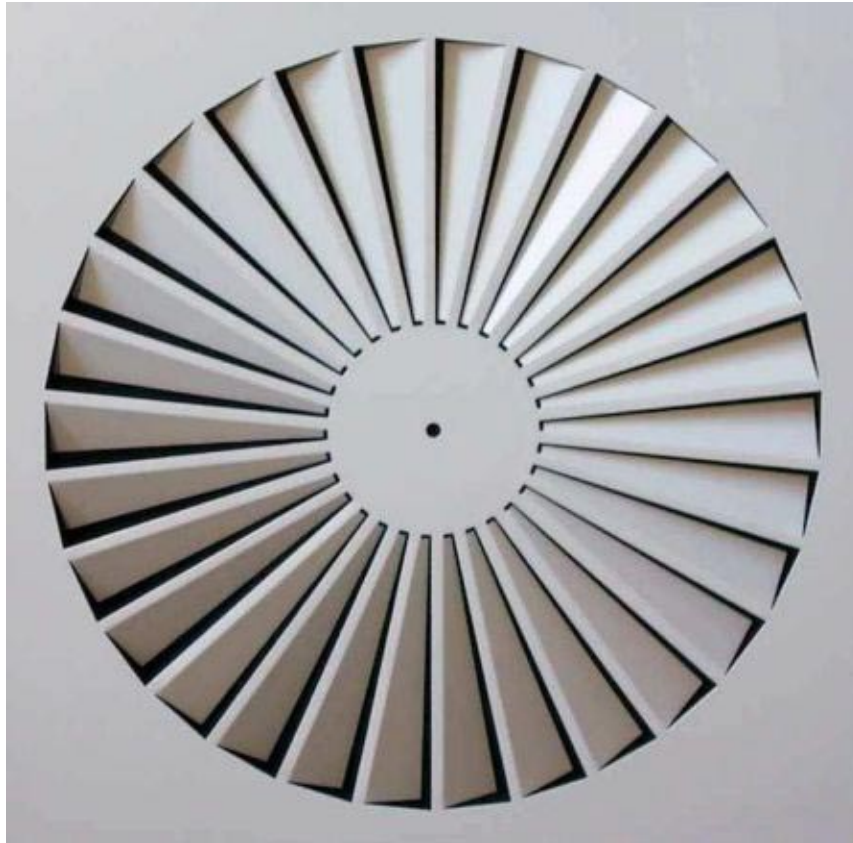




Swirl Diffuser Model

DQF



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Swirl Diffuser Model DQF

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Swirl Diffuser Model DQF

Description

The ceiling swirl diffuser type DQF has been developed in particular **for comfort rooms with a high air change rate**. The swirl diffuser is made either with a square faceplate (type DQF-A) or a round faceplate (type DQF-R) with integrated air baffle. The diffuser plate achieves a horizontal swirl jet. The diffuser can be used for both **supply and return air installations**.

The swirl diffuser is suitable in particular for installations with variable volumetric flow. A **stable jet pattern** is guaranteed by the high exit velocity. Even at a low volumetric flow the jet does not sink abruptly from the ceiling.

If the "critical throw" x_{kr} (m) parameter is smaller than the "horizontal throw" x (m) parameter for your model, then the calculation for the maximum end velocity of jet V_{max} (m/s) is based on the "critical throw" x_{kr} and not on the "horizontal throw" x (m).

A volumetric flow meter can be integrated in the connection piece of the plenum box at an extra charge. The measurement error of the volumetric flow meter is $\pm 5\%$ at a connecting piece velocity of 2-5 m/s and a straight flow pattern of at least $1 \times D$. The measurement is carried out with integrated diffuser. By adjusting the throttle damper, the required air volume of each diffuser can be set quickly and correctly. For plenum boxes SGK, the ceiling diffuser must be removed, before the damper can be adjusted. Alternatively, a cable-operated adjustment (-SZV) can be attached, which allows the damper (-DK) to be adjusted on the room side even with mounted diffuser.

With the ROB model, the diffuser plate, the throttle damper, if built in, and the volumetric flow meter can be removed from the plenum box to allow duct cleaning robots into the ductwork from the room side.

Attention:

The swirl diffuser type DQF may only be used in connection with plenum box type SGK.

Construction

Faceplate

- sheet steel painted to RAL 9010 (white) or in any other RAL colour at an extra charge.
- Natural anodised aluminium (E6/EV1) (only available with VM mounting) (at an extra charge)

Model

- DQF-A - Square faceplate
- DQF-R - Round faceplate

Accessories

Plenum box (-SGK)

- only available in conjunction with VM mounting
- made of galvanised sheet steel with fixing lugs

Ball-impact guard (-BS)

- only possible for DQF-A with SM mounting
- steel painted to RAL 9010 (white), other RAL colours possible at an extra charge.

Throttle damper (-DK)

- Damper made of galvanised sheet steel.
- plastic damper fixing
- with cable-operated adjustment (-SZV, at an extra charge)

Rubber lip seal (-GD)

- special rubber

External insulation (-Ia)

- Thermal insulation on the outside of the plenum box

Internal insulation (-Ii)

- Thermal insulation inside the plenum box

ROB model (-ROB)

- Removable diffuser plate, damper and volumetric flow meter

Volumetric flow meter (-VME)

- Mounting made of galvanised sheet steel
- Measuring sensor made of plastic
- Aluminium connections.

Fastening

Screw mounting (-SM) (DQF-A only)

- only for connection to fire protection unit
- for model with ball-impact guard only (-BS)
- with 4 raised countersunk head tapping screws (on-site)

Concealed mounting (-VM, standard)

