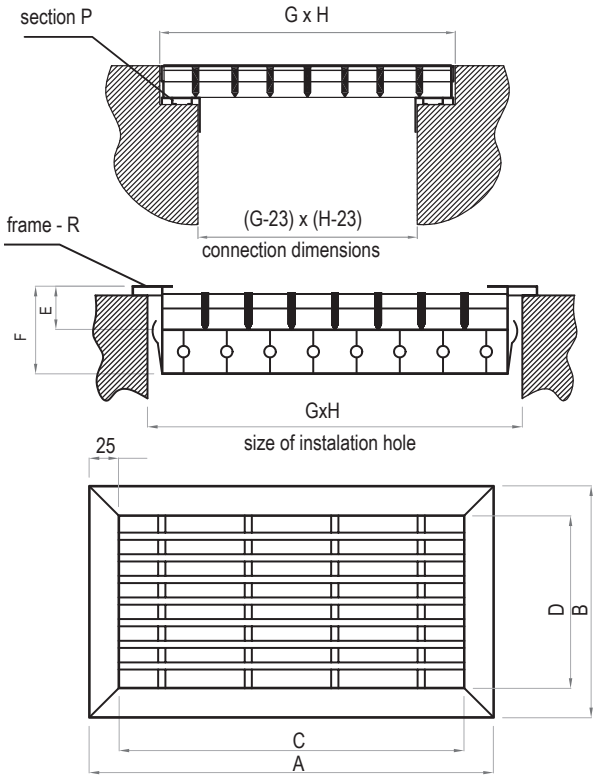


DESCRIPTION

KPP and KPR are high quality and high static load resistance floor air grates, designed to supply and exhaust air. They are equipped with fixed blades and can be installed in the floor, in the wall or in the ventilation duct.

KPP-PP, KPR-PP are air grates additionally equipped with backward control throttle. Adjustable angle of the throttle allows for adjusting airflow capacity..

FEATURES

- designed to supply and exhaust air
- fixed blades
- high quality product
- high static load resistance
- air gates made of aluminium
- optional additional throttle allows for adjusting airflow capacity
- made in 45 standard sizes
- available in standard RAL 9003 colour
- upon customer's request, gates can be made in any size and colour from RAL palette
- given sizes are sizes of installation holes
- assembly with springs

INSTALLATION

Air grates can be mounted in the floor or in the wall using screws or springs (version KPR – with frame), or can be let in the floor and fixed with a section (version KPP).
If you are fitting the air grate in the wall, prepare an installation hole of a size G x H for the chosen air gate. Joints between the air gate and the wall or a duct should be sealed.
When installing the air grate in the floor, follow instruction for preparing the installation hole as presented on the above figure.

ORDER REFERENCE

KP - R - PP - 37 – RAL9003

- RAL9003 – colour
- 37 – size (G x H)
- PP – no throttle / PP backward throttle
- R – version: R - frame, P - section
- KP – type

STANDARD SIZES

	1	2	3	4	5	6	7	8	9	10	11
A [mm]	130	180	230	280	330	430	530	630	830	1030	1230
B [mm]	130										
C [mm]	80	130	180	230	280	380	480	580	780	980	1180
D [mm]	80										
G [mm]	100	150	200	250	300	400	500	600	800	1000	1200
H [mm]	100										

	12	13	14	15	16	17	18	19	21	21
A [mm]	180	230	280	330	430	530	630	830	1030	1230
B [mm]	180									
C [mm]	130	180	230	280	380	480	580	780	980	1180
D [mm]	130									
G [mm]	150	200	250	300	400	500	600	800	1000	1200
H [mm]	150									

	22	23	24	25	26	27	28	29	30
A [mm]	230	280	330	430	530	630	830	1030	1230
B [mm]	230								
C [mm]	180	230	280	380	480	580	780	980	1180
D [mm]	180								
G [mm]	200	250	300	400	500	600	800	1000	1200
H [mm]	200								

