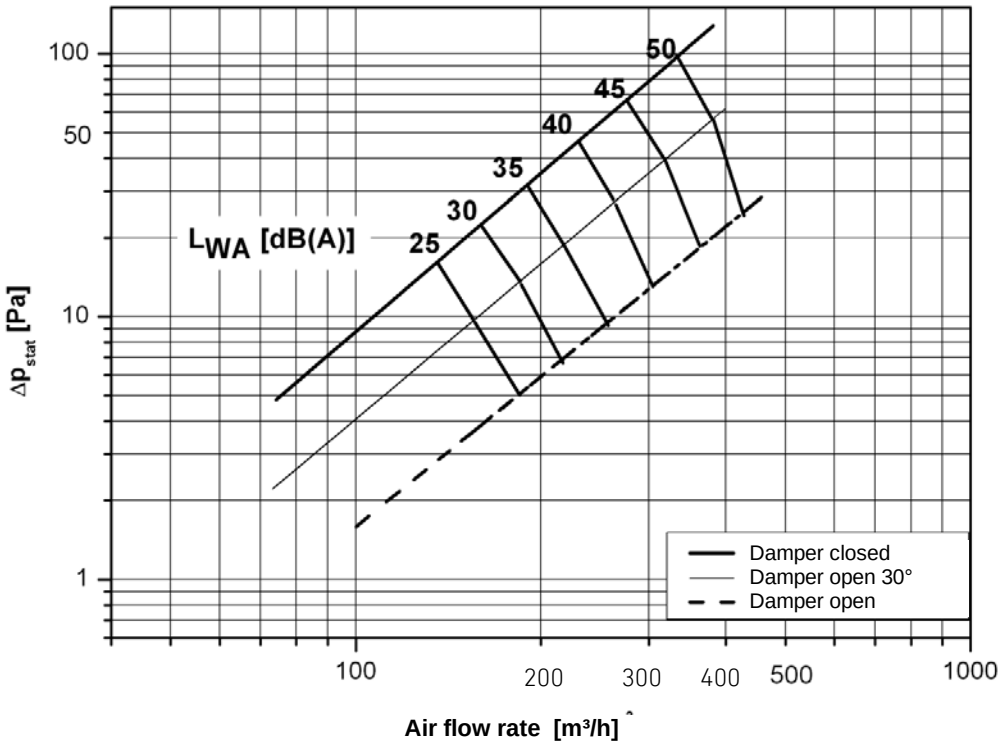


Size A [mm]	C [mm]	H [mm]
850	806	190...245
1050	1006	
1250	1206	
1450	1406	

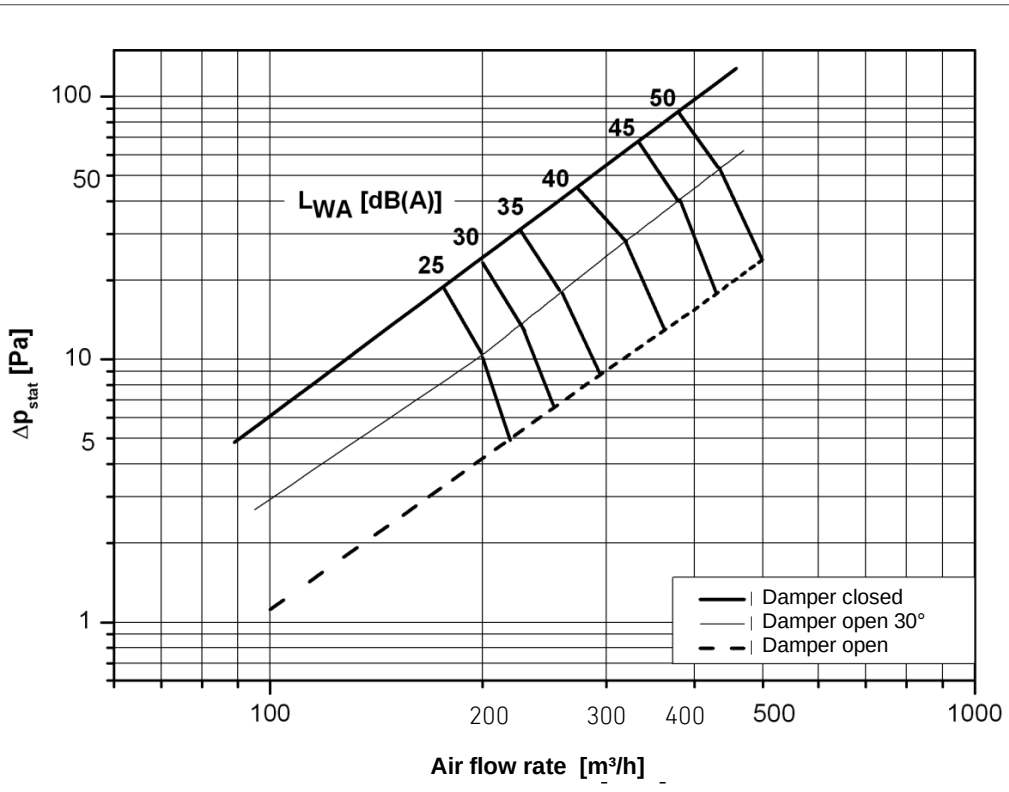
The number of air connections depends on flow rate and size (refer to Selection, page 6 and the following ones).

