

Slot diffusers for ceiling installation

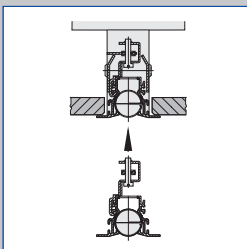
Type VSD35



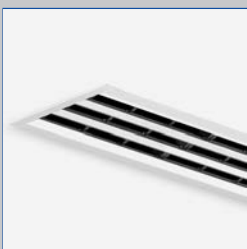
Plenum box with damper blade (optional)



Alternating horizontal air discharge



Concealed screw fixing



Installation in continuous ceilings



Numerous variants for many different installation situations

Slot diffusers with 35 mm diffuser face (nominal width) and adjustable air control elements

- Nominal length from 600 to 1950 mm, 1 to 4 slots
- Volume flow rate range 15 – 135 (l/s)/m or 54 – 486 (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

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Application

Application

- Type VSD35 slot diffusers are used as supply air or extract air devices in comfort zones
- They blend in inconspicuously with continuous grid ceilings and plasterboard ceilings
- 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

- VSD35-*: 1, 2, 3 or 4 slots
- VSD35-*-F: Diffuser face only
- VSD35-*-E: Corner section
- VSD35-...: Diffuser face without extended border
- VSD35-.../B00: Diffuser face with extended border
- VSD35-...: Black air control elements
- VSD35-.../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 plates and end angles 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/EC
- 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

Functional description

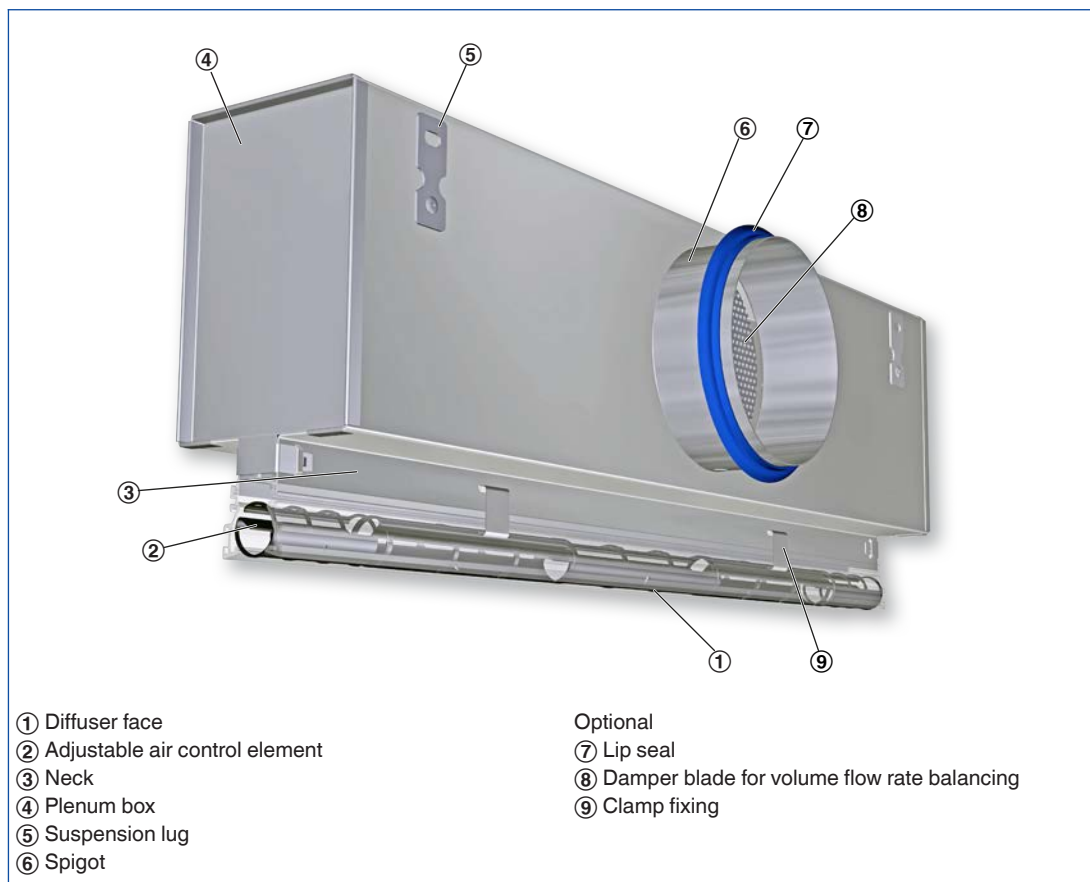
Slot diffusers direct the air from air conditioning systems into the room, either horizontally or at an angle. The resulting airflow induces high levels of room air, thereby rapidly reducing the airflow velocity and the temperature difference between supply air and room air. The result is a mixed flow ventilation in comfort zones, with good overall room ventilation, creating only very little turbulence in the occupied zone. Type VSD35 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 VSD35 diffusers may also be used for extract air.

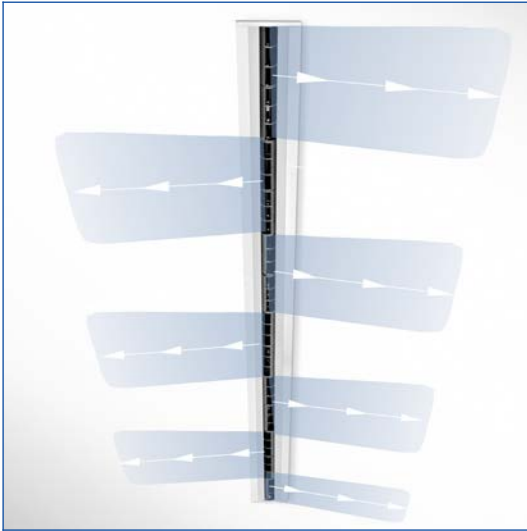
Schematic illustration of the VSD35 with clamp fixing



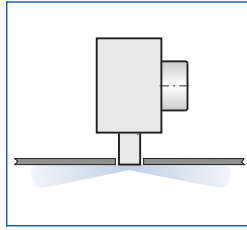
Air patterns

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

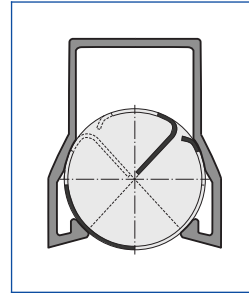
Alternating horizontal air discharge



Alternating horizontal (WH)



Setting of the air control elements

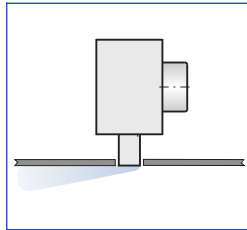


Alternating air control elements (300 mm) as shown

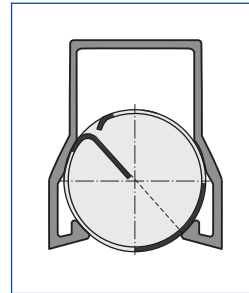
One-way horizontal air discharge to the left



One-way horizontal left (HL)



Setting of the air control elements

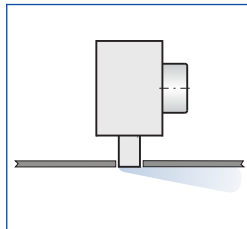


All air control elements as shown

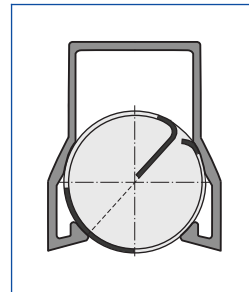
One-way horizontal air discharge to the right



One-way horizontal right (HR)

