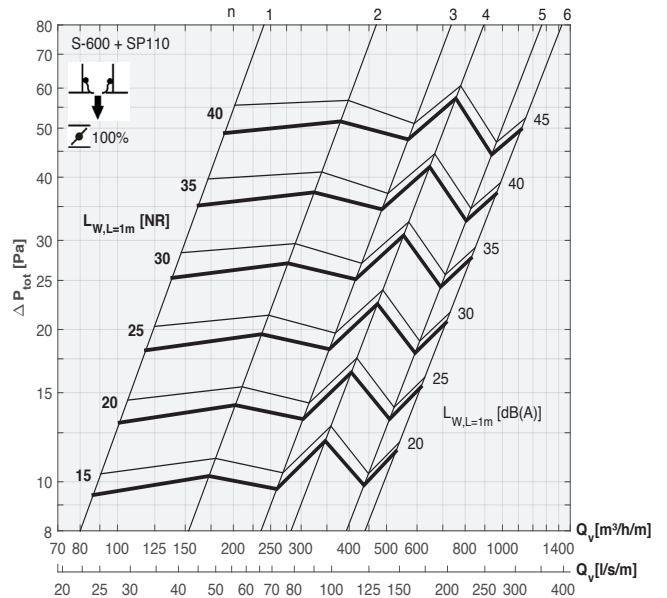
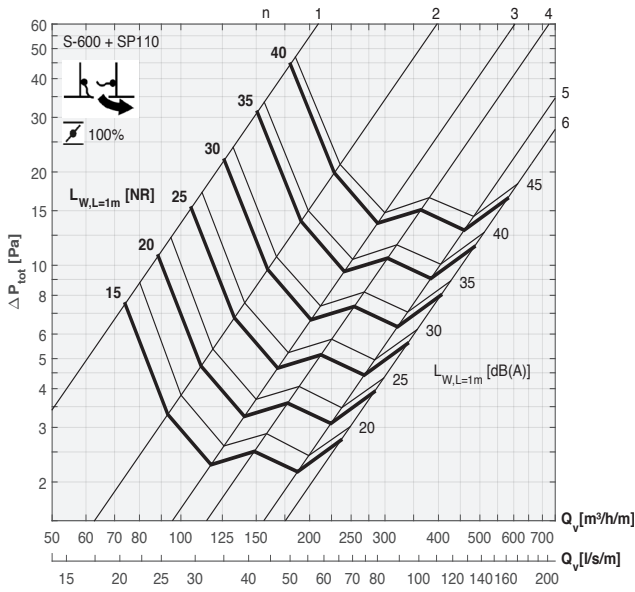


## SELECTION

### SUPPLY

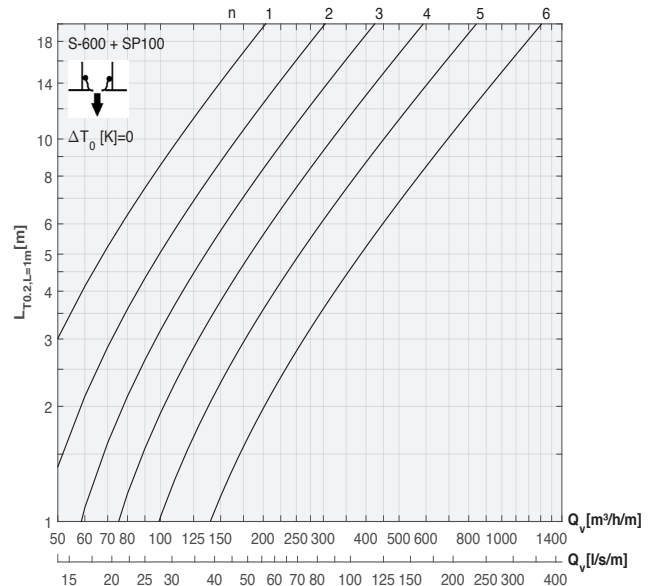
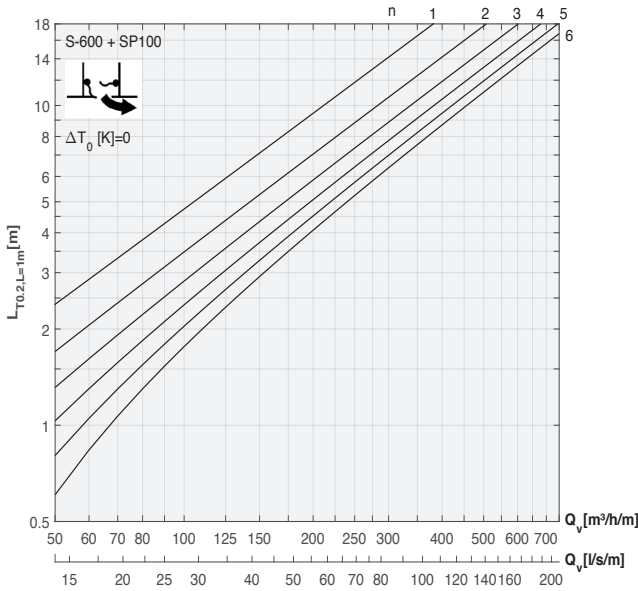
#### SOUND POWER, PRESSURE DROP

