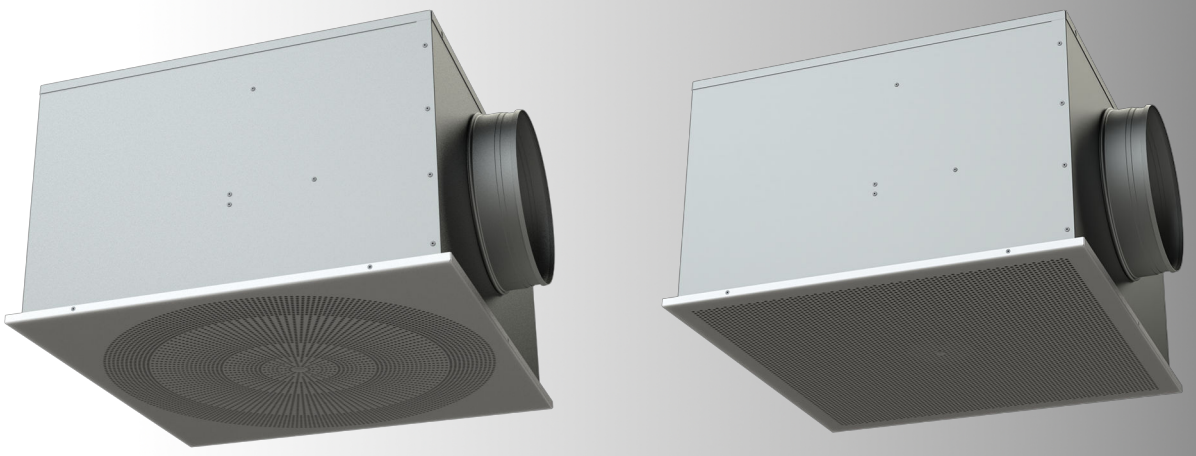


PIL

Ceiling impulse diffuser

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Table of Contents

Description 3
Construction 4
Model 4
Fastening 4
Accessories 5
Models and dimensions 6
Dimensions 6
Dimensions of accessories 8
Damper (-DK1/-DK2) 8
Rubber lip seal (-GD1) 8
Volumetric flow meter (-VME1) 8
Insulation 8
Reduction piece for connection ductwork (-RF) 8
Ball-impact guard (-BS) 9
Fastening methods 10
Screw mounting (-SM) (only PIL-...-Q-...) 10
Concealed mounting (-VM) 10
Technical data of PIL-N-... 11
Pressure loss and sound power level 11
Maximum end velocity of jet 13
critical throw 14
PIL-N-...-Z-... induction ratio 15
PIL-N-...-Z-... temperature ratio 15
Technical data of PIL-G-... 16
Pressure loss and sound power level 16
Maximum end velocity of jet 17
critical throw 18
PIL-G-...-Z-... induction ratio 19
PIL-G-...-Z-... temperature ratio 19
Legend 20
Order code PIL 21
Order code SK 22
Specification texts 24

DESCRIPTION

The ceiling impulse diffuser type PIL-... has been specially designed for use **in clean rooms, operating theatres and comfort rooms up to heights of 4 m**. It produces a **pulsating horizontal jet stream**. The supply air is discharged along the ceiling and, upon reaching the critical throw length, gradually sinks into the occupied zone at low velocity. The pulsating air pattern results in an **efficient reduction of the velocity and of the temperature difference in the air jet**. A displacement flow is created near the air diffuser so that particles in the room air are less likely to be deposited on the diffuser or on the ceiling around the diffuser. An integrated air guide funnel ensures that the supply air is discharged uniformly across the whole face of the diffuser. The diffuser can be used for cooling with a maximum temperature difference of -15K. Free hanging installation is possible with sizes 500 and 600/625 up to ΔT of -4K. Size 400 needs a size 500 faceplate for freely suspended installation. The air guide funnel of PIL-G has been modified to allow a throughput of much **higher air volumes** (about +50%), compared with PIL, at the **same noise level** and at **lower pressure losses** (about -30%). This means a **saving** on ceiling impulse diffusers in case of a similar supply air volume. Reducing the number of diffusers also reduces installation and adjustment costs.

The regular air diffuser cleaning required in clean rooms and operating theatres can be done very easily thanks to the smooth surface of the faceplate. The ceiling impulse diffuser can be used for supply and return air. The ceiling impulse diffuser is connected to the duct system with a plenum box type SK-Q-... for the square model or type SK-R-... for round models. For the supply air model, a perforated straightener is installed in the plenum box to create a certain pre-pressure and ensure that the diffuser is evenly pressurized with air. A damper, adjustable from underneath, used for air volume control, can be installed (even when already installed) for both supply and return air versions at an extra charge. For plenum boxes SK-R-..., the ceiling diffuser must be removed before the damper can be adjusted. Alternatively, a cable-operated adjustment can be ordered at an extra charge, which allows the damper to be adjusted on the room side even with mounted diffuser.

As standard, the ceiling air diffuser is attached using a central fixing screw to a crossbar located in the plenum box (concealed mounting VM). The funnel-shaped recess for concealed mounting on the crossbar makes ceiling diffuser installation much easier. A volumetric flow meter can be integrated in the connection spigot of the plenum box at an extra charge. The measurement error of the volumetric flow meter is ± 5 % at a spigot velocity of 2-5 m/s and a straight flow pattern of min. 1 x D. The measurement is carried out with the diffuser removed. By adjusting the damper, the required air volume of each diffuser can be set quickly and correctly.

With the ROB model of the SK-Q-... plenum box the diffuser plate, damper and volumetric flow meter can be removed to allow duct cleaning robots into the ductwork from room side.

Construction subject to change. No return possible.

The ceiling impulse diffuser is connected to ducts with a reducer type RF for square and round supply air models with screw mounting or for installation in grid ceilings.

TÜV SÜD has successfully inspected the ceiling impulse diffuser according to the following rules:

- **VDI 6022 Sheet 1: Hygienic requirements of ventilation and air-conditioning systems**
- **VDI 6022 Sheet 2: Hygienic requirements of ventilation and air-conditioning systems - Measurement methods and investigations during hygienic controls and hygienic inspections.**
- **DIN 1946 Sheet 2: Air-conditioning technology - Health requirements**

Minimum volumetric flow range V_{min} (ΔT= -12 K)

NW	V_{min}			
	PIL-N-...		PIL-G-...	
	(m³/h)	(l/s)	(m³/h)	(l/s)
310	80	22	-	-
400	100	28	150	42
500	150	42	200	56
600 / 625	300	83	350	97

Attention!

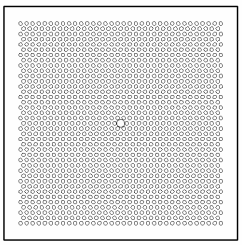
The correct functioning of the ceiling impulse diffuser type PIL-... is only guaranteed in connection with the plenum box type SK-... suitable for PIL- diffusers!

Comparison of PIL-G with PIL-N for NW 600/625

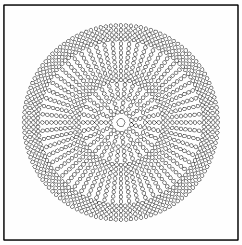
		PIL-N-...	PIL-G-...	Difference
L_{WA}	[dB(A)]	35	35	
Δp_t	(Pa)	26	18	-32%
V_{ZU}	(m³/h)	500	760	+52%

Square designs

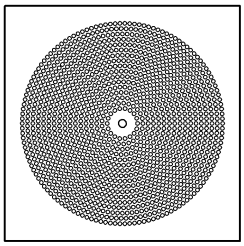
PIL-...-QV-...
V drill pattern



PIL-...-QS-...
S drill pattern

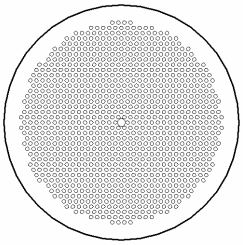


PIL-...-QK-...
K drill pattern

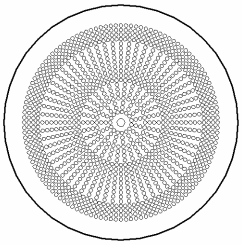


Round designs

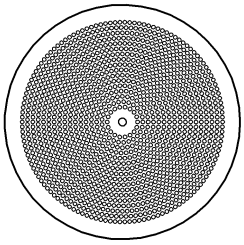
PIL-...-RV-...
V drill pattern



PIL-...-RS-...
S drill pattern



PIL-...-RK-...
K drill pattern



Note: Only the square model with V drill pattern is available in aluminium.

