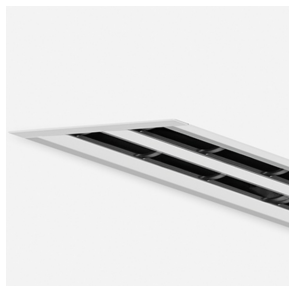
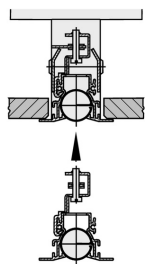




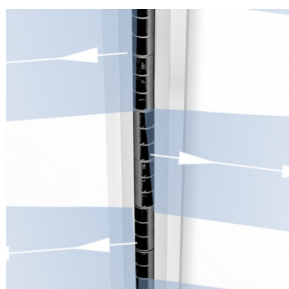
VSD50-1-AK



INSTALLATION IN
CONTINUOUS CEILINGS



CONCEALED SCREW
FIXING



ALTERNATING
HORIZONTAL AIR
DISCHARGE



PLENUM BOX WITH
DAMPER BLADE
(OPTIONAL)

WITH WIDE DIFFUSER FACE FOR LARGER VOLUME FLOW RATES

Slot diffusers with 50 mm diffuser face (nominal width) and adjustable air control elements

- Nominal length from 600 to 1950 mm, 1 or 2 slots
- Volume flow rate range 20 – 120 (l/s)/m or 72 – 432 (m³/h)/m
- Diffuser face made of extruded aluminium sections
- For variable and constant volume flows
- 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
- Damper blade for volume flow rate balancing, can be adjusted through the diffuser face
- Concealed screw fixing that simplifies installation of the diffuser after the ceiling has been completed
- Symmetric and asymmetric plenum boxes, with or without lining
- End plates, end angles, corner sections

Application



Application

- Type VSD50 slot diffusers are used as supply air or extract air devices in comfort zones
- 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 (supply air variant)
- For variable and constant 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

Special characteristics

- Individually adjustable air control elements to meet individual local requirements
- 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

Nominal sizes

- L_N: 600, 750, 900, 1050, 1200, 1350, 1500, 1650, 1800, 1950 mm
- Diffuser face available in intermediate sizes from 300 to 2550 mm, in increments of 1 mm

Description



Variants

- VSD50-*: 1 or 2 slots
- VSD50-*F: Diffuser face only
- VSD50-*E: Corner section
- VSD50-...: Diffuser face without extended border
- VSD50-.../B00: Diffuser face with extended border
- VSD50-...: Black air control elements
- VSD50-.../WW: White air control elements

Plenum box and diffuser face fixing

- AK: Plenum box and clamp fixing
- DK: Plenum box with lining and clamp fixing
- AS: Plenum box and concealed screw fixing
- DS: Plenum box with lining and concealed screw fixing
- AA: Asymmetric plenum box and clamp fixing

Parts and characteristics

- Diffuser face with individually adjustable air control elements
- Plenum box for horizontal duct connection
- Concealed screw fixing (facilitates installation of the diffuser face) or clamp fixing
- Connecting pins and alignment plates to connect and align slot diffusers for a continuous linear arrangement

Attachments

- M: Damper blade for volume flow rate balancing
- 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

Construction features

- Spigot suitable for circular ducts to EN 1506 or EN 13180
- Spigot with groove for lip seal (if accessory lip seal has been ordered)

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
- End plate and end angle made of aluminium
- Lip seal made of rubber
- Lining is mineral wool
- 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

Mineral wool

- To EN 13501, fire rating class A1, non-combustible
- RAL quality mark RAL-GZ 388
- Biosoluble and hence hygienically safe according to the German TRGS 905 (Technical Rules for Hazardous Substances) and EU directive 97/69/EG
- Faced with glass fibre fabric as a protection against erosion through airflow velocities of up to 20 m/s
- Inert to fungal and bacterial growth

