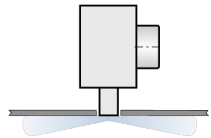




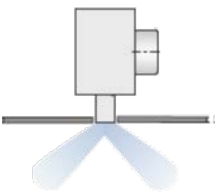
New design possibilities with black, white and grey air control elements



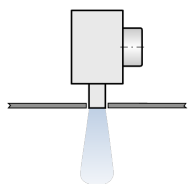
Asymmetrical plenum box



Horizontal air discharge



Angled airflow



Vertical airflow

Slot diffusers for ceiling installation

PURELINE50



The clean solution for significantly less ceiling contamination

Perfectly integrated slot diffuser for large volume flow rates, which can be easily and inconspicuously installed in the suspended ceiling.

- Simple and fast installation – tool-free fastening of the diffuser face
- New areas of application – including as air curtains for food counters
- High flexibility thanks to numerous standard variants
- Extended range of applications, as now available with 1 to 4 slots
- Very high comfort due to lower sound power levels and improved temperature and velocity reduction
- Improved energy efficiency due to lower pressure losses

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General information

Application

- Type PURELINE50 slot diffusers are used as supply air or extract air devices in comfort zones
- The many variants allow for flexible use as mixed ventilation systems and make them suitable for various applications
- Unobtrusive integration into suspended ceilings
- For room heights up to 4 m (lower edge of suspended ceiling)
- Suitable for large volume flow rates. Thanks to the option of 1-4 slots, the scope of application is wide-ranging.
- One-way or alternating air discharge can be adjusted on site to meet local requirements
- 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

Special features

- Uniform air pattern reduces contamination of the ceiling due to induced room air
- Horizontal, angled or vertical air discharge by means of manually adjustable air control elements
- Comfortable indoor climate due to high induction and rapid reduction of temperature differences and airflow velocities
- Attractive appearance due to extruded aluminium sections with anodised finish or powder coating (RAL CLASSIC colour)
- 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 can be ordered in mm increments, also in intermediate lengths

Variants

PL50-... :

- -*: 1 to 4 slots
- -PF: Combination of diffuser face and plenum box with fixed connection
- -SF: Combination of diffuser face and plenum box with detachable screw fixing
- -PB: Plenum box only (for combination with DS)
- -DS: Only diffuser face with extended border and screw fixing
- -DF: Only diffuser face with extended border and spring clip
- -CD: Air transfer section that can be integrated into linear runs. On the reverse side of the diffuser face, there are openings for the air to flow through. The air transfer section has to be fastened by others. The connectors supplied are only used to position and align the air transfer sections.
- -BD: Non-active section that can be integrated into linear runs. The diffuser face is connected on the reverse side so that air is prevented from flowing through the non-active section. The non-active section has to be fastened by others. The connectors supplied are only used to position and align the air transfer sections.
- -CS: Corner section

Position of the plenum box on the diffuser face, if the plenum box is shorter than the diffuser face

- Central position of plenum box
- Plenum box on the left (LE)
- Plenum box on the right (RI)

Plenum box variant

- Symmetrical plenum box with horizontal connection (HS)
- Symmetrical plenum box with vertical connection (VS)
- Asymmetrical plenum box with horizontal connection (HA)

Construction

Diffuser face finish

- With anodised finish, E6-C-0, natural colour
- P1: Powder-coated RAL 9010, pure white, GE50
- P1: Powder-coated RAL9010, RAL9005, RAL9006, RAL9016, RAL7012 GE30
- P1: Powder-coated DB703
- P1: Powder-coated in other RAL CLASSIC colours, GE70 (no luminous colours)

Attachments

- D: Damper blade for volume flow rate balancing
- LS: Lip seal
- L: Internal lining
- EP: Two end plates
- EA: Two end angles

Single diffusers are factory fitted with end plates or end angles. Either end plates or end angles can be used as the end piece.

Accessories

- EP: Two end plates
- EA: Two end angles

For a continuous linear arrangement, the end plates or end angles have to be ordered separately and fitted by others. 2 alignment plates for connecting the slot diffusers to each other are supplied separately with each slot diffuser without a factory-fitted end piece.