DIFFUSER LENGTH L[m]=1



### THROW

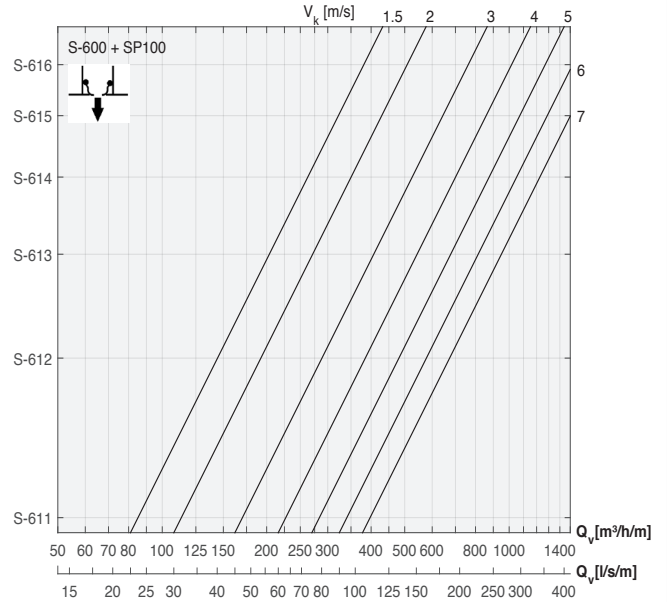
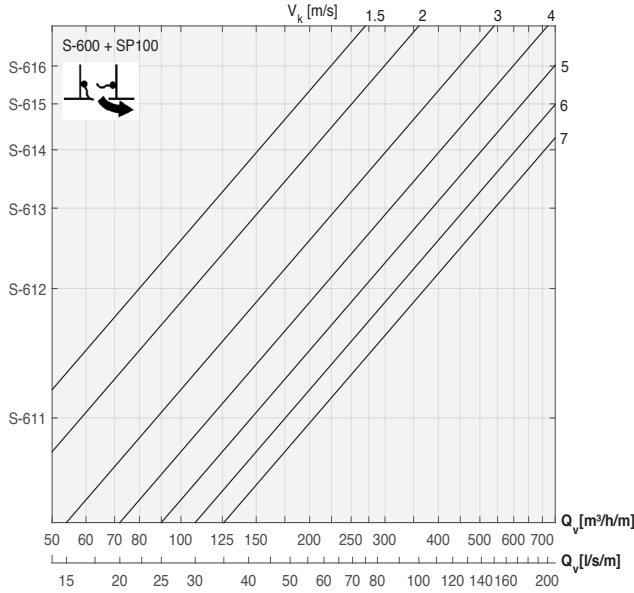
DIFFUSER LENGTH L[m]=1



