Perforated diffuser HLD

Description

HLD is a circular high level displacement diffuser adapted for industrial requirements. HLD is equipped with a damper function, which makes it possible to vary the supply air pattern between horizontal or vertical, depending on whether heating or cooling is required. The switch can be made manually, or it can be automated using several types of motor. The external dimensions of the diffuser are adapted to the connection, making it easy to integrate into an ordinary duct system. HLD can be suspended from or installed on a wall or column using the installation bracket, which ensures great flexibility no matter how premises are used.

- Suitable for both cooling and heating
- Horizontal and vertical dispersal patterns
- High capacity
- Flexible positioning
- Can be supplied with an electric motor
- Can be supplied with a thermal actuator

Maintenance

The visible parts of the diffuser can be wiped with a damp cloth. For other maintenance, see installation instructions.

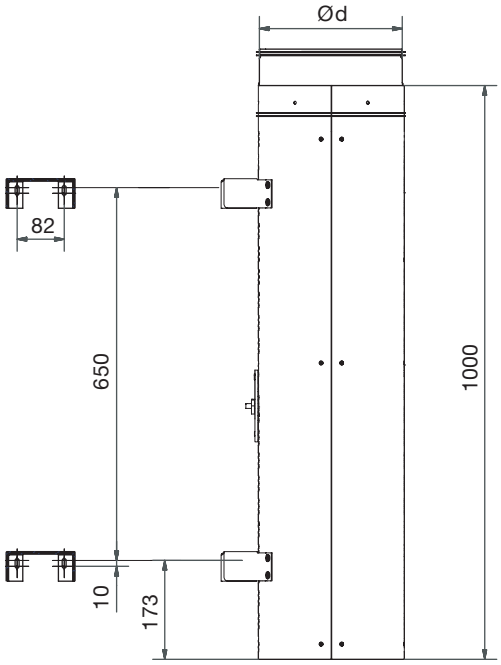
Order code

Product		HLD	a	bbb
Type				
Manual	0			
Motorized - modulating	1			
Motorized- on/off	2			
Automatic thermal actuator	3			
Size				

Accessories

Product	HLZ	a
Installation brackets (1set)		
Size		

Dimension



Ød Size	A [mm]	Weight* [kg]
250	192	11.5
315	225	13.7
400	270	17.0
500	322	21.0
630	390	27.0

*Motorized models weigh approx. 1 kg more than the weight stated in the table above.

Motor type

Type	Motor
HLD - 1	NM24A-MF-F
HLD - 2	NM24A-F

Materials and finish

Material: Galvanised steel
Standard finish: Galvanised

HLD is also available in stainless steel. Please contact Lindab's sales department for further information.

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Technical data

Capacity

Volume flow q_v [l/s] and [m³/h], total pressure Δp_t [Pa], throw $l_{0.2}$ [m] and sound power level L_{WA} [dB(A)] can be seen in the diagrams.

Throw $l_{0.2}$ / turning point $l_{0.0}$

Throw $l_{0.2}$[m] can be seen in the diagrams for isothermal air at a speed of 0.2 m/s. Turning point $l_{0.0}$ [m] can be seen in the diagrams for heated air, +5 K +10 K respectively.

Frequency-related sound effect level

The sound effect level in the frequency band is defined as $L_{WA}+K_{ok}$. K_{ok} values are specified in charts beneath the diagrams on the following pages.

