



## LOD

### Air diffuser for open ceiling systems

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#### SPECIAL FEATURES

- Suitable for supply and return air.
- Mounting to the raw ceiling.
- Cooling and heating mode for direct connection to the duct system
- Supply air  $\Delta T$  to  $-8$  K.

## OVERVIEW OF PRODUCT VERSIONS

### For return air:

Only available for NW 100.

#### LOD-...-A-...-Q

rectangular connection (standard)



#### LOD-...-A-...-R

round connection



### For supply air:

#### LOD-...-Z-...-Q

rectangular connection (standard)



#### LOD-...-Z-...-R

round connection (NW 150 with 5 air diffusers not available)



## FUNCTION AND USE

The SCHAKO air diffuser LOD for open ceiling systems has been developed for use in supply and return air systems.

The air diffuser is suitable for direct connection to the duct system and is suitable for VAV systems with variable volumetric flows of 40-100%.

The air diffuser is placed directly above the open ceiling system under the raw ceiling. In cooling mode as well as in heating mode, a very high induction is achieved after blowing out the supply air, which effectively reduces the air velocity and temperature above the open ceiling system. The supply air above the open ceiling system flows out evenly and sinks into the occupied area at a very low velocity.

The air diffuser LOD for open ceiling systems consists of several individual supply air or return air diffusers for the optimum discharge of supply air in cooling and heating mode, as well as a uniform suction of return air from the room.

According to VDI 6022, the plenum box can be accessed via an inspection opening on the box bottom side.

## PERFORMANCE DATA

### LOD-100/150-Z-3-Q-... (with 3 air diffusers)

L <sub>WA</sub> [dB(A)]	V (m <sup>3</sup> /h) [l/s]		Δp <sub>t</sub> (Pa)	
	NW 100	NW 150	NW 100	NW 150
30	200 [55.6]	440 [122.2]	14	12
35	230 [63.9]	510 [141.7]	19	16
40	270 [75.0]	585 [162.5]	26	21
45	310 [86.1]	670 [186.1]	35	28

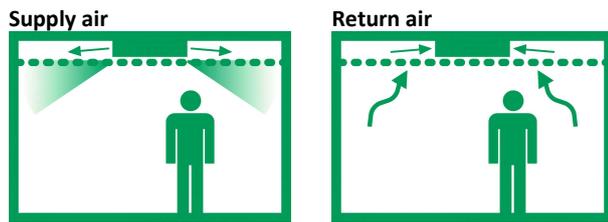
### LOD-100/150-Z-5-Q-... (with 5 air diffusers)

L <sub>WA</sub> [dB(A)]	V (m <sup>3</sup> /h) [l/s]		Δp <sub>t</sub> (Pa)	
	NW 100	NW 150	NW 100	NW 150
30	285 [79.2]	580 [161.1]	16	15
35	330 [91.7]	670 [186.1]	22	20
40	385 [106.9]	780 [216.7]	29	27
45	440 [122.2]	900 [250.0]	38	36

### LOD-100-A-3-Q-... (with 3 air diffusers)

L <sub>WA</sub> [dB(A)]	V (m <sup>3</sup> /h) [l/s]	Δp <sub>t</sub> (Pa)
	NW 100	NW 100
30	560 [155.6]	12
35	690 [191.7]	15
40	745 [206.9]	20
45	860 [238.9]	27

### AIR THROW PATTERN



### FIELD OF APPLICATION

Air diffuser for air-conditioning of rooms with suspended lamella ceiling.

### MODELS

LOD-100-...	Nominal size 100
LOD-150-...	Nominal size 150 (not possible for return air)
LOD-...-Z-...	supply air
LOD-...-A-...	Return air (only NW 100 available)
LOD-...-3-...	with 3 air diffusers (standard)
LOD-...-5-...	with 5 air diffusers (not possible for return air)
LOD-...-Q-...	rectangular connection (standard), with flange
LOD-...-R-...	round connection (NW150 for supply air with 5 air diffusers not available [LOD-150-Z-5-...])

