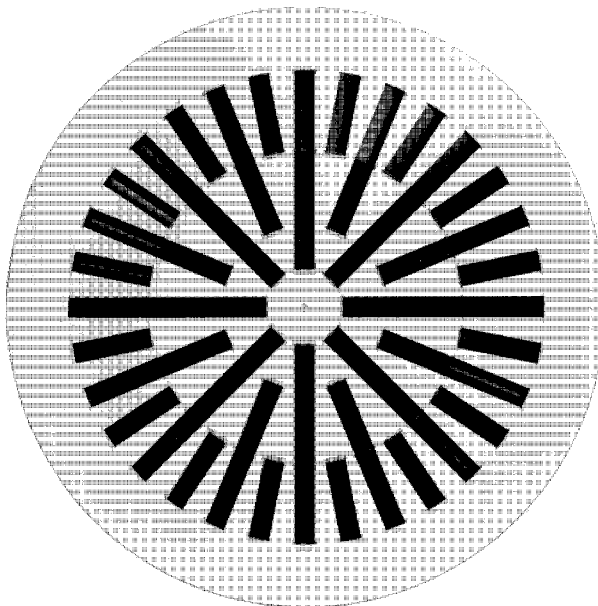




Swirl Diffuser

DQJ-FSR



Ferdinand Schad KG
Steigstraße 25-27
D-78600 Kolbingen
Telefon +49 (0) 74 63 - 980 - 0
Telefax +49 (0) 74 63 - 980 - 200
info@schako.de
www.schako.de

Swirl Diffuser DQJ-FSR

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Swirl Diffuser Model DQJ-FSR

Description

The swirl diffuser type DQJ-FSR is an air diffuser that is suitable in particular **for suspended use** in industrial halls and comfort rooms of high air change rates. Unlike the conventional swirl diffusers, the built-in **blades can also be adjusted at a later stage**. This modification can be necessary, for example, if obstacles obstruct the air jet or if high air velocities occur in areas where this is not desired.

The air jet can be deflected from the horizontal to the vertical direction by adjusting individual blades. This can be important, for example, if the air jet is to be directed towards a certain point for heating. For example, if pillars are in the way, the air can be moved around them by adjusting the blades. In difficult cases, the adjustment must be determined by tests.

Ex works, it is set to the air throw pattern "A".

Variable volumetric flow

NW	310	400	500	600	800
V_{\min} (m ³ /h)	100	100	200	300	500
V_{\max} (m ³ /h)	500	500	1000	1500	3000

The air diffuser is suitable for installations with variable volumetric flow. A stable air jet is guaranteed by the high outflow velocities, thus ensuring that the air jet does not become detached abruptly from the ceiling at small volumetric flows. The minimum and maximum volumetric flows are shown in the above table.

Construction

Plenum box (-SRK)

- Galvanised sheet steel

Faceplate

- Sheet steel painted to the RAL colour 9010 (white)
- Sheet steel painted to a different RAL colour

Blades

- made of plastic (PVC) colour RAL 9005 (black) or RAL 9010 (white)

Accessories

Honeycomb air flow straightener (-WG)

- Plastic

Internal insulation (-li)

- Thermal insulation inside the plenum box

External insulation (-la)

- Thermal insulation on the outside of the plenum box

Fastening

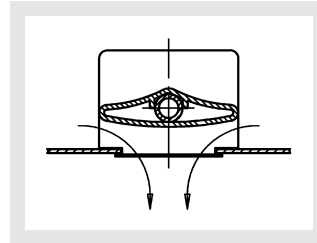
Screw mounting (-SM)

- sideways, by means of 4 on-site slotted shallow-raised countersunk-head tapping screws DIN ISO 7049 pitch 3.9 x 13

