

Industrial diffuser

Application:

- The industrial diffuser is design to be used in blowing of cold and warm air into commercial center or warehouse.
- WSD can be used for heating and cooling in storehouse and industrial premises.

Type:

- **WSD-K** - manually driven
- **WSD-M** - servomotor driven (24V or 230V)
- **WSD-T** - driven by thermal dilatation element, which adjust the direction of air according to the temperature of the supply air (between 14 and 26°C). The reaction time is approx. 15 minutes and the displacement is not uniform.

Material:

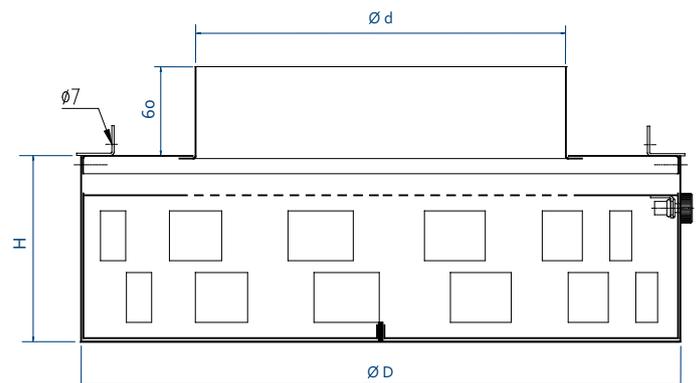
- Diffuser is made of steel podwer coated RAL 9010 or other RAL colors upon request

Operation:

- Due to the variable direction of the air, the direction of the air flow can be varied in many ways in case of buildings with high headroom. The diffuser is produced with double casing. You can open or close the supplying slot by turning the inner part.
- For heating, WSD with vertical air flow transmits warm air into the rooms, in addition it restricts the airspeed.
- In case of cooling, the horizontal diffuser spreads the cool air in an "umbrella shape", which means that the air can get evenly to every part of the room.

Fixing:

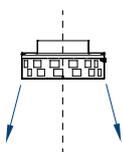
- You can install to round duct with rivets or screws up to D.315 if the connecting duct is sufficient load-bearing capacity.
- The diffuser can be mounted with threaded rod through the hanging ears.



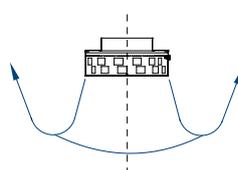
Type	d [mm]	D [mm]	H [mm]
200	199	350	139
250	249	400	154
315	314	500	179
400	398	650	211
500	498	800	247

