

**2/S12**  
v 2.4 (en)



# DIFFUSER FOR HORIZONTAL OR VERTICAL DISCHARGE DHV

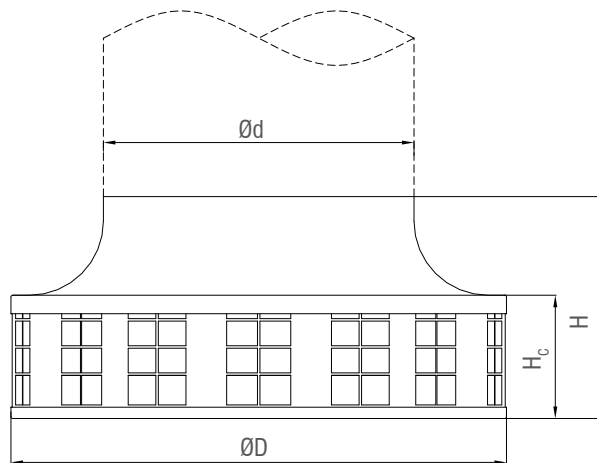
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Definition of symbols:

$V$ [m <sup>3</sup> /h]	- Airflow rate	$t_z$ [°C]	- Supply air temperature
$y$ [m]	- Vertical jet component	$t_L$ [°C]	- Temperature at distance L
$x$ [m]	- Horizontal jet component	$t_p$ [°C]	- Room temperature
A,B [m]	- Distance between diffusers	$\Delta t_z$ [K]	- ( $t_z - t_p$ )
C,X [m]	- Distance between diffuser and wall	$\Delta t_L$ [K]	- ( $t_L - t_p$ )
L [m]	- Throw distance ( $x+h$ )	$\Delta p$ [Pa]	- Total pressure drop
$v_L$ [m/s]	- Average air velocity at distance h from diffuser	$L_{WA}$ [dB(A)]	- Sound power level
h [m]	- Distance between ceiling and occupied zone		
$v_h$ [m/s]	- Average air velocity between two diffusers at distance h (m) from diffuser		

## DIFFUSER FOR HORIZONTAL OR VERTICAL DISCHARGE



### DHV

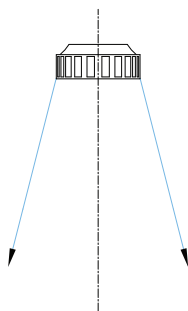
- Ceiling diffuser for room heights from 4 to 10m.
- Made out of steel sheet, standard RAL 9010
- Adjustable discharge direction

### Options

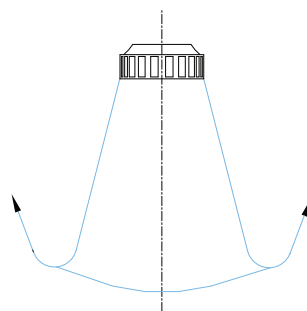
- RAL...
- Plenum box
- Motor drive

### Air discharge types

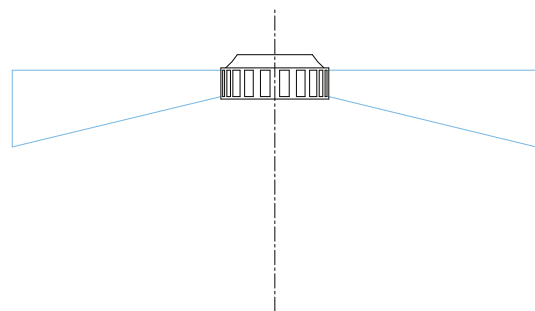
Isothermal vertical jet



Warm vertical jet



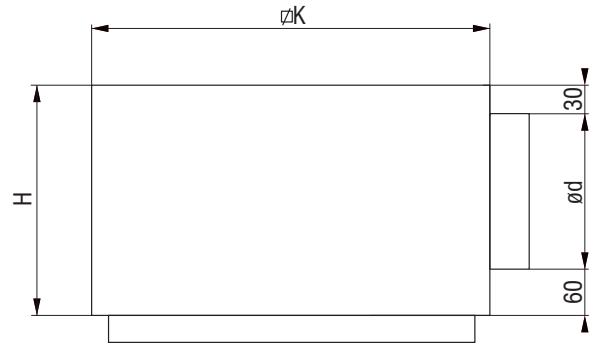
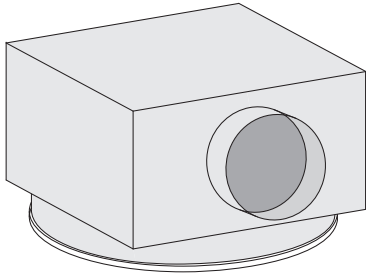
Cold horizontal jet