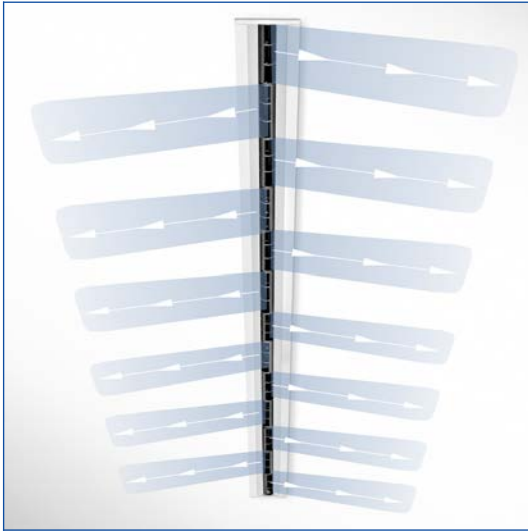


Setting of the air control elements

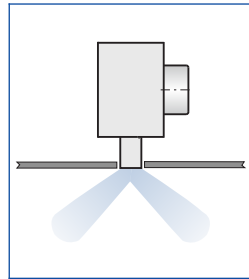


All air control elements as shown

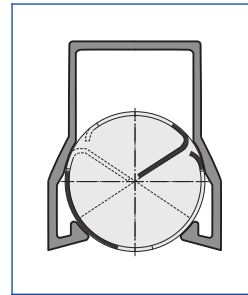
Alternating angled air discharge



Alternating angled
(WS)



Setting of the air
control elements



Alternating air control
elements (150 mm) as
shown

Nominal length	600, 750, 900, 1050, 1200, 1350, 1500, 1650, 1800, 1950 mm
Number of slots	1, 2, 3, 4
Neck extension	0, 30, 55, 80, 104, 105, 129 mm
Minimum volume flow rate	15 – 50 (l/s)/m or 54 – 180 (m ³ /h)/m
Maximum volume flow rate with $L_{WA} \cong 50$ dB(A)	45 – 135 (l/s)/m or 162 – 486 (m ³ /h)/m
Supply air to room air temperature difference	-10 to +10 K

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

The maximum volume flow rates apply to a sound power level of approx. 50 dB (A) with damper blade position 0°.

Exact values for all parameters can be determined with our Easy Product Finder design programme.

VSD35-1, supply air, alternating horizontal air discharge, sound power level and total differential pressure

Nominal length	\dot{V}		Damper blade position											
			0°				45°				90°			
			D = 98		D = 123		D = 98		D = 123		D = 98		D = 123	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
	l/s	m³/h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
600	7	25	4	<15	4	<15	5	<15	4	<15	8	<15	5	<15
600	15	54	17	27	15	22	23	27	18	23	35	27	23	23
600	20	72	30	35	27	31	41	35	31	31	62	36	40	32
600	30	108	66	47	60	44	91	48	70	44	139	49	90	44
750	10	36	5	<15	5	<15	8	<15	6	<15	14	<15	8	<15
750	20	72	21	31	18	27	32	32	22	27	53	32	31	28
750	25	90	32	38	28	34	49	38	35	34	83	39	48	34
750	35	126	63	48	55	44	96	49	68	44	162	50	94	45
900	11	40	5	<15	4	<15	9	<15	6	<15	15	<15	8	<15
900	20	72	16	28	13	24	27	29	18	24	48	30	26	25
900	30	108	35	40	29	36	60	41	39	36	108	42	59	37
900	40	144	63	49	52	45	106	50	69	45	192	51	104	46
1050	15	54	7	19	6	<15	14	19	8	15	26	19	13	15
1050	25	90	20	32	16	28	37	33	23	28	71	34	36	29
1050	30	108	29	37	23	33	53	38	33	34	101	39	52	34
1050	45	162	65	50	51	45	120	51	73	46	228	52	116	47
1200	15	54	6	17	5	<15	13	17	7	<15	25	18	12	<15
1200	30	108	25	35	18	31	49	36	28	31	97	37	48	32
1200	40	144	43	44	33	39	87	45	50	40	172	46	84	41
1200	50	180	68	50	51	46	136	52	78	47	269	53	132	48
1350	20	72	10	23	7	18	21	23	11	19	42	24	20	19
1350	30	108	22	33	16	29	46	34	25	30	94	35	45	30
1350	40	144	38	42	27	37	82	43	45	38	167	44	79	39
1350	50	180	60	48	42	44	128	50	70	45	261	51	124	46
1500	20	72	9	21	6	<15	20	22	11	17	41	22	19	18
1500	30	108	20	32	13	27	44	33	23	28	92	34	43	29
1500	40	144	35	40	24	36	78	41	41	36	163	43	76	37
1500	55	198	65	49	44	45	148	51	78	46	309	53	143	47
1650	20	72	5	17	4	<15	8	17	6	<15	14	17	8	<15
1650	45	162	25	38	21	34	40	39	27	35	70	40	39	35
1650	50	180	31	41	26	37	50	42	34	38	86	43	48	38
1650	70	252	60	52	51	48	97	53	66	48	169	54	95	49
1800	25	90	7	21	6	17	12	21	8	17	21	22	11	18
1800	40	144	18	33	15	29	30	34	19	30	53	35	29	30
1800	60	216	39	45	32	41	66	46	43	42	119	47	64	42
1800	70	252	53	50	44	46	90	51	59	46	162	52	88	47
1950	25	90	6	20	5	16	11	20	7	16	20	21	11	17
1950	40	144	16	32	13	28	28	33	18	28	51	34	27	29
1950	50	180	24	39	20	34	43	39	27	35	80	40	42	36
1950	70	252	47	49	38	44	84	50	53	45	156	51	82	46

VSD35-2, supply air, alternating horizontal air discharge, sound power level and total differential pressure

Nominal length	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position											
			0°				45°				90°			
			D = 123		D = 138		D = 123		D = 138		D = 123		D = 138	
			Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)
600	15	54	5	<15	4	<15	7	<15	6	<15	12	<15	9	<15
600	30	108	18	31	17	29	28	31	23	29	48	32	35	30
600	33	120	23	34	21	32	35	35	29	32	59	35	44	33
600	55	198	61	49	56	47	94	50	77	48	159	51	118	49
750	20	72	6	17	5	15	11	17	8	15	19	18	14	16
750	35	126	18	32	16	30	32	32	25	30	58	33	41	31
750	50	180	37	42	32	40	64	43	50	41	118	44	84	42
750	65	234	62	50	55	48	108	51	84	49	199	53	141	50
900	25	90	8	20	6	18	14	21	11	18	28	21	19	19
900	40	144	19	33	16	30	36	33	27	31	71	34	49	32
900	55	198	35	42	30	40	68	43	51	40	133	44	92	42
900	70	252	57	49	48	47	111	50	82	48	216	52	149	49
1050	25	90	6	18	5	16	13	19	10	17	27	19	18	17
1050	45	162	20	34	16	31	42	35	31	32	86	36	58	33
1050	60	216	35	42	29	40	75	43	54	41	152	44	103	42
1050	75	270	55	49	45	46	117	50	84	47	237	52	160	49
1200	30	108	8	21	6	19	18	22	13	19	37	22	25	20
1200	50	180	22	35	17	32	49	36	35	33	103	37	69	34
1200	70	252	42	44	34	42	96	46	68	43	201	47	134	44
1200	85	306	62	50	49	48	141	52	100	49	296	54	197	51
1350	35	126	10	23	8	21	23	24	16	22	50	25	33	22
1350	55	198	24	36	18	33	57	37	39	34	122	38	80	35
1350	75	270	44	44	34	42	105	46	73	43	226	48	149	45
1350	90	324	62	50	49	48	152	52	105	49	326	54	215	51
1500	35	126	9	22	7	20	23	23	15	20	49	23	32	21
1500	55	198	22	34	17	32	55	35	38	33	120	37	79	34
1500	75	270	40	43	31	40	102	44	70	42	223	46	146	43
1500	95	342	64	50	49	47	164	52	112	49	357	54	234	51
1650	40	144	6	21	5	19	11	21	8	19	20	21	14	19
1650	65	234	15	33	13	31	28	34	21	32	53	35	37	33
1650	90	324	29	43	25	41	53	44	41	41	101	45	71	42
1650	115	414	47	50	41	48	87	51	66	49	165	53	115	50
1800	45	162	7	22	6	20	13	23	10	21	25	24	17	21
1800	70	252	16	34	14	32	31	35	23	33	60	36	41	34
1800	95	342	29	43	25	41	56	44	42	42	110	45	76	43
1800	120	432	46	50	39	48	89	51	67	49	175	53	120	50
1950	45	162	6	21	5	19	12	22	9	20	24	22	17	20
1950	70	252	15	33	12	31	29	34	22	32	58	35	40	32
1950	95	342	26	42	22	39	54	43	39	40	107	44	73	41
1950	125	450	45	50	38	48	93	51	68	49	185	53	126	50