Construction

- Faceplate
  - perforated sheet steel painted RAL 9010 (white)
  - perforated natural colour anodised aluminium (available only for PIL-...-QV-... model)
- baffle plate
  - Sheet steel painted to RAL 9005 (black), only for supply air model
- Funnel
  - Sheet steel painted to RAL 9005 (black), only for supply air model

Model

PIL-N-...	-	for standard air volumes, supply air and return air
PIL-G-...	-	for large air volumes, only for supply air
PIL-...-QV-...	-	square front plate, offset perforations
PIL-...-QS-...	-	square design, star-shaped perforations (not possible in aluminium)
PIL-...-QK-...	-	square design, circular perforation (not possible in aluminium)
PIL-...-RV-...	-	round front plate, displaced perforations
PIL-...-RS-...	-	round design, star-shaped perforations (not possible in aluminium)
PIL-...-RK-...	-	round design, circular perforation (not possible in aluminium)
PIL-...-Z-...		Supply air
PIL-...-A-...		Return air (not for PIL-G)

Fastening

- Concealed mounting (-VM)
  - Traverse fixing, by means of M6 cylinder screw (to DIN EN ISO 4762) at the plenum box.
- Screw mounting (-SM)
  - only for models with ball-impact guard or in combination with a reduction piece
  - only possible with standard faceplate size
  - with raised countersunk head tapping screws (on site)

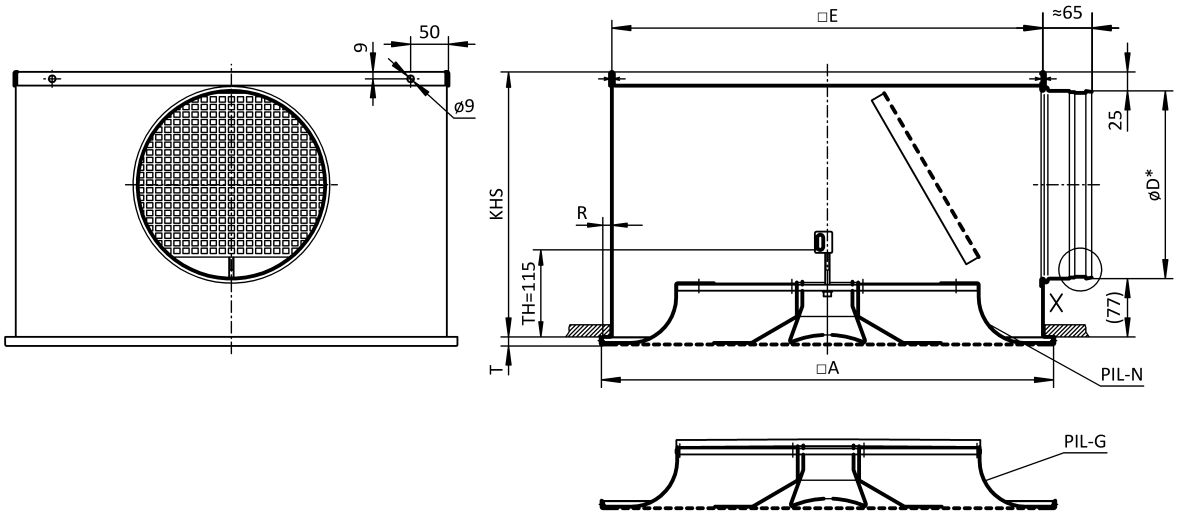
Accessories

- Plenum box (SK-Q-... and SK-R-...)
  - Galvanised sheet steel, with integrated perforated straightener (supply air model only) and fixing lugs.
- Damper (-DK1)
  - Damper fastening made of plastic
  - Galvanised sheet steel
- Damper (-DK2)
  - DK1 with cable-operated adjustment
- Rubber lip seal (-GD1)
- Volumetric flow meter (-VME1)
  - Aluminium connections
  - Measuring sensor made of plastic
  - holder made of galvanised sheet steel
- ROB version (-ROB1)
  - only possible for SK-Q-... plenum box
  - Removable diffuser plate, damper and volumetric flow meter
- Ball-impact guard (-BS)
  - Only possible for PIL-...-Q...-... with screw mounting and standard faceplate size.
  - Steel painted to RAL 9010 (white), other RAL colours possible at an extra charge.
- Internal insulation (-Ii)
  - thermal insulation at the inside of the plenum box
- External insulation (-Ia)
  - thermal insulation at the outside of the plenum box
- Reduction piece (-RF)
  - Galvanised sheet steel
  - for connection to ducts without plenum box
  - Only for supply air models with screw mounting or for installation in grid ceilings (not possible for PIL-G-...)

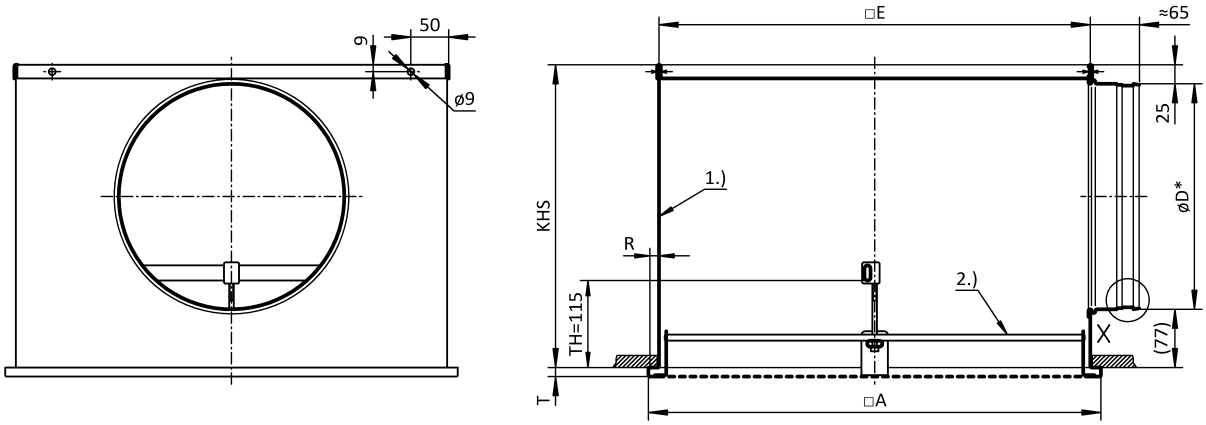
MODELS AND DIMENSIONS

Dimensions

PIL-...-Q...-Z-... with SK-Q-...-Z-... (for supply air)



PIL-N-Q...-A-... with SK-Q-...-A-... (for return air)

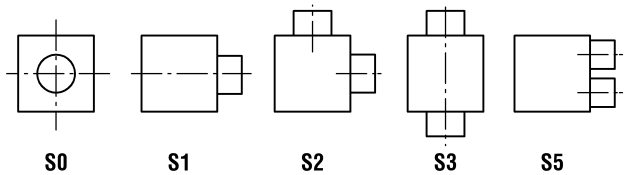


* = external

Available sizes

NW	□A	□E	T	R	PIL-N-Q...-Z		PIL-G-Q...-Z		PIL-N-Q...-A		$øD_{max}$ for ...-S5
					KHS	øD	KHS	øD	KHS	øD	
310	308	290	12	8	260	158	-	-	300	198	98
400	398	370		12	260	158	300	198	300	198	138
500	498	470		12	300	198	350	248	350	248	198
600	598	570		12	350	248	415	313	400	298	248
625	623	570		24	350	248	415	313	400	298	248

Spigot position



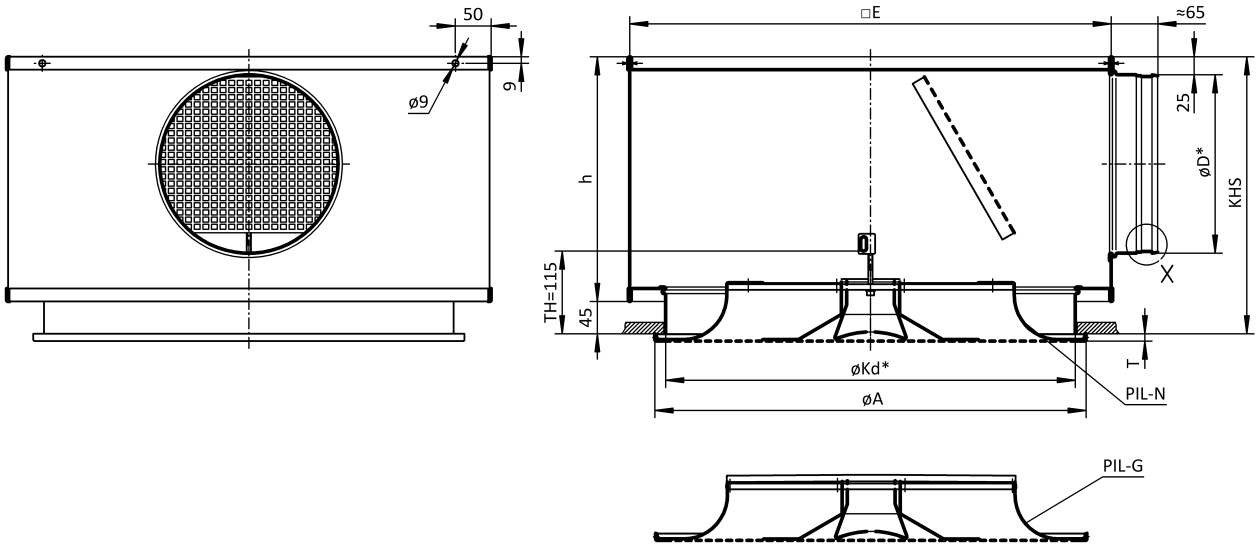
KHS = standard height of box

Special height of plenum box = øD + 102mm, but at least 200mm

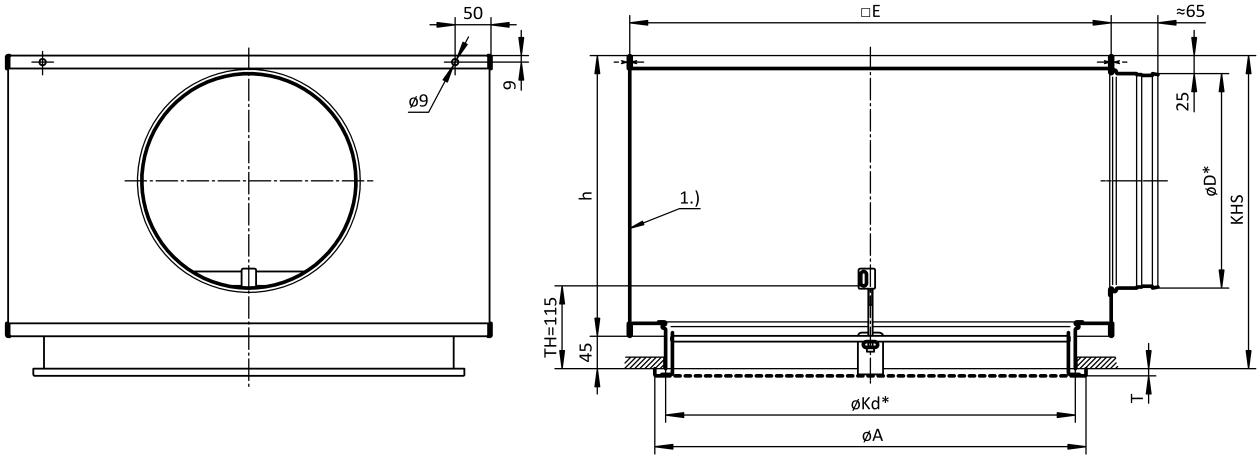
1.) Inside painted to RAL 9005 (black)