DHV	Dimensions				Characteristics			Cooling		Heating	
	$\varnothing D$ [mm]	$\varnothing d$ [mm]	H [mm]	$H_c$ [mm]	h [m]	$V_{min}$ [m <sup>3</sup> /h]	$V_{max}$ [m <sup>3</sup> /h]	$Ah_s$ [m <sup>2</sup> ]	$Ah_{EF}$ [m <sup>2</sup> ]	$Av_s$ [m <sup>2</sup> ]	$Av_{EF}$ [m <sup>2</sup> ]
300	302	180	145	80	3	200	900	0,03345	0,0268	0,03126	0,0250
400	402	250	180	100	3	300	1800	0,03978	0,0318	0,03781	0,0302
500	502	315	200	120	4	600	2500	0,06115	0,0489	0,05972	0,0478
600	602	400	220	135	5	800	3500	0,08121	0,0650	0,07996	0,0640
800	802	500	310	185	5	1500	6300	0,17523	0,1402	0,15848	0,1268

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**PLENUM BOX- UPK2**



Plenum box dimensions

DHV	øK[mm]	H[mm]	ød[mm]
300	284	290	198
400	384	340	248
500	484	405	313
600	590	490	398
800	790	590	498

Ordering key:

Horizontal-vertical diffuser