VSD35-3, supply air, alternating horizontal air discharge, sound power level and total differential pressure

Nominal length	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position											
			0°				45°				90°			
			D = 138		D = 158		D = 138		D = 158		D = 138		D = 158	
			Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)
600	25	90	6	18	6	16	11	18	8	16	19	19	13	16
600	40	144	16	30	14	28	27	31	21	28	49	32	33	29
600	60	216	36	42	31	40	61	43	46	40	109	44	74	41
600	75	270	55	49	49	47	95	50	71	47	171	51	116	48
750	30	108	7	20	6	17	13	20	9	18	25	21	17	18
750	50	180	19	33	16	31	36	34	26	31	70	35	45	32
750	70	252	36	43	30	40	70	44	50	41	137	46	89	42
750	85	306	53	49	44	46	103	50	74	47	201	52	131	49
900	35	126	8	21	6	19	16	22	11	19	33	22	21	20
900	55	198	18	33	15	31	39	34	27	31	80	35	51	32
900	75	270	34	42	27	39	73	43	50	40	149	45	94	42
900	95	342	54	49	43	47	117	51	80	48	239	52	151	49
1050	35	126	7	19	5	16	15	20	10	17	32	20	20	18
1050	55	198	16	31	12	28	37	32	24	29	78	33	48	30
1050	80	288	33	42	26	39	78	43	51	40	165	44	102	41
1050	105	378	57	50	44	47	134	51	88	48	283	53	175	50
1200	45	162	10	24	7	21	24	25	15	22	51	25	31	22
1200	70	252	23	36	17	33	57	37	37	34	123	38	76	35
1200	95	342	42	44	31	42	105	46	68	43	227	48	139	44
1200	115	414	62	50	46	47	153	52	99	49	333	54	203	51
1350	50	180	11	25	8	22	28	26	18	23	62	27	38	24
1350	75	270	24	36	18	33	63	37	40	34	140	39	85	35
1350	100	360	43	44	31	41	112	46	71	43	248	48	150	44
1350	120	432	62	50	44	47	162	52	103	48	357	54	216	50
1500	55	198	12	26	9	23	33	27	21	24	74	28	45	25
1500	80	288	26	36	18	33	70	38	44	35	157	39	95	36
1500	105	378	45	44	31	41	121	46	76	43	271	48	163	44
1500	130	468	68	50	48	47	185	52	116	49	415	55	249	51
1650	60	216	7	23	6	21	14	24	10	22	27	25	17	22
1650	90	324	15	34	12	32	30	35	21	32	61	36	39	33
1650	120	432	26	42	22	40	54	44	38	41	108	45	69	42
1650	155	558	44	50	36	47	90	51	62	49	179	53	114	50
1800	65	234	7	24	6	22	15	25	11	22	31	26	20	23
1800	100	360	17	36	13	33	36	37	25	34	73	38	46	35
1800	130	468	28	43	22	41	60	45	41	42	123	46	78	43
1800	165	594	45	50	36	48	97	52	66	49	199	54	125	51
1950	70	252	8	25	6	23	17	26	12	23	35	27	22	24
1950	100	360	16	35	12	32	35	36	23	33	72	37	45	34
1950	135	486	28	43	22	41	63	44	42	42	131	46	82	43
1950	170	612	44	50	35	47	99	52	67	49	207	54	129	50

VSD35-4, supply air, alternating horizontal air discharge, sound power level and total differential pressure

Nominal length	\dot{V} l/s	\dot{V} m ³ /h	Damper blade position											
			0°				45°				90°			
			D = 158		D = 198		D = 158		D = 198		D = 158		D = 198	
			Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)	Δp_t Pa	L_{WA} dB(A)
600	30	108	5	17	4	<15	9	17	6	<15	16	17	9	<15
600	55	198	17	32	14	28	29	33	19	29	53	34	29	29
600	75	270	32	41	26	37	54	42	35	38	99	43	53	39
600	100	360	56	50	46	46	96	51	62	47	175	53	94	48
750	40	144	7	21	5	17	13	21	8	17	26	22	13	17
750	65	234	18	34	14	29	35	34	21	30	68	36	34	31
750	90	324	34	43	26	39	67	44	39	40	131	46	65	40
750	110	396	51	49	39	45	100	51	58	46	195	52	97	47
900	45	162	7	21	5	17	15	22	9	18	31	22	15	18
900	70	252	17	33	12	29	37	34	20	29	76	35	36	30
900	100	360	35	43	24	39	75	45	41	40	154	46	73	41
900	125	450	54	50	38	46	117	52	64	47	240	53	114	48
1050	50	180	8	22	5	18	18	22	9	18	38	23	17	19
1050	75	270	17	33	11	28	40	34	21	29	84	35	39	30
1050	105	378	33	42	22	38	78	44	40	39	164	45	75	40
1050	135	486	54	50	36	45	128	51	66	46	272	54	124	48
1200	55	198	8	23	5	19	21	23	10	19	44	24	20	19
1200	85	306	20	34	12	30	49	35	24	30	106	37	47	31
1200	115	414	36	43	22	38	89	44	44	39	193	46	86	41
1200	145	522	56	50	35	45	141	52	70	46	307	54	137	48
1350	65	234	11	25	6	21	28	26	13	22	61	27	27	22
1350	95	342	23	36	13	31	59	37	28	32	130	38	57	33
1350	125	450	39	43	23	39	102	45	49	40	225	47	99	41
1350	155	558	59	50	35	45	156	52	75	47	346	54	151	48
1500	70	252	12	26	7	22	31	27	15	22	70	28	30	23
1500	100	360	23	36	13	31	64	37	30	32	143	39	62	33
1500	135	486	43	44	24	39	116	46	54	41	260	48	112	42
1500	165	594	63	50	36	45	173	52	81	47	388	55	168	49
1650	80	288	7	25	5	21	14	25	8	21	28	26	14	22
1650	120	432	15	35	11	31	31	36	18	32	62	37	30	33
1650	160	576	27	44	20	39	55	45	31	40	111	46	54	41
1650	200	720	42	50	30	46	86	52	49	47	173	54	84	48
1800	85	306	7	25	5	21	15	26	8	22	31	26	15	22
1800	125	450	15	35	11	31	32	36	18	32	66	37	32	33
1800	170	612	28	44	18	39	60	45	31	40	122	47	55	41
1800	210	756	42	50	30	46	91	52	49	47	186	54	88	48
1950	90	324	7	25	5	22	16	26	9	22	34	27	16	23
1950	133	480	16	36	11	32	36	37	19	32	74	38	35	33
1950	177	636	28	44	19	39	62	45	33	40	130	47	60	42
1950	220	792	42	50	29	46	96	52	51	47	201	54	93	49