2.) turned 45°

PIL-...-R...-Z-... with SK-R-...-Z-... (for supply air)



PIL-N-R...-A-... with SK-R-...-A-... (for return air)

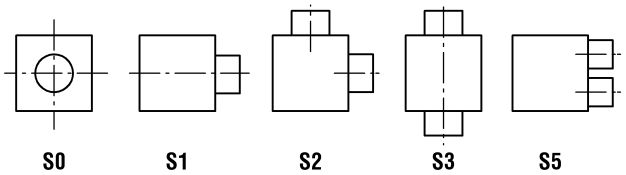


* = external

Available sizes

NW	øA	øKd	□E	T	PIL-N-R...-Z			PIL-G-R...-Z			PIL-N-R...-A			$øD_{max}$ for ...-S5
					KHS	øD	h	KHS	øD	h	KHS	øD	h	
310	310	298	405	10	295	158	250	-	-	-	335	198	290	158
400	400	370	445		295	158	250	335	198	290	335	198	290	178
500	500	470	545		335	198	290	385	248	340	385	248	340	198
600	600	570	670		385	248	340	450	313	405	435	298	390	298
625	625	570	670		385	248	340	450	313	405	435	298	390	298

Spigot position



KHS = standard height of box

Special height of plenum box = øD + 137 mm, but at least 235 mm

1.) Inside painted to RAL 9005 (black)

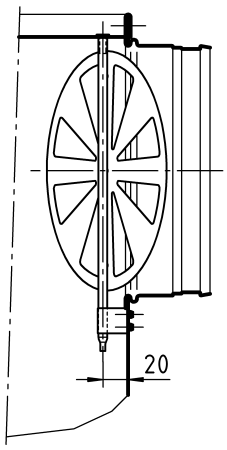
Construction subject to change. No return possible.

DIMENSIONS OF ACCESSORIES

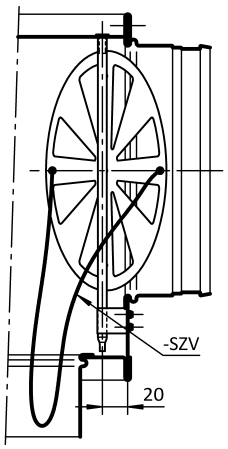
Damper (-DK1/-DK2)

(at an extra charge)

Damper (-DK1)



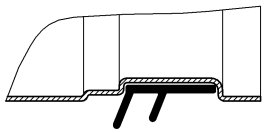
Damper (-DK2), with cable adjustment



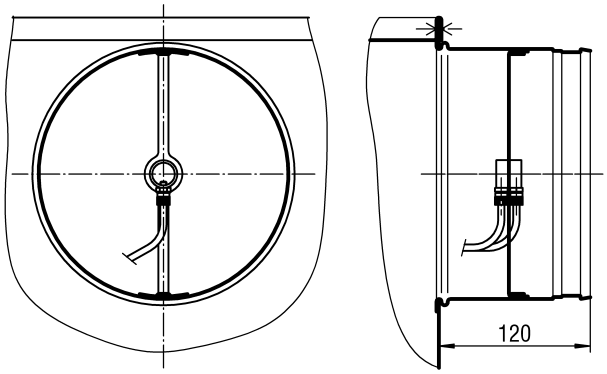
SZV = cable-operated adjustment

Rubber lip seal (-GD1)

Detail X



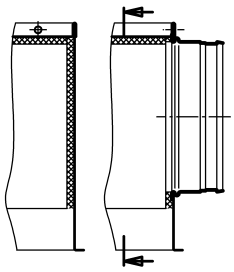
Volumetric flow meter (-VME1)



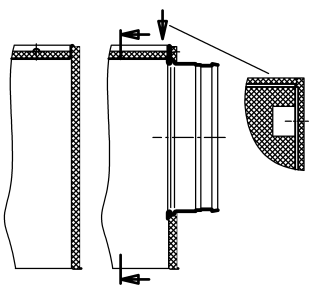
Insulation

Insulation for SK-Q-...

internal (-Ii)

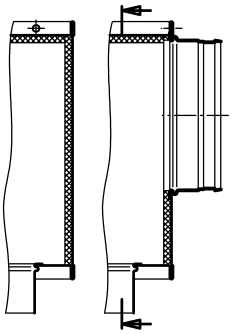


external (-Ia)

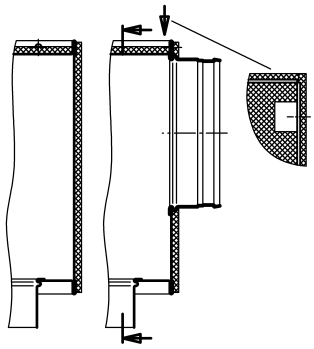


Insulation for SK-R-...

internal (-Ii)



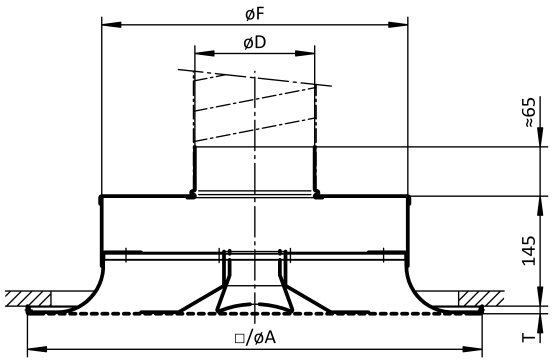
external (-Ia)



Reduction piece for connection ductwork (-RF)

(not possible for PIL-G-...)

For supply air model with screwed mounting only or for installation in grid ceilings



The technical data and the function are the same as those of the supply air models with plenum box and damper (100% open).

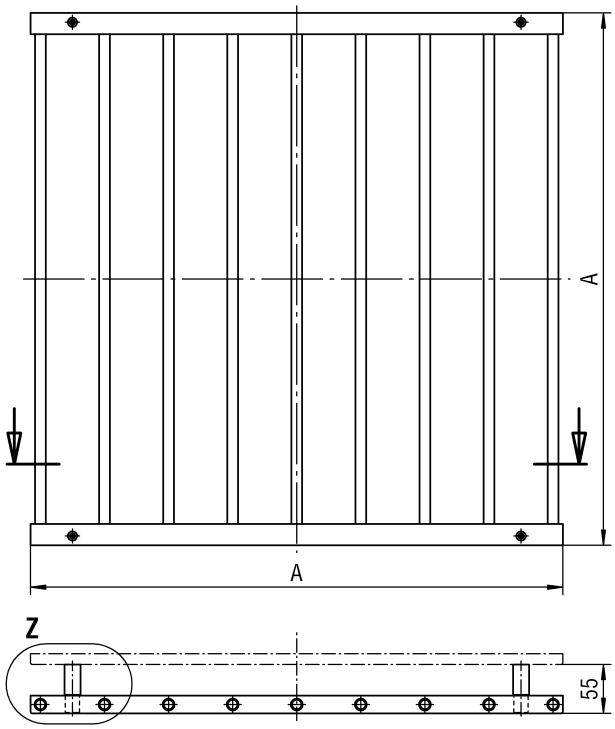
Available sizes

NW	□A	øA	øF	T		øD
	PIL-N-Q...-...	PIL-N-R...-...		PIL-N-Q...-...	PIL-N-R...-...	
310	308	310	126	12	10	98
400	398	400	254			158
500	498	500	319			198
600	598	600	404			248
625	623	625	404			248

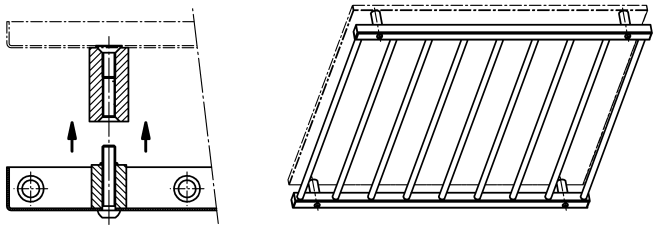
Construction subject to change. No return possible.