**DHV - 500 - M230 - OZ - A - H - ød - Z**

Nominal dimension

**R** - manual drive

**M230** - motor drive 230V

**M24** - motor drive 24V

**OZ** - two positions

**K** - continuous

**A** - supply air

**B** - exhaust air

**H** - horizontal connection

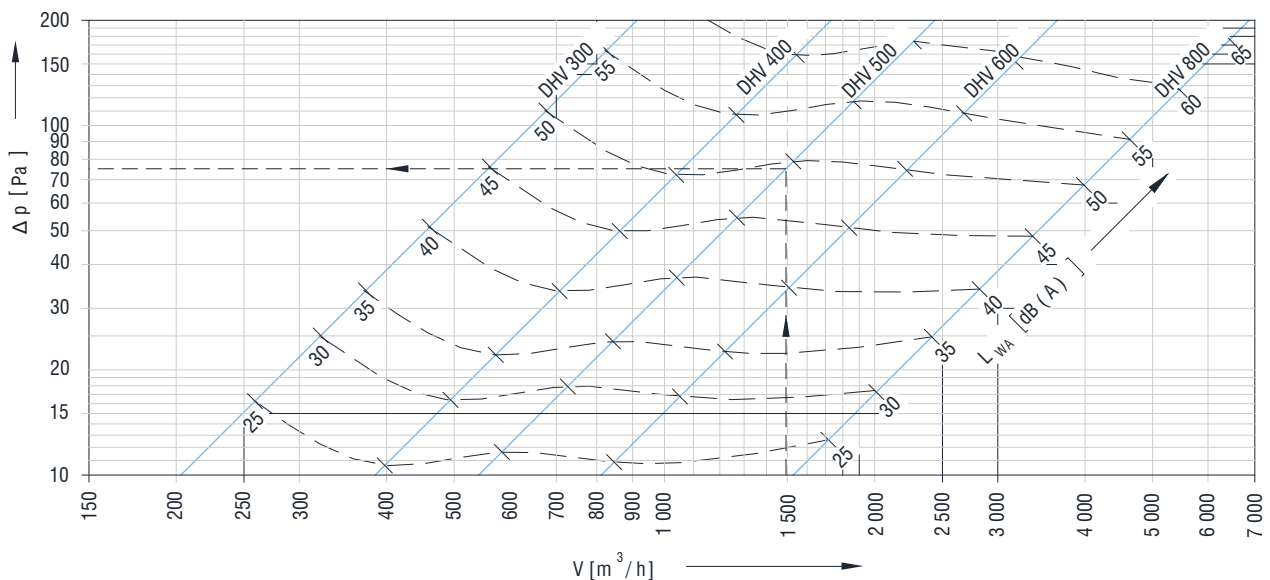
Connection diameter

**Z** - insulation

**SELECTION DIAGRAMS**

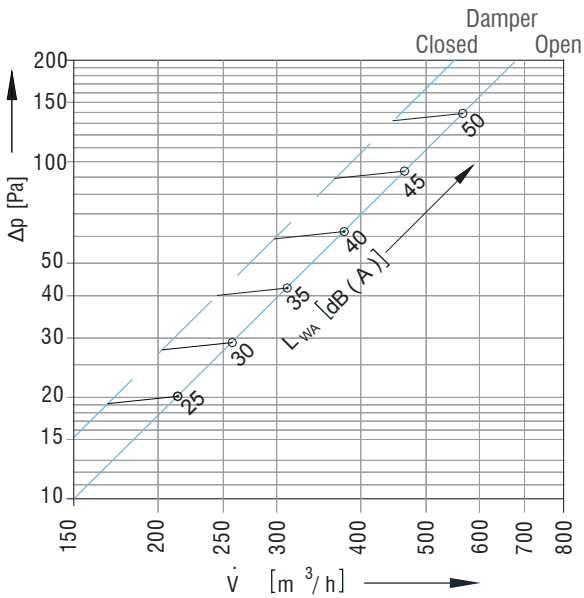
**Diagram 1:** Pressure drop and sound level diagram for DHV

Connection to duct



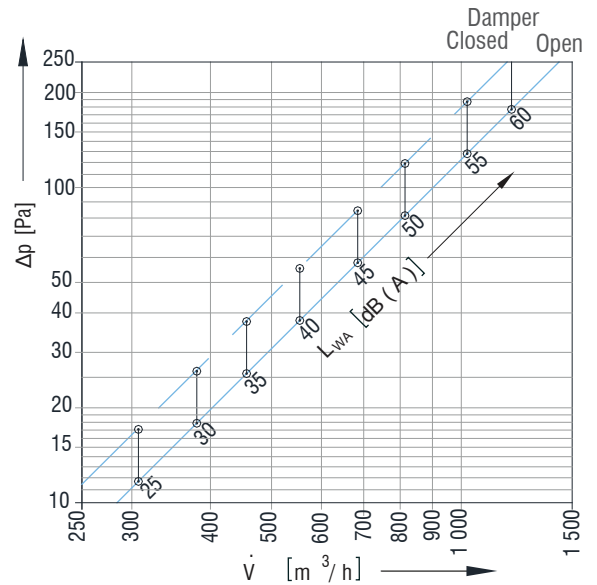
**Diagram 2:** Pressure drop and sound level diagram for DHV 300

Diffuser with plenum box



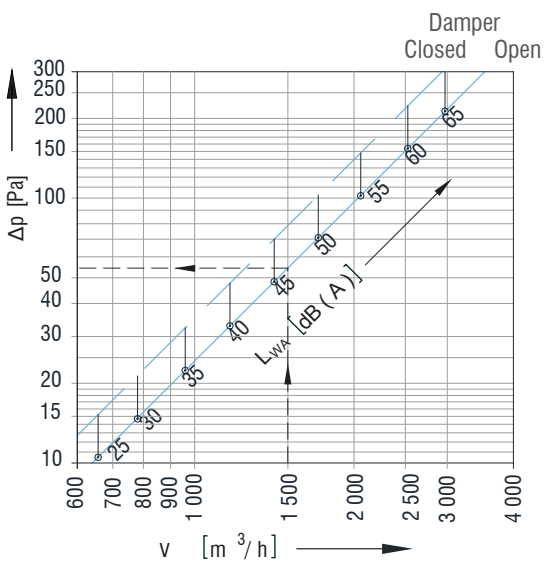
**Diagram 3:** Pressure drop and sound level diagram for DHV 400

Diffuser with plenum box



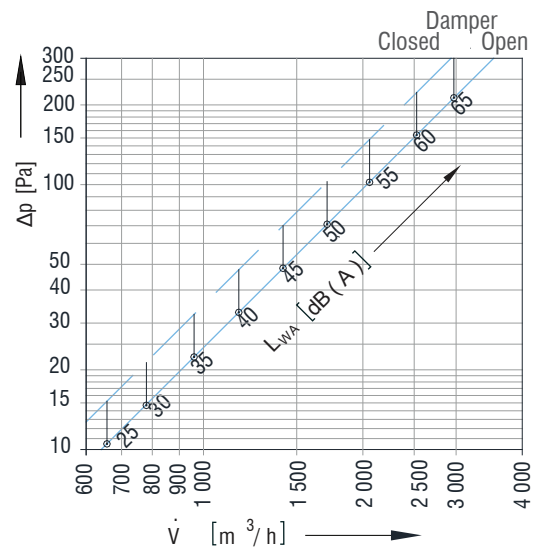
**Diagram 4:** Pressure drop and sound level diagram for DHV 500