Sizing example

Given data

$\dot{V} = 60$ l/s (216 m³/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

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 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 plates and end angles 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/EC
- 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, 3, 4
- Neck extension: 0, 30, 55, 80, 104, 105, 129 mm
- Minimum volume flow rate: 15 – 50 (l/s)/m or 54 – 180 (m³/h)/m
- Maximum volume flow rate with $L_{WA} \approx 50$ dB(A): 45 – 135 (l/s)/m or 162 – 486 (m³/h)/m
- Supply air to room air temperature difference: –10 to +10 K

Sizing data

- \dot{V} _____
[m³/h]
- Δp_i _____
[Pa]
- Air-regenerated noise
- L_{WA} _____
[dB(A)]

VSD35

VSD35 – 1 – AK – M – L / 900x98x30 / C2 / B00 / P1 – RAL ... / WS / WW										
1	2	3	4	5	6	7	8	9	10	11

1 Type

VSD35 Slot diffuser

2 Number of slots

1
2
3
4

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

4 Damper blade for volume flow rate balancing

No entry: none
M With (only AK, DK, AS, DS and AA)

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 $\varnothing D$ 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 $\varnothing D$

98 1 slot
123 1 or 2 slots
138 2 or 3 slots
158 3 or 4 slots
198 4 slots

Neck extension Y

No entry: 0

30
55
80
105
129 (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)

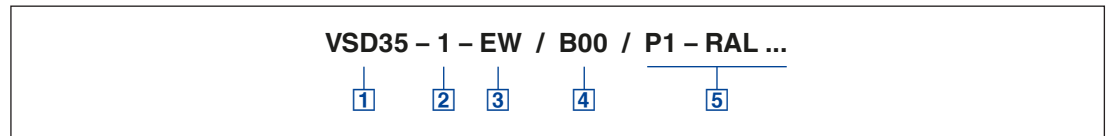
11 Colour of air control elements

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

Order example: VSD35-2-AK-M-L/1200x123/C2/B00/P1-RAL 9010

Number of slots	2
Connection	Plenum box with clamp fixing
Damper blade for volume flow rate balancing	With
Accessories	Lip seal
Nominal size / spigot diameter	1200 x 123 mm
Neck extension	Without
End pieces	End angles
Extended border	With
Exposed surface	RAL 9010, pure white, gloss level 50 %
Air pattern	Alternating horizontal
Colour of air control elements	Black

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

5 Surface

- No entry: anodised, E6-C-0, natural colour
- P1** Powder-coated, specify RAL CLASSIC colour

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

VSD35-*-AS

Variant

- Slot diffuser with plenum box for concealed screw fixing
- Concealed screw fixing only with profile B00 (with extended border)

Parts and characteristics

- Plenum box for horizontal duct connection
- Concealed screw fixing
- Damper blade (optional)
- Lip seal (optional)

VSD35-*-DS

Variant

- Slot diffuser with plenum box for concealed screw fixing
- Plenum box with lining
- Concealed screw fixing only with profile B00 (with extended border)

Parts and characteristics

- Plenum box for horizontal duct connection
- Concealed screw fixing
- Thermal and acoustic insulation (lining)
- Damper blade (optional)
- Lip seal (optional)

VSD35-*-AK

Variant

- Slot diffuser with plenum box for clamp fixing

Parts and characteristics

- Plenum box for horizontal duct connection
- Damper blade (optional)
- Lip seal (optional)

VSD35-*-DK

Variant

- Slot diffuser with plenum box for clamp fixing
- Plenum box with lining

Parts and characteristics

- Plenum box for horizontal duct connection
- Concealed screw fixing
- Thermal and acoustic insulation (lining)
- Damper blade (optional)
- Lip seal (optional)

VSD35-*-AA

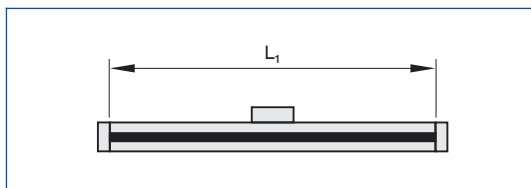
Variant

- Slot diffuser with plenum box for clamp fixing
- Asymmetric plenum box

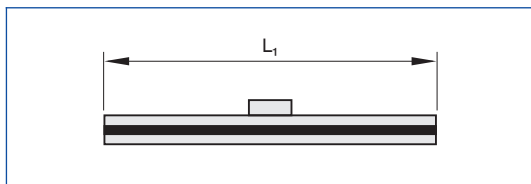
Parts and characteristics

- Plenum box for horizontal duct connection
- Asymmetric plenum box
- Damper blade (optional)
- Lip seal (optional)

End pieces on both ends



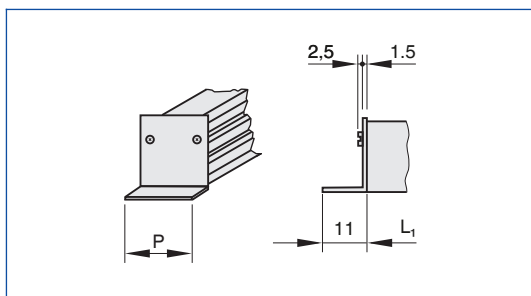
Without end piece



VSD35

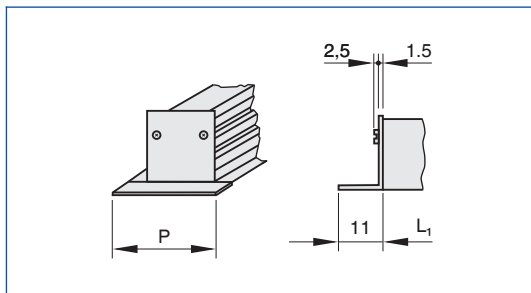
Nominal length	L_1 mm
600	600
750	750
900	900
1050	1050
1200	1200
1350	1350
1500	1500
1650	1650
1800	1800
1950	1950

