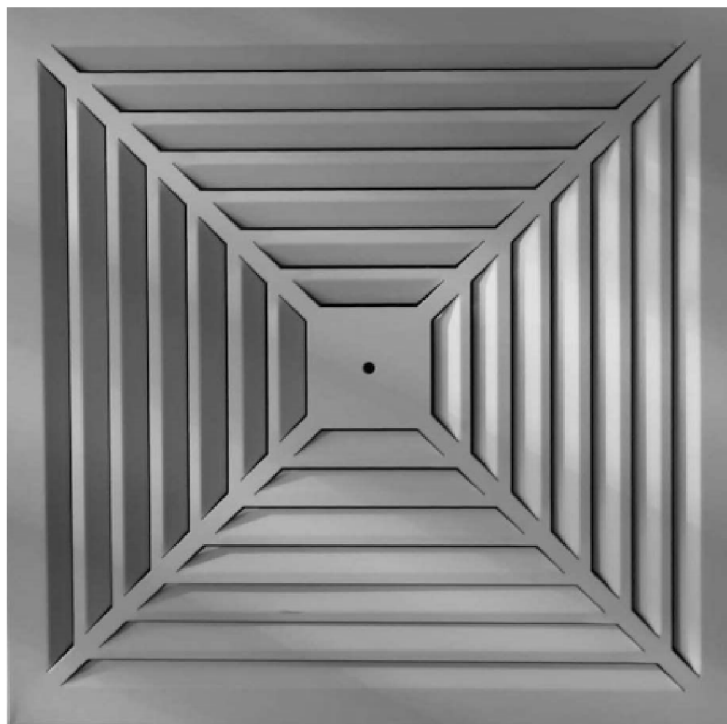


**ceiling diffuser  
4-DF**



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## 4-DF

### ceiling diffuser

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## 4-DF

# ceiling diffuser

## Description

The square 4 way diffuser type 4-DF is suitable for supply and extract air systems. The supply air is delivered horizontally in a 4 way pattern. The diffuser is fitted flush to the ceiling and can be easily cleaned.

A hit and miss damper can be fitted to the back of the diffuser for direct mounting onto the ductwork without the need for a plenum box.

A volume flow measurement device can be fitted to the plenum box at additional cost. The deviation factor of the device is +/- 5% at  $L_{WA} = 40$  dB(A) and requires a minimum straight duct section of  $1 \times D$ . The measurement is taken with a built in diffuser. The air volumes can quickly and easily be adjusted by using the perforated plate damper.

The perforated plate damper, equalising grid and measurement device can easily be removed from the plenum type SGK - ROB model for easy cleaning from the room side.

The 4-DF ceiling diffuser is especially suitable for VAV systems. The high exit velocities ensure a good coanda effect even at low air volumes to eliminate any possibility of air dumping

## Fixing

The ceiling diffuser type 4-DF is fitted to the plenum box type SAK using a central M6 screw for a secret fixing (VM).

## Variable air flow

The square 4 way diffuser type 4-DF is especially suitable for VAV systems. The high exit velocities ensure a good coanda effect even at low air volumes to eliminate any possibility of air dumping.

## Construction

faceplate

- Painted sheet steel RAL 9010 (white)
- Painted sheet steel to a RAL colour to match (at additional cost)
- Anodised aluminium (E6/EV1) (at extra cost)

## Model

4-DF - square face plate

## Accessories

plenum box (-SAK) - Galvanised sheet steel with integrated equalising grid (only for supply air) and fixing lugs

rubber gasket (-GD) - special rubber

perforated plate damper (-LD)

- galvanised sheet steel damper
- plastic damper fixing

ROB model (-ROB) - removable equalising grid, perforated damper and regulating device

volume flow measuring device (-VME)

- mounting from galvanised sheet steel
- plastic measurer
- aluminium connections

## Fixing

screw fixing (-SM) - not available!

secret fixing (-VM)

- Only available with plenum box type SAK
- fitted to the plenum box using a central M6 screw