Construction features

- Spigot suitable for circular ducts to EN 1506 or EN 13180
- 4 suspension points on the plenum box for fixing to be performed by others
- Manually adjustable air control elements with detent for defined adjustment of the air distribution
- Factory-set air distribution, manually adjustable on site
- Spigot with groove for lip seal (only for accessories with lip seal)
- Diffuser face available in mm increments between 600 and 1950 mm
- If the diffuser face is longer than the plenum box, the protruding areas of the diffuser face are covered at the reverse side.
- Plenum boxes only available in nominal lengths
- Extract air variant with air control elements
- The optionally available neck extension in the standard dimensions 22, 47, 72, 97 and 121 mm can be used to compensate for structural conditions
- Fixing material for the diffuser face is supplied separately with the variants -SF and -DS

Materials and surfaces

- Diffuser face made from extruded aluminium sections
- Air control elements made of ABS 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 Evoprene
- Lining of mineral wool and closed cell vinyl foam
- Diffuser face with anodised finish, E6-C-0, natural colour
- P1: Powder-coated, RAL CLASSIC colour
- Air control elements similar to RAL 9005, black
- G: Air control elements similar to RAL 9006, grey
- W: Air control elements similar to RAL 9010, white
- Mineral wool
- Mineral wool faced with glass fibre fabric on the surfaces in contact with the air, abrasion-resistant up to 20 m/s
- To EN 13501, fire rating class A1, non-combustible
- RAL quality mark RAL-GZ 388
- Non-hazardous to health thanks to being highly biosoluble in accordance with the Ordinance on Hazardous Substances and Note Q of the European Directive (EC) No. 1272/2008
- Inert to fungal and bacterial growth

Standards and guidelines

- Sound power level of the air-regenerated noise measured according to EN ISO 5135
- Compliant with VDI 6022

Maintenance

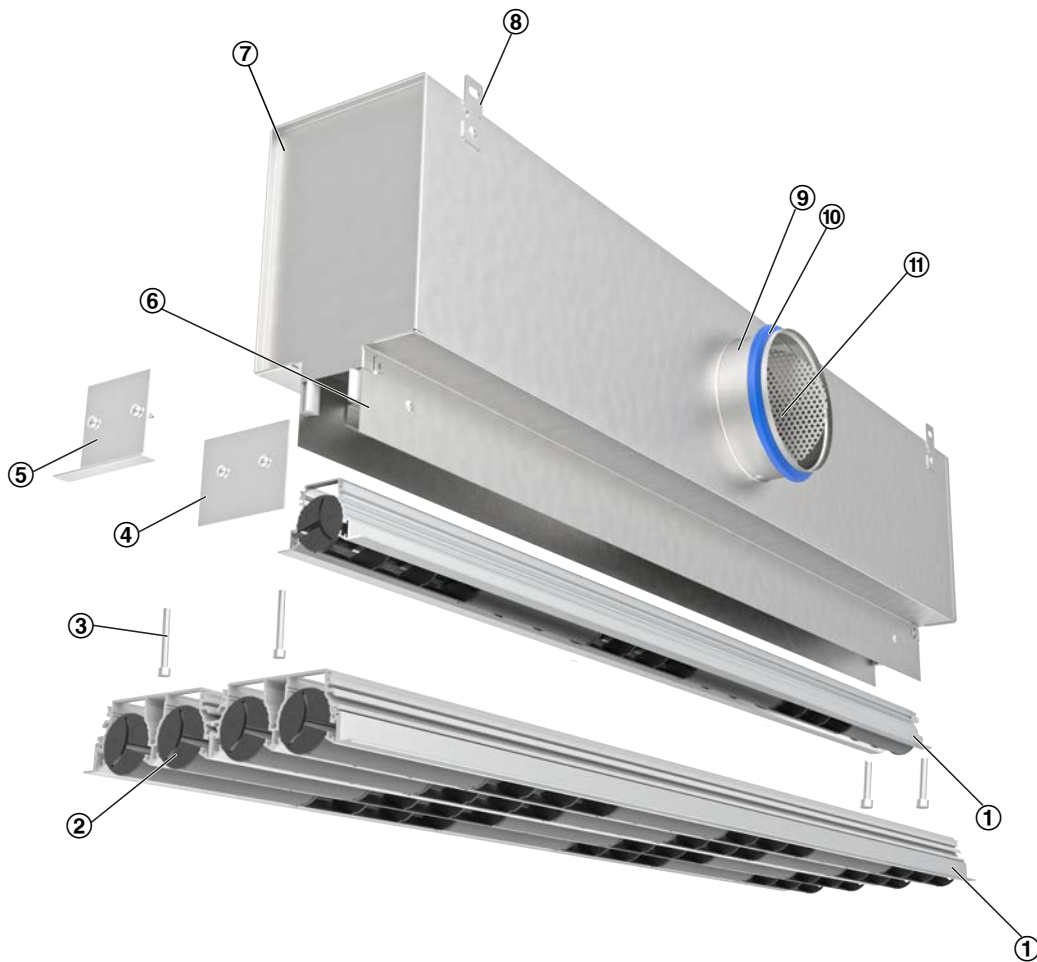
- Maintenance-free as construction and materials are not subject to wear
- Inspection and cleaning to VDI 6022

Function

Slot diffusers direct the supply air from ventilation and air conditioning systems into the room, either horizontally, at an angle or vertically.
 The resulting airflow induces high levels of room air, thereby rapidly reducing the airflow velocity and the temperature difference between supply air and indoor air.
 The result is a mixed flow air distribution in comfort zones, with good overall room ventilation, creating only very little turbulence in the occupied zone.
 Type PURELINE50 slot diffusers are factory fitted with manually adjustable air control elements.

