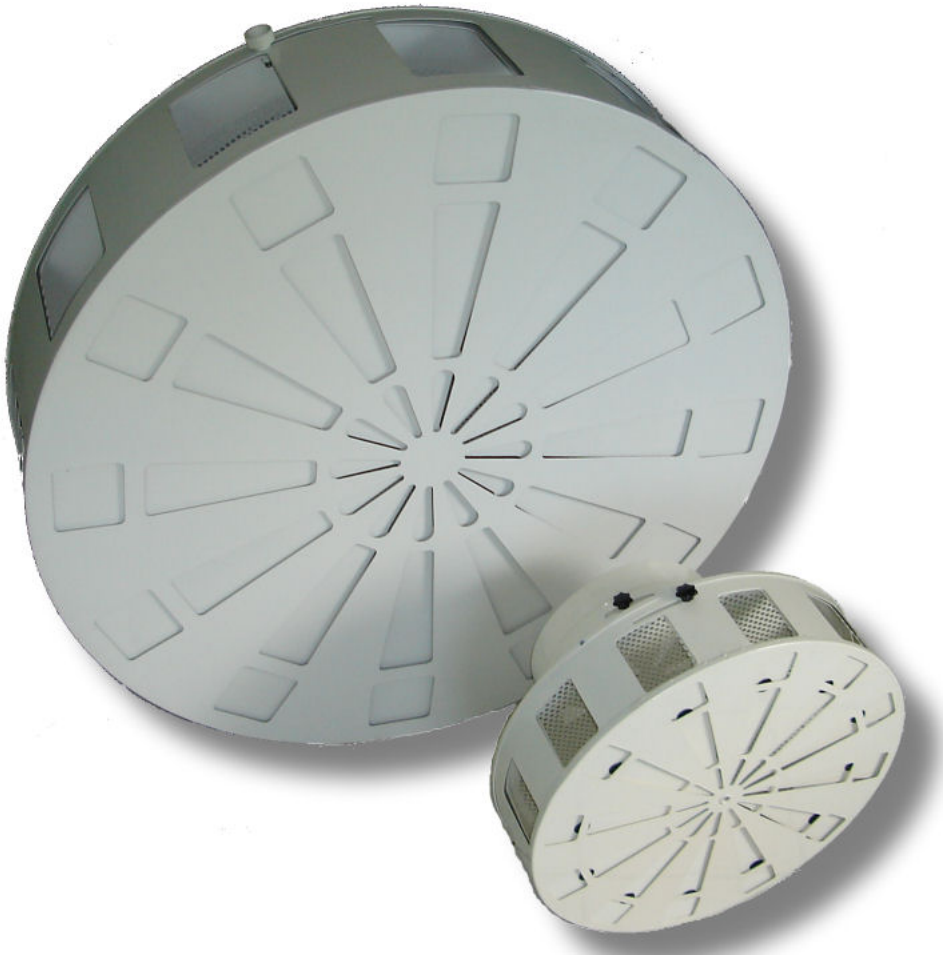
RA- TYPE INDUSTRIAL DIFFUSER

radel & hahn zrt



RA - INDUSTRIAL DIFFUSER

Industrial diffusers are suitable for blowing cold or warm air into the rooms through radial or axial air supply elements. Airflow direction can be changed from radial into axial stepless.

Structure of industrial diffusers:

The diffuser consists of two cylindrical lateral surfaces of diameter D, which are rotateable in eachother and two metal round plates close these lateral surfaces from the bottom, which diameter is D as well. The outer lateral surface and its round metal closing plate are fixed. The inner lateral surface its metal closing round plate are rotatable. The fixed and rotatable parts (the lateral surface and the closing round plate) have windows on their surfaces. If the windows of lateral surfaces interlock with eachother, the diffuser is in radially opened position and the windows of metal closing round plates cover eachother in the same time; so they are in closed position. If we rotate the inner part, things change to the opposite.

If we set the intermediate position, the direction of air supply can be radial or axial. The position is set with the help of the adjuster-locker arm, which can be found on the lateral surface.

The required airflow rate can be set, if we put a throttle plate of diameter d into its connecting branch. The throttle plate can be set by using the handle, which is on the lateral surface and can be fixed with the help of the button on the arm. Instead of manual set the moving of these plates can be motorized.

