



Wall Slot Diffuser

DSX-XXL-W



Ferdinand Schad KG
Steigstraße 25-27
D-78600 Kolbingen
Telephone +49 (0) 74 63 - 980 - 0
Fax +49 (0) 74 63 - 980 - 200
info@schako.de
www.schako.de

Wall Slot Diffuser Model DSX-XXL-W

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Wall Slot Diffuser Model DSX-XXL-W

Description

The architecturally attractive wall slot diffuser type DSX-XXL-W-S is suitable for installation in or at wall systems.

The models DSX-XXL-W-P, DSX-XXL-W-PA and DSX-XXL-W-PB with a continuous frame are suitable for achieving a good and clean finish when installed in a wall.

The **high induction** ensures **fast reduction of the air outflow velocity and of the temperature difference** in cooling mode. The air outflow direction is set in-factory to a horizontal throw, directed slightly upwards. The stable air jet makes the diffuser suitable for VAV systems. Even with a volumetric flow of 40% the jet remains stable. The attached plenum box ensures a uniform distribution of supply air along the whole length of the diffuser. For an extra charge, a damper which can be adjusted from below can be mounted in the connection piece for air volume regulation. The plenum box can also be insulated either internally or externally.

A band design with plenum box is delivered with concealed mounting as standard. If the order does not specify the band design or if it is not obvious from the order documentation that the band design has been ordered, the individual grilles will be delivered with fixed connection to the plenum box.

For slot diffusers in band design with concealed mounting, the fastening effort is reduced by half, compared with the model without concealed mounting.

Note:

We would like to point out that the diffusers must be mounted, before panelling the walls.

Diffuser mounting

Attachment holes are provided in the plenum box to allow the diffuser to be suspended (see page 5). These attachment holes can be provided with M4 riveting nuts at an extra charge.

Construction

Air guide elements

- Plastic, RAL colour 9010 (white) or RAL colour 9005 (black).

Frame

- extruded aluminium profile
- DSX-XXL-W-S painted in the RAL colour of the air guide elements RAL 9010 (white) or RAL 9005 (black).
- DSX-XXL-W-P painted to RAL 9010 (white) or anodised in natural colour (E6/EV1) (standard)
- DSX-XXL-W-PA painted to RAL 9010 (white) or anodised in natural colour (E6/EV1)
- DSX-XXL-W-PB painted to RAL 9010 (white) or anodised in natural colour (E6/EV1)

Model

- DSX-XXL-W - For installation in walls
- DSX-XXL-W-S - with narrow frame profile
- DSX-XXL-W-P - with frame profile (standard)
- DSX-XXL-W-PA - with U-frame profile
- DSX-XXL-W-PB - with wide frame profile
- DSX-XXL-W-...-1/2 - 1 or 2 slots
- DSX-XXL-W-...-Z - Supply air
- DSX-XXL-W-...-A - Return air with air guide elements

Accessories

Plenum box (-ASK-W)

- galvanised sheet steel as well as connection pieces from behind and fixing lugs

Throttle damper (-DK)

- Damper made of galvanised sheet steel
- Damper fastening made of plastic

M4 riveting nut

- at an extra charge

End piece (pair) (-ES)

- supplied loose as standard. If there are order details regarding fitting, mounting will take place at the manufacturer's.
- for DSX-XXL-W-S (ES1) aluminium painted to RAL 9005 (black) and RAL 9010 (white), respectively.
- for DSX-XXL-W-P (ES2), natural colour anodised aluminium E6/EV1 or aluminium painted to RAL 9010 (white).
- for DSX-XXL-W-PB (-ES3), natural colour anodised aluminium E6/EV1 or aluminium painted to RAL 9010 (white).

Rubber lip seal (-GD)

- Special rubber

Internal insulation (-li)

- thermal insulation at the inside of the plenum box

External insulation (-la)

- thermal insulation at the outside of the plenum box

Dummy piece (-BS)

- with dummy plate made of galvanised sheet steel
- with M4 riveting nut

Mounting bracket (pair) (-BW) for operation with circulating air

- Galvanised sheet steel
- with M4 riveting nut

Connection element

- Spring band steel
- for connection of DSX-XXL-W-... with band design
- supplied loose as standard

Fastening

Permanent connection

- Standard for models DSX-XXL-W-...

Concealed mounting (-VM)

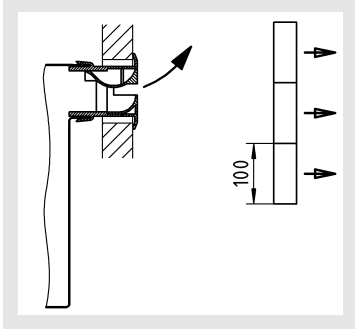
- Standard for band design with plenum box (-ASK)
- available for single diffusers with plenum box (-ASK)

Wall Slot Diffuser Model DSX-XXL-W

Models and dimensions

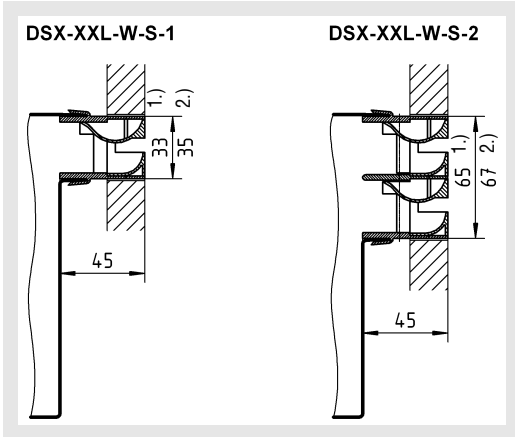
Air throw pattern

Air guide element position diagonally upwards (-LV)

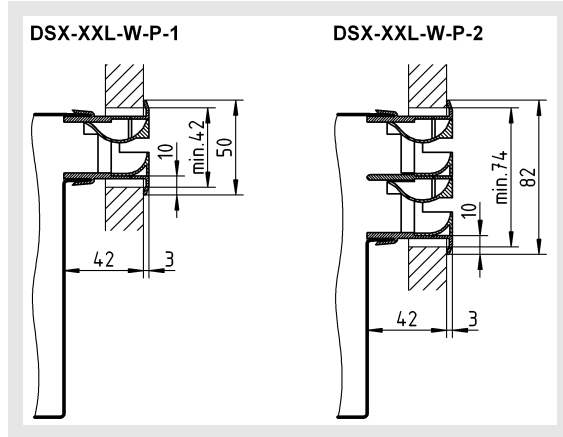


Dimensions

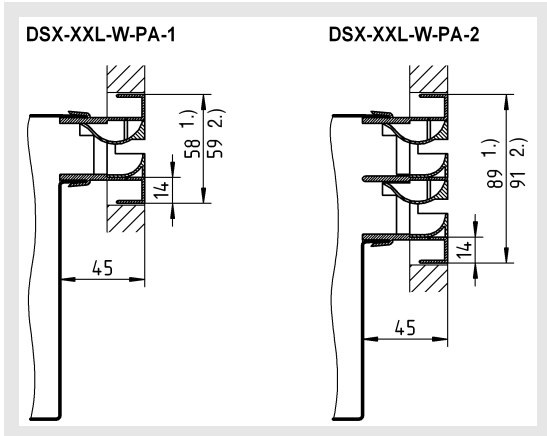
DSX-XXL-W-S: with narrow frame profile



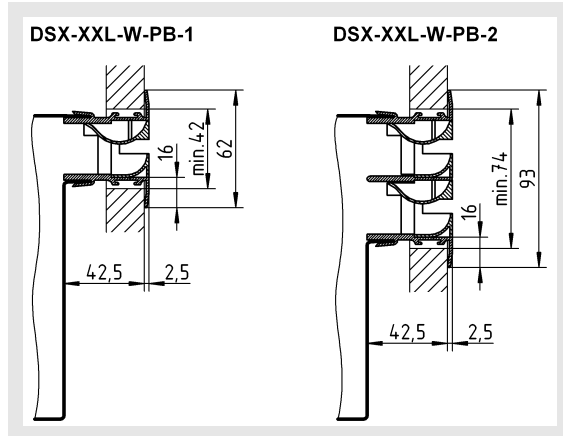
DSX-XXL-W-P, with frame profile



DSX-XXL-W-PA: with U frame profile



DSX-XXL-W-PB - with wide frame profile

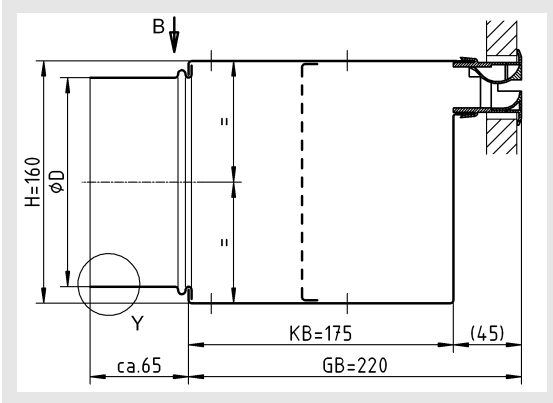


- 1.) anodised model
- 2.) painted model

Wall Slot Diffuser Model DSX-XXL-W

Dimensions of accessories

Plenum box type ASK-W for DSX-XXL-W...



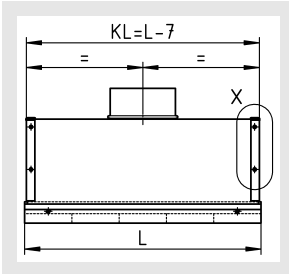
Available sizes

	øD		
	400 < L ≤ 500	500 < L ≤ 1000	1000 < L ≤ 1500
DSX-XXL-W-...-1	ø138	ø138	2x ø138
DSX-XXL-W-...-2	ø138	2x ø138	3x ø138

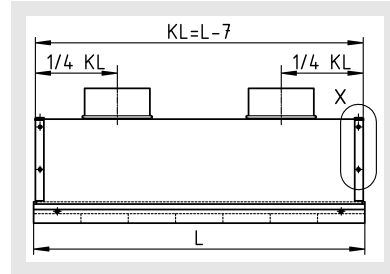
KH = Height of plenum box

GH = Total height

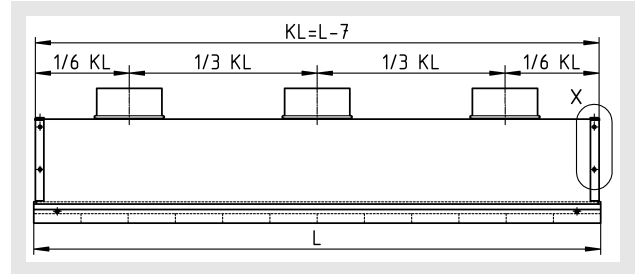
View B (drawn rotated by 90°) with 1 connection piece



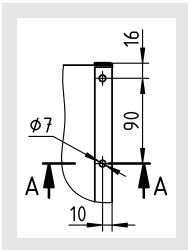
with 2 connection pieces



with 3 connection pieces

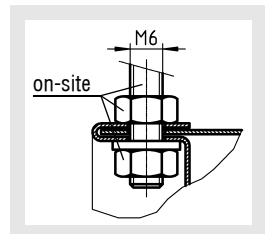


View X

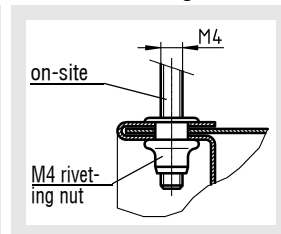


Section A-A / Diffuser mounting

Standard:



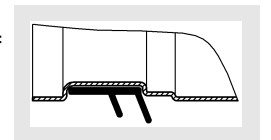
at an extra charge:



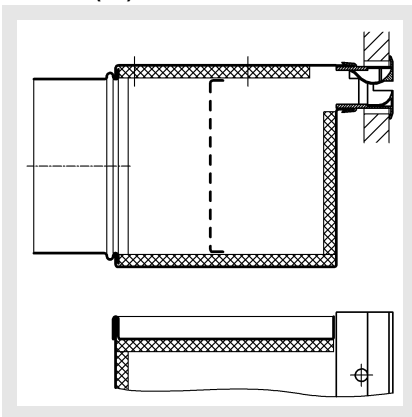
Rubber lip seal

To facilitate ceiling mounting, the plenum boxes can be provided with an M4 riveting nut. This is carried out on site if supplied without plenum box

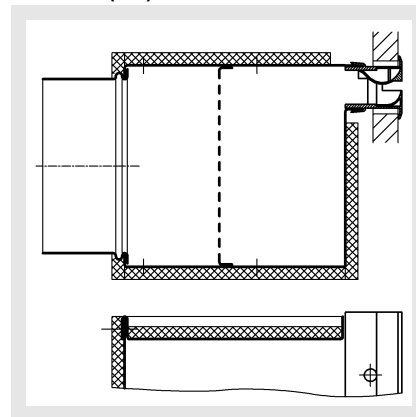
Detail Y



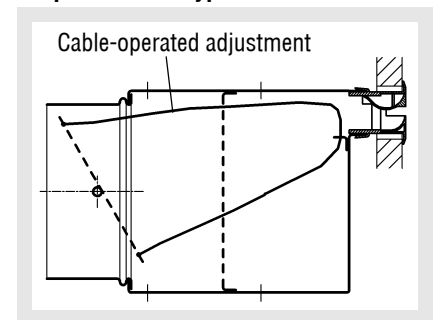
Insulation for plenum box internal (-li)



external (-la)

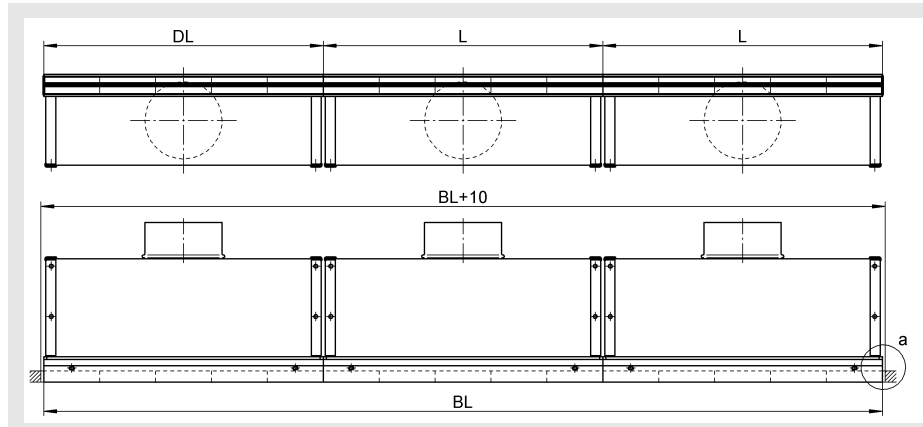


Throttle damper (-DK) for plenum box type ASK-W



Wall Slot Diffuser Model DSX-XXL-W

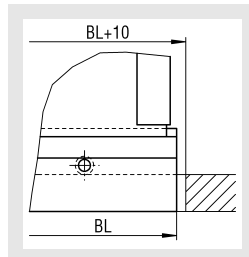
Band design DSX-XXL-W-..., without end piece



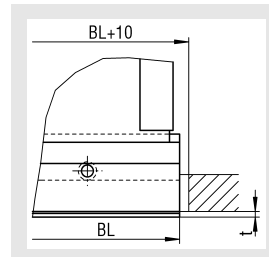
DL = Difference distance
BL = Length of band
L = 500/1000/1500 mm

Detail a, without end pieces

DSX-XXL-W-S / DSX-XXL-W-PA

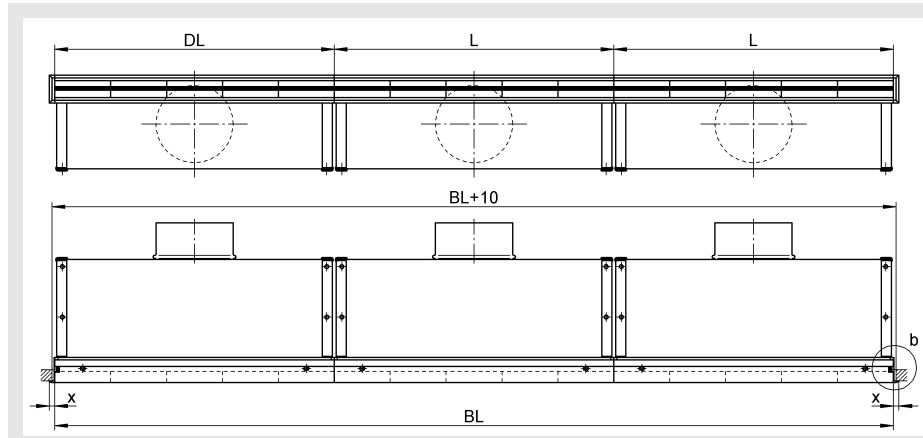


DSX-XXL-W-P / DSX-XXL-W-PB



	t (mm)
DSX-XXL-W-S	-
DSX-XXL-W-PA	-
DSX-XXL-W-P	3
DSX-XXL-W-PB	2,5

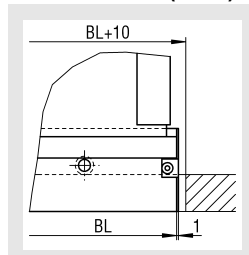
Band design DSX-XXL-W-..., with end piece



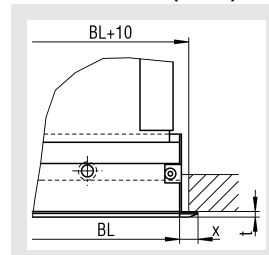
DL = Difference distance
BL = Length of band
L = 500/1000/1500 mm

Detail b, with end pieces

DSX-XXL-W-S (-ES1)



DSX-XXL-W-P (-ES2) / DSX-XXL-W-PB (-ES3)



	t (mm)	x (mm)
DSX-XXL-W-S	-	1
DSX-XXL-W-P	3	10
DSX-XXL-W-PB	2,5	16

When the ceiling slot diffuser type DSX-XXL is designed as a band > 2000 mm, the total length BL is assembled from standard lengths L = 1500 mm. The difference pieces <1500 mm to ≥400 mm are fitted with a plenum box. The difference pieces <400 mm are supplied as dummy pieces without plenum box. A different band division is possible after consultation and when required by the customer. Individual sections are attached (for on-site assembly) using connecting elements.

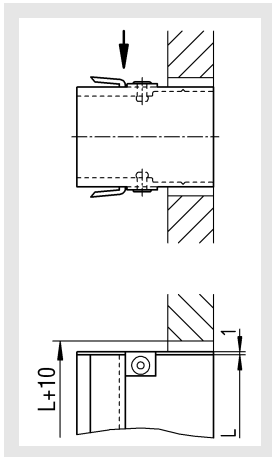
Wall Slot Diffuser Model DSX-XXL-W

End piece (-ES1 / -ES2 / -ES3)

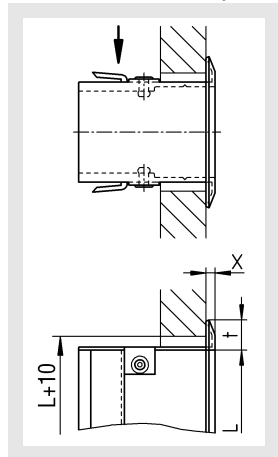
To give the impression of a continuous frame, lateral end pieces can be fitted (at an extra charge).

These end pieces are supplied loosely as standard. If there are order details regarding fitting, mounting will take place at the manufacturer's.

for DSX-XXL-W-S (-ES1)

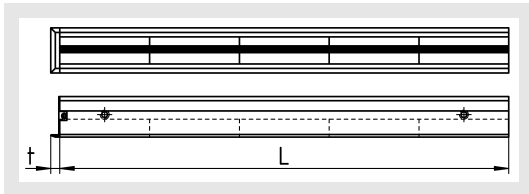


for DSX-XXL-W-P (-ES2)
for DSX-XXL-W-PB (-ES3)

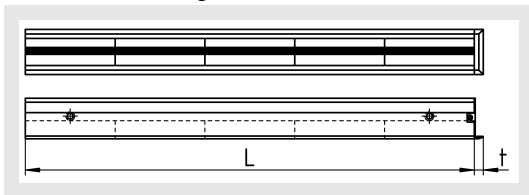


	t (mm)	x (mm)
DSX-XXL-W-P	10	3
DSX-XXL-W-PB	16	2,5

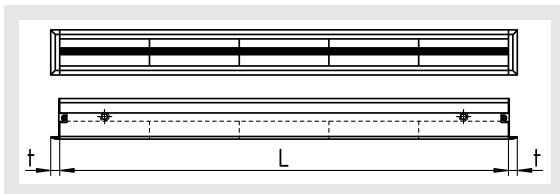
Mounted on the left



Mounted on the right



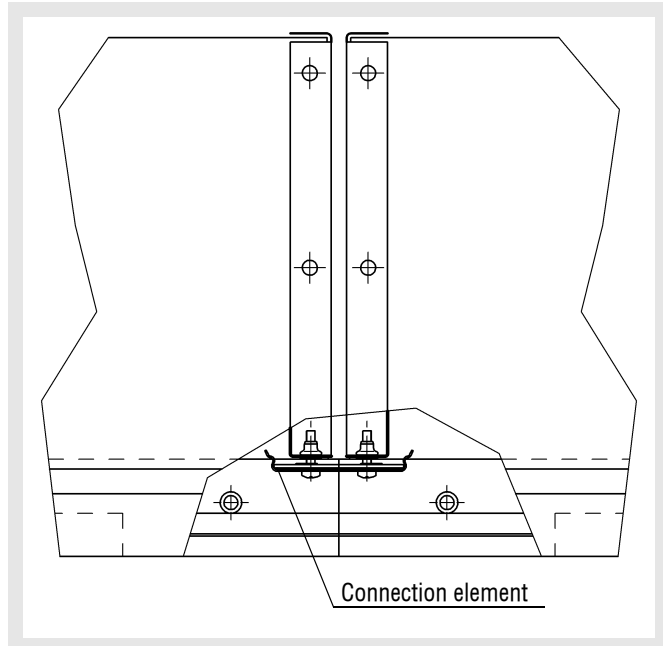
Mounted on both sides



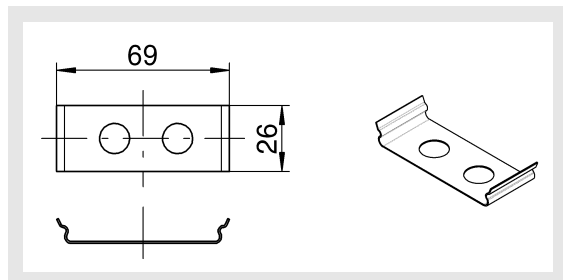
Please specify when ordering whether end pieces are to be fitted on both sides of the diffuser or on the left or right side.