1. Dimensions of industrial diffuser type WSD

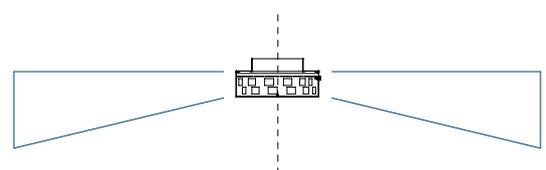
Isothermal vertical jet



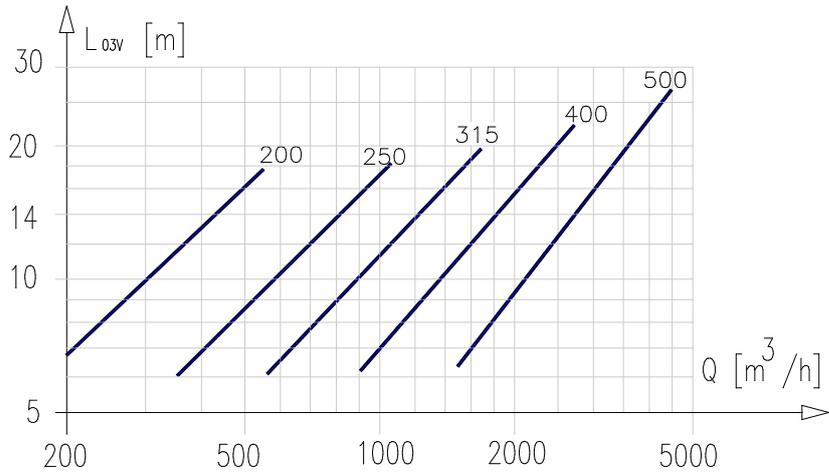
Warm vertical jet



Cold horizontal jet



Selection



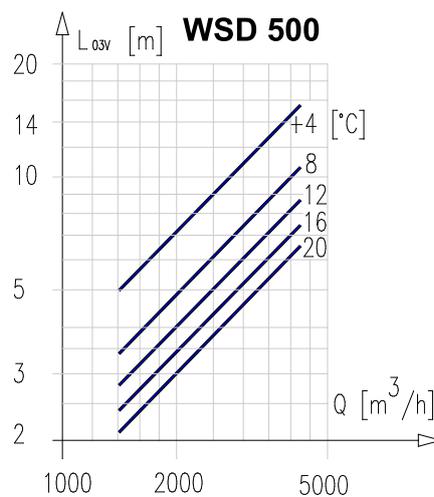
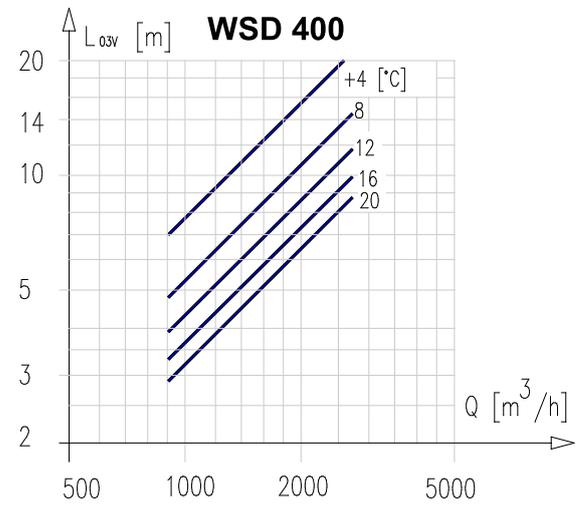
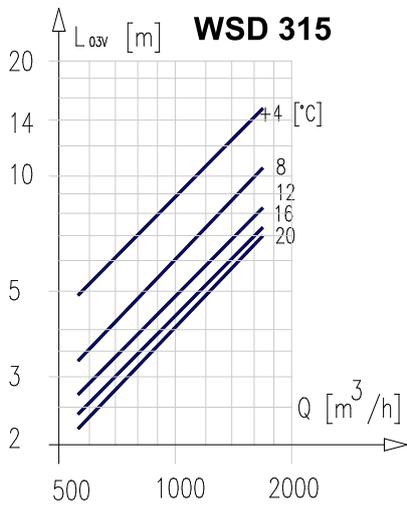
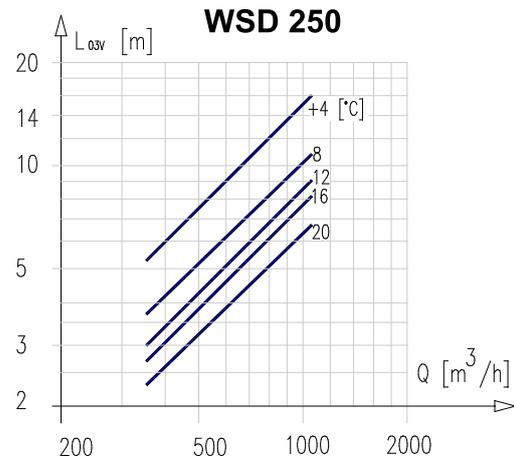
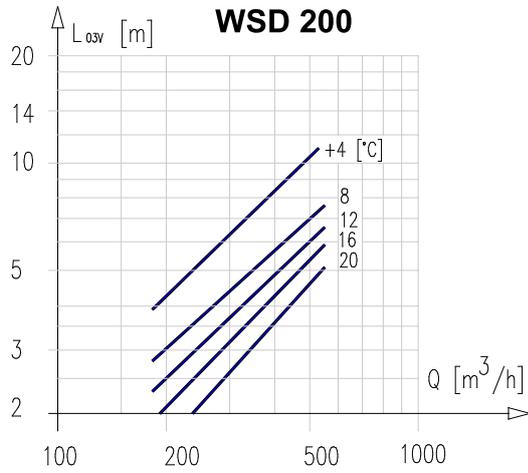
2. Selection diagram according to isothermal vertical jet throw

Type		200	250	315	400	500
$v = 2$ [m/sec]	Q [m ³ /h]	226	353	561	905	1414
	Δp [Pa]	11	14	10	14	9
	L_{WA} [dBA]	21,8	25,9	24,9	29,8	28,3
	$L_{o,3H}$ [m]	1,5	1,6	2,4	2,3	2,5
	$L_{o,3V}$ [m]	6,2	6,1	6,1	6,2	6,4
$v = 3$ [m/sec]	Q [m ³ /h]	339	530	842	1357	2121
	Δp [Pa]	24	32	22	32	20
	L_{WA} [dBA]	29,6	33,7	32,7	37,5	36,0
	$L_{o,3H}$ [m]	2,3	2,5	3,5	3,6	3,9
	$L_{o,3V}$ [m]	9,1	8,9	9,1	9,5	10,0
$v = 4$ [m/sec]	Q [m ³ /h]	452	707	1122	1810	2827
	Δp [Pa]	43	58	38	6	35
	L_{WA} [dBA]	35,1	39,2	38,2	43,0	41,5
	$L_{o,3H}$ [m]	3,2	3,7	5,0	5,0	5,6
	$L_{o,3V}$ [m]	11,9	11,9	12,4	13,2	14,5
$v = 5$ [m/sec]	Q [m ³ /h]	565	884	1403	2262	3534
	Δp [Pa]	68	90	60	88	55
	L_{WA} [dBA]	39,4	43,4	42,4	47,3	45,8
	$L_{o,3H}$ [m]	4,2	5,1	6,9	6,8	7,9
	$L_{o,3V}$ [m]	14,8	15,0	15,8	17,4	19,9
$v = 6$ [m/sec]	Q [m ³ /h]	679	1060	1683	2714	4241
	Δp [Pa]	97	130	86	126	79
	L_{WA} [dBA]	42,8	46,9	45,9	50,8	49,3
	$L_{o,3H}$ [m]	5,3	6,8	9,5	9,0	10,9
	$L_{o,3V}$ [m]	17,7	18,2	19,6	22,2	26,6

3. You can find the calculated selection datas of industrial diffuser type WSD in the table above.

In the tables, data is calculated according to connection socket size average speed between $v_s=2$ and $v_s=6$ (m/sec).

The data is $\rho=1,2$ (kg/m³) density in the case of isothermal blowing valid assumption.



4. The jet throw is strongly dependent on the difference between the supply air temperature and the room temperature in case of winter operation. The following diagram shows the exposure depth which depend on the air volume and temperature difference.