

Bar grille for wall mounting

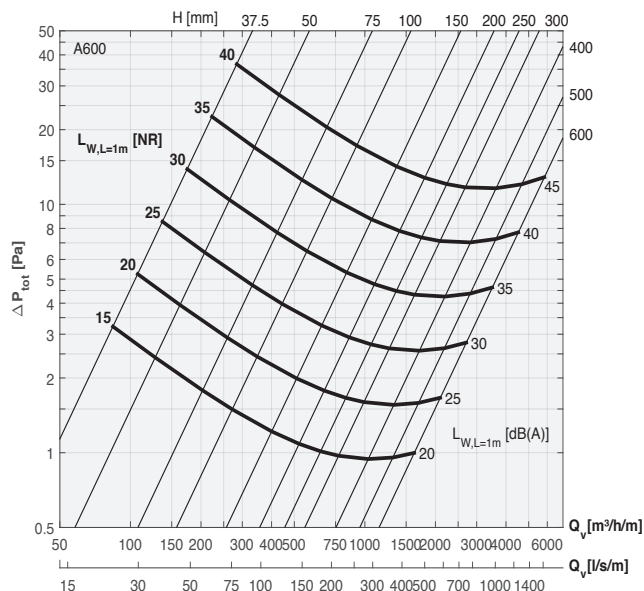
A600

Selection

SUPPLY

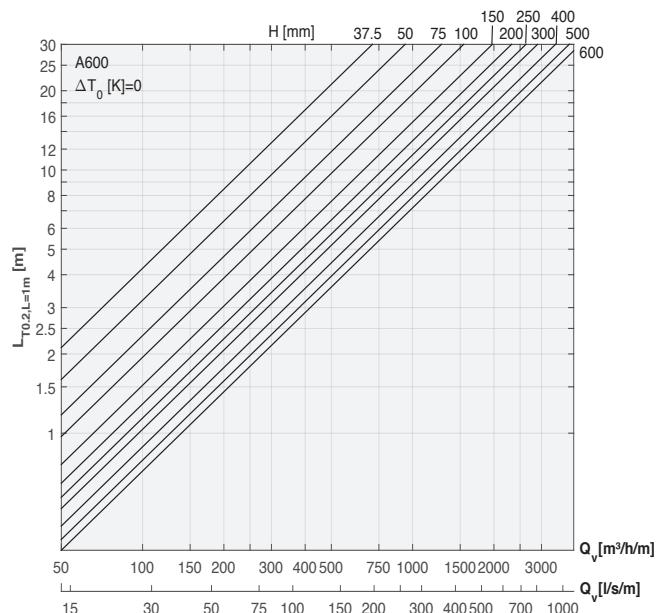
Sound power level, pressure drop

Grille length $L[m]=1$



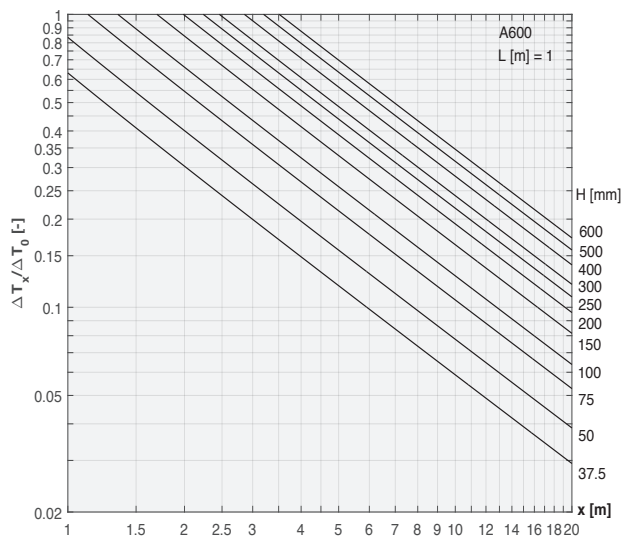
Wharf

Grille length $L[m]=1$

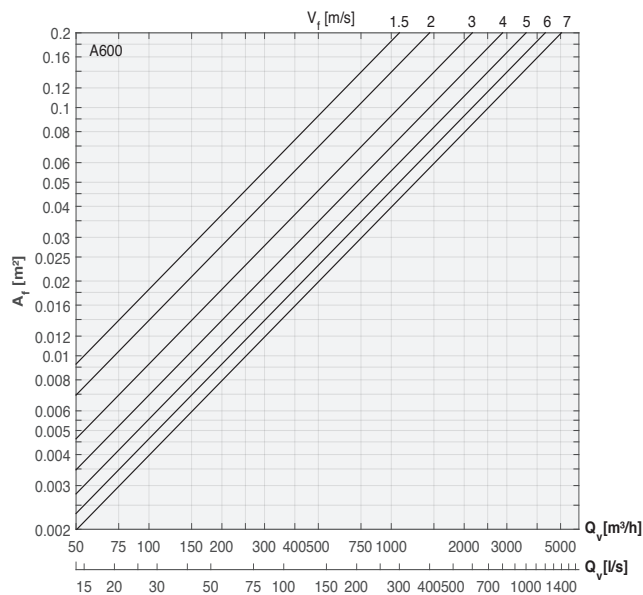


Temperature

Grille length $L[m]=1$



Discharge velocity,
calculated from



