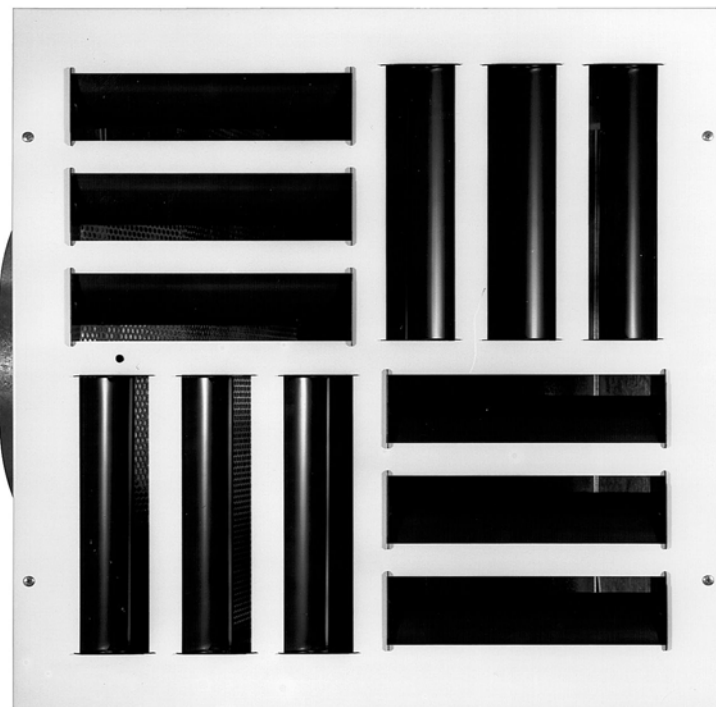




Ceiling diffuser

DQC



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

Ceiling diffuser DQC

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Ceiling diffuser DQC

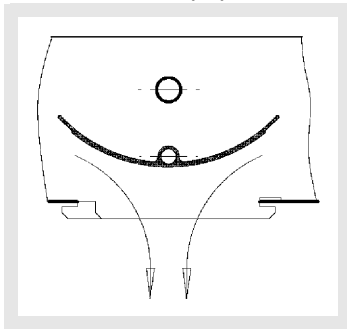
Description

In ventilation and air-conditioning of production halls, increased demands are made on the room air flow. In cooling mode, there should not be a draught in the occupied zone, and, in heating mode, high rooms should also be heated up quickly.

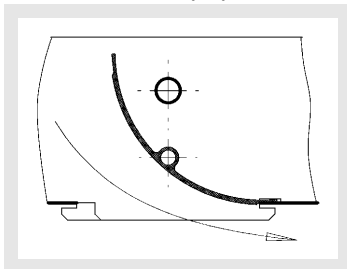
Such supply air problems can only be solved by using motor adjustable diffusers. This is why the ceiling diffuser type DQC... was developed. It is suitable for room heights ≥ 4.5 m.

For mounting in the ceiling, inspection openings for the electrical connection must be provided on site in sufficient number and size.

Blade position 1 (-V)



Blade position 2 (-H)



Construction

plenum box

- Galvanised sheet steel

Faceplate

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

Air deflection blades

- plastic, similar to RAL colour 9005 (black)(-LS9005)
- plastic, similar to RAL colour 9010 (white)(-LW9010)

Model

DQC-Z-...

- for supply air, with air deflection blades

DQC-A-...

- for return air, without air deflection blades, box inside painted to RAL 9005 (black)

DQC-Z-...-E013-...

- additionally with electric actuator 24V / 50Hz. 0...10V

Accessories

Plenum box (SK-Q-16-A-...-S1)

- with horizontal connection piece

Plenum box (SK-Q-16-A-...-S0)

- with vertical connection piece

Plenum box (SK-Q-16-Z-...-S1)

- with horizontal connection piece and integrated perforated straightener

Plenum box (SK-Q-16-Z-...-S0)

- with vertical connection piece and integrated air diffuser plate

Ball-impact guard (-BS)

- Steel painted to RAL 9010 (white), other RAL colours possible at an extra charge.

Rubber lip seal (-GD1)

- Special rubber

Damper (-DK1)

- made of galvanized sheet steel
- with plastic fixing

Internal insulation (-li)

- with thermal insulation inside the plenum box

External insulation (-la)

- with thermal insulation on the outside of the plenum box

ROB version (-ROB1)

- Removable diffuser plate, damper and volumetric flow meter

Fastening

Screw mounting (-SM)

- Standard, with raised countersunk head tapping screws (on-site)

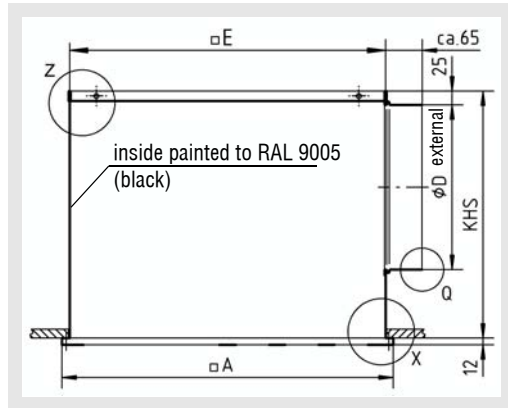
Concealed mounting not possible!