End angle C1



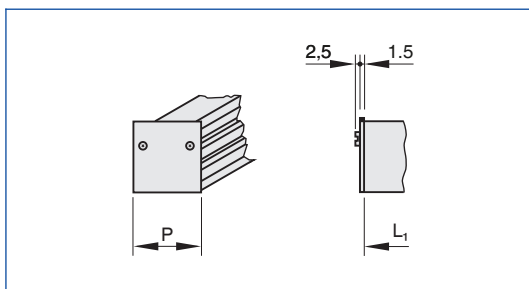
Profile without extended border

End angle C2



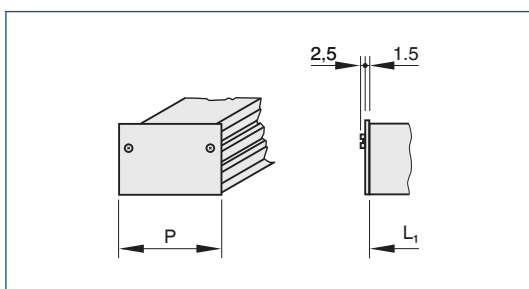
Profile with extended border

End plate C5



Profile without extended border

End plate C6

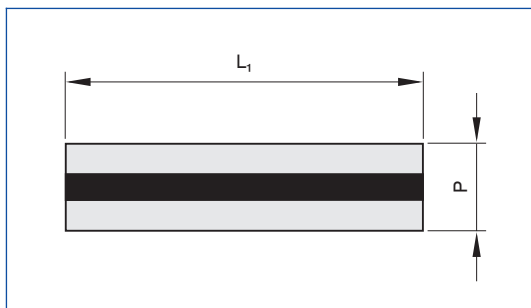


Profile with extended border

VSD35

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

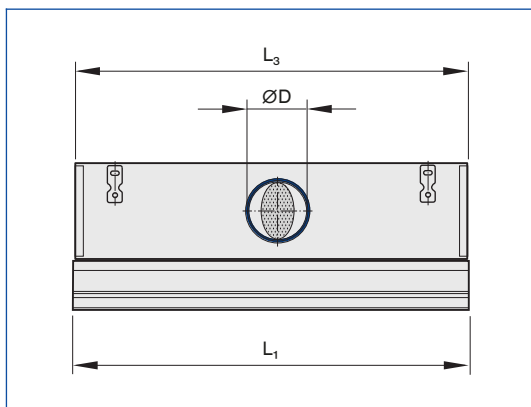
Diffuser face VSD...-F



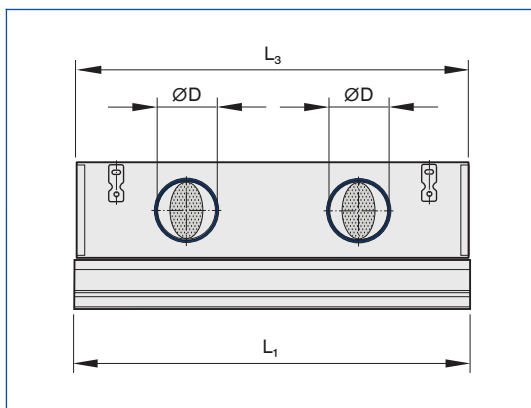
VSD35

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

VSD35, L_N : 600 – 1500



VSD35, L_N : 1650 – 1950



VSD35

Nominal length	L ₁		L ₃	
	mm		mm	
600	600		595	
750	750		745	
900	900		895	
1050	1050		1045	
1200	1200		1195	
1350	1350		1345	
1500	1500		1495	
1650	1650		1645	
1800	1800		1795	
1950	1950		1945	

Number of spigots and spigot diameter

Nominal length	VSD35-1		VSD35-2		VSD35-3		VSD35-4	
	ØD							
	mm							
600 – 1500	1 × 98	1 × 123	1 × 123	1 × 138	1 × 138	1 × 158	1 × 158	1 × 198
1650 – 1950	2 × 98	2 × 123	2 × 123	2 × 138	2 × 138	2 × 158	2 × 158	2 × 198

VSD35-*-AS

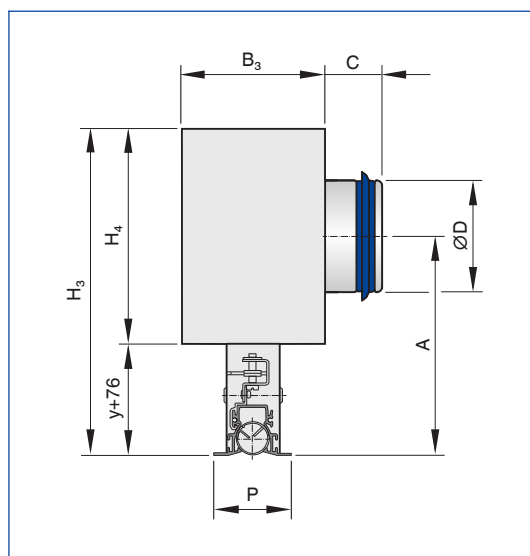


Illustration shows VSD35-1-AS-L/.../B00

VSD35-*-AS

Variant	Y = 0		Y = 30		Y = 55		Y = 80		Y = 104		B ₃	H ₄	ØD	C
	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A				
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm				
VSD35-1/... × 98	228	153	258	183	283	208	308	233	332	257	100	152	98	48
VSD35-1/... × 123	228	153	258	183	283	208	308	233	332	257	100	152	123	46
VSD35-2/... × 123	258	168	288	198	313	223	338	248	362	272	138	182	123	46
VSD35-2/... × 138	258	168	288	198	313	223	338	248	362	272	138	182	138	40
VSD35-3/... × 138	276	177	306	207	331	232	356	257	380	281	176	200	138	40
VSD35-3/... × 158	276	177	306	207	331	232	356	257	380	281	176	200	158	48
VSD35-4/... × 158	308	193	338	223	363	248	388	273	412	297	214	232	158	48
VSD35-4/... × 198	308	193	338	223	363	248	388	273	412	297	214	232	198	48

Y: Neck extension, resulting neck lengths 76, 106, 131, 156, 180 mm

VSD35-*-AS

Nominal length	VSD35-1	VSD35-2	VSD35-3	VSD35-4
	m			
	kg	kg	kg	kg
600	3.0	3.7	4.3	5.1
750	3.7	4.5	5.3	6.3
900	4.4	5.4	6.3	7.4
1050	5.1	6.2	7.3	8.5
1200	5.8	7.1	8.2	9.6
1350	6.5	7.9	9.2	10.7
1500	7.2	8.8	10.2	11.9
1650	7.9	9.6	11.1	13.0
1800	8.6	10.5	12.1	14.1
1950	9.3	11.3	13.1	15.2

VSD35-*-DS

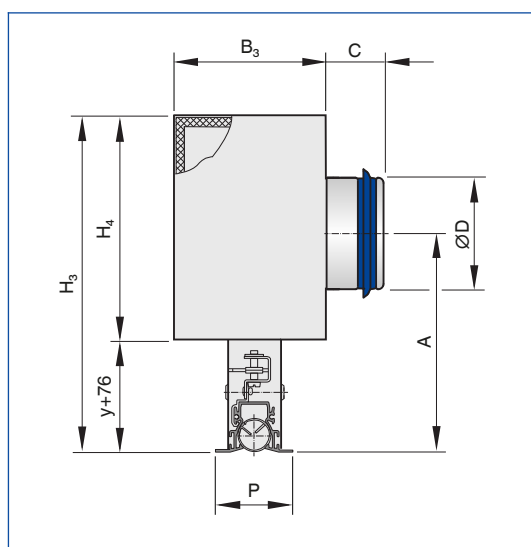


Illustration shows VSD35-1-DS-L/.../B00

VSD35-*-DS

Variant	Y = 0		Y = 30		Y = 55		Y = 80		Y = 104		B ₃	H ₄	ØD	C
	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A				
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm				
VSD35-1/... x 98	248	153	278	183	303	208	328	233	352	257	138	172	98	48
VSD35-1/... x 123	248	153	278	183	303	208	328	233	352	257	138	172	123	46
VSD35-2/... x 123	278	168	308	198	333	223	358	248	382	272	176	202	123	46
VSD35-2/... x 138	278	168	308	198	333	223	358	248	382	272	176	202	138	40
VSD35-3/... x 138	296	177	326	207	351	232	376	257	400	281	214	220	138	40
VSD35-3/... x 158	296	177	326	207	351	232	376	257	400	281	214	220	158	48
VSD35-4/... x 158	328	193	358	223	383	248	408	273	432	297	254	252	158	48
VSD35-4/... x 198	328	193	358	223	383	248	408	273	432	297	254	252	198	48

Y: Neck extension, resulting neck lengths 76, 106, 131, 156, 180 mm

VSD35-*-DS

Nominal length	VSD35-1	VSD35-2	VSD35-3	VSD35-4
	m			
	kg	kg	kg	kg
600	3.8	4.6	5.4	6.2
750	4.7	5.7	6.6	7.6
900	5.6	6.7	7.8	9.0
1050	6.4	7.8	8.9	10.3
1200	7.3	8.8	10.1	11.7
1350	8.2	9.9	11.3	13.1
1500	9.1	10.9	12.5	14.4
1650	10.0	11.9	13.7	15.8
1800	10.8	13.0	14.9	17.2
1950	11.7	14.0	16.1	18.5