The airflow direction can be adjusted to meet various local requirements.
 Air discharge is one-way or alternating horizontal.
 Heating operation with vertical flow is also possible, as is angled air discharge.
 The supply air to room air temperature difference can range from -10 to +10 K.
 A damper blade (optional) enables volume flow rate balancing for commissioning.
 To give rooms an aesthetic, uniform look, Type PURELINE50 diffusers may also be used for extract air.

Schematic illustration of PL50-*-SF



- ① Diffuser face, 1, 2, 3 or 4 slots
- ② Adjustable air control elements
- ③ Screw fixing
- ⑥ Neck
- ⑦ Plenum box
- ⑧ Suspension lug
- ⑨ Spigot

- Optional
- ④ End plate
 - ⑤ End angle
 - ⑩ Lip seal
 - ⑪ Damper blade for volume flow rate balancing

Technical data

Nominal lengths	600 – 1950 mm, in increments of 150 mm
Number of slots	1, 2, 3 or 4
Neck extension	22, 47, 72, 97, 121 mm
Minimum volume flow rate, at $\Delta t_z = -10$ K	10 l/s or 36 m ³ /h
Maximum volume flow rate, at LWA \cong 50 dB(A)	608 l/s or 2190 m ³ /h
Supply air to room air temperature difference	-10 to +10 K

Quick sizing

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

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

Up to nominal length 1500 mm, sizing includes one spigot; from length 1650 mm, two spigots are required.

PL50-1, supply air, alternating horizontal air discharge, sound power level and total differential pressure D = 123

LN	q _v [l/s]	q _v [m ³ /h]	1		2		3	
			Δp_t [Pa]	LWA [dB(A)]	Δp_t [Pa]	LWA [dB(A)]	Δp_t [Pa]	LWA [dB(A)]
600	10	36	< 5	< 15	< 5	< 15	5	< 15
600	30	109	21	36	29	37	47	37
600	51	182	58	51	82	51	131	51
600	70	255	113	60	161	60	258	61
750	13	45	< 5	< 15	< 5	< 15	7	< 15
750	36	129	20	37	32	37	57	38
750	59	212	55	51	87	51	155	52
750	82	296	106	60	170	60	301	61
900	15	54	< 5	< 15	5	< 15	9	< 15
900	41	147	20	37	36	38	68	38
900	67	241	54	51	96	51	183	52
900	92	334	104	60	185	60	352	61
1050	18	63	< 5	< 15	6	< 15	12	< 15
1050	46	165	21	37	40	38	81	39
1050	74	268	54	51	107	52	214	52
1050	102	370	104	60	203	61	408	61
1200	18	63	< 5	< 15	6	< 15	12	< 15
1200	46	165	21	37	40	38	81	39
1200	74	268	54	51	107	52	214	52
1200	102	370	104	60	203	61	408	61
1350	23	81	< 5	< 15	8	< 15	18	< 15
1350	55	199	22	38	51	39	110	40
1350	88	318	57	51	131	52	282	53

LN	q _v [l/s]	q _v [m ³ /h]	1		2		3	
			Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]
1350	121	436	108	60	246	61	530	61
1500	25	90	< 5	< 15	10	15	22	16
1500	60	216	24	38	58	39	128	40
1500	95	341	60	51	144	52	318	53
1500	129	467	112	60	270	61	596	62
1650	28	99	< 5	< 15	< 5	< 15	8	< 15
1650	71	255	17	38	29	38	53	39
1650	114	411	44	51	75	52	138	52
1650	157	567	85	60	143	60	263	61
1800	30	108	< 5	< 15	5	< 15	9	< 15
1800	76	272	17	38	31	38	58	39
1800	121	437	44	51	79	52	150	52
1800	166	601	84	60	150	61	285	61
1950	33	117	< 5	< 15	5	< 15	10	< 15
1950	80	289	17	38	33	39	64	39
1950	128	461	44	51	83	52	162	52
1950	175	633	83	60	156	61	306	61

1 Damper blade position 0°

2 Damper blade position 45°

3 Damper blade position 90°

PL50-1, supply air, alternating horizontal air discharge, sound power level and total differential pressure
D = 158