Quick selection

Size		q_v [l/s]	q_v [m³/h]	P_t [Pa]	$l_{0.2}$ isoterm [m]	$l_{0.0}$ -5K [m]
		L_{WA} = 50				
250	Horizontal	259	934	44	2	
250	Vertical	259	934	44		3
315	Horizontal	394	1420	37	2	
315	Vertical	394	1420	32		3
400	Horizontal	586	2111	32	2	
400	Vertical	586	2111	32		2
500	Horizontal	938	3377	32	3	
500	Vertical	938	3377	32		2
630	Horizontal	1500	5401	32	4	
630	Vertical	1500	5401	32		2
Size		L_{WA} = 55				
250	Horizontal	305	1099	62	2	
250	Vertical	305	1099	62		3
315	Horizontal	457	1647	50	2	
315	Vertical	457	1647	50		3
400	Horizontal	680	2447	44	3	
400	Vertical	680	2447	44		3
500	Horizontal	1087	3915	42	3	
500	Vertical	1087	3915	42		3
630	Horizontal	1739	6262	42	4	
630	Vertical	1739	6262	42		2
Size		L_{WA} = 60				
250	Horizontal	359	1294	85	2	
250	Vertical	359	1294	85		4
315	Horizontal	531	1910	68	3	
315	Vertical	531	1910	68		3
400	Horizontal	788	2838	58	3	
400	Vertical	788	2838	58		3
500	Horizontal	1261	4539	57	4	
500	Vertical	1261	4539	57		3
630	Horizontal	2017	7260	57	5	
630	Vertical	2017	7260	57		3

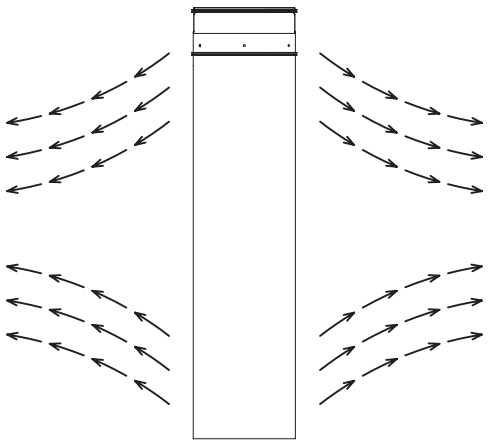
Supply air

With its special design, HLD is suitable for the supply of large volumes of air with short throws in a limited area. This concentrates the supplied air in a small area within a larger space, after which the air distributes itself around the premises. Normally, a horizontal dispersal pattern is recommended in cooling situations and a vertical dispersal pattern in heating situations.

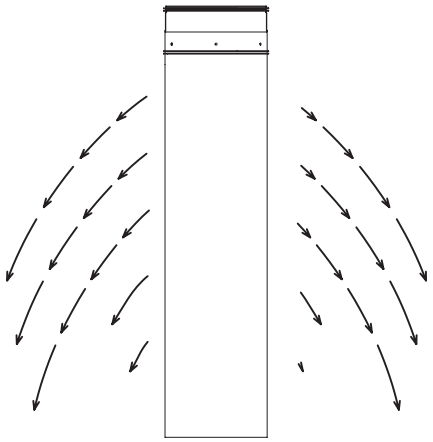
Planning

HLD with cooled air works in much the same way as displacement ventilation. Displacement ventilation has a higher temperature efficiency than mixing ventilation, and thus more power is discharged with the same volume of air and the same cooling temperature. For the calculation of discharged power in a cooling situation, use the calculation method for displacement ventilation. For HLD with heated air, power is calculated as for mixing ventilation.

Horizontal supply air - cooling



Vertical supply air - heating



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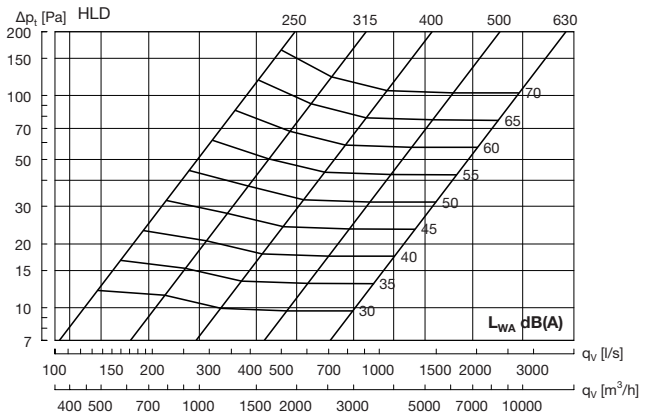
Sound power level