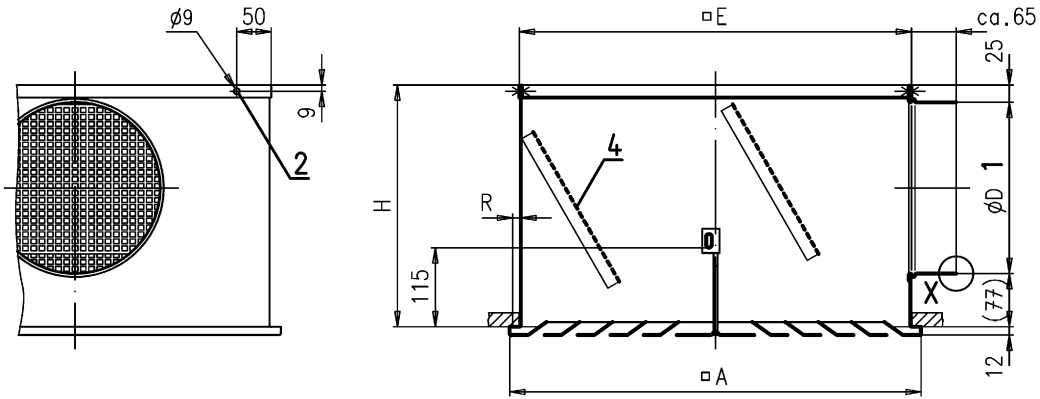
## 4-DF

### ceiling diffuser

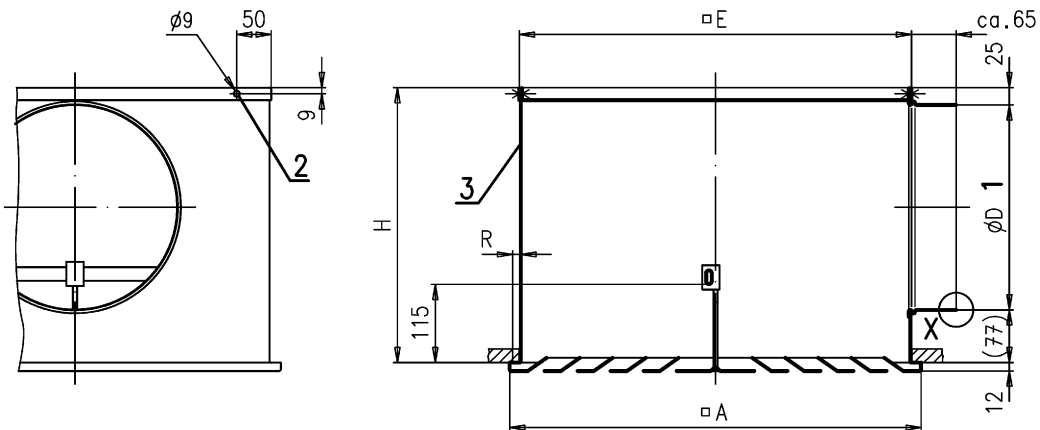
#### Models and dimensions

##### Dimensions

##### 4-DF with SAK-Z (for supply air)



##### 4-DF with SAK-A (for extract air)



- 1 = External
- 2 = Mounting on site
- 3 = RAL 9005 painted inside (black, standard) or RAL 9010 (white)
- 4 = Not required for sizes 600 and 625

##### available sizes

| NW  | □A  | □E  | R  | SAK-Z |     | SAK-A |     |
|-----|-----|-----|----|-------|-----|-------|-----|
|     |     |     |    | H     | øD  | H     | øD  |
| 400 | 398 | 370 | 12 | 260   | 158 | 300   | 198 |
| 500 | 498 | 470 | 12 | 300   | 198 | 350   | 248 |
| 600 | 598 | 570 | 12 | 350   | 248 | 400   | 298 |
| 625 | 623 | 570 | 24 | 350   | 248 | 400   | 298 |

available sizes

**4-DF**

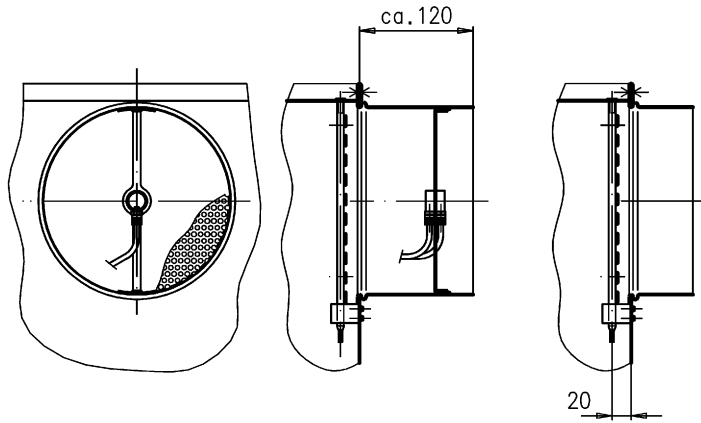
**ceiling diffuser**

**Accessories - dimensions**

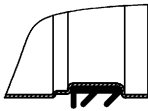
(at additional cost):