Ball-impact guard (-BS)

(only possible for PIL-...-Q...-...-000-... with screw mounting)



Detail Z



1.) ULS standard DIN EN ISO 7380 M6x30

Available sizes

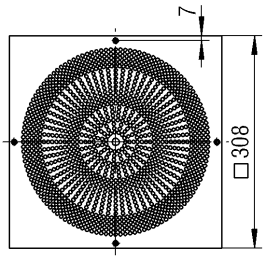
NW	□A
310	308
400	398
500	498
600	598
625	623

FASTENING METHODS

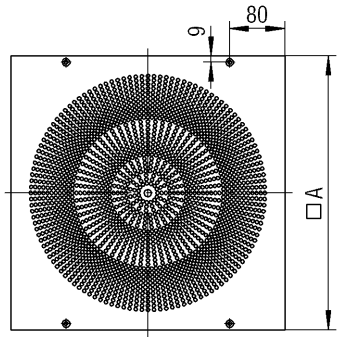
Screw mounting (-SM) (only PIL-...-Q-...)

- only for models with ball-impact guard or in combination with a reduction piece (-RF)
- 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

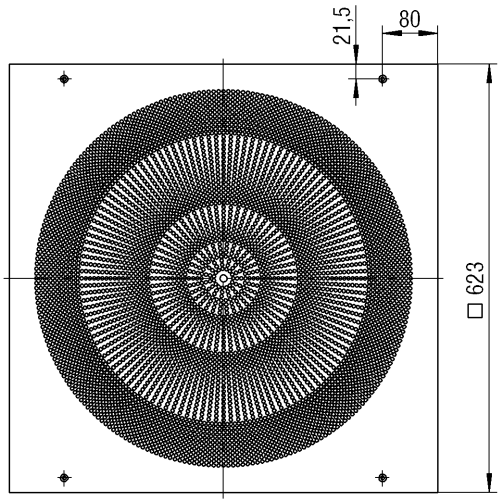
NW310



NW400-600



NW625



Concealed mounting (-VM)

In concealed mounting, the ceiling impulse diffuser type PIL-... is fastened to the plenum box using a crossbar and an M6 cylinder head screw (to DIN EN ISO 4762).

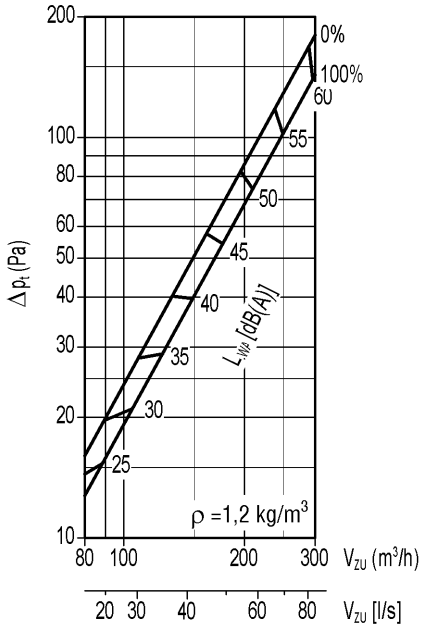
Attention: The max. torque of the fastening screw is 0.4 Nm

TECHNICAL DATA OF PIL-N-...

Pressure loss and sound power level

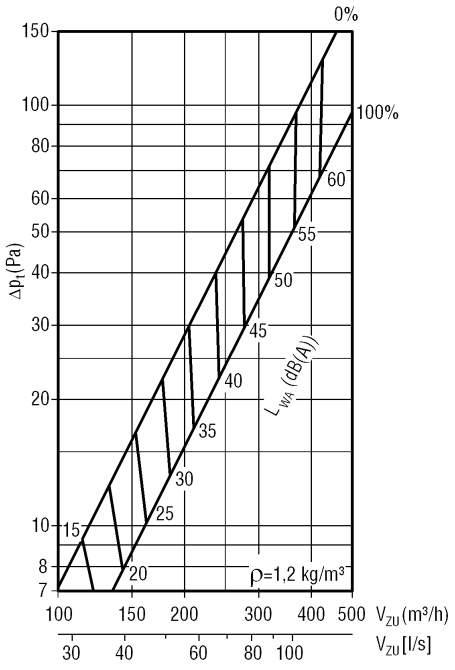
PIL-N-...-Z-...-310-...

Supply air model square / round



PIL-N-...-Z-...-400-...

Supply air model square / round



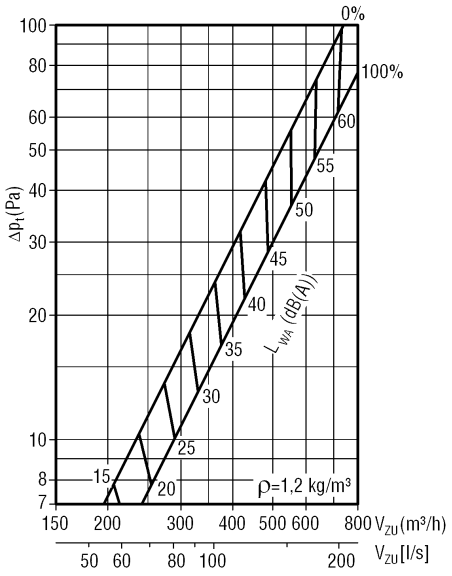
(Supply air) with plenum box, pole brace and damper

Damper position:

OPEN = 100%
CLOSED = 0%

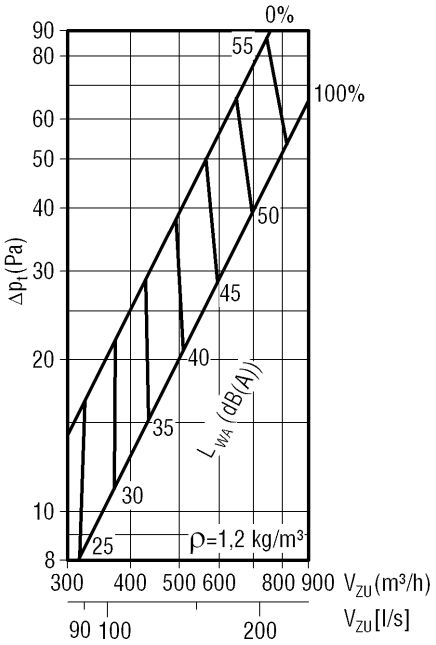
PIL-N-...-Z-...-500-...

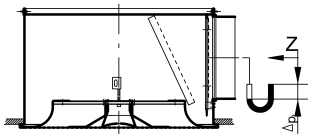
Supply air model square / round



PIL-N-...-Z-...-600-...

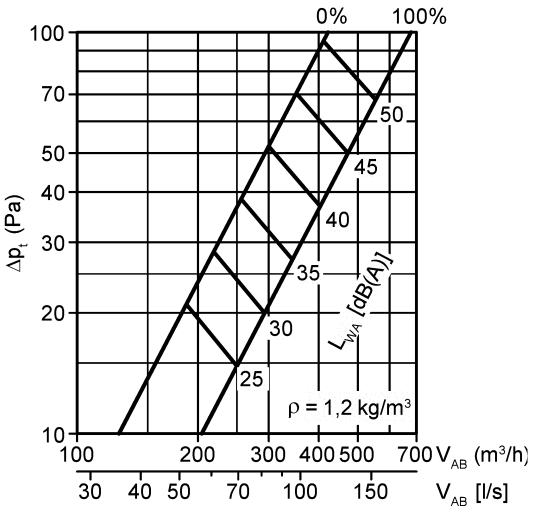
Supply air model square / round





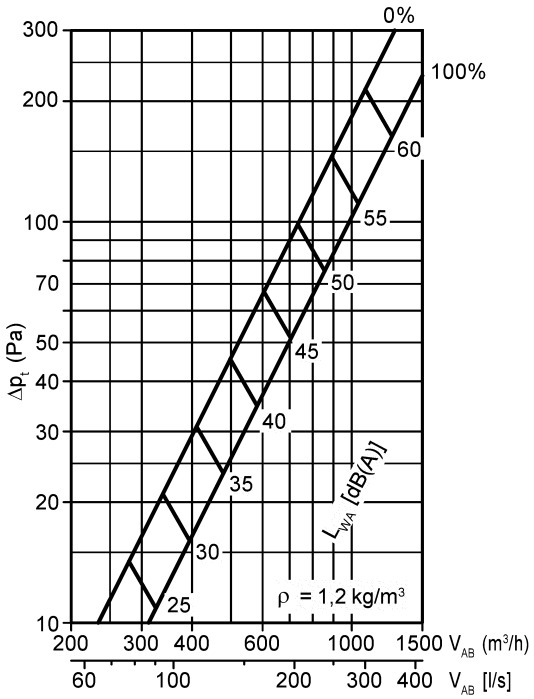
PIL-N-...-A-...-310-...

Return air model square / round



PIL-N-...-A-...-400-...

