

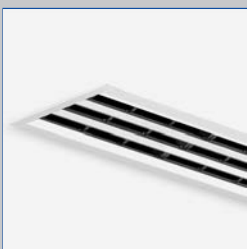
# Slot diffusers for ceiling installation Type VSD35 Varyset



Varyset flap  
with balance weight



Alternating  
horizontal air discharge



Installation  
in continuous ceilings

## For large, variable volume flow rate ranges, stable discharge patterns even with small volume flow rates

Slot diffusers with 35 mm nominal width, with adjustable air control elements and self-powered Varyset flap for the adjustment of the active slot diffuser length

- Nominal length from 900 to 1500 mm, 1 to 4 slots
- Volume flow rate range 8 – 90 (l/s)/m or 29 – 324 (m<sup>3</sup>/h)/m
- Diffuser face made of extruded aluminium sections
- For variable volume flows
- Excellent room ventilation even with small volume flow rates due to self-powered Varyset flap
- Suitable for continuous linear arrangement
- High induction results in a rapid reduction of the temperature difference and airflow velocity
- Individually adjustable air control elements to meet individual local requirements

Optional equipment and accessories

- Exposed diffuser face available in RAL CLASSIC colours
- Diffuser face with extended border
- End plates, end angles

| Type          |   | Page     |
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Variants

Product examples

VSD35-1



Diffuser face without extended border, black air control elements

VSD35-1/.../WW



Diffuser face without extended border, white air control elements

VSD35-1/.../B00



Diffuser face with extended border, black air control elements

VSD35-1/.../B00/.../WW



Diffuser face with extended border, white air control elements

Installation examples

VSD35-1/.../B00, installation in continuous ceilings



Anodised, E6-C-0, natural colour

VSD35-2/.../B00/P1-RAL 9010, installation in continuous ceilings



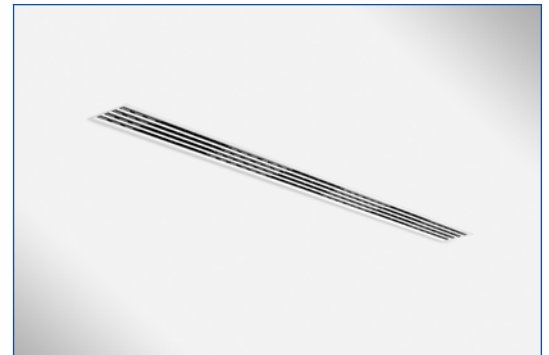
Powder-coated RAL 9010, pure white

VSD35-3/.../B00, installation in continuous ceilings



Anodised, E6-C-0, natural colour

VSD35-4/.../B00/P1-RAL 9010, installation in continuous ceilings



Powder-coated RAL 9010, pure white

Description

**Application**

- Type VSD35 Varyset slot diffusers are used as supply air diffusers in comfort zones
- They blend in inconspicuously with continuous grid ceilings and plasterboard ceilings
- Excellent room ventilation even with minimum volume flow rates ( $\dot{V}_{\min}$ )
- Air discharge is one-way or alternating horizontal, or alternating angled; turbulent flow (mixed flow ventilation)
- High induction results in a rapid reduction of the temperature difference and airflow velocity
- For variable volume flows
- For supply air to room air temperature differences from -10 to +10 K
- For room heights up to 4 m (lower edge of suspended ceiling)
- For suspended ceilings; suitable for restricted ceiling voids due to the low overall height of the plenum box
- Suitable for continuous linear arrangement

**Variants**

- VSD35-VA-\*: 1, 2, 3 or 4 slots
- VSD35-VA-...: Diffuser face without extended border
- VSD35-VA-.../B00: Diffuser face with extended border
- VSD35-VA-...: Black air control elements
- VSD35-VA-.../WW: White air control elements

**Nominal sizes**

- $L_N$ : 900, 1050, 1200, 1350, 1500 mm
- Diffuser face available in intermediate sizes from 901 to 2550 mm, in increments of 1 mm

**Attachments**

- C1, C2: Two end plates
- C5, C6: Two end angles

**Accessories**

- Lip seal

**Useful additions**

- EP: Two end plates
- EW: Two end angles
- To be ordered separately for continuous linear runs
- Corner section, see Type VSD35

**Special characteristics**

- Individually adjustable air control elements to meet individual local requirements
- Excellent room ventilation even with minimum volume flow rates ( $\dot{V}_{\min}$ )
- High induction results in a rapid reduction of the temperature difference and airflow velocity
- Diffuser face has been optimised for maximum volume flow rate at low sound power levels
- Suitable for continuous linear arrangement

**Parts and characteristics**

- Diffuser face with individually adjustable air control elements
- Plenum box for horizontal duct connection
- Self-powered Varyset flap with external balance weight
- Protective cap for the balance weight
- Clamp fixing
- Connecting pins and alignment plates to connect and align slot diffusers for a continuous linear arrangement

**Construction features**

- Spigot suitable for circular ducts to EN 1506 or EN 13180

**Materials and surfaces**

- Diffuser face made from extruded aluminium sections
- Air control elements made of plastic, UL 94, V-0, flame retardant
- Plenum box made of galvanised sheet steel
- Varyset flap, end plate and end angle made of aluminium
- Lip seal made of rubber
- Diffuser face with anodised finish, E6-C-0, natural colour
- P1: Powder-coated, RAL CLASSIC colour
- Air control elements similar to RAL 9005, black
- WW: Air control elements similar to RAL 9010, white

**Installation and commissioning**

- Preferably for rooms with a clear height up to 4.0 m
- Flush ceiling installation
- Horizontal duct connection
- Diffusers with a shorter plenum box as well as non-active diffusers require a rear blanking plate; length of blanking plate =  $L_1 - L_3$
- For a continuous linear arrangement connect the diffusers with connecting pins and alignment plates

**Standards and guidelines**

- Sound power level of the air-regenerated# noise measured according to EN ISO 5135

**Maintenance**

- Maintenance-free as construction and materials are not subject to wear
- Inspection and cleaning to VDI 6022

**Technical data**

|  |  |
|--|--|
| <b>Nominal length</b>  | 900, 1050, 1200, 1350, 1500 mm                     |
| <b>Number of slots</b>   | 1, 2, 3, 4   |
| <b>Minimum volume flow rate</b>                                    | 8 – 22 (l/s)/m or 29 – 80 (m <sup>3</sup> /h)/m    |
| <b>Maximum volume flow rate <math>L_{WA} \cong 50</math> dB(A)</b> | 33 – 90 (l/s)/m or 120 – 324 (m <sup>3</sup> /h)/m |
| <b>Supply air to room air temperature difference</b>               | -10 to +10 K                                       |

Function

Functional description

Slot diffusers direct the air from air conditioning systems into the room, either horizontally or at an angle. The resulting airflow induces high levels of room air, thereby rapidly reducing the airflow velocity and the temperature difference between supply air and room air. The result is a mixed flow ventilation in comfort zones, with good overall room ventilation, creating only very little turbulence in the occupied zone. Type VSD35 Varyset slot diffusers have adjustable air control elements. The air pattern can be adjusted to meet different local requirements. Air discharge is one-way or alternating horizontal. Heating mode with angled air discharge is also possible. The supply air to room air temperature difference may range from -10 to +10 K.