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 INFORMATION

Functional description

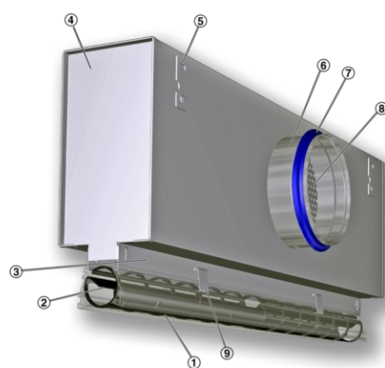
Slot diffusers direct the air from air conditioning systems into the room, either horizontally or at an angle. The resulting airflow induces high levels of room air, thereby rapidly reducing the airflow velocity and the temperature difference between supply air and room air. The result is a mixed flow ventilation in comfort zones, with good overall room ventilation, creating only very little turbulence in the occupied zone.

Type VSD50 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.

A damper blade (optional) simplifies volume flow rate balancing for commissioning.

To give rooms an aesthetic, uniform look, Type VSD50 diffusers may also be used for extract air.

Schematic illustration of the VSD50 with clamp fixing



- ① Diffuser face
- ② Adjustable air control element
- ③ Neck
- ④ Plenum box
- ⑤ Suspension lug
- ⑥ Spigot
- Optional
- ⑦ Lip seal
- ⑧ Damper blade for volume flow rate balancing
- ⑨ Clamp fixing

Nominal length	600, 750, 900, 1050, 1200, 1350, 1500, 1650, 1800, 1950 mm
Number of slots	1, 2
Neck extension	0, 25, 50, 75, 100, 125 mm
Minimum volume flow rate	20 – 40 (l/s)/m or 72 – 144 (m³/h)/m
Maximum volume flow rate, with $L_{WA} \cong 50$ dB(A)	70 – 120 (l/s)/m or 252 – 432 (m³/h)/m
Supply air to room air temperature difference	–10 to +10 K

Quick sizing – sound power level and total differential pressure

Nominal length	V		Damper blade position											
Nominal length	V		0°				45°				90°			
			D = 123		D = 158		D = 123		D = 158		D = 123		D = 158	
Nominal length	V		Δp_t	LWA	Δp_t	LWA	Δp_t	LWA	Δp_t	LWA	Δp_t	LWA	Δp_t	LWA
Nominal length	l/s	m³/h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
600	11	38	4	<15	3	<15	5	<15	4	<15	7	<15	4	<15
	25	90	19	31	17	28	25	32	20	28	36	32	24	28
600	40	144	49	45	44	42	65	46	50	42	91	46	60	42
	50	180	77	52	69	49	101	53	78	49	143	54	93	50
750	15	54	5	<15	4	<15	7	15	5	<15	11	15	7	12
	30	108	20	33	17	29	28	33	20	29	43	34	25	29
750	40	144	35	41	30	37	50	42	35	37	77	42	45	38
	55	198	65	51	56	47	94	52	66	48	145	53	85	48
900	15	54	4	<15	3	<15	6	<15	4	<15	10	<15	5	<15
	35	126	20	34	17	30	32	34	21	30	53	35	28	31
900	50	180	41	44	33	41	65	45	42	41	107	46	58	41
	65	234	70	53	56	49	110	54	71	49	181	55	97	50
1050	20	72	6	17	4	<15	9	17	6	<15	16	18	8	<15
	40	144	22	35	17	31	37	36	22	32	64	37	32	32
1050	55	198	41	45	31	41	70	45	42	41	120	46	60	42
	70	252	66	52	50	48	113	53	68	49	195	55	98	50
1200	25	90	7	20	5	17	13	21	8	17	24	21	11	17
	40	144	19	33	13	29	34	34	19	29	61	34	29	30
1200	55	198	35	42	25	38	64	43	36	39	114	44	54	39
	75	270	64	52	47	48	118	53	67	48	212	54	101	49
1350	25	90	7	19	5	15	13	19	7	15	23	20	11	15
	45	162	21	34	14	30	40	35	21	31	74	36	34	31
1350	65	234	43	45	29	41	83	46	44	42	154	47	70	42
	80	288	65	52	44	48	126	53	67	48	233	54	106	49
1500	30	108	8	22	6	18	17	22	9	18	32	23	14	19
	50	180	23	36	15	31	47	37	24	32	89	37	39	33
1500	70	252	45	46	29	41	92	47	47	42	174	48	77	43
	85	306	66	52	43	47	135	53	69	48	256	55	113	49
1650	30	108	5	18	4	<15	7	18	5	<15	11	19	6	<15
	50	180	13	31	11	28	20	32	13	28	31	33	18	28
1650	75	270	29	43	24	40	44	44	30	40	70	45	39	40
	100	360	51	52	43	49	78	53	52	49	124	54	69	50
1800	35	126	6	20	5	17	9	21	6	17	15	21	8	17
	58	210	16	34	13	30	25	35	16	31	40	36	22	31
1800	82	294	30	44	25	40	48	45	31	41	79	46	42	41
	105	378	50	52	41	48	79	53	51	49	130	54	70	50
1950	35	126	5	19	4	16	8	20	5	16	14	20	7	16
	60	216	15	34	12	30	24	34	15	30	41	35	21	31
1950	85	306	30	44	23	40	49	45	30	41	82	46	42	41
	110	396	49	52	39	48	81	53	51	49	137	55	71	50