Wall Slot Diffuser Model DSX-XXL-W

Connection element for band design
(supplied loose as standard)

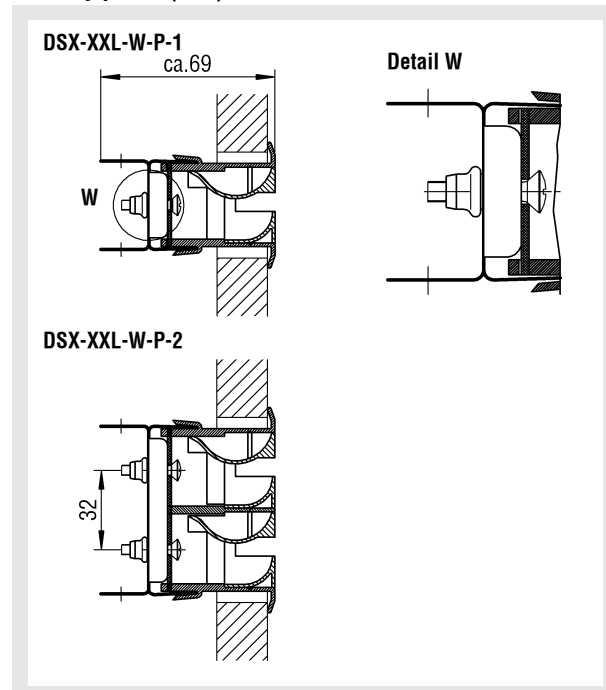


Detail of connection element

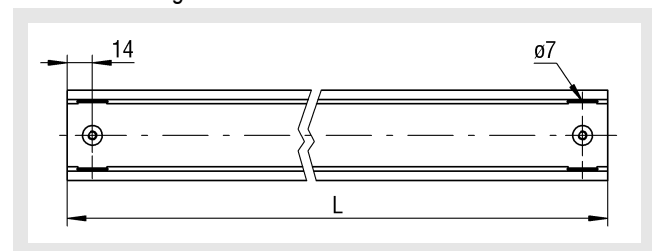


For the ceiling slot diffuser DSX-XXL-W-...-1 a connection element is used. For DSX-XXL-W-...-2, two connection elements are used in the outer slots.

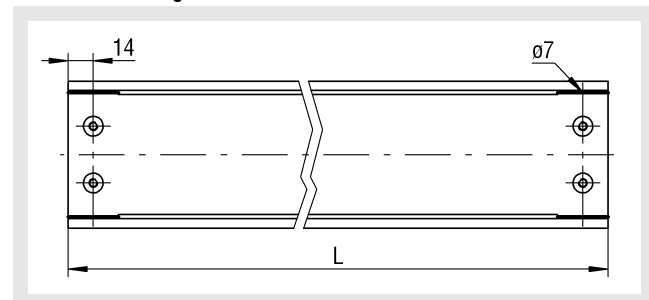
Dummy piece (-BS)



Arrangement of the mounting holes in the dummy piece
DSX-XXL-W-...-1 (1-slot)
with 2 mounting holes



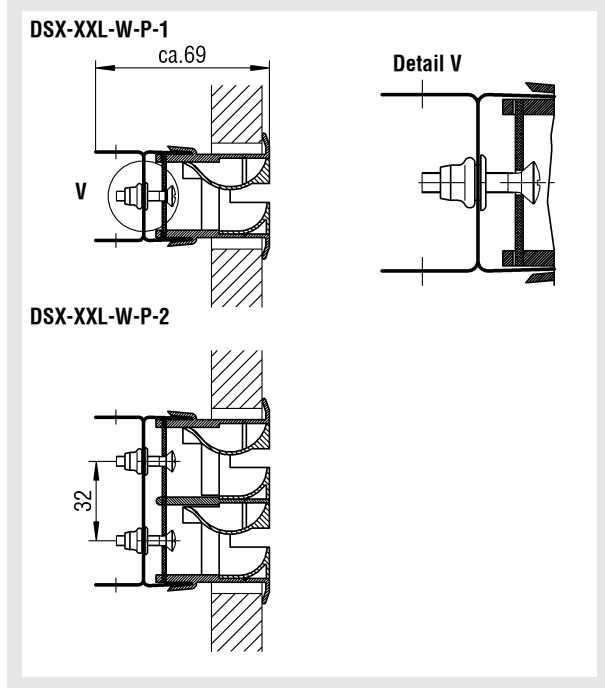
DSX-XXL-W-...-2 (2-slot)
with 4 mounting holes



In the dummy design, no operation with overflow air is possible since the slot diffuser is completely closed at the back.

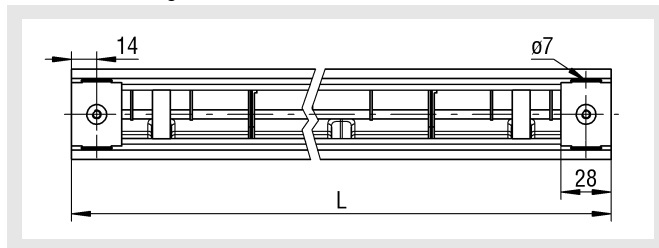
Wall Slot Diffuser Model DSX-XXL-W

Mounting bracket (pair) (-BW) for operation with overflow air

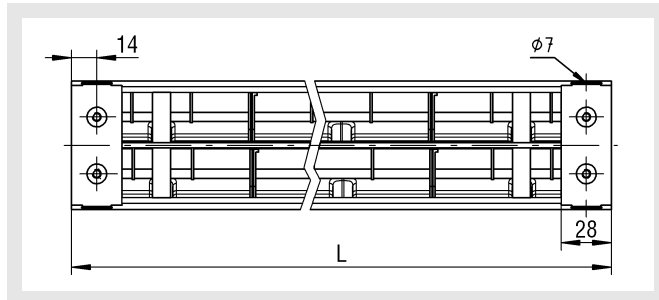


Arrangement of the mounting holes

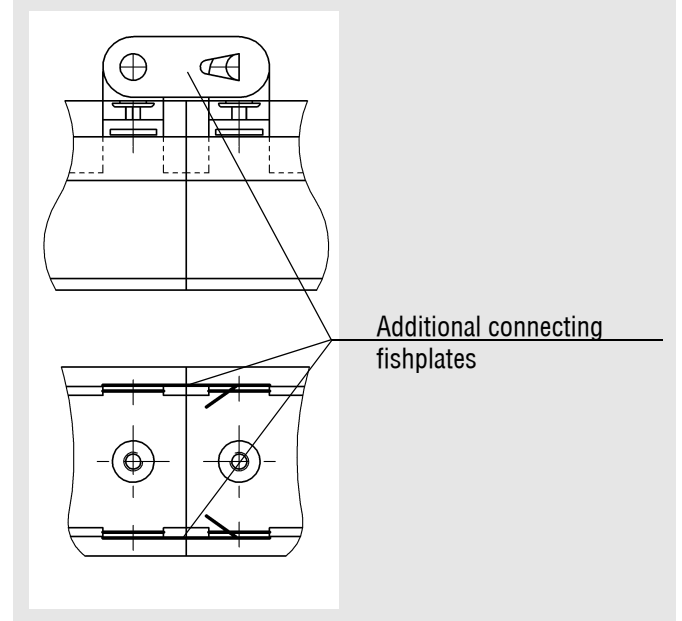
DSX-XXL-W-...-1 (1-slot)
with 2 mounting holes



DSX-XXL-W-...-2 (2-slot)
with 4 mounting holes



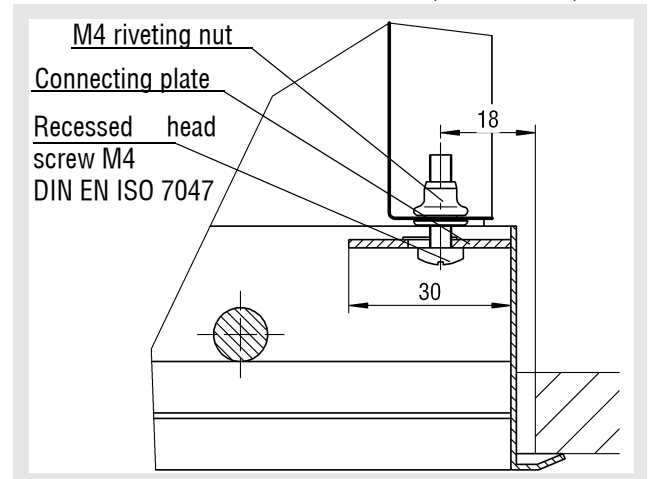
Band design for operation with overflow air or dummy pieces



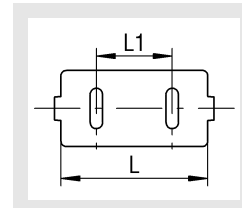
In the band design for operation with overflow air or dummy pieces, two additional fishplates are supplied loose, thus only requiring two threaded bars on-site for suspension.

Fastening methods

Concealed mounting (-VM) with plenum box
DSX-XXL-W-...-1 and DSX-XXL-W-...-2 (1- and 2-slot)



Detail of connecting plate

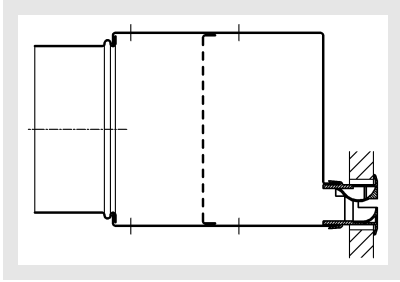


	L	L1
DSX-XXL-W-1	27	-
DSX-XXL-W-2	58	30

Wall Slot Diffuser Model DSX-XXL-W

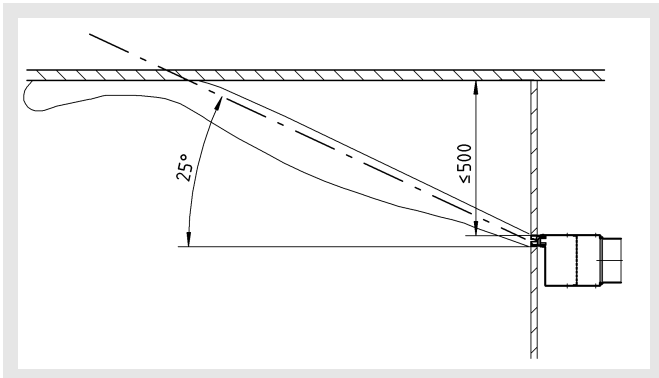
Installation

plenum box (-ASK) rotated



The plenum box (-ASK) can be turned on request. This has to be stated when ordering.

Optimum installation



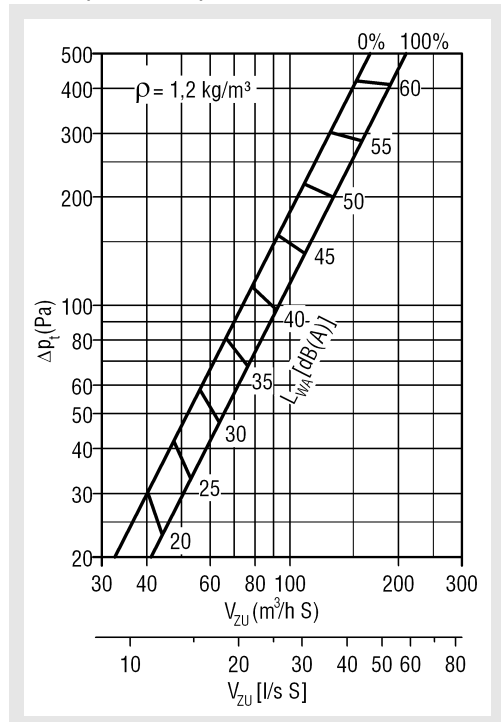
The clearance between ceiling and upper edge of the diffuser must not exceed 0.5 m, otherwise no coanda effect is achieved!

