



# Floor displacement air diffuser PILBR



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# Floor displacement air diffuser PILBR

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## Floor displacement air diffuser PILBR

### Description

The SCHAKO floor displacement air diffuser type PILBR in **round design** is suitable **for installation in double floors in rooms of high thermal loads** such as computer centres. The **air flows horizontally** out of the floor displacement air diffuser. This flow results in a **rapid reduction of the temperature and velocity** near the diffuser.

The round floor displacement air diffuser PILBR consists of a faceplate and a dirt collection basket (at an extra charge). The basket bottom of the dirt collection basket is height-adjustable. This allows the supply air volume of each diffuser to be set to different values if there are different diffuser resistances.

Instead of the dirt collection basket, the floor displacement air diffuser can also be fitted with a plenum box for optimum air distribution over the entire diffuser. The plenum box can be additionally fitted with a damper. This serves for air volume regulation and is easy to adjust. For easy mounting, a mounting ring can be delivered at an extra charge.

To maintain the local thermal ambient climate, we recommend selecting a supply air temperature  $\geq 19^{\circ}\text{C}$ .

Please also observe EN ISO 7730, 6.2007 and DIN EN 15251, 8.2007

### Load-carrying capacity of the faceplate

The floor displacement air diffuser type PILBR can be subjected to the following loads according to DIN-EN 13264:

	PILBR
kN	1,5

### Manufacture

Faceplate

- Stainless steel (V2A) without paint (-V2-0000).

Baffle plate

- PILBR-200:
  - made of sheet steel painted to RAL 9005 (black).
- PILBR-250:
  - made of plastic material similar to RAL 9005 (black).

### Model

- PILBR-... - round design, faceplate with radial perforation and back-fitted baffle plate

### Accessories

Dirt collection basket (-SFK0 / -SFK1)

- without dirt collection basket (-SFK0).
- with dirt collection basket (-SFK1), made of galvanised sheet steel (not for use with plenum box).

Mounting ring (-ER0 / -ER1), with flange

- without mounting ring (-ER0).
- with mounting ring (-ER1), made of stainless steel 1.4301 (V2A) in the colour sand silver.

Plenum box (-SK-...-53), for PILBR

- square model (-Q), for supply air (-Z) (not for use with dirt collection basket).
  - Nominal size:
    - NW 200 (-200)
    - NW 250 (-250)
  - Mounting:
    - without fastening (-00) (standard)
    - Concealed mounting (-VM)
  - Material:
    - made of galvanised sheet steel (-SV) (standard)
  - Damper
    - Without damper (-DK0) (standard)
    - with damper (-DK1), made of galvanised sheet steel, damper fastening made of plastic material, adjustable, in the plenum box housing, for simple air volume regulation.
  - Rubber lip seal:
    - without rubber lip seal (-GD0) (standard)
    - with rubber lip seal (-GD1), made of special rubber, at the connection spigot.
  - Volumetric flow meter
    - Without volumetric flow meter (-VME0) (standard)
  - ROB version
    - without ROB version (-ROB0) (standard)

## Floor displacement air diffuser PILBR

- Insulation:
  - without insulation (-I0) (standard)
  - with internal insulation (-Ii), thermal insulation inside the plenum box.
  - with external insulation (-Ia), thermal insulation at the outside of the plenum box.
- Height of plenum box:
  - standard height of plenum box (-KHS)
  - Height of plenum box in mm, freely selectable (-xxx) (minimum height [KHS] = spigot diameter  $\varnothing D + 57$  mm, but at least 180 mm, always with 3 digits)
- Spigot diameter:
  - Standard spigot diameter (-SDS)
  - Spigot diameter in mm, freely selectable (-xxx, always with 3 digits).
- Spigot position:
  - 1 lateral spigot on the plenum box (-S1) (standard)

### Mounting

- Fastening prongs (-BK, standard)
- Concealed mounting (-VM, at an extra charge)
  - fastened to the plenum box by means of the central screw M6x120 (according to DIN EN ISO 4762) (only available with plenum box (-SK) ).
- without fastening (-00)