Ceiling diffuser DQC

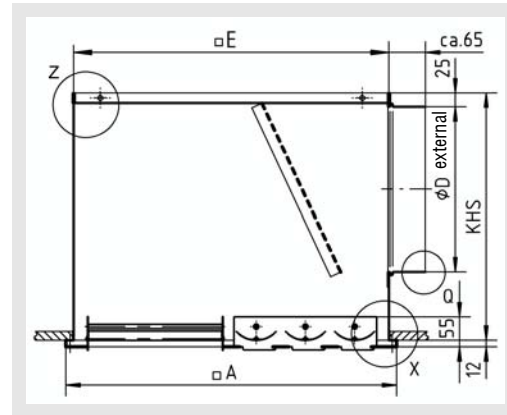
Models and dimensions

Dimensions

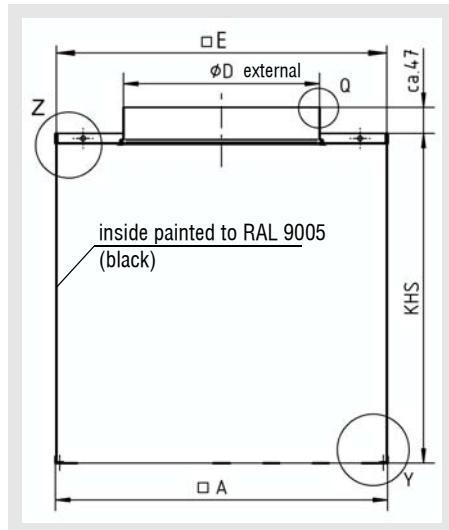
DQC-A... with SK-Q-16-A-...-S1



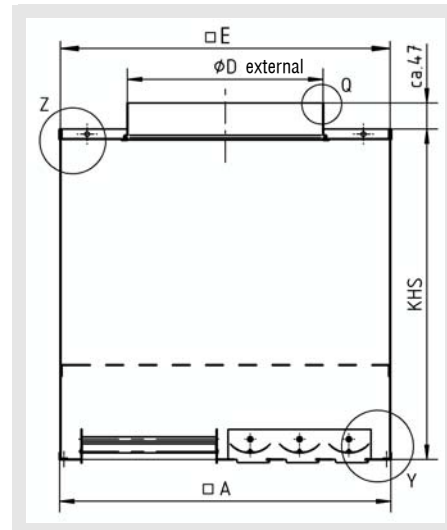
DQC-Z... with SK-Q-16-Z-...-S1



DQC-A... with SK-Q-16-A-...-S0



DQC-Z... with SK-Q-16-Z-...-S0

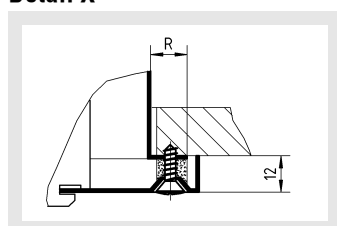


Available sizes

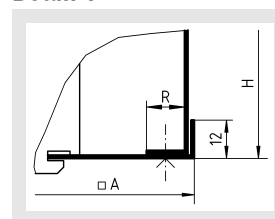
NW	□A	SK-Q-...	□E	KHS	ød	R	øD _{max} for ...-S5
600	598	S1	570	447	298	12	248
		S0	595	597	353	12	
625	623	S1	570	447	298	24	248
		S0	620	597	353	24	
800	798	S1	770	647	498	12	353
		S0	795	647	498	12	

For information on spigot arrangement, please refer to page 5.

Detail X

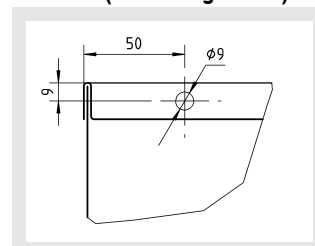


Detail Y



KHS= standard height of plenum box
Special height of plenum box = $\phi D + 124\text{mm}$, but at least 200mm

Detail Z (mounting holes)

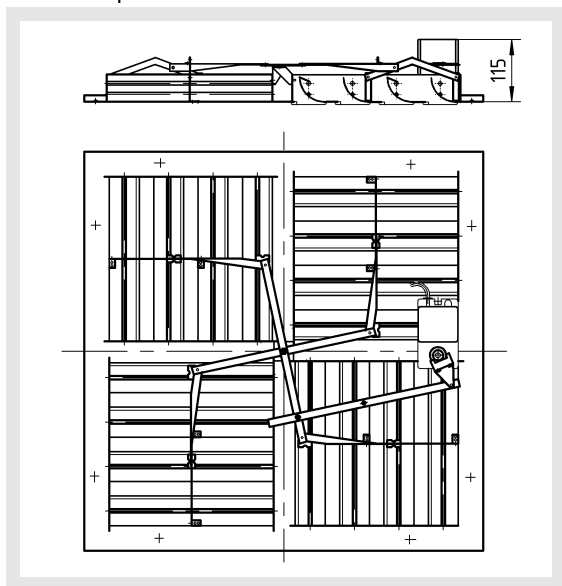


Ceiling diffuser DQC

DQC-Z-...-E013-... (electric actuator)

24 V AC, 0...10 V activation

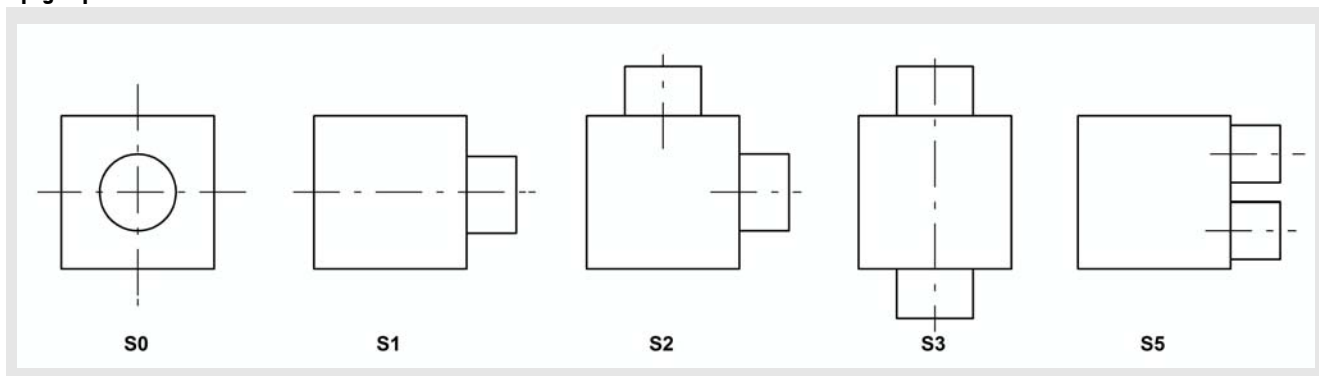
Activation possible via AGV-2



Technical data for -E013 (NM24A-SR (Belimo))

Supply voltage	24V AC 50/60 Hz
Power consumption	1.3 W in operation, 0.5 W in idle position
Dimensioning	3 VA
angle of rotation	max. 95° (adjustable, mechanical end stops)
Protection type	IP 54 (cable routing at the bottom)
Protection class	III (safety extra low voltage)
Ambient temperature	-20...+50°C
Maintenance	maintenance-free

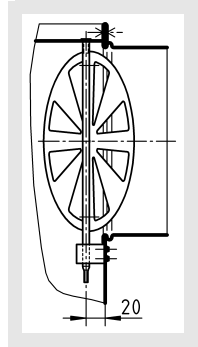
Spigot position



Ceiling diffuser DQC

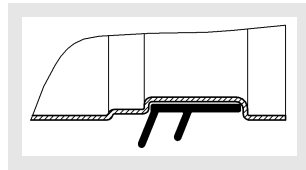
Accessories - dimensions

Damper (-DK1)

