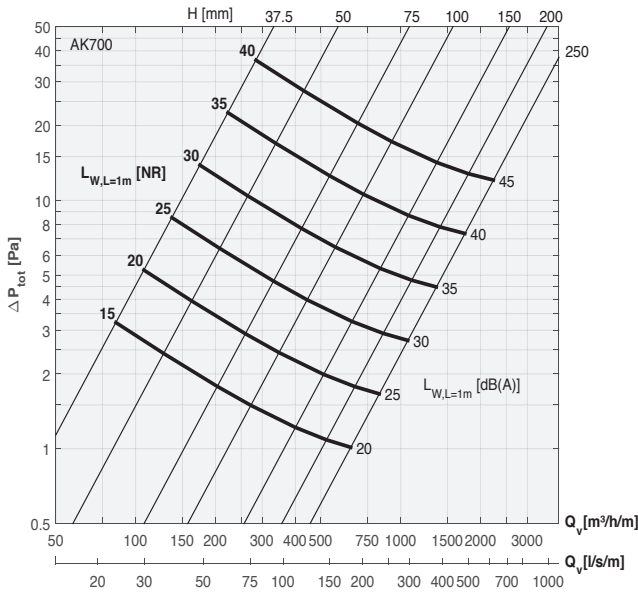


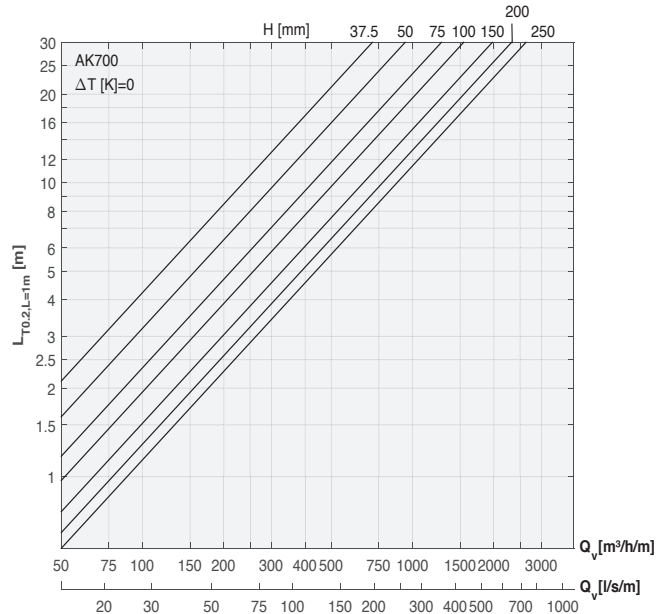
SELECTION

SUPPLY

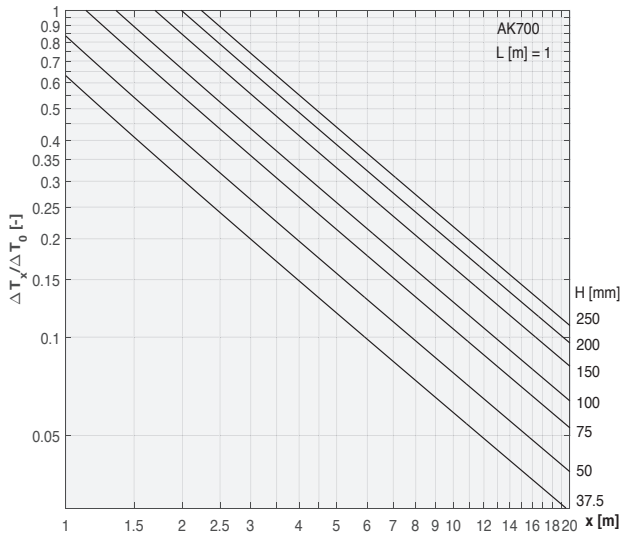
SOUND POWER, PRESSURE DROP
GRILLE LENGTH L[M]=1