Wall Slot Diffuser Model DSX-XXL-W

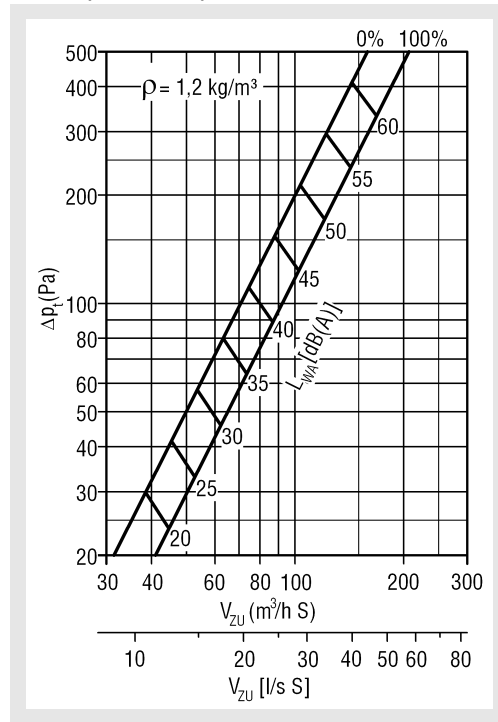
Technical Data

Pressure loss and noise level

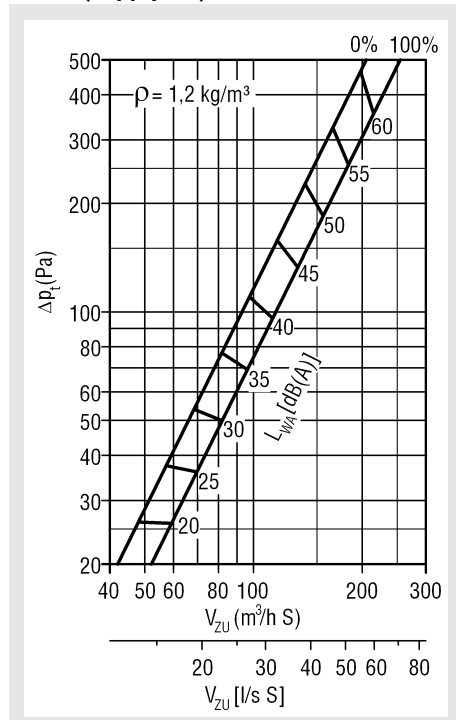
DSX-XXL-W-...1
L=400 (supply air)



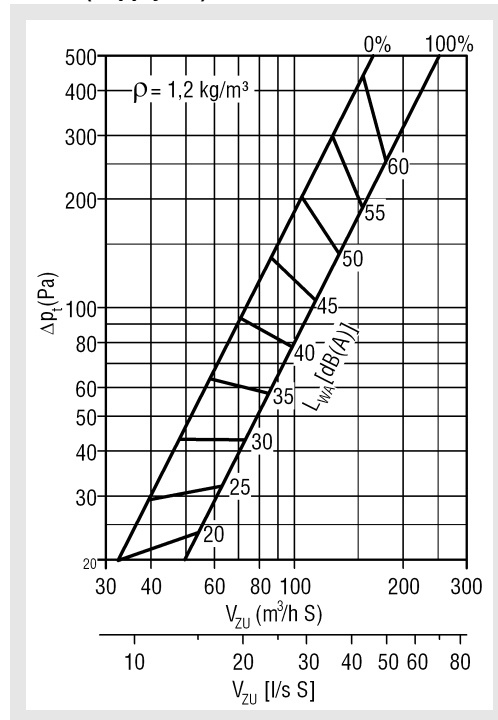
DSX-XXL-W-...2
L=400 (supply air)



DSX-XXL-W-...1
L=500 (supply air)



DSX-XXL-W-...2
L=500 (supply air)

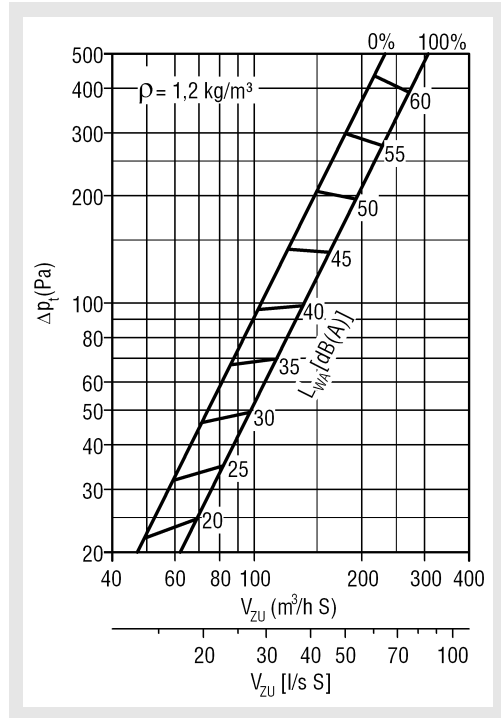


0% = Damper CLOSED

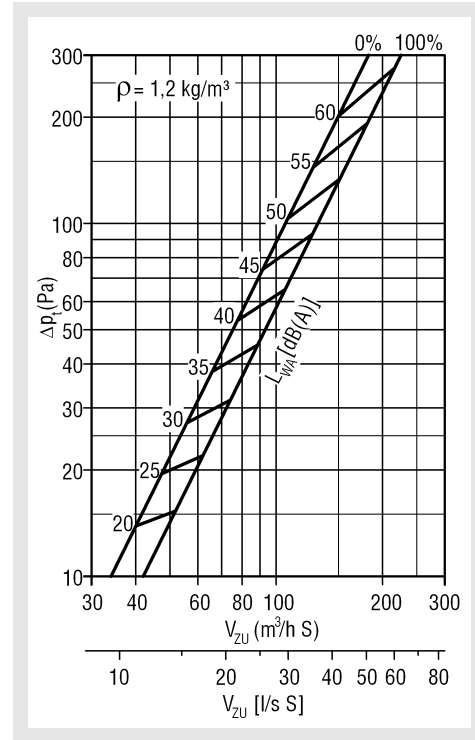
100% = Damper OPEN

Wall Slot Diffuser Model DSX-XXL-W

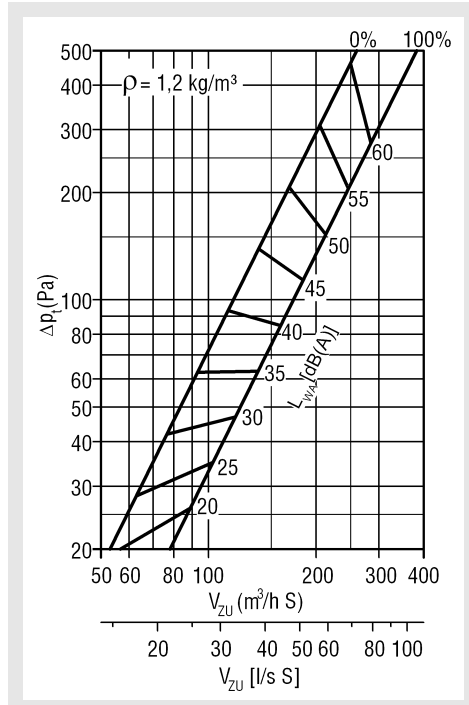
DSX-XXL-W-...1
L=600 (supply air)



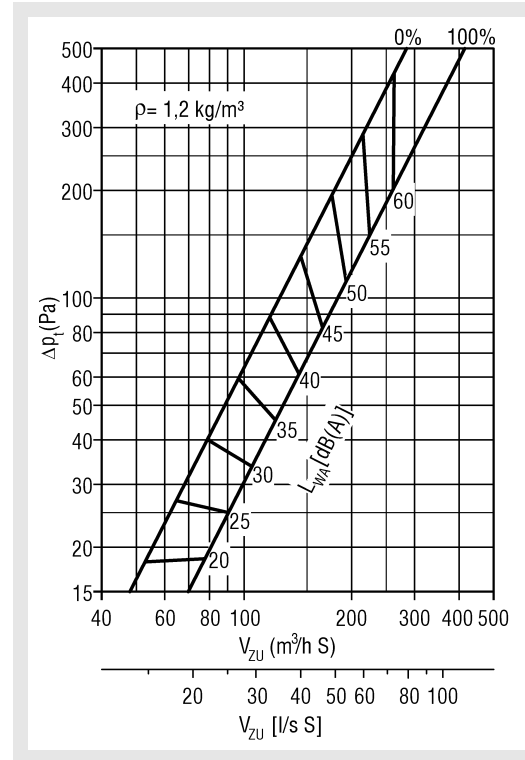
DSX-XXL-W-...2
L=600 (supply air)



DSX-XXL-W-...1
L=800 (supply air)



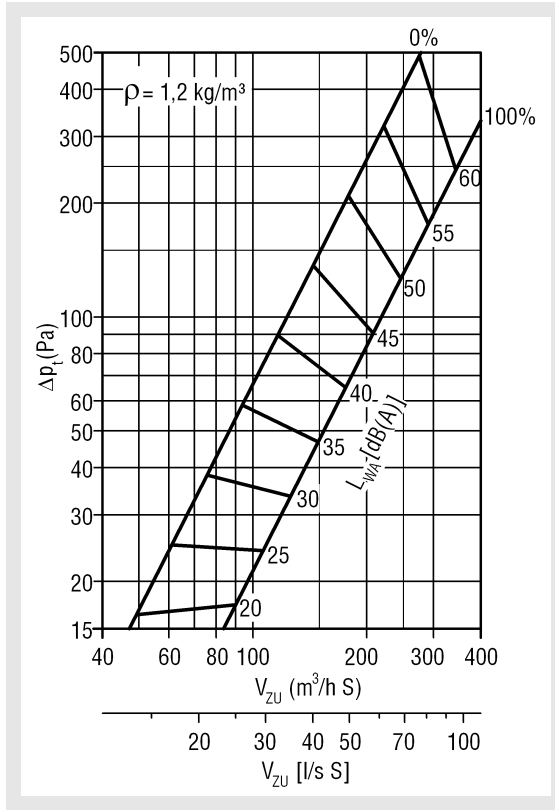
DSX-XXL-W-...2
L=800 (supply air)



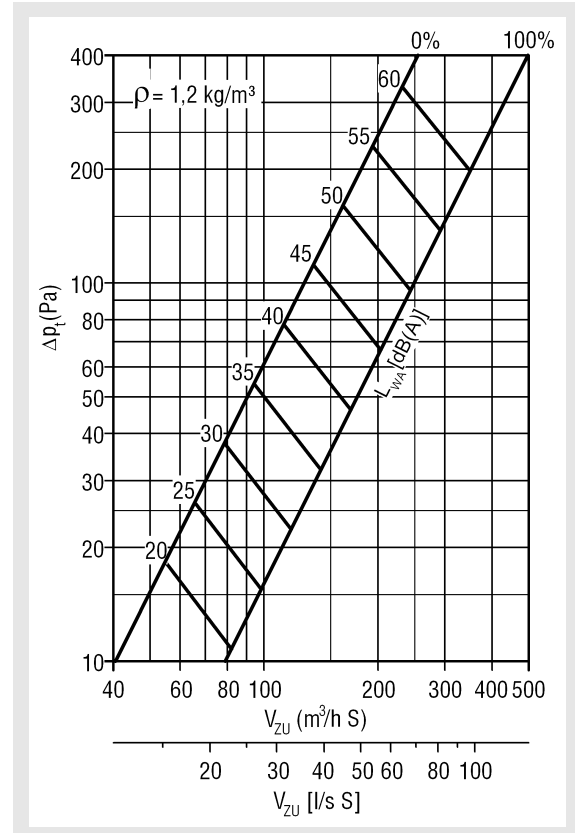
0% = Damper CLOSED
100% = Damper OPEN

Wall Slot Diffuser Model DSX-XXL-W

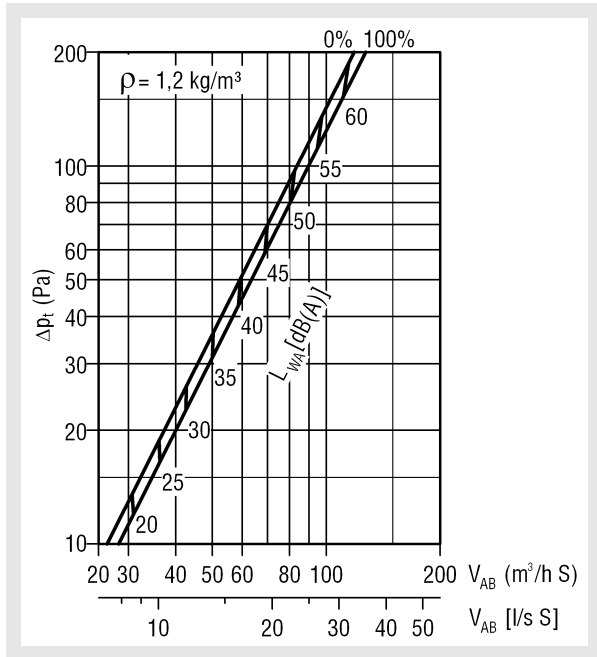
DSX-XXL-W...1
L=1000 (supply air)