Diffuser with plenum box



**Diagram 5:** Pressure drop and sound level diagram for DHV 600

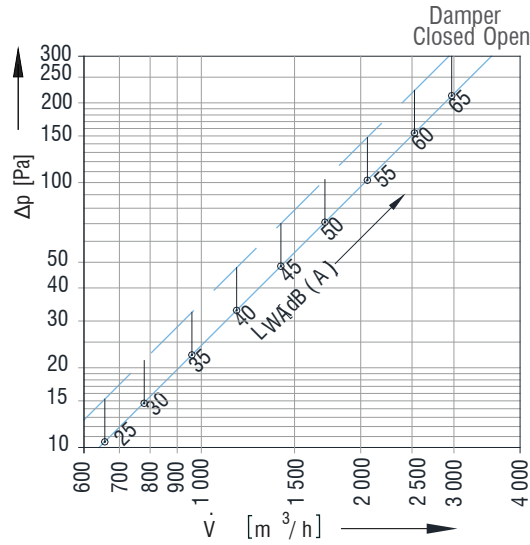
Diffuser with plenum box



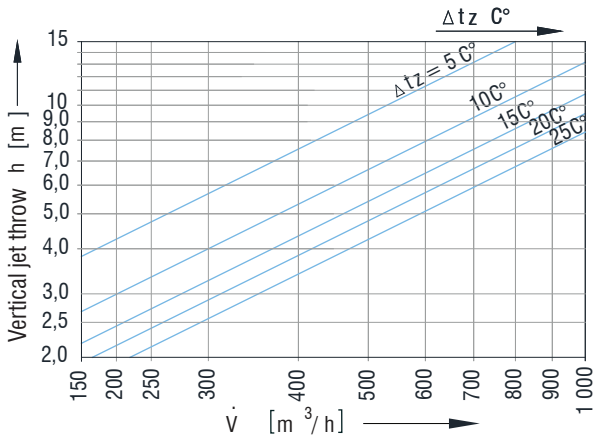
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**Diagram 5:** Pressure drop and sound level diagram for DHV 800

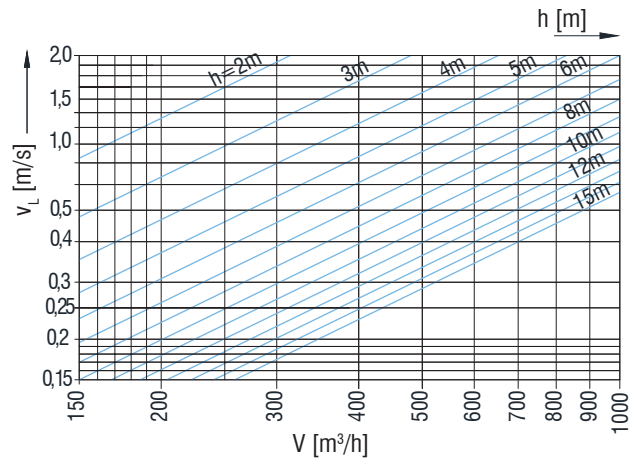
Diffuser with plenum box



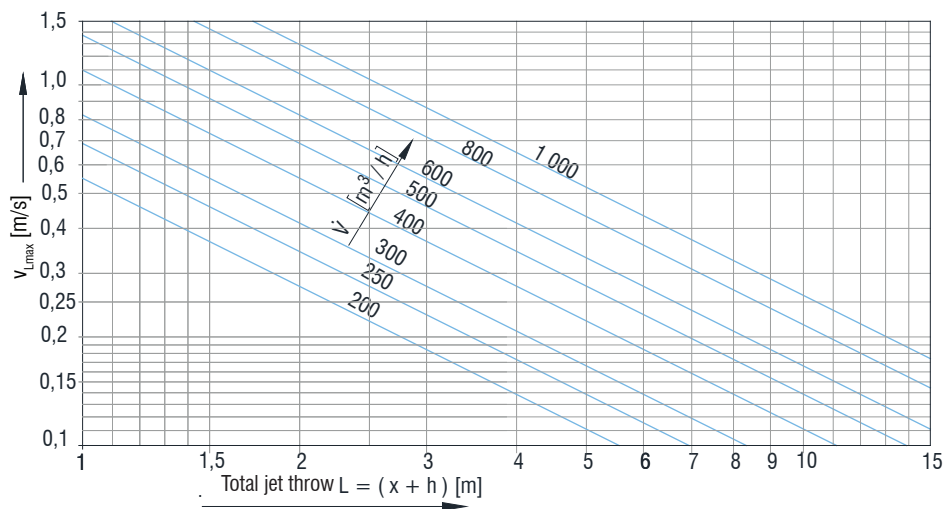
**Diagram 7:** Vertical warm jet throw diagram for DHV 300