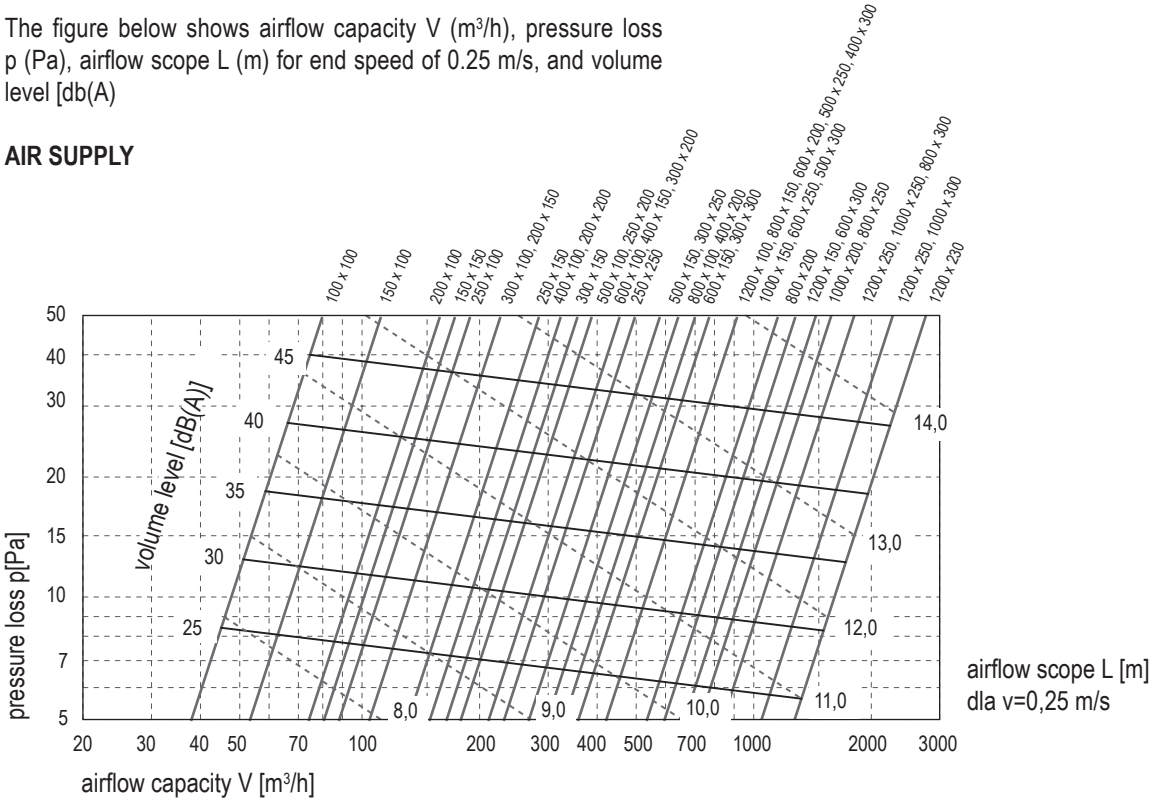
	31	32	33	34	35	36	37	38
A [mm]	280	330	430	530	630	830	1030	1230
B [mm]	280							
C [mm]	230	280	380	480	580	780	980	1180
D [mm]	230							
G [mm]	250	300	400	500	600	800	1000	1200
H [mm]	250							

	39	40	41	42	43	44	45
A [mm]	330	430	530	630	830	1030	1230
B [mm]	330						
C [mm]	280	380	480	580	780	980	1180
D [mm]	280						
G [mm]	300	400	500	600	800	1000	1200
H [mm]	300						