Quick sizing – sound power level and total differential pressure

Nominal length	V		Damper blade position											
Nominal length	V		0°				45°				90°			
			D = 158		D = 198		D = 158		D = 198		D = 158		D = 198	
Nominal length	V		Δp_t	LWA	Δp_t	LWA	Δp_t	LWA	Δp_t	LWA	Δp_t	LWA	Δp_t	LWA
Nominal length	l/s	m³/h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
600	25	90	5	17	5	<15	8	17	6	<15	11	17	7	<15
	45	162	17	32	15	29	24	33	18	29	37	33	23	29
600	65	234	35	43	31	40	50	44	37	40	76	45	47	41
	85	306	60	52	52	49	85	53	62	49	130	54	80	50
750	30	108	6	18	5	<15	9	18	6	<15	14	19	8	15
	50	180	15	31	12	28	24	32	16	28	39	33	22	29
750	80	288	38	45	31	42	61	46	41	42	100	47	56	43
	100	360	60	53	49	49	95	54	63	50	156	55	88	51
900	35	126	6	19	5	16	10	19	6	16	18	20	9	16
	60	216	17	34	13	30	30	34	18	30	52	35	27	31
900	85	306	34	44	26	40	60	45	37	41	104	46	55	42
	110	396	57	52	44	49	100	53	61	49	174	55	91	50
1050	40	144	7	20	5	17	12	21	7	17	22	21	11	17
	65	234	17	33	12	30	32	34	18	30	58	35	29	31
1050	90	324	32	43	23	39	61	44	35	40	110	45	55	41
	120	432	57	52	41	48	108	53	62	49	196	55	98	50
1200	45	162	7	21	5	18	14	22	8	18	27	23	13	18
	70	252	17	33	12	30	34	34	19	30	64	35	31	31
1200	100	360	35	44	24	40	70	45	38	41	131	46	63	42
	130	468	58	52	40	48	118	54	64	49	222	55	106	50
1350	50	180	8	22	5	19	17	23	9	19	32	24	15	19
	80	288	20	35	13	31	43	36	22	32	82	37	38	33
1350	110	396	38	45	25	41	80	46	42	42	155	47	72	43
	140	504	61	52	40	48	130	54	68	50	250	56	116	51
1500	55	198	9	23	6	19	20	24	10	20	38	25	17	20
	90	324	23	37	15	33	52	38	26	34	102	39	46	35
1500	125	450	45	47	28	43	100	48	50	44	196	50	89	45
	150	540	65	53	40	49	144	54	72	50	282	56	128	51
1650	60	216	5	21	4	18	9	22	6	18	15	22	8	18
	95	342	13	34	11	31	22	35	14	31	37	36	20	31
1650	135	486	26	45	21	41	44	46	28	42	75	47	41	42
	175	630	44	53	35	49	74	54	47	50	126	56	68	51
1800	65	234	6	22	4	19	10	23	6	19	17	23	9	19
	105	378	14	36	11	32	25	36	16	32	44	37	23	33
1800	145	522	27	45	21	42	48	46	29	42	83	47	44	43
	185	666	44	53	34	50	78	54	48	50	135	56	71	51
1950	70	252	6	23	5	19	11	24	6	20	19	24	10	20
	110	396	14	36	11	32	26	36	16	32	47	37	24	33
1950	150	540	27	45	20	41	48	46	29	42	86	47	44	43
	190	684	43	52	32	49	78	54	46	50	138	55	71	51