Technical brochure • Linear diffusers LDU-W and LDU-W/H, floor mounted Type LDU-W/-

Selection type LDU-W/-/3/1050, 3 slots, size 1050, connection 3 x Ø 99

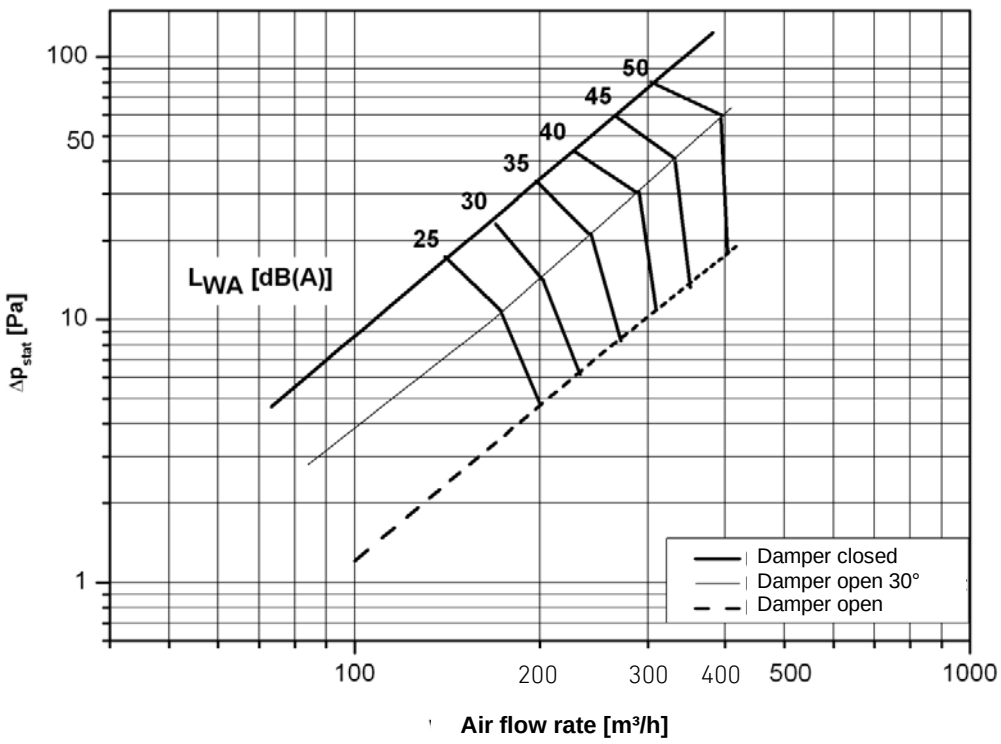


Selection type LDU-W/-/3/1250, 3 slots, size 1250, connection 3 x Ø 99

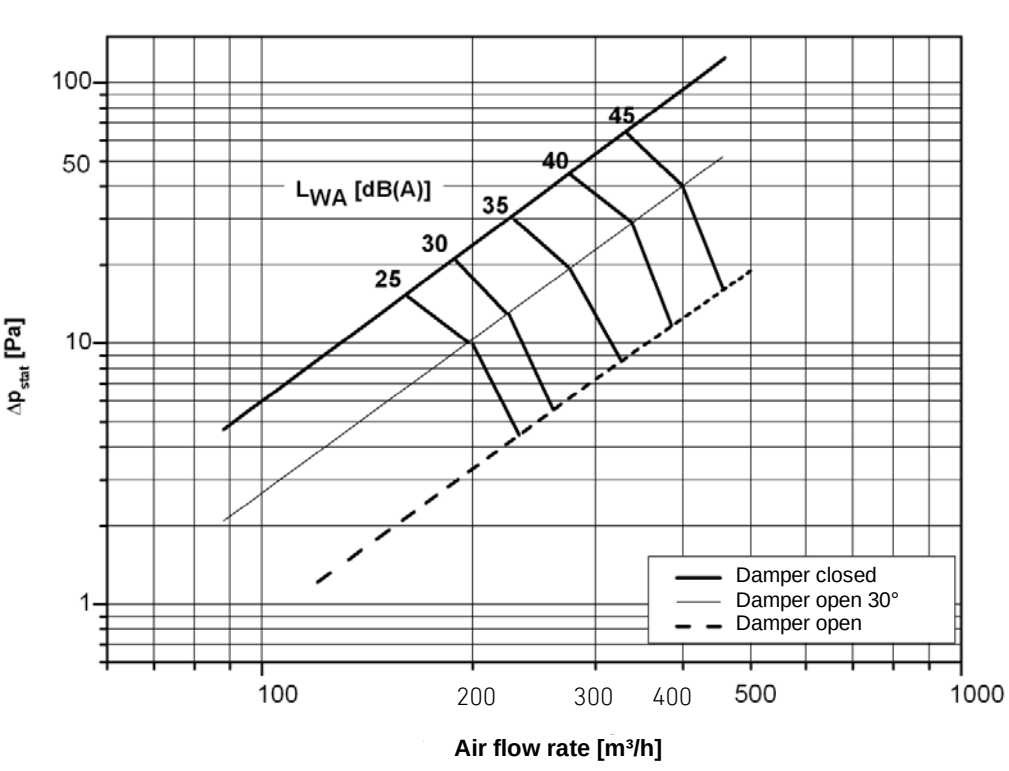


Technical brochure • Linear diffusers LDU-W and LDU-W/H, floor mounted Type LDU-W/-