### Attention!

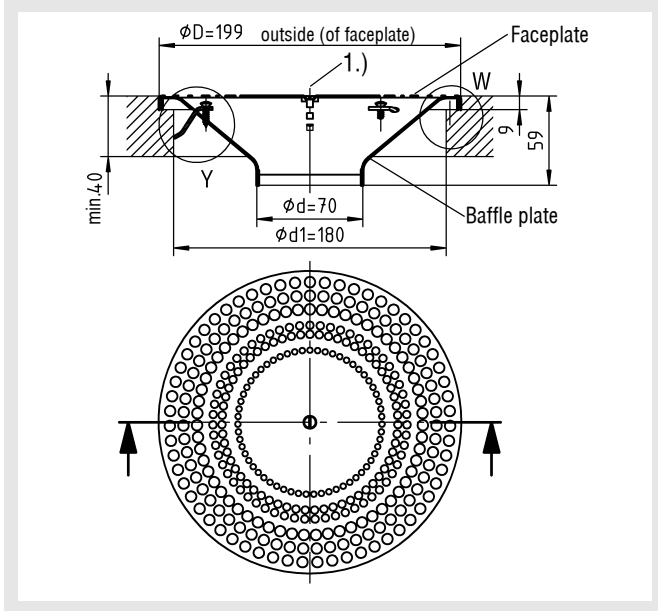
We would like to point out that for cleaning stainless steel models, only suitable cleaning materials may be used!

# Floor displacement air diffuser PILBR

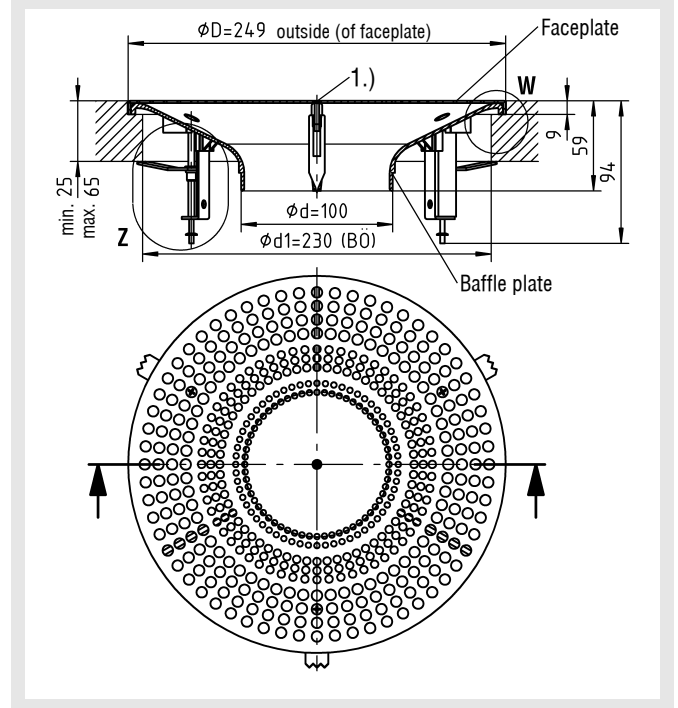
## Models and dimensions

### Dimension

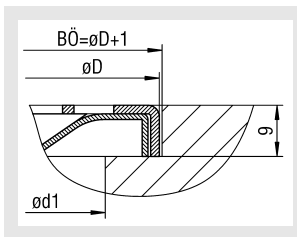
#### PILBR-200-...-



#### PILBR-250-...



#### Detail W



NW = BÖ

BÖ = Floor opening

1.) Countersunk-head screw for fastening the faceplate on the baffle plate.

For detail Y and Z, see page 13 for mounting.

**When mounting the faceplate to the baffle plate, the torque must not exceed 3 Nm.**

## Floor displacement air diffuser PILBR

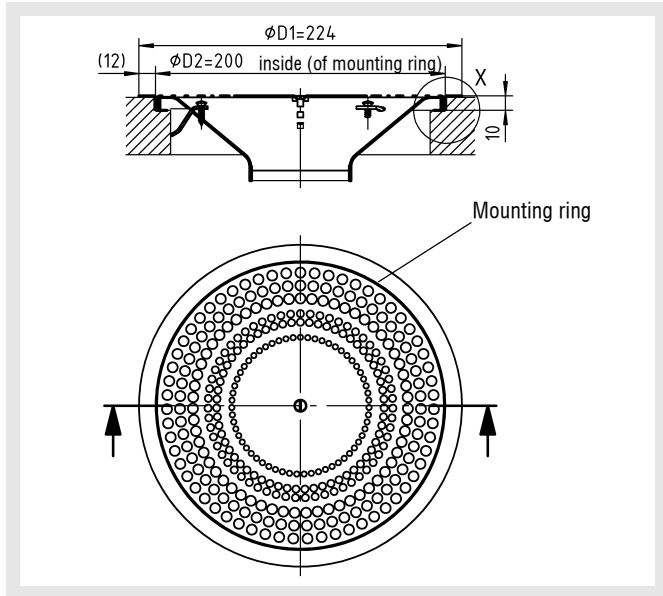
### Dimensions of accessories

#### Mounting ring (-ER0 / -ER1)

ER0 = without mounting ring (standard)