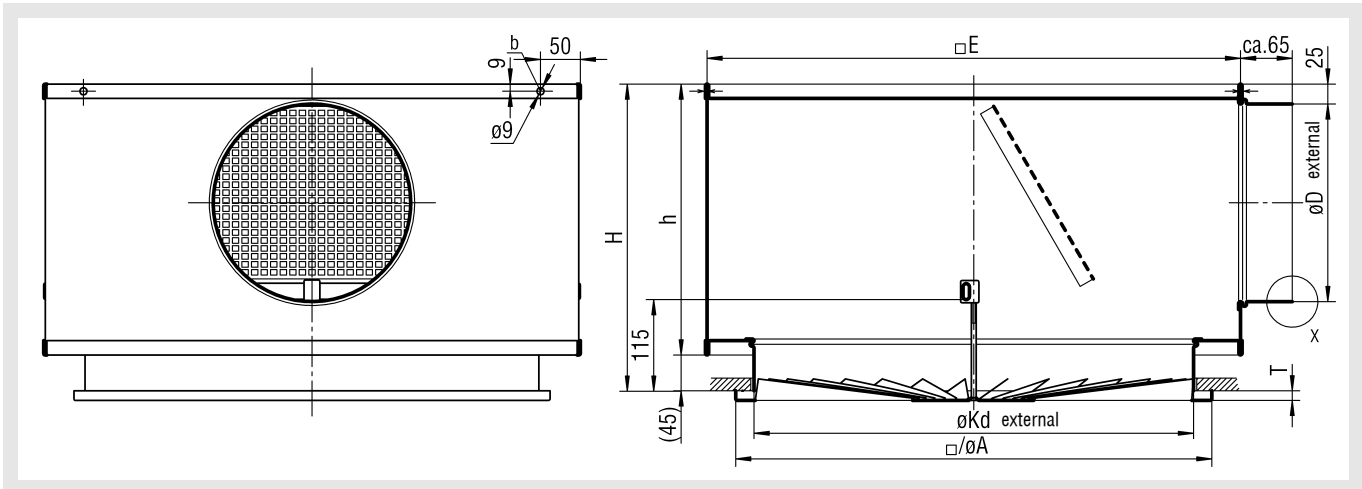
- Pole brace fixing, by means of M6 screw to DIN EN ISO 10642 at the plenum box, with plenum box (-SGK) only.

Swirl Diffuser Model DQF

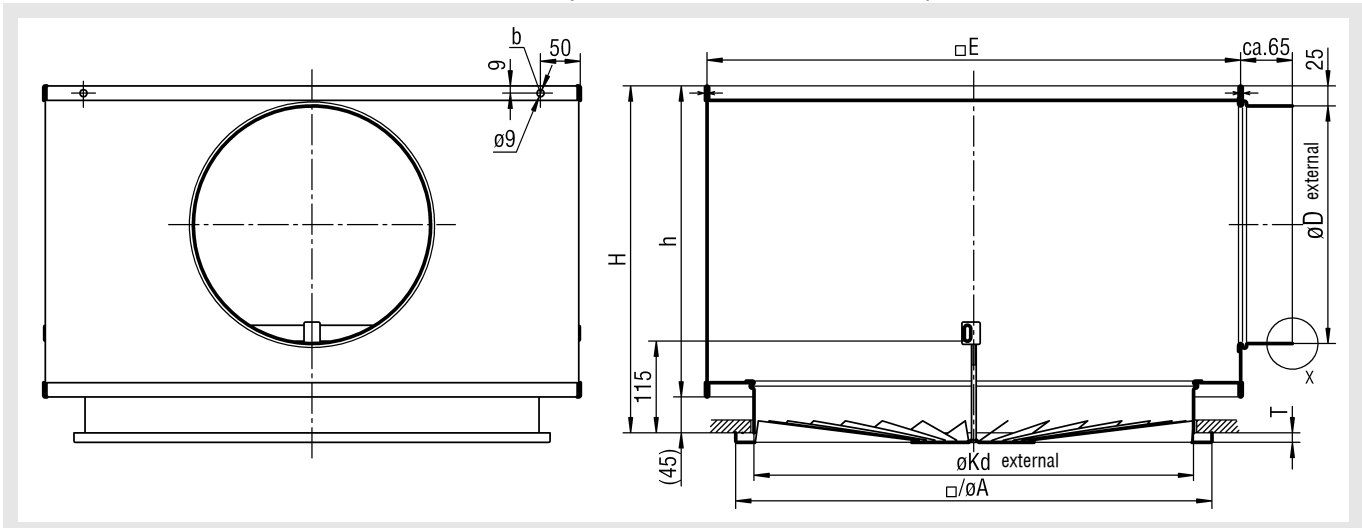
Models and dimensions

Dimensions

DQF-A-Z and DQF-R-Z with plenum box type SGK-Z (for supply air, with VM mounting)



DQF-A-A and DQF-R-A with plenum box type SGK-A (for return air, with VM mounting)



b = mounting on-site

Available sizes

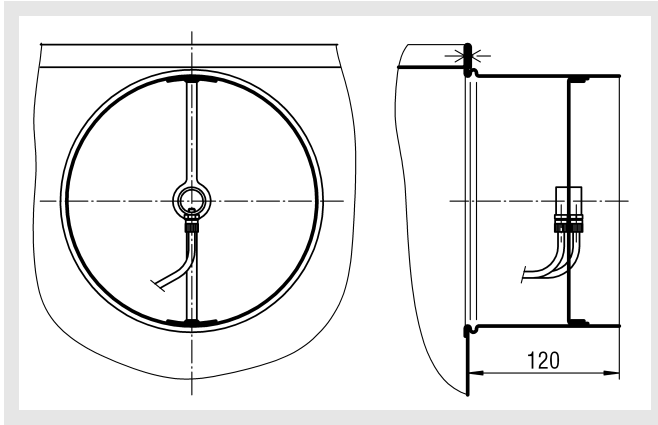
NW	DQF-A		DQF-R		SGK-Z					SGK-A				
	A	T	øA	T	□E	øKd	H	h	øD	□E	øKd	H	h	øD
310	308	7	310	7	445	283	295	250	158	445	283	335	290	198
400	398	12	400		445	353	295	250	158	445	353	335	290	198
500	498		500		545	453	335	290	198	545	453	385	340	248
600	598		600		670	553	385	340	248	670	553	435	390	298
625	623		625		670	553	385	340	248	670	553	435	390	298

Swirl Diffuser Model DQF

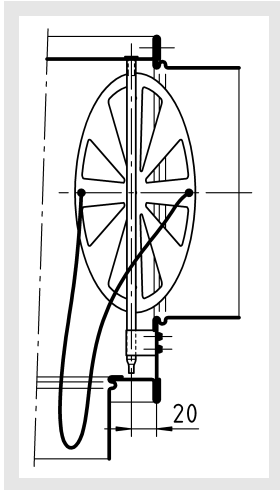
Dimensions of accessories

(at an extra charge)

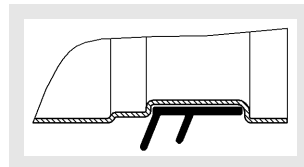
Volumetric flow meter (-VME)



Damper (-DK) with Cable adjustment (-SZV)



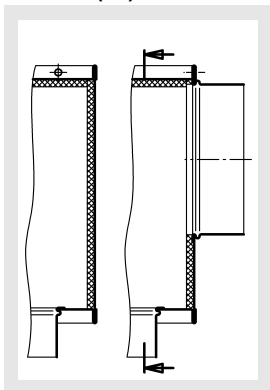
Rubber lip seal (-GD) Detail X



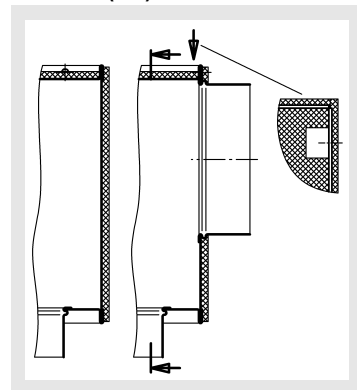
ROB model (-ROB)

Removable diffuser plate, throttle damper and volumetric flow meter.