LN	q _v [l/s]	q _v [m ³ /h]	1		2		3	
			Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]
600	10	36	< 5	< 15	< 5	< 15	< 5	< 15
600	33	117	21	36	25	36	33	36
600	55	198	61	50	72	51	93	51
600	77	279	122	60	143	60	186	60
750	13	45	< 5	< 15	< 5	< 15	< 5	< 15
750	38	138	20	36	25	36	35	37
750	64	231	55	51	70	51	99	51
750	90	324	109	60	137	60	195	61
900	15	54	< 5	< 15	< 5	< 15	5	< 15
900	44	158	19	37	25	37	39	37
900	73	262	52	51	70	51	108	51
900	101	366	101	60	137	60	210	61
1050	18	63	< 5	< 15	< 5	< 15	6	< 15
1050	49	177	18	37	27	37	44	38
1050	81	292	49	51	72	51	119	52
1050	112	406	96	60	140	60	230	61
1200	18	63	< 5	< 15	< 5	< 15	6	< 15
1200	49	177	18	37	27	37	44	38
1200	81	292	49	51	72	51	119	52
1200	112	406	96	60	140	60	230	61
1350	23	81	< 5	< 15	< 5	< 15	8	< 15
1350	59	214	18	38	30	38	55	39
1350	96	346	47	51	79	51	145	52

LN	q _v [l/s]	q _v [m³/h]	1		2		3	
			Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]
1350	133	479	90	60	151	60	277	61
1500	25	90	< 5	< 15	5	< 15	9	< 15
1500	64	231	18	38	32	38	62	39
1500	104	373	47	51	84	52	160	52
1500	142	514	89	60	159	61	305	61
1650	28	99	< 5	< 15	< 5	< 15	< 5	< 15
1650	76	273	16	37	21	37	32	38
1650	124	446	44	51	57	51	84	51
1650	172	620	84	60	110	60	163	61
1800	30	108	< 5	< 15	< 5	< 15	5	< 15
1800	81	291	16	37	22	38	33	38
1800	132	474	42	51	57	51	88	52
1800	182	657	81	60	110	60	169	61
1950	33	117	< 5	< 15	< 5	< 15	5	< 15
1950	86	309	16	37	22	38	35	38
1950	139	501	41	51	58	51	92	52
1950	192	693	79	60	111	60	177	61

1 Damper blade position 0°

2 Damper blade position 45°

3 Damper blade position 90°

**PL50-2, supply air, alternating horizontal air discharge, sound power level and total differential pressure
D = 158**

LN	q _v [l/s]	q _v [m³/h]	1		2		3	
			Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]
600	20	72	< 5	< 15	< 5	< 15	7	< 15
600	54	195	17	37	28	38	50	39
600	89	319	46	51	74	52	134	53
600	122	442	89	60	143	61	257	62
750	25	90	< 5	< 15	5	< 15	10	< 15
750	63	227	17	38	31	39	61	40
750	101	365	44	51	80	52	158	53
750	139	502	83	60	152	61	299	62
900	30	108	< 5	< 15	6	15	13	16
900	72	258	17	39	36	40	74	41
900	113	407	43	51	89	52	185	53
900	154	557	80	60	166	61	347	62
1050	35	126	< 5	16	8	17	17	18
1050	79	286	18	39	40	40	88	41
1050	124	447	43	51	98	53	215	54
1050	168	607	80	60	182	61	396	62
1200	35	126	< 5	16	8	17	17	18
1200	79	286	18	39	40	40	88	41
1200	124	447	43	51	98	53	215	54
1200	168	607	80	60	182	61	396	62
1350	45	161	< 5	19	12	20	27	22
1350	94	339	20	40	51	41	118	42
1350	144	518	46	52	120	53	276	54



LN	q _v [l/s]	q _v [m ³ /h]	1		2		3	
			Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]
1350	193	696	83	60	217	61	499	63
1500	50	179	5	20	14	22	33	23
1500	101	365	21	40	58	42	135	43
1500	153	551	48	52	132	53	309	55
1500	204	737	86	60	236	62	552	63
1650	55	197	< 5	16	5	17	11	18
1650	125	449	15	39	28	40	58	41
1650	194	700	35	51	69	52	141	54
1650	264	952	65	60	128	61	260	62
1800	60	215	< 5	17	6	18	13	19
1800	133	477	15	39	30	40	64	41
1800	205	738	35	52	73	53	152	54
1800	277	1000	65	60	134	61	279	62
1950	65	233	< 5	18	7	19	15	20
1950	140	504	15	40	32	41	69	42
1950	215	775	35	52	77	53	164	54
1950	290	1046	64	60	140	61	299	62

1 Damper blade position 0°

2 Damper blade position 45°

3 Damper blade position 90°

PL50-2, supply air, alternating horizontal air discharge, sound power level and total differential pressure
D = 198