### PROCESSING

#### Air diffuser

- **for supply air.** With round air diffuser, consisting of:
  - Fastening ring, cover plate and connection spigot made of painted sheet steel.
  - Nozzle head with radially arranged apertures and integrated adjusting disc. With 3 x plugs for shielding (steering) of air jet. Plastic parts made of polystyrene (4754).
- **for return air.** With rectangular air diffuser, consisting of a frame with facing horizontal and pivoting air deflection blades made of painted sheet steel.
- **Paint of air diffuser:**
  - Sheet metal parts painted to RAL colour 9005 (black) / plastic parts similar to RAL colour 9005 (black, only for supply air) (-**9005**) (standard).
  - Sheet metal parts painted to RAL colour 9010 (white) / plastic parts similar to RAL colour 9010 (white, only for supply air) (-**9010**).
  - Sheet metal parts painted to a RAL colour of your choice, freely selectable / plastic parts similar to RAL colour 9005 (black, only for supply air) (-**xxxx**, always with 4 digits).

#### Plenum box

- housing made of painted sheet steel.
  - with connection spigot, either round or rectangular (with flange, standard).
  - with integrated air diffuser plate made of perforated sheet steel (only for supply air model).
  - accessible via an inspection opening on the box bottom side (according to VDI 6022).
- **Paint of plenum box:**
  - painted to RAL colour 9005 (black, standard) (-**9005**).
  - painted to the colour RAL 9010 (white) (-9010).
  - painted to a RAL colour of your choice, freely selectable, (-**xxxx**, always with 4 digits).

### ACCESSORIES

#### Rubber lip seal (-GD0 / -GD1)

- without rubber lip seal (-GD0) (standard). (Model with rectangular connection [-Q] only possible without rubber lip seal).
- with rubber lip seal (-GD1), made of special rubber (only possible for round connection [-R]).

### MOUNTING

The air diffuser is placed directly above the open ceiling system under the raw ceiling. It can be mounted directly against the solid ceiling (acoustic decoupling on site), or suspended (via threaded rods, on site).

**OPTIONS**

**FOR SUPPLY AIR**

LA	Rectangular connection (-Q) with flange (standard)		Round connection (-R)	
	NW 100	NW 150	NW 100	NW 150
3	X	X	X	X
5	X	X	X	--

**FOR RETURN AIR**

LA	Rectangular connection (-Q) with flange (standard)		Round connection (-R)	
	NW 100	NW 150	NW 100	NW 150
3	X	--	X	--

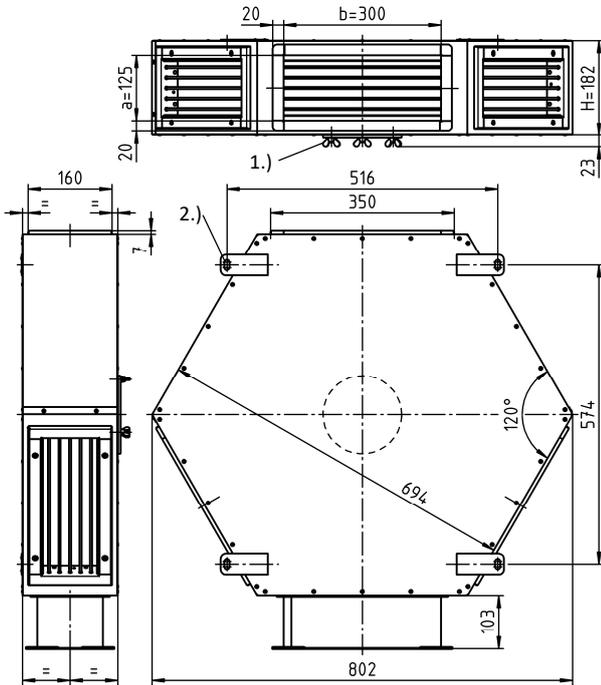
X = available  
 -- = not available  
 LA = air diffusers



**FOR RETURN AIR**

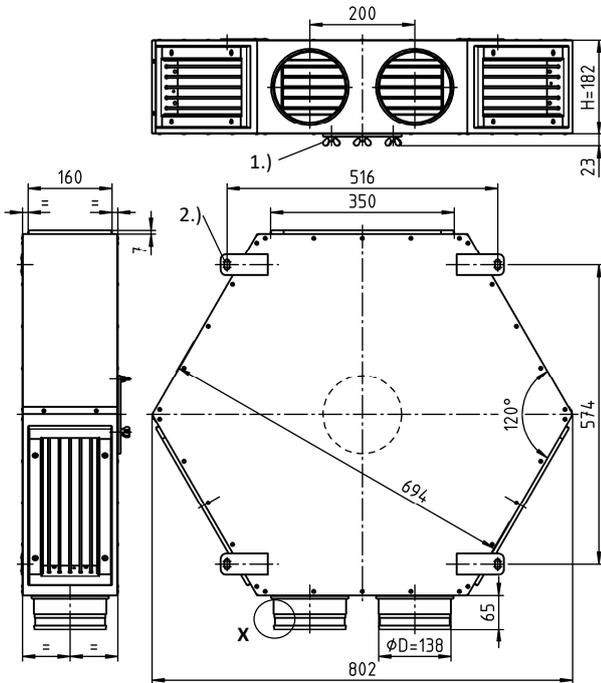
**Rectangular connection, with flange (standard)**