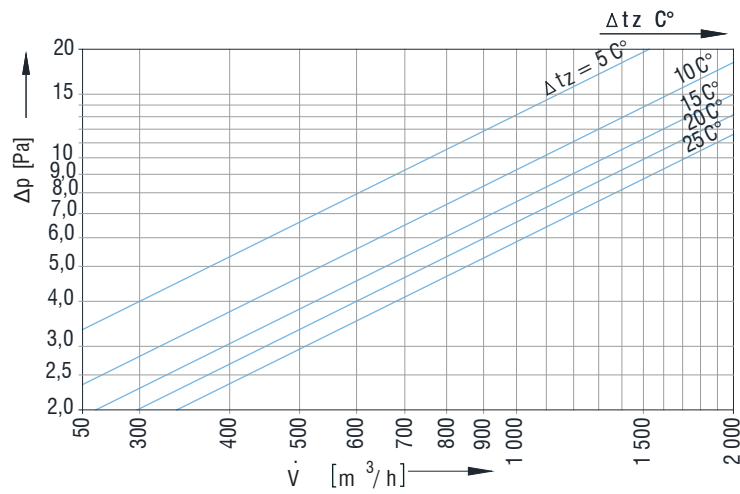
**Diagram 8:** Vertical isothermal jet throw diagram for DHV 300



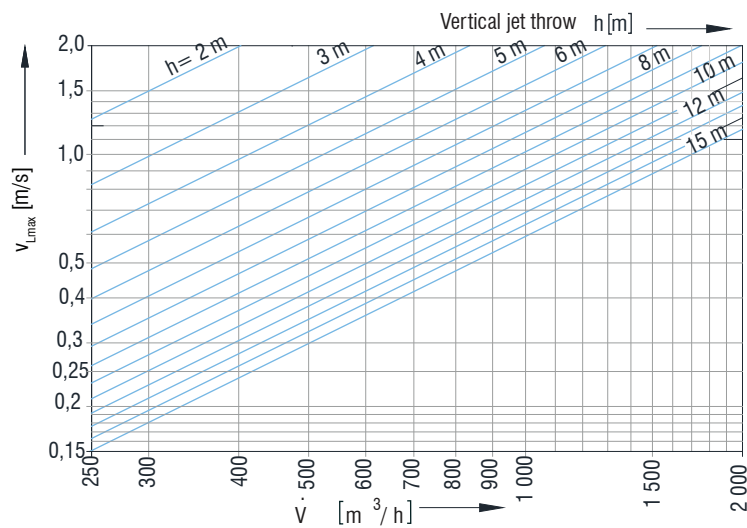
**Diagram 9:** Maximum jet velocity diagram for DHV 300



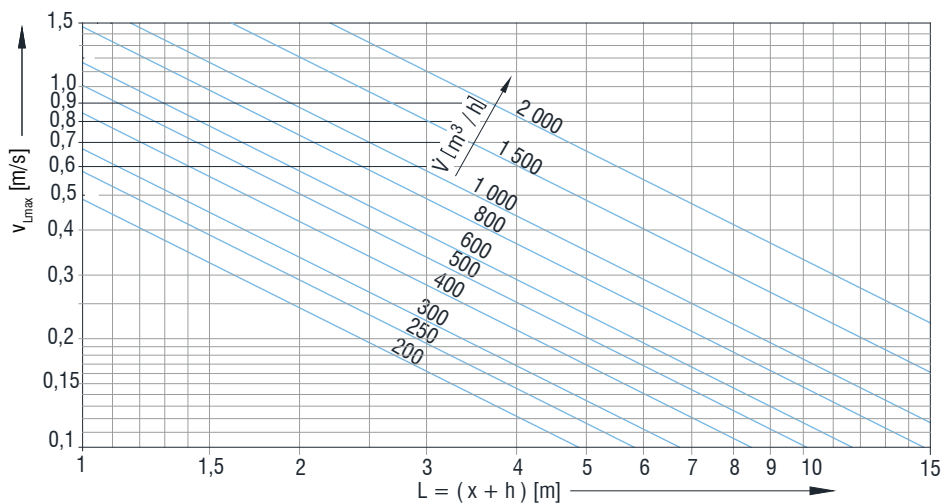
**Diagram 10:** Vertical warm jet throw diagram for DHV 400