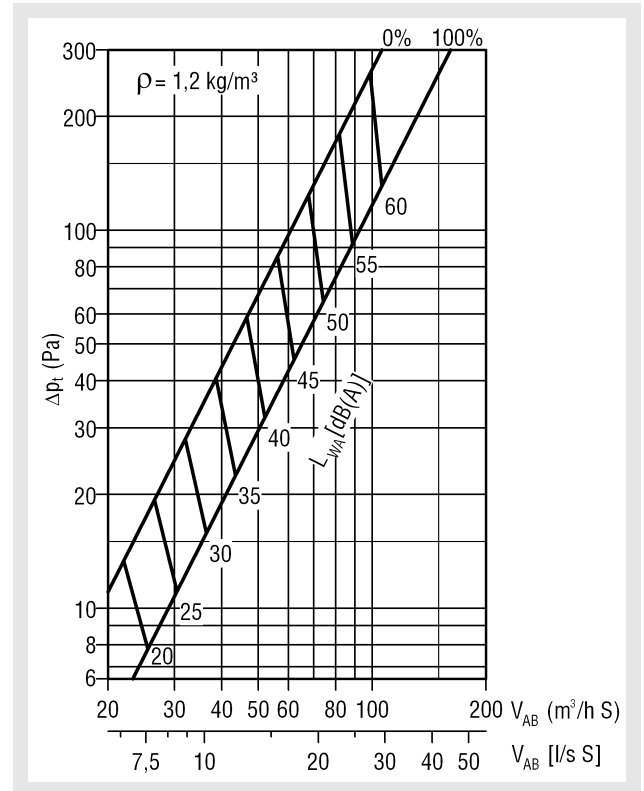
DSX-XXL-W...2
L=1000 (supply air)



DSX-XXL-W...1
L=400 (return air)



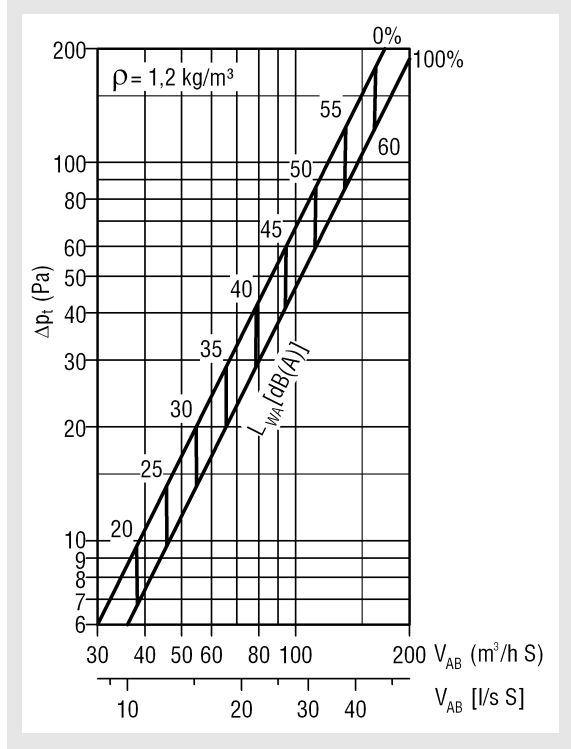
DSX-XXL-W...2
L=400 (return air)



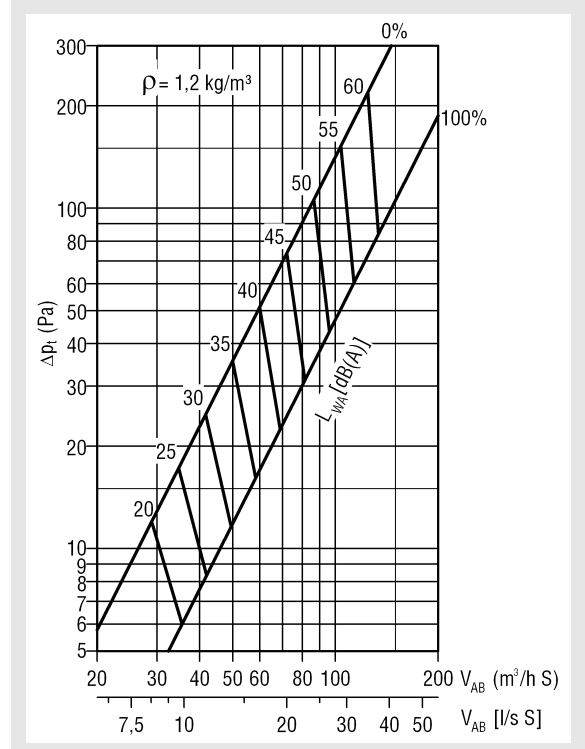
0% = Damper CLOSED
100% = Damper OPEN

Wall Slot Diffuser Model DSX-XXL-W

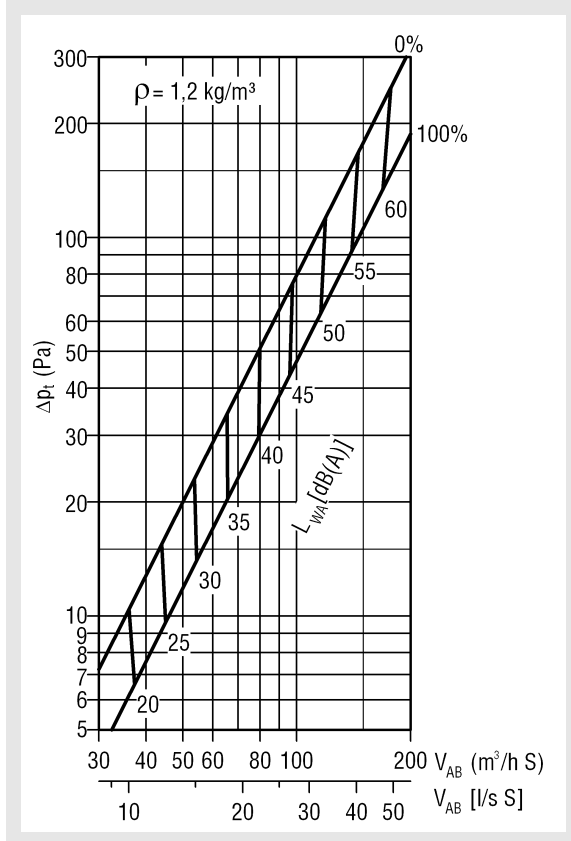
DSX-XXL-W-...1
L=500 (return air)



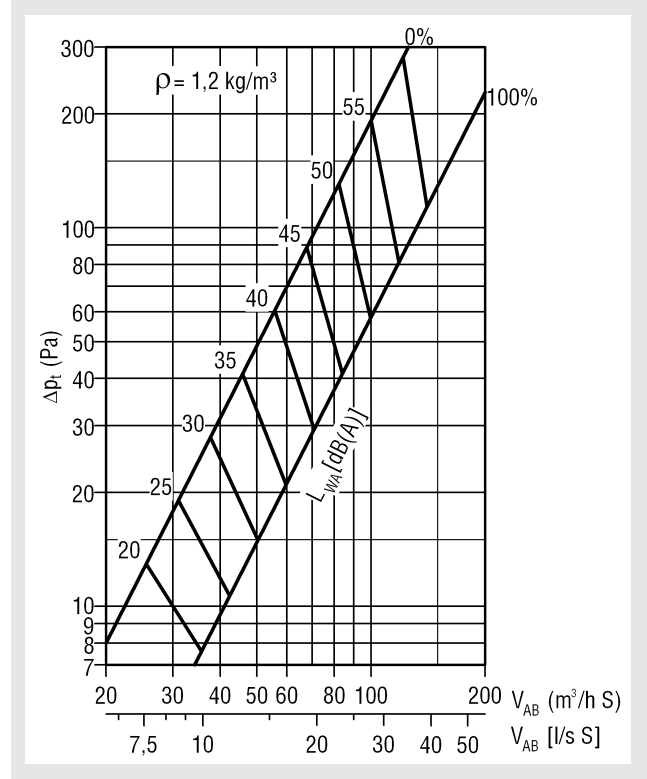
DSX-XXL-W-...2
L=500 (return air)



DSX-XXL-W-...1
L=600 (return air)



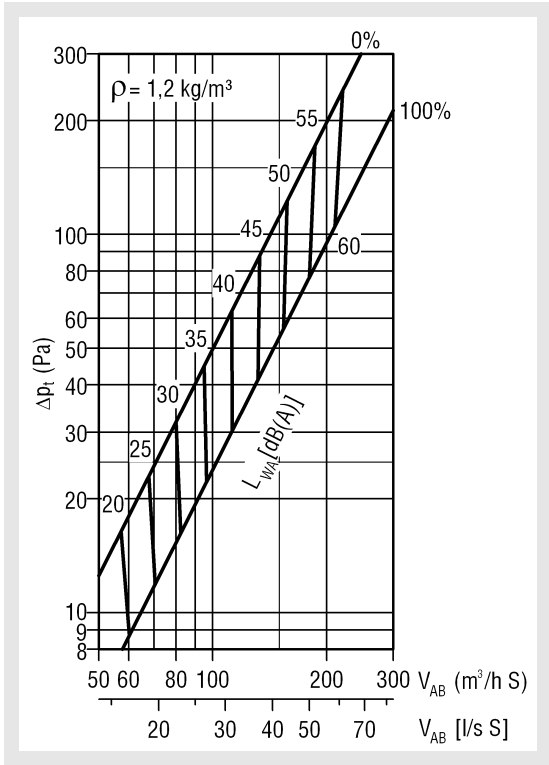
DSX-XXL-W-...2
L=600 (return air)