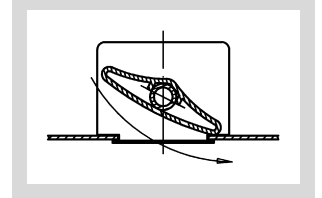
Models and dimensions

Throw pattern

Air throw pattern "B"
Blade position 1



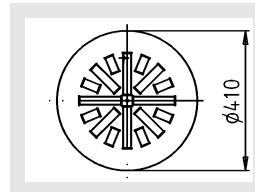
Air throw pattern "A"
Blade position 2



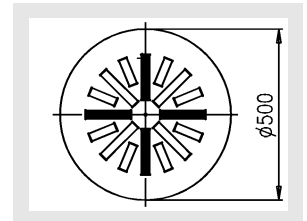
Air throw pattern "A" - all blades in position 2

Air throw pattern "B" is preset in factory

DQJ-FSR 310

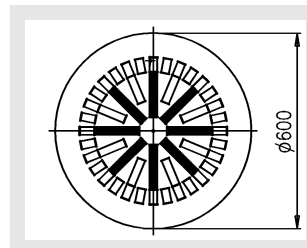


DQJ-FSR 400

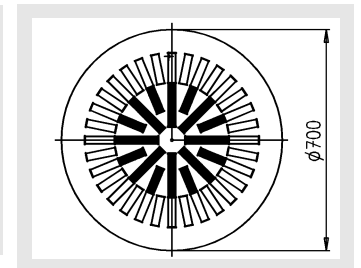


The swirl diffuser type DQJ-FSR 310 is delivered with air throw pattern "A" only.