LOD-...-A-3-Q-... (with 3 air diffusers)



**Round connection**

LOD-...-A-3-R-... (with 3 air diffusers)



- 1.) Inspection opening
- 2.) Mounting bracket with long hole  $\varnothing 10 \times 20$

**Attention: Air diffuser LOD-150-A is not available!**

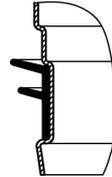
Construction subject to change  
No return possible

**DIMENSIONS OF ACCESSORIES**

**Rubber lip seal (-GD0 / -GD1)**

- without rubber lip seal (-GD0) (standard).  
(Model with rectangular connection [-Q] only possible without rubber lip seal)
- with rubber lip seal (-GD1), made of special rubber (only possible for round connection [-R]).

**Detail X**

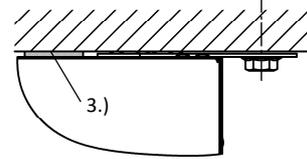


**MOUNTING OPTIONS**

The air diffuser is placed directly above the open ceiling system under the raw ceiling. It can be mounted directly against the solid ceiling (acoustic decoupling on site), or suspended (via threaded rods, on site).

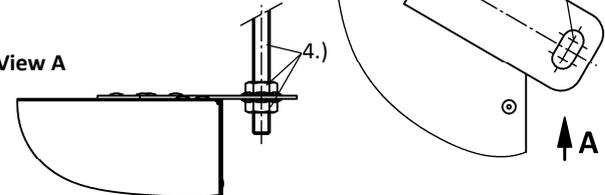
**Mounting directly against solid ceiling**

**View A**



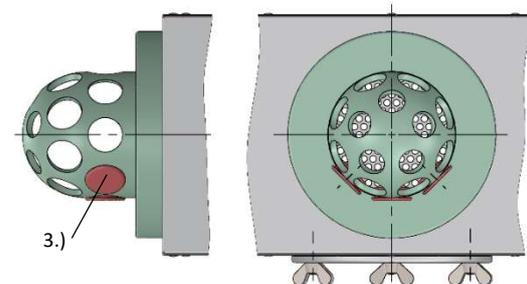
**Suspended below ceiling**

**View A**



- 2.) Mounting bracket with long hole  $\varnothing 10 \times 20$
- 3.) Acoustic decoupling
- 4.) on site

**SHIELDING OF AIR JET**



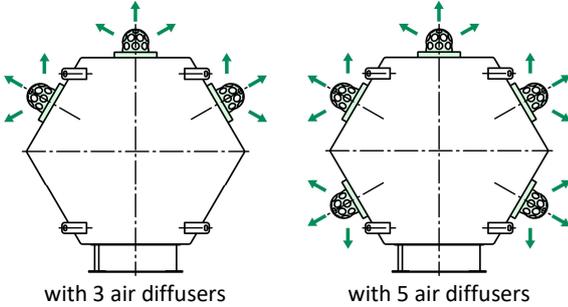
- 3.) 3x plugs for shielding (steering) of air jet.  
Plugs are necessary for air throw pattern.

**TECHNICAL DATA**

**Pressure loss and noise level (for supply air)**

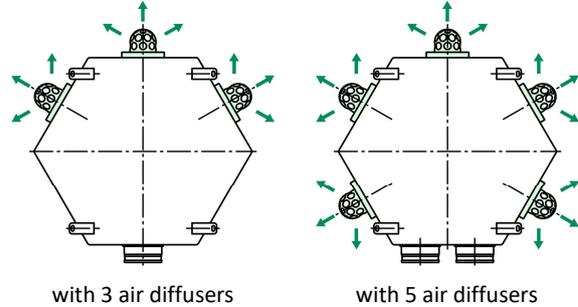
**LOD-...-Z-...-Q**

Rectangular connection, with flange (standard)