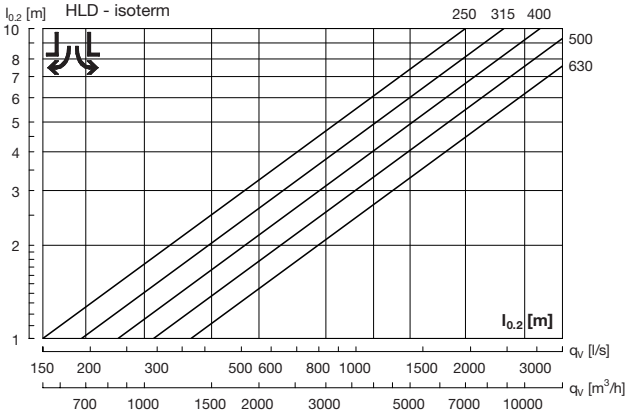
The diagram for sound effect level and pressure applies to both horizontal and vertical dispersal.

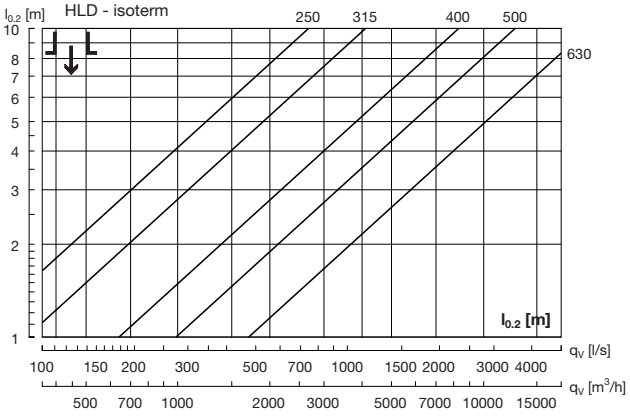


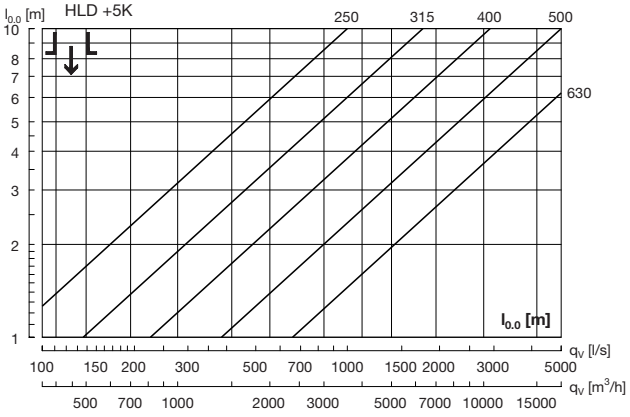
Size	Hz	Centre frequency Hz 63	125	250	500	1K	2K	4K	8K
250	Kok	4	-3	-3	1	-6	-16	-29	-37
315	Kok	12	1	0	1	-7	-16	-27	-36
400	Kok	5	-3	2	1	-8	-17	-29	-41
500	Kok	5	-3	2	1	-8	-17	-29	-41
630	Kok	5	-3	2	1	-8	-17	-29	-41

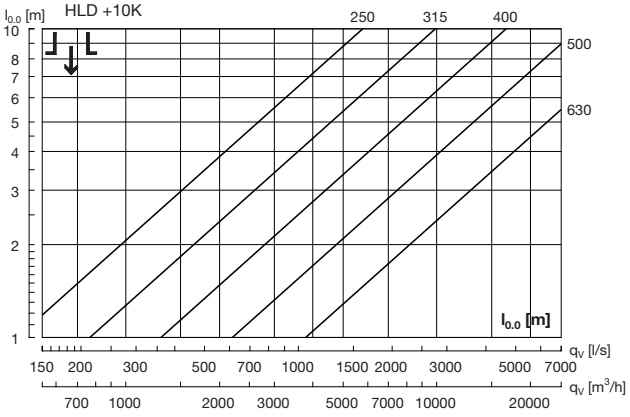
Throw $l_{0.2}$ / Turning point $l_{0.0}$

These diagrams apply for installation heights > 1 m.