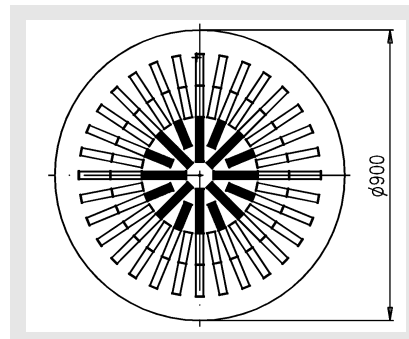
DQJ-FSR 500



DQJ-FSR 600



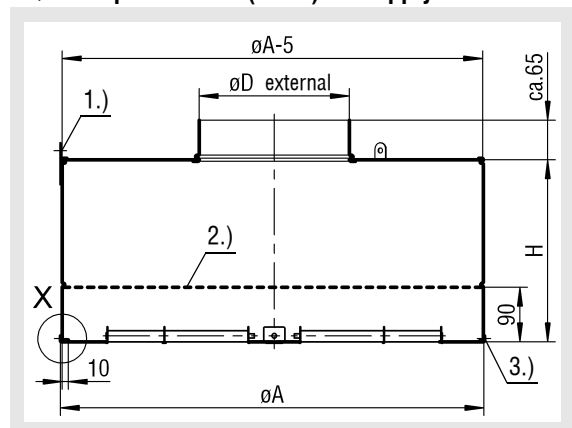
DQJ-FSR 800



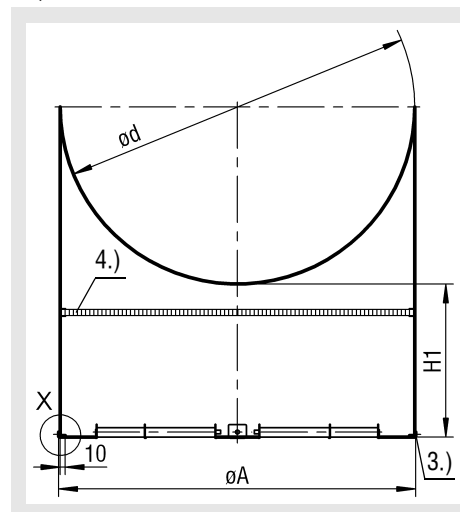
Swirl Diffuser Model DQJ-FSR

Dimensions

DQJ-FSR plenum box (-SRK) for supply air



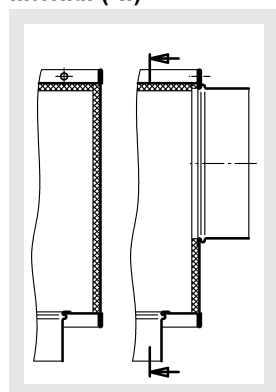
DQJ-FSR with saddle bracket



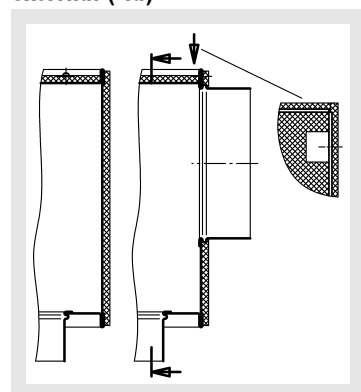
Dimensions of accessories

Insulation for SRK

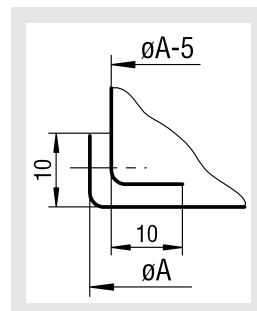
internal (-li)



external (-la)



Detail X



Available sizes

NW	$\varnothing A$	$\varnothing D$	H	H1	$\varnothing d$ (min)
310	410	158	250	300	410
400	500	158	250	300	500
500	600	248	300	300	600
600	700	248	300	300	700
800	900	353	350	300	900

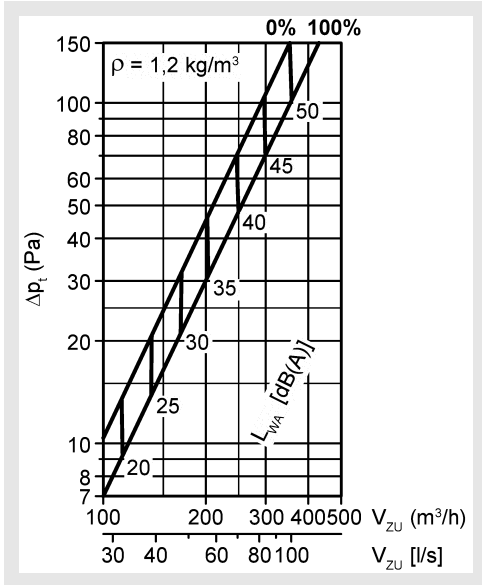
- 1.) = 3 mounting brackets
- 2.) = Perforated sheet FQ 46.1%
- 3.) = 4 on-site slotted shallow-raised countersunk-head tapping screws DIN ISO 7049 pitch 3.9 x 13
- 4.) = Honeycomb air flow straightener (at an extra charge)