Insulation for SGK internal (-li)

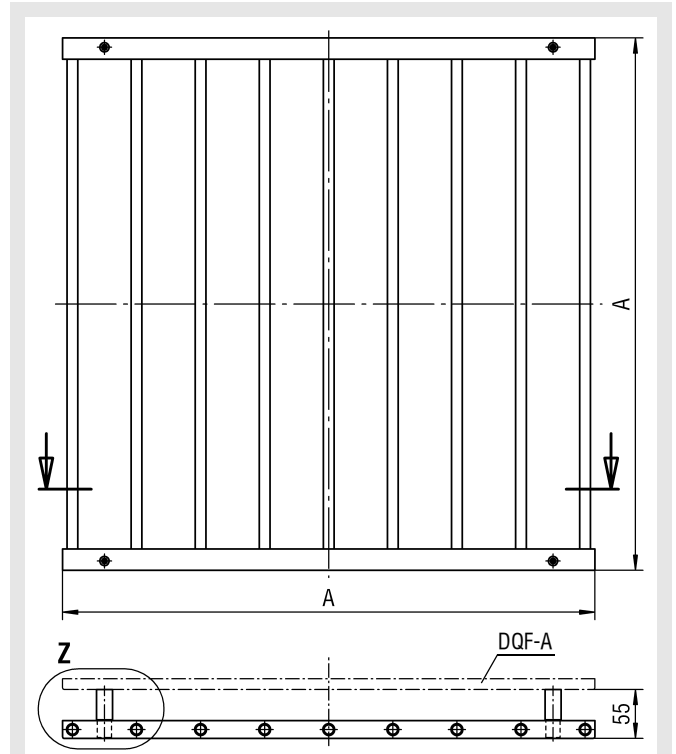


external (-la)

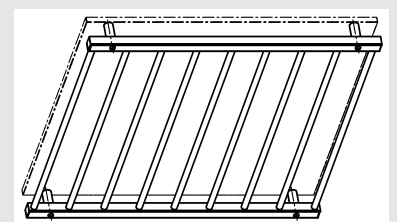
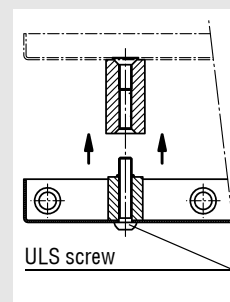


Ball-impact guard (-BS)

(only possible for DQF-A with SM mounting)



Detail Z



Available sizes

NW	□ A
310	308
400	398
500	498
600	598
625	623

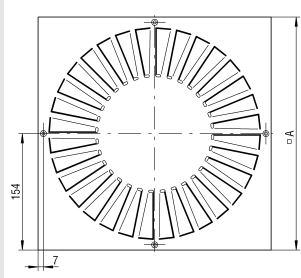
Swirl Diffuser Model DQF

Fastening methods

Screw mounting (-SM) (DQF-A only)

only for connection to fire protection unit or for model with ball-impact guard.

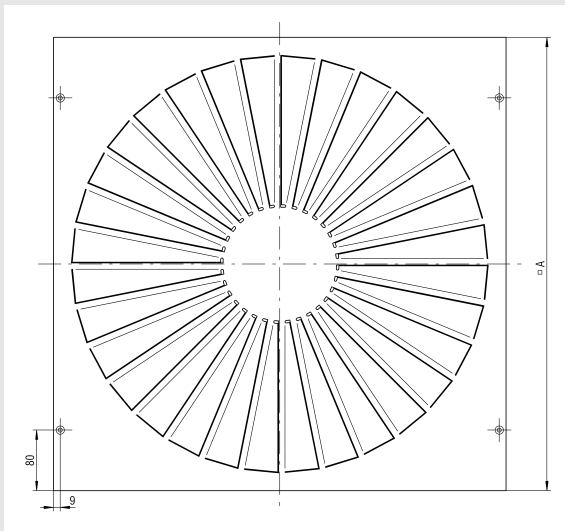
NW 310



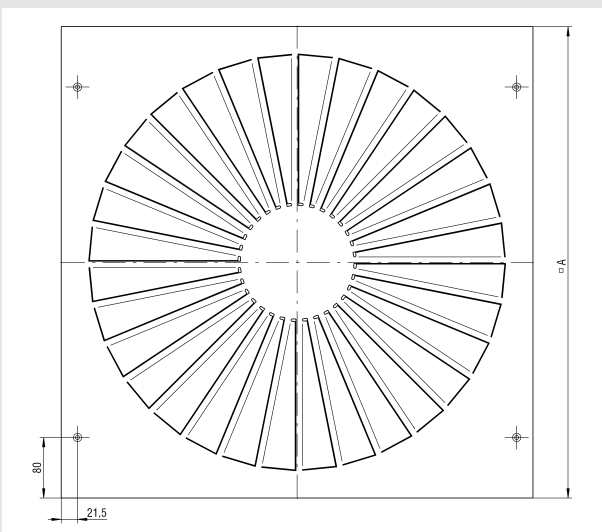
with indentation for slotted shallow-raised countersunk-head tapping screw (on-site)