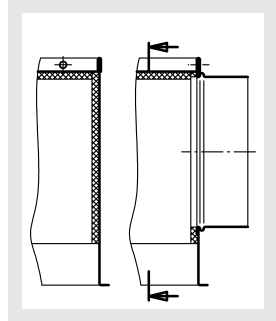


Rubber lip seal (-GD1)

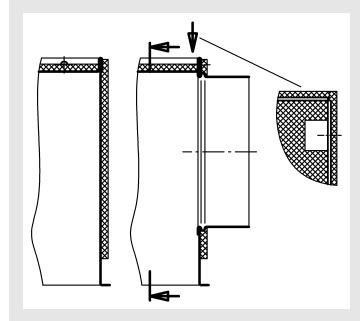
Detail Q



Insulation for SK-Q-16-... internal (-li)

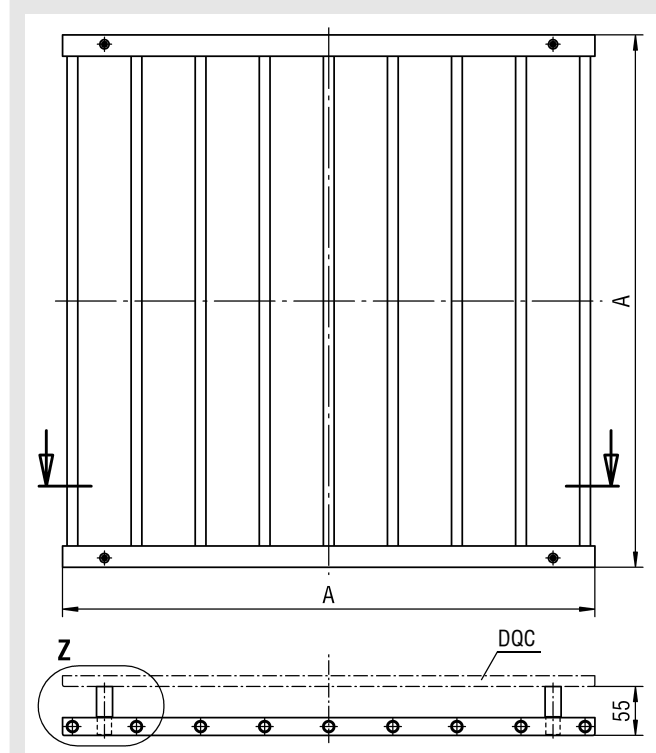


external (-la)

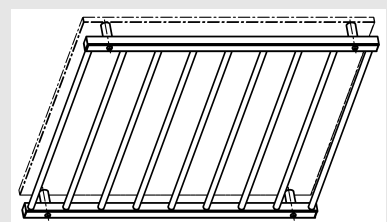
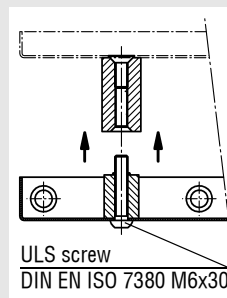


ball-impact guard (-BS)

(model DQC-Z-...-E013-... not available with ball-impact guard)



Detail Z



Available sizes

NW	□ A
600	598
625	623
800	798

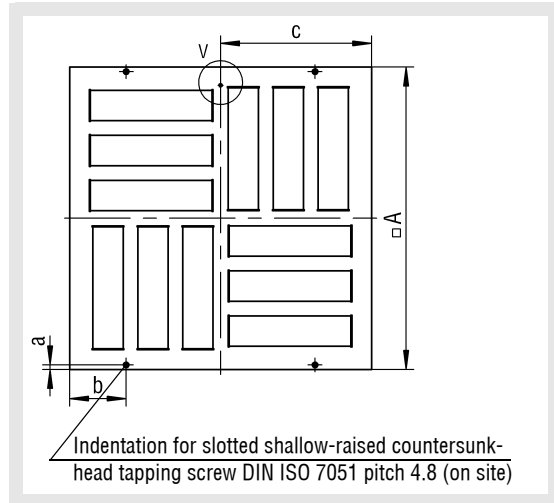
Ceiling diffuser DQC

Fastening methods

Screw mounting (-SM)

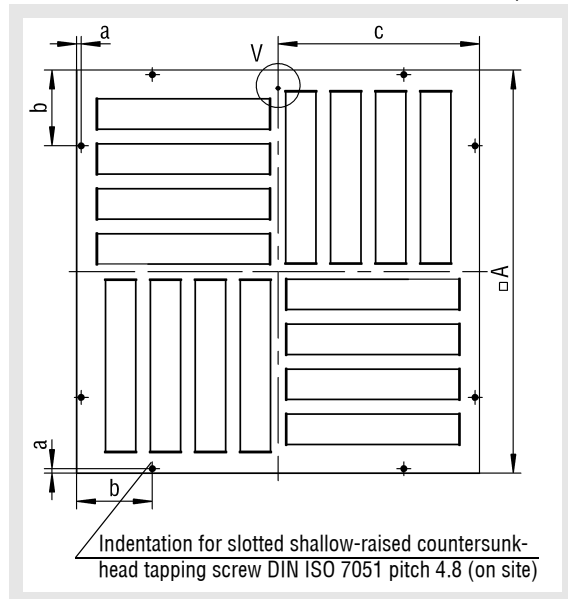
Size 600/625

with 4 raised countersunk head tapping screws (on-site)



Size 800

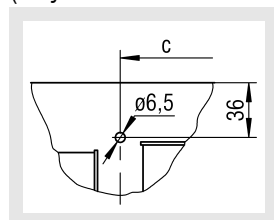
with 8 raised countersunk head tapping screws (on-site)



Detail V

Hole for the damper adjustment

(only available for the version with damper)