Swirl Diffuser Model DQJ-FSR

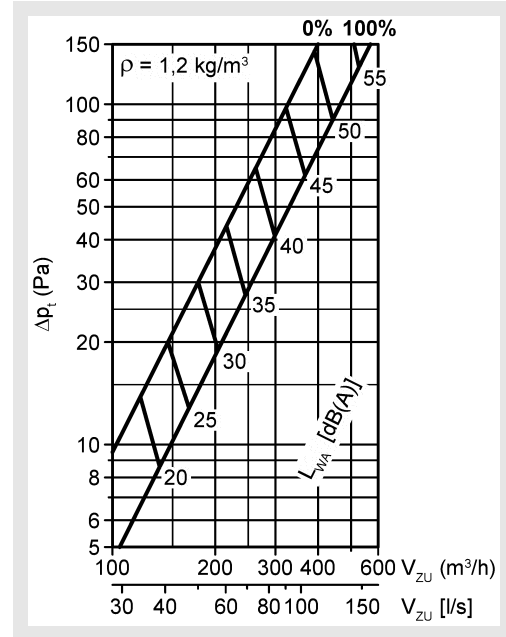
Technical Data

Pressure loss and noise level

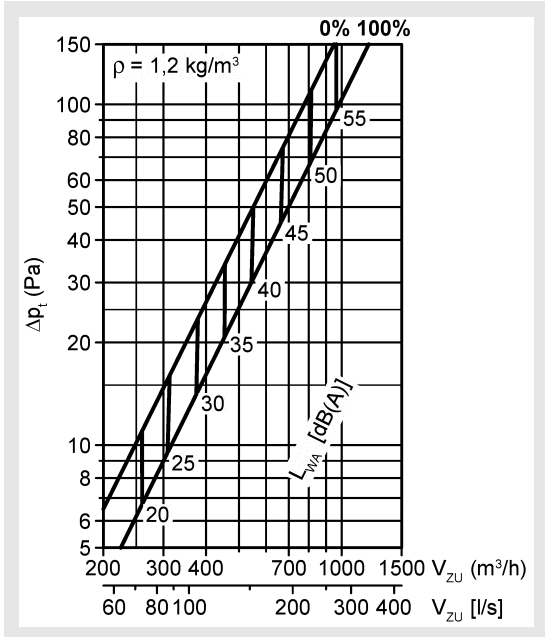
DQJ-FSR 310 supply air



DQJ-FSR 400 supply air



DQJ-FSR 500 supply air



DQJ-FSR 600 supply air

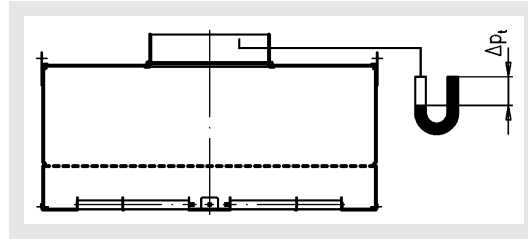
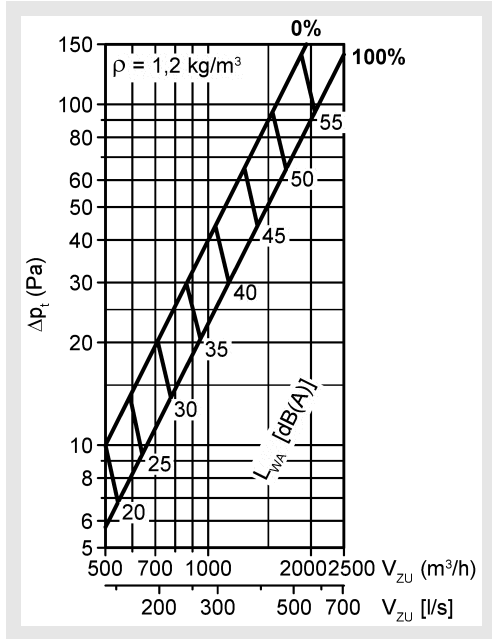