- NW 310:
DIN ISO 7051 pitch 3.9
- NW 400-625:
DIN ISO 7051 pitch 4.8

NW 400-600



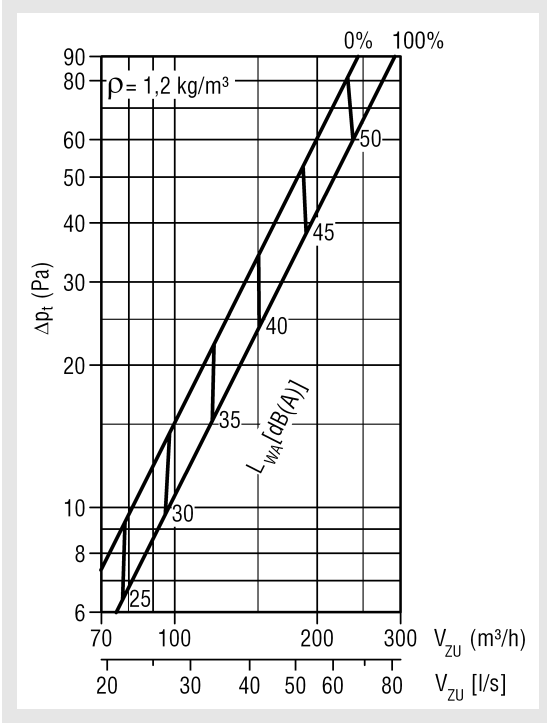
NW 625



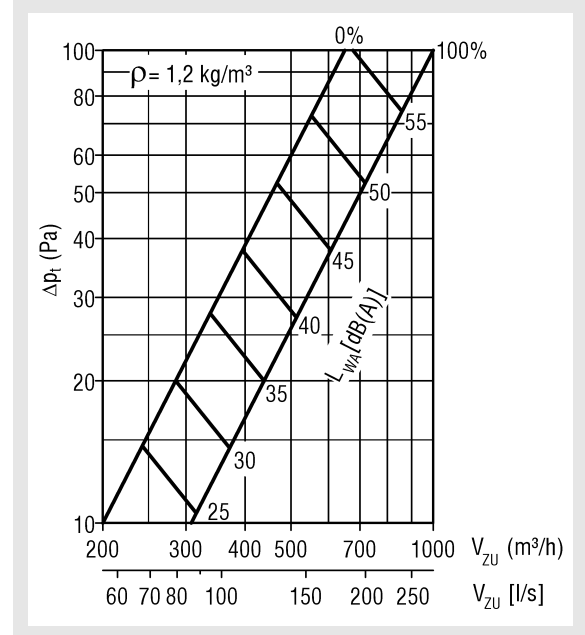
Swirl Diffuser Model DQF

Technical Data

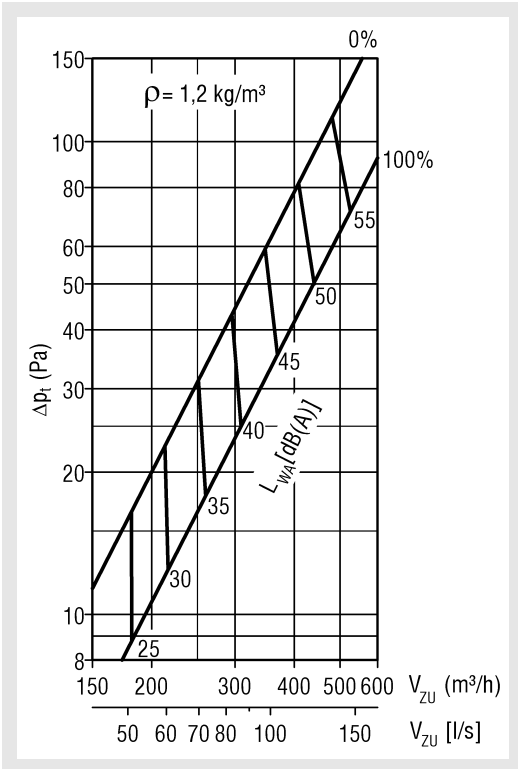
Pressure loss and noise level
(supply air), with plenum box
DQF 310



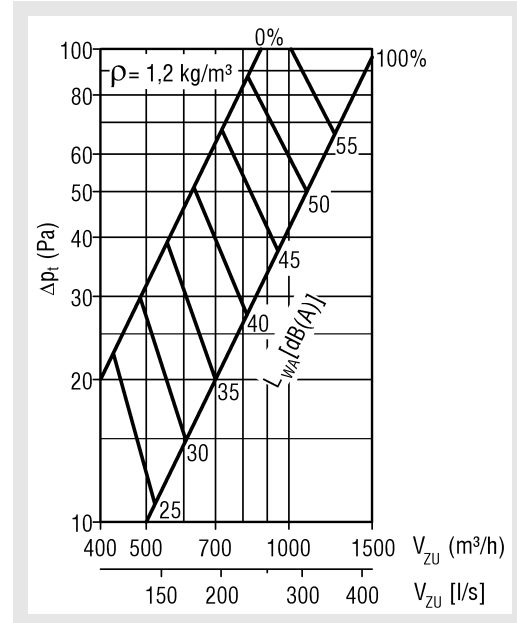
DQF 500



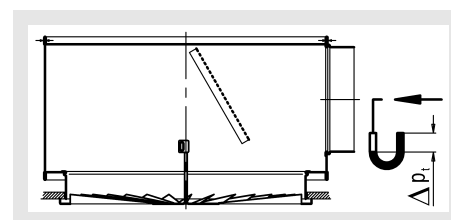
DQF 400



DQF 600 und DQF 625

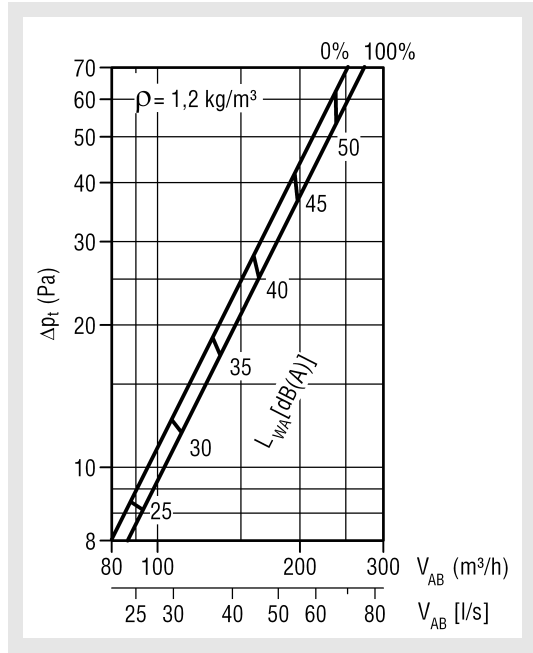


0 % = Damper "CLOSED"
100 % = Damper "OPEN"