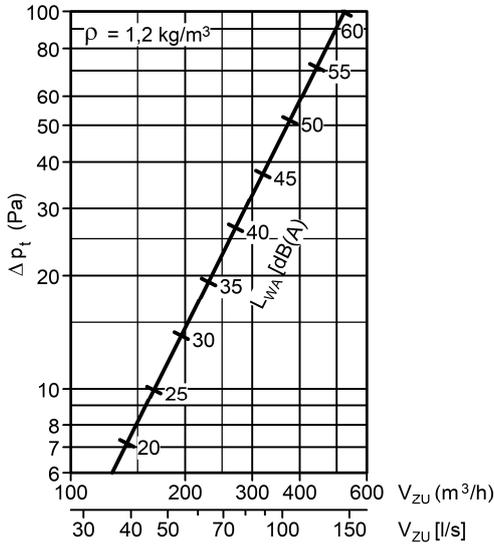


**LOD-...-Z-...-R**

Round connection

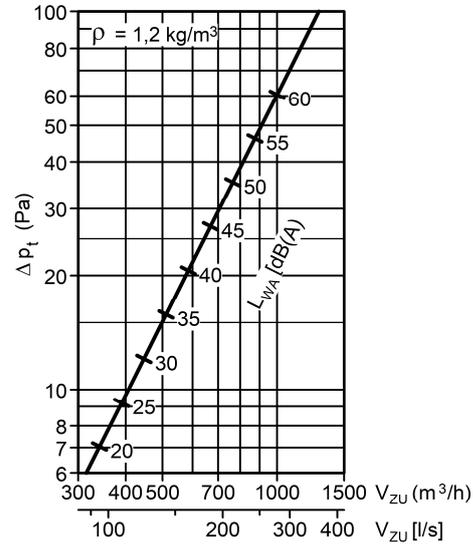


**LOD-100-Z-3-Q-... (with 3 air diffusers)**



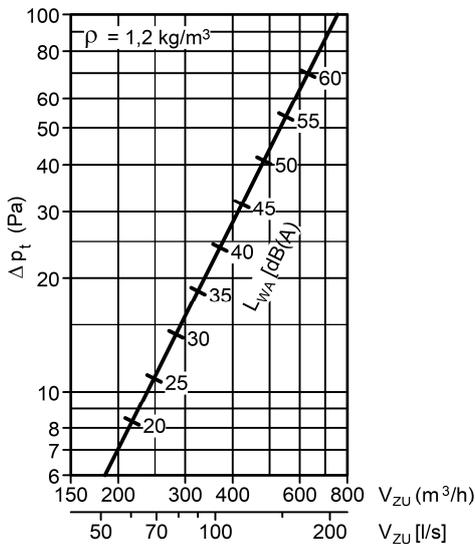
Correction factor (KF) for **LOD-100-Z-3-R-... :**  
 Diagram value  $\Delta p_t \times 1.8$

**LOD-150-Z-3-Q-... (with 3 air diffusers)**



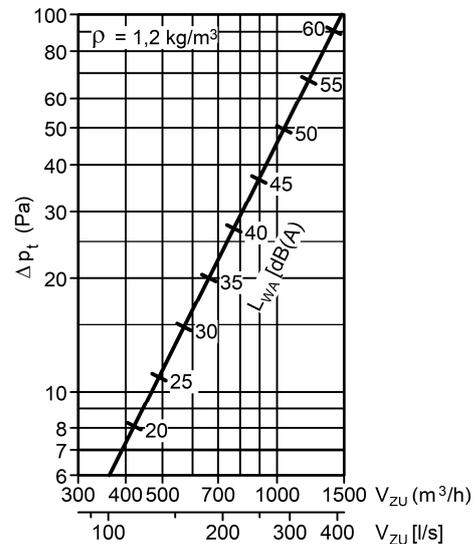
Correction factor (KF) for **LOD-150-Z-3-R-... :**  
 Diagram value  $\Delta p_t \times 1.8$

**LOD-100-Z-5-Q-... (with 5 air diffusers)**



Correction factor (KF) for **LOD-100-Z-5-R-... :**  
 Diagram value  $\Delta p_t \times 1.8$