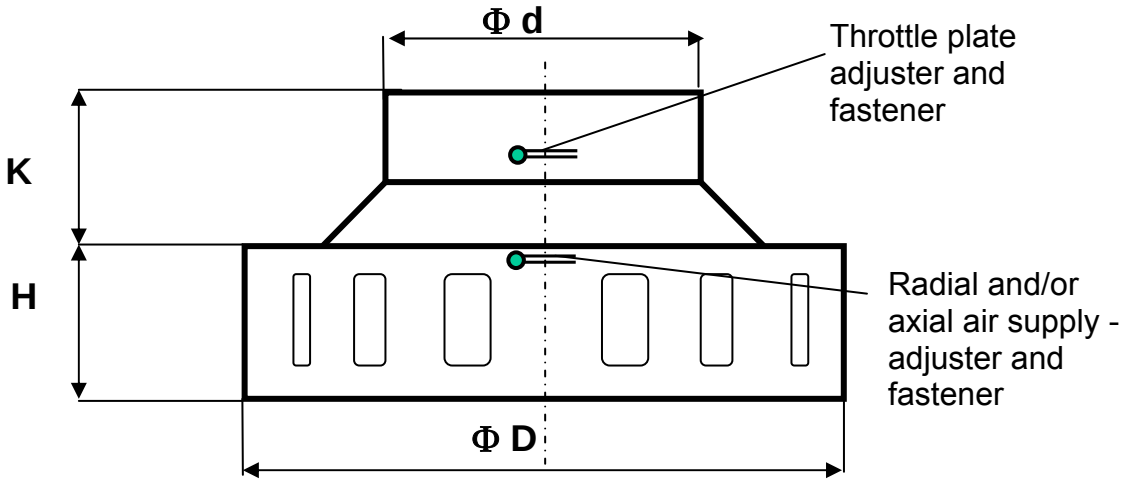
Material:

Painted steel sheet (Optionally can be ordered: stainless, galvanized steel sheet)

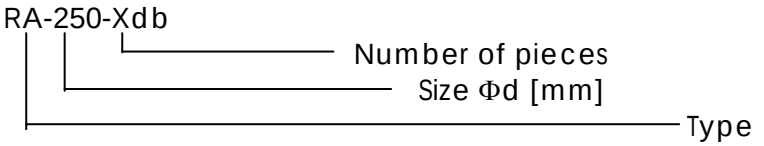
Size chart of supply elements:

This table shows the suggested airflow rate as well

Φ d [mm]	200	**250**	**315**	**400**	500
Φ D [mm]	380	**475**	**600**	**760**	950
H[mm]	100	**120**	**150**	**190**	240
K[mm]	140	**160**	**180**	**200**	220
q_{min}[m^3/h]	150	**200**	**300**	**400**	600
q_{max}[m^3/h]	800	**1200**	**2200**	**2800**	3800



The meaning of the order number:



ANNEXES

- It shows the connection between the airflow rate q[m³/h] of industrial diffuser which diameter is Φ250mm, Φ315mm, Φ400mm and the pressure loss Δp[Pa] related to medium density (ρ [kg/m³])

$$\frac{\Delta p}{\rho} = f(q)$$

- Axial throw distance (y[m]) depending on airflow rate (q[m³/h]) in case of heating

- Maximum end velocity (v_{max}[m/s]) depending on how far the air is blown horizontally(x[m]) at different airflow rates