ER1 = with mounting ring

#### PILBR-200-...-ER1

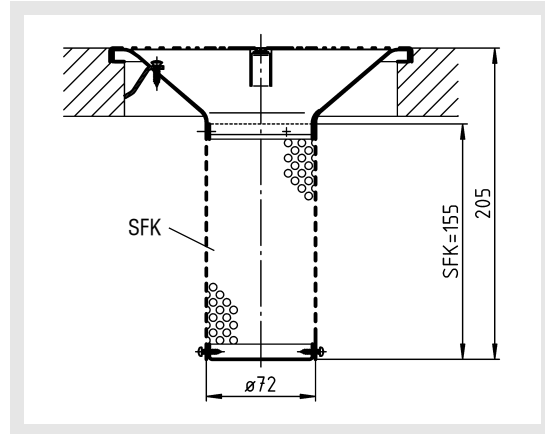


### Dirt collection basket (-SFK0 / -SFK1)

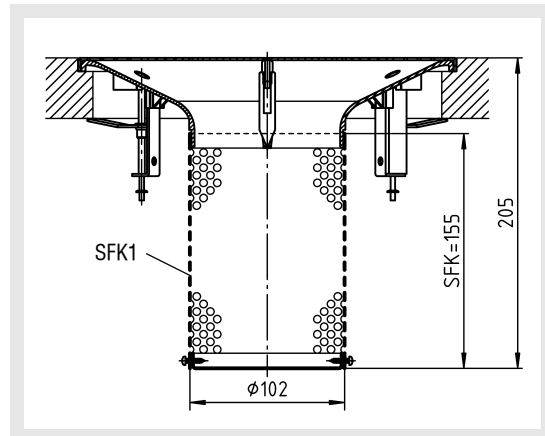
SFK0 = without dirt collection basket (standard)

SFK1 = with dirt collection basket (only possible without plenum box)