**LOD-150-Z-5-Q-... (with 5 air diffusers)**

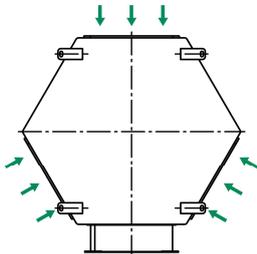


**LOD-150-Z-5-R-... not available**

**Pressure loss and noise level (for return air)**

**LOD-...-A-...-Q**

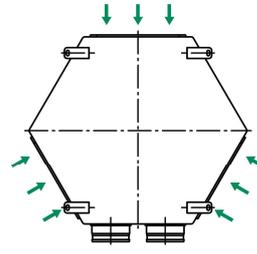
Rectangular connection, with flange (standard)



with 3 air diffusers

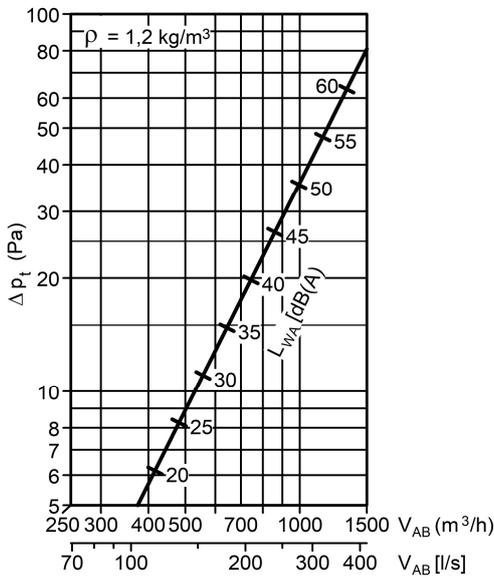
**LOD-...-A-...-R**

Round connection

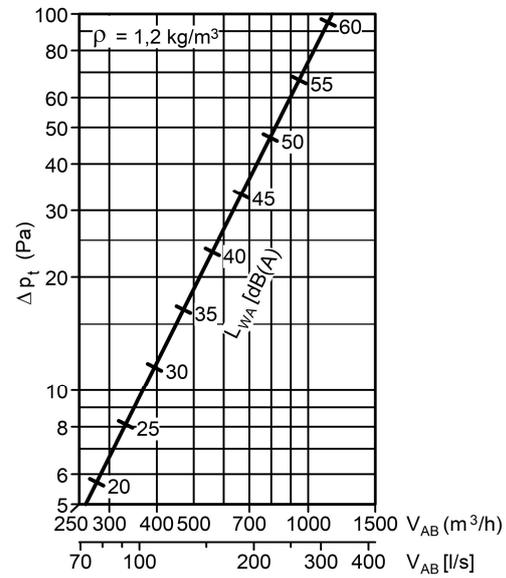


with 3 air diffusers

**LOD-100-A-3-Q-... (with 3 air diffusers)**



**LOD-100-A-3-R-... (with 3 air diffusers)**



**LEGEND**

V <sub>ZU</sub>	(m³/h) [l/s]	=	supply air volumetric flow
V <sub>AB</sub>	(m³/h) [l/s]	=	return air volumetric flow
Δp <sub>t</sub>	(Pa)	=	Pressure loss
L <sub>WA</sub>	[dB(A)]	=	A-weighted sound power level
KF	(-)	=	Correction factor
ρ	(kg/m³)	=	Density
NW	(mm)	=	Nominal size

## ORDER CODE LOD

01	02	03	04	05	06	07	07
Type	Nominal size	Air throw	Number Air diffusers	Connection	Paint Air diffusers	Paint Plenum box	Rubber lip seal
<b>Example</b>							
LOD	-100	-Z	-5	-Q	-9005	-9005	-GD0

All fields must be filled when ordering.

### Sample

**LOD-100-Z-5-Q-9005-9005-GD0**

Air diffuser **LOD** for open ceiling systems | NW 100 | Supply air | with 5 air diffusers | Rectangular connection, with flange | Air diffuser: sheet metal parts painted to RAL colour 9005 (black) / plastic parts similar to RAL colour 9005 (black) | Plenum box: painted to RAL colour 9005 (black) | without rubber lip seal

## ORDER DETAILS

### 01 - Type

LOD = air diffuser **LOD** for open ceiling systems

### 02 – Nominal size

100 = NW 100

150 = NW 150

### 03 - Air throw

Z = supply air

A = return air (only NW 100 available)

### 04 - Number of air diffusers

3 = with 3 air diffusers (standard)

5 = with 5 air diffusers (not possible for return air)

### 05 - Connection

Q = rectangular connection, with flange (standard)

R = round connection (NW150 for supply air with 5 air diffusers not available [LOD-150-Z-5-...])