Markings are seen in this figure

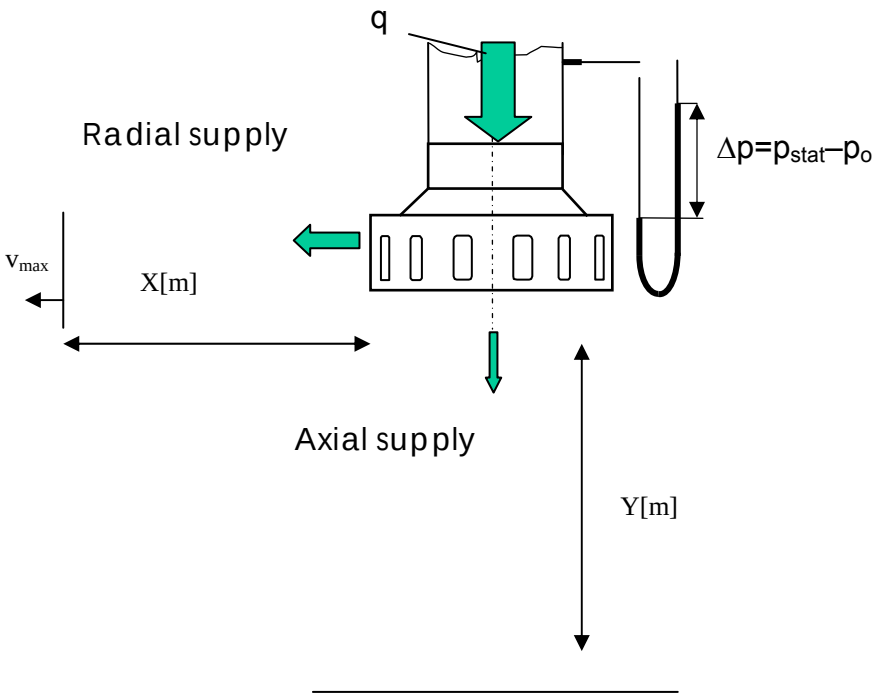