LN	q _v [l/s]	q _v [m ³ /h]	1		2		3	
			Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]
600	20	72	< 5	< 15	< 5	< 15	< 5	< 15
600	59	214	18	37	23	37	34	38
600	99	355	50	51	64	51	94	52
600	138	497	97	60	125	60	184	61
750	25	90	< 5	< 15	< 5	< 15	5	< 15
750	69	249	17	37	24	38	38	38
750	113	408	45	51	63	51	102	52
750	157	567	86	60	122	61	198	61
900	30	108	< 5	< 15	< 5	< 15	6	< 15
900	78	282	16	38	25	38	43	39
900	127	456	41	51	64	52	114	53
900	175	630	79	60	123	61	217	62
1050	35	126	< 5	< 15	< 5	< 15	8	< 15
1050	87	314	15	38	26	39	50	40
1050	139	501	39	51	67	52	127	53
1050	191	689	74	60	127	61	240	62
1200	35	126	< 5	< 15	< 5	< 15	8	< 15
1200	87	314	15	38	26	39	50	40
1200	139	501	39	51	67	52	127	53
1200	191	689	74	60	127	61	240	62
1350	45	161	< 5	16	6	16	12	17
1350	103	372	15	39	31	40	64	41
1350	162	584	38	51	76	52	157	54



LN	q _v [l/s]	q _v [m ³ /h]	1		2		3	
			Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]
1350	220	795	70	60	141	61	290	62
1500	50	179	< 5	17	7	18	14	19
1500	111	400	16	39	34	40	71	41
1500	173	622	38	52	81	53	173	54
1500	234	843	69	60	149	61	317	62
1650	55	197	< 5	< 15	< 5	< 15	6	< 15
1650	136	490	14	38	20	39	35	39
1650	218	783	35	51	52	52	88	53
1650	298	1076	66	60	98	61	167	61
1800	60	215	< 5	< 15	< 5	< 15	6	15
1800	144	520	13	38	21	39	37	40
1800	229	826	34	51	53	52	93	53
1800	314	1131	63	60	99	61	175	62
1950	65	233	< 5	15	< 5	15	7	16
1950	153	550	13	39	22	39	40	40
1950	241	868	33	51	54	52	99	53
1950	329	1185	61	60	101	61	184	62

1 Damper blade position 0°

2 Damper blade position 45°

3 Damper blade position 90°

PL50-3, supply air, alternating horizontal air discharge, sound power level and total differential pressure**D = 198**

LN	q _v [l/s]	q _v [m ³ /h]	1		2		3	
			Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]
600	30	108	< 5	< 15	< 5	< 15	6	< 15
600	79	283	18	37	26	38	41	38
600	127	457	46	51	68	51	108	52
600	175	632	88	60	130	60	207	61
750	38	134	< 5	< 15	5	< 15	8	< 15
750	92	330	17	38	29	38	50	39
750	146	525	44	51	73	52	126	52
750	200	721	83	60	138	61	238	61
900	45	161	< 5	15	6	15	11	16
900	104	375	18	38	33	39	60	40
900	163	588	44	51	80	52	147	53
900	222	802	81	60	150	61	273	61
1050	53	188	< 5	16	8	17	14	18
1050	116	417	19	39	37	40	70	40
1050	180	647	45	51	89	52	169	53
1050	243	876	82	60	164	61	311	62
1200	53	188	< 5	16	8	17	14	18
1200	116	417	19	39	37	40	70	40
1200	180	647	45	51	89	52	169	53
1200	243	876	82	60	164	61	311	62
1350	68	242	5	19	11	20	22	21
1350	138	498	21	40	47	41	95	42
1350	209	754	48	52	109	53	218	53

LN	q _v [l/s]	q _v [m ³ /h]	1		2		3	
			Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]
1350	280	1010	87	60	195	61	391	62
1500	75	268	6	21	13	22	27	22
1500	149	536	23	40	53	41	108	42
1500	223	804	51	52	120	53	244	54
1500	297	1072	90	60	213	61	433	62
1650	82	295	< 5	17	5	17	10	18
1650	182	654	15	39	26	40	47	40
1650	281	1012	36	51	63	52	112	53
1650	380	1371	66	60	116	61	206	61
1800	90	322	< 5	18	6	18	11	19
1800	193	695	15	39	28	40	51	41
1800	297	1069	36	52	67	52	121	53
1800	400	1442	66	60	121	61	221	61
1950	97	349	< 5	19	7	19	13	20
1950	204	736	16	40	30	40	56	41
1950	312	1123	36	52	70	52	130	53
1950	419	1510	66	60	126	61	236	61