### 06 - Paint of air diffusers

9005 = Sheet metal parts painted to RAL colour 9005 (black) / plastic parts similar to RAL colour 9005 (black, only for supply air) (standard).

9010 = Sheet metal parts painted to RAL colour 9010 (white) / plastic parts in the colour similar to RAL 9010 (white, only for supply air).

xxxx = sheet metal parts painted to a RAL colour of your choice, freely selectable / plastic parts similar to RAL colour 9005 (black, only for supply air) (always with 4 digits).

### 07 - Paint of plenum box

9005 = painted to RAL colour 9005 (black, standard)

9010 = painted to the colour RAL 9010 (white)

xxxx = painted to a RAL colour of your choice, freely selectable (always with 4 digits).

### 08 - Rubber lip seal

GD0 = without rubber lip seal (standard).  
 (Model with rectangular connection [-Q] only possible without rubber lip seal).

GD1 = with rubber lip seal.

## SPECIFICATION TEXT

The SCHAKO air diffuser LOD for open ceiling systems has been developed for use in supply and return air systems.

The air diffuser is suitable for direct connection to the duct system and is suitable for VAV systems with variable volumetric flows of 40-100%.

The air diffuser is placed directly above the open ceiling system under the raw ceiling. It can be mounted directly against the solid ceiling (acoustic decoupling on site), or suspended. Height and design have been adapted to open ceiling systems. In cooling mode as well as in heating mode, a very high induction ( $I=30.2$  at  $80 \text{ m}^3/\text{h}$  at a distance of 2 m and a temperature difference of 8 K) is achieved after blowing out the supply air, which effectively reduces the air velocity and temperature above the open ceiling system. The supply air above the open ceiling system flows out evenly and sinks into the occupied area at a very low velocity.

The air diffuser LOD consists of a plenum box with several individual air diffusers (for supply air or return air) for the optimum discharge of supply air in cooling and heating mode, as well as a uniform suction of return air from the room. Flexible air pattern adjustment and air flow direction are optionally configurable.

The plenum box made of painted sheet steel consists of a housing with connection spigot, either round or rectangular (with flange, standard). With integrated air diffuser plate made of perforated sheet steel (only for supply air model). According to VDI 6022, the plenum box can be accessed via an inspection opening on the box bottom side. Sound power level  $L_{WA} = 30 \text{ dB(A)}$  at approx.  $300 \text{ m}^3/\text{h}$  (for LOD-100-Z-5-Q-...).

- for supply air. With round air diffuser consisting of fastening ring, cover plate and connection spigot made of painted sheet steel. With nozzle head with radially arranged apertures and integrated adjusting disc. With 3 x plugs for shielding (steering) of air jet. Plastic parts made of polystyrene (4754).

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

- for return air. With rectangular air diffuser, consisting of a frame with facing horizontal and pivoting air deflection blades of painted sheet steel (only NW 100 available).

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

### Nominal size:

- NW 100 (-100)
- NW 150 (-150) (not possible for return air)

### Number of air diffusers:

- with 3 air diffusers (-3) (standard)
- with 5 air diffusers (-5) (not possible for return air)

### Connection:

- rectangular connection (-Q) (standard)
- round connection (-R) (NW150 for supply air with 5 air diffusers not available [LOD-150-Z-5-...])

### Paint of air diffuser:

- Sheet metal parts painted to RAL colour 9005 (black) / plastic parts similar to RAL colour 9005 (black, only for supply air) (-9005) (standard).
- Sheet metal parts painted to RAL colour 9010 (white) / plastic parts similar to RAL colour 9010 (white, only for supply air) (-9010).
- Sheet metal parts painted to a RAL colour of your choice, freely selectable / plastic parts similar to RAL colour 9005 (black, only for supply air) (-xxxx, always with 4 digits).

### Paint of plenum box:

- painted to RAL colour 9005 (black) (-9005) (standard).
- painted to the colour RAL 9010 (white) (-9010).
- painted to a RAL colour of your choice, freely selectable, (-xxxx) (always with 4 digits).

### Accessories:

- Rubber lip seal
  - without rubber lip seal (-GD0) (standard).  
(Model with rectangular connection [-Q] only possible without rubber lip seal).
  - with rubber lip seal (-GD1), made of special rubber, at the connection spigot (only possible for round connection [-R]).