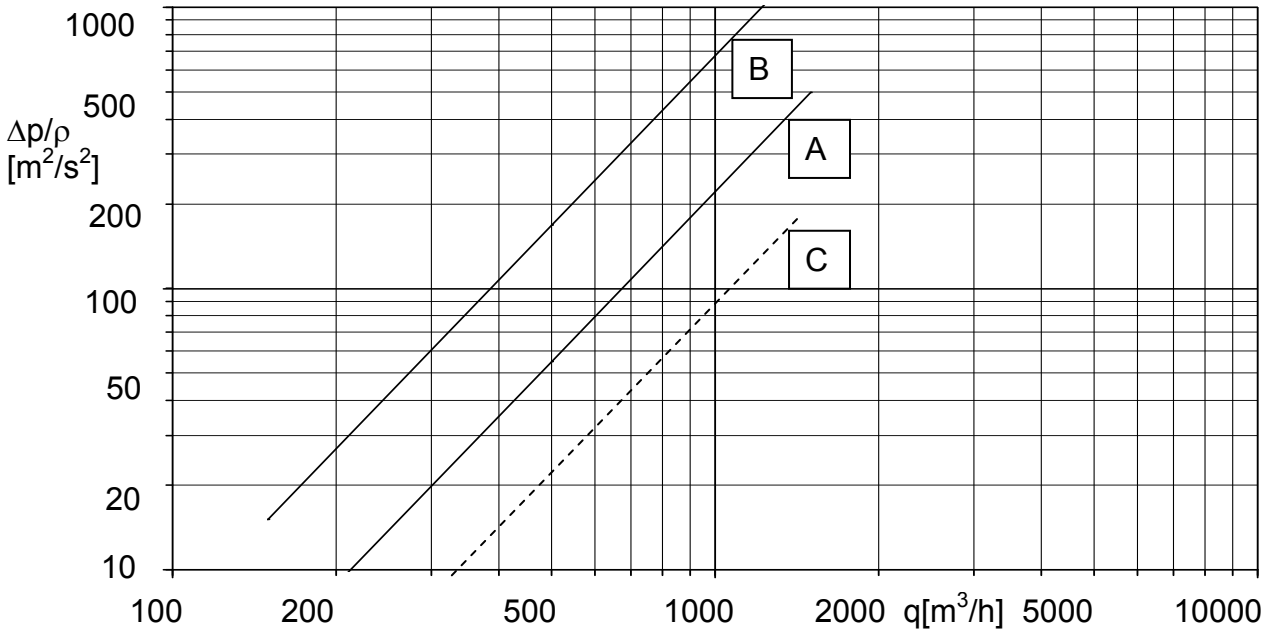
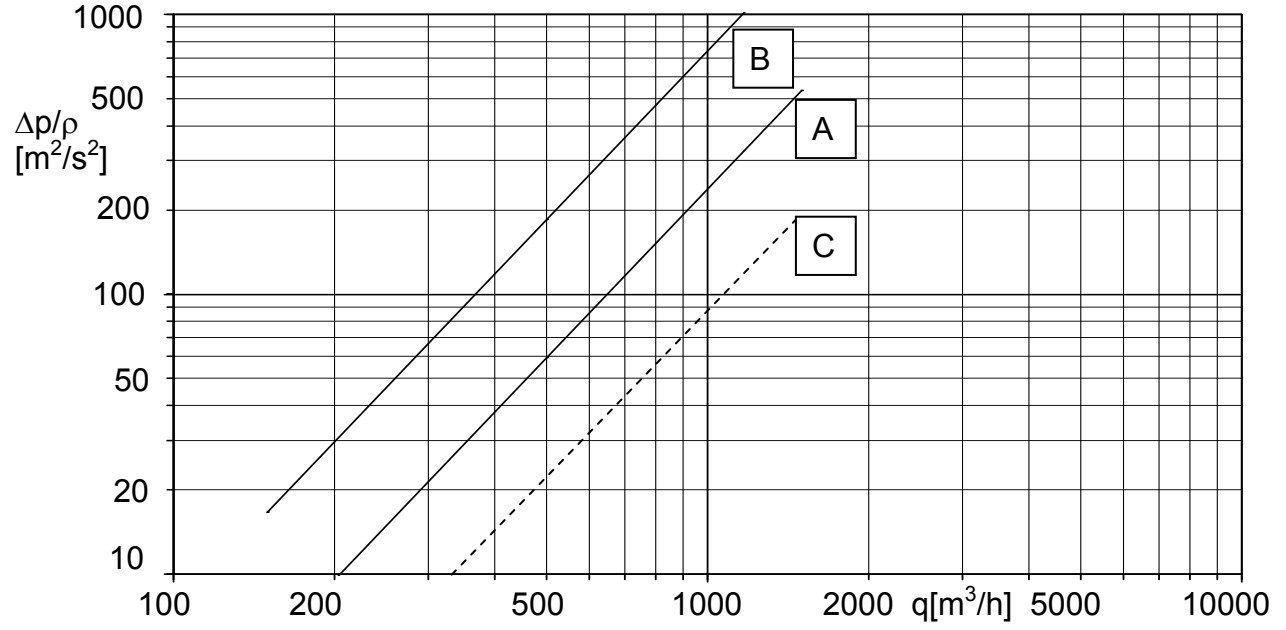