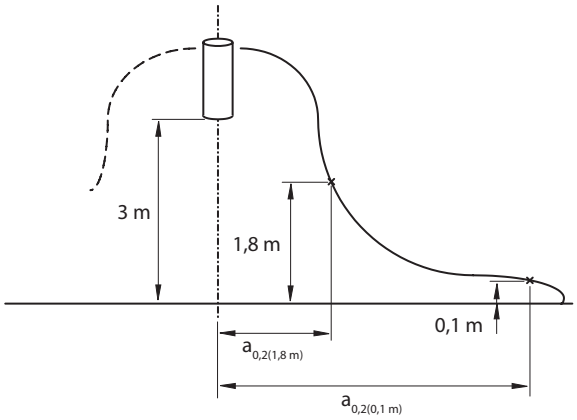
Perforated diffuser HLD

Technical data

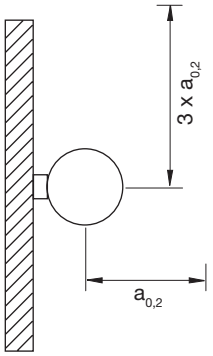
All diagrams apply for suspended installation.

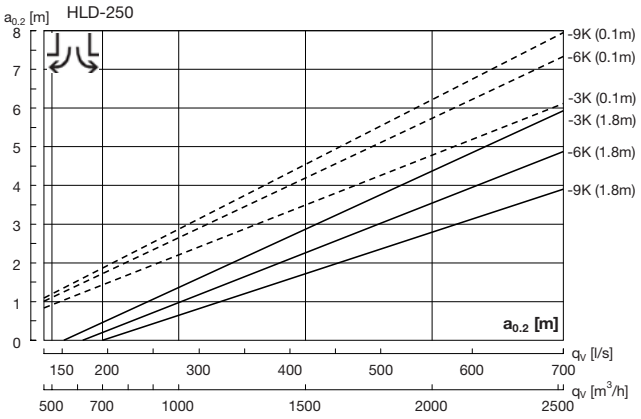
Near zones

For cooling and horizontal supply air, HLD will function as a displacement diffuser positioned high up.
The near zone is shown for two different heights, one “inner” near zone $a_{0.2\ (1.8\ m)}$ defined as the distance from the diffuser where the speed at a height of 1.8 m is 0.2 m/s, and an “outer” near zone $a_{0.2\ (0.1\ m)}$, which is the distance from the diffuser where the speed at a height of 0.1 m is 0.2 m/s.

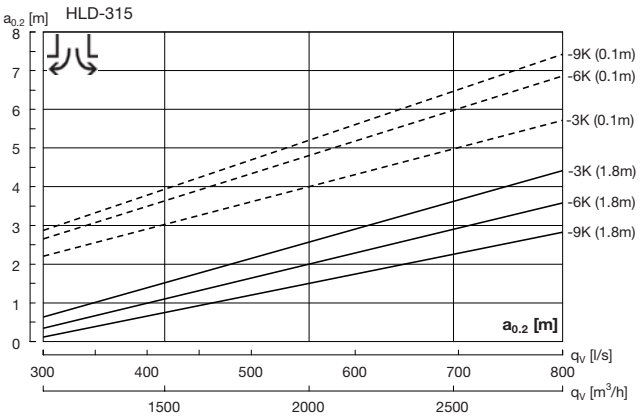


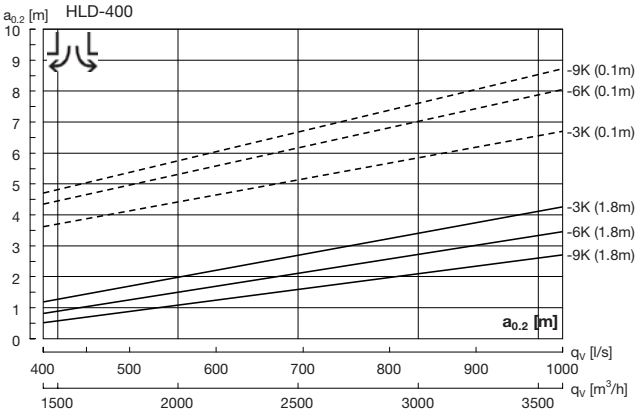
For wall installation the following corrections apply:
$a_{0.2}$ at right angles to wall = diagram value.
$a_{0.2}$ along wall = diagram value × 3.