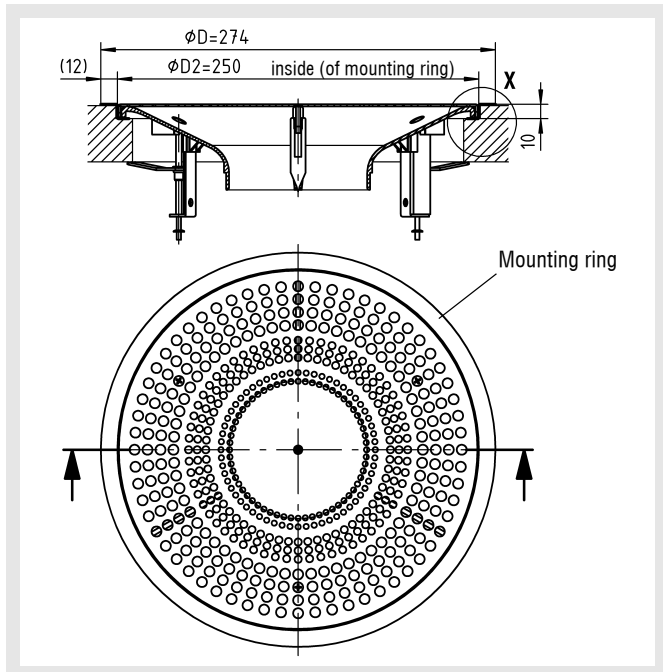
#### PILBR-200-...-SFK1



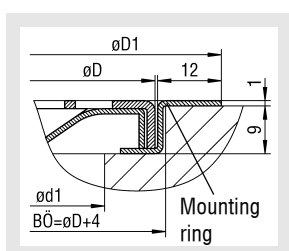
#### PILBR-250-...-SFK1



#### PILBR-250-...-ER1

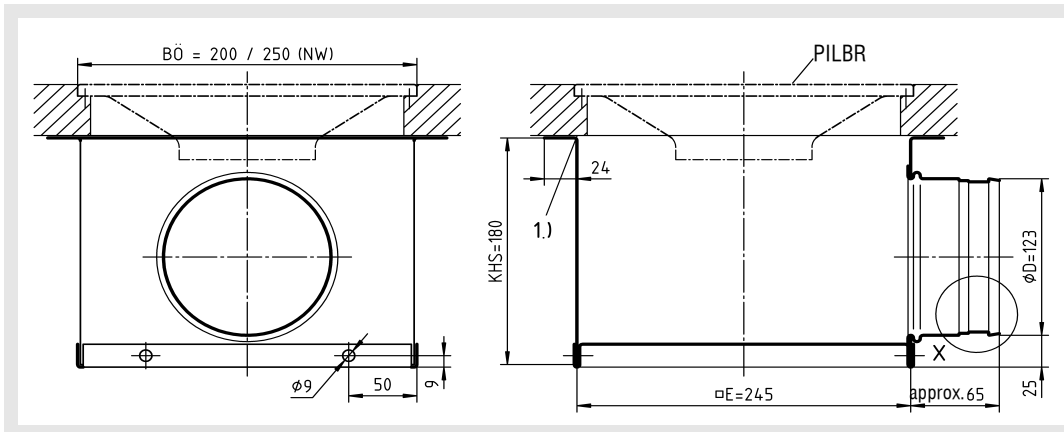


### Detail X



# Floor displacement air diffuser PILBR

## Plenum box (-SK-Q-53-...)



1.) leak proofing on site

Minimum height [KHS] = spigot diameter  $\phi D$  + +57 mm, but at least 180 mm.

BÖ = Floor opening

**Spigot position -S1:** 1 lateral spigot on the plenum box  
NW = BÖ

**Damper (-DK0 / -DK1),** for SK-Q-53-...

DK0 = without damper (standard)

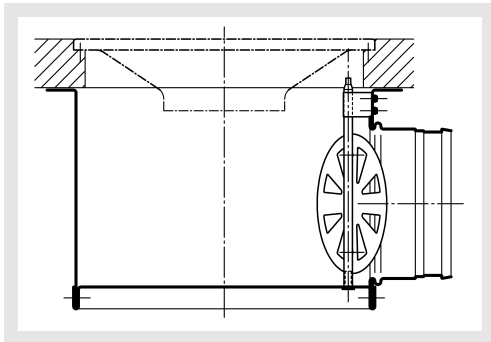
DK1 = with damper

**Insulation (-I0 / -Ii / -Ia),** for SK-Q-53-...

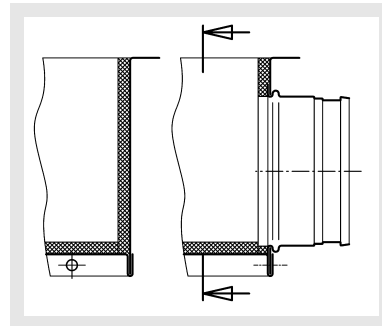
I0 = without insulation (standard)

Ii = With internal insulation

Ia = with external insulation



**internal (-Ii)**

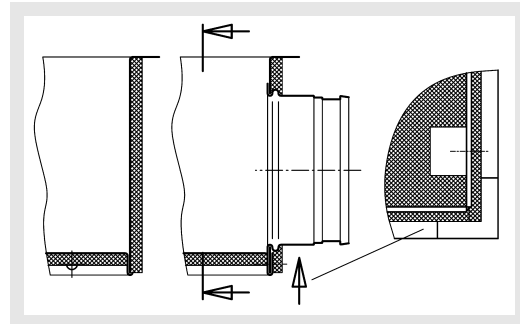


**Rubber lip seal (-GD0 / -GD1),** for SK-Q-53-...

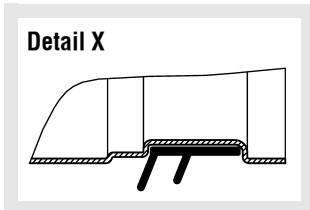
GD0 = without rubber lip seal (standard)