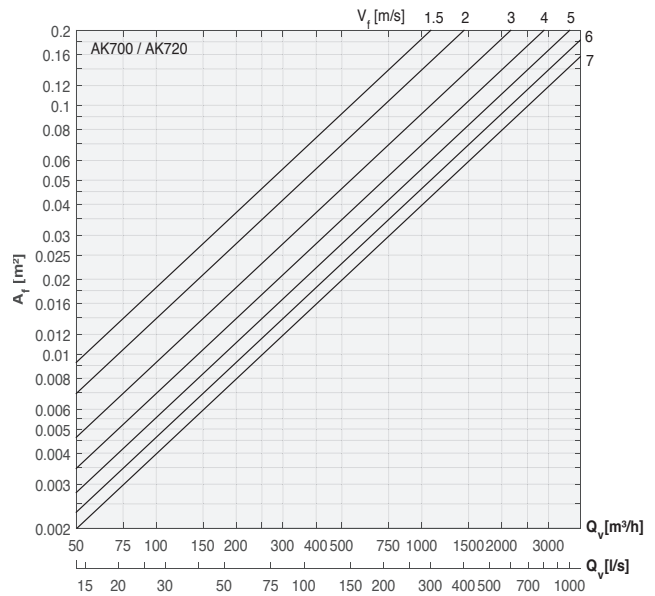
THROW
GRILLE LENGTH L[M]=1



TEMPERATURE
GRILLE LENGTH L[M]=1



AIR DISCHARGE VELOCITY, BASED ON AF

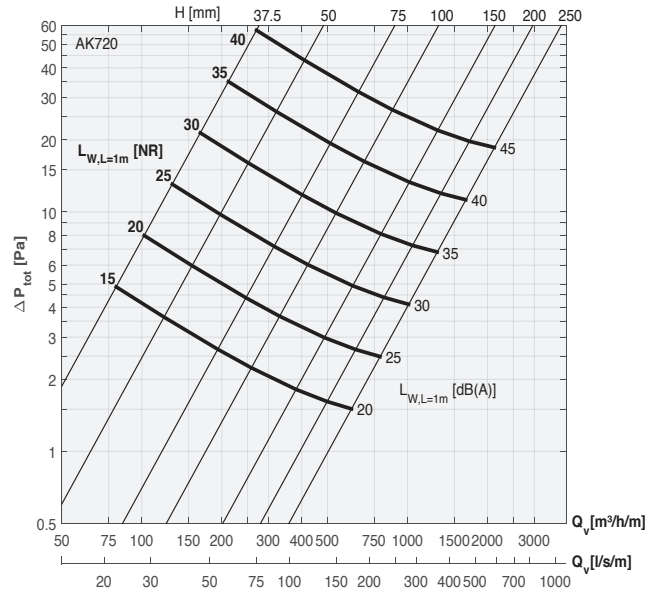
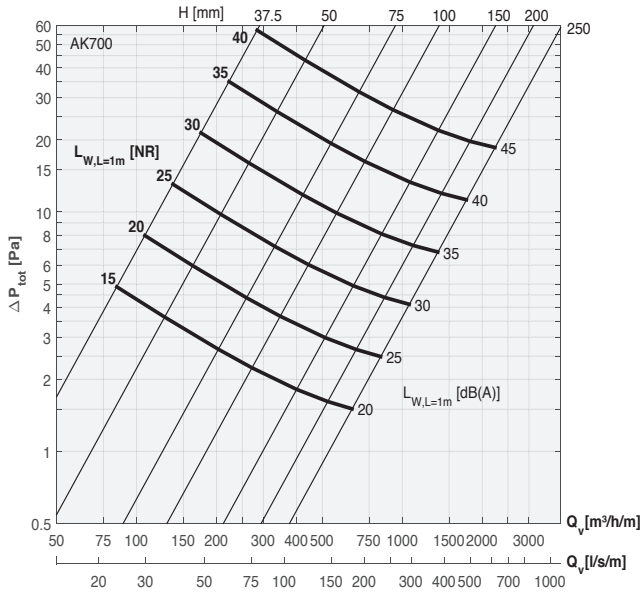


To calculate the airflow behavior in rooms as well as performance data such as sound level and pressure loss, please consult our [FACT selection software](#).