**Diagram 11:** Vertical isothermal jet throw diagram for DHV 400

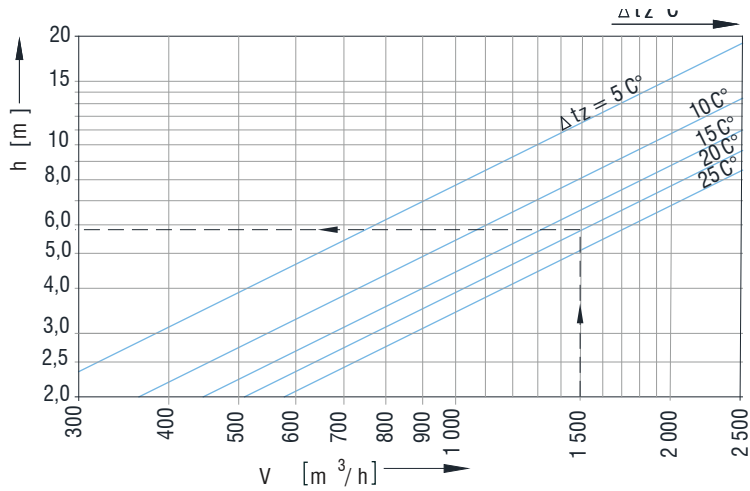


**Diagram 12:** Maximum jet velocity diagram for DHV 400

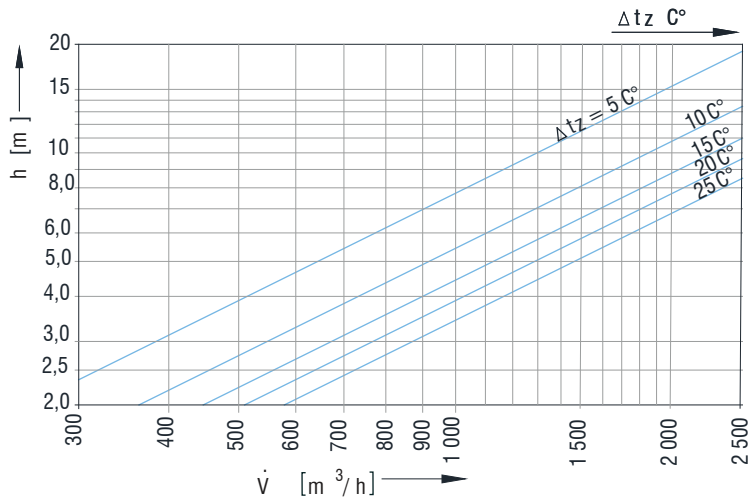


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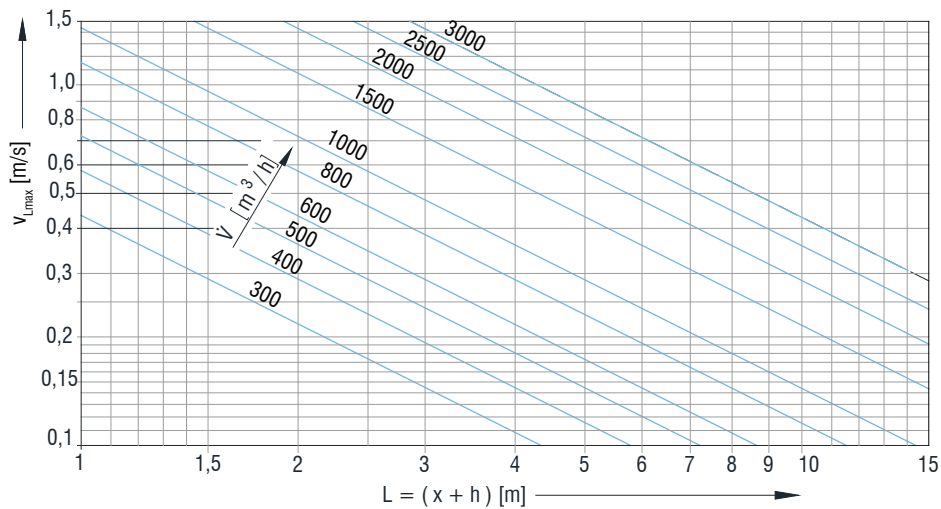
**Diagram 13:** Vertical warm jet throw diagram for DHV 500