GD1 = with rubber lip seal

**external (-Ia)**



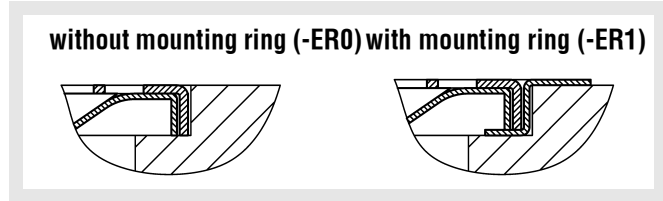
**Detail X**



# Floor displacement air diffuser PILBR

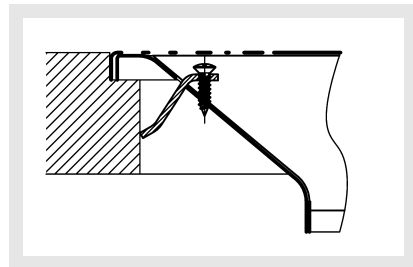
## Mounting

### without fastening (-00)

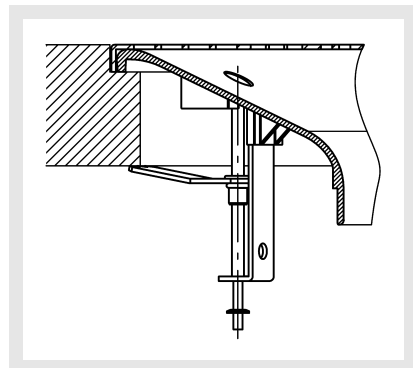


### Fastening prongs (-BK) (standard)

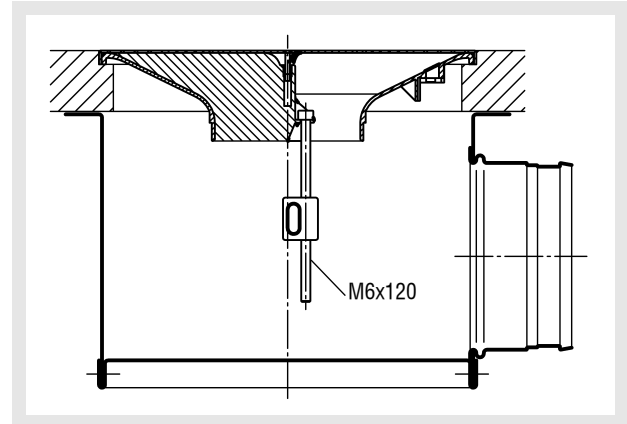
#### PILBR-200



#### PILBR-250



### Concealed mounting (-VM) (at an extra charge)



Floor displacement air diffuser fastened to the plenum box by means of the central screw M6x120 (according to DIN EN ISO 4762) (only available with plenum box -SK).