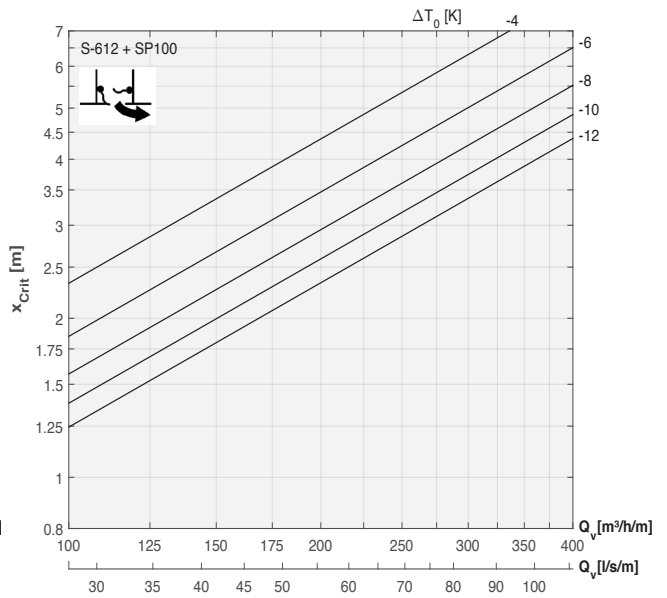
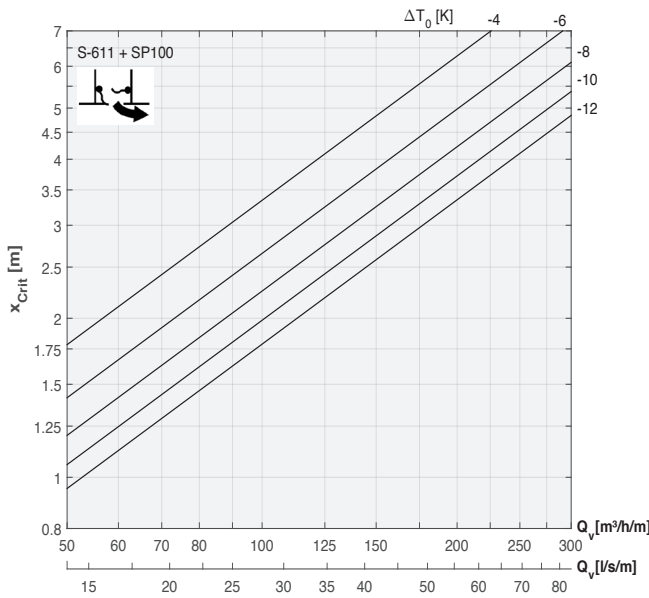
To calculate the airflow behavior in rooms as well as performance data such as sound level and pressure loss, please consult our [FACT selection software](#).