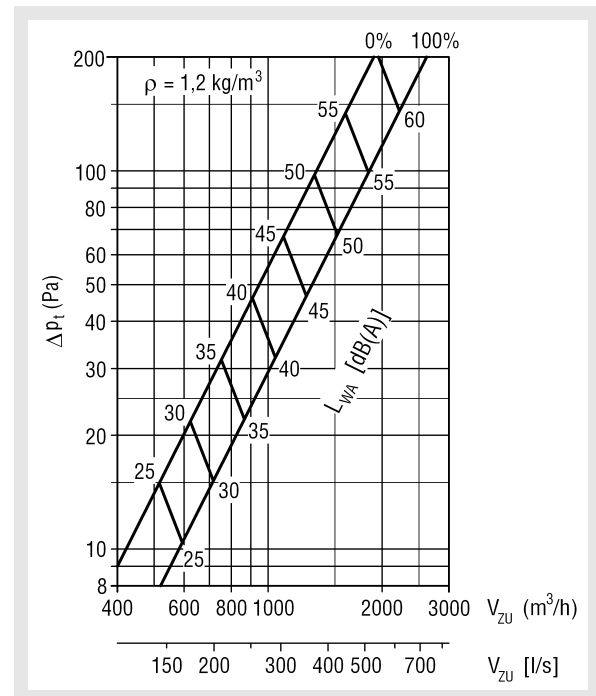


NW	□A	a	b	c
600	598	9	80	304
625	623	21,5	80	316,5
800	798	9	150	404

Technical data

Pressure loss and noise level

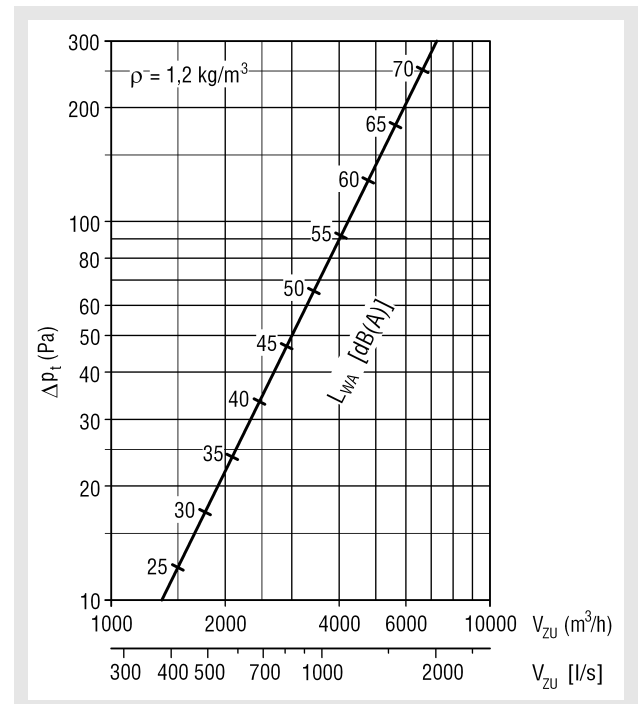
DQC-Z-600-...-S1 / DQC-Z-625-...-S1



0% = damper "CLOSED"

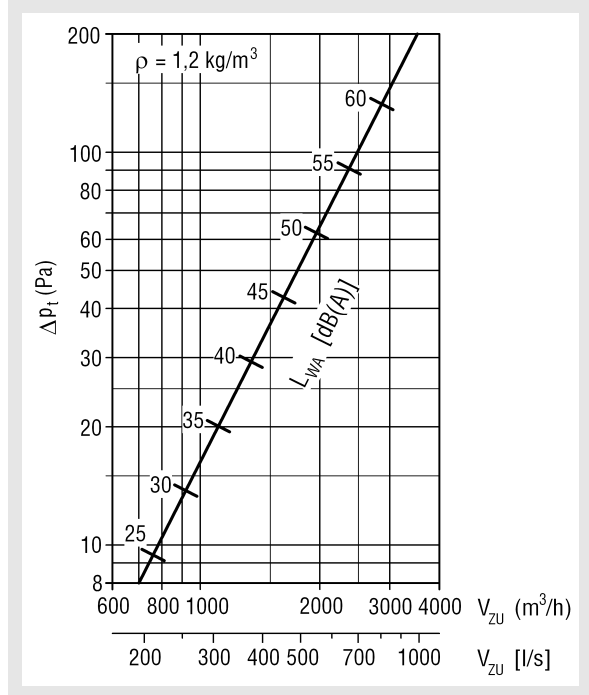
100% = damper "OPEN"

DQC-Z-800-...-S1



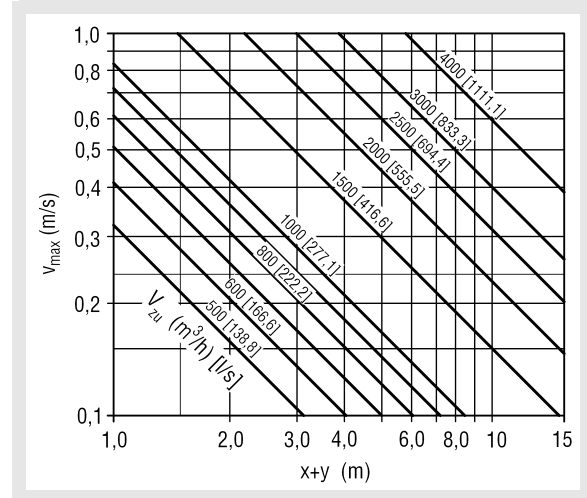
Ceiling diffuser DQC

DQC-Z-600-...-S0 / DQC-Z-625-...-S0



Maximum end velocity of jet

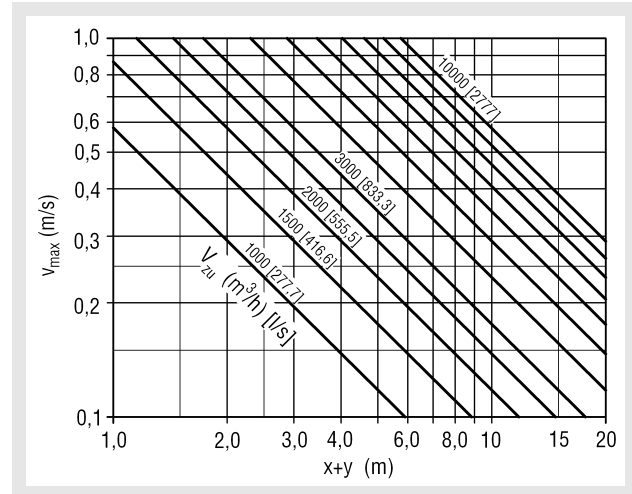
DQC-Z-600/625-... (without coanda effect)



with coanda effect:

- diagram value x 1.41

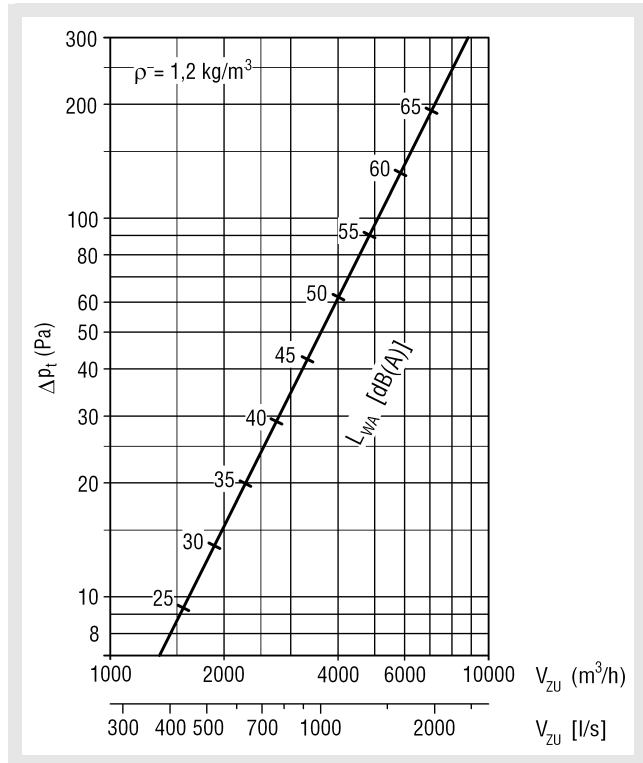
DQC-Z-800-... (without coanda effect)



with coanda effect:

- diagram value x 1.41

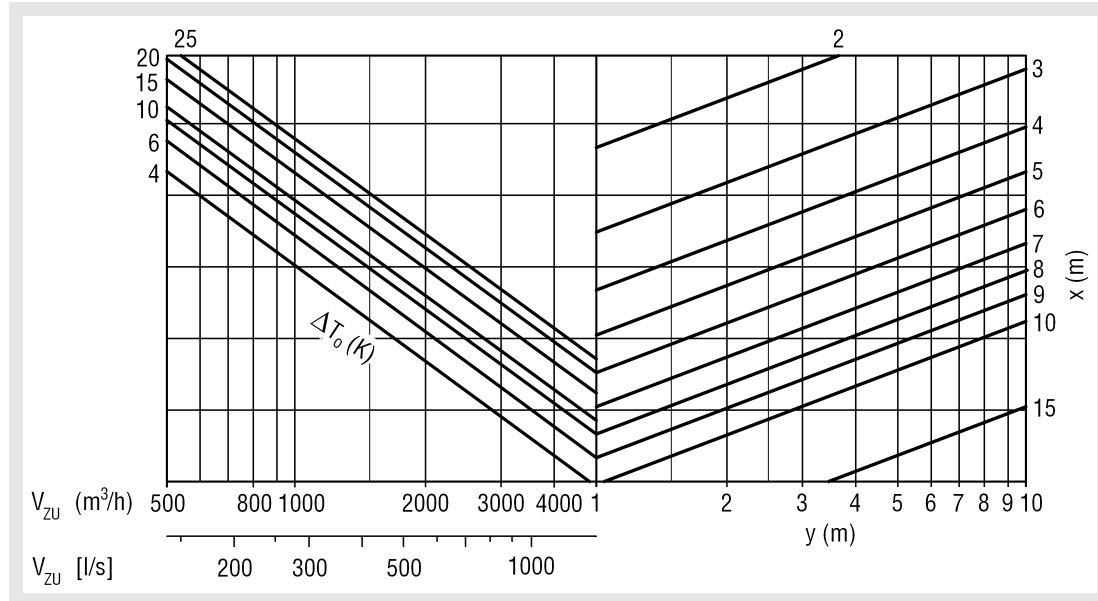
DQC-Z-800-...-S0



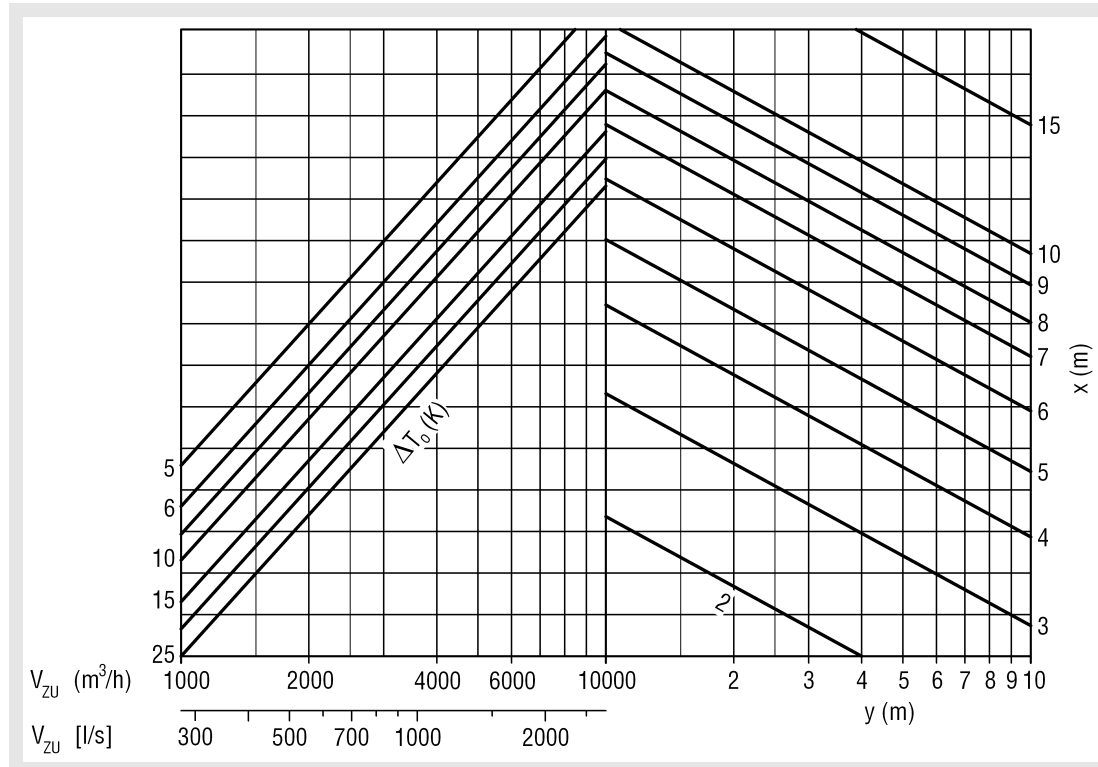
Ceiling diffuser DQC

Jet path

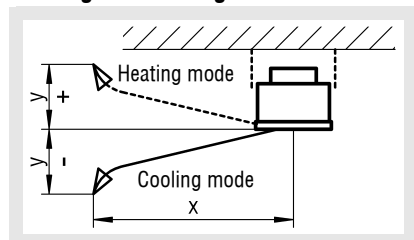
DQC-Z-600-... / DQC-Z-625-...



DQC-Z-800-...