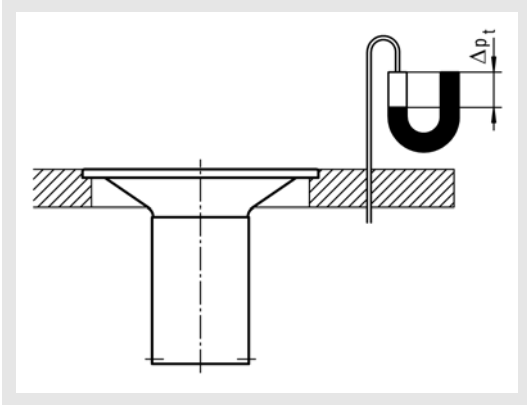


# Floor displacement air diffuser PILBR

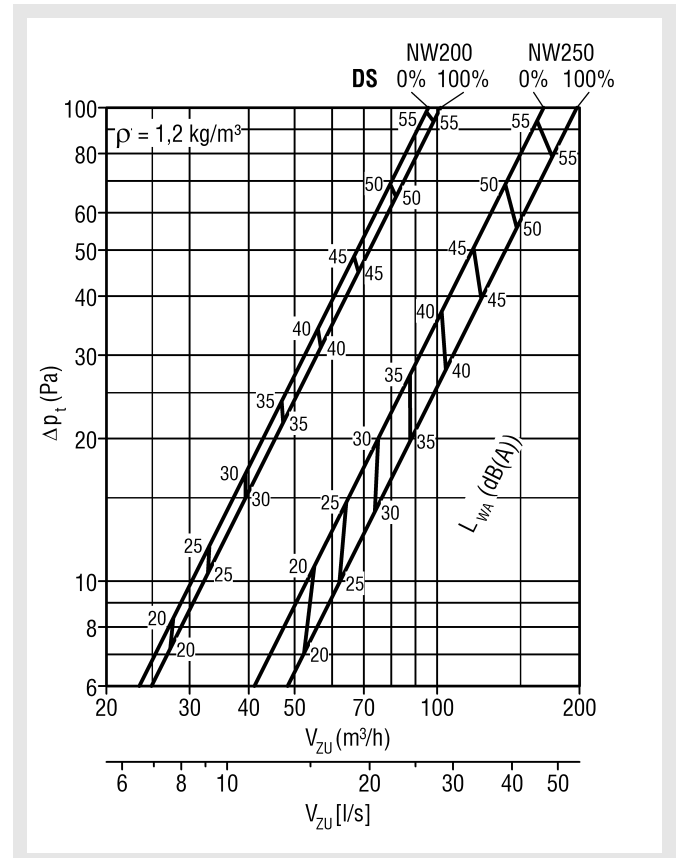
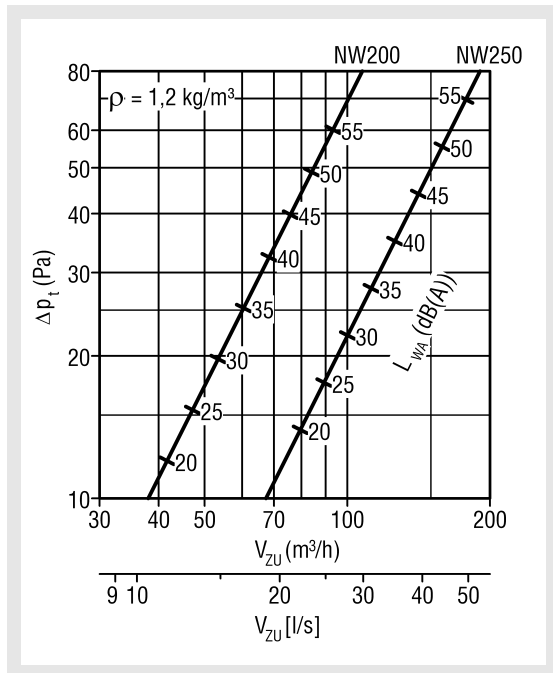
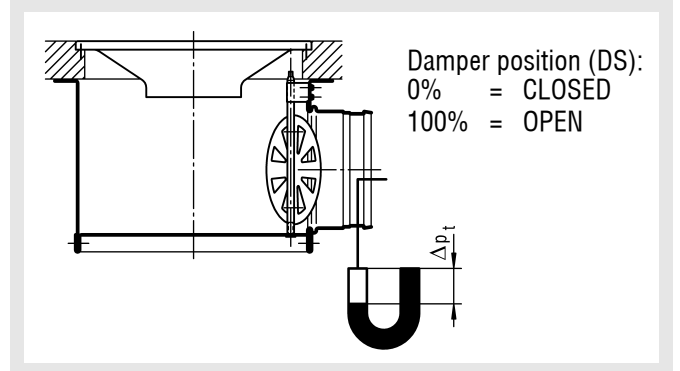
## Technical data

### Pressure loss and noise level

in pressure floor

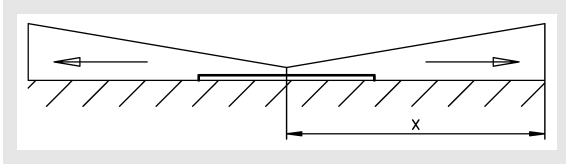


with plenum box (-SK-Q-53) and damper (-DK1)