SELECTION

AIR DISCHARGE VELOCITY, BASED ON  $A_K$   
DIFFUSER LENGTH  $L[m]=1$



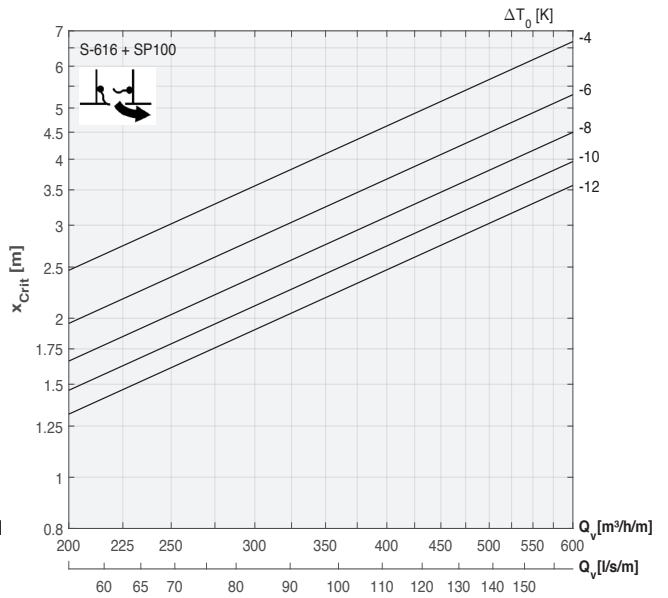
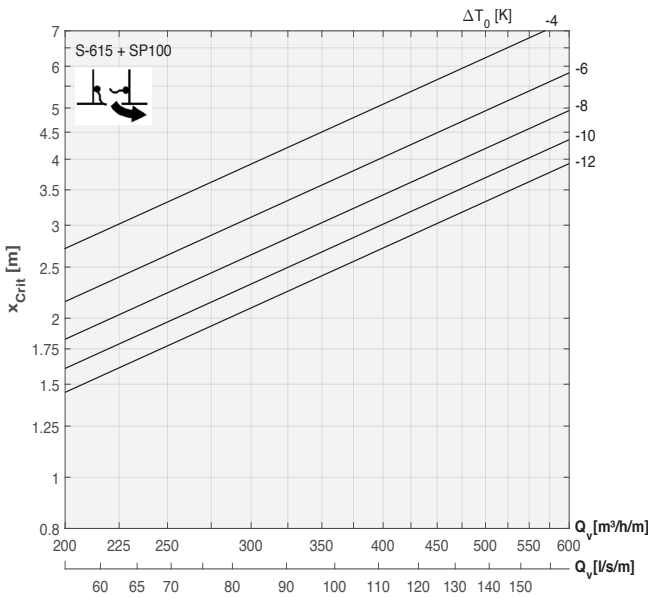
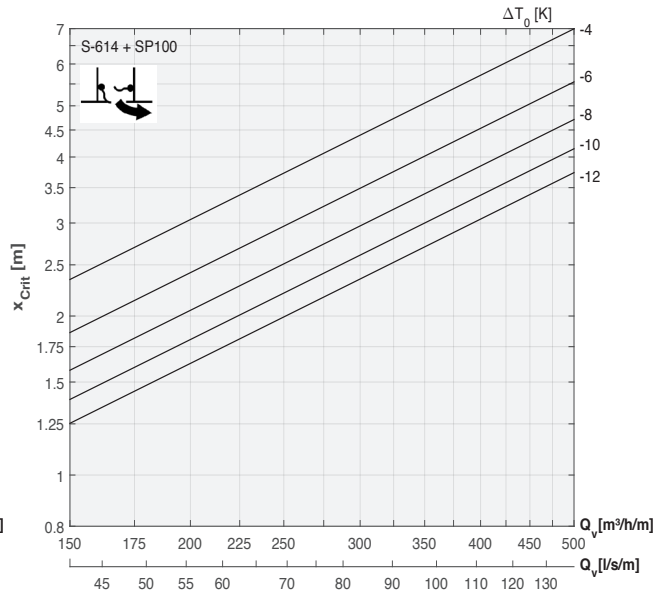
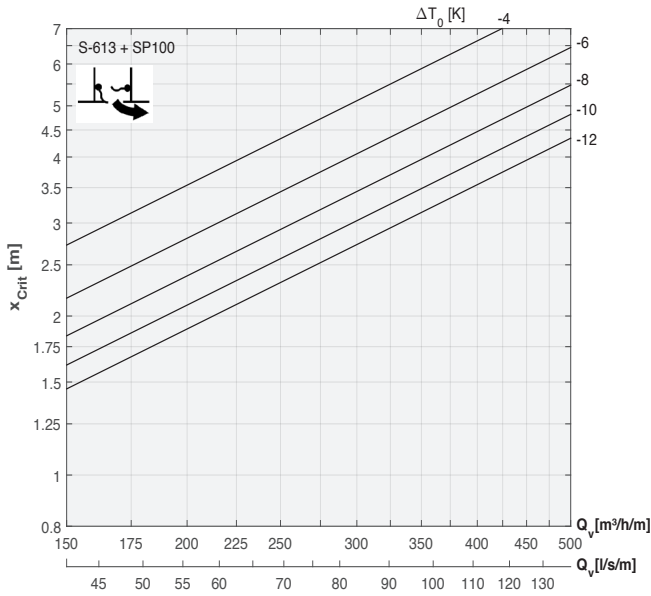
CRITICAL DISTANCE  
DIFFUSER LENGTH  $L[m]=1$



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](#).