VSD35-*-AK

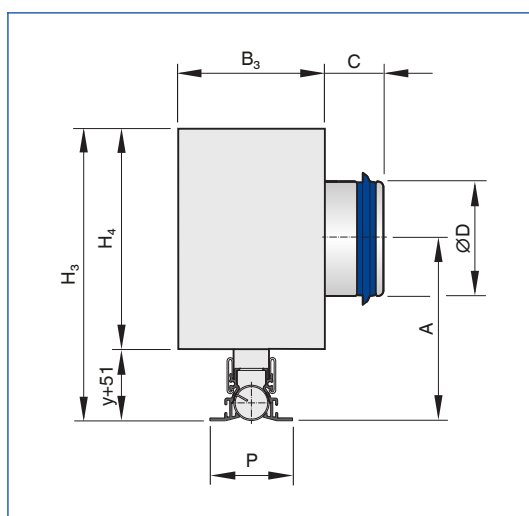


Illustration shows VSD35-1-AK-L/.../B00

VSD35-*-AK

Variant	Y = 0		Y = 30		Y = 55		Y = 80		Y = 105		Y = 129		B ₃	H ₄	ØD	C
	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A				
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm				
VSD35-1/... x 98	203	127	233	157	258	182	283	207	308	232	332	256	100	152	98	48
VSD35-1/... x 123	203	127	233	157	258	182	283	207	308	232	332	256	100	152	123	46
VSD35-2/... x 123	233	143	263	173	288	198	313	223	338	248	362	272	138	182	123	46
VSD35-2/... x 138	233	143	263	173	288	198	313	223	338	248	362	272	138	182	138	40
VSD35-3/... x 138	251	152	281	182	306	207	331	232	356	257	380	281	176	200	138	40
VSD35-3/... x 158	251	152	281	182	306	207	331	232	356	257	380	281	176	200	158	48
VSD35-4/... x 158	283	168	313	198	338	223	363	248	388	273	412	297	214	232	158	48
VSD35-4/... x 198	283	168	313	198	338	223	363	248	388	273	412	297	214	232	198	48

Y: Neck extension, resulting neck lengths 51, 81, 106, 131, 156, 180 mm

VSD35-*-AK

Nominal length	VSD35-1	VSD35-2	VSD35-3	VSD35-4
	m			
	kg	kg	kg	kg
600	2.2	2.9	3.6	4.3
750	2.7	3.6	4.4	5.3
900	3.3	4.3	5.1	6.2
1050	3.8	4.9	5.9	7.2
1200	4.3	5.6	6.7	8.1
1350	4.8	6.3	7.5	9.0
1500	5.3	6.9	8.3	10.0
1650	5.8	7.6	9.1	10.9
1800	6.4	8.2	9.9	11.9
1950	6.9	8.9	10.7	12.8

VSD35-*-DK

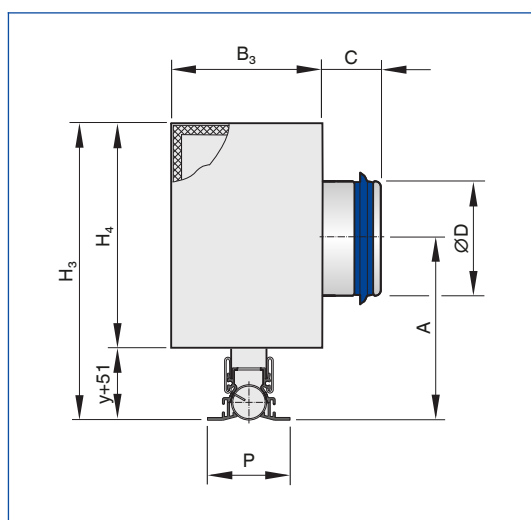


Illustration shows VSD35-1-DK-L /.../B00

VSD35-*-DK

Variant	Y = 0		Y = 30		Y = 55		Y = 80		Y = 105		Y = 129		B ₃	H ₄	ØD	C
	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A				
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm				
VSD35-1/... x 98	223	127	253	157	278	182	303	207	328	232	352	256	138	172	98	48
VSD35-1/... x 123	223	127	253	157	278	182	303	207	328	232	352	256	138	172	123	46
VSD35-2/... x 123	253	143	283	173	308	198	333	223	358	248	382	272	176	202	123	46
VSD35-2/... x 138	253	143	283	173	308	198	333	223	358	248	382	272	176	202	138	40
VSD35-3/... x 138	271	152	301	182	326	207	351	232	376	257	400	281	214	220	138	40
VSD35-3/... x 158	271	152	301	182	326	207	351	232	376	257	400	281	214	220	158	48
VSD35-4/... x 158	303	168	333	198	358	223	383	248	408	273	432	297	254	252	158	48
VSD35-4/... x 198	303	168	333	198	358	223	383	248	408	273	432	297	254	252	198	48

Y: Neck extension, resulting neck lengths 51, 81, 106, 131, 156, 180 mm

VSD35-⁺-DK

Nominal length	VSD35-1	VSD35-2	VSD35-3	VSD35-4
	m			
	kg	kg	kg	kg
600	3.1	3.9	4.6	5.5
750	3.8	4.7	5.6	6.6
900	4.4	5.6	6.6	7.8
1050	5.1	6.5	7.6	9.0
1200	5.8	7.3	8.6	10.2
1350	6.5	8.2	9.6	11.4
1500	7.2	9.0	10.7	12.5
1650	7.9	9.9	11.7	13.7
1800	8.6	10.8	12.7	14.9
1950	9.3	11.6	13.7	16.1

VSD35-⁺-AA

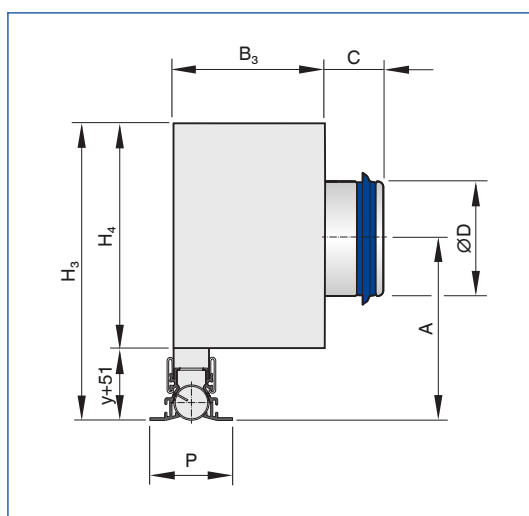


Illustration shows VSD35-1-AA-L.../B00

VSD35-⁺-AA

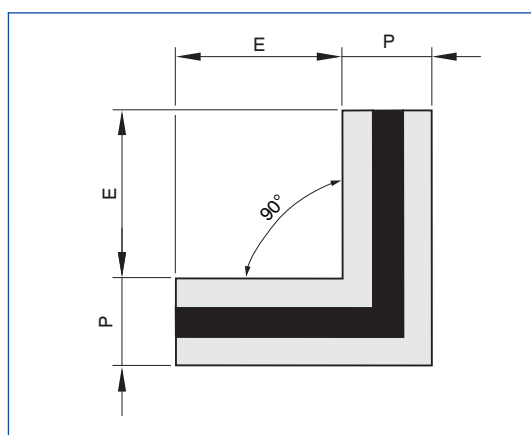
Variant	Y = 0		Y = 30		Y = 55		Y = 80		Y = 105		Y = 129		B ₃	H ₄	ØD	C
	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A	H ₃	A				
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm				
VSD35-1/... x 98	203	127	233	157	258	182	283	207	308	232	332	256	100	152	98	48
VSD35-1/... x 123	203	127	233	157	258	182	283	207	308	232	332	256	100	152	123	46
VSD35-2/... x 123	233	143	263	173	288	198	313	223	338	248	362	272	138	182	123	46
VSD35-2/... x 138	233	143	263	173	288	198	313	223	338	248	362	272	138	182	138	40
VSD35-3/... x 138	251	152	281	182	306	207	331	232	356	257	380	281	176	200	138	40
VSD35-3/... x 158	251	152	281	182	306	207	331	232	356	257	380	281	176	200	158	48
VSD35-4/... x 158	283	168	313	198	338	223	363	248	388	273	412	297	214	232	158	48
VSD35-4/... x 198	283	168	313	198	338	223	363	248	388	273	412	297	214	232	198	48