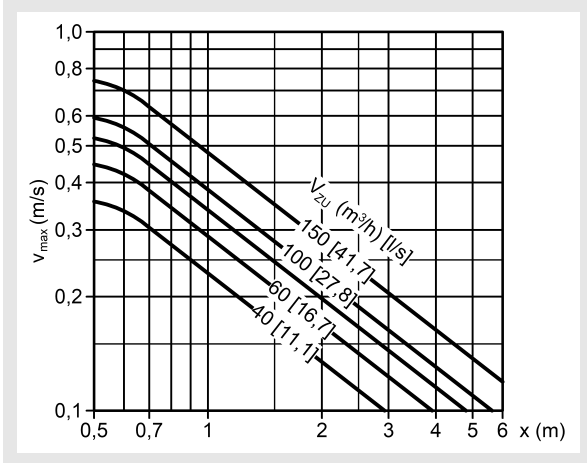


# Floor displacement air diffuser PILBR

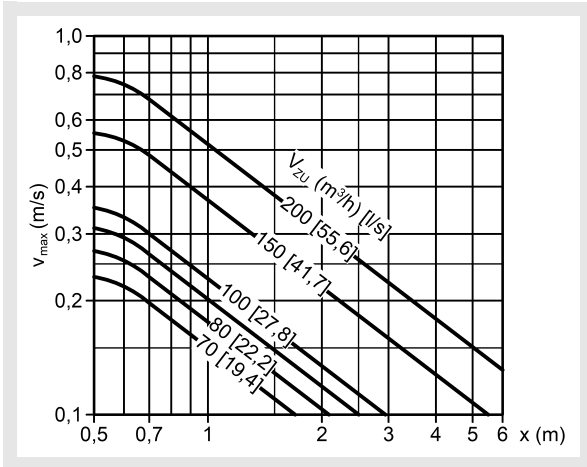
## Maximum end velocity of jet



### PILBR-200

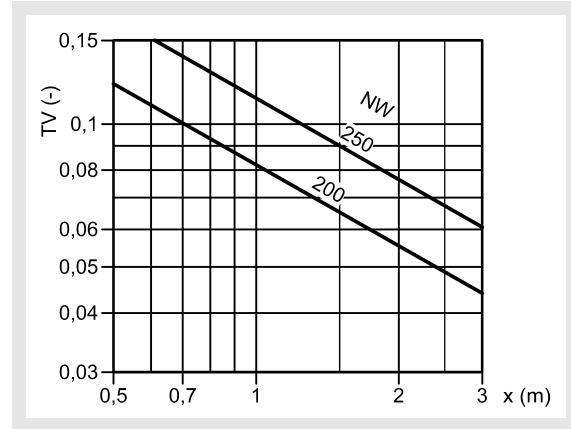


### PILBR-250

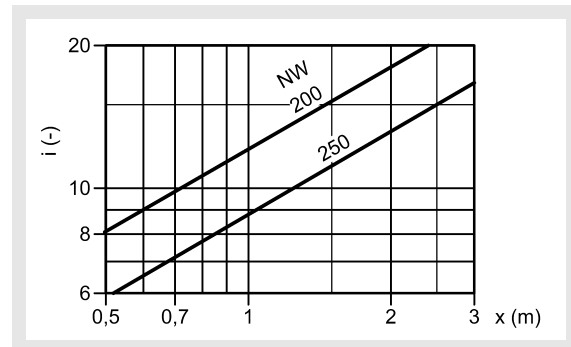


## Temperature and induction ratios

### Temperature ratio



### Induction ratio



## Legend

$V_{zu}$ (m <sup>3</sup> /h)	= Supply air volume
$V_{zu}$ [l/s]	= Supply air volume
$\Delta p_t$ (Pa)	= Pressure loss
$L_{WA}$ [dB(A)]	= A-weighted sound power level
$\rho$ (kg/m <sup>3</sup> )	= Density
$f_m$ (Hz)	= Octave centre frequency
$x$ (m)	= horizontal throw
$v_{max}$ (m/s)	= Maximum end velocity of jet
$TV$ (-)	= Temperature ratio ( $TV = \Delta T_x / \Delta T_0$ )
$\Delta T_0$ (K)	= Temperature difference between supply air temperature and room temperature ( $\Delta T_0 = t_{zu} - t_R$ )
$\Delta T_x$ (K)	= Temperature difference at point x
$t_{zu}$ (°C)	= Supply air temperature
$V_x$ (m <sup>3</sup> /h) [l/s]	= total air jet volume at point x
$t_R$ (°C)	= Room temperature
$i$ (-)	= Induction ratio ( $i = V_x / V_{zu}$ )
NW (mm)	= Nominal size

## Floor displacement air diffuser PILBR

### PILBR order code

01	02	03	04	05
Type	Nominal size	Mounting	Dirt collection basket	Mounting ring
<b>Example</b>				
PILBR	-200	-BK	-SFK0	-ERO

All fields must be filled when ordering.

#### Sample

#### **PILBR-200-BK-SFK0-ERO**

Floor displacement air diffuser PILBR, round design | NW 200 | with fastening prongs | without dirt collection basket | without mounting ring

#### Order details

##### 01 - Type

PILBR = Floor displacement air diffuser PILBR, round design

##### 02 - Nominal size

200 = NW 200

250 = NW 250

##### 03 - Mounting

00 = without fastening

BK = with fastening prongs (standard)

VM = with concealed mounting (only available with plenum box) (at an extra charge)

##### 04 - Dirt collection basket

SFK0 = without dirt collection basket (standard)

SFK1 = with dirt collection basket (only possible without plenum box)

##### 05- Mounting ring

ERO = without mounting ring (standard)

ER1 = with mounting ring

## Floor displacement air diffuser PILBR

### Order code SK

01	02	03	04	05	06	07	08
Type	Model	Air diffuser	Type of air	Nominal size	Mounting	Material	Damper
<b>Example</b>							
SK	-Q	-53	-Z	-200	-00	-SV	-DK1

09	10	11	12	13	14	15
Rubber lip seal	Volumetric flow meter	ROB version	Insulation	Height of plenum box	Spigot diameter	Spigot position
-GD1	-VME0	-ROB0	-I0	-KHS	-SDS	-S1

All fields must be filled when ordering.