Selection type LDU-W/-/4/1050, 4 slots, size 1050, connection 3 x Ø 99

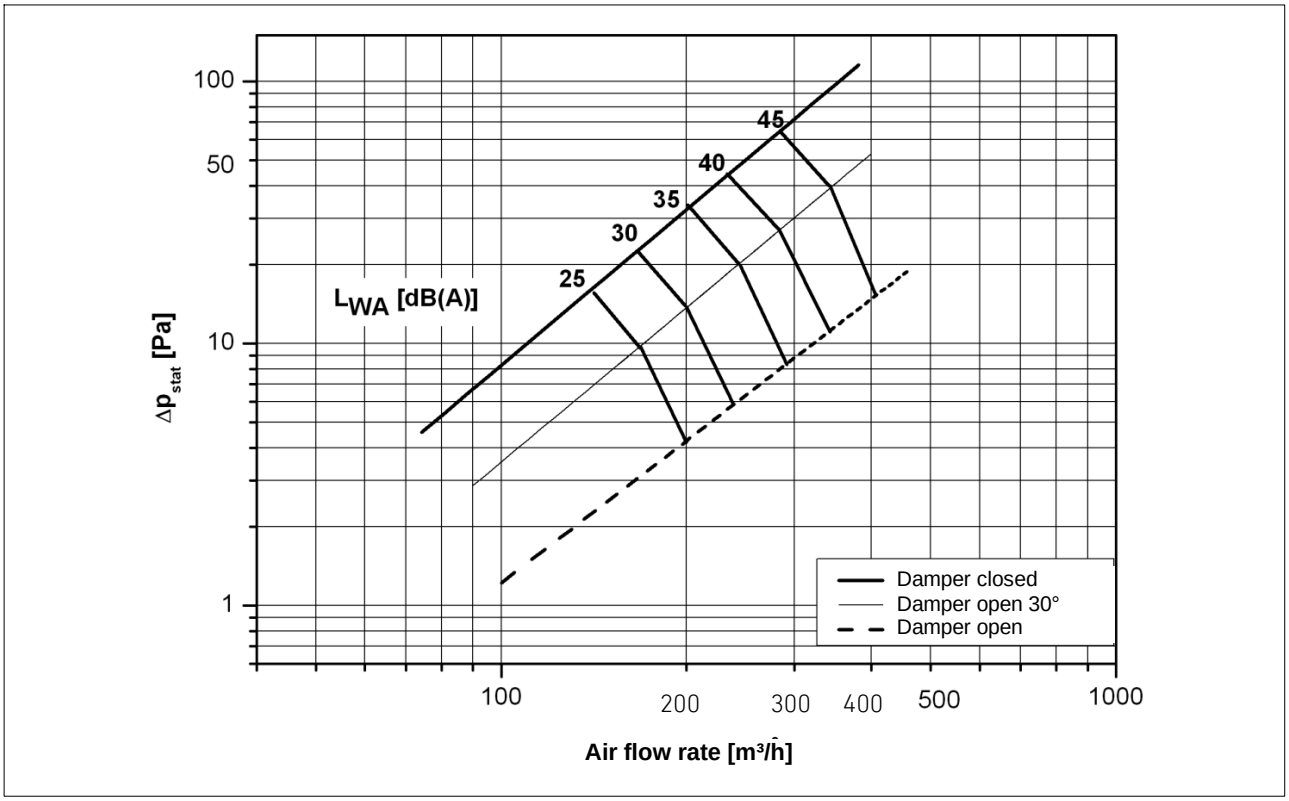


Selection type LDU-W/-/4/1250, 4 slots, size 1250, connection 3 x Ø 99

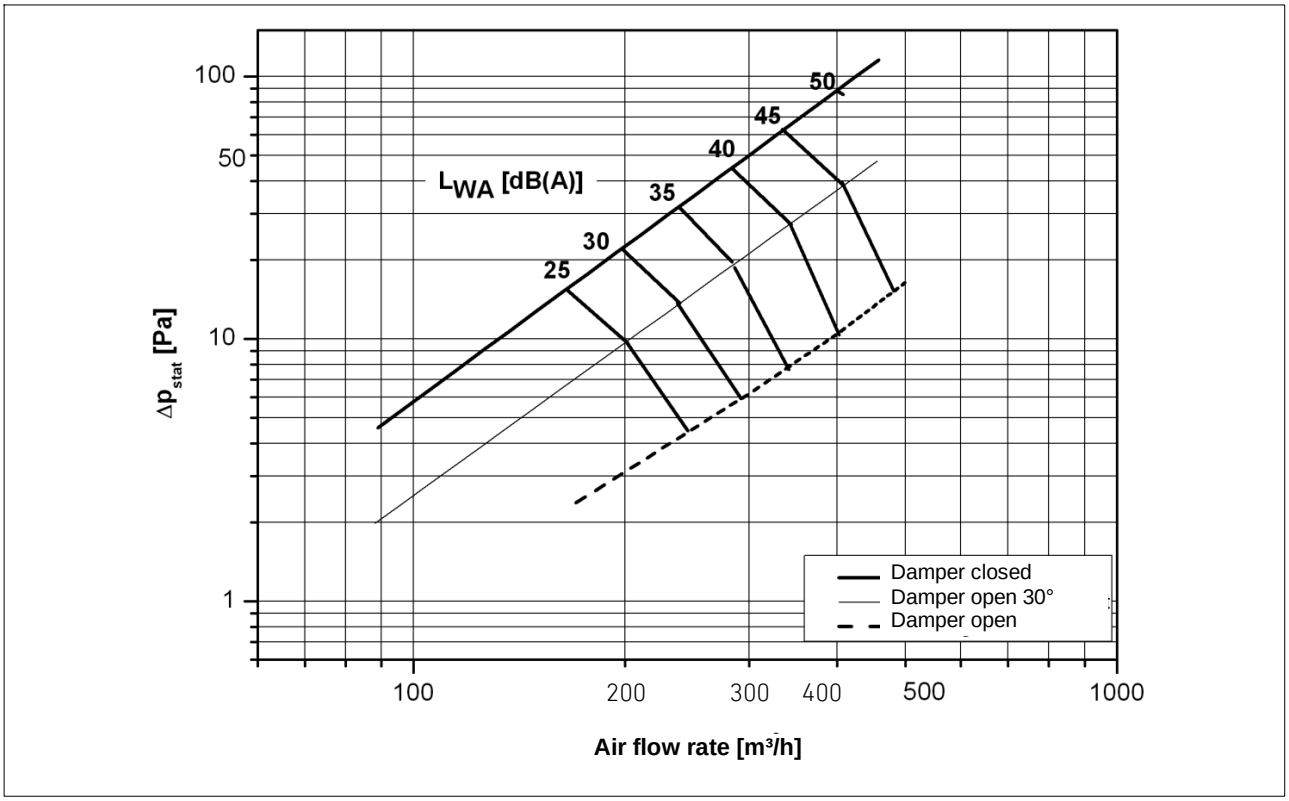


Technical brochure • Linear diffusers LDU-W and LDU-W/H, floor mounted Type LDU-W/-

Selection type LDU-W/-/5/1050, 5 slots, length 1050 mm, connection 4 x Ø 99



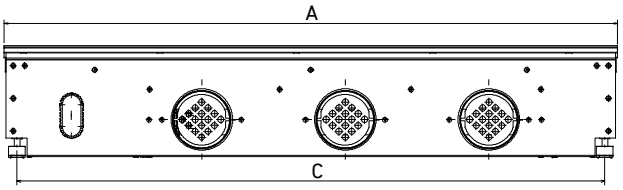
Selection type LDU-W/-/5/1250, 5 slots, length 1250 mm, connection 4 x Ø 99



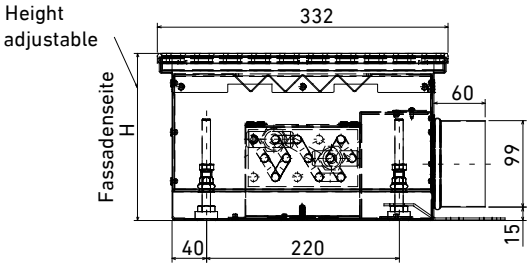
Technical brochure • Linear diffusers LDU-W and LDU-W/H, floor mounted
Type LDU-W/H with reheater

Dimensions, lateral air connection

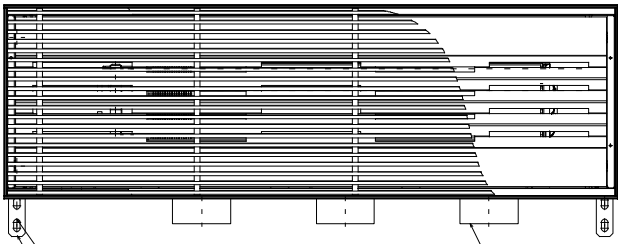
Front view



Lateral view (left side)



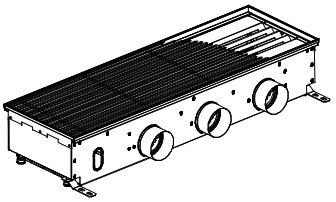
Top view



2 x LL 20 x 10,5
Foot fixing link

Connection with damper
(regulating device)

Isometric view



Size A [mm]	C [mm]	H [mm]
850	806	190...245
1050	1006	
1250	1206	
1450	1406	

The number of air connections depends on flow rate and size (refer to pages 10 and the following ones).