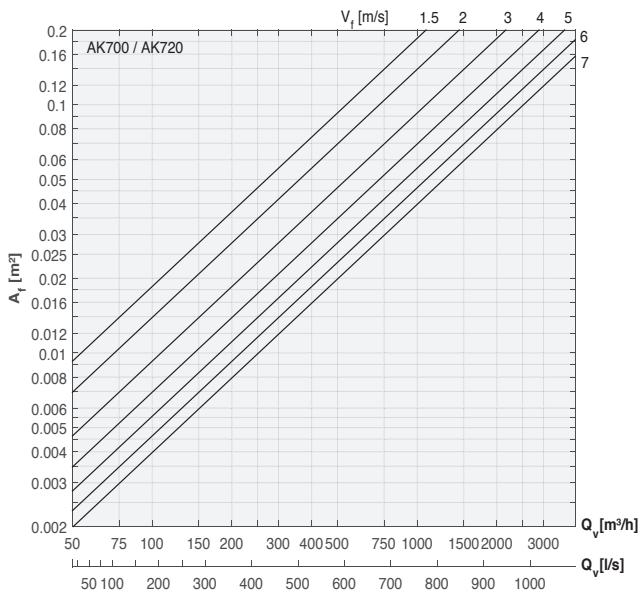
SELECTION

EXHAUST

SOUND POWER, PRESSURE DROP
GRILLE LENGTH LIM]=1



AIR DISCHARGE VELOCITY, BASED ON AF

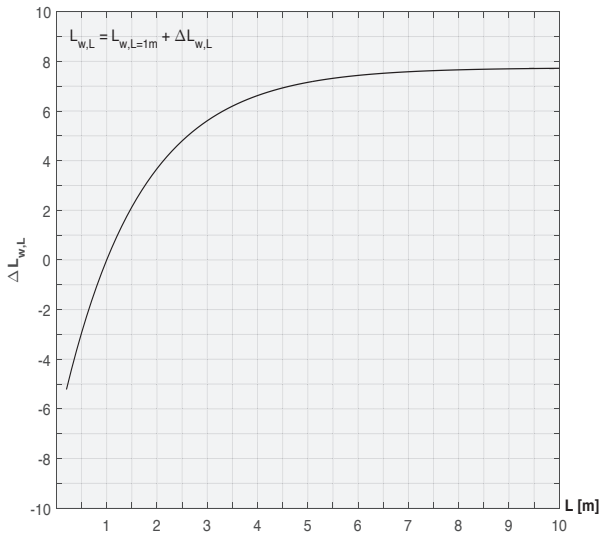


To calculate the airflow behavior in rooms as well as performance data such as sound level and pressure loss, please consult our [FACT selection software](#).