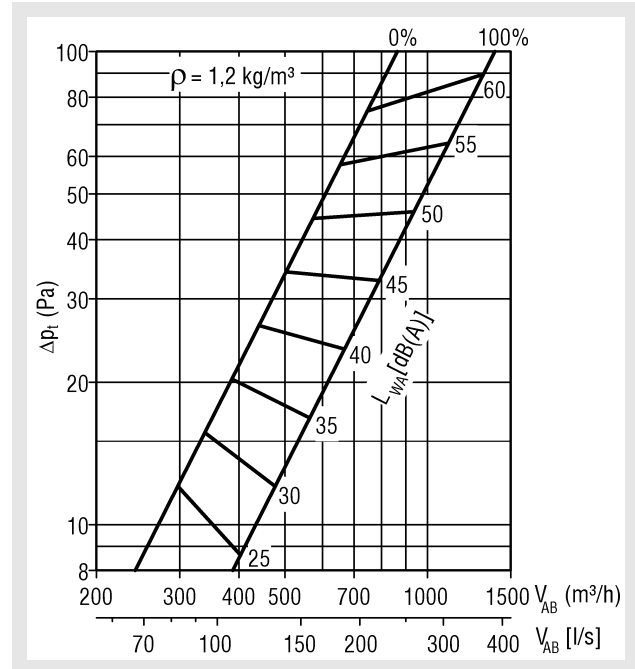


Swirl Diffuser Model DQF

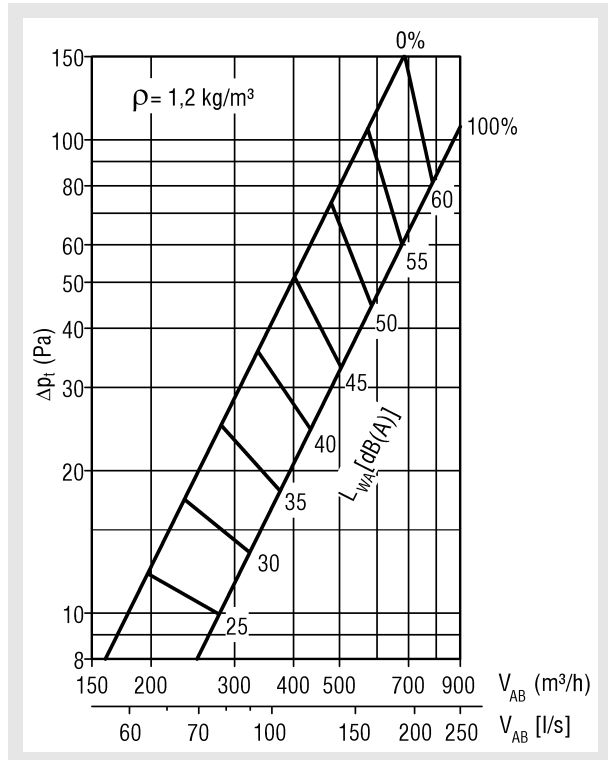
DQF 310



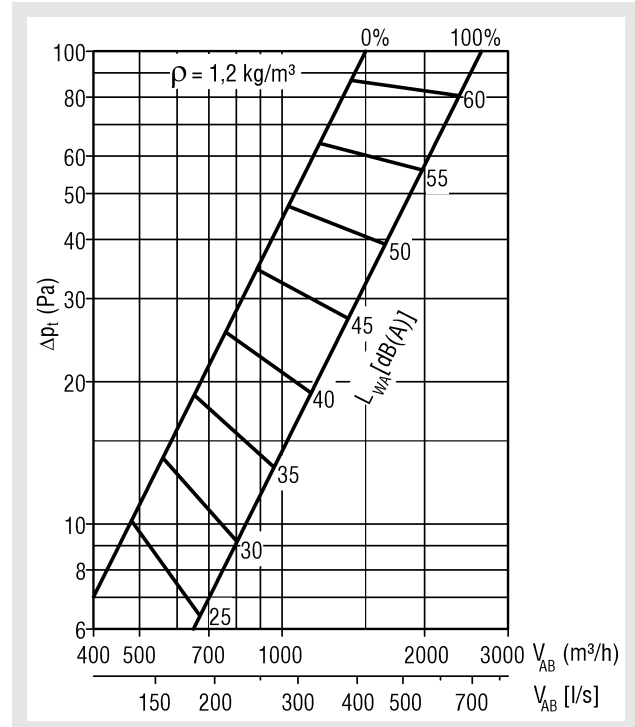
DQF 500



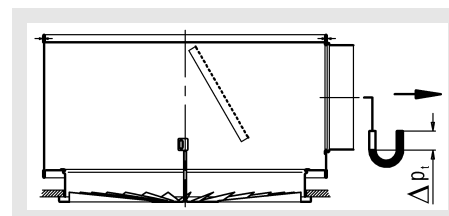
DQF 400



DQF 600 and DQF 625

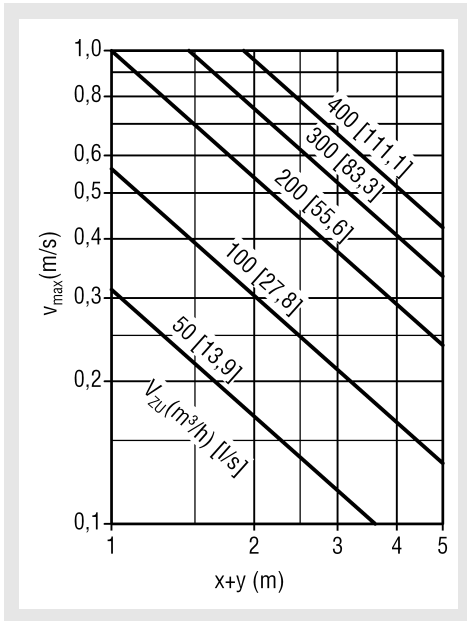


0 % = Damper "CLOSED"
100 % = Damper "OPEN"

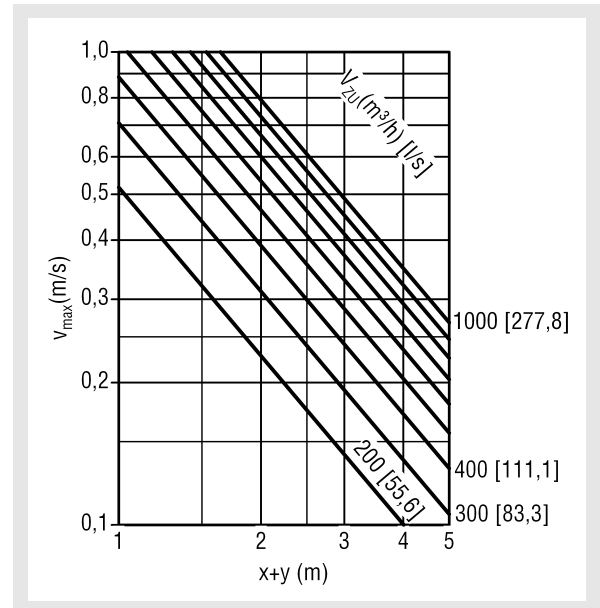


Swirl Diffuser Model DQF

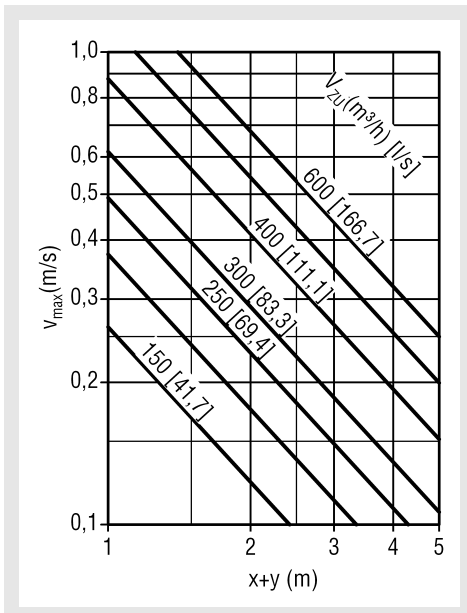
Maximum end velocity of jet
(supply air), with plenum box
DQF 310