1 Damper blade position 0°

2 Damper blade position 45°

3 Damper blade position 90°

**PL50-3, supply air, alternating horizontal air discharge, sound power level and total differential pressure
D = 248**

LN	q _v [l/s]	q _v [m ³ /h]	1		2		3	
			Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]
600	30	108	< 5	< 15	< 5	< 15	< 5	< 15
600	86	308	18	37	22	37	29	37
600	141	508	49	51	60	51	80	51
600	196	708	94	60	116	60	155	61
750	38	134	< 5	< 15	< 5	< 15	< 5	< 15
750	100	359	17	37	22	37	32	38
750	162	584	44	51	58	51	85	52
750	224	809	84	60	112	60	163	61
900	45	161	< 5	< 15	< 5	< 15	6	< 15
900	113	408	16	38	23	38	36	38
900	182	655	41	51	60	51	93	52
900	250	902	78	60	113	60	176	61
1050	53	188	< 5	< 15	< 5	< 15	7	< 15
1050	126	454	16	38	25	39	41	39
1050	200	721	39	51	62	52	102	52
1050	274	987	74	60	116	61	192	61
1200	53	188	< 5	< 15	< 5	< 15	7	< 15
1200	126	454	16	38	25	39	41	39
1200	200	721	39	51	62	52	102	52
1200	274	987	74	60	116	61	192	61
1350	68	242	< 5	16	6	17	10	17
1350	151	543	16	39	29	40	52	40
1350	234	843	38	51	69	52	125	53

LN	q _v [l/s]	q _v [m ³ /h]	1		2		3	
			Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]
1350	317	1144	71	60	128	61	229	61
1500	75	268	< 5	17	7	18	12	18
1500	162	584	16	39	31	40	58	41
1500	250	899	39	51	74	52	137	53
1500	337	1215	71	60	135	61	249	61
1650	82	295	< 5	< 15	< 5	< 15	5	< 15
1650	197	710	14	38	19	38	29	39
1650	313	1125	35	51	48	52	73	52
1650	427	1540	65	60	91	60	137	61
1800	90	322	< 5	< 15	< 5	15	6	15
1800	210	755	14	38	20	39	31	39
1800	330	1188	34	51	49	52	76	52
1800	450	1621	63	60	91	60	142	61
1950	97	349	< 5	15	< 5	16	6	16
1950	222	799	13	39	20	39	33	40
1950	347	1250	33	51	50	52	80	52
1950	472	1700	61	60	92	60	149	61

1 Damper blade position 0°

2 Damper blade position 45°

3 Damper blade position 90°

**PL50-4, supply air, alternating horizontal air discharge, sound power level and total differential pressure
D = 248**

LN	q _v [l/s]	q _v [m ³ /h]	1		2		3	
			Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]
600	40	143	< 5	< 15	< 5	< 15	5	< 15
600	101	363	15	36	21	36	31	37
600	162	583	39	50	54	51	79	51
600	223	803	74	60	102	60	150	60
750	50	179	< 5	< 15	< 5	< 15	6	< 15
750	118	424	15	37	23	37	36	38
750	186	669	37	51	56	51	90	51
750	253	914	68	60	105	60	167	61
900	60	215	< 5	< 15	5	< 15	8	< 15
900	134	482	15	38	25	38	42	38
900	208	748	36	51	60	51	102	52
900	281	1015	66	60	111	60	188	61
1050	70	251	< 5	15	6	16	11	16
1050	149	537	15	38	28	39	50	39
1050	228	822	36	51	66	51	116	52
1050	307	1108	66	60	119	60	211	61
1200	70	251	< 5	15	6	16	11	16
1200	149	537	15	38	28	39	50	39
1200	228	822	36	51	66	51	116	52
1200	307	1108	66	60	119	60	211	61
1350	90	322	< 5	19	9	19	17	19
1350	178	640	17	39	35	40	66	40
1350	266	959	38	51	79	52	147	52

LN	q _v [l/s]	q _v [m³/h]	1		2		3	
			Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]
1350	354	1277	68	60	139	60	261	61
1500	100	358	5	20	11	21	20	21
1500	192	690	18	40	39	40	75	41
1500	284	1023	40	52	86	52	164	52
1500	376	1355	70	60	151	60	288	61
1650	110	393	< 5	15	< 5	16	7	16
1650	234	844	13	38	21	38	34	39
1650	360	1295	30	51	49	51	80	52
1650	485	1746	55	60	88	60	145	61
1800	120	429	< 5	16	5	17	8	17
1800	249	898	13	39	22	39	37	39
1800	380	1367	30	51	50	51	85	52
1800	510	1836	54	60	91	60	154	61
1950	130	465	< 5	17	6	18	10	18
1950	264	951	13	39	23	39	40	40
1950	399	1436	30	51	53	52	91	52
1950	533	1922	54	60	94	60	163	61