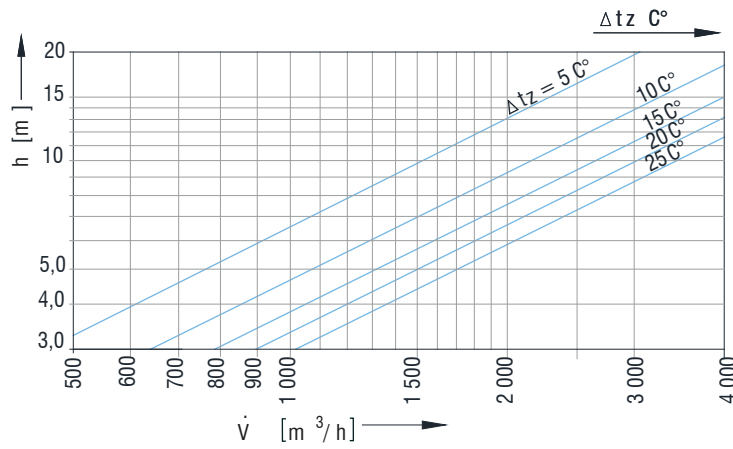
**Diagram 14:** Vertical isothermal jet throw diagram for DHV 500



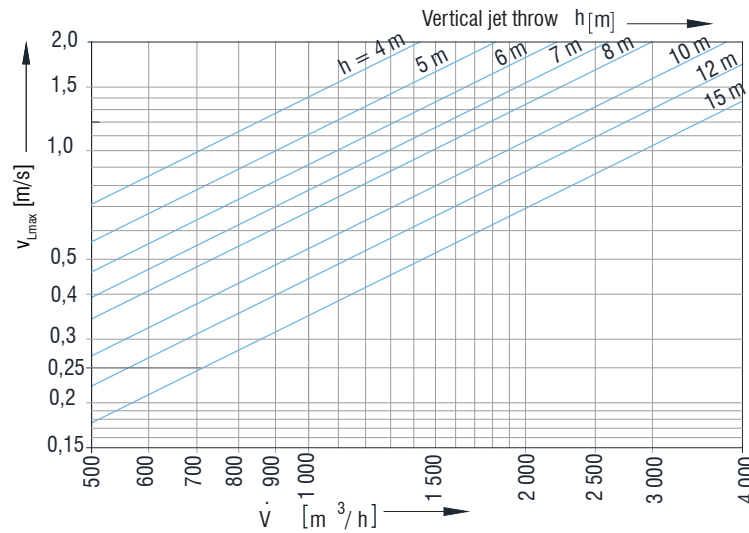
**Diagram 15:** Maximum jet velocity diagram for DHV 500



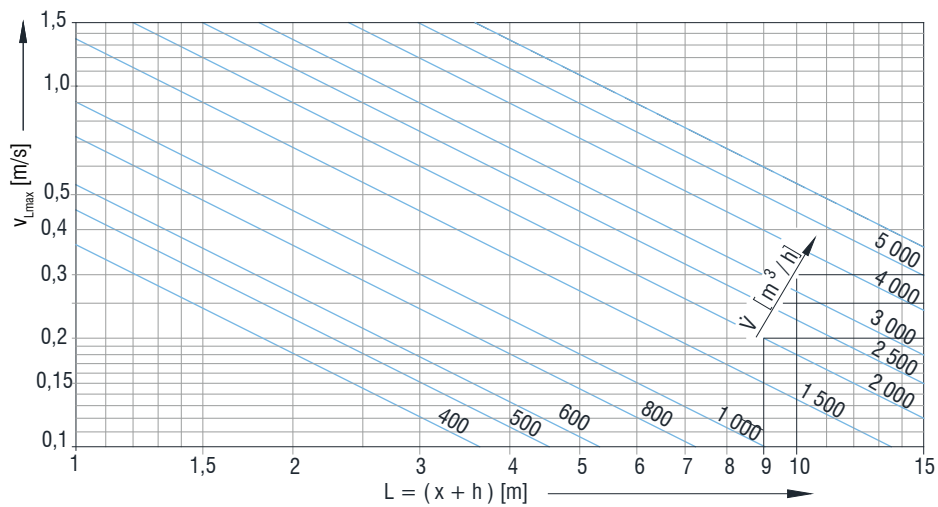
**Diagram 16:** Vertical warm jet throw diagram for DHV 600



**Diagram 17:** Vertical isothermal jet throw diagram for DHV 600



**Diagram 18:** Maximum jet velocity diagram for DHV 600



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Diagram 19: Vertical warm jet throw diagram for DHV 800