**volume flow measuring device (-VME)**

**Perforated plate damper (-LD)**



**rubber gasket (GD)  
detail X**



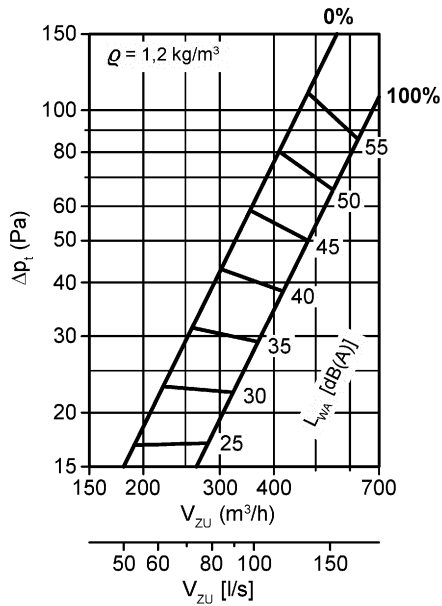
# 4-DF ceiling diffuser

## Technical data

### Pressure loss and noise level

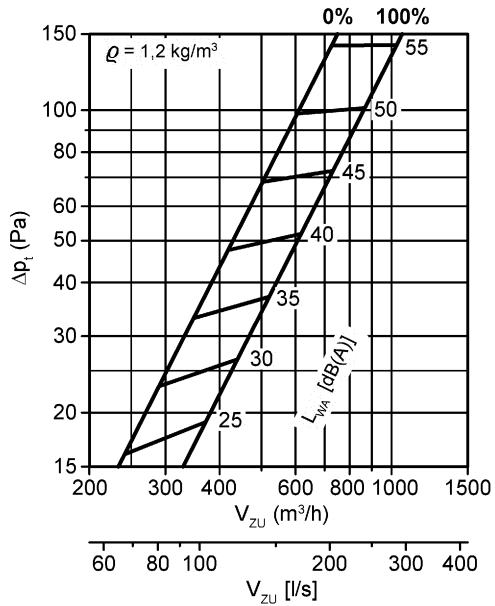
(supply air) with plenum box

#### 4-DF 400



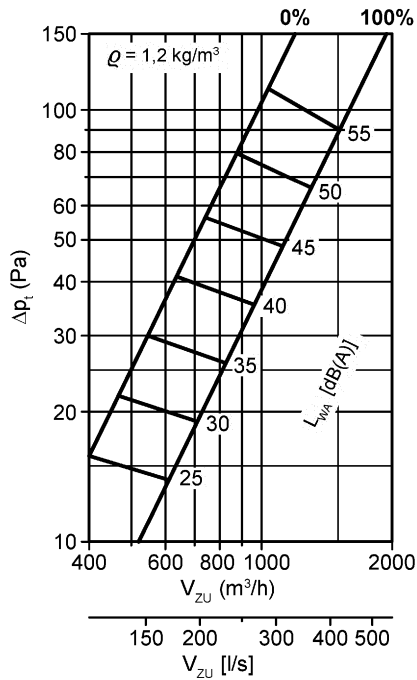
Damper OPEN in %

#### 4-DF 500

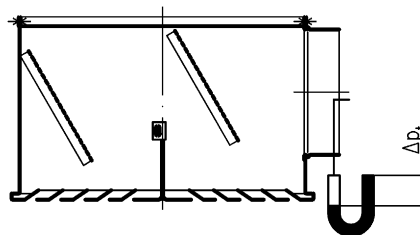


Damper OPEN in %

#### 4-DF 600 / 625



Damper OPEN in %



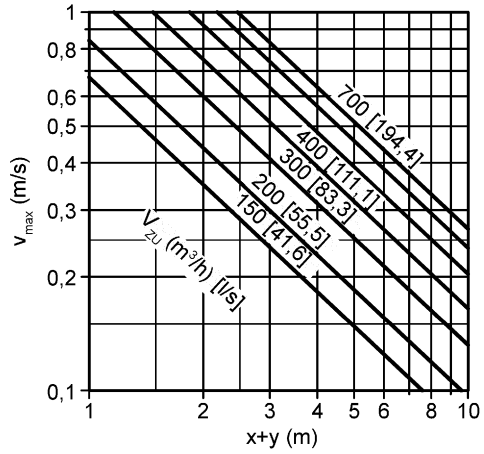
## 4-DF

### ceiling diffuser

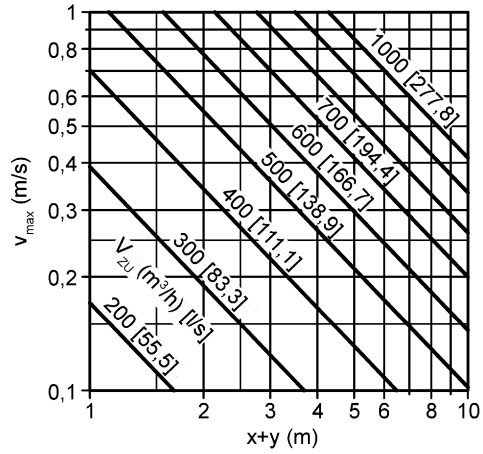
#### Maximum end velocity

with plenum box

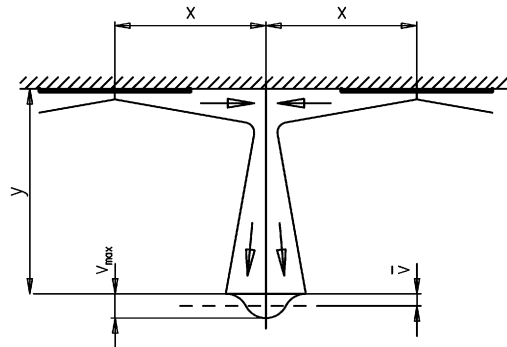
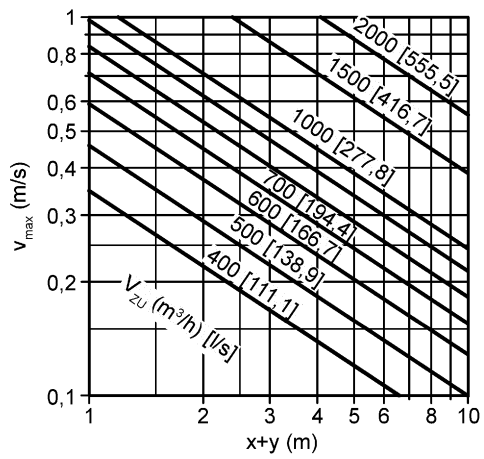
#### 4-DF 400