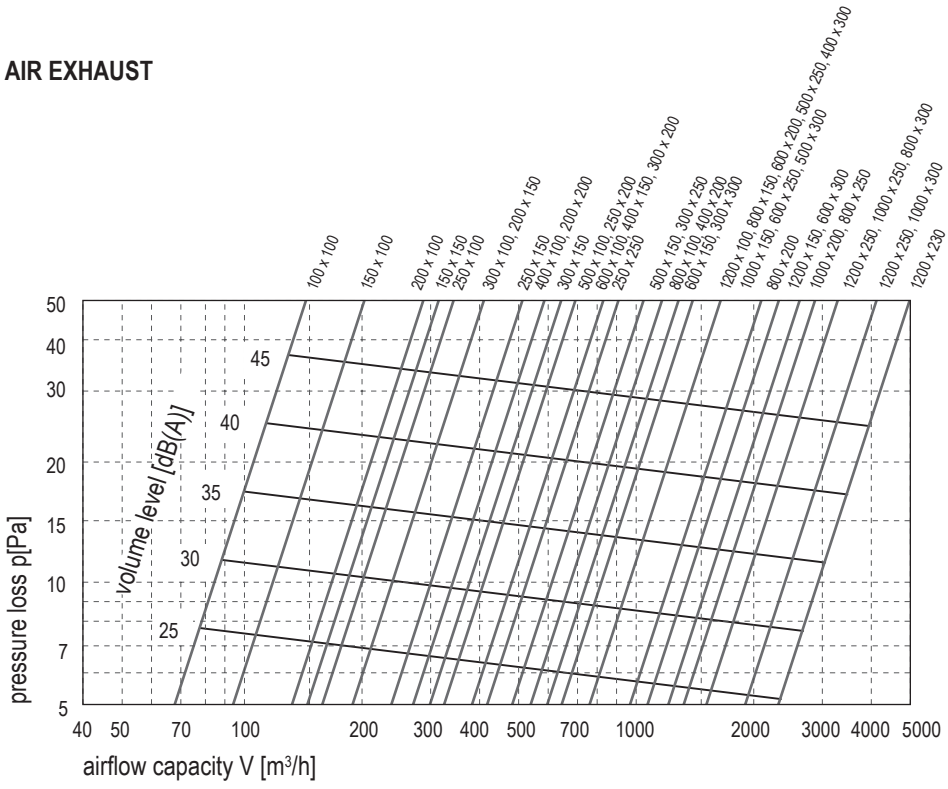
FEATURES

The figure below shows airflow capacity V (m³/h), pressure loss p (Pa), airflow scope L (m) for end speed of 0.25 m/s, and volume level [db(A)