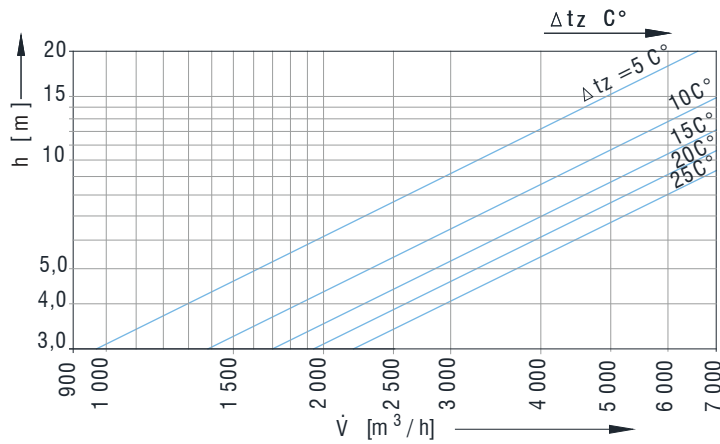


Diagram 20: Vertical isothermal jet throw diagram for DHV 800

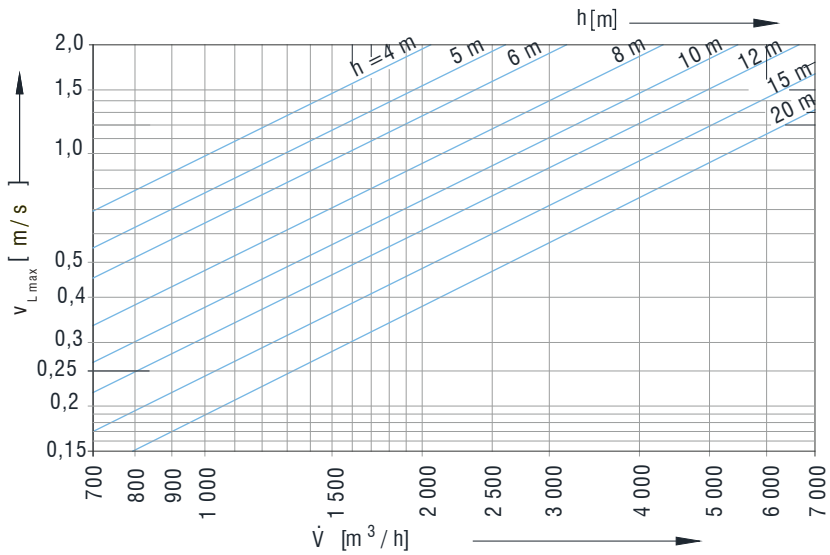
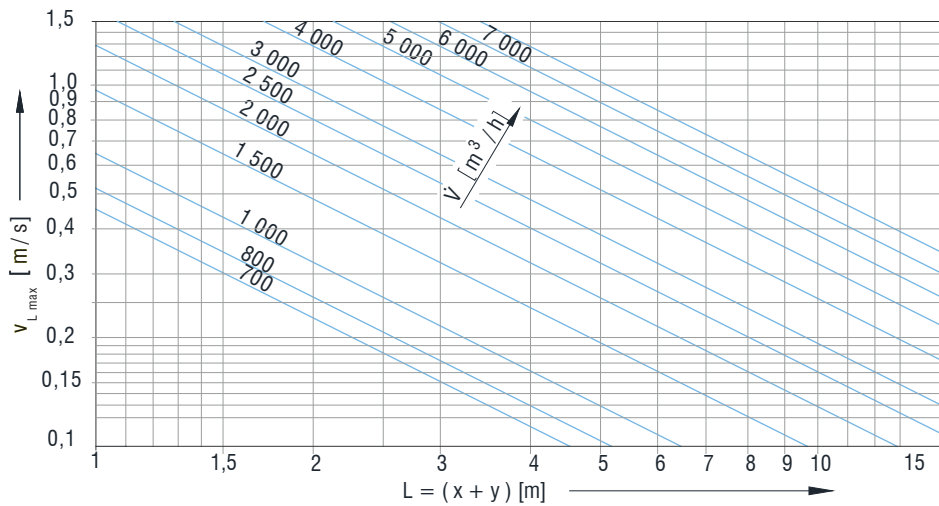


Diagram 21: Maximum jet velocity diagram for DHV 800



Example:

**Given:**

Type DHV 500  
 $V = 1500 \text{ m}^3/\text{h}$   
 $\Delta T = +20 \text{ }^\circ\text{C}$   
Damper open 100%

**Solution:****Installation on duct****Diagram 1:**

$L_{WA} = 50 \text{ dB(A)}$   
 $\Delta p = 78 \text{ Pa}$

**Installation with plenum****Diagram 4:**

$L_{WA} = 46 \text{ dB(A)}$   
 $\Delta p = 53 \text{ Pa}$

**Diagram 13:**

$h = 6 \text{ m}$