Diagram of supply elements RA250 mm $\Delta p/\rho=f(q)$

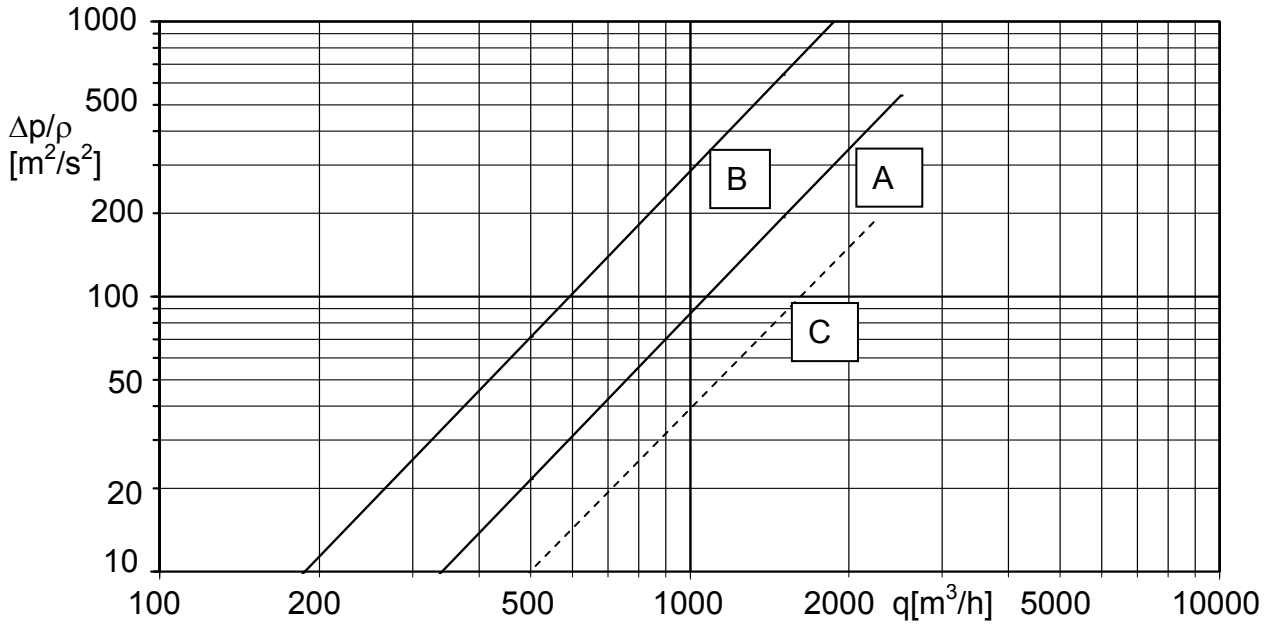


The degree of supplied air in case of axial airflow,
A characteristic curve, if A is fully opened
B characteristic curve, if it is opened up to 50%,
C characteristic curve, if it is fully opened, without throttle plate

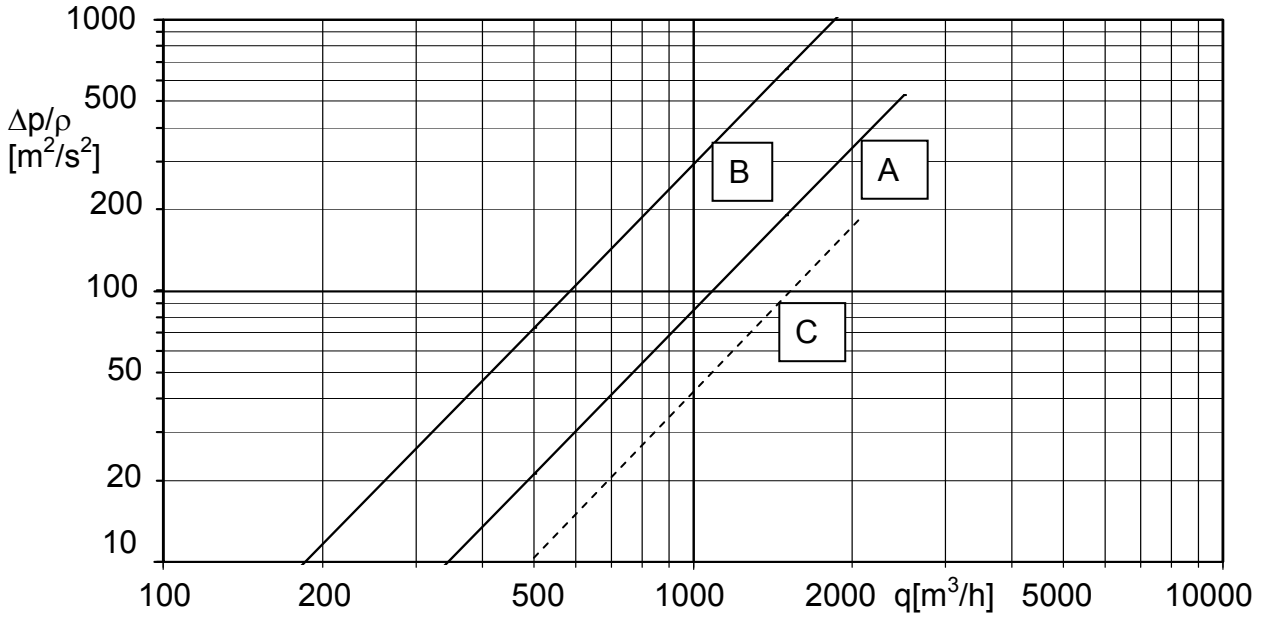


The degree of supplied air in case of radial airflow,
A characteristic curve, if A is fully opened
B characteristic curve, if it is opened up to 50%,
C characteristic curve, if it is fully opened, without throttle plate