SELECTION

CRITICAL DISTANCE  
DIFFUSER LENGTH L [m]=1



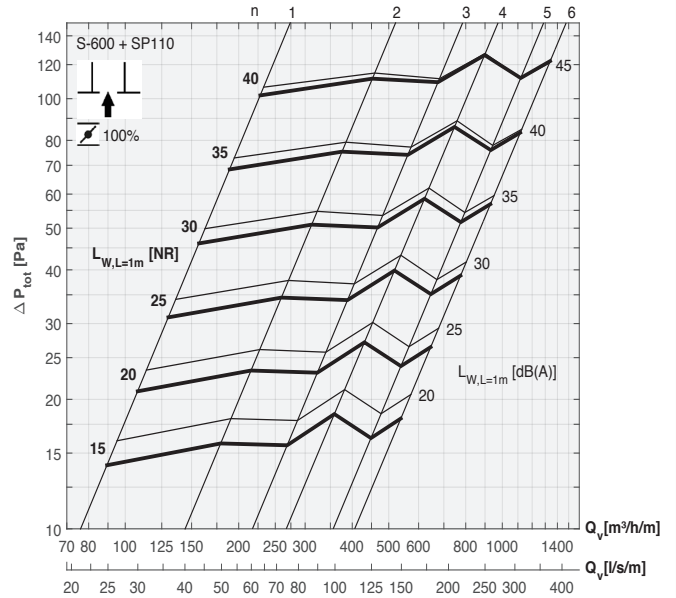
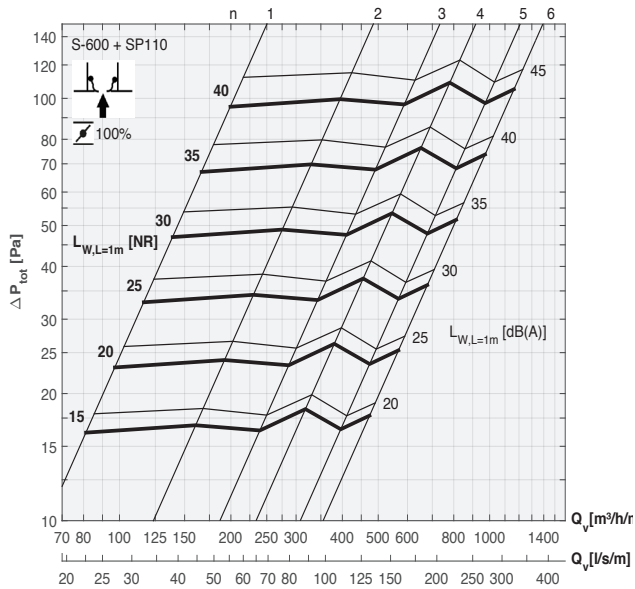
To calculate the airflow behavior in rooms as well as performance data such as sound level and pressure loss, please consult our [FACT selection software](#).