Technical brochure • Linear diffusers LDU-W and LDU-W/H, floor mounted
Type LDU-W/H with reheater

Technical data size 850 (connection 2 x Ø 99)

V_P [m^3/h]	Δp [Pa]	L_{A18} [dB(A)]	L_{wA} [dB(A)]	Q_h /Δt [W/K]	Q_{stat} [1)] [W]	w_{oh} /Δp_H [kg/h]/ [kPa]	Q_H [1)] [W]
90	4	18	25	23	141	90/2	918
150	11	24	30	32	141	90/2	1267
180	16	28	34	35	141	90/2	1419

Technical data size 1050 (connection 3 x Ø 99)

V_P [m^3/h]	Δp [Pa]	L_{A18} [dB(A)]	L_{wA} [dB(A)]	Q_h /Δt [W/K]	Q_{stat} [1)] [W]	w_{oh} /Δp_H [kg/h]/ [kPa]	Q_H [1)] [W]
180	8	23	29	40	190	120/5	1589
210	11	25	32	44	190	120/5	1748
240	14	28	35	47	190	120/5	1900

Technical data size 1250 (connection 4 x Ø 99)

V_P [m^3/h]	Δp [Pa]	L_{A18} [dB(A)]	L_{wA} [dB(A)]	Q_h /Δt [W/K]	Q_{stat} [1)] [W]	w_{oh} /Δp_H [kg/h]/ [kPa]	Q_H [1)] [W]
240	8	22	28	52	238	150/9	2072
290	12	26	32	58	238	150/9	2330
320	15	28	35	62	238	150/9	2478

Technical data size 1450 (connection 5 x Ø 99)

V_P [m^3/h]	Δp [Pa]	L_{A18} [dB(A)]	L_{wA} [dB(A)]	Q_h /Δt [W/K]	Q_{stat} [1)] [W]	w_{oh} /Δp_H [kg/h]/ [kPa]	Q_H [1)] [W]
320	10	24	30	66	287	180/16	2659
350	12	25	32	70	287	180/16	2811
400	15	29	35	76	287	180/16	3056