For calculation of air flows in a room, and parameters such as noise level and pressure drop, please consult our FACT selection software.

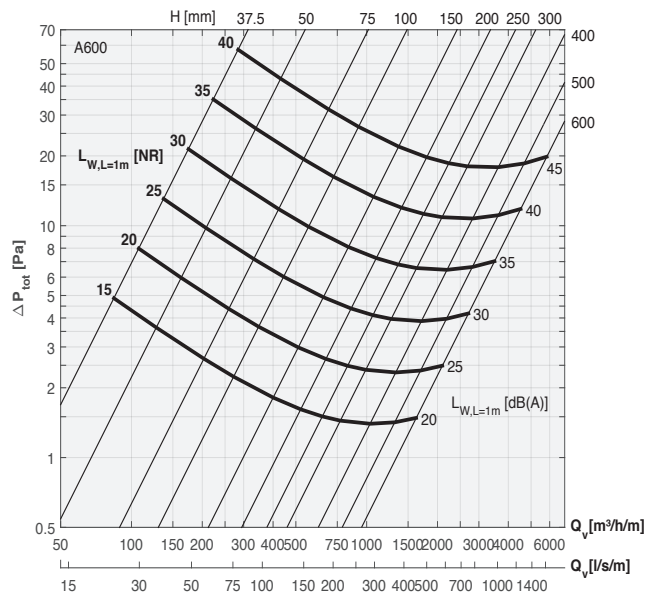
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Selection

Exhaust

SOUND distribution, pressure drop



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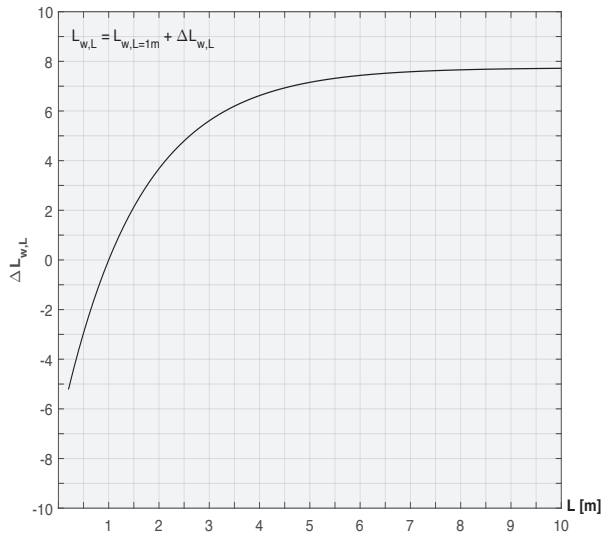
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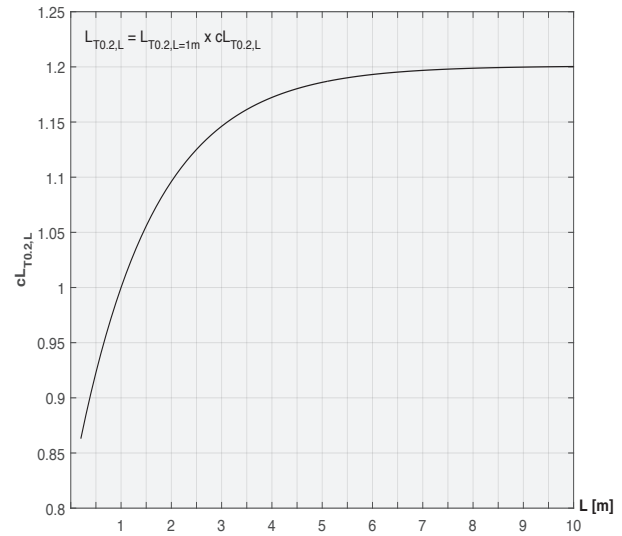
Selection