The diagram of supply elements RA315 mm; $\Delta p/\rho=f(q)$

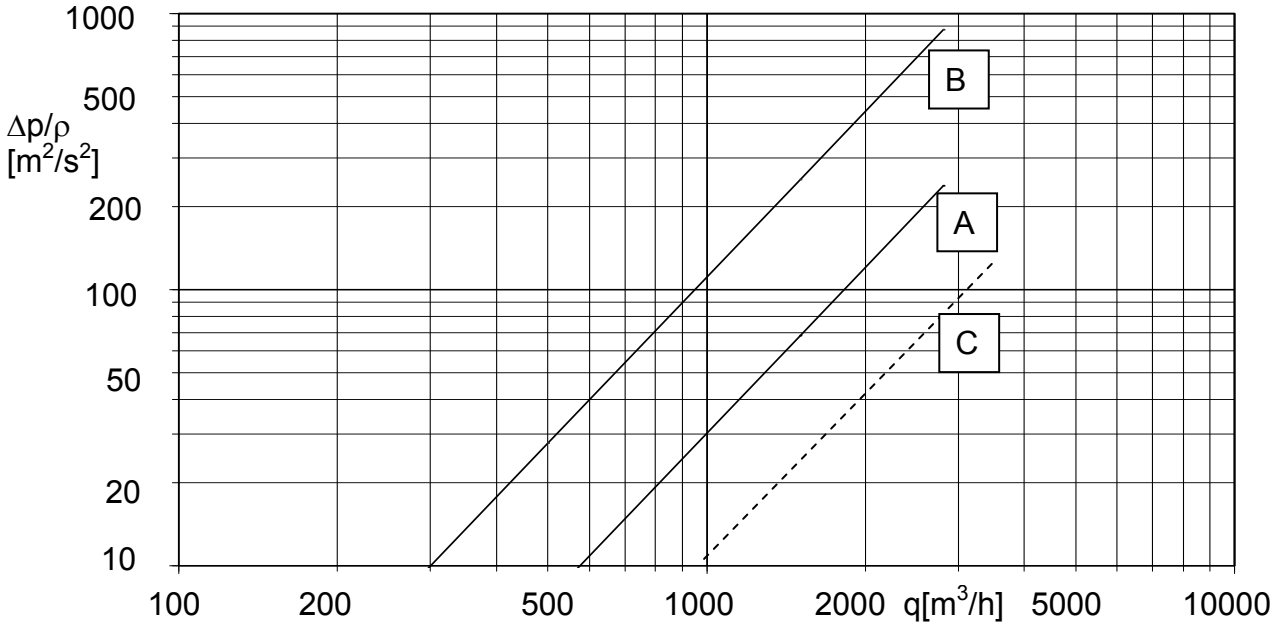


The degree of supplied air in case of axial airflow,
A characteristic curve, if A is fully opened
B characteristic curve, if it is opened up to 50%,
C characteristic curve, if it is fully opened, without throttle plate