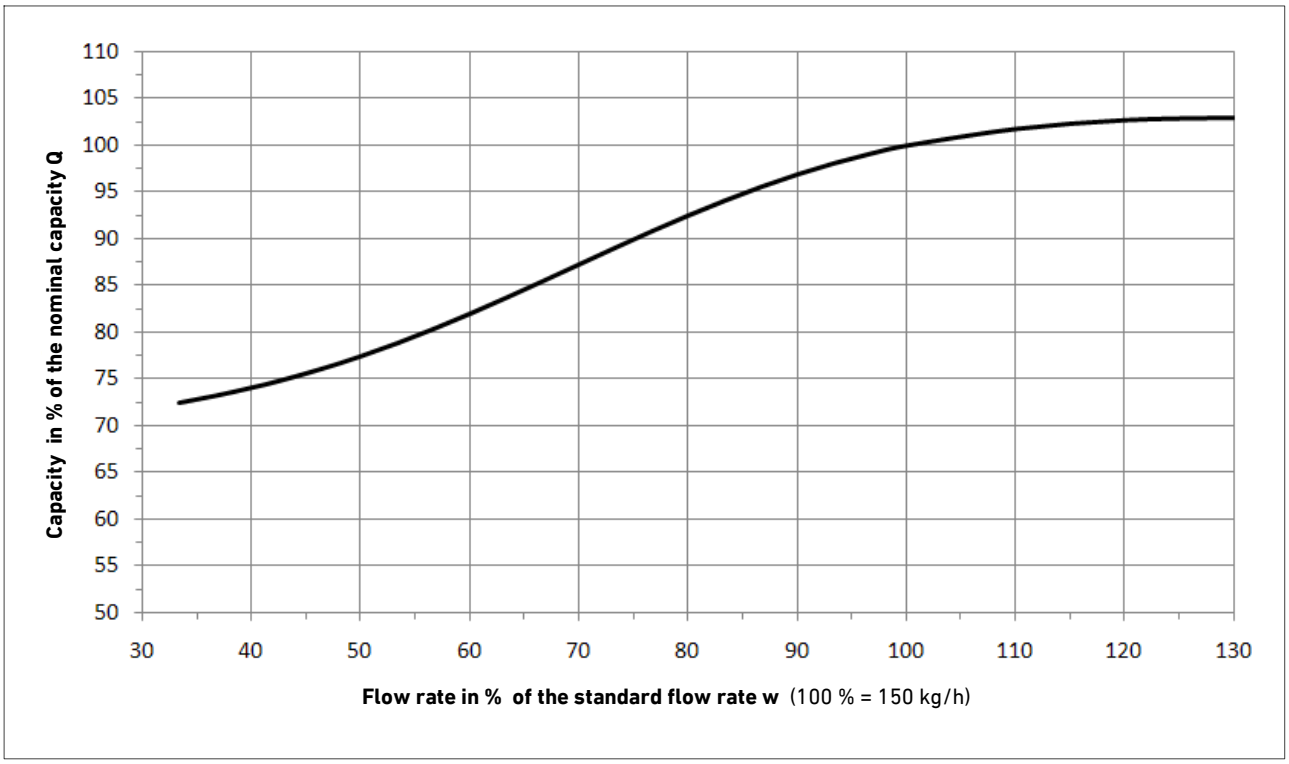
1) With 60 °C water supply temperature,
20 °C primary air temperature,
20 °C room temperature

The charts show examples for the unit design. A special selection program is available for other flow rates, primary pressures, temperatures and water flow rates.

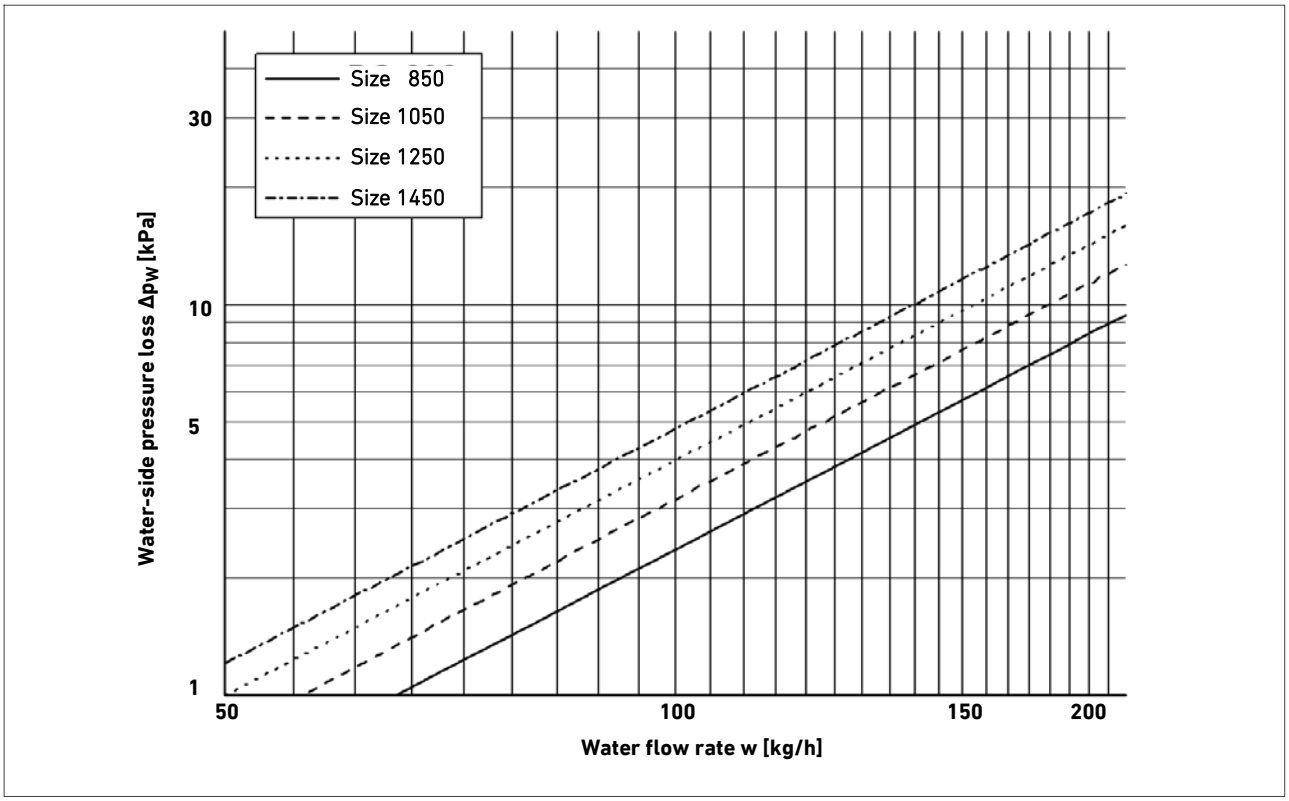
V_P - primary air flow rate
Δp - pressure loss
L_{A18} - sound pressure level at a room absorption of 18 m^2 Sabine (±3 dB)
L_{wA} - sound power level (± 3 dB)
Q_h - water-side heating capacity
Δt - temperature difference between air entering the room and water supply
Q_{stat} - static heating capacity
w_{oh} - standard water-flow rate (heating)
Δp_H - water-side pressure loss via heating element
Q_H - heating capacity