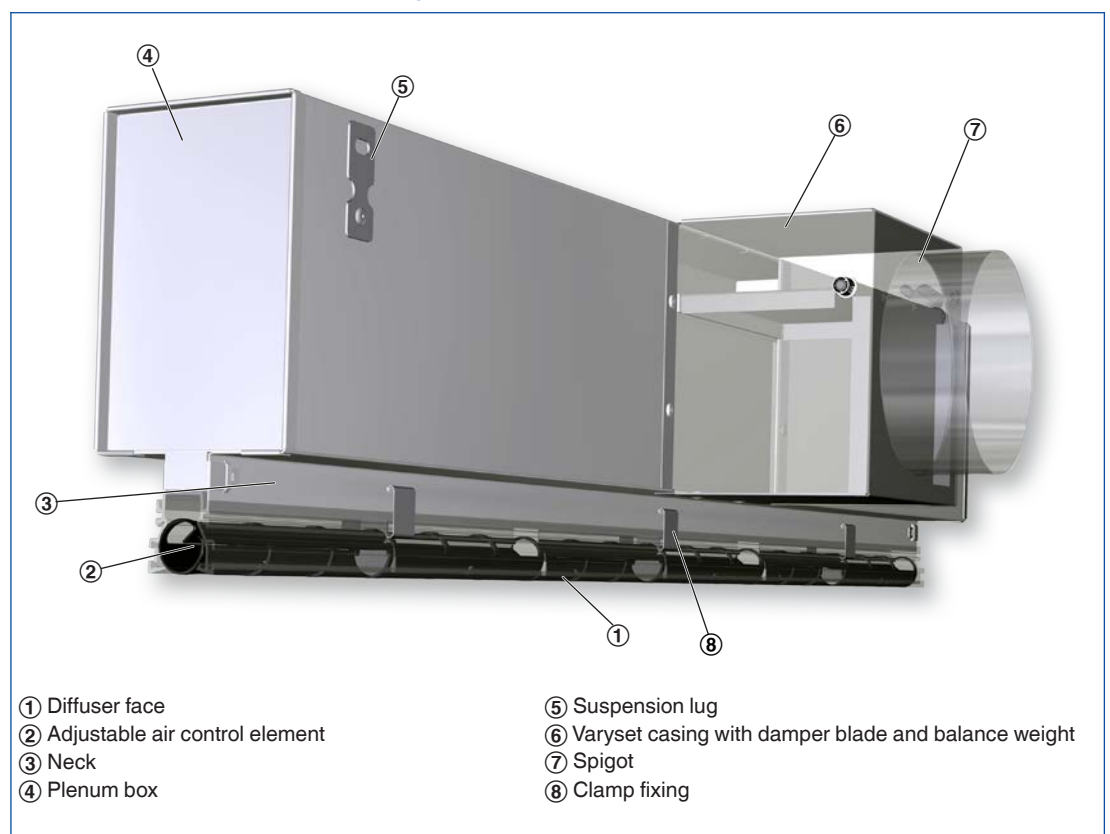
Principle of operation – Varyset

Each diffuser requires for a stable horizontal air pattern in cooling mode a certain minimum volume flow rate; this minimum flow rate depends on the supply air to room air difference. If the actual volume flow rate is lower than the required minimum, the supply air does not adhere to the ceiling long enough, or not at all, but 'falls' immediately vertically into the occupied zone. This may result in draughts. The Varyset diffuser allows for smaller minimum volume flow rates and hence for larger variable volume flow rate ranges. The discharge velocity is reduced more slowly with decreasing volume flow rates when a Varyset diffuser is used, due to the self-powered Varyset flap in the plenum box. At the minimum volume flow rate the Varyset flap remains closed, and the supply air is discharged through only 25 % of the total slot length. As the volume flow rate increases, the Varyset flap opens due to the total pressure, and more and more air is discharged through the remaining slot sections.

Advantages of Varyset

- Stable horizontal air discharge in cooling mode with a large variable volume flow rate range
- Elimination of draughts with the minimum volume flow rate
- Excellent room ventilation even with the minimum volume flow rate
- Smaller vertical temperature differences in the occupied zone, particularly in heating mode with angled air discharge

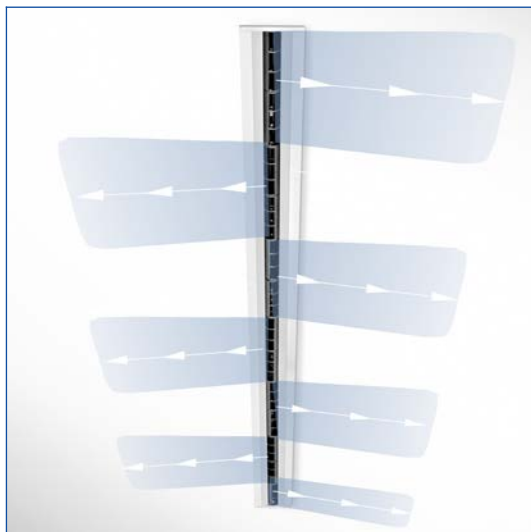
Schematic illustration of VSD35 Varyset



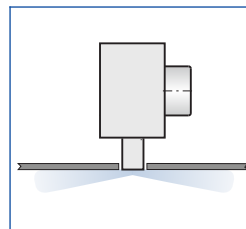
### Air patterns

These are only schematic diagrams to illustrate the setting of the air control elements.

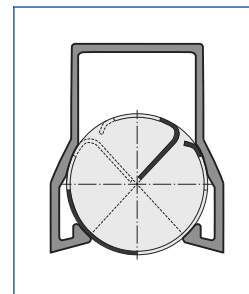
### Alternating horizontal air discharge



### Alternating horizontal (WH)



### Setting of the air control elements

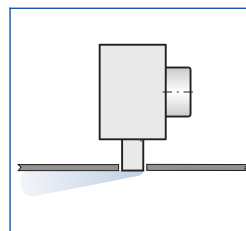


Alternating air control elements (300 mm) as shown

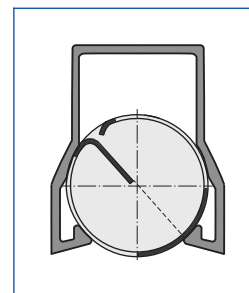
### One-way horizontal air discharge to the left



### One-way horizontal left (HL)



### Setting of the air control elements

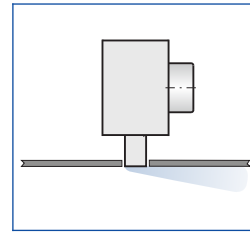


All air control elements as shown

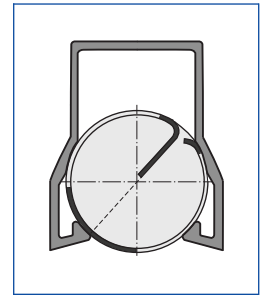
One-way horizontal air discharge to the right



One-way horizontal right (HR)

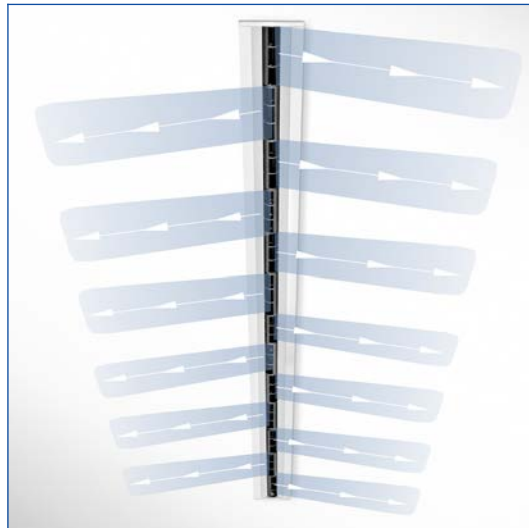


Setting of the air control elements

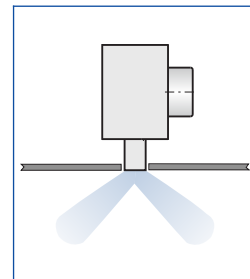


All air control elements as shown

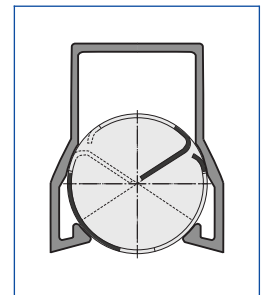
Alternating angled air discharge



Alternating angled (WS)



Setting of the air control elements



Alternating air control elements (150 mm) as shown

Order code

VSD35 Varyset

VSD35 – VA – 1 / 1050 / C2 / B00 / P1 – RAL ... / HL / WW

1 2 3 4 5 6 7 8

1 Type

**VSD35-VA** Slot diffuser with Varyset

2 Number of slots

1  
2  
3  
4

3 Nominal size [mm]

Nominal length  $L_N$

900  
1050  
1200  
1350  
1500

4 End pieces

No entry: without  
Both ends with end angles factory fitted

**C1** to profile 000  
**C2** to profile B00  
Both ends with end plates factory fitted  
**C5** to profile 000  
**C6** to profile B00  
To be ordered separately for slot diffusers  
for linear arrangement