0% = Damper CLOSED

100% = Damper OPEN

Swirl Diffuser Model DQJ-FSR

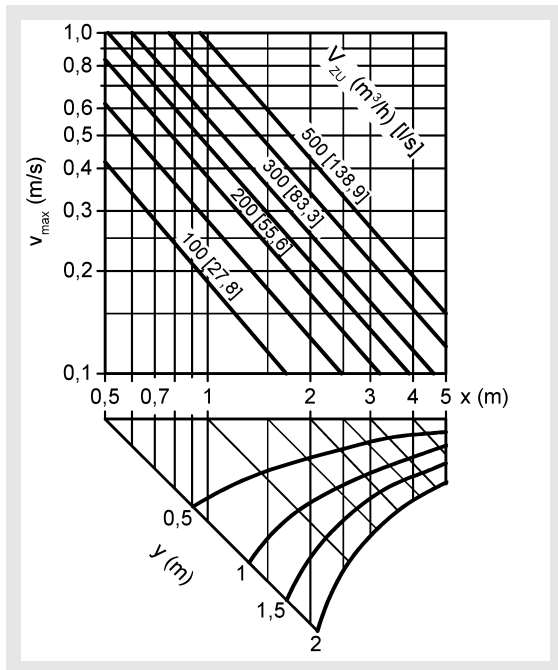
DQJ-FSR 800 supply air



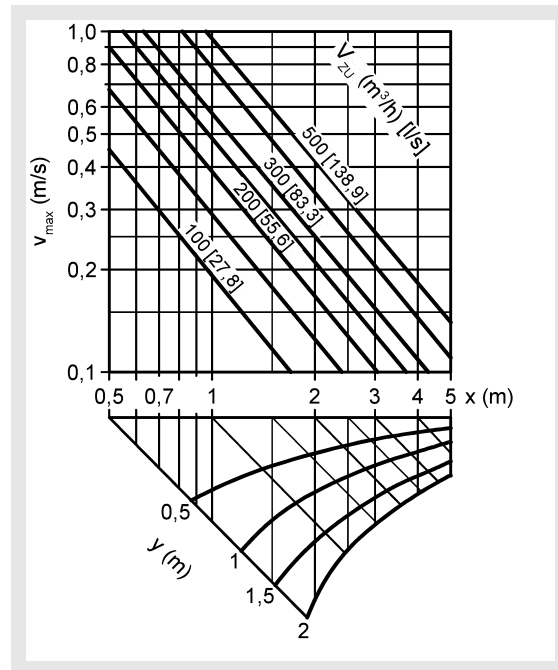
0% = Damper CLOSED
100% = Damper OPEN

Maximum end velocity of jet