Technical brochure • Linear diffusers LDU-W and LDU-W/H, floor mounted
Type LDU-W/H with reheater

Capacity with different water flow rates



Water-side pressure loss with different water flow rates



Floor-mounted air diffusers type LDU-W and LDU-W/H

Nomenclature, ordering code

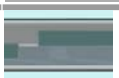
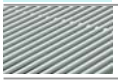
LDU-W / H / 3 / 850 / 320 / OR / AE / S / 2 / 99 / DLU

(1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11)

(1) **Series**	**LDU-W**	= floor-mounted air diffuser LDU-W
(2) **Reheater**	**–**	= without
	H	= with
(3) **No. of slot rows**	**1**	
	2	
	3	
	4	
(4) **Size** [mm]	**850**	
	1050	
	1250	
	1450	
(5) **Width of grille** [mm]	**200**	
	320	
(6) **Facing panel with grille frame**	**OR**	= without
	LR	= left side
	RR	= right side
	BR	= both sides
(7) **Ventilation grille**	**AE**	= aluminum linear grille, anodized
	AR	= aluminum roller grille 20 mm
	E	= stainless steel grille
(8) **Air connection**	**S**	= lateral
	U	= at the bottom
(9) **No. of connecting sockets**	**1**	
	2	
	3	
	4	
	5	
(10) **Connecting diameter** [mm]	**79**	
	99	
	124	
	139	
(11) **Damper**	**DLU**	= with damper DLU
	–	= without damper DLU

Product Overview • **LTG Air Diffusers**

LTG air diffusers for ceiling, wall or floor

	Ceiling	Wall	Floor
Linear diffuser	 LDB	 LW*module*	 LDU
	 LDB LTG System clean	 LW*module* LTG System clean	 LDU-W
Swirl-diffuser	 DLA	————	————
Transfer air device	————	 LDO-T	————

Custom diffusers

	LDR and LDB 12M LTG System clean
	Step diffuser BLQ
	Displacement air diffuser DLD
	Displacement air diffuser DLQ

Engineering Services

	LTG Engineering Services Comfort Air Technology

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Air-Water Systems
Air Diffusers
Air Distribution

Process Air Technology

Fans
Filtration Technology
Humidification Technology

Engineering Services

Laboratory Test & Experiment
Field Measurement & Optimisation
Simulation & Expertise
R&D & Start-up

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