Return air model square / round



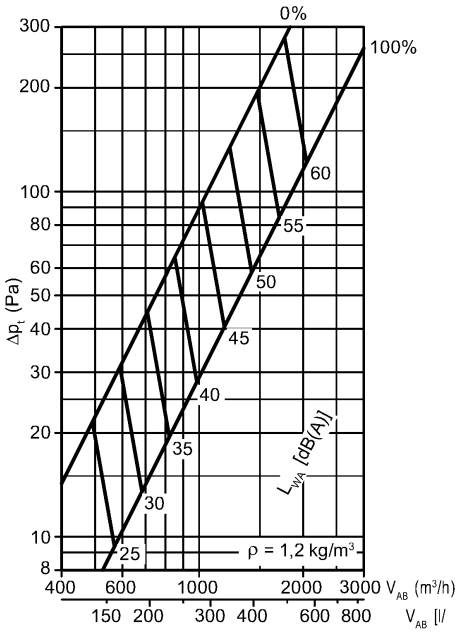
(return air) with plenum box, traverse and damper

Damper position:

OPEN = 100%
CLOSED = 0%

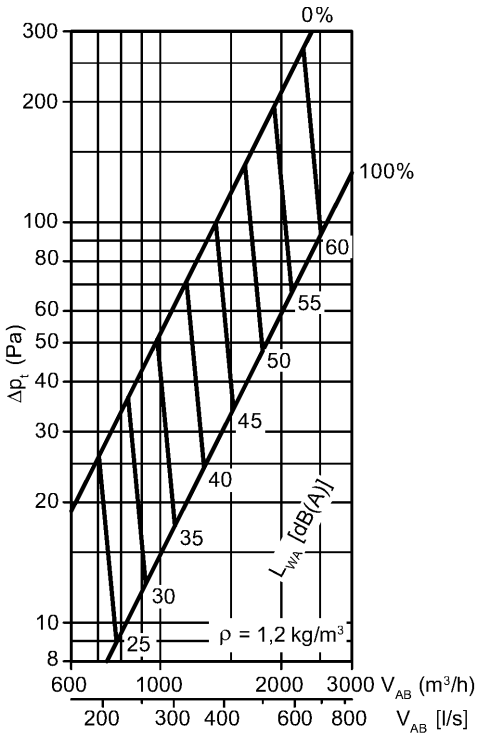
PIL-N-...-A-...-500-...

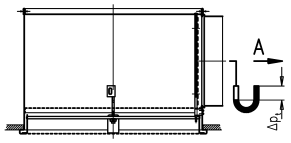
Return air model square / round



PIL-N-...-A-...-600-...

Return air model square / round

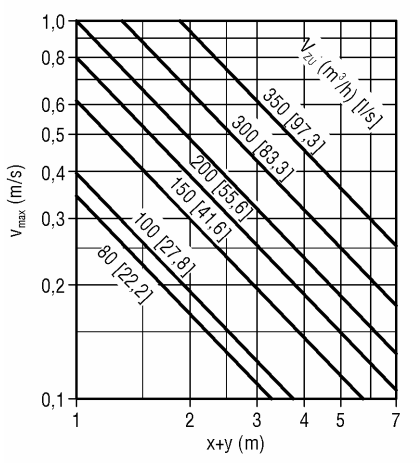




Maximum end velocity of jet

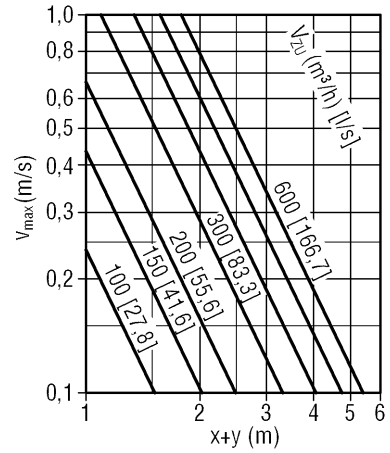
PIL-N-...-Z-310-...

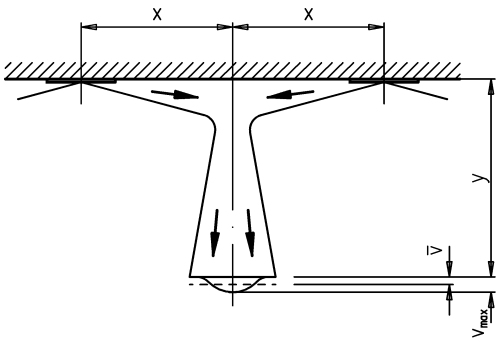
Supply air model square / round



PIL-N-...-Z-400-...

Supply air model square / round

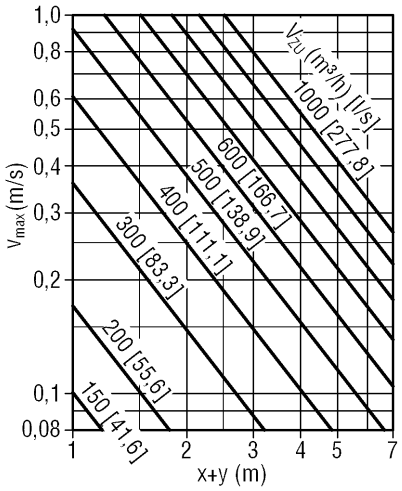




isothermal, with coanda effect / with plenum box

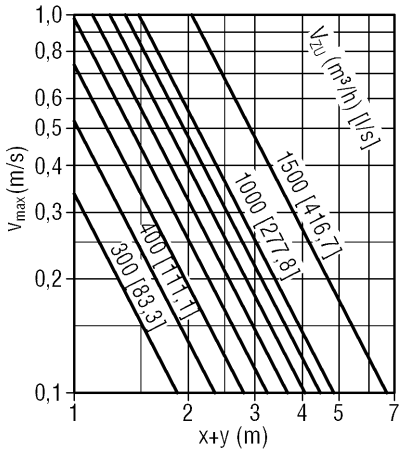
PIL-N-...-Z-500-...

Supply air model square / round



PIL-N-...-Z-600/625-...

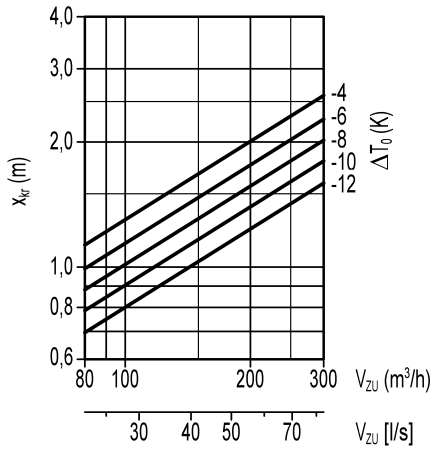
Supply air model square / round



critical throw

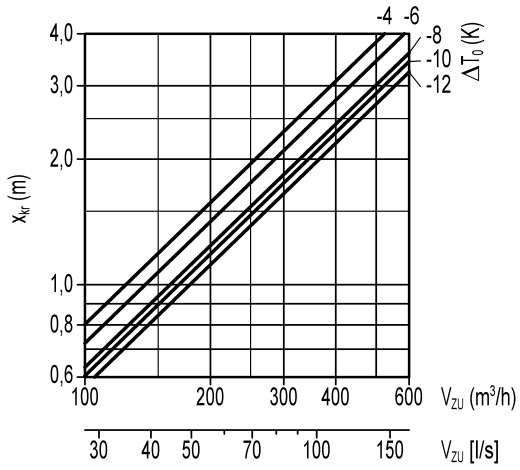
PIL-N-...-Z-310-...

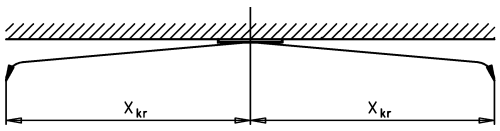
Supply air model square / round



PIL-N-...-Z-400-...

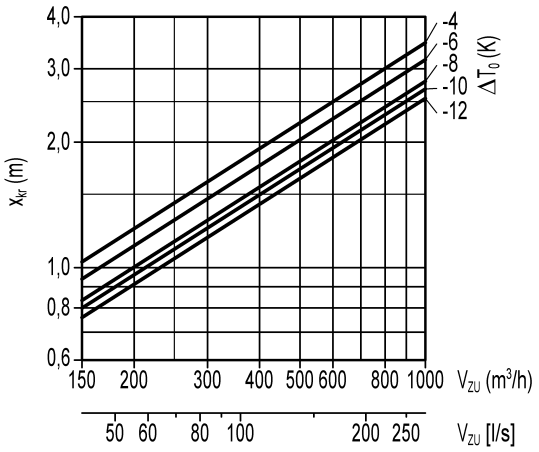
Supply air model square / round





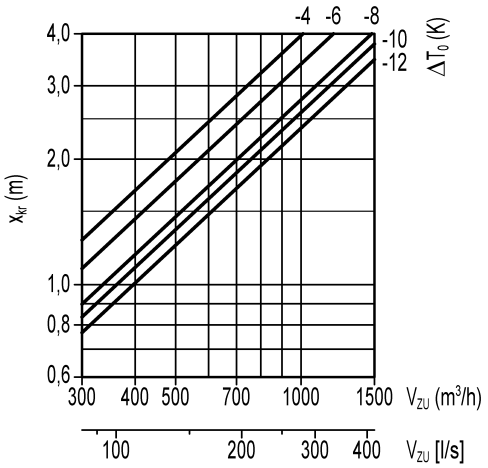
PIL-N-...-Z-500-...

Supply air model square / round

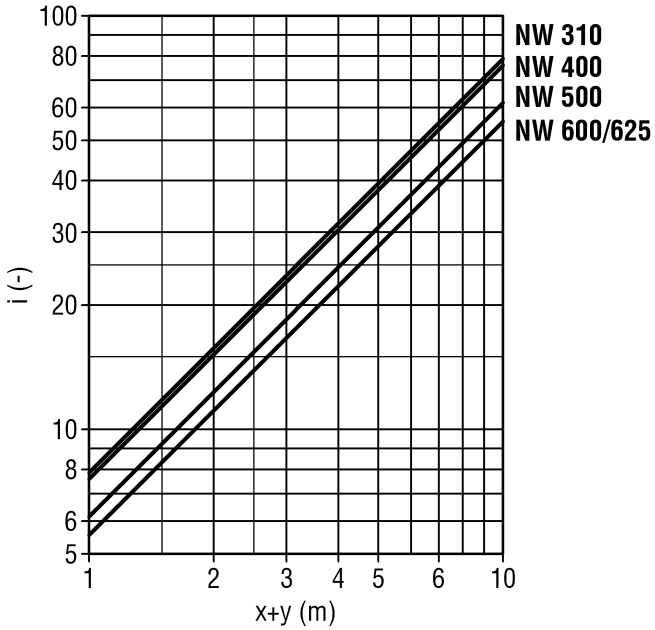


PIL-N-...-Z-600/625-...