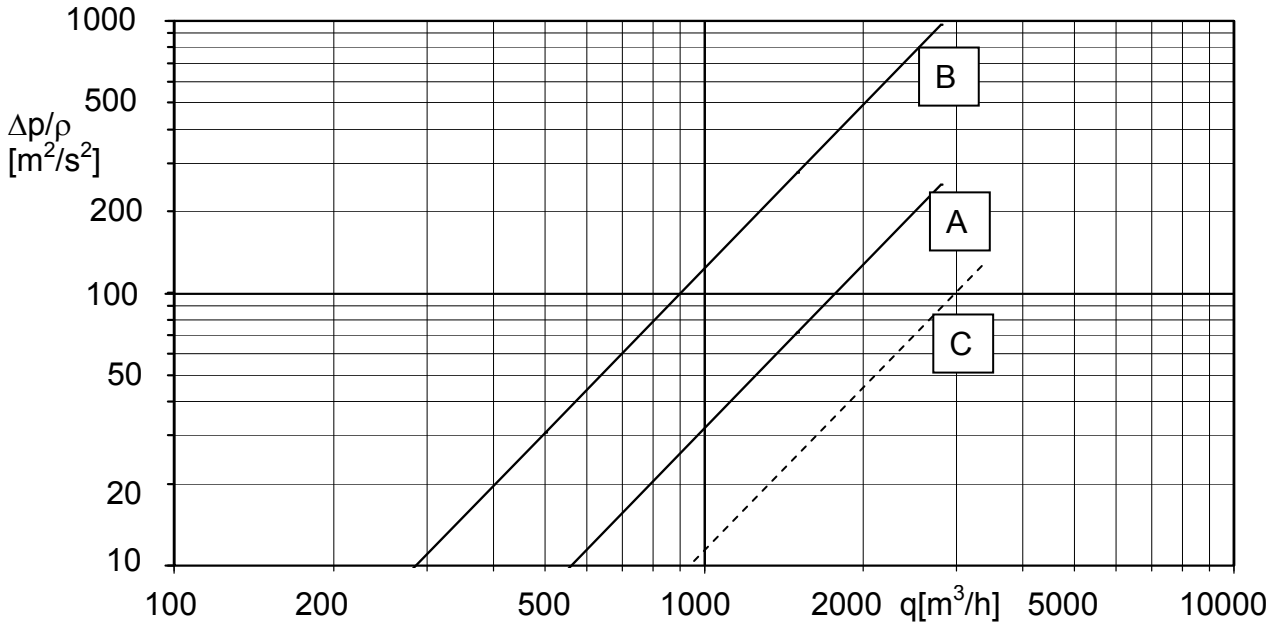


The degree of supplied air in case of radial airflow,
A characteristic curve, if A is fully opened
B characteristic curve, if it is opened up to 50%,
C characteristic curve, if it is fully opened, without throttle plate

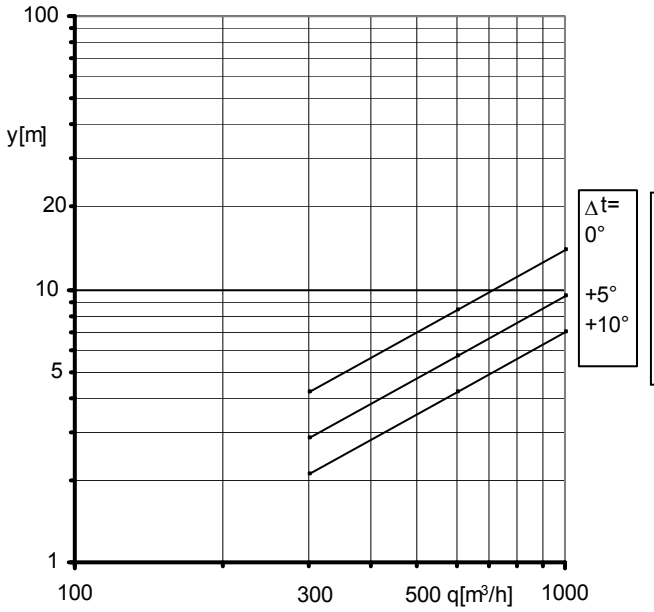
The diagram of supply elements RA400 mm; $\Delta p/\rho = f(q)$



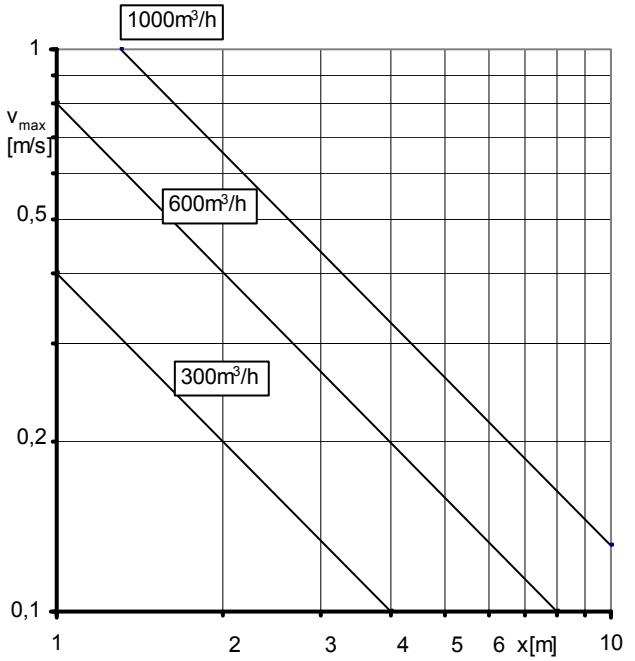
The degree of supplied air in case of axial airflow,
A characteristic curve, if A is fully opened
B characteristic curve, if it is opened up to 50%,
C characteristic curve, if it is fully opened, without throttle plate