5 Extended border

No entry: none

**B00** With extended border

6 Exposed surface

No entry: anodised, E6-C-0, natural colour

**P1** Powder-coated,  
specify RAL CLASSIC colour

Gloss level  
RAL 9010 50 %  
RAL 9006 30 %  
All other RAL colours 70 %

7 Air pattern

No entry: alternating horizontal (WH)

**WS** Alternating angled  
**HL** Horizontal left  
(opposite direction from spigot)  
**HR** Horizontal right (same direction as spigot)

8 Colour of air control elements

No entry: similar to RAL 9005, black

**WW** Similar to RAL 9010, white

Order example

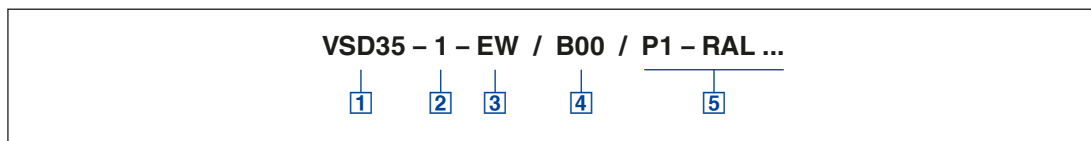
VSD35-VA-1/1050/C2/B00/P1-RAL 9010/HL/WW

|                                |  |
|--------------------------------|--|
| Number of slots                | 1                                      |
| Nominal size                   | 1200 mm                                |
| End pieces                     | End angles                             |
| Extended border                | With                                   |
| Exposed surface                | RAL 9010, pure white, gloss level 50 % |
| Air pattern                    | Horizontal left                        |
| Colour of air control elements | White                                  |



Useful additions

VSD35



1 Type

**VSD35** Slot diffuser

2 Number of slots

- 1
- 2
- 3
- 4

3 End pieces

**EP** Two end plates

**EW** Two end angles

4 Extended border

**000** Profile without extended border

**B00** Profile with extended border

Quick sizing tables provide a good overview of the volume flow rates and corresponding sound power levels and differential pressures.

**VSD35-VA-1, supply air,  
alternating horizontal  
air discharge**

**Quick sizing – sound power level  
and total differential pressure**

| Nominal length | $\dot{V}$ |                   | $\Delta p_t$<br>Pa | $L_{WA}$<br>dB(A) |
|----------------|-----------|-------------------|--------------------|-------------------|
|                | l/s       | m <sup>3</sup> /h |                    |                   |
| 900            | 7.5       | 27                | 10                 | <15               |
|                | 15        | 54                | 15                 | 20                |
|                | 30        | 108               | 33                 | 35                |
|                | 35        | 126               | 41                 | 40                |
|                | 10        | 36                | 12                 | 15                |
| 1200           | 20        | 72                | 18                 | 22                |
|                | 40        | 144               | 39                 | 39                |
|                | 45        | 162               | 46                 | 43                |
|                | 12.5      | 45                | 19                 | 24                |
| 1500           | 20        | 72                | 23                 | 26                |
|                | 40        | 144               | 32                 | 36                |
|                | 50        | 180               | 40                 | 42                |

**VSD35-VA-2, supply air,  
alternating horizontal  
air discharge**

**Quick sizing – sound power level  
and total differential pressure**

| Nominal length | $\dot{V}$ |                   | $\Delta p_t$<br>Pa | $L_{WA}$<br>dB(A) |
|----------------|-----------|-------------------|--------------------|-------------------|
|                | l/s       | m <sup>3</sup> /h |                    |                   |
| 900            | 10        | 36                | 6                  | 16                |
|                | 20        | 72                | 12                 | 22                |
|                | 40        | 144               | 27                 | 33                |
|                | 50        | 180               | 37                 | 38                |
|                | 15        | 54                | 9                  | 16                |
| 1200           | 30        | 108               | 15                 | 23                |
|                | 60        | 216               | 32                 | 36                |
|                | 70        | 252               | 41                 | 40                |
|                | 20        | 72                | 13                 | 18                |
| 1500           | 40        | 144               | 20                 | 26                |
|                | 60        | 216               | 31                 | 35                |
|                | 80        | 288               | 44                 | 42                |

**VSD35-VA-3, supply air,  
alternating horizontal  
air discharge**

**Quick sizing – sound power level  
and total differential pressure**

| Nominal length | $\dot{V}$ |                   | $\Delta p_t$<br>Pa | $L_{WA}$<br>dB(A) |
|----------------|-----------|-------------------|--------------------|-------------------|
|                | l/s       | m <sup>3</sup> /h |                    |                   |
| 900            | 15        | 54                | 10                 | 15                |
|                | 30        | 108               | 13                 | 26                |
|                | 60        | 216               | 23                 | 37                |
|                | 70        | 252               | 28                 | 40                |
|                | 20        | 72                | 12                 | 21                |
| 1200           | 40        | 144               | 16                 | 28                |
|                | 80        | 288               | 23                 | 39                |
|                | 90        | 324               | 30                 | 42                |
|                | 25        | 90                | 15                 | 23                |
| 1500           | 50        | 180               | 20                 | 32                |
|                | 80        | 288               | 25                 | 39                |
|                | 100       | 360               | 32                 | 42                |

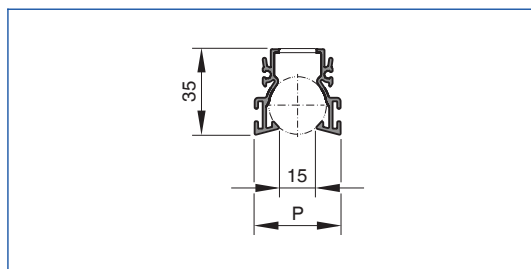
**VSD35-VA-4, supply air,  
alternating horizontal  
air discharge**

**Quick sizing – sound power level  
and total differential pressure**

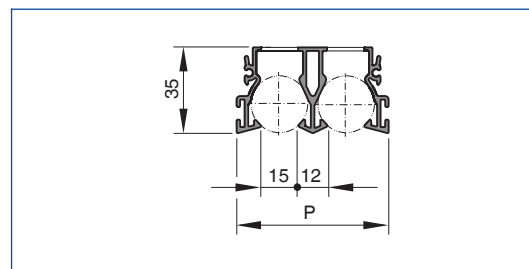
| Nominal length | $\dot{V}$ |                   | $\Delta p_t$<br>Pa | $L_{WA}$<br>dB(A) |
|----------------|-----------|-------------------|--------------------|-------------------|
|                | l/s       | m <sup>3</sup> /h |                    |                   |
| 900            | 20        | 72                | 11                 | 25                |
|                | 40        | 144               | 17                 | 32                |
|                | 60        | 216               | 21                 | 36                |
|                | 80        | 288               | 26                 | 40                |
|                | 25        | 90                | 10                 | 21                |
| 1200           | 40        | 144               | 14                 | 27                |
|                | 60        | 216               | 19                 | 32                |
|                | 100       | 360               | 28                 | 40                |
|                | 30        | 108               | 16                 | 25                |
| 1500           | 50        | 180               | 19                 | 31                |
|                | 80        | 288               | 23                 | 37                |
|                | 100       | 360               | 27                 | 39                |

Profiles

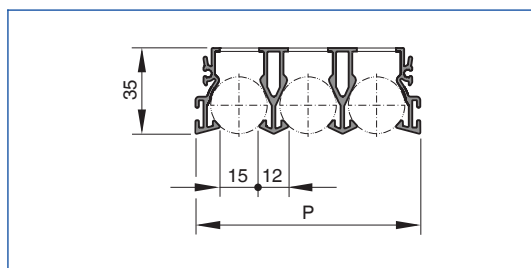
VSD35-1/.../000



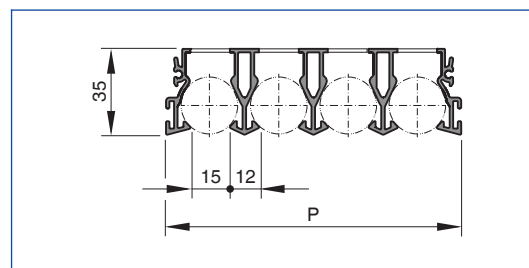
VSD35-2/.../000



VSD35-3/.../000

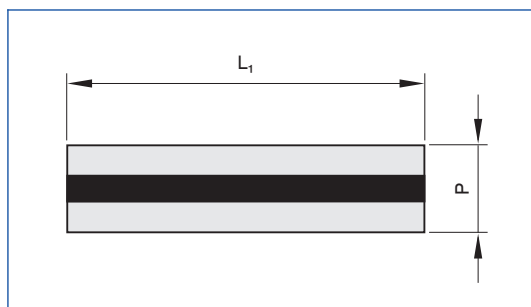


VSD35-4/.../000



Diffuser face

Diffuser face VSD...-\*-F



Dimensions

| Variant | 000 |
|---------|-----|
|         | P   |
|         | mm  |
| VSD35-1 | 35  |
| VSD35-2 | 62  |
| VSD35-3 | 89  |
| VSD35-4 | 116 |