AIR SUPPLY



AIR EXHAUST



RAPID SELECTION TABLE

		L	1000	1000	1000	1000	1000	1000	1000	1000
Q		H	50	75	100	125	150	200	250	300
$m^3/h/m$	l/s/m	Ak	0,024	0,0370	0,0500	0,0630	0,0820	0,1080	0,1400	0,1720
100	27,8	V_k X P_t NR	1,2 2,3 0,8	0,8 1,9 0,3	0,6 1,6 0,2					
120	33,3	V_k X P_t NR	1,4 2,8 1,1	0,9 2,2 0,5	0,7 1,9 0,3					
140	38,9	V_k X P_t NR	1,6 3,2 1,5	1,1 2,6 0,6	0,8 2,2 0,4					
160	44,4	V_k X P_t NR	1,9 3,7 2,0	1,2 3,0 0,8	0,9 2,6 0,5					
180	50,0	V_k X P_t NR	2,1 4,1 2,5 8	1,4 3,3 1,1	1,0 2,9 0,6	0,8 2,6 0,4				
200	55,6	V_k X P_t NR	2,3 4,6 3,1 10	1,5 3,7 1,3	1,1 3,2 0,7	0,9 2,8 0,5				
250	69,4	V_k X P_t NR	2,9 5,8 4,9 16	1,9 4,6 2,0 7	1,4 4,0 1,1	1,1 3,6 0,7	0,8 3,1 0,4			
300	83,3	V_k X P_t NR	3,5 6,9 7,0 21	2,3 5,6 2,9 11	1,7 4,8 1,6	1,3 4,3 1,0	1,0 3,7 0,6	0,8 3,3 0,3	0,6 2,9 0,2	
350	97,2	V_k X P_t NR	4,1 8,1 9,5 25	2,6 6,5 4,0 15	1,9 5,6 2,2 9	1,5 5,0 1,4	1,2 4,4 0,8	0,9 3,8 0,5	0,7 3,3 0,3	0,6 3,0 0,2
400	111,1	V_k X P_t NR	4,6 9,2 12,4 28	3,0 7,4 5,2 19	2,2 6,4 2,9 12	1,8 5,7 1,8 8	1,4 5,0 1,1	1,0 4,3 0,6	0,8 3,8 0,4	0,6 3,4 0,2
450	125,0	V_k X P_t NR	5,2 10,4 15,7 31	3,4 8,3 6,6 22	2,5 7,2 3,6 15	2,0 6,4 2,3 11	1,5 5,6 1,3 5	1,2 4,9 0,8	0,9 4,3 0,5	0,7 3,9 0,3
500	138,9	V_k X P_t NR	5,8 11,5 19,4 34	3,8 9,3 8,2 25	2,8 8,0 4,5 18	2,2 7,1 2,8 13	1,7 6,2 1,7 8	1,3 5,4 1,0	1,0 4,8 0,6	0,8 4,3 0,4
600	166,7	V_k X P_t NR	6,9 13,8 28,0 38	4,5 11,1 11,8 29	3,3 9,6 6,4 23	2.6 8,5 4,1 18	2,8 7,5 2,4 12	1,5 6,5 1,4 6	1,2 5,7 0,8	1,0 5,2 0,5
700	194,4	V_k X P_t NR	8,1 16,1 38,1 42	5,3 13,0 16,0 33	3,9 11,2 8,8 27	3,1 9,9 5,5 22	2,4 8,7 3,3 16	1,8 7,6 1,9 10	1,4 6,7 1,1 5	1,1 6,0 0,7
800	222,2	V_k X P_t NR	9,3 18,4 49,7 46	6,0 14,8 20,9 37	4,4 12,8 11,5 30	3,5 11,4 7,2 25	2,7 10,0 4,3 20	2,1 8,7 2,5 14	1,6 7,6 1,5 8	1,3 6,9 1,0
900	250,0	V_k X P_t NR		6,8 16,7 26,5 40	5,0 14,4 14,5 33	4,0 12,8 9,1 28	3,0 11,2 5,4 23	2,3 9.8 3,1 17	1,8 8,6 1,8 11	1,5 7,7 1,2 7
1000	277,8	V_k X P_t NR		7,5 18,5 32,7 42	5,6 15,9 17,9 36	4,4 14,2 11,3 31	3,4 12,5 6,7 25	2,6 10,9 3,8 20	2,0 9,5 2,3 14	1,6 8,6 1,5 10
1200	333,3	V_k X P_t NR			6,7 19,1 25,8 41	5,3 17,1 16,2 36	4,1 14,9 9,6 30	3,1 13,0 5,5 24	2,4 11,4 3,3 19	1,9 10,3 2,2 14
1400	388,9	V_k X P_t NR				6,2 19,9 22,1 40	4,7 17,4 13,0 34	3,6 15,2 7,5 28	2,8 23,3 4,5 23	2,3 12,0 3,0 18

SYMBOLS:

L - actual length in mm
H - actual length in mm
Q - value of air throw for m. lengths
Ak - effective surface in m2 per m. length
Vk- effective speed w m/s
X - range in m.
Pt - total pressure in Pa
NR- noise ratio in dB

EXAMPLE OF SELECTION

While selecting, You should take into account the size of the air throw , noise level and range.
Range values given in the rapid selection tables correspond to the terminal velocity in the operating range of 0.25 m/s.

EXAMPLE

Needs	
Air flow rate	350 m^3/h
Range	4 m. plus amendments
Noise level	below 20 NR
application	consulting room
needs pressure loss	below 10 PA
Speed effective	below 3 m/s

Location of the grate (grate) on the windowsill, 2 m. from the ceiling and 1 m. from the floor.

Before You use the table, calculate the adjusted range (XC) based on the value of range (X), the distance between the ceiling and the grid (h) and the correction factor for slot grates mounted to the windowsill or floor Cs. Coefficient Cs for grates installed in the windowsill or the floor is always 1:1.

$X_c = (X+h) * C_s$
$X_c = (4+2) * 1,1$
$X_c = 6,6$ m.

OFFER

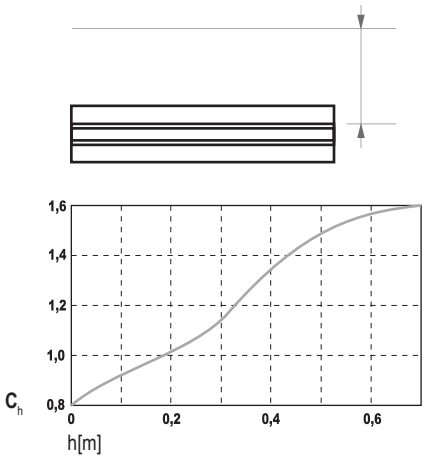
Given the size of the air throw 350 m3 / h and the range of 6.6 m., adjusted on the basis of the rapid selection table, we obtain the following values:

Q (Air flow rate)	250 m^3/h (97,2 l/s)
V_k (effective speed)	2,6 m/s
X_c (adjusted range)	6,5 m.
P_t (loss of pressure)	4,0 Pa
NR (Noise level)	17

KPP type grate with dimensions 1000 x 75

CORRECTION FACTORS FOR MOUNTING ON THE WALL

In addition to a coefficient Cs mentioned earlier (for grates installed in the windowsill or floor), there is also a correction factor for the distance between the ceiling and the grate when it is mounted on the wall. It is a factor C_h, which for the free flow of air is 1,6.



$X_c = X * C_h$

Adjusted range = range x Ch, where h on the chart is the distance from the ceiling to the grate.

TIPS MAXIMUM DISTANCE - H MAX

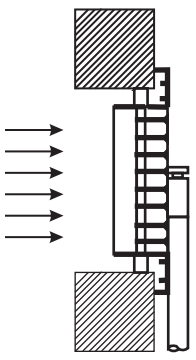
To get the desired stream of cold air, when the grate is mounted on the wall, it is recommended to not exceed the reported in the table below the distances between the grate and the ceiling (h max.) and the temperature difference Δt (the temperature difference between the air blown from the outside and the air in the room) .

Δt (°C)	0	6	9	12
h max (m)	0,65	0,37	0,25	0,13

MEASUREMENT OF FLOW

The stream size (Qv) is obtained from the product of the effective surface of the grate (Ak) and its effective speed (Vk): qv (m^3 / h) = Ak (m^2/m.)*Vk(m/s)*3600*L/100

To obtain Vk, it is recommended to use thermal anemometer.
(egg.: type TSI-VELOCICLAC)

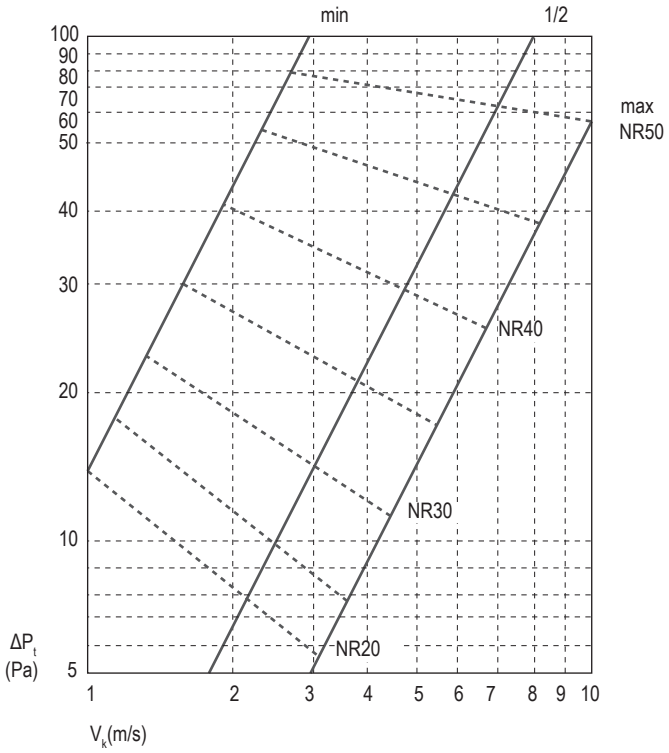


PP damper control modifies the value of the noise level and pressure loss given in the rapid selection tables.

In the further material and on the chart below we provide the values of the noise level and the values of the total pressure loss (ΔPt) for grate fitted with a damper contraol as a function of the parameters Vk (effective rate) and the percentage of damper opening (min. , 1/2 max.)

The graph shows the noise level NR as the sound power level (without silencing the room) for grate equipped with the damper.

The value Vk on the graph refers to the grid without a damper.



Correction factors should be used to the noise level as a function of Ak (effective area of air flow outlet) in accordance with the table below.

Δt (m2)	0,01	0,02	0,03	0,05	0,1	0,2
NR	-5,2	-1,9	0	+2,4	+5,8	+9,1