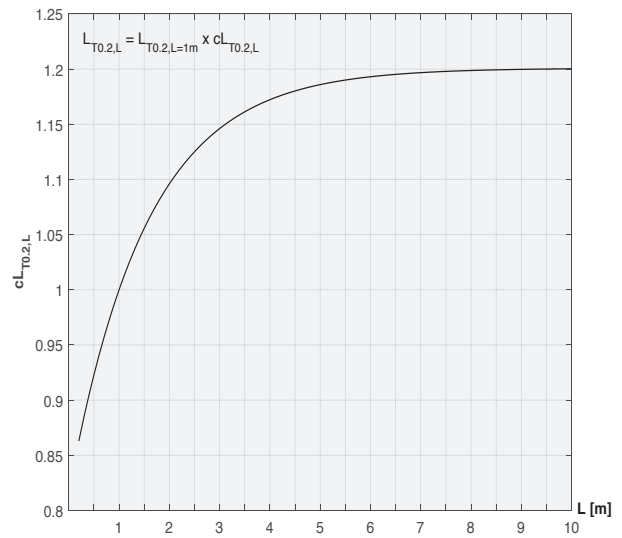
SELECTION

CORRECTION FACTORS

SOUND CORRECTION FOR ARBITRARY GRILLE LENGTH L



THROW CORRECTION FOR ARBITRARY GRILLE LENGTH L



GEOMETRICAL AIR DISCHARGE SURFACE
AREA AF. SUPPLY/EXHAUST

A _f [m ²]	L [MM]									
	H [mm]	200	300	400	500	600	700	800	1000	1200
37,5		0,002	0,003	0,004	0,005	0,006	0,006	0,007	0,009	0,011
50		0,003	0,005	0,006	0,008	0,010	0,011	0,013	0,016	0,019
75		0,006	0,009	0,012	0,015	0,018	0,021	0,024	0,030	0,036
100		0,009	0,013	0,017	0,022	0,026	0,031	0,035	0,044	0,052
150		0,014	0,021	0,029	0,036	0,043	0,050	0,057	0,071	0,086
200		0,020	0,030	0,040	0,049	0,059	0,069	0,079	0,099	0,119
250		0,025	0,038	0,051	0,063	0,076	0,088	0,101	0,126	0,152

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
SELECTION EXAMPLE

Known data		
supply air flow rate, Q_v	[m ³ /h]	2000
supply air temperature, T_0	[°C]	18
room temperature, T_r	[°C]	26
diffuser length, L	[mm]	2000
max. allowable sound pressure, L_p	[dB(A)]	35
room sound attenuation, ΔL_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 ³ /h/m]	1000
Sound		
requested max. sound power, $L_{w,L}$ (= $L_p + \Delta L_r$)	[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 grille height, H	[mm]	150
Pressure drop		
total pressure, ΔP_{tot}	[Pa]	8
Velocity		
throw correction factor, $cL_{T0,2,L}$	[-]	1,096
throw for diffuser of L = 1000 mm, $L_{T0,2,L=1m}$	[m]	15,2
throw for diffuser of L = 2000 mm, $L_{T0,2,L}$ (= $L_{T0,2,L=1m} \times cL_{T0,2,L}$)	[m]	16,7
air discharge surface area A_f (= $A_{f,L=1m} \times L/1000$)	[m ²]	0,1425
discharge velocity V_f , Q_v/A_f (or by graph)	[m/s]	3,9
Temperature		
temperature coefficient @ $L_{T0,2,L=1m}$, $\Delta T_x/\Delta T_0$	[-]	0,108
temperature coefficient @ $L_{T0,2,L}$, $\Delta T_x/\Delta T_0 \times cL_{T0,2,L}$	[-]	0,118
-->temperature $T_x = T_a - (\Delta T_x/\Delta T_0 \times cL_{T0,2,L})(T_a - T_0)$	[°C]	25,1

LEGEND

Symbol	Unit	
ΔP_{tot}	[Pa]	total pressure loss
Q_v	[m ³ /h/m] / [l/s/m]	airflow for a grille length of 1 m
ΔT_x	[K]	difference between ambient temperature and jet centreline temperature at distance x
ΔT_0	[K]	temperature difference between ambient 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
x	[m]	distance measured from the diffuser's/ grille's centre
L	[m]	length of diffuser or grille
$L_{w,L}$	[NR] / [dB(A)]	sound power for a diffuser or grille with length L
$\Delta L_{w,L}$	[NR] / [dB(A)]	sound power correction for a diffuser or grille 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 grille with length L
$cL_{T0,2,L}$	[m]	correction factor for the distance at which the jet centreline velocity decreases to 0.2 m/s for a diffuser or grille with length L
V_f	[m/s]	air discharge velocity based on A_f
A_f	[m ²]	geometrical air discharge surface area
V_k	[m/s]	air discharge velocity based on A_k
A_k	[m ²]	effective air discharge surface area (measured)