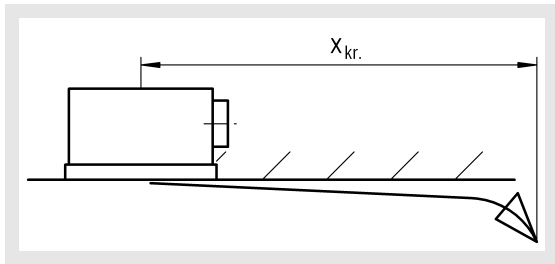


Heating and cooling modes

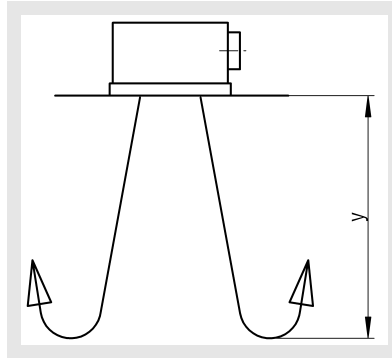


Ceiling diffuser DQC

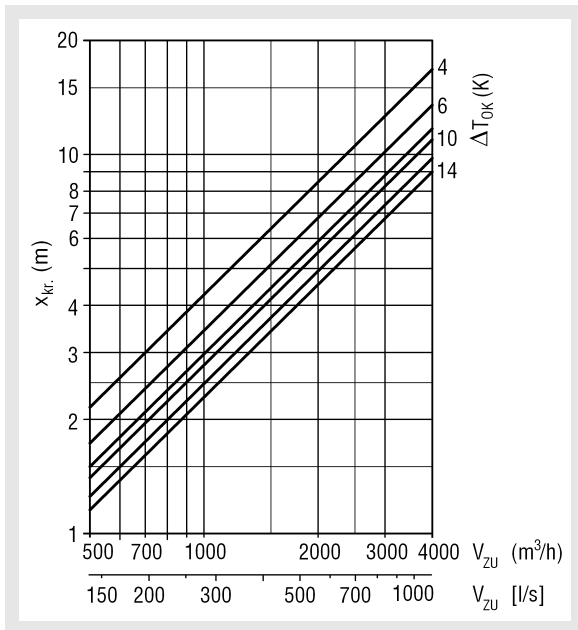
Critical throw



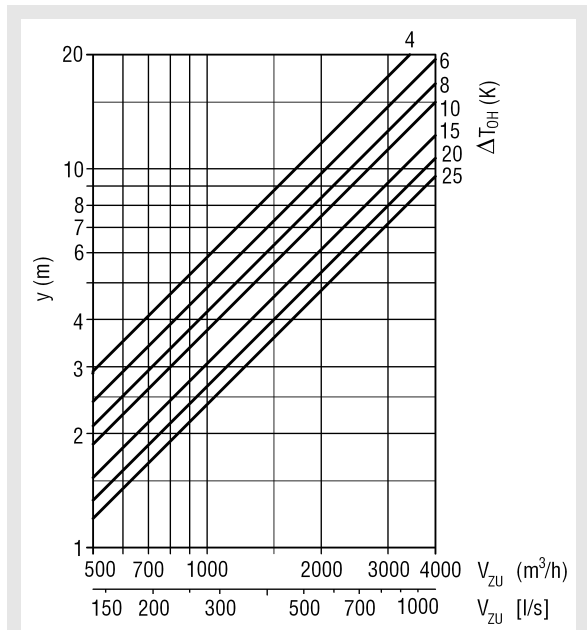
Maximum penetration



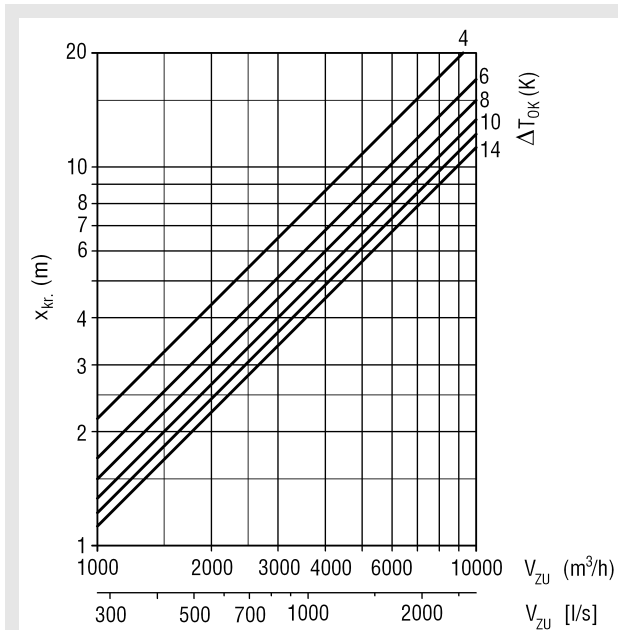
DQC-Z-600-... / DQC-Z-625-...



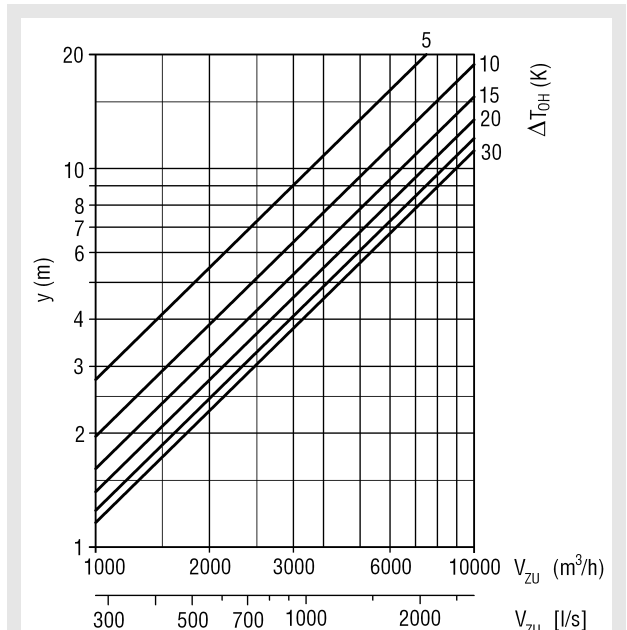
DQC-Z-600-... / DQC-Z-625-...



DQC-Z-800-...