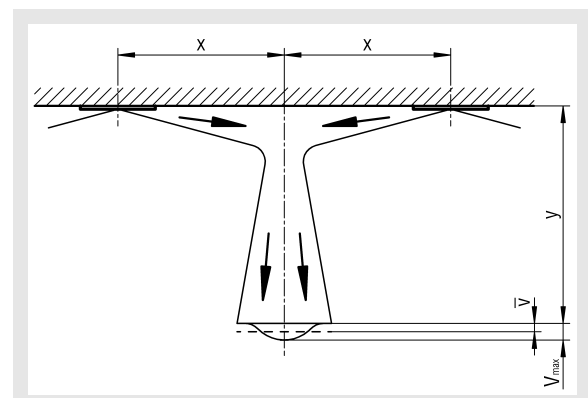
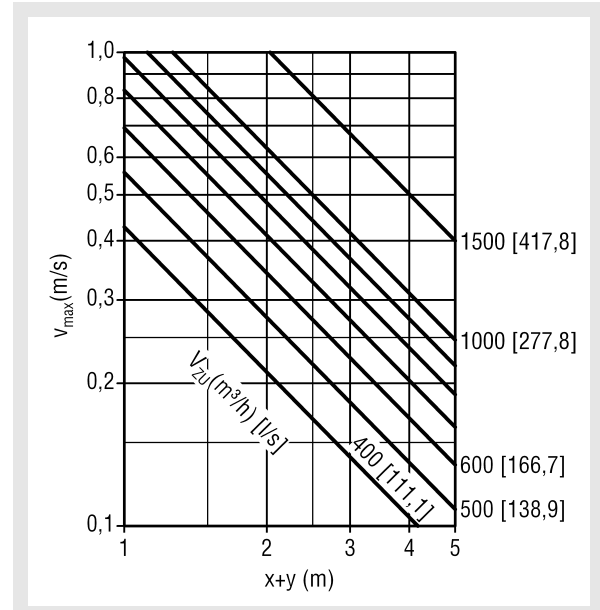
DQF 500