Slot diffusers with individually manually adjustable air control elements and an aesthetically shaped face section with one or two slots, for horizontal one-way, horizontal alternating or angled alternating air discharge. For supply air or extract air. 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 and suspension lugs.

Clamp fixing or concealed screw fixing

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
- 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
- End plate and end angle made of aluminium
- Lip seal made of rubber
- Lining is mineral wool
- 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

Mineral wool

- To EN 13501, fire rating class A1, non-combustible
- RAL quality mark RAL-GZ 388
- Biosoluble and hence hygienically safe according to the German TRGS 905 (Technical Rules for Hazardous Substances) and EU directive 97/69/EG
- Faced with glass fibre fabric as a protection against erosion through airflow velocities of up to 20 m/s
- Inert to fungal and bacterial growth

Technical data

- Nominal length: 600 – 1950 mm
- Number of slots: 1, 2
- Neck extension: 0, 25, 50, 75, 100, 125 mm
- Minimum volume flow rate: 20 – 40 (l/s)/m or 72 – 144 (m³/h)/m
- Maximum volume flow rate with $L_{WA} \cong 50$ dB(A): 70 – 120 (l/s)/m or 252 – 432 (m³/h)/m
- Supply air to room air temperature difference: –10 to +10 K

VSD50 – 1 – AK – M – L / 900x123x25 / C2 / B00 / P1 – RAL ... / WS / WW

1 2 3 4 5 6 7 8 9 10 11

1 Type

VSD50 Slot diffuser

2 Number of slots

1
2

3 Connection

F Diffuser face only
E 90 ° corner section only
Plenum box
AK With clamp fixing
DK With lining and clamp fixing
AS With concealed screw fixing
DS With lining and concealed screw fixing
AA Asymmetric and with clamp fixing

Diffusers with a shorter plenum box as well as non-active diffusers require a rear blanking plate
Length of blanking plate = L₁ – L₃

4 Damper blade for volume flow rate balancing

No entry: none
M With

5 Accessories

No entry: none
L With lip seal

6 Nominal size [mm]

Nominal length L_N
600
750
900
1050
1200
1350
1500
1650
1800
1950

Specify ØD and Y only for AK, DK, AS, DS and AA
Up to L_N 1500 with one spigot, from L_N 1650 with two spigots
spigot diameter ØD

123 1 slot
158 1 or 2 slots
198 2 slots

Neck extension Y
No entry: 0

25
50
75
100
125
(125 only AK, DK and AA)

7 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

8 Extended border

No entry: without (only AK, DK, AA)
B00 With extended border

9 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 %

10 Air pattern

No entry: alternating horizontal (WH)
WS Alternating angled
HL Horizontal left (opposite direction from spigot)
HR Horizontal right (same direction as spigot)

11 Colour of air control elements

No entry: similar to RAL 9005, black
WW Similar to RAL 9010, white