#### 4-DF 500



#### 4-DF 600 / 625

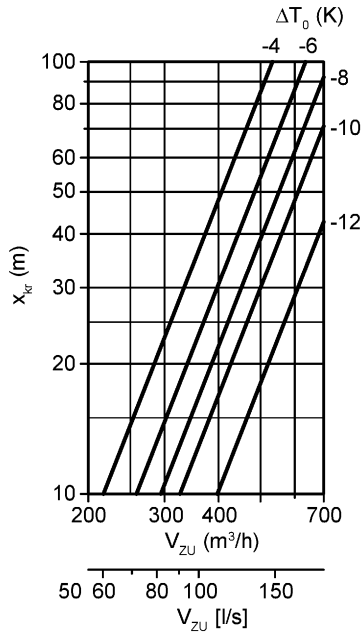


## 4-DF

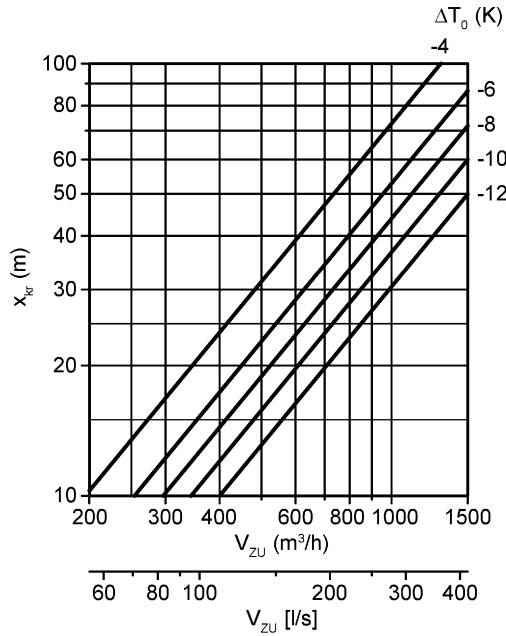
### ceiling diffuser

#### Critical throw

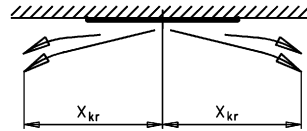
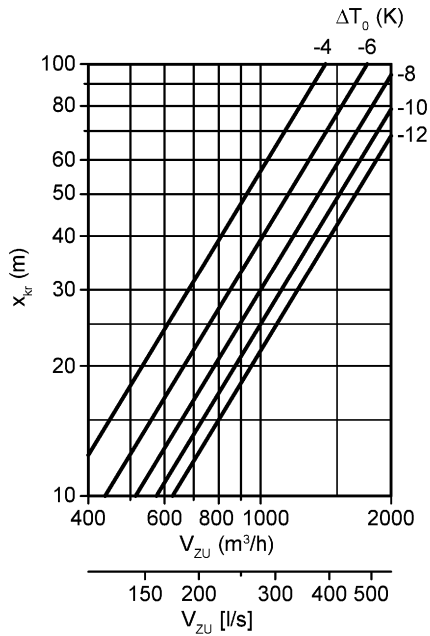
#### 4-DF 400