1 Damper blade position 0°

2 Damper blade position 45°

3 Damper blade position 90°

PL50-4, supply air, alternating horizontal air discharge, sound power level and total differential pressure
D = 313

LN	q _v [l/s]	q _v [m³/h]	1		2		3	
			Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]
600	40	143	< 5	< 15	< 5	< 15	< 5	< 15
600	111	400	16	35	19	35	24	36
600	182	656	43	50	51	50	63	50
600	253	913	84	60	98	60	123	60
750	50	179	< 5	< 15	< 5	< 15	< 5	< 15
750	129	466	15	36	18	36	25	36
750	209	753	38	50	48	50	65	51
750	288	1040	73	60	92	60	124	60
900	60	215	< 5	< 15	< 5	< 15	< 5	< 15
900	147	529	14	37	19	37	27	37
900	234	842	35	50	48	51	68	51
900	321	1156	67	60	90	60	129	60
1050	70	251	< 5	< 15	< 5	< 15	5	< 15
1050	163	588	14	37	19	37	30	38
1050	257	926	33	51	48	51	74	51
1050	350	1263	62	60	90	60	137	60
1200	70	251	< 5	< 15	< 5	< 15	5	< 15
1200	163	588	14	37	19	37	30	38
1200	257	926	33	51	48	51	74	51
1200	350	1263	62	60	90	60	137	60
1350	90	322	< 5	15	5	15	8	15
1350	195	701	13	38	22	38	36	39
1350	300	1081	32	51	52	51	86	52



LN	q _v [l/s]	q _v [m ³ /h]	1		2		3	
			Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]	Δpt [Pa]	LWA [dB(A)]
1350	405	1460	58	60	95	60	158	61
1500	100	358	< 5	16	5	16	9	17
1500	210	756	14	38	24	39	40	39
1500	320	1153	32	51	55	51	94	52
1500	430	1551	57	60	99	60	170	61
1650	110	393	< 5	< 15	< 5	< 15	< 5	< 15
1650	257	925	12	37	16	37	22	37
1650	404	1456	30	51	40	51	55	51
1650	552	1988	57	60	74	60	103	60
1800	120	429	< 5	< 15	< 5	< 15	< 5	< 15
1800	273	983	12	37	16	38	23	38
1800	427	1537	29	51	40	51	57	51
1800	580	2091	54	60	73	60	105	60
1950	130	465	< 5	< 15	< 5	< 15	5	< 15
1950	289	1040	12	38	17	38	24	38
1950	449	1615	29	51	40	51	59	51
1950	608	2190	53	60	73	60	109	60

1 Damper blade position 0°

2 Damper blade position 45°

3 Damper blade position 90°

Specification text

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

Specification text

Slot diffusers of Type PURELINE50 with individually, manually adjustable air control elements and 1, 2, 3 or 4 slots.

Air distribution can be alternating horizontal, alternating angled, vertical, one-way horizontal to the left or one-way horizontal to the right.

The slot diffusers are intended to be installed in suspended ceilings and are suitable for supply air and extract air. Ready-to-install component which consists of a diffuser face with a choice of black, grey or white air control elements.

Variants with plenum boxes have 1 or 2 spigots which are arranged horizontally or vertically for symmetrical plenum boxes and horizontally for asymmetrical plenum boxes.

The plenum boxes are fitted with 4 suspension lugs.

The connection between the diffuser face and the plenum box can be fixed or detachable.

Spigots are suitable for circular ducts according to EN 1506 or EN 13180. The sound power level of air-regenerated noise is measured according to EN ISO 5135.

Special features

- Uniform air pattern reduces contamination of the ceiling due to induced room air
- Horizontal, angled or vertical air discharge by means of manually adjustable air control elements
- Comfortable indoor climate due to high induction and rapid reduction of temperature differences and airflow velocities
- Attractive appearance due to extruded aluminium sections with anodised finish or powder coating (RAL CLASSIC colour)
- 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 ABS 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 Evoprene
- Lining of mineral wool and closed cell vinyl foam
- Diffuser face with anodised finish, E6-C-0, natural colour
- P1: Powder-coated, RAL CLASSIC colour
- Air control elements similar to RAL 9005, black
- G: Air control elements similar to RAL 9006, grey
- W: Air control elements similar to RAL 9010, white

Mineral wool

- Mineral wool faced with glass fibre fabric on the surfaces in contact with the air, abrasion-resistant up to 20 m/s
- To EN 13501, fire rating class A1, non-combustible
- RAL quality mark RAL-GZ 388
- Non-hazardous to health thanks to being highly biosoluble in accordance with the Ordinance on Hazardous Substances and Note Q of the European Directive (EC) No. 1272/2008
- Inert to fungal and bacterial growth