Y: Neck extension, resulting neck lengths 51, 81, 106, 131, 156, 180 mm

VSD35-*-AA

Nominal length	VSD35-1	VSD35-2	VSD35-3	VSD35-4
	m			
	kg	kg	kg	kg
600	2.2	2.9	3.6	4.3
750	2.7	3.6	4.4	5.3
900	3.3	4.3	5.1	6.2
1050	3.8	4.9	5.9	7.2
1200	4.3	5.6	6.7	8.1
1350	4.8	6.3	7.5	9.0
1500	5.3	6.9	8.3	10.0
1650	5.8	7.6	9.1	10.9
1800	6.4	8.2	9.9	11.9
1950	6.9	8.9	10.7	12.8

Corner section VSD...-*-E

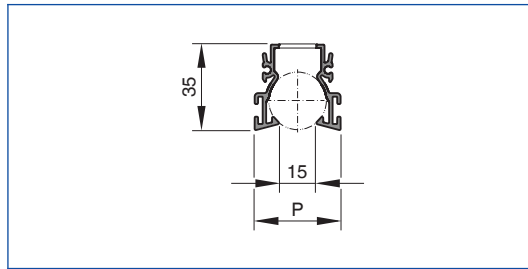


VSD35-*/.../000

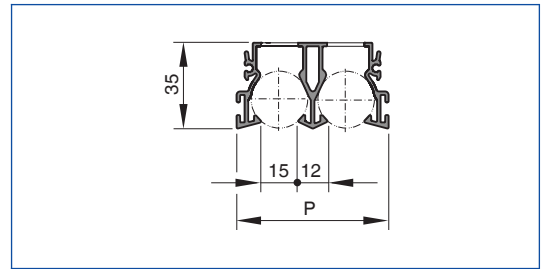
Variant	000		B00	
	P	E	P	E
	mm	mm	mm	mm
VSD35-1	35	110	55	100
VSD35-2	62	110	82	100
VSD35-3	89	110	109	100
VSD35-4	116	110	136	100

Profiles

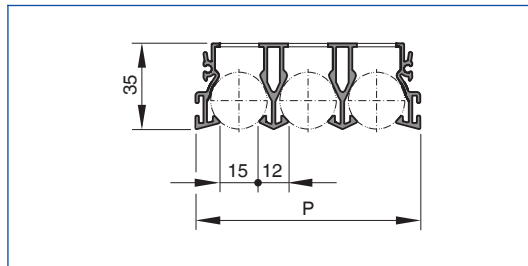
VSD35-1/.../000



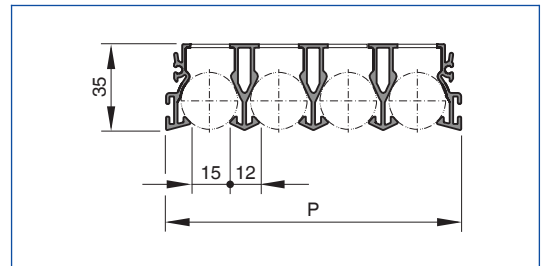
VSD35-2/.../000



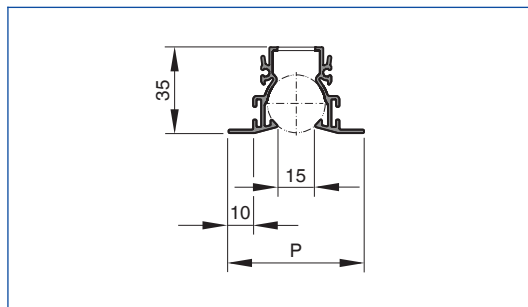
VSD35-3/.../000



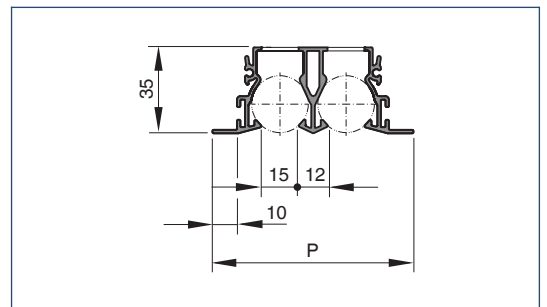
VSD35-4/.../000



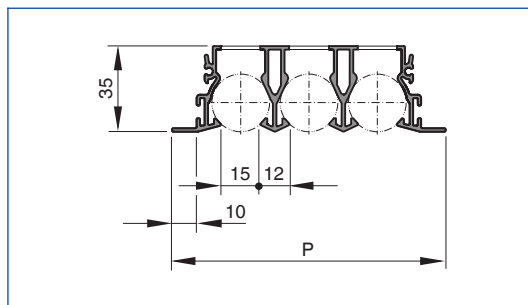
VSD35-1/.../B00



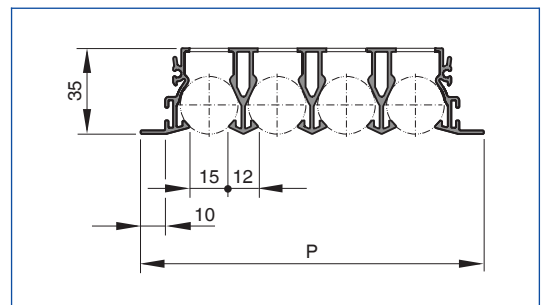
VSD35-2/.../B00



VSD35-3/.../B00



VSD35-4/.../B00



VSD35

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

VSD35

Nominal length	VSD35-1		VSD35-2		VSD35-3		VSD35-4	
	A _{eff}	A _{eff} WS	A _{eff}	A _{eff} WS	A _{eff}	A _{eff} WS	A _{eff}	A _{eff} WS
	m ²	m ²	m ²	m ²	m ²	m ²	m ²	m ²
600	0.0035	0.0039	0.0070	0.0078	0.0105	0.0117	0.0140	0.0156
750	0.0044	0.0049	0.0088	0.0097	0.0131	0.0146	0.0175	0.0194
900	0.0053	0.0058	0.0105	0.0117	0.0158	0.0175	0.0210	0.0233
1050	0.0061	0.0068	0.0123	0.0136	0.0184	0.0204	0.0245	0.0272
1200	0.0070	0.0078	0.0140	0.0156	0.0210	0.0233	0.0280	0.0311
1350	0.0079	0.0088	0.0158	0.0175	0.0237	0.0262	0.0315	0.0350
1500	0.0088	0.0097	0.0175	0.0194	0.0263	0.0292	0.0350	0.0389
1650	0.0096	0.0107	0.0193	0.0214	0.0289	0.0321	0.0385	0.0428
1800	0.0105	0.0117	0.0210	0.0233	0.0315	0.0350	0.0421	0.0467
1950	0.0114	0.0126	0.0228	0.0253	0.0342	0.0379	0.0456	0.0505