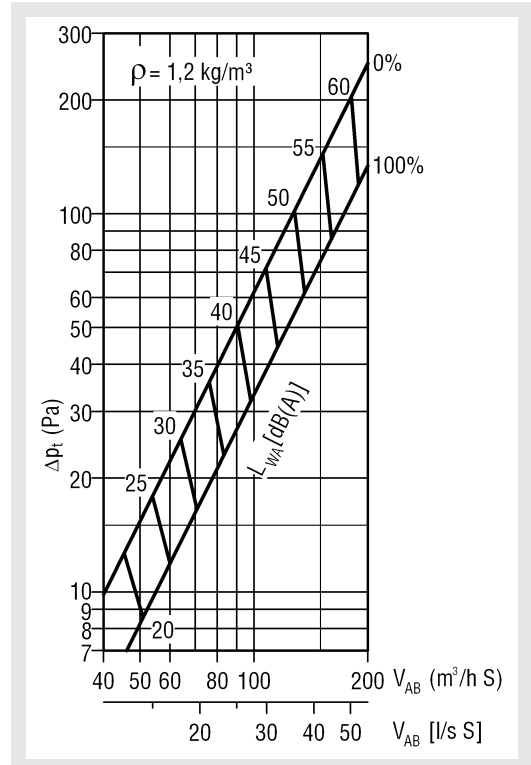
0% = Damper CLOSED
100% = Damper OPEN

Wall Slot Diffuser Model DSX-XXL-W

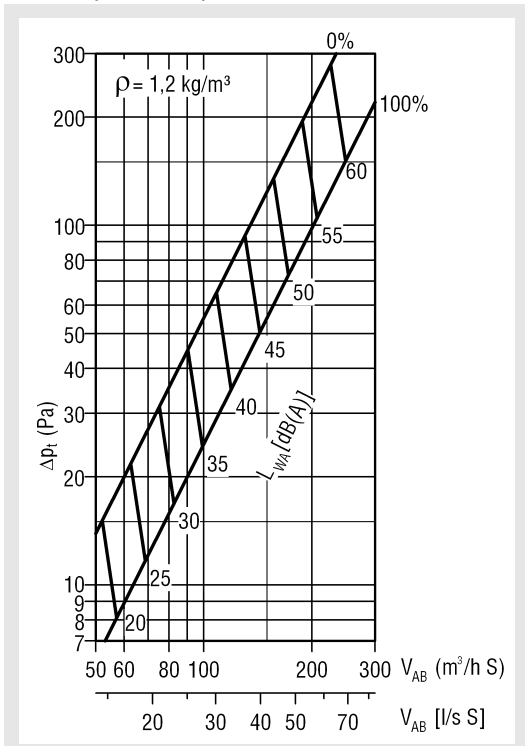
DSX-XXL-W-...1
L=800 (return air)



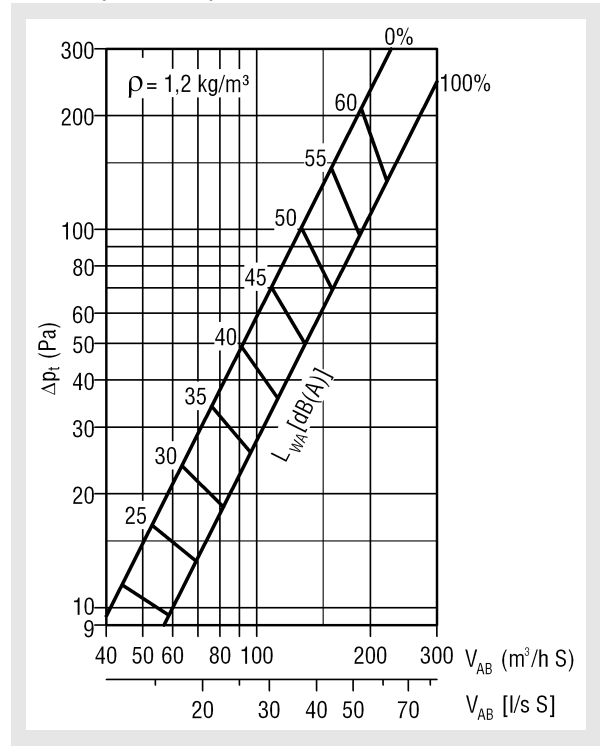
DSX-XXL-W-...2
L=800 (return air)



DSX-XXL-W-...1
L=1000 (return air)



DSX-XXL-W-...2
L=1000 (return air)

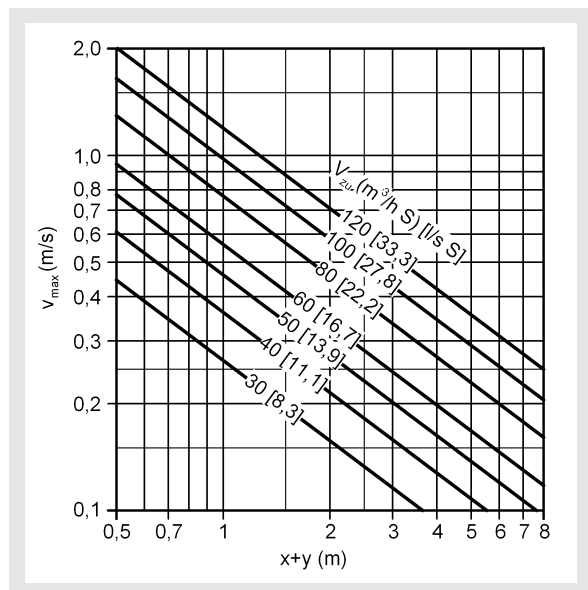


0% = Damper CLOSED
100% = Damper OPEN

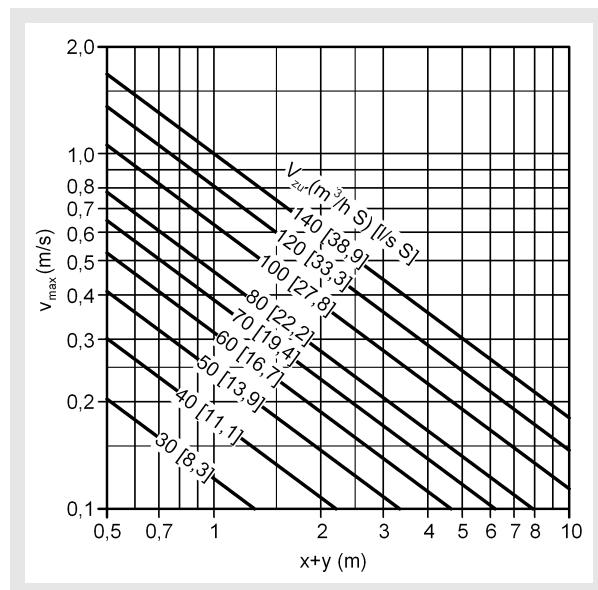
Wall Slot Diffuser Model DSX-XXL-W

Maximum end velocity of jet

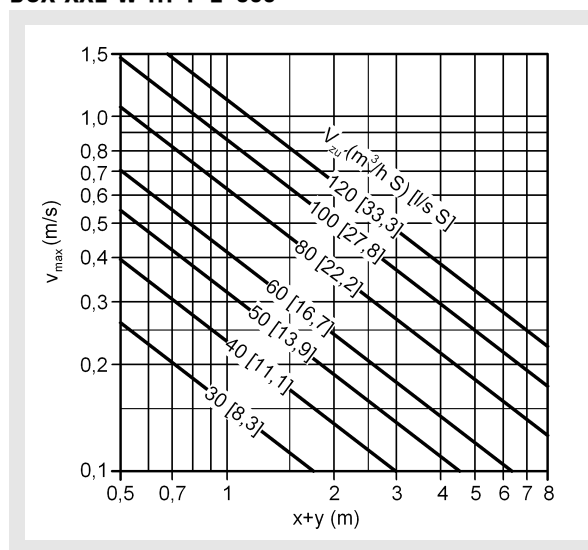
DSX-XXL-W-...-1 L=400



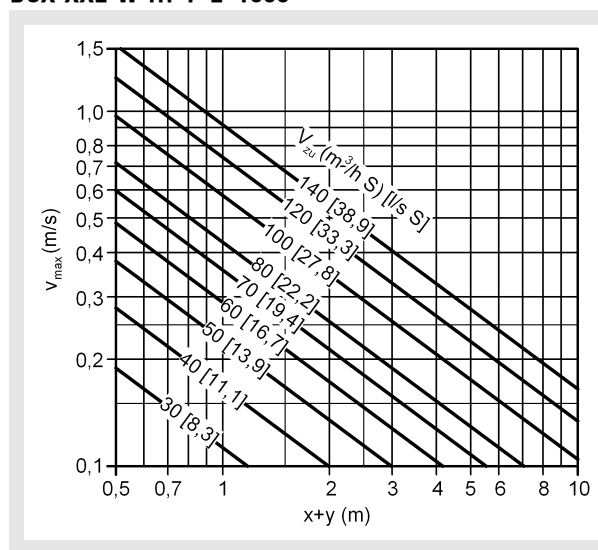
DSX-XXL-W-...-1 L=800



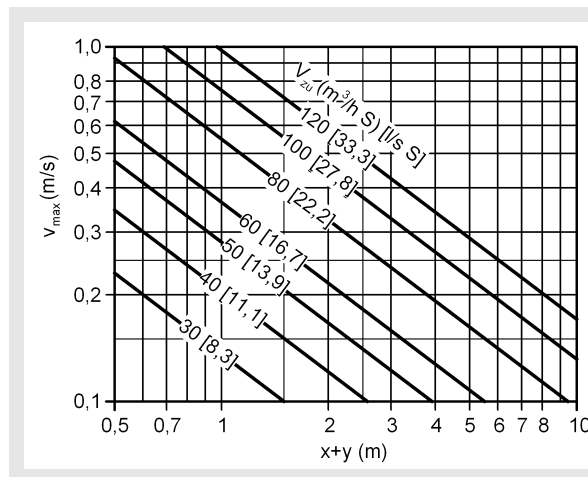
DSX-XXL-W-...-1 L=500



DSX-XXL-W-...-1 L=1000



DSX-XXL-W-...-1 L=600



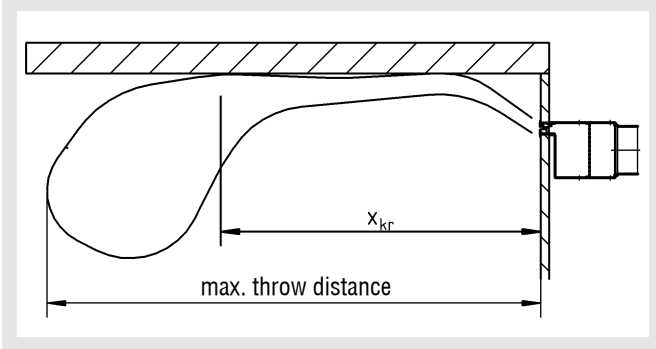
Correction factor for DSX-XXL-W-...-2:

$$V_{max} \times 1,33$$

Wall Slot Diffuser Model DSX-XXL-W

Critical throw

Calculation of the maximum throw distance in cooling mode



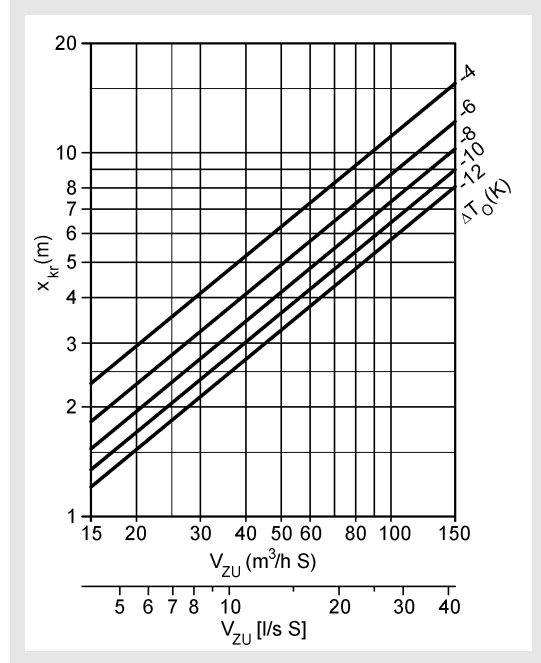
$$x = x_{kr} \times 2,66$$

Correction factor for DSX-XXL-W-...-2:

$$x_{kr} \times 1.17$$

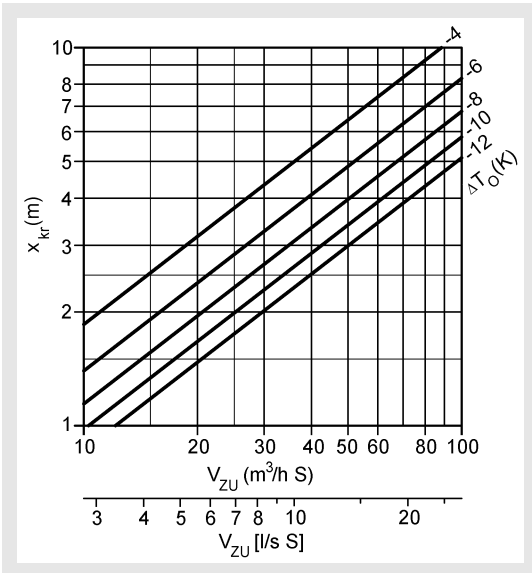
DSX-XXL-W-...-1

L=400



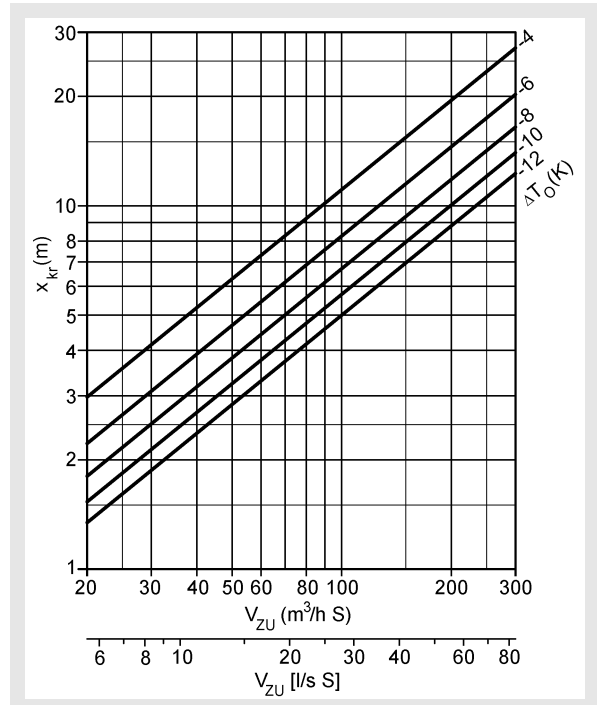
DSX-XXL-W-...-1

L=500



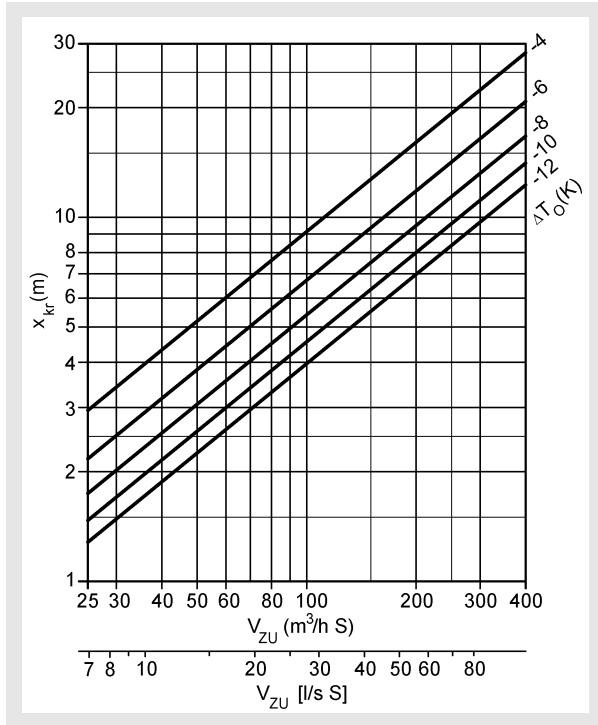
DSX-XXL-W-...-1

L=600

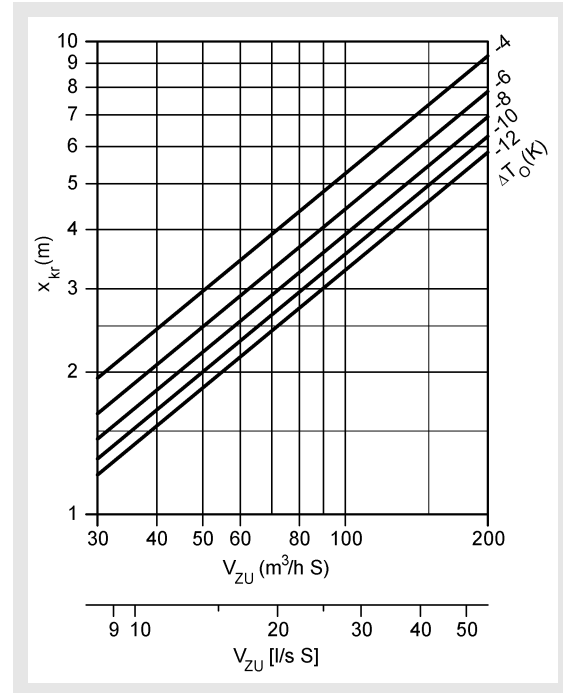


Wall Slot Diffuser Model DSX-XXL-W

DSX-XXL-W-...-1
L=800



DSX-XXL-W-...-1
L=1000

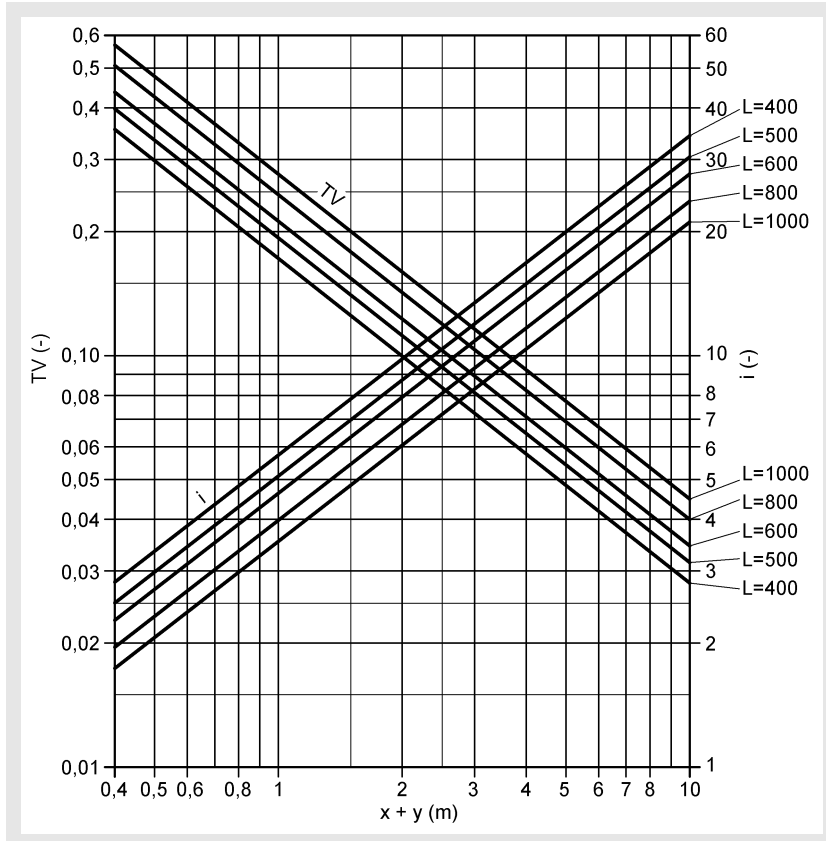


Correction factor for DSX-XXL-W-...-2:

$x_{kr} \times 1.17$

Induction ratios and temperature ratios

DSX-XXL-W-...-1



Correction factor for DSX-XXL-W-...-2:

$i \times 0,711$

$TV \times 1,38$

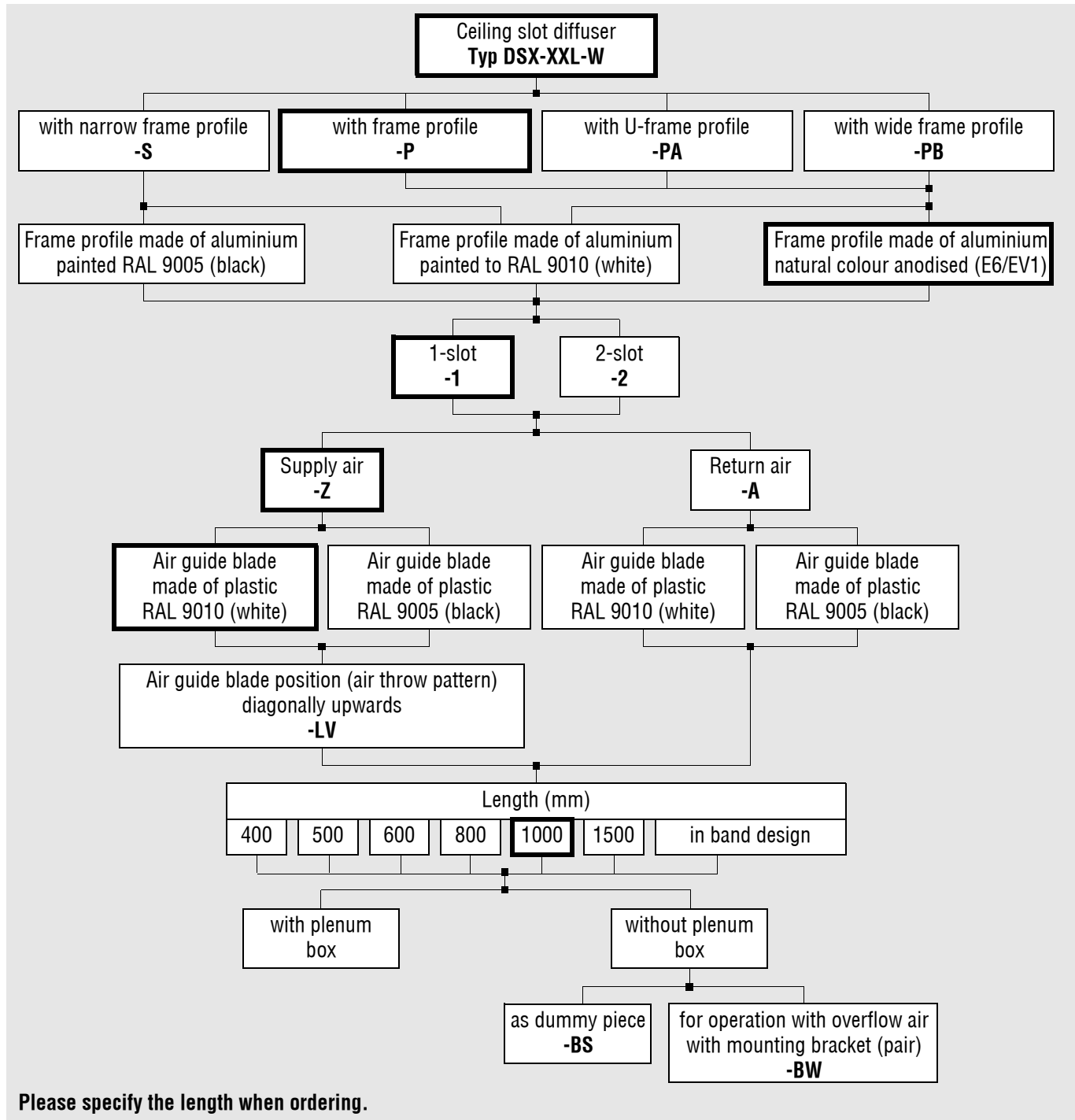
Wall Slot Diffuser Model DSX-XXL-W

Legend

V_{ZU} (m^3/h S)	= volumetric flow per slot
V_{ZU} [l/s S]	= volumetric flow per slot
Δp_t (Pa)	= Pressure loss
ρ (kg/m^3)	= Density
L_{WA} [dB(A)]	= A-weighted sound power level
x_{kr} (m)	= Critical throw
ΔT_0 (K)	= Temperature difference between air supply and room temperature $(\Delta T_0 = t_{ZU} - t_R)$
v_{max} (m/s)	= Maximum end velocity of jet
TV (-)	= Temperature ratio $(TV = \Delta T_x / \Delta T_0)$
i (-)	= Induction ratio $(i = V_x / V_{ZU})$
x (m)	= horizontal throw
y (m)	= vertical throw
t_{ZU} ($^{\circ}C$)	= Supply air temperature
t_R ($^{\circ}C$)	= Room temperature
KL (mm)	= Length of plenum box
KB (mm)	= Width of plenum box
GB (mm)	= Total width
L (mm)	= Length
ΔT_x (K)	= Temperature difference at point x
V_x (m^3/h)	= total air jet volume at point x
V_x [l/s]	= total air jet volume at point x