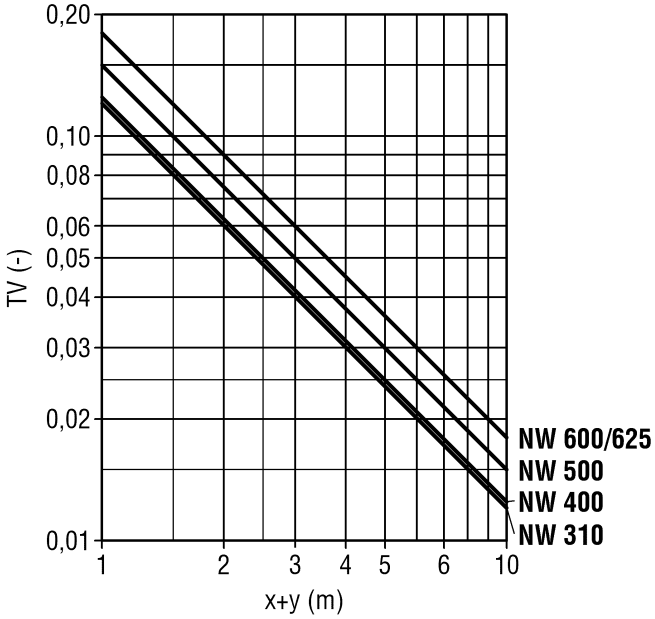
Supply air model square / round



PIL-N-...-Z-... induction ratio



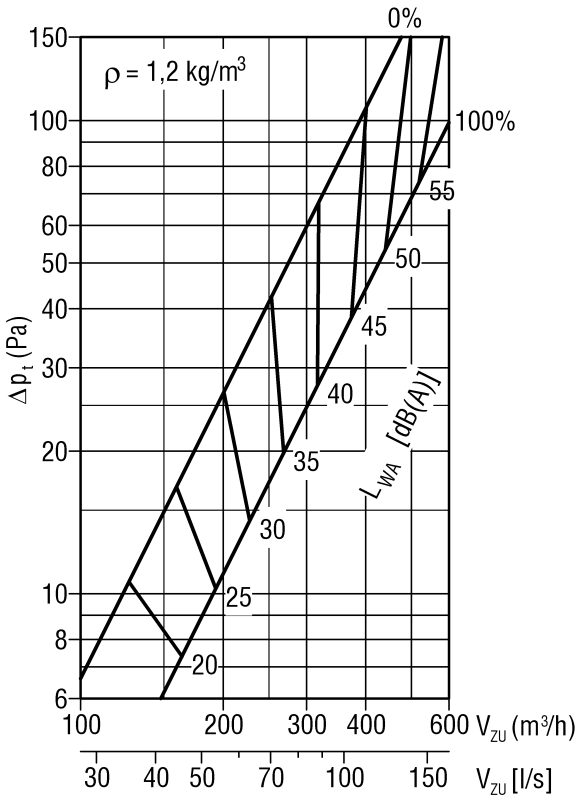
PIL-N-...-Z-... temperature ratio



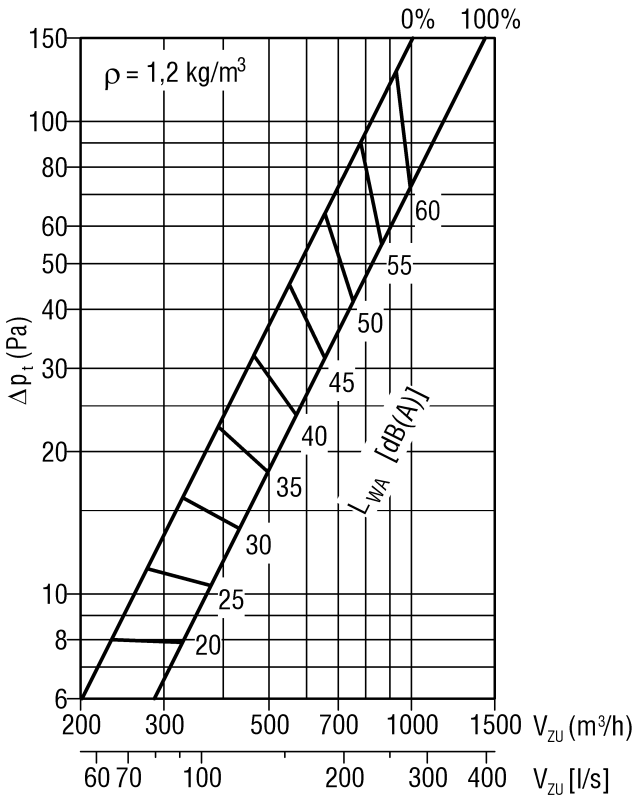
TECHNICAL DATA OF PIL-G-...

Pressure loss and sound power level

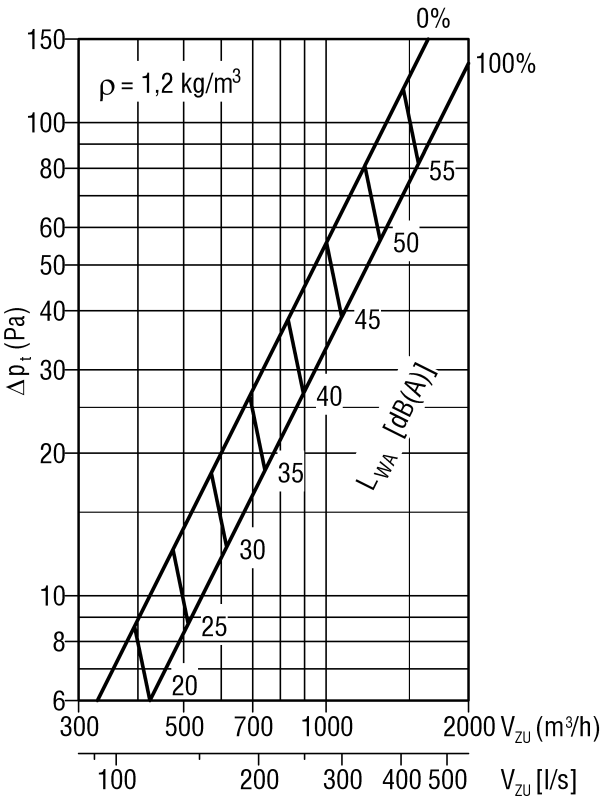
PIL-G-...-Z-400-...



PIL-G-...-Z-500-...



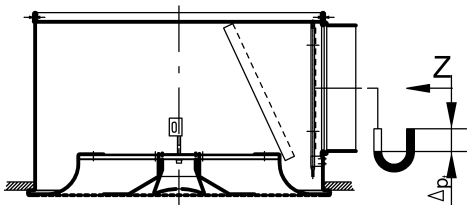
PIL-G-...-Z-600-...



(Supply air) with plenum box, pole brace and damper

Damper position:

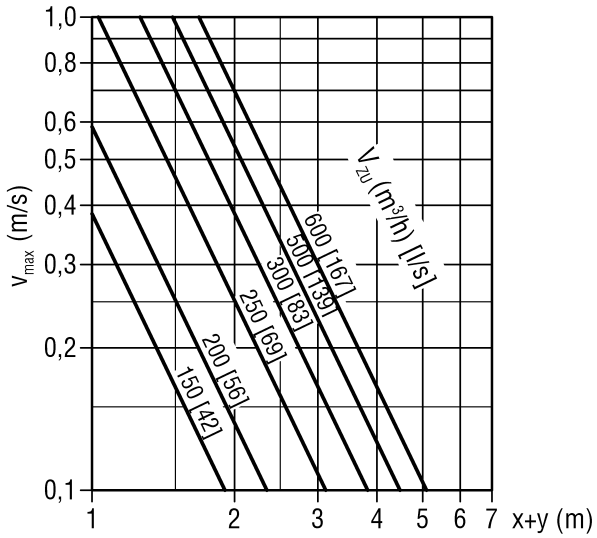
OPEN	=	100%
CLOSED	=	0%



Note: The sound and pressure loss data always apply to the standard plenum boxes.

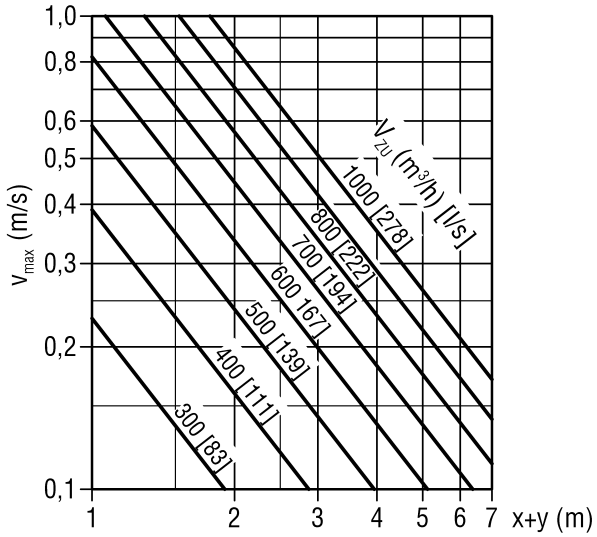
Maximum end velocity of jet

PIL-G-...-Z-400-...