Dimensions

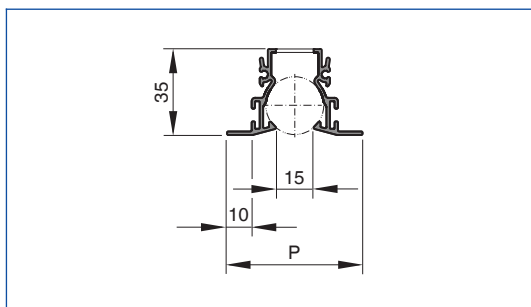
| Nominal length | VSD35-1          |                     | VSD35-2          |                     | VSD35-3          |                     | VSD35-4          |                     | L <sub>1</sub><br>mm |
|----------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|----------------------|
|                | A <sub>eff</sub> | A <sub>eff</sub> WS | A <sub>eff</sub> | A <sub>eff</sub> WS | A <sub>eff</sub> | A <sub>eff</sub> WS | A <sub>eff</sub> | A <sub>eff</sub> WS |                      |
|                | m <sup>2</sup>   |                     |                  |                     |                  |                     |                  |                     |                      |
| 900            | 0.0053           | 0.0058              | 0.0105           | 0.0117              | 0.0158           | 0.0175              | 0.0210           | 0.0233              | 900                  |
| 1050           | 0.0061           | 0.0068              | 0.0123           | 0.0136              | 0.0184           | 0.0204              | 0.0245           | 0.0272              | 1050                 |
| 1200           | 0.0070           | 0.0078              | 0.0140           | 0.0156              | 0.0210           | 0.0233              | 0.0280           | 0.0311              | 1200                 |
| 1350           | 0.0079           | 0.0088              | 0.0158           | 0.0175              | 0.0237           | 0.0262              | 0.0315           | 0.0350              | 1350                 |
| 1500           | 0.0088           | 0.0097              | 0.0175           | 0.0194              | 0.0263           | 0.0292              | 0.0350           | 0.0389              | 1500                 |

A<sub>eff</sub>: One-way horizontal and alternating horizontal air discharge

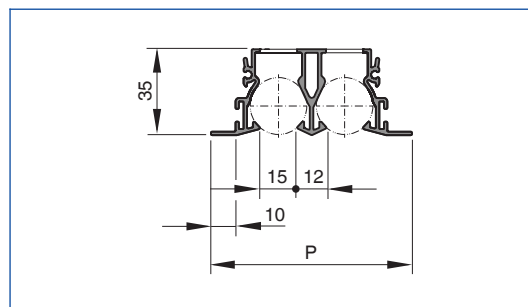
A<sub>eff</sub> WS: Alternating angled air discharge

Profiles

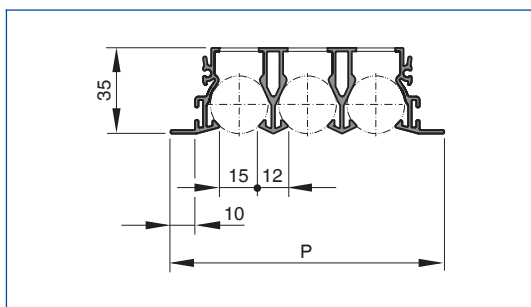
VSD35-1/.../B00



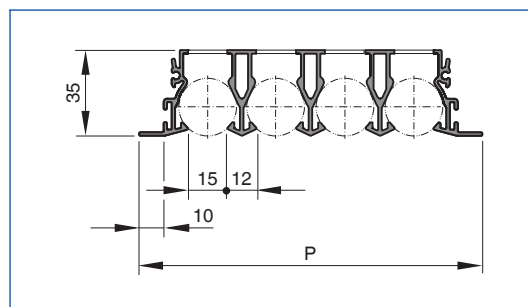
VSD35-2/.../B00



VSD35-3/.../B00

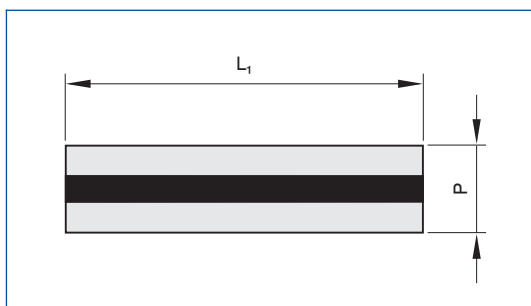


VSD35-4/.../B00



Diffuser face

Diffuser face VSD...-\*-F



Dimensions

| Variant | B00 |  |
|---------|-----|--|
|         | P   |  |
|         | mm  |  |
| VSD35-1 | 55  |  |
| VSD35-2 | 82  |  |
| VSD35-3 | 109 |  |
| VSD35-4 | 136 |  |

Dimensions

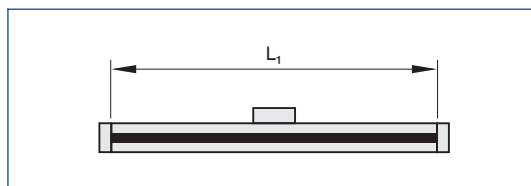
| Nominal length | VSD35-1          |                     | VSD35-2          |                     | VSD35-3          |                     | VSD35-4          |                     | L <sub>1</sub><br>mm |
|----------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|----------------------|
|                | A <sub>eff</sub> | A <sub>eff</sub> WS | A <sub>eff</sub> | A <sub>eff</sub> WS | A <sub>eff</sub> | A <sub>eff</sub> WS | A <sub>eff</sub> | A <sub>eff</sub> WS |                      |
|                | m <sup>2</sup>   |                     |                  |                     |                  |                     |                  |                     |                      |
| 900            | 0.0053           | 0.0058              | 0.0105           | 0.0117              | 0.0158           | 0.0175              | 0.0210           | 0.0233              | 900                  |
| 1050           | 0.0061           | 0.0068              | 0.0123           | 0.0136              | 0.0184           | 0.0204              | 0.0245           | 0.0272              | 1050                 |
| 1200           | 0.0070           | 0.0078              | 0.0140           | 0.0156              | 0.0210           | 0.0233              | 0.0280           | 0.0311              | 1200                 |
| 1350           | 0.0079           | 0.0088              | 0.0158           | 0.0175              | 0.0237           | 0.0262              | 0.0315           | 0.0350              | 1350                 |
| 1500           | 0.0088           | 0.0097              | 0.0175           | 0.0194              | 0.0263           | 0.0292              | 0.0350           | 0.0389              | 1500                 |

A<sub>eff</sub>: One-way horizontal and alternating horizontal air discharge

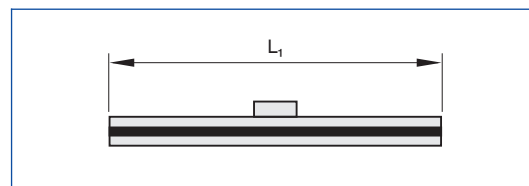
A<sub>eff</sub> WS: Alternating angled air discharge