#### 4-DF 500



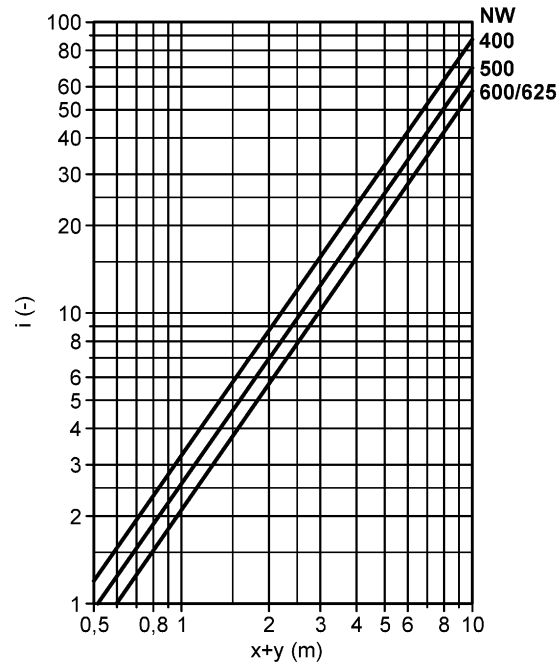
#### 4-DF 600 / 625



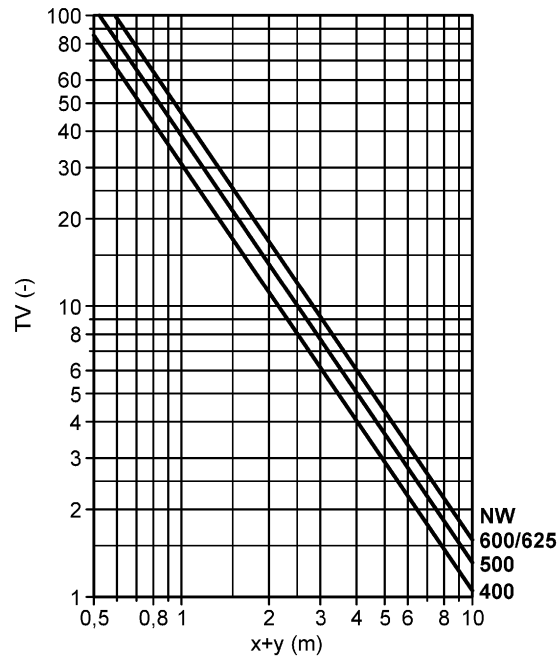
## 4-DF

### ceiling diffuser

#### induction ratio



#### Temperature ratio



## 4-DF

### ceiling diffuser

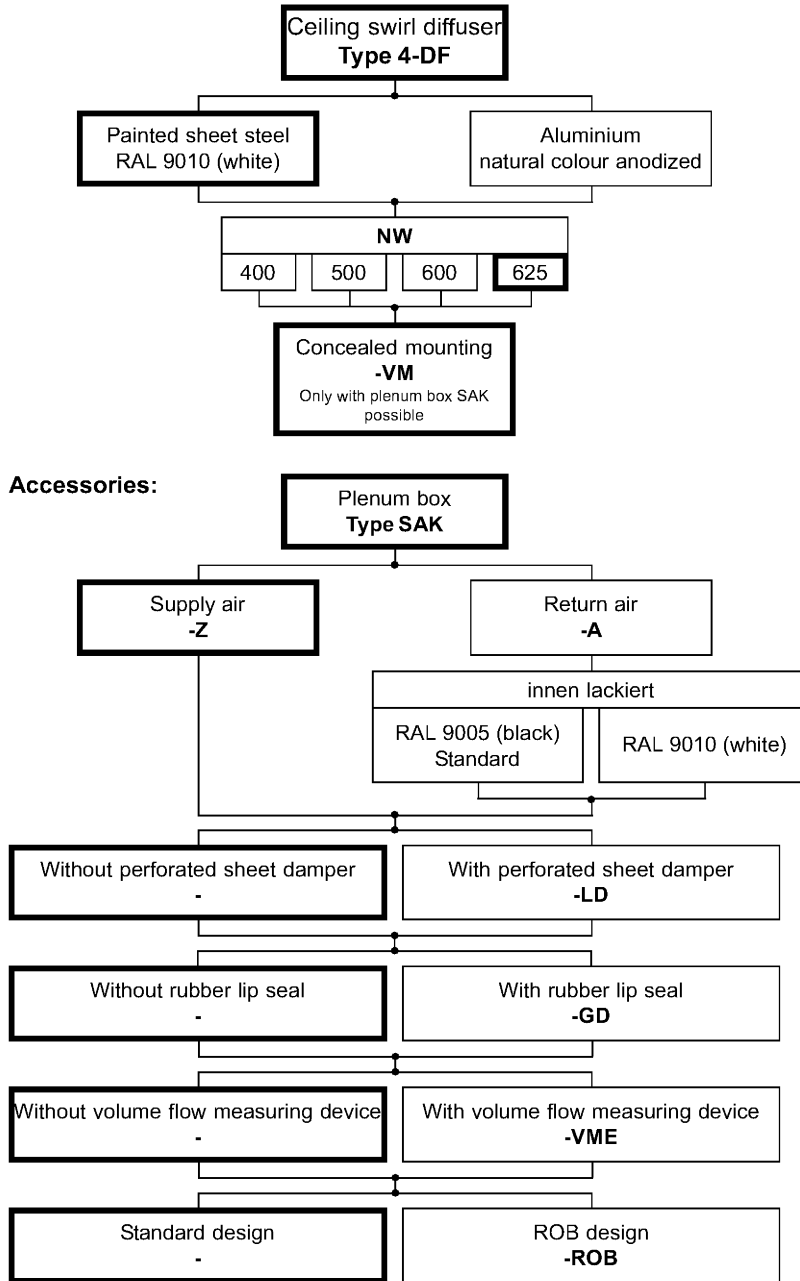
#### Legend

|                                       |   |  |
|---------------------------------------|---|--|
| $V_{\text{supp}}$ (m <sup>3</sup> /h) | = | supply air volume  |
| $V_{\text{supp}}$ (l/s)               | = | supply air volume  |
| $\Delta p_1$ (Pa)                     | = | pressure loss  |
| $L_{\text{WA}}$ [dB(A)]               | = | a weighted sound power level                                   |
| $\rho$ (kg/m <sup>3</sup> )           | = | density  |
| $V_{\text{max}}$ (m/s)                | = | maximum end velocity   |
| $v$ (m)                               | = | average velocity $v = v_{\text{max}} \times 0.5$               |
| $x+y$ (m)                             | = | horizontal and vertical throw                                  |
| $\Delta T_o$ (K)                      | = | temperature difference between supply and room air temperature |
| $x_{\text{kr}}$ (m)                   | = | critical throw   |
| TV (-)                                | = | temperature ratio  |
| $i$                                   | = | induction ratio  |
| NW                                    | = | nominal value  |
| A                                     | = | damper open  |
| Z                                     | = | damper closed  |

## 4-DF

### ceiling diffuser

#### Order details



#### Ordering example:

4-DF-625-VM-SAK-Z

**At non-specified order the thick framed design will be delivered!**

## 4-DF

### ceiling diffuser

#### Specification texts

4 way ceiling diffuser type 4-DF with square faceplate made from painted sheet steel RAL 9010 (white) with secret fixing (VM).  
manufacturer: SCHAKO type 4-DF

- faceplate made from natural anodised aluminium (E6/EV 1)

accessories:

- with galvanised sheet steel plenum box (SGK) with fixing lugs
  - supply air model with equalising grid
  - extract air model painted inside
    - RAL 9005 (black, standard)
    - RAL 9010 (white)
  - with perforated plate damper (-LD) in the plenum box, adjustable from below for commissioning.
  - with volume flow regulating device (-VME)
  - with ROB model (-ROB)  
removable equalising grid, damper and regulating device
  - rubber gasket (-GD), in spigot