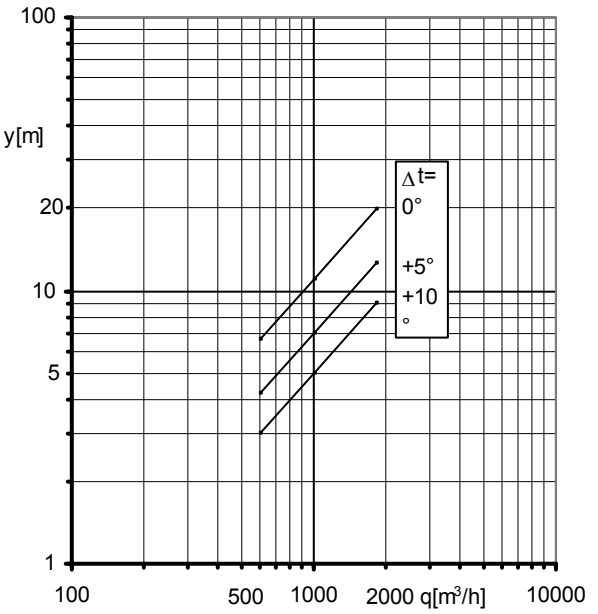
The degree of supplied air in case of radial airflow,
A characteristic curve, if A is fully opened
B characteristic curve, if is opened up to 50%,
C characteristic curve, if A is fully opened, without throttle plate



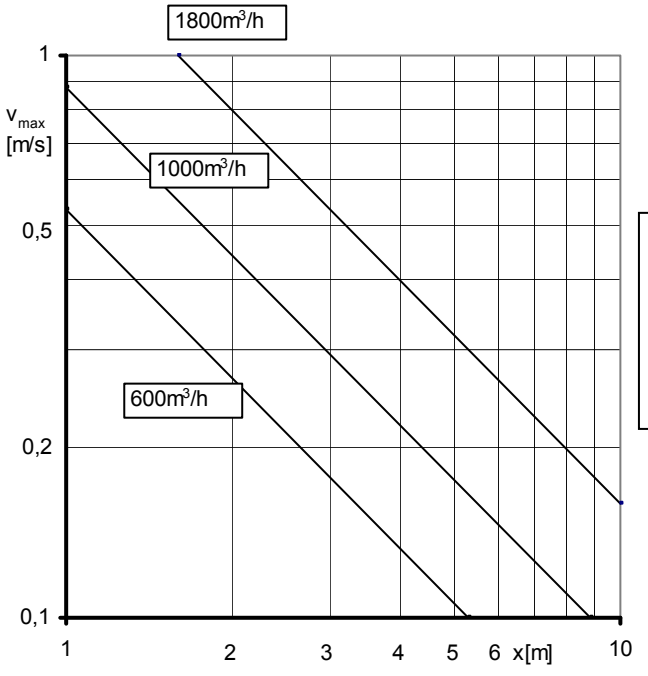
Type:RA 250
The throw distance of axial supply y[m]
$\Delta t = t_{ray} - t_{enviroment}$ [°C]



Type:RA 250
The throw distance of radial air supply horizontal y[m]
Maximum end velocity at x[m]= v_{max} [m/s]



Type:RA 315
The throw distance of axial supply y[m]
$\Delta t = t_{ray} - t_{enviroment}$ [°C]



Radial supply
Type:RA 315
Horizontal airflow(how far the air is blown) x[m]
Maximum end velocity (v_{max}[m/s])

Quick Selection Table:

Size	$Q_{average}$ [m^3/h]	L_w [dB(A)]	Δp [Pa]	v_{max} [m/s]	y($\Delta t=10^{\circ}C$) [m]	x [m]
RA250	600	≈40	35	≈0,15	4,2	5,0
RA315	1000	≈42	38	≈0,15	6,7	6,0
RA400	1800	≈42	38	≈0,15	7,0	8,0

radel & hahn Klimatechnik Ges.mbH
A-7210 Mattersburg,Wienerstrasse 22.
Tel.: 0043 (0) 2626 62744
Fax: 0043 (0) 2626 65259
e-mail: office@radel-hahn.at
web: www.radel-hahn.at

radel & hahn zrt.
H-4028 Debrecen, Kassai út 92.
Tel.: 0036-52/448-441
Fax: 0036-52/415-258
e-mail: info@radel-hahn.hu
web: www.radel-hahn.hu