## End pieces

### End pieces on both ends

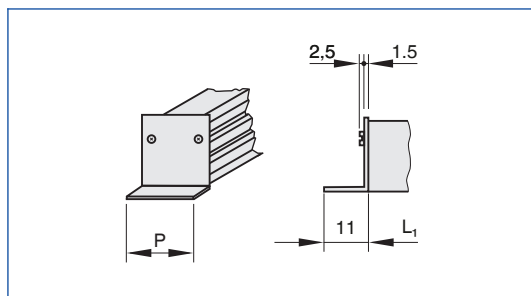


### Without end piece



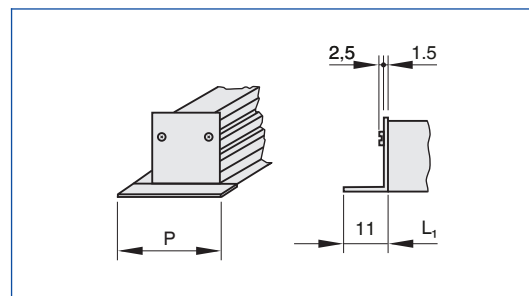
## End angles

### End angle C1



Profile without extended border

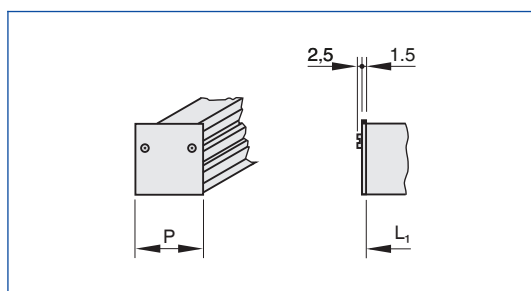
### End angle C2



Profile with extended border

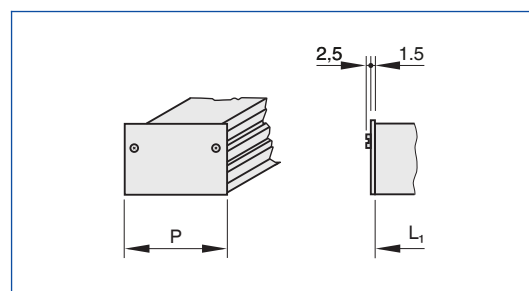
## End plate

### End plate C5



Profile without extended border

### End plate C6



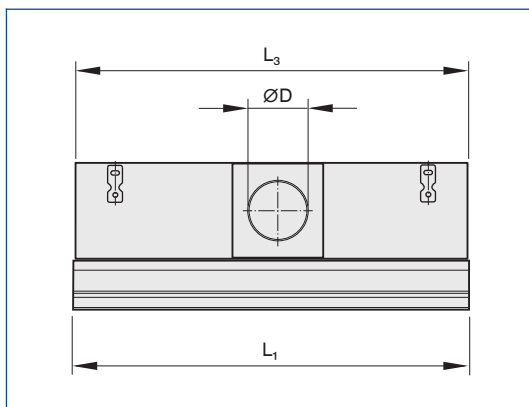
Profile with extended border

## Dimensions

| Variant | 000 | B00 |
|---------|-----|-----|
|         | P   |     |
|         | mm  |     |
| VSD35-1 | 35  | 55  |
| VSD35-2 | 62  | 82  |
| VSD35-3 | 89  | 109 |
| VSD35-4 | 116 | 136 |

Spigot

VSD35-VA



Dimensions

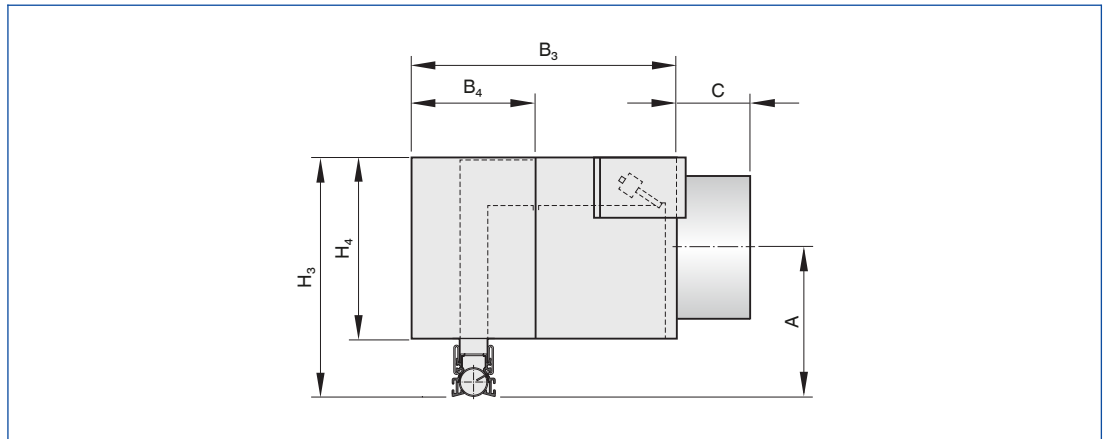
| Nominal length | $L_1$ | $L_3$ |
|----------------|-------|-------|
|                | mm    |       |
| 900            | 900   | 895   |
| 1050           | 1050  | 1045  |
| 1200           | 1200  | 1195  |
| 1350           | 1350  | 1345  |
| 1500           | 1500  | 1495  |

Spigot diameter

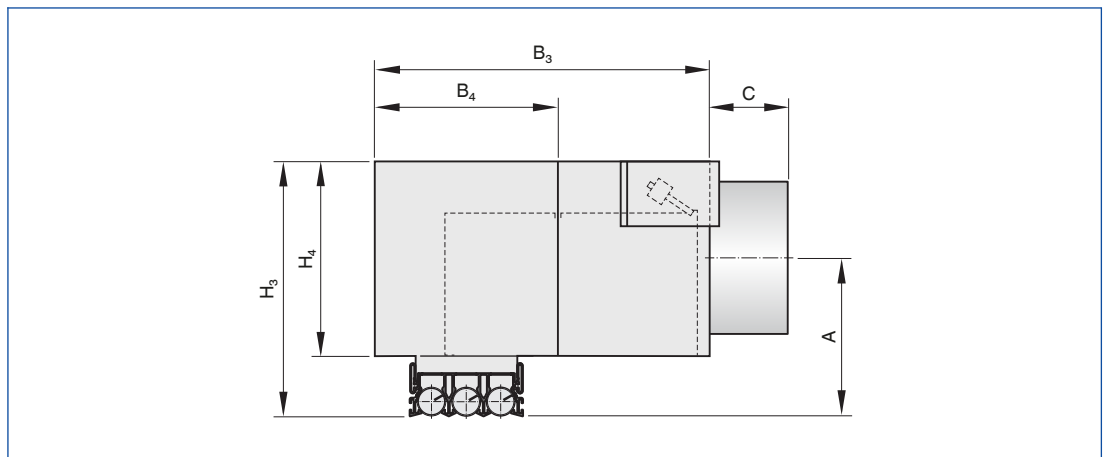
| Variant    | $\varnothing D$ |
|------------|-----------------|
|            | mm              |
| VSD35-VA-1 | 123             |
| VSD35-VA-2 | 158             |
| VSD35-VA-3 | 178             |
| VSD35-VA-4 | 198             |

Plenum boxes

VSD35-VA-1, VSD35-VA-2



VSD35-VA-3, VSD35-VA-4



Dimensions

| Variant    | B <sub>3</sub> | H <sub>3</sub> | B <sub>4</sub> | H <sub>4</sub> | ØD  | A   | C  |
|------------|----------------|----------------|----------------|----------------|-----|-----|----|
|            | mm             |                |                |                |     |     |    |
| VSD35-VA-1 | 225            | 203            | 100            | 152            | 123 | 127 | 46 |
| VSD35-VA-2 | 288            | 233            | 138            | 182            | 158 | 143 | 48 |
| VSD35-VA-3 | 336            | 251            | 176            | 200            | 178 | 152 | 40 |
| VSD35-VA-4 | 391            | 283            | 214            | 232            | 198 | 168 | 48 |

Weight

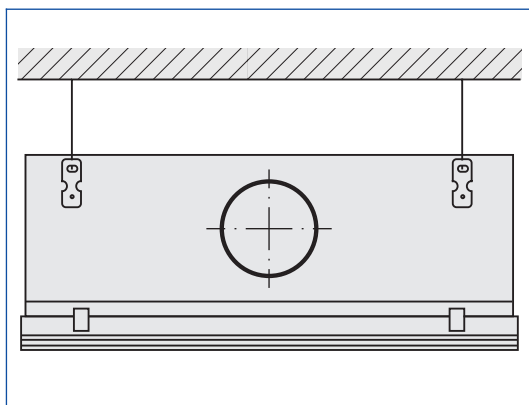
| Nominal length | VSD35-VA-1 | VSD35-VA-2 | VSD35-VA-3 | VSD35-VA-4 |
|----------------|------------|------------|------------|------------|
|                | m          |            |            |            |
|                | kg         |            |            |            |
| 900            | 5.0        | 7.0        | 8.0        | 10.0       |
| 1050           | 5.5        | 7.5        | 9.0        | 11.0       |
| 1200           | 6.5        | 8.5        | 10.0       | 12.0       |
| 1350           | 7.0        | 9.0        | 11.0       | 13.0       |
| 1500           | 8.0        | 10.0       | 12.0       | 14.0       |

## Installation types

For more installation details see Chapter K1 – 2.3

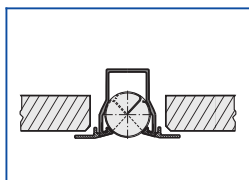
These are only schematic diagrams to illustrate installation details.