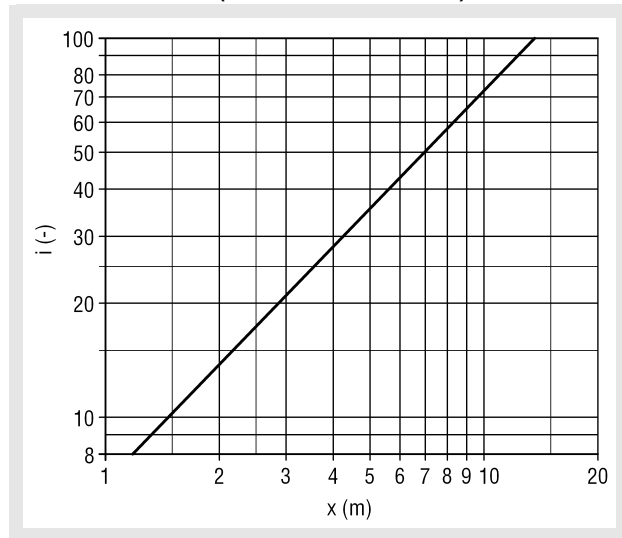
DQC-Z-800-...



Ceiling diffuser DQC

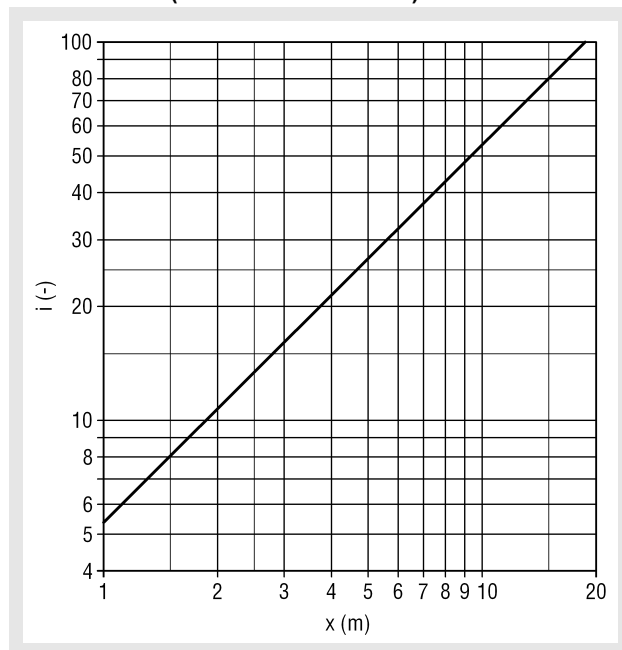
Induction ratio

DQC-Z-600/625-... (without coanda effect)



with coanda effect:
- diagram value x 0.71

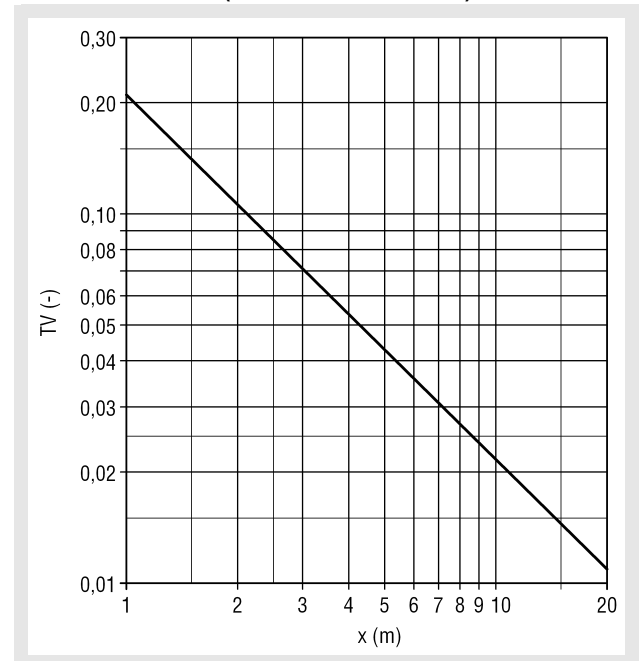
DQC-Z-800-... (without coanda effect)



with coanda effect:
- diagram value x 0.71

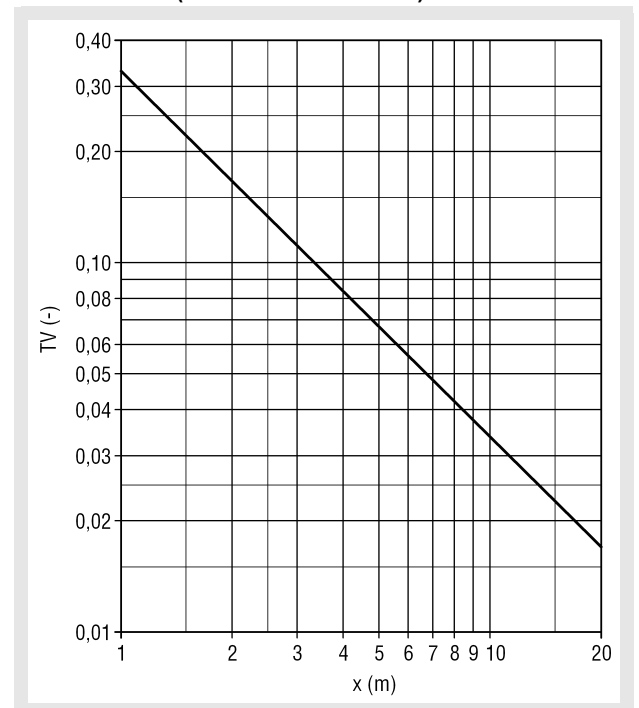
Temperature ratio

DQC-Z-600/625-... (without coanda effect)



with coanda effect:
- diagram value x 1.41

DQC-Z-800-... (without coanda effect)



with coanda effect:
- diagram value x 1.41

Ceiling diffuser DQC

Legend

V_{ZU}	(m³/h) [l/s]	= Supply air volume
V_X	(m³/h) [l/s]	= Total air jet volume at point x
v_{max}	(m/s)	= Maximum end velocity of jet
x	(m)	= horizontal throw
y	(m)	= vertical throw
x+y	(m)	= horizontal + vertical throw
i	(-)	= Induction ratio ($i = V_X / V_{ZU}$)
TV	(-)	= Temperature ratio ($TV = \Delta T_X / \Delta T_0$)
NW	(mm)	= Nominal value
$x_{kr.}$	(m)	= Critical jet path
ΔT_0	(K)	= Temperature difference between supply air temperature and room temperature ($\Delta T_0 = t_{ZU} - t_R$)
ΔT_X	(K)	= Temperature difference at point x
t_{ZU}	(°C)	= Supply air temperature
t_R	(°C)	= Room temperature
Δp_t	(Pa)	= Pressure loss
ρ	(kg/m³)	= Density
L_{WA}	[dB(A)]	= A-weighted sound power level
ΔT_{OH}		= Temperature difference between air supply and room temperature in heating mode
ΔT_{OK}		= Temperature difference between supply air temperature and room temperature in cooling mode