#### Sample

**SK-Q-53-Z-200-00-SV-DK1-GD1-VME0-ROB0-I0-KHS-SDS-S1**

Plenum box | Square design | For floor displacement air diffuser type PILBR-... | Supply air | NW 200 | without fastening | Made of galvanised sheet steel | With damper | With rubber lip seal | Without volumetric flow meter | Without ROB version | Without insulation | Standard height of plenum box | Standard spigot diameter | Lateral spigot on the plenum box

#### Order details

##### 01 - Type

SK = plenum box

##### 02 - Model

Q = Square model

##### 03 - Air diffuser (must be ordered separately)

53 = for floor displacement air diffuser PILBR-...

##### 04 - Type of air

Z = Supply air

##### 05 - Nominal size

200 = NW 200

250 = NW 250

##### 06 - Mounting

00 = without fastening (standard)

VM = Concealed mounting (at an extra charge)

##### 07 - Material

SV = Galvanised sheet steel (standard)

##### 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 version

ROB0 = Without ROB version (standard)

##### 12 - Insulation

I0 = without insulation (standard)

Ii = With internal insulation

Ia = with external insulation

##### 13 - Height of plenum box

KHS = Height of plenum box standard

xxx = Height of plenum box in mm, freely selectable (minimum height [KHS] = spigot diameter  $\varnothing D + 57$  mm, but at least 180 mm, always with 3 digits)

##### 14 - Spigot diameter

SDS = Standard spigot diameter

xxx = Spigot diameter in mm, freely selectable (always with 3 digits)

##### 15 - Spigot position

S1 = 1 lateral spigot on the box (standard)

## Floor displacement air diffuser PILBR

### Specification texts

Floor displacement air diffuser, in round design, for installation in double floors, consisting of a round faceplate made of stainless steel (V2A) without paint (-V2-0000), with radial perforation and back-fitted baffle plate. Baffle plate made of sheet steel painted to RAL 9005 (black) for PILBR-200 and of plastic material similar to RAL 9005 (black) for PILBR-250.

Product: SCHAKO **type PILBR**

- Nominal size:
  - NW 200 (-200)
  - NW 250 (-250)
- Mounting:
  - without fastening (-00)
  - with fastening prongs (-BK) (standard), made of galvanised sheet steel.
  - Concealed mounting (-VM) (at an extra charge), (fastened to the plenum box by means of the central screw M6x120 (according to DIN EN ISO 4762) (only available with plenum box -SK))

#### Accessories:

Dirt collection basket (-SFK0 / -SFK1)

- without dirt collection basket (-SFK0) (standard).
- with dirt collection basket (-SFK1), made of galvanised sheet steel (not for use with plenum box).

Mounting ring (-ER0 / -ER1) with flange

- without mounting ring (-ER0) (standard).
- with mounting ring (-ER1), made of stainless steel 1.4301 (V2A) in the colour sand silver.

Plenum box (-SK-...-53)

- square model (-Q), for supply air (-Z) (not for use with dirt collection basket).
  - Nominal size:
    - NW 200 (-200)
    - NW 250 (-250)
  - Mounting:
    - without fastening (-00) (standard)
    - Concealed mounting (-VM) (at an extra charge)
  - Material:
    - made of galvanised sheet steel (-SV) (standard)
  - Damper
    - Without damper (-DK0) (standard)
    - with damper (-DK1), made of galvanised sheet steel, damper fastening made of plastic material, adjustable, in the plenum box housing, for simple air volume regulation.

- Rubber lip seal:
  - without rubber lip seal (-GD0) (standard)
  - with rubber lip seal (-GD1), made of special rubber, at the connection spigot.
- Volumetric flow meter:
  - Without volumetric flow meter (-VME0) (standard)
- ROB version:
  - without ROB version (-ROB0) (standard)
- Insulation:
  - without insulation (-I0) (standard)
  - With box insulation inside (-Ii), thermal insulation at the inside of the plenum box.
  - with box insulation outside (-Ia), thermal insulation at the outside of the plenum box.
- Height of plenum box:
  - standard height of plenum box (-KHS)
  - Height of plenum box in mm, freely selectable (-xxx) (minimum height [KHS] = spigot diameter  $\varnothing D + 57$  mm, but at least 180 mm, always with 3 digits)
- Spigot diameter:
  - Standard spigot diameter (-SDS)
  - Spigot diameter in mm, freely selectable (-xxx, always with 3 digits).
- Spigot position:
  - 1 lateral spigot on the plenum box (-S1) (standard)