## Installation with plenum box

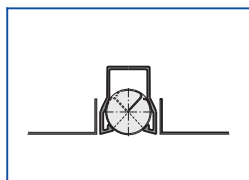


## Ceiling systems

### Continuous ceiling

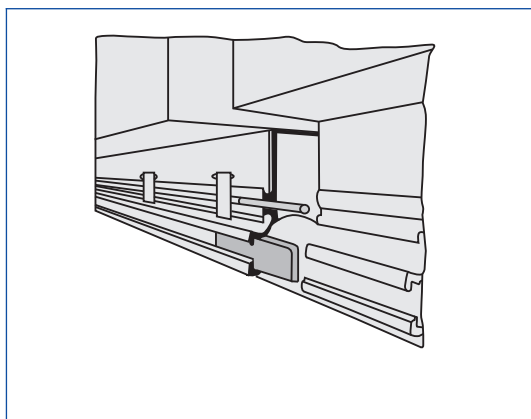


### Panelled ceiling



## Slot diffusers, linear run

## Slot diffusers, linear run





### Standard text

This specification text describes the general properties of the product. Texts for variants can be generated with our Easy Product Finder design programme.

Slot diffusers with individually manually adjustable air control elements and an aesthetically shaped face section with one to four slots, for one-way horizontal, alternating horizontal or alternating angled air discharge. For supply air, for large variable volume flow rate ranges.

For installation into suspended ceilings. Ready-to-install component which consists of the diffuser face with individually adjustable black or white air control elements, and of a plenum box with side entry spigot, self-powered Varyset flap and suspension lugs. Spigot suitable for circular ducts to EN 1506 or EN 13180. Sound power level of the air-regenerated noise measured according to EN ISO 5135.

### Special characteristics

- Individually adjustable air control elements to meet individual local requirements
- Excellent room ventilation even with minimum volume flow rates ( $\dot{V}_{\min}$ )
- High induction results in a rapid reduction of the temperature difference and airflow velocity
- Diffuser face has been optimised for maximum volume flow rate at low sound power levels
- Suitable for continuous linear arrangement

### Materials and surfaces

- Diffuser face made from extruded aluminium sections
- Air control elements made of plastic, UL 94, V-0, flame retardant
- Plenum box made of galvanised sheet steel
- Varyset flap, end plate and end angle made of aluminium
- Lip seal made of rubber
- Diffuser face with anodised finish, E6-C-0, natural colour
- P1: Powder-coated, RAL CLASSIC colour
- Air control elements similar to RAL 9005, black
- WW: Air control elements similar to RAL 9010, white

### Technical data

- Nominal length: 900, 1050, 1200, 1350, 1500 mm
- Number of slots: 1, 2, 3, 4
- Minimum volume flow rate: 8 – 22 (l/s)/m or 29 – 80 (m<sup>3</sup>/h)/m
- Maximum volume flow rate with  $L_{WA} \cong 50$  dB(A): 33 – 90 (l/s)/m or 120 – 324 (m<sup>3</sup>/h)/m
- Supply air to room air temperature difference: –10 to +10 K

### Sizing data

- $\dot{V}$  \_\_\_\_\_ [m<sup>3</sup>/h]
- $\Delta p_t$  \_\_\_\_\_ [Pa]
- $L_{WA}$  Air-regenerated noise \_\_\_\_\_ [dB(A)]

Order options

1 Type

**VSD35-VA** Slot diffuser with Varyset

2 Number of slots

- 1
- 2
- 3
- 4

3 Nominal size [mm]

Nominal length  $L_N$

- 900
- 1050
- 1200
- 1350
- 1500

4 End pieces

No entry: without

Both ends with end angles factory fitted

- C1** to profile 000
- C2** to profile B00
- Both ends with end plates factory fitted
- C5** to profile 000
- C6** to profile B00
- To be ordered separately  
for slot diffusers for linear arrangement

5 Extended border

No entry: none

- B00** With extended border

6 Exposed surface

No entry: anodised, E6-C-0,  
natural colour

- P1** Powder-coated,  
specify RAL CLASSIC colour

Gloss level

RAL 9010 50 %

RAL 9006 30 %

All other RAL colours 70 %

7 Air pattern

No entry: alternating horizontal (WH)

- WS** Alternating angled
- HL** Horizontal left  
(opposite direction from spigot)
- HR** Horizontal right  
(same direction as spigot)

8 Colour of air control elements

No entry: similar to RAL 9005, black

- WW** Similar to RAL 9010, white

Useful additions

Order options

1 Type

**VSD35** Slot diffuser

2 Number of slots

- 1
- 2
- 3
- 4

3 End pieces

- EP** Two end plates
- EW** Two end angles

4 Extended border

- 000** Profile without extended border
- B00** Profile with extended border

# Slot diffusers

## Basic information and nomenclature



### Slot diffusers

- Product selection
- Principal dimensions
- Nomenclature
- Sizing and sizing example
- Installation information
- Commissioning

