GRADA

RESIDENTIAL VALVE
RLV

SELECTION

SUPPLY

SOUND POWER, PRESSURE DROP
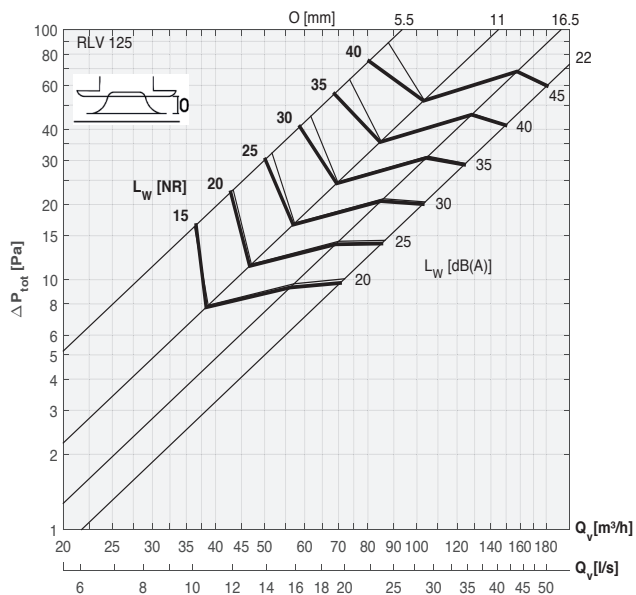
THROW
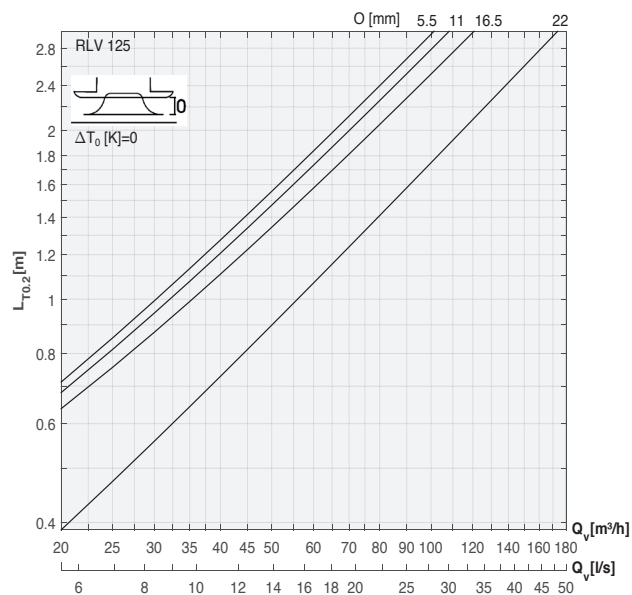
CRITICAL DISTANCE
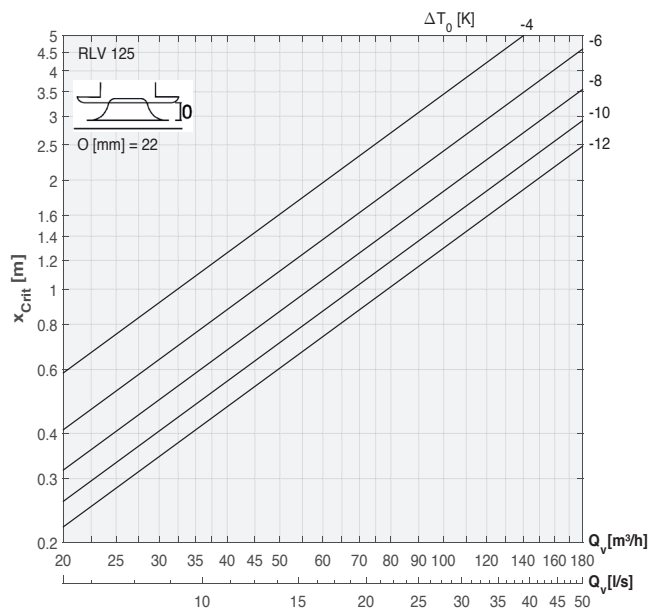
TEMPERATURE
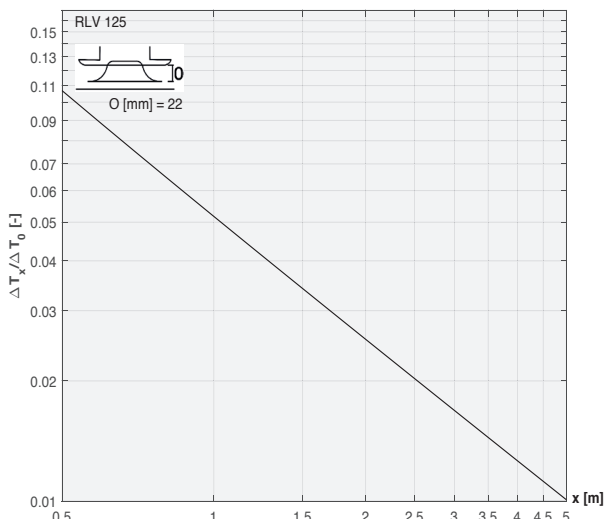
SELECTION