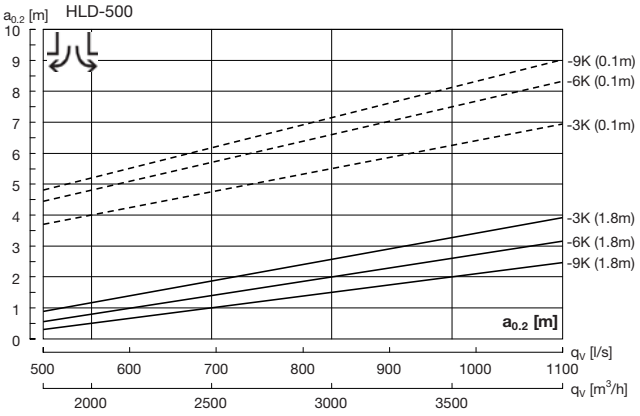


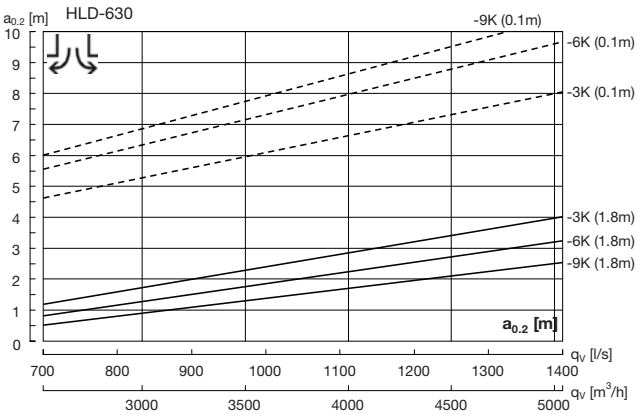


Nearzone, Horizontal









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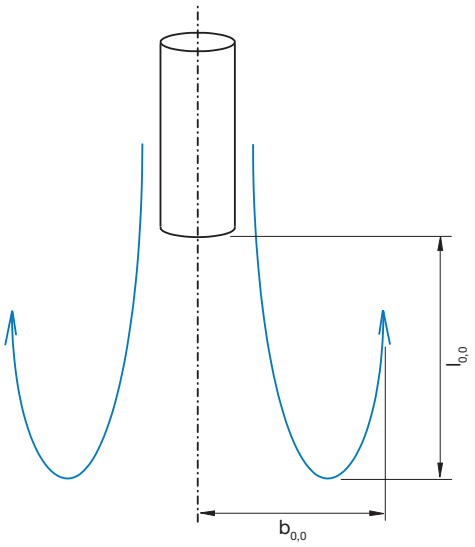
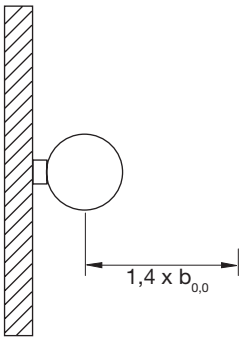
Spread

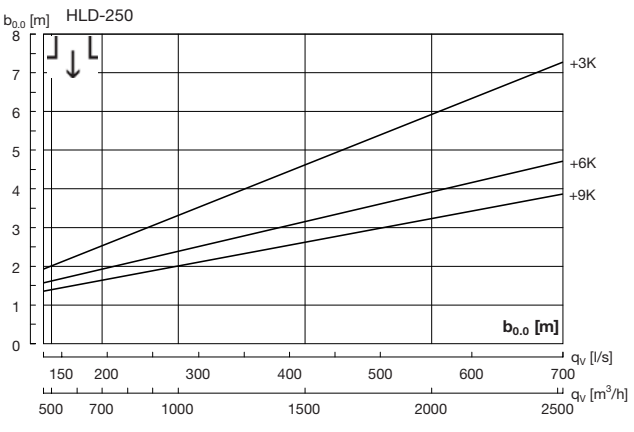
For vertical supply air with warm air, the air from the diffuser will turn at a vertical distance of $l_{0.0}$ from the diffuser. The width of the air jet, $b_{0.0}$, which can also be designated horizontal spread, can be seen in the diagrams for spread.