# Slot diffusers

## Basic information and nomenclature

### Product selection

|  | Ceiling installation   |   |   |                                   | Wall installation             |                               |
|--|--|---|---|-----------------------------------|-------------------------------|-------------------------------|
|  | VSD15  | VSD35   | VSD50   | VSD35-Varyset                     | VSD50-1-LT                    | VSD35-3-AZ                    |
| <b>Diffuser face</b>                   |  |   |   |                                   |                               |                               |
| Nominal width                          | 15 mm  | 35 mm   | 50 mm   | 35 mm                             | 50 mm                         | 35 mm                         |
| Extended border                        | ●  | ●   | ●   | ●                                 | ●                             | ●                             |
| Aluminium                              | ●  | ●   | ●   | ●                                 | ●                             | ●                             |
| <b>Diffuser fixing</b>                 |  |   |   |                                   |                               |                               |
| Concealed screw fixing                 |  | ●   | ●   |                                   |                               |                               |
| Clamp fixing                           | ●  | ●   | ●   | ●                                 |                               |                               |
| Spring clip fixing                     |  |   |   |                                   | ●                             | ●                             |
| Rigid connection                       | ●  |   |   |                                   |                               | ●                             |
| <b>Air control elements</b>            |  |   |   |                                   |                               |                               |
| Adjustable                             | ●  | ●   | ●   | ●                                 | ●                             | ●                             |
| Plastic, black and white               | ●  | ●   | ●   | ●                                 | ●                             | ●                             |
| <b>Air patterns</b>                    |  |   |   |                                   |                               |                               |
| Horizontal, one-way                    | ●  | ●   | ●   | ●                                 | ●                             | ●                             |
| Alternating horizontal                 | ●  | ●   | ●   | ●                                 |                               |                               |
| Alternating angled                     | ●  | ●   | ●   | ●                                 |                               |                               |
| <b>Plenum box</b>                      |  |   |   |                                   |                               |                               |
| Galvanised sheet steel                 | ●  | ●   | ●   | ●                                 | ●                             | ●                             |
| Acoustic lining (cross talk reduction) | ●  | ●   | ●   |                                   | ●                             |                               |
| Neck extension                         |  | ●   | ●   |                                   |                               |                               |
| Asymmetric                             |  | ●   | ●   |                                   |                               |                               |
| <b>Attachments</b>                     |  |   |   |                                   |                               |                               |
| Damper blade                           | ●  | ●   | ●   |                                   | ●                             | ●                             |
| <b>Accessories</b>                     |  |   |   |                                   |                               |                               |
| Lip seal                               | ●  | ●   | ●   |                                   | ●                             | ●                             |
| End plate                              |  | ●   | ●   | ●                                 |                               |                               |
| End angles                             | ●  | ●   | ●   | ●                                 |                               | ●                             |
| End seal                               | ●  |   |   |                                   |                               |                               |
| <b>Nominal sizes</b>                   |  |   |   |                                   |                               |                               |
| Number of slots                        | 1  | 1, 2, 3, 4  | 1, 2  | 1, 2, 3, 4                        | 1                             | 3                             |
| Nominal length                         | 600, 700<br>800, 900<br>1000, 1100<br>1200, 1300<br>1400, 1500 | 600, 750<br>900, 1050<br>1200, 1350<br>1500, 1650<br>1800, 1950 | 600, 750<br>900, 1050<br>1200, 1350<br>1500, 1650<br>1800, 1950 | 900, 1050<br>1200, 1350<br>1500   | 550, 1175                     | 600, 750<br>900, 1050<br>1200 |
| Nominal size of spigot                 | 80   | 100, 125<br>140, 160<br>200                                     | 125, 160<br>200   | 125, 160<br>180, 200              | 80, 100                       | 80                            |
| Slot diffusers, linear run             | ●  | ●   | ●   | ●                                 |                               |                               |
| Corner section                         |  | ●   | ●   | ●                                 |                               |                               |
| <b>Technical data</b>                  |  |   |   |                                   |                               |                               |
| Volume flow rate range                 | 7 – 30<br>(l/s)/m  | 15 – 135<br>(l/s)/m   | 20 – 120<br>(l/s)/m   | 8 – 90<br>(l/s)/m                 | 10 – 70<br>l/s                | 8 – 40<br>l/s                 |
|  | 25 – 108<br>(m <sup>3</sup> /h)/m                              | 54 – 486<br>(m <sup>3</sup> /h)/m                               | 72 – 432<br>(m <sup>3</sup> /h)/m                               | 29 – 324<br>(m <sup>3</sup> /h)/m | 36 – 252<br>m <sup>3</sup> /h | 30 – 144<br>m <sup>3</sup> /h |
| ●                                      | Possible   |   |   |                                   |                               |                               |
|  | Not possible   |   |   |                                   |                               |                               |

# Slot diffusers

## Basic information and nomenclature

### Principal dimensions

**ØD [mm]**

Outside diameter of the spigot

**L<sub>1</sub> [mm]**

Length of diffuser without end pieces

**L<sub>3</sub> [mm]**

Length of plenum box

**P [mm]**

Width of diffuser face – with extended border, if any

**B<sub>3</sub> [mm]**

Width of plenum box

**H<sub>3</sub> [mm]**

Height of slot diffuser with plenum box, from the lower edge of the suspended ceiling to the upper edge of the plenum box

**Y [mm]**

Neck extension – The neck length results from a fixed length plus the neck extension

**A [mm]**

Position of the spigot, defined by the distance of the spigot centre line to the lower edge of the suspended ceiling

**C [mm]**

Length of spigot

**m [kg]**

Weight

### Nomenclature

**f<sub>m</sub> [Hz]**

Octave band centre frequency

**L<sub>WA</sub> [dB(A)]**

Sound power level of the air-regenerated noise

 **$\dot{V}$  [m<sup>3</sup>/h] and [l/s]**

Volume flow rate

**Δp<sub>t</sub> [Pa]**

Total differential pressure

All sound power levels are based on 1 pW.

# Slot diffusers

## Basic information and nomenclature

### Sizing with the help of this catalogue

This catalogue provides convenient quick sizing tables for slot diffusers. The tables give supply air volume flow rates for all nominal sizes. The maximum volume flow rates are for an open damper blade. A smaller opening of the damper blade results in higher sound power levels and a higher total differential pressure. The tables show values for damper blade positions 0°, 45° and 90°. Sizing data for other volume flow rates and damper blade positions can be determined quickly and precisely using the Easy Product Finder design programme.

### Sizing example

#### Given data

$\dot{V} = 60 \text{ l/s}$  (216 m<sup>3</sup>/h)  
 Slot diffuser for ceiling installation  
 Maximum sound power level 40 dB(A)  
 with damper blade position 45°  
 Alternating angled air discharge

#### Quick sizing

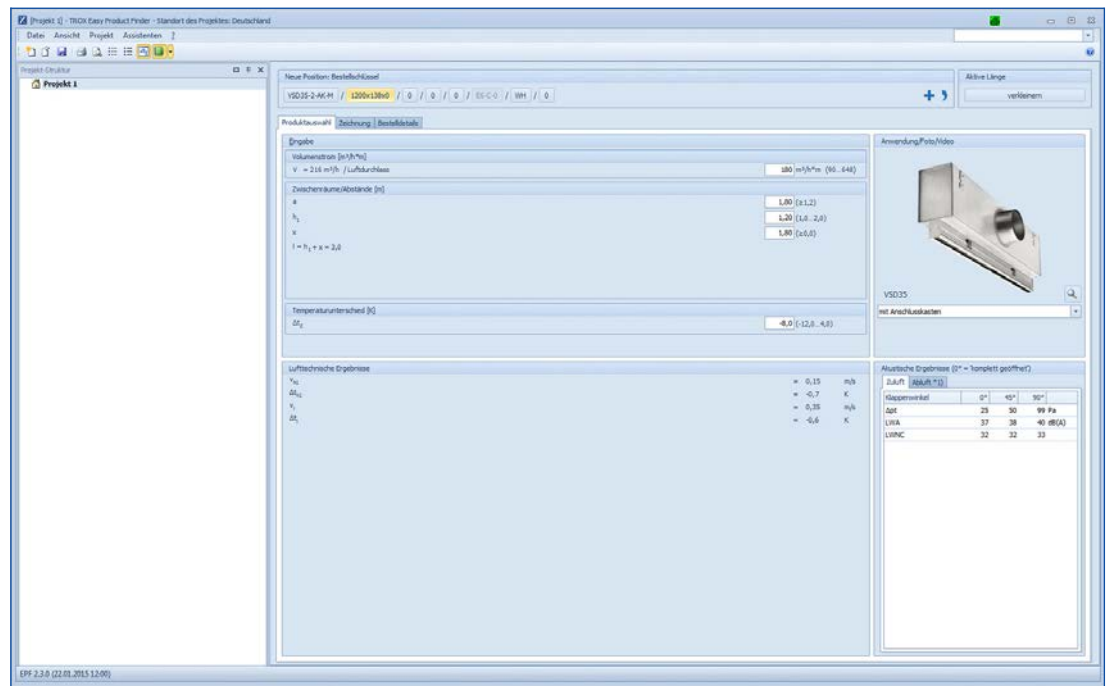
Type VSD35  
 Nominal sizes: VSD35-1/1950×123,  
 VSD35-2/1200×138, VSD35-1/1500×123,  
 VSD35-3/600×158, VSD35-3/750×138  
 Selected: VSD35-2/1200×138

### Easy Product Finder



The Easy Product Finder allows you to size products using your project-specific data.

You will find the Easy Product Finder on our website.