EXHAUST

SOUND POWER, PRESSURE DROP
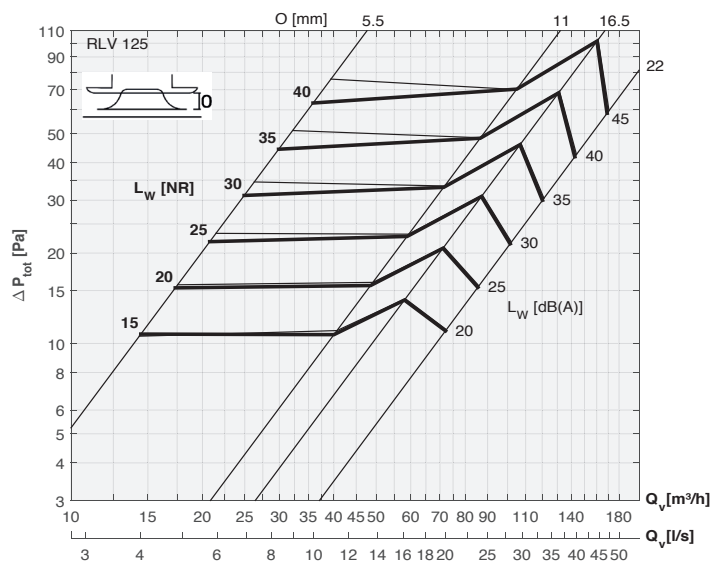
SELECTION EXAMPLE

Known data		
supply air flow rate, Q_v	[m³/h]	75
supply air temperature, T_0	[°C]	20
ambiant temperature, T_a	[°C]	24
acoustic room attenuation, ΔL_r	[dB(A)]	8
max. air velocity in occupied zone	[m/s]	0,2
aperture, O	[mm]	22
Selection from graphs		
sound power, L_W	[dB(A)]	21
	[NR]	17
sound pressure, L_p (= L_W - ΔL_r)	[dB(A)]	13
total pressure loss, ΔP_{tot}	[Pa]	11
throw, $L_{T0.2}$	[m]	1,3
critical distance @ ΔT_0 = T_a - T_0, x_{crit}	[m]	2,5
temperature coefficient @ $L_{T0.2}$, $\Delta T_x/\Delta T_0$	[-]	0,038
temperature T_x = T_a-($\Delta T_x/\Delta T_0$)(T_a-T_0)	[°C]	23,8

LEGEND

Symbol	Unit	
ΔP_{tot}	[Pa]	total pressure loss
x_{crit}	[m]	critical distance at which the jet detaches from the ceiling because of ΔT_0
Q_v	[m³/h] / [l/s]	airflow
ΔT_x	[K]	difference between ambiant temperature and jet centreline temperature at distance x
ΔT_0	[K]	temperature difference between ambiant air and supply air
L_W	[NR] / [dB(A)]	sound power
$L_{T0.2}$	[m]	distance at which the jet centreline velocity decreases to 0.2 m/s
O	[mm]	aperture
x	[m]	distance measured from the diffuser's centre

To calculate the airflow behavior in rooms as well as performance data such as sound level and pressure loss, please consult our **FACT selection software.**