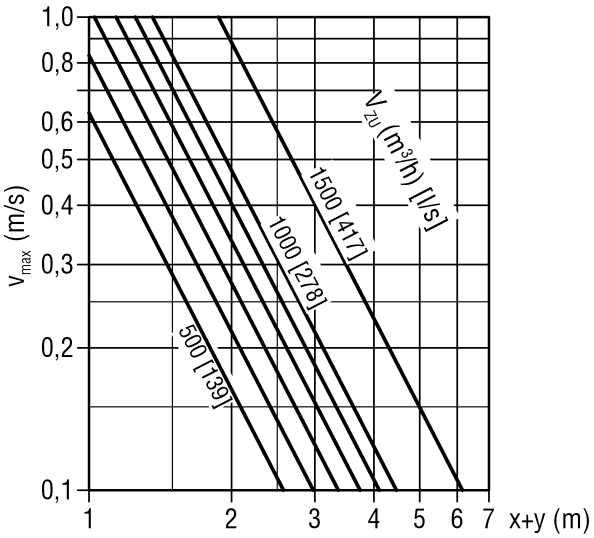


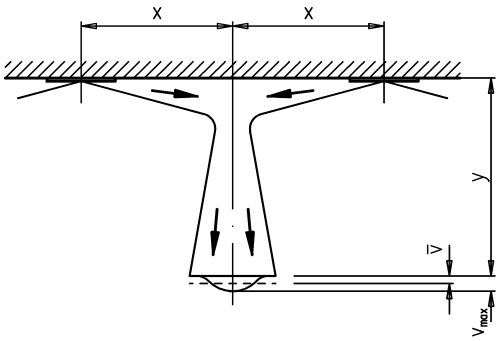
isothermal, with coanda effect / with plenum box

PIL-G-...-Z-500-...



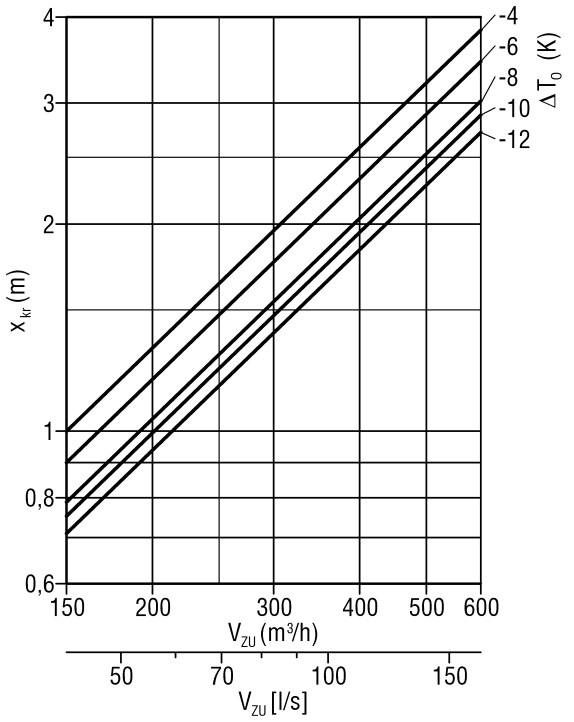
PIL-G-...-Z-600-...



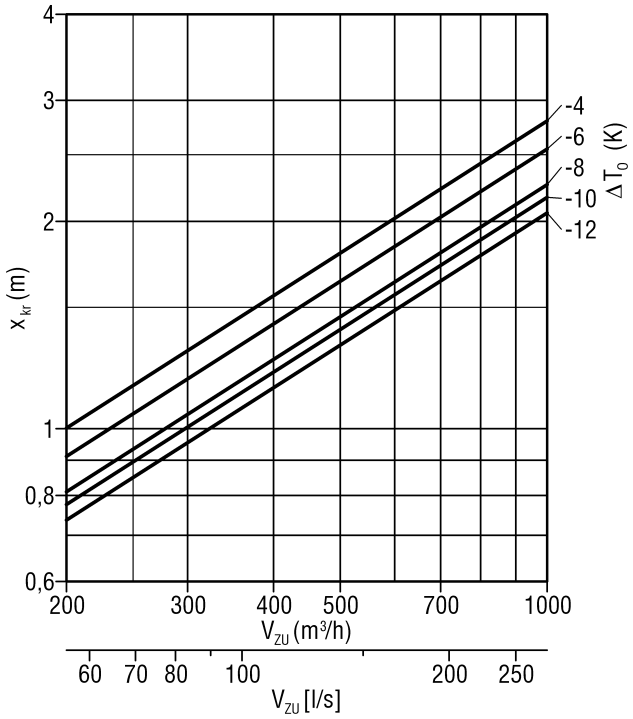


critical throw

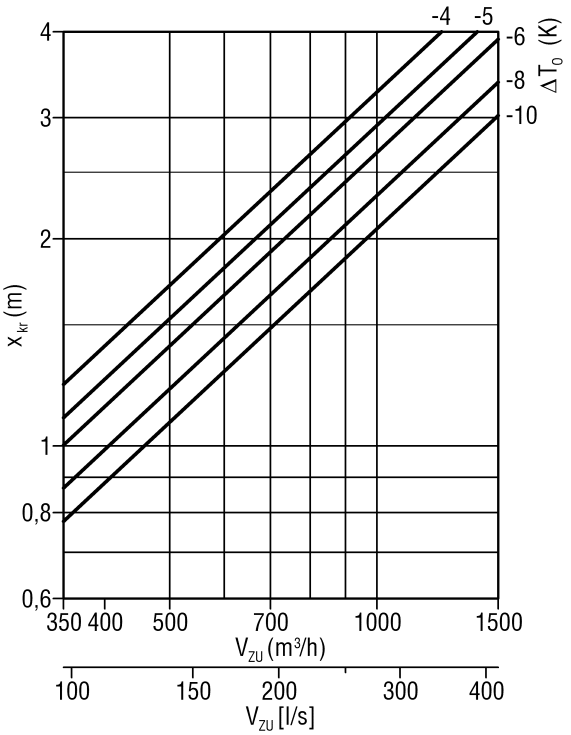
PIL-G-...-Z-400-...

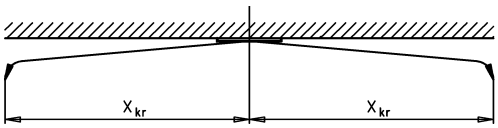


PIL-G-...-Z-500-...

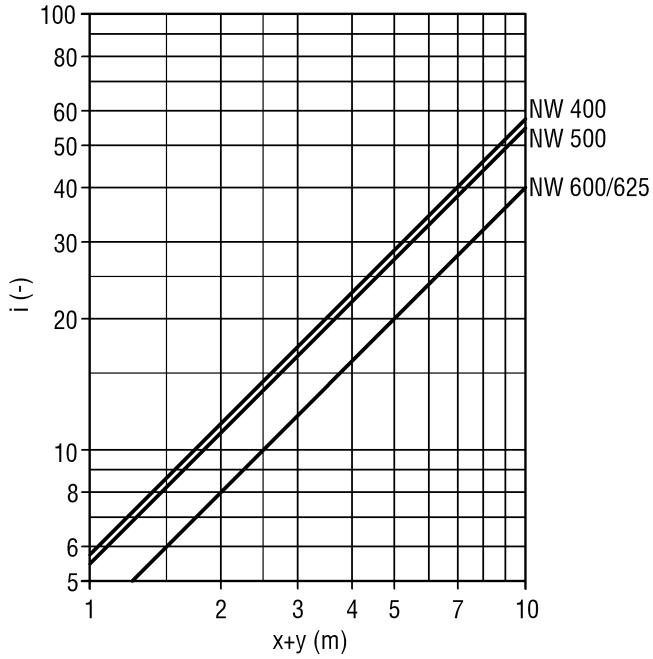


PIL-G-...-Z-600-...

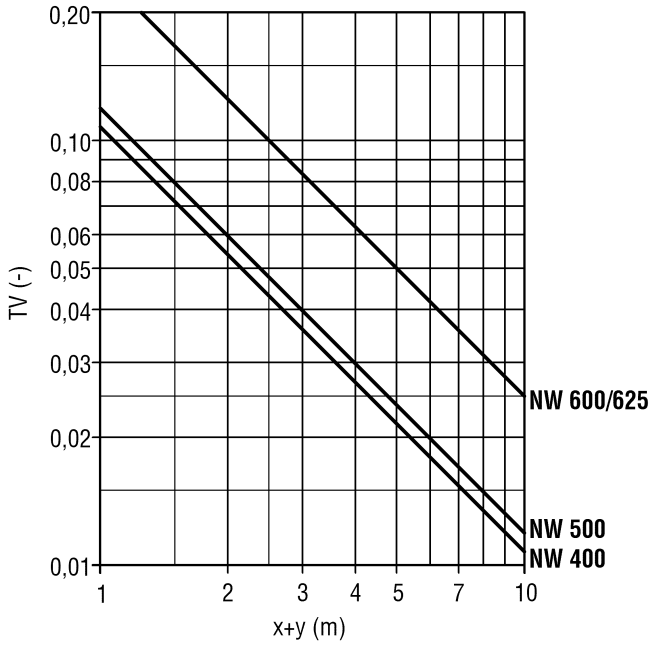




PIL-G-...-Z-... induction ratio



PIL-G-...-Z-... temperature ratio



LEGEND

V_{ZU}	(m³/h) [l/s]	=	Supply air volume
V_{AB}	(m³/h) [l/s]	=	Return air volume
V_X	(m³/h) [l/s]	=	Total air jet volume at point x
Δp_t	(Pa)	=	Pressure loss
L_{WA}	[dB(A)]	=	A-weighted sound power level
ρ	(kg/m³)	=	Density
A		=	Return air
Z		=	Supply air
x	(m)	=	horizontal jet path
y	(m)	=	vertical throw
x+y	(m)	=	Horizontal + vertical throw
v_{max}	(m/s)	=	Maximum end velocity of jet
v_{medium}	(m)	=	Average end velocity of jet ($v_{medium} = v_{max}$ x 0.5)
x_{kr}	(m)	=	critical throw
ΔT_O	(K)	=	Temperature difference between supply air temperature and room temperature ($\Delta T_O = t_{ZU} - t_R$)
ΔT_X	(K)	=	Temperature difference at point x
t_{ZU}	(°C)	=	Supply air temperature
t_R	(°C)	=	Room temperature
TV	(-)	=	Temperature ratio ($TV = \Delta T_X / \Delta T_O$)
i	(-)	=	Induction ratio ($i = V_X / V_{ZU}$)
NW	(mm)	=	Nominal width = perforation