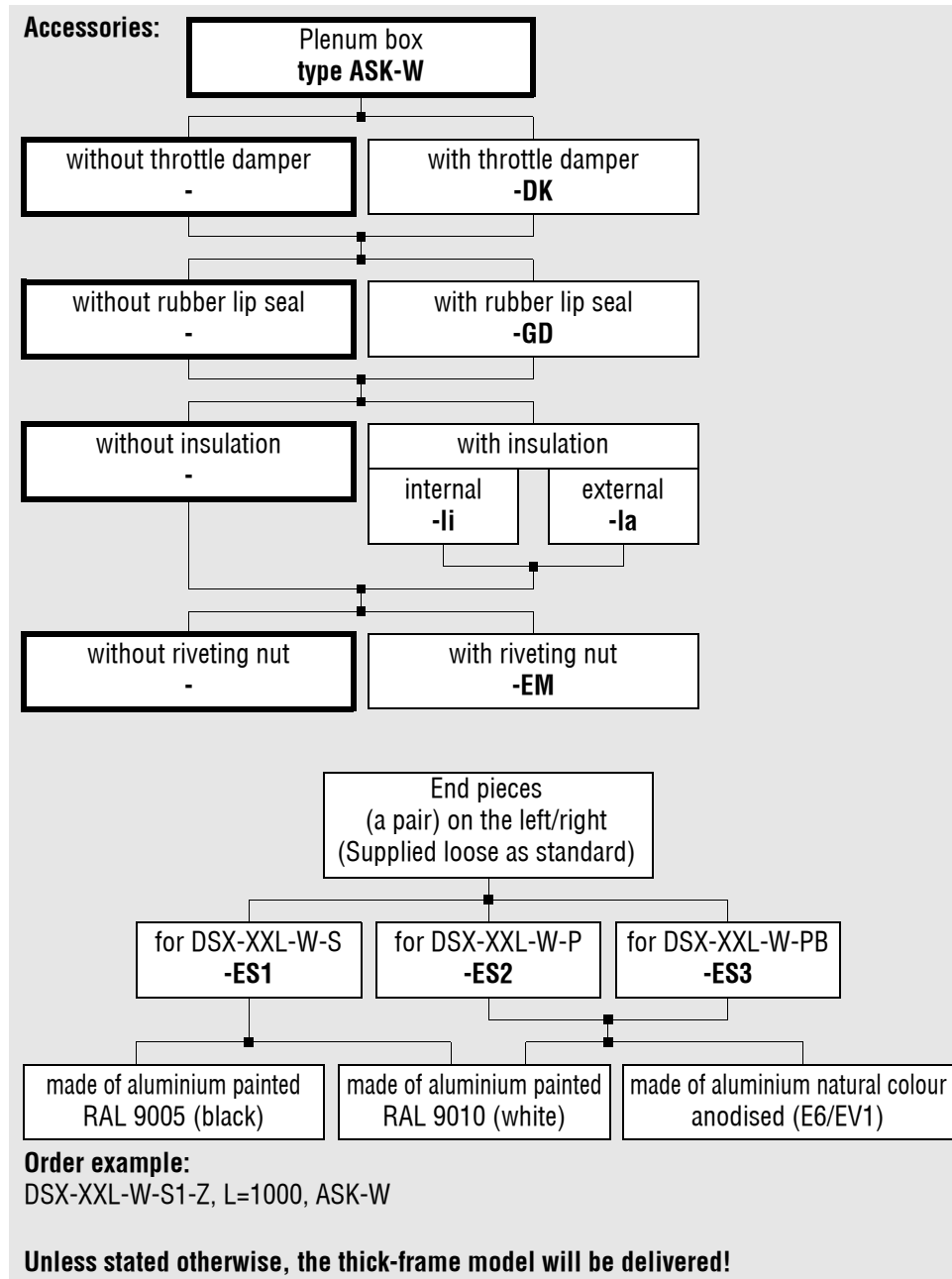
Wall Slot Diffuser Model DSX-XXL-W

Order details



Please specify the length when ordering.

Wall Slot Diffuser Model DSX-XXL-W



Wall Slot Diffuser Model DSX-XXL-W

Specification texts

The wall slot diffuser **type DSX-XXL-W-S** for supply air is a narrow version with a narrow frame profile suitable for the installation in walls. The high induction ensures fast reduction of the air outflow velocity and of the temperature difference.

Slot diffuser consisting of extruded aluminium profile painted in black (RAL 9005) or white (RAL 9010), depending on the colour of the air guide blade.

Air guide blade made of plastic, colour

- RAL 9005 (black) or
- RAL 9010 (white)

Product: SCHAKO **type DSX-XXL-W-S-Z**

- Version (number of slots)
 - **1** (1-slot)
 - **2** (2-slot)
- Air guide element setting
 - LV, air throw diagonally upwards
- Length:
 - 400 mm
 - 500 mm
 - 600 mm
 - 800 mm
 - 1000 mm
 - 1500 mm
- in band design with plenum box (-ASK) and concealed mounting (-VM)
- Model without plenum box
 - as dummy piece (-BS)
 - with M4 riveting nuts
 - for operation with overflow air with mounting bracket (pair) (-BW)
 - with M4 riveting nuts
- Return air version with air guide blades

Product: SCHAKO **type DSX-XXL-W-S-A**

Accessories:

- with plenum box (-ASK-W) made of galvanised sheet steel, as well as lateral connection pieces and fixing lugs.
 - with a throttle damper (-DK) in the connection piece adjustable from the front for air volume regulation.
 - with rubber lip seal (-Gd)
 - with thermal insulation
 - internal (-li)
 - external (-la)
 - with M4 riveting nuts
- with end piece (-ES1) (supplied loose as standard), made of painted aluminium
 - RAL 9005 (black) or
 - RAL 9010 (white)

Wall Slot Diffuser Model DSX-XXL-W

Wall slot diffuser **type DSX-XXL-W-P** for supply air is a narrow version with a frame profile, suitable for installation in walls. The high induction ensures fast reduction of the air outflow velocity and of the temperature difference.

Slot diffuser made of extruded aluminium profiles in natural colour anodised E6/EV1 or painted to RAL 9010 (white).

Air guide blades made of plastic, colour

- RAL 9005 (black) or
- RAL 9010 (white)

Product: SCHAKO **Typ DSX-XXL-W-P-Z**

- Version (number of slots)
 - **1** (1-slot)
 - **2** (2-slot)
- Air guide element setting
 - LV, air throw diagonally upwards
- Length:
 - 400 mm
 - 500 mm
 - 600 mm
 - 800 mm
 - 1000 mm
 - 1500 mm
 - in band design with plenum box (-ASK) and concealed mounting (-VM)
 - Model without plenum box
 - as dummy piece (-BS)
 - with M4 riveting nuts
 - for operation with overflow air with mounting bracket (pair) (-BW)
 - with M4 riveting nuts

- Return air version with air guide blades

Product: SCHAKO **type DSX-XXL-W-P-A**

Accessories:

- with plenum box (-ASK-W) made of galvanised sheet steel, as well as lateral connection piece and fixing lugs.
 - with a throttle damper (-DK) in the connection piece adjustable from the front for air volume regulation.
 - with rubber lip seal (-Gd)
 - with thermal insulation
 - internal (-li)
 - external (-la)
 - with M4 riveting nuts
- with end piece (-ES2) (supplied loose as standard)
 - natural colour anodised aluminium (E6/EV1)
 - aluminium painted in white (RAL 9010)

Wall Slot Diffuser Model DSX-XXL-W

The wall slot diffuser **type DSX-XXL-W-PA** for supply air has a U-frame profile suitable for installation in walls. The high induction ensures fast reduction of the air outflow velocity and of the temperature difference.

Slot diffuser made of extruded aluminium profiles in natural colour anodised E6/EV1 or painted to RAL 9010 (white).

Air guide blade made of plastic, colour

- RAL 9005 (black) or
- RAL 9010 (white)

Product: SCHAKO **type DSX-XXL-W-PA-Z**

- Version (number of slots)
 - **1** (1-slot)
 - **2** (2-slot)
 - Air guide element setting
 - LV, air throw diagonally upwards
 - Length:
 - 400 mm
 - 500 mm
 - 600 mm
 - 800 mm
 - 1000 mm
 - 1500 mm
 - in band design with plenum box (-ASK) and concealed mounting (-VM)
 - Model without plenum box
 - as dummy piece (-BS)
 - with M4 riveting nuts
 - for operation with overflow air with mounting bracket (pair) (-BW)
 - with M4 riveting nuts
 - Return air version with air guide blades
- Product: SCHAKO **type DSX-XXL-W-PA-A**

Accessories:

- with plenum box (-ASK-W) made of galvanised sheet steel, as well as lateral connection piece and fixing lugs.
- with a throttle damper (-DK) in the connection piece adjustable from the front for air volume regulation.
- with rubber lip seal (-Gd)
- with thermal insulation
 - internal (-li)
 - external (-la)
- with M4 riveting nuts

The wall slot diffuser **type DSX-XXL-W-PB** for supply air is a narrow version with a wide frame profile, suitable for installation in walls. The high induction ensures fast reduction of the air outflow velocity and of the temperature difference.

Slot diffuser made of extruded aluminium profiles in natural colour anodised E6/EV1 or painted to RAL 9010 (white).

Air guide blade made of plastic, colour

- RAL 9005 (black) or
- RAL 9010 (white)

Product: SCHAKO **type DSX-XXL-W-PB-Z**

- Version (number of slots)
 - **1** (1-slot)
 - **2** (2-slot)
 - Air guide element setting
 - LV, air throw diagonally upwards
 - Length:
 - 400 mm
 - 500 mm
 - 600 mm
 - 800 mm
 - 1000 mm
 - 1500 mm
 - in band design with plenum box (-ASK) and concealed mounting (-VM)
 - Model without plenum box
 - as dummy piece (-BS)
 - with M4 riveting nuts
 - for operation with overflow air with mounting bracket (pair) (-BW)
 - with M4 riveting nuts
 - Return air version with air guide blades
- Product: SCHAKO **type DSX-XXL-W-PB-A**

Accessories:

- with a plenum box (-ASK-W) made of galvanized sheet steel, as well as lateral spigots and attachment eyes.
- with a throttle damper (-DK) in the connection pipe adjustable on the front side for air volume regulation.
- with rubber lip seal (-Gd)
- with thermal insulation
 - internal (-li)
 - external (-la)
- with M4 riveting nuts
- with end piece (-ES3) (supplied loose as standard)
 - natural colour anodised aluminium (E6/EV1)
 - aluminium painted in white (RAL 9010)