Correction factors

Correction noise for arbitrary diffuser length L



Correction throw for arbitrary grid length L



Geometric passage area Supply/drainage

A_f [m ²]	L [MM]								
H [mm]	200	300	400	500	600	700	800	1000	1200
50	0,0032	0,0048	0,0064	0,0081	0,0097	0,0113	0,0129	0,0161	0,0193
75	0,0060	0,0090	0,0120	0,0149	0,0179	0,0209	0,0239	0,0299	0,0359
100	0,0087	0,0131	0,0175	0,0218	0,0262	0,0306	0,0349	0,0437	0,0000
150	0,0143	0,0214	0,0285	0,0356	0,0428	0,0499	0,0570	0,0713	0,0855
200	0,0198	0,0297	0,0395	0,0494	0,0593	0,0692	0,0791	0,0988	0,1186
250	0,0253	0,0379	0,0506	0,0632	0,0759	0,0885	0,1011	0,1264	0,1517
300	0,0308	0,0462	0,0616	0,0770	0,0924	0,1078	0,1232	0,1540	0,1848

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Selection

Example of selection

Data		
Supply air volume, Q_v	[m ³ /h]	2000
Supply air temperature, T_0	[°C]	18
Ambient temperature, T_r	[°C]	26
Diffuser length, L	[mm]	2000
Max. permissible sound pressure level, L_p	[dB(A)]	35
Room acoustic attenuation, ΔL_r	[dB(A)]	8
Max. permissible air velocity in occupied zone	[m/s]	0,2

Selection by means of graphs		
Flow rate for diffuser with L = 1000 mm	[m ³ /h/m]	1000
Noise		
Requested max. sound power level, $L_{w,L}$ (= $L_p + \Delta L_r$)	[dB(A)]	43
Correction of sound power level for diffuser with length L, $\Delta L_{w,L}$	[dB(A)]	3,7
Requested max. sound power level for L = 1000 mm, $L_{w,L=1m}$	[dB(A)]	39,3
Proposed grille height, H	[mm]	150
Pressure drop		
Total pressure loss, ΔP_{tot}	[Pa]	8
Velocity		
Correction factor jet length, $c_{L_{T0,2,L}}$	[-]	1,096
Jet length for grille with L = 1000 mm, $L_{T0,2,L=1m}$	[m]	15,2
Radius for grille with L = 2000 mm, $L_{T0,2,L}$ (= $L_{T0,2,L=1m} \times c_{L_{T0,2,L}}$)	[m]	16,7
Outlet area A_f (= $A_{f,L=1m} \times L/1000$)	[m ²]	0,1425
Air outlet speed V_f , Q_v/A_f (of d.m.v. grafiek)	[m/s]	3,9
Temperature		
Temperature quotient @ $L_{T0,2,L=1m}$, $\Delta T_x/\Delta T_0$	[-]	0,108
Temperature quotient @ $L_{T0,2,L}$, $\Delta T_x/\Delta T_0 \times c_{L_{T0,2,L}}$	[-]	0,118
-->temperature $T_x = T_a - (\Delta T_x/\Delta T_0 \times c_{L_{T0,2,L}})(T^a - T_0)$	[°C]	25,1

Symbols explained

symbol	unit	
ΔP_{tot}	[Pa]	Total pressure difference
Q_v	[m ³ /h/m] / [l/s/m]	Air flow rate for a grille length of 1 m
ΔT_x	[K]	Temperature difference between the room air and the radiant temperature at the distance x
ΔT_0	[K]	Temperature difference between room air and supply air
L_w	[NR] / [dB(A)]	Noise output
$L_{T0,2}$	[m]	Radius at a terminal velocity of 0.2 m/s
x	[m]	Distance measured from the grid centre
L	[m]	Length of air diffuser
$L_{w,L}$	[NR] / [dB(A)]	Sound power level of a diffuser with length L
$\Delta L_{w,L}$	[NR] / [dB(A)]	Correctional sound power level of a diffuser with length L in relation to the length of 1 m
$L_{T0,2,L}$	[m]	Beam spacing at an end speed of 0.2 m/s for a grille with length L
$c_{L_{T0,2,L}}$	[m]	Correction factor to the beam spacing at a terminal velocity of 0.2 m/s for a grille with length L