DQF 400



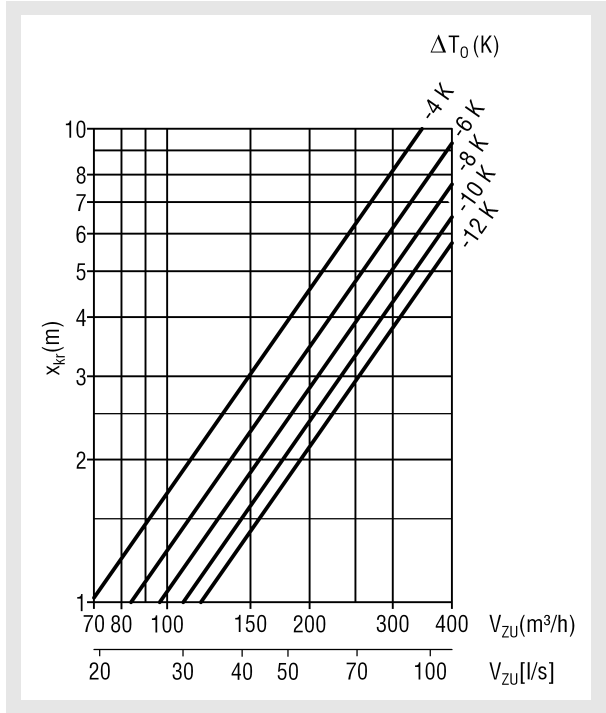
DQF 600 und DQF 625



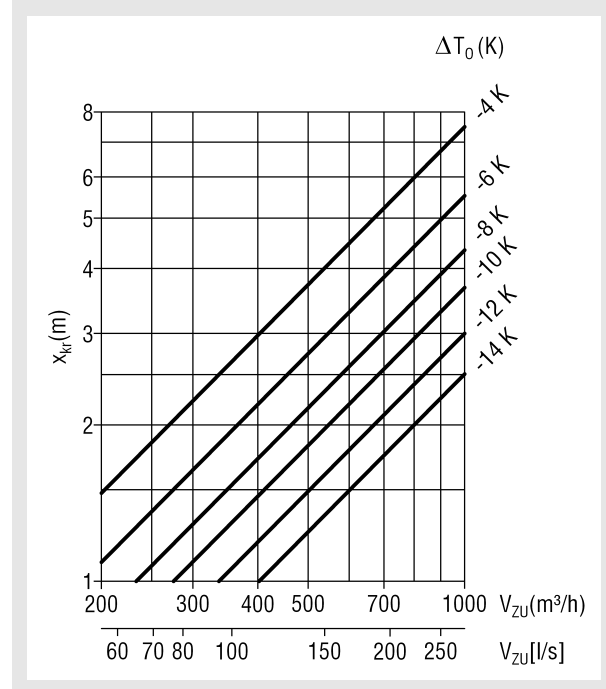
Swirl Diffuser Model DQF

Critical throw

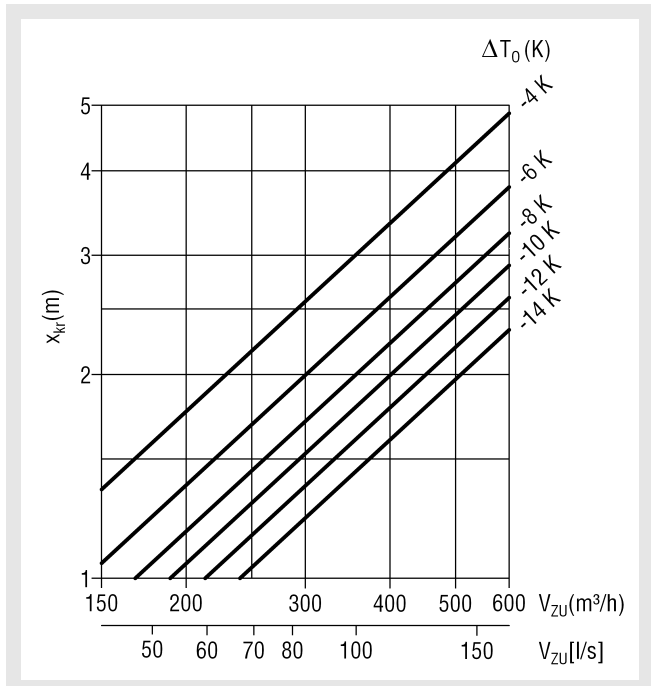
DQF 310



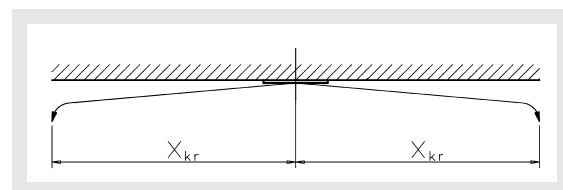
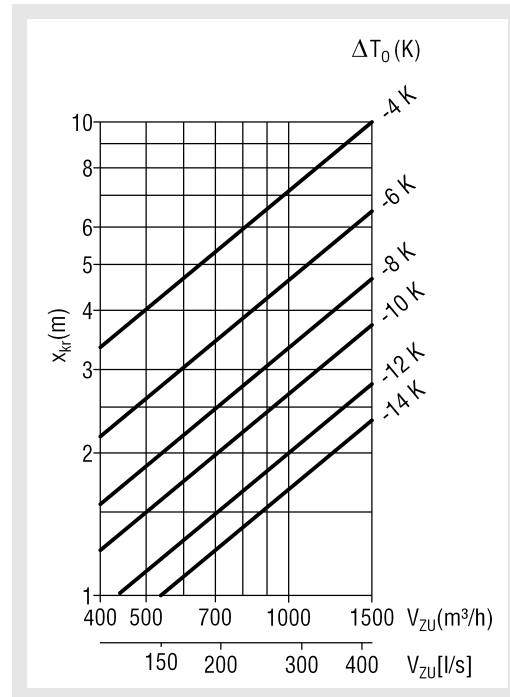
DQF 500