# Slot diffusers

## Basic information and nomenclature

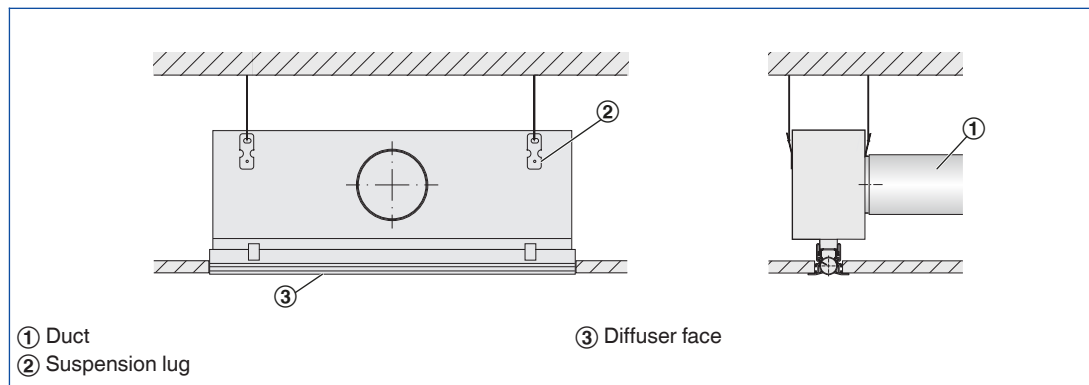
### Description

### Installation information

- Installation and making connections to be performed by others
- The optimum aerodynamic function is only achieved with flush ceiling installation
- The actual diffuser can be fixed to the plenum box in three ways: concealed screw fixing, clamp fixing or spring clip fixing

### Installation types

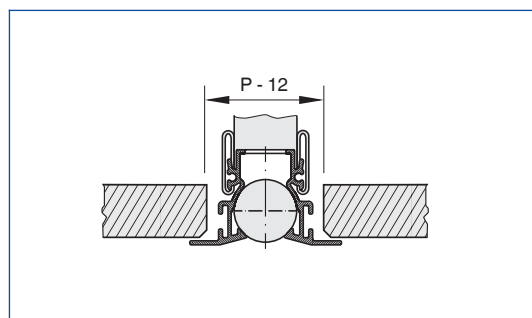
### Installation with plenum box



- Horizontal duct connection
- Four suspension lugs
- Suspension with cords, wires or hangers, to be provided by others

### Ceiling systems

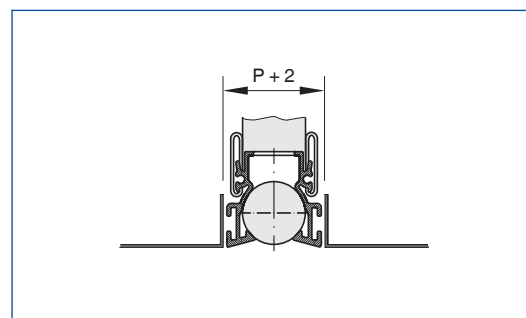
### Continuous ceiling



#### Slot diffuser with extended border

- Fix the plenum box to the ceiling slab
- Adjust plasterboard ceiling tile as required

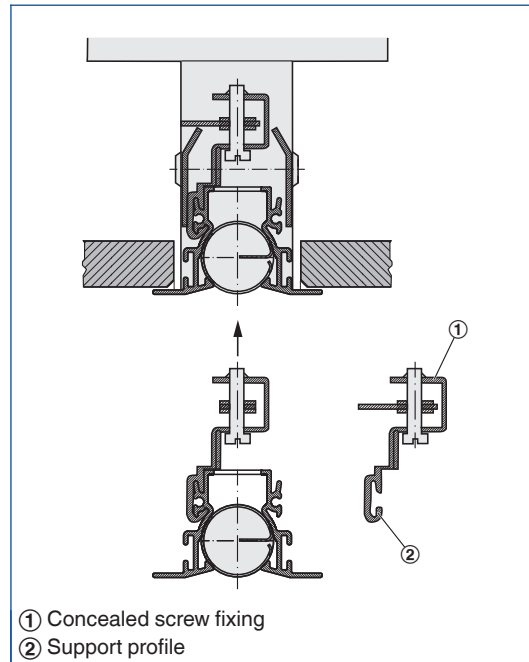
### Ceiling panels with rectangular edges



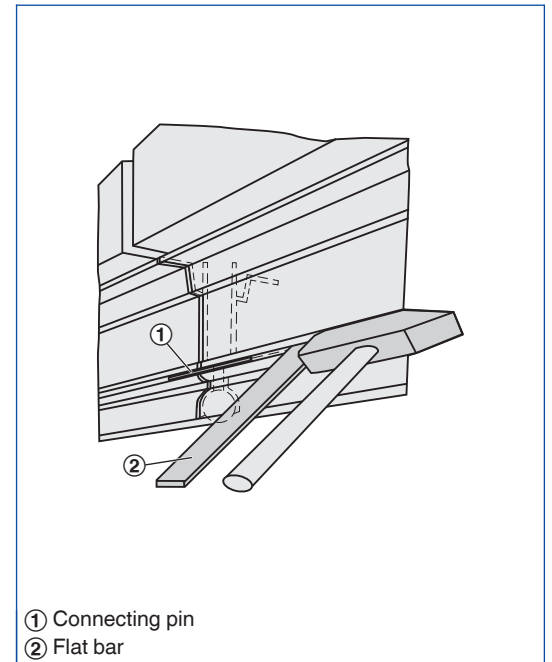
#### Slot diffuser without extended border

- Fix the plenum box to the ceiling slab
- The ceiling tile or panel of a panelled ceiling has no contact with the diffuser

### Concealed screw fixing



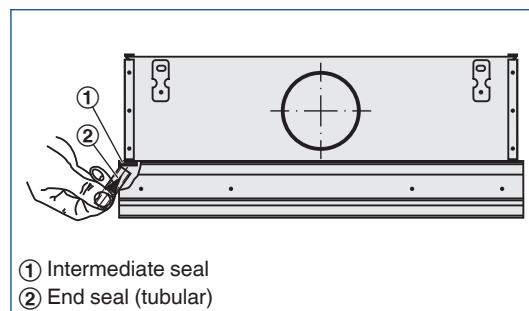
### Continuous linear arrangement



- Concealed screw fixing with plenum box AS or DS
- Each slot diffuser is supplied with four concealed screw fixings
- If a slot diffuser with factory fitted end pieces has been supplied, first remove one of the end pieces
- Grasp each screw fixing by its support profile and slide the support profile onto the diffuser
- Position the screw fixings at regular distances on the diffuser
- Turn the tab of each screw fixing lengthways such that it is parallel to the diffuser face
- Push the diffuser face into the neck of the plenum box
- Turn the tab of each screw fixing by 90° and tighten the screws
- To remove the diffuser, follow the steps in reverse order

- Each slot diffuser (without end pieces) is supplied with two connecting pins
- Connecting pins are used to align slot diffusers for linear runs
- Insert the connecting pins into a slot diffuser
- Connect the next slot diffuser to it

### End seal



#### End seal for VSD15 only

- Continuous linear runs require an end seal on each end to ensure that no air leaks
- End seals can be either factory fitted or fitted by others
- Single diffusers require end seals on both ends
- End seals are suitable only for slot diffusers without extended border



# Slot diffusers

## Basic information and nomenclature

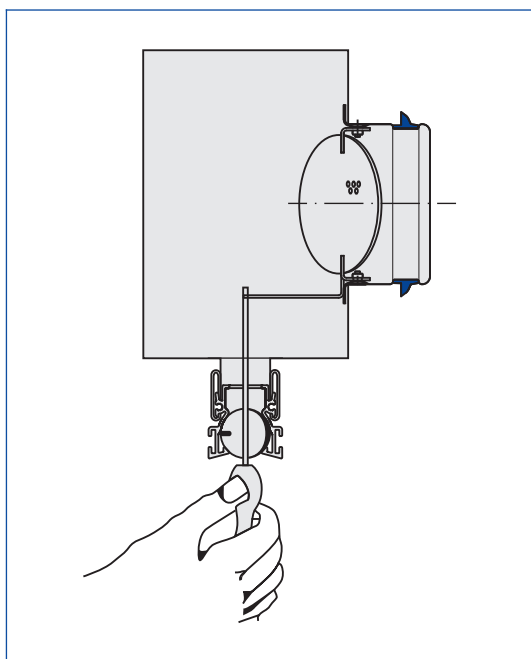
### Commissioning

#### Volume flow rate balancing

When several diffusers are connected to just one volume flow controller, it may be necessary to balance the volume flow rates.

- Slot diffuser with plenum box and damper blade (variant -M): The damper blade can be adjusted even after the diffuser face has been installed.

#### Volume flow rate balancing



- Move the damper blade near the spigot in such a way that it is possible to insert a screw driver