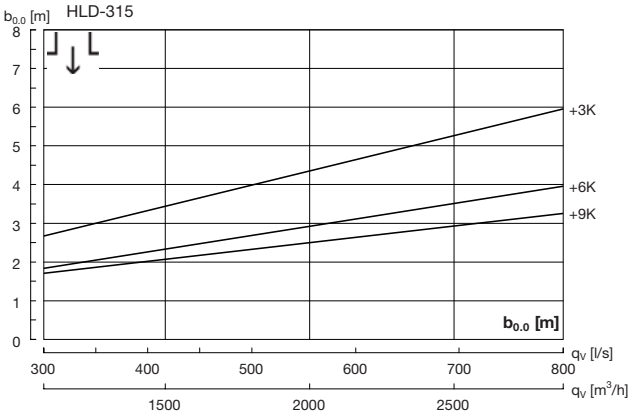
$l_{0.0}$ values for overtemperature +5 ° K and +10 ° K is found in 2 diagrams at the bottom of the right column page 3.

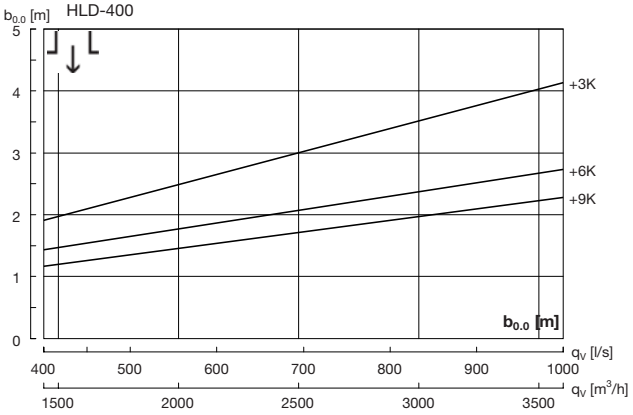
For wall installation the following correction applies:
$b_{0.0}$ wall = diagram value × 1.4.

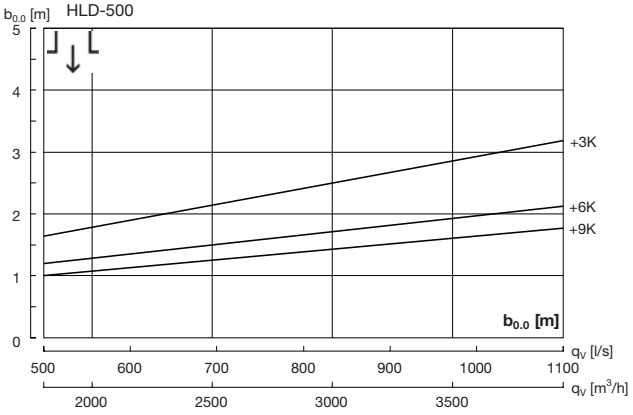


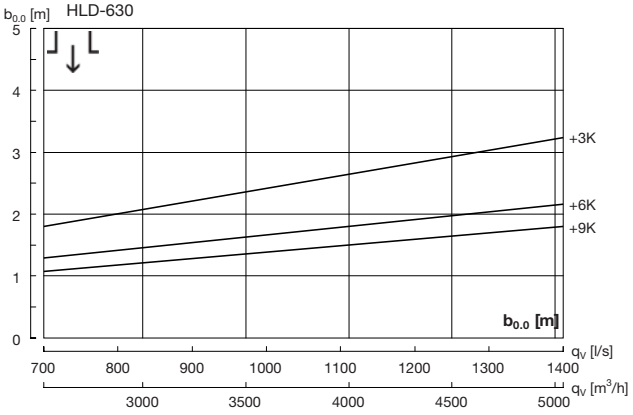


Spread, Vertical









Most of us spend the majority of our time indoors. Indoor climate is crucial to how we feel, how productive we are and if we stay healthy.

We at Lindab have therefore made it our most important objective to contribute to an indoor climate that improves people's lives. We do this by developing energy-efficient ventilation solutions and durable building products. We also aim to contribute to a better climate for our planet by working in a way that is sustainable for both people and the environment.

Lindab | For a better climate