DQF 400

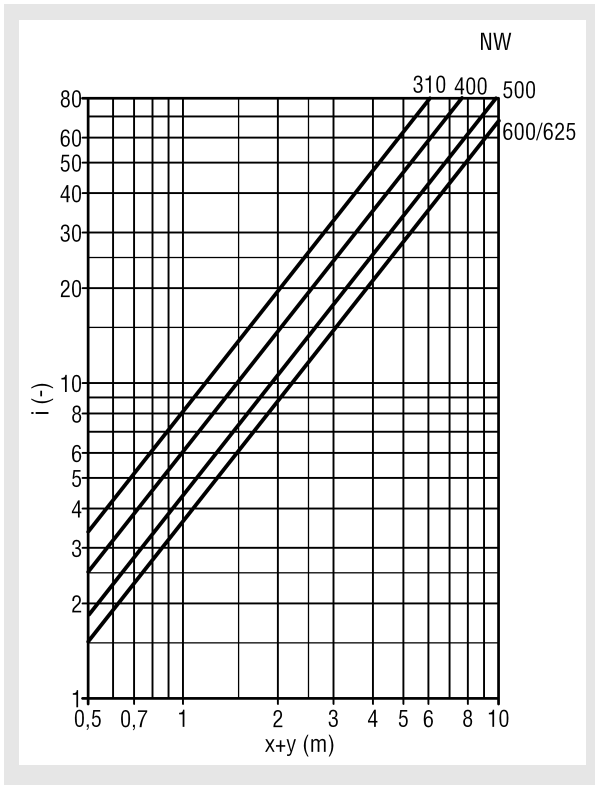


DQF 600 und DQF 625



Swirl Diffuser Model DQF

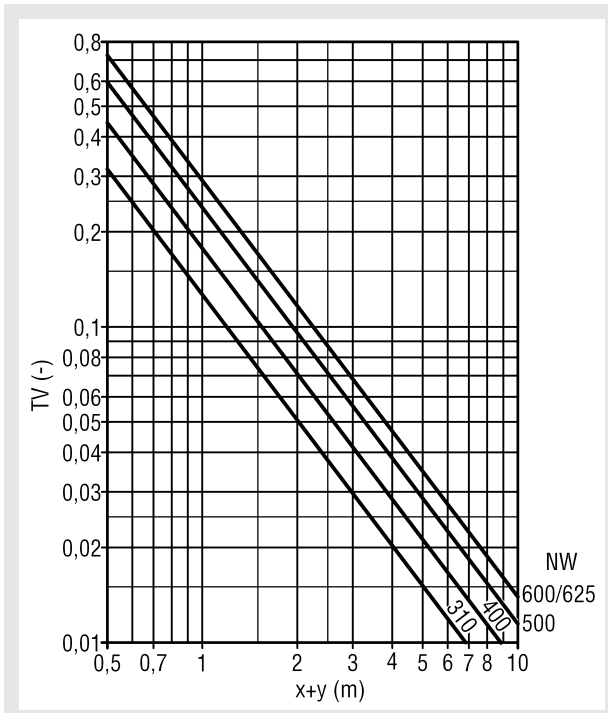
Induction ratio



Legend

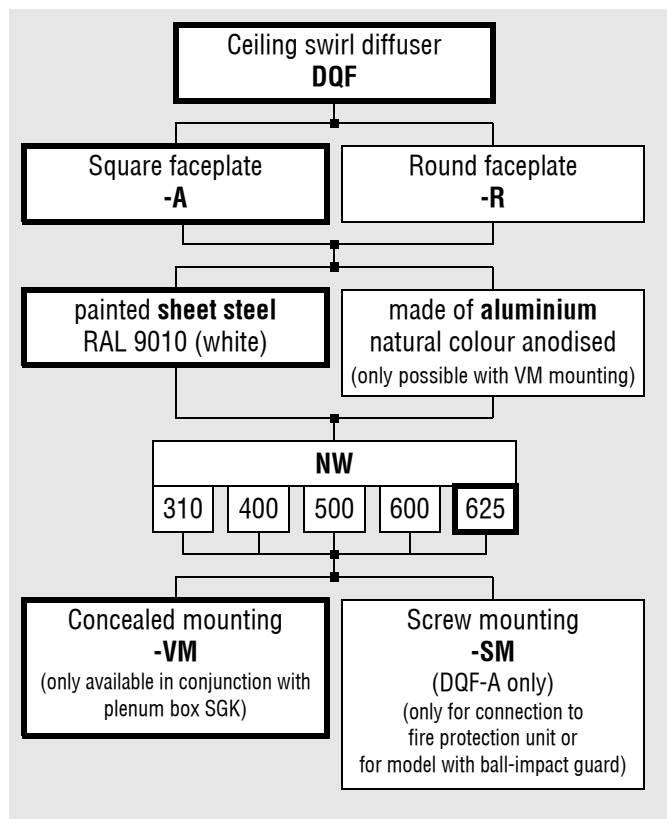
V_{ZU}	(m ³ /h)	= Supply air volume
V_{ZU}	[l/s]	= Supply air volume
Δp_t	(Pa)	= Pressure loss
L_{WA}	[dB(A)]	= A-weighted sound power level
ρ	(kg/m ³)	= Density
v_{max}	(m/s)	= Maximum end velocity of jet
v	(m/s)	= Average end velocity of jet $v = v_{max} \times 0,5$
$x+y$	(m)	= horizontal + vertical throw
ΔT_0	(K)	= Temperature difference between supply air temperature and room temperature ($\Delta T_0 = t_{ZU} - t_R$)
x_{kr}	(m)	= Critical throw
TV	(-)	= Temperature ratio ($TV = \Delta T_x / \Delta T_0$)
i	(-)	= Induction ration ($i = V_x / V_{ZU}$)
NW	(-)	= Nominal width
ΔT_x	(K)	= Temperature difference at point x
V_x	(m ³ /h)	= total air jet volume at point x
V_x	[l/s]	= total air jet volume at point x
t_{ZU}	(°C)	= Supply air temperature
t_R	(°C)	= Room temperature

Temperature ratio

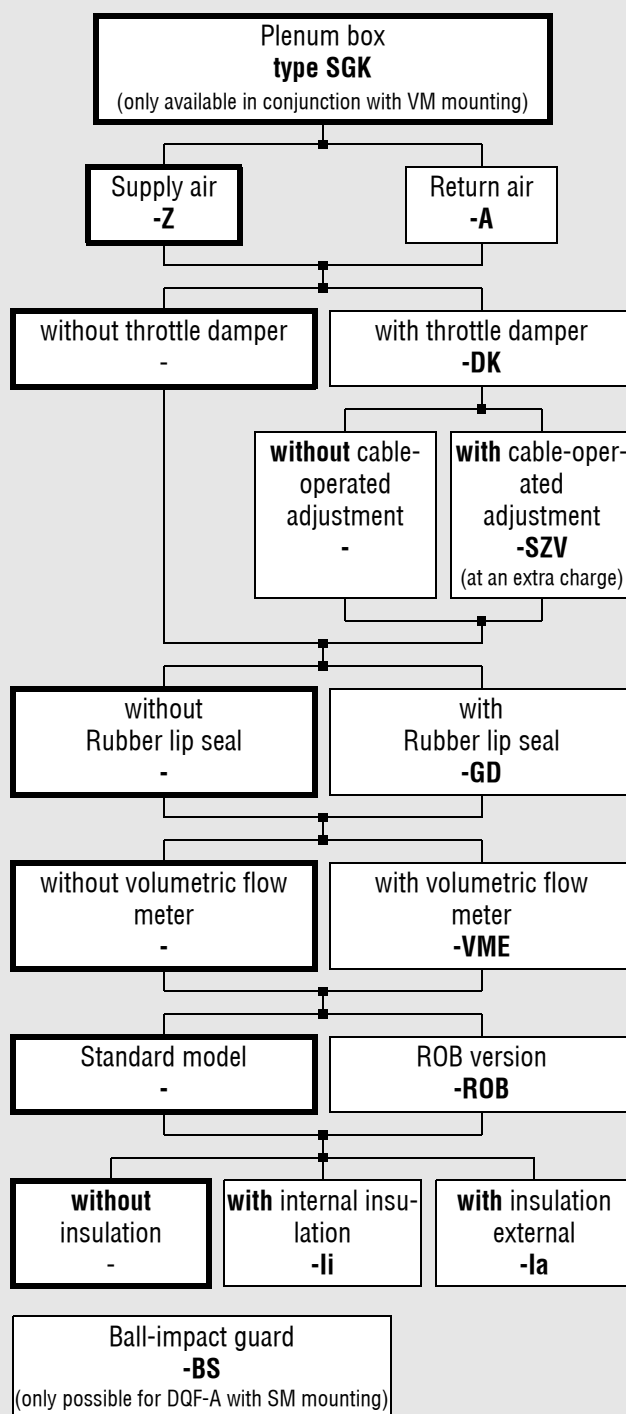


Swirl Diffuser Model DQF

Order details



Accessories:



Order example:

DQF-A-625-VM-SGK-Z

Unless stated otherwise, the thick-frame model will be delivered!

Swirl Diffuser Model DQF

Specification texts

Ceiling swirl diffuser type **DQF-A** for square supply and return air models. Especially suitable for use in comfort rooms of high air change rates and for VAV systems with variable volumetric flows (between 40 and 100%). Consisting of square sheet steel faceplate painted with a high-quality powder coating to a RAL colour (RAL 9010 (white), standard), with integrated fixed air deflection blades, with concealed mounting (VM). For use up to -14 K. Sophisticated design allows easy cleaning to VDI 6022.

Product: SCHAKO **type DQF-A**

- with round faceplate
Product: SCHAKO **type DQF-R**
- Faceplate made of natural colour anodised aluminium (E6/ EV1) (only available with VM mounting)
- with screw mounting (-SM) (DQF-A only), only for connection to fire protection unit or for model with ball-impact guard

Accessories:

- Plenum box (SGK) made of galvanised sheet steel, with fixing lugs (only available in conjunction with VM mounting).
 - Supply air version with integrated perforated straightener
 - with a throttle damper (-DK) adjustable from the front in the plenum box for air volume regulation
 - with cable-operated adjustment (-SZV)
 - with volumetric flow meter (-VME)
 - with ROB version (-ROB), removable diffusion plate, throttle damper and volumetric flow meter.
 - with rubber lip seal (-GD), made of special rubber, at the connection pipe.
 - with thermal insulation
 - internal (-li)
 - external (-la)
- Ball-impact guard (-BS), made of steel with high-quality powder coating in RAL 9010 (white), other RAL colours possible at an extra charge (only possible for DQF-A with concealed mounting).