Air throw pattern "A", without coanda effect (supply air)
DQJ-FSR 310

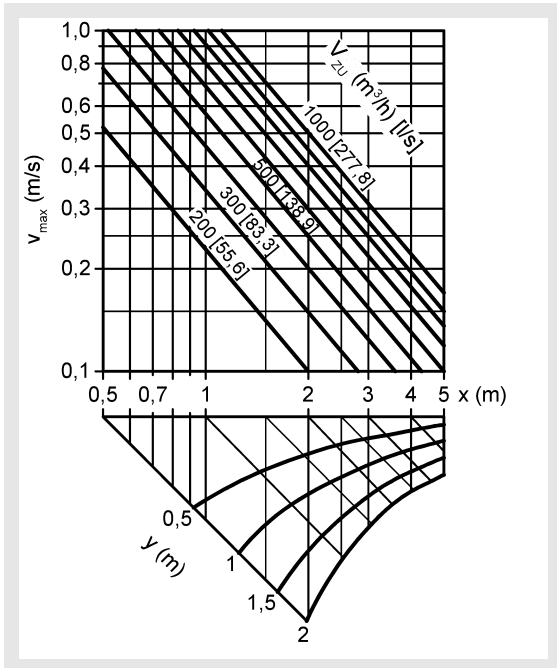


DQJ-FSR 400

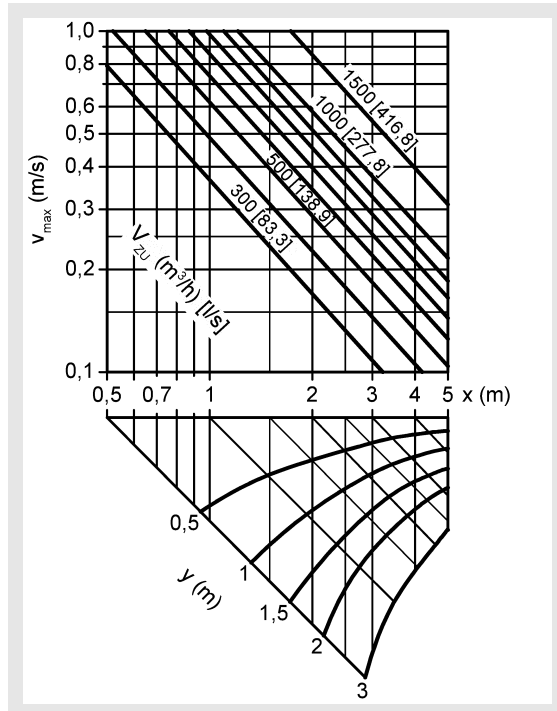


Swirl Diffuser Model DQJ-FSR

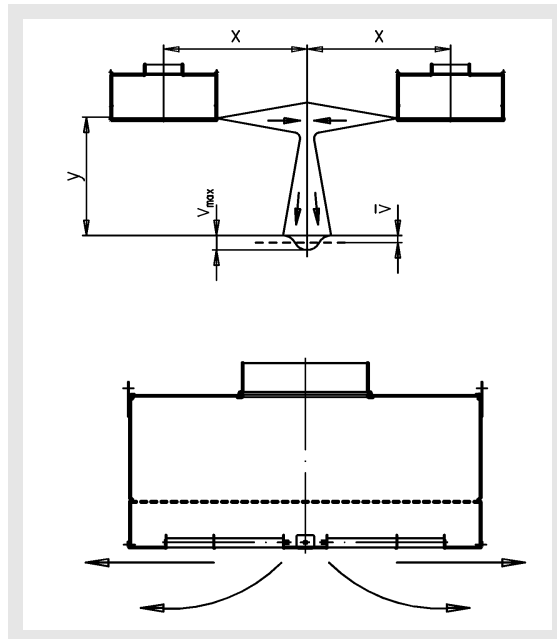
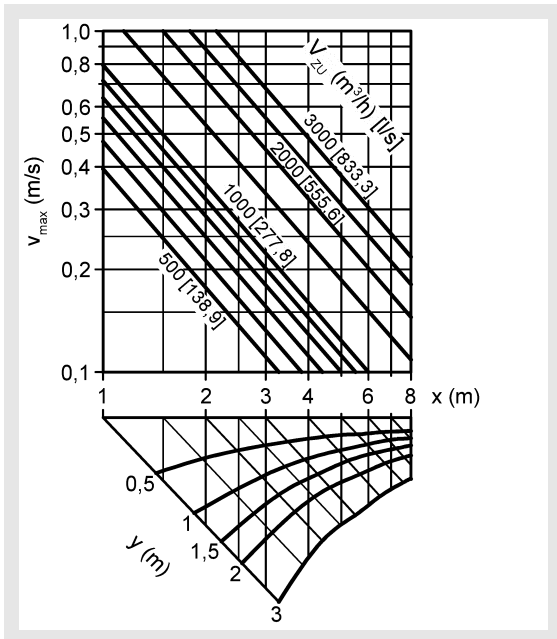
DQJ-FSR 500