## SELECTION

### EXHAUST

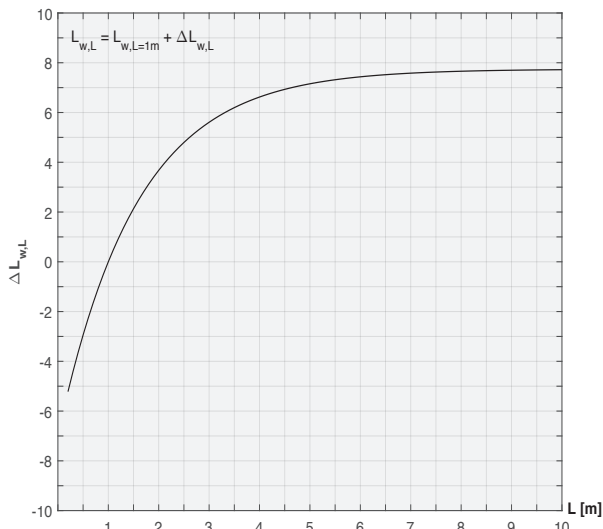
#### SOUND POWER, PRESSURE DROP

DIFFUSER LENGTH L [m]=1

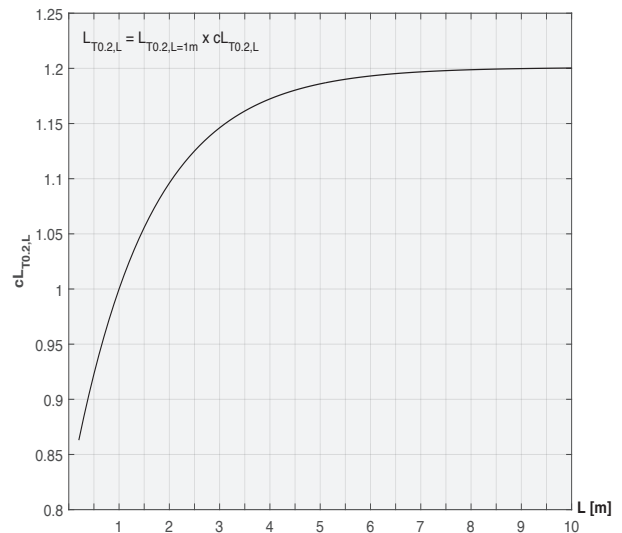


### CORRECTION FACTORS SUPPLY/EXHAUST

SOUND CORRECTION FOR ARBITRARY DIFFUSER LENGTH L





THROW CORRECTION FOR ARBITRARY DIFFUSER LENGTH L



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](#).

**SELECTION**
**EFFECTIVE AIR DISCHARGE AREA**

DIFFUSER LENGTH L [m]=1

$A_k$ [m <sup>2</sup> /m]	S-611	S-612	S-613	S-614	S-615	S-616
	0,008	0,015	0,021	0,028	0,035	0,042
	0,016	0,027	0,038	0,049	0,060	0,071

**EXAMPLE SELECTION**

Known data		
supply air flow rate, $Q_v$	[m <sup>3</sup> /h]	400
supply air temperature, $T_0$	[°C]	18
room temperature, $T_a$	[°C]	26
max. diffuser length, L	[mm]	2000
max. allowable sound pressure, $L_p$	[dB(A)]	35
room sound attenuation, $\Delta L_r$	[dB(A)]	8
max. allowable velocity in occupied zone	[m/s]	0,2

**Selection from graphs**

flow rate for diffuser of L = 1000 mm	[m <sup>3</sup> /h/m]	200
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**Sound**

requested max. sound power, $L_{wL}$ (= $L_p + \Delta L_r$ )	[dB(A)]	43
sound power correction for diffuser length L, $\Delta L_{w,L}$	[dB(A)]	3,7
requested max. sound power for L= 1000 mm, $L_{w,L=1m}$	[dB(A)]	39,3
proposal of slot number, n	[-]	3


**Pressure drop**

static pressure, $\Delta P_s$	[Pa]	5
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**Velocity**

throw correction factor, $cL_{T0,2,L}$	[-]	1,096
throw for diffuser of L = 1000 mm, $L_{T0,2,L=1m}$	[m]	5,8
throw for diffuser of L = 2000 mm, $L_{T0,2,L}$ (= $L_{T0,2,L=1m} \times cL_{T0,2,L}$ )	[m]	6,4
air discharge surface area $A_k$ (= $A_{k,L=1m} \times L/1000$ )	[m <sup>2</sup> ]	0,043
discharge velocity $V_k$ , $Q_v/A_k$ (or by graph)	[m/s]	2,6
critical distance @ $\Delta T_0 = T_a - T_0$ , $x_{crit}$	[m]	2,6

**LEGEND**

Symbol	Unit	
$A_k$	[m <sup>2</sup> ]	effective air discharge surface area (measured)
$cL_{T0,2,L}$	[m]	correction factor for the distance at which the jet centreline velocity decreases to 0.2 m/s for a diffuser or diffuser with length L
L	[m]	length of diffuser or diffuser
$L_{w,L}$	[NR] / [dB(A)]	sound power for a diffuser or diffuser with length L
$\Delta L_{w,L}$	[NR] / [dB(A)]	sound power correction for a diffuser or diffuser with length L relative to the length of 1 m
$L_{T0,2,L}$	[m]	distance at which the jet centreline velocity decreases to 0.2 m/s for a diffuser or diffuser with length L
n	[-]	number of slots
$\Delta P_{tot}$	[Pa]	total pressure loss
$Q_v$	[m <sup>3</sup> /h] / [l/s]	airflow
$\Delta T_0$	[K]	temperature difference between ambient air and supply air
$V_k$	[m/s]	air discharge velocity based on $A_k$
x	[m]	distance measured from the diffuser/diffuser's centre
	[%]	valve position (100% = open)

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](#).