Ceiling diffuser DQC

Order code DQC

01	02	03	04	05
Type	Air throw	Nominal size	Material	Paint
Example				
DQC	-Z	-600	-SB	-9010

06	07	08	09	10
Blade colour	Air throw pattern	Mounting	Motor adjustment	Ball-impact guard
-L9005	-H	-SM	-E000	-B0

Sample

DQC-Z-600-SB-9010-L9005-H-SM-E000-B0

Ceiling diffuser type DQC I supply air I NW600 I faceplate made of sheet steel I faceplate painted to RAL9010 I blade colour similar to RAL9005 black I air throw pattern H I screw mounting I without motor adjustment I without ball-impact guard

Order details

01 - Type

DQC = ceiling diffuser with square faceplate

02 - Air throw

Z = Supply air

A = Return air

03 – Nominal size

600 = NW600

625 = NW625

800 = NW800

04 - Material

SB = Sheet steel (standard)

V2 = Stainless steel (V2A)

05 - Paint

0000 = without paint (galvanised sheet steel)

9010 = RAL colour white (standard)

xxxx = RAL colour can be freely selected

SAND = Sand silver (only for V2A)

06 - Blade colour

L9005 = Blades made of plastic similar to RAL 9005 (black)

L9010 = Blades made of plastic similar to RAL9010 (white)

00000 = without blades (only for return air)

07 - Air throw pattern

H = All blades in position 2

V = all blades in position 1, vertical throw

C = Without blades (available only for return air)

08 - Mounting

SM = Screw mounting (standard, concealed mounting not possible)

09 - Motor adjustment

E000 = Without motor adjustment (standard)

E013 = with actuator 24V, 0-10V

10 – Ball-impact guard

B0 = without ball-impact guard (standard)

BS = with ball-impact guard, painted same as faceplate

Ceiling diffuser DQC

Order code SK

01	02	03	04	05	06	07
Plenum box	model	Air diffuser	Type of air	Nominal size	Fastening	Material
Example						
SK	-Q	-16	-Z	-600	-SM	-SV

08	09	10	11	12	13	14	15
Damper	Rubber lip seal	Volumetric flow meter	ROB model	Insulation	Height of plenum box	Spigot diameter	Spigot position
-DK1	-GD1	-VME1	-ROB0	-I0	-KHS	-SDS	-S1

Sample

SK-Q-16-Z-600-SM-SV-DK1-GD1-VME1-ROB0-I0-KHS-SDS-S1

Plenum box, square design I for square air diffusers I air diffuser DQC I supply air I NW600 I with screw mounting I galvanised sheet steel I with damper I with rubber lip seal I with volumetric flow meter I without ROB model I without box insulation I standard height of plenum box I standard spigot diameter I 1 lateral spigot

Order details

01 - Plenum box

SK = Plenum box, square design

02 – Model

Q = for square air diffusers

03 - Air diffuser (must be ordered separately)

16 = suitable for DQC-...

04 - Type of air

Z = Supply air

A = Return air

05 – Nominal size

600 = NW600

625 = NW625

800 = NW800

06 - Fastening

SM = Screw mounting (standard, concealed mounting not possible)

07 - Material

SV = Galvanised sheet steel (standard)

V2 = with stainless steel (V2A)

08 - Damper

DK0 = Without damper (standard)

DK1 = With damper

09 - Rubber lip seal

GD0 = Without rubber lip seal (standard)

GD1 = With rubber lip seal

10 – Volumetric flow meter

VME0 = Without volumetric flow meter (standard)

11 – ROB model

ROB0 = Without ROB version (standard)

ROB1 = With ROB version

12 - Insulation

I0 = Without insulation (standard)

Ii = With box insulation inside

Ia = With box insulation outside

13 – Height of plenum box

KHS = Height of plenum box standard

xxx = Height of plenum box in mm (Height_{min} = spigot diameter + 124 mm, but at least 200 mm)

14 – Spigot diameter

SDS = Standard spigot diameter

xxx = Spigot diameter in mm

Ceiling diffuser DQC

15 – Spigot position

- S0 = Spigot from above
- S1 = 1 lateral spigot on the box (standard)
- S2 = 2 spigots offset by 90°
- S3 = 2 spigots offset by 180°
- S5 = 2 spigots arranged next to each other

Ceiling diffuser DQC

Specification texts

Ceiling diffuser type DQC-Z-... for supply air consists of a square faceplate, RAL colour 9010 (white) with visible screw mounting (-SM), including four lamella fields each arranged offset by 90°. The plastic air deflection blades painted to a RAL colour similar to RAL 9005 (black, -LS9005) or RAL 9010 (white, -LW9010) are manually individually adjustable.

Product: SCHAKO **type DQC-Z-...**

Ceiling diffuser type DQC-A-... for exhaust air consists of a square faceplate, RAL colour 9010 (white) with visible screw mounting (-SM), including four lamella fields each arranged offset by 90° without air deflection blades.

Product: SCHAKO **type DQC-A-...**

Ceiling diffuser type DQC-Z-...-E013-... for supply air consists of a square faceplate, RAL colour 9010 (white) with visible screw mounting (-SM), including four lamella fields each arranged offset by 90°. The plastic air deflection blades painted to a RAL colour similar to RAL 9005 (black, -LS9005) or RAL 9010 (white, -LW9010) are adjustable with an electrical servomotor at the same time.

Nominal voltage: AC 24V 50/60 Hz

Actuator signal: DC 0...10 V

Product: SCHAKO **type DQC-Z-...-E013-...**

Accessories:

- Plenum box (SK-Q-16-...) made of galvanised sheet steel, with fixing lugs.
 - Supply air model with integrated perforated straightener.
 - Return air model inside painted to RAL 9005 (black)
 - with damper (-DK1) in plenum box, adjustable from below, for simple air volume regulation without dismantling the faceplate.
 - with volumetric flow meter (-VME1).
 - with ROB model (-ROB1), removable diffuser plate, damper and volumetric flow meter
 - with rubber lip seal (-GD1), at the connection spigot made of special rubber.
 - with thermal insulation
 - internal (-li)
 - external (-la)
 - Height of plenum box can be freely selected, xxx in mm, minimum height = spigot diameter + 124 mm, but at least 200 mm
 - Spigot diameter can be freely selected, xxx in mm
 - Spigot position:
 - S0 = spigot from above
 - S1 = 1 lateral spigot on the box (standard)
 - S2 = 2 spigots offset by 90°
 - S3 = 2 spigots offset by 180°
 - S5 = 2 spigots arranged next to each other
- Ball-impact guard (-BS), made of steel painted to RAL 9010 (white), other RAL colours possible at an extra charge