DQJ-FSR 600



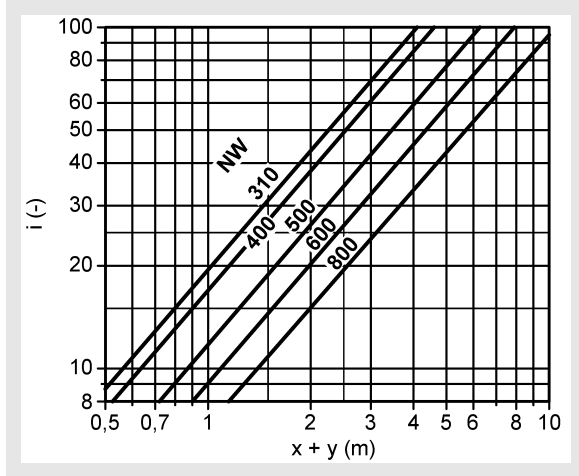
DQJ-FSR 800



Swirl Diffuser Model DQJ-FSR

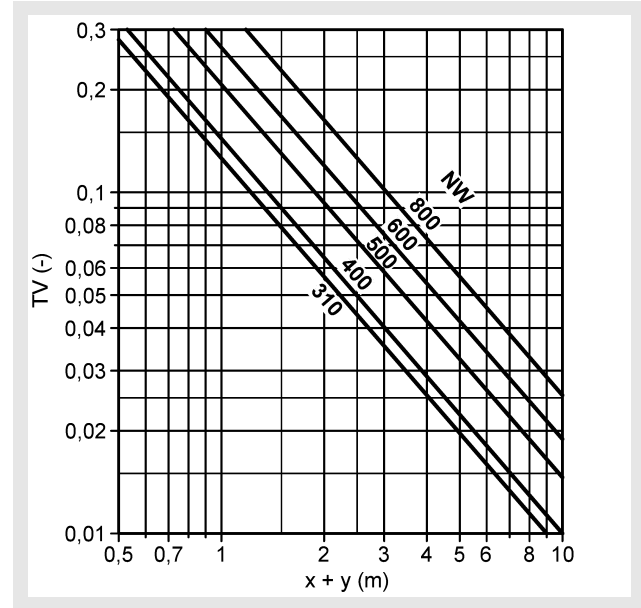
Induction ratios

Air throw pattern "A", without coanda effect (supply air)



Temperature ratios

Air throw pattern "A", without coanda effect (supply air)



Legend

V_{ZU}	(m ³ /h) [l/s]	= Supply air volume
v_{max}	(m/s)	= Maximum end velocity of jet
x	(m)	= Horizontal throw
y	(m)	= Vertical throw
$x+y$	(m)	= horizontal and vertical throw
ρ	(kg/m ³)	= Density
Δp_t	(Pa)	= Pressure loss
L_{WA}	[dB(A)]	= A-weighted sound power level
i	(-)	= Induction ratio ($i = V_x / V_{ZU}$)
TV	(-)	= Temperature ratio ($TV = \Delta T_x / \Delta T_0$)
NW	(mm)	= Nominal width
V_x	(m ³ /h)	= total air jet volume at point x
V_x	[l/s]	= total air jet volume at point x
ΔT_x	(K)	= Temperature difference at point x
ΔT_0	(K)	= Temperature difference between supply air temperature and room temperature ($\Delta T_0 = t_{ZU} - t_R$)
t_{ZU}	(°C)	= Supply air temperature
t_R	(°C)	= Room temperature

Specification texts

Swirl diffuser type DQJ-FSR in round design. Particularly suitable for freely suspended use in industrial halls, comfort rooms of high air change rates and for VAV systems having variable volumetric flows (between 40 and 100%). Cooling and heating modes are possible. Consisting of a faceplate made of sheet steel provided with a high-quality powder coating in a RAL colour (RAL 9010, white, standard), with central pivoting, aerodynamic radially fitted air deflection blades, which are individually adjustable, without any tools, from the diffuser front side without dismantling the diffuser, in support profile design made of plastic RAL 9010 (white), RAL 9005 (black) or aluminium, painted individually or to the same RAL colour as the faceplate (subsequent adjustment of blades not possible). The blades are set ex works to a reinforced horizontal throw (throw pattern "A"), but can be individually adjusted to the situation (e.g. for moving the air around a column).. Free cross-section, resistance and sound power level constant in all blade positions. With laterally visible screw mounting (SM). Volumetric flows of 100 - 3000 m³/h possible.

Product: SCHAKO type DQJ-FSR

Accessories:

- Plenum box (-SRK) made of galvanised sheet steel with built-in perforated air flow straightener and connection piece from above with fixing lugs
 - with thermal insulation
 - internal (-li)
 - external (-la)
- 1/4 cover (-AD), made of galvanised sheet steel for individual adaptation of the air flow to room conditions.
- Plastic honeycombe straightener (-WG)