ORDER CODE PIL

01	02	03	04	05	06	07	08	09	10	11
Type	Air volume	Model	Air throw	Faceplate size	Material	Paint	Perforation	Mounting	Ball-impact guard	Reduction piece
Example										
PIL	-N	-QV	-Z	-500	-SB	-9010	-500	-VM	-B0	-R0

Sample

PIL-N-QV-Z-500-SB-9010-500-VM-B0-R0

Ceiling impulse diffuser type PIL | for standard air volume I square faceplate, drill pattern V (standard) I supply air | NW 500 | faceplate made of sheet steel | RAL 9010 white | NW 500 | concealed mounting | without ball-impact guard | without reduction piece

Order details

01 - Type

PIL = Ceiling impulse diffuser

02 – Air volume

N = Normal
G = Large

03 - Model

QV = Square faceplate, drill pattern V (standard)
QS = Square faceplate, drill pattern S
QK = Square faceplate, drill pattern K
RV = round faceplate, drill pattern V
RS = round faceplate, drill pattern V S
RK = round faceplate, drill pattern K

Only -QV model is available in aluminium.

04 - Air throw

Z = Supply air
A = Return air (not possible for PIL-G-...)

05 - Faceplate size

310 = NW 310 (not possible for PIL-G-...)
400 = NW 400
500 = NW 500
600 = NW 600
625 = NW 625

Note: If the faceplate is larger than the perforation, only concealed mounting is possible (exception PIL-...-625-...-600-...). The faceplate can never be smaller than the perforation!

06 - Material

SB = Sheet steel (standard)
AL = Aluminium (natural colour anodised) (for PIL-...-QV-... only)

07 – Paint

9010 = RAL colour white (standard)
xxxx = RAL colour can be freely selected
ELOX = natural colour anodised (only possible for aluminium)

The RAL colours are also possible for aluminium.

08 - Perforation

310 = NW 310 (not possible for PIL-G-...) (standard for faceplate size NW310)
400 = NW 400 (standard for faceplate size NW400)
500 = NW 500 (standard for faceplate size NW500)
600 = NW 600 (standard for faceplate size NW600 / NW625)

09 - Mounting

VM = Concealed mounting (standard)
SM = Screw mounting (only in combination with ball-impact guard or reduction piece, only possible with standard faceplate size)

10 – Ball-impact guard

B0 = without ball-impact guard (standard)
BS = with ball-impact guard, painted to the same colour as the faceplate (only for square model and standard faceplate size)

11 - Reduction piece

R0 = without reduction piece (standard)
RF = with reduction piece for connection to ductwork (for supply air model with SM mounting only or for installation in grid ceilings, not possible for PIL-G-...)

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	-03	-Z	-500	-VM	-SV

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

Sample

SK-Q-03-Z-500-VM-SV-DK1-GD1-VME1-ROB0-I0-KHS-SDS-S1

Plenum box, square design I for square air diffusers I air diffuser PIL I supply air I NW 500 I with concealed 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
R = for round air diffusers with round recess for diffuser

03 - Air diffuser (must be ordered separately)

02 = suitable for PIL-N-... (for standard air volumes)
03 = suitable for PIL-G-... (for large air volumes)

04 - Type of air

Z = Supply air
A = Return air (not possible for PIL-G-...)

05 – Nominal size

310 = NW 310 (not possible for PIL-G-...)
400 = NW 400
500 = NW 500
600 = NW 600
625 = NW 625

Note: nominal width = perforation of the PIL

06 - Fastening

VM = Concealed mounting (standard)
SM = Screw mounting (only for the model with ball-impact guard)

07 - Material

SV = galvanised sheet steel (standard)

08 - Damper

DK0 = Without damper (standard)
DK1 = With damper
DK2 = with damper + cable

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)
VME1 = With volumetric flow meter

11 – ROB version

ROB0 = Without ROB version (standard)
ROB1 = With ROB version (not possible for SK-R-...)

12 - Insulation

I0 = Without insulation (standard)
Ii = With box insulation inside
Ia = With box insulation outside

13 – Height of box

KHS = Height of plenum box standard
xxx = Height of plenum box in mm ($height_{min}$= spigot diameter + 102 mm for PIL-...-Q...-.../ spigot diameter + 137 mm for PIL-...-R...-..., but at least 235 mm)

14 – Spigot diameter

SDS = Spigot diameter standard
xxx = Spigot diameter in mm

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

SPECIFICATION TEXTS

Square ceiling impulse diffuser for installation in supply and exhaust air systems in clean rooms, operating theatres and comfort rooms up to a height of 4 m.

Consisting of an easy to clean square perforated sheet steel front plate displaced with punch outs, painted RAL 9010 (white) or anodised aluminium in natural colour (natural colour anodised aluminium not available in the S model). The supply air model is additionally provided with a baffle plate and a sheet steel air guide funnel painted to RAL 9005 (black). It is fastened by concealed mounting (-VM) using a central fastening screw. TÜV inspected according to **VDI 6022 Sheets 1+2**, as well as **DIN 1946 Sheet 2**.

Product: SCHAKO **type PIL-N-QV-Z-...**

- for large air volumes: product: SCHAKO **type PIL-G-QV-Z-...**
- star-shaped perforations (not possible in aluminium)
  Product: SCHAKO **type PIL-N-QS-Z-...**
  - for large air volumes
    Product: SCHAKO **type PIL-G-QS-Z-...**
- Circular perforation (not possible in aluminium)
  Product: SCHAKO **type PIL-N-QK-Z-...**
  - for large air volumes
    Product: SCHAKO **type PIL-G-QK-Z-...**
- Return air version without baffle plate and without air guide funnel. Offset perforations
  Product: SCHAKO **type PIL-N-QV-A-...**
- Return air version without baffle plate and without air guide funnel. Star-shaped perforations (not possible in aluminium)
  Product: SCHAKO **type PIL-N-QS-A-...**
- Return air version without baffle plate and without air guide funnel. Circular perforation (not possible in aluminium)
  Product: SCHAKO **type PIL-N-QK-A-...**
- With screw mounting (-SM), only for models with ball-impact guard (-BS) or in combination with a reduction piece (-RF), only with standard faceplate size (-000)

Round ceiling impulse diffuser for installation in supply and exhaust air systems in clean rooms, operating theatres and comfort rooms up to a height of 4 m.

Consisting of a round front plate easy to clean, with offset perforation, made of perforated sheet steel painted to RAL 9010 (white). The supply air model is additionally provided with a baffle plate and a sheet steel air guide funnel painted to RAL 9005 (black). It is fastened using concealed mounting (-VM) by means of a central fastening screw. TÜV inspected according to **VDI 6022 Sheets 1+2**, as well as **DIN 1946 Sheet 2**.

Product: SCHAKO **type PIL-N-R...-Z-...**

- for large air volumes: product: SCHAKO **type PIL-G-QV-Z-...**
- Star-shaped perforations. (not possible in aluminium)
  Product: SCHAKO **type PIL-N-RS-Z-...**
  - for large air volumes
    Product: SCHAKO **type PIL-G-RS-Z-...**
- Circular perforation. (not possible in aluminium)
  Product: SCHAKO **type PIL-N-RK-Z-...**
  - for large air volumes
    Product: SCHAKO **type PIL-G-RK-Z-...**
- Return air version without baffle plate and without air guide funnel. Offset perforations.
  Product: SCHAKO **type PIL-N-RV-A-...**
- Return air version without baffle plate and without air guide funnel. Star-shaped perforations. (not possible in aluminium)
  Product: SCHAKO **type PIL-N-RS-A-...**
- Return air version without baffle plate and without air guide funnel. Circular perforation. (not possible in aluminium)
  Product: SCHAKO **type PIL-N-RK-A-...**

Accessories:

- Plenum box (SK-Q-... and SK-R-...) 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 dismounting the faceplate.
  - adjustable from below with cable (-DK2)
  - with volumetric flow meter (-VME1).
  - with ROB model (-ROB1), removable diffuser plate, damper and volumetric flow meter (only SK-Q-...)
  - with rubber lip seal (-GD1) on the connection spigot.
  - with thermal insulation
    - internal (-Ii)
    - external (-Ia)
  - Height of plenum box can be freely selected, xxx in mm, minimum height = spigot diameter + 102 mm with SK-Q-... and spigot diameter +137 mm with SK-R-..., but at least 235 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
- Reduction piece made of galvanised sheet steel in the connection to ductwork (-RF), only for supply air model without plenum box