A_{eff}: One-way horizontal and alternating horizontal air discharge

A_{eff} WS: Alternating angled air discharge

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



Anodised, E6-C-0, natural colour

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



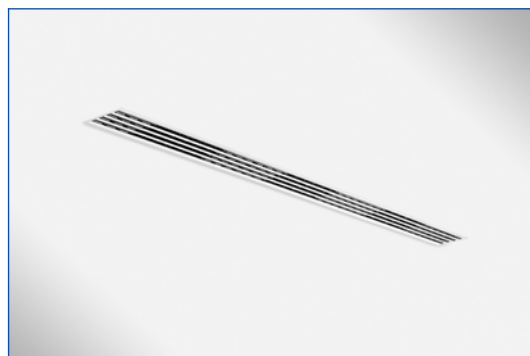
Powder-coated RAL 9010, pure white

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



Anodised, E6-C-0, natural colour

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



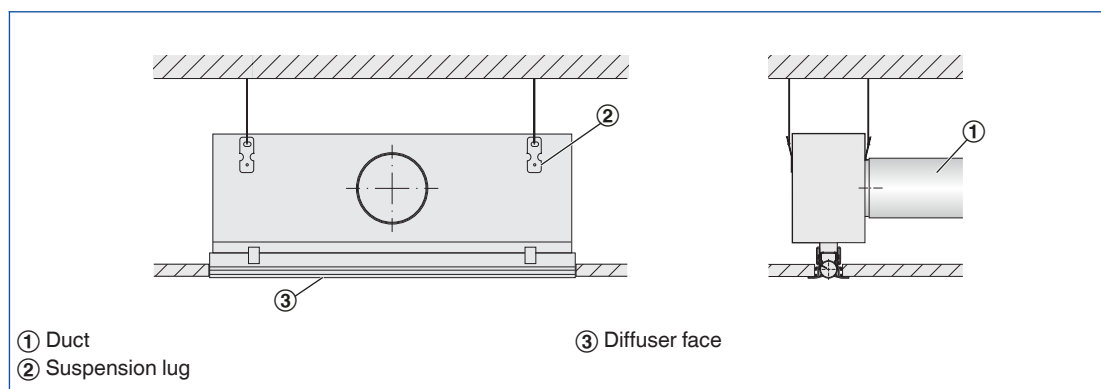
Powder-coated RAL 9010, pure white

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
- If necessary, carry out volume flow rate balancing with the damper blade

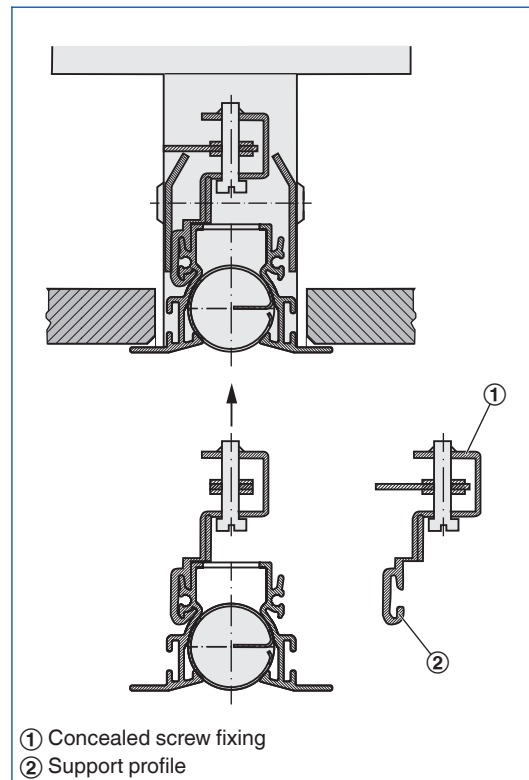
These are only schematic diagrams to illustrate installation details.

Installation with plenum box



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

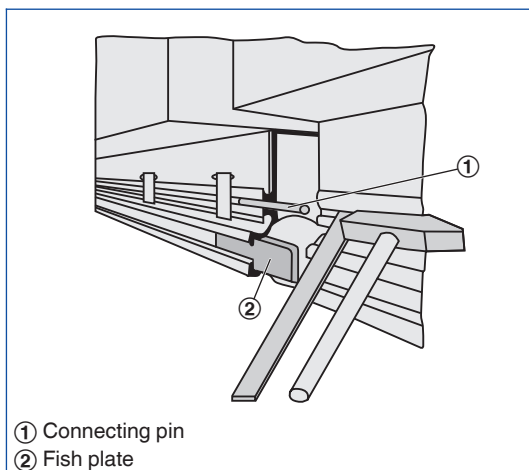
Concealed screw fixing



- ① Concealed screw fixing
- ② Support profile

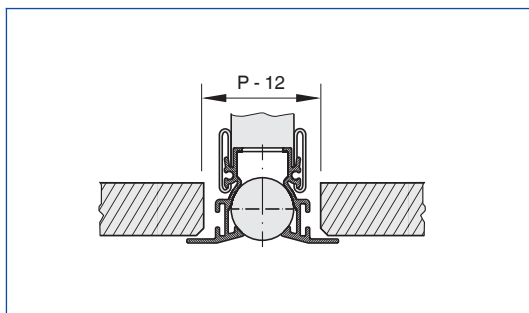
- Concealed screw fixing with plenum box AS or DS
- Each slot diffuser is supplied with four concealed screw fixings
- If a slot diffuser with factory fitted end pieces has been supplied, first remove one of the end pieces
- Grasp each screw fixing by its support profile and slide the support profile 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

Continuous linear arrangement



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

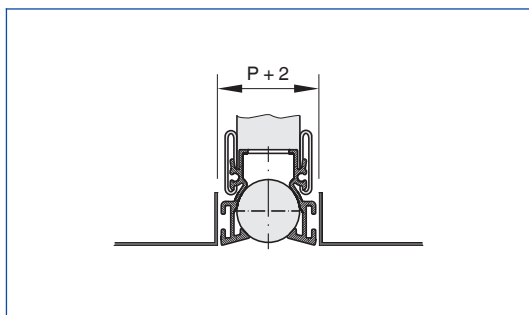
Continuous ceiling



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

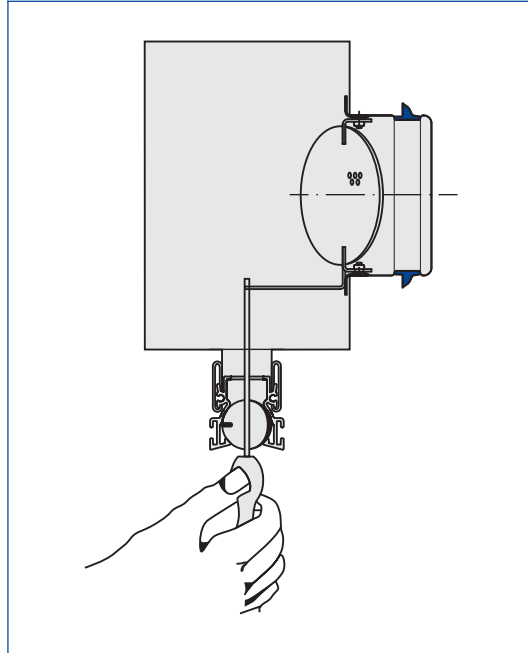
- Fix the plenum box to the ceiling slab
- The ceiling tile or panel of a panelled ceiling has no contact with the diffuser

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 diffusers 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 air control element near the spigot in such a way that it is possible to insert a screw driver

Principal dimensions

$\varnothing D$ [mm]

Outer diameter of the spigot

$\varnothing D_1$ [mm]

Outer diameter of a circular diffuser face

$\varnothing D_2$ [mm]

Diameter of a circular diffuser face style

$\varnothing D_3$ [mm]

Diameter of a circular plenum box

$\square Q_1$ [mm]

Outer diameter of a square diffuser face

$\square Q_2$ [mm]

Dimensions of a square diffuser face style

$\square Q_3$ [mm]

Dimensions of a square plenum box

H_1 [mm]

Distance (height) from the lower edge of the

suspended ceiling to the lower edge of the diffuser face

H_2 [mm]

Height of a ceiling diffuser, from the lower edge of the suspended ceiling to the upper edge of the spigot

H_3 [mm]

Height of a ceiling diffuser with plenum box, from the lower edge of the suspended ceiling to the upper edge of the plenum box or of the spigot

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 the spigot

m [kg]

Weight

Nomenclature

L_{WA} [dB(A)]

A-weighted sound power level of air-regenerated noise

\dot{V} [m^3/h] and [l/s]

Volume flow rate

Δt_z [K]

Supply air to room air temperature difference, i.e.

supply air temperature minus room temperature

Δp_t [Pa]

Total differential pressure

A_{eff} [m^2]

Effective air discharge area

All sound power levels are based on 1 pW.