Construction

Diffuser face finish

- With anodised finish, E6-C-0, natural colour
- P1: Powder-coated RAL 9010, pure white, GE50
- P1: Powder-coated RAL9010, RAL9005, RAL9006, RAL9016, RAL7012 GE30
- P1: Powder-coated DB703
- P1: Powder-coated in other RAL CLASSIC colours, GE70 (no luminous colours)

Technical data

- Nominal lengths: 600 – 1950 mm, in increments of 150 mm
- Number of slots: 1, 2, 3 or 4
- Minimum volume flow rate with $\Delta t_z = -10$ K: 10 l/s or 36 m³/h
- Maximum volume flow rate, at LWA \cong 50 dB(A): 608 l/s or 2190 m³/h
- Supply air to room air temperature difference: -10 to $+10$ K

Sizing data

- V _____ [m³/h]
- Δp_t _____ [Pa] air-regenerated noise
- L_{WA} _____ [dB(A)]

Order example: PL50-1-S-PF-HS/1200x1200x123/1

Number of slots	1
System	Supply air
Variant	Diffuser face fixed to the plenum box, non-detachable
Plenum box variant	Standard plenum box with horizontal connection
Nominal size	Diffuser face 1200 mm, plenum box 1200 mm, spigot diameter 123 mm
No. of spigots	1
Damper blade for volume flow rate balancing	Without
Lip seal	Without
Lining	Without
Position of plenum box	Central position
Air pattern	Alternating horizontal
Diffuser face with extended border	Without
End pieces	Without
Surface	With anodised finish, E6-C-0, natural colour
Colour of air control elements	Black

Order example: PL50-2-S-SF-HS/1200x1050x158/2-D-LS-L-LE/AS/B00/EA/P1-RAL 9010/W

Number of slots	2
System	Supply air
Variant	With detachable connection between plenum box and diffuser face
Plenum box variant	Standard plenum box with horizontal connection
Nominal size	Diffuser face 1200 mm, plenum box 1050 mm, spigot diameter 158 mm
No. of spigots	2
Damper blade for volume flow rate balancing	With
Lip seal	With
Lining	With
Position of plenum box	Left side
Air pattern	Alternating angled
Diffuser face with extended border	With
End pieces	With end angle
Surface	Powder-coated RAL 9010, pure white, GE50
Colour of air control elements	White

Order example: PL50-2-E-DF/1200/V/B00/EP/P1-RAL 9006/G

Number of slots	2
System	Extract air
Variant	Diffuser face with extended border and spring clip
Plenum box variant	No plenum box
Nominal size	Diffuser face 1200 mm
No. of spigots	Without
Damper blade for volume flow rate balancing	Without
Lip seal	Without
Lining	Without
Position of plenum box	No plenum box
Air pattern	Extract air (vertical setting turned by 180°)
Diffuser face with extended border	With extended border
End pieces	With end plate
Surface	Powder-coated, RAL 9006, white aluminium, GE30
Colour of air control elements	Grey

PL50 - 1 - S - CS / 100 × 100 × 90 / B00 / P1 - RAL 9016 / W
 | | | | | | | |
 1 2 3 4 5 6 7 8

1 Type

PURELINE50 Slot diffuser

2 Number of slots

- 1 1 air slot
- 2 2 air slots
- 3 3 air slots
- 4 4 air slots

3 System

- S Supply air
- E Extract air

4 Variant

CS Corner section

5 Dimensions [mm]

- E 100 to 300 mm (in mm increments)
- F 100 to 300 mm (in mm increments)
- W 90°

6 Diffuser face with extended border

No entry required: None

B00 With extended border

7 Surface

No entry required: With anodised finish, E6-C-0, natural colour

P1 Powder-coated, specify RAL Classic colour

P1 Powder-coated DB703

Gloss level

RAL9010 GE50

RAL9006 GE30

RAL9010, RAL9005, RAL9016, RAL7012 GE20

All RAL Classic colours (except luminous colours) GE70

8 Colour of air control elements

No entry required: Similar to RAL 9005, black

W Similar to RAL 9010, white

G Similar to RAL 9006, grey

E0 Without air control elements

Order example: PL50-1-S-CS/100x100x90

Number of slots	1
Variant	Corner section
System	Supply air
Dimensions	Leg length E: 100 mm; leg length F: 100 mm; 90° angle
Extended border	Without
Surface	With anodised finish, E6-C-0, natural colour
Colour of air control elements	Black, similar to RAL 9005



PL50 – ACC – EA / 2 – B00 / P1 – RAL 9016
 | | | | | |
 1 2 3 4 5 6

1 Type

PURELINE50 Slot diffuser

1 1-slot

2 1-slot

3 3-slot

4 4-slot

2 Type

ACC Accessories and replacement parts

5 Extended border

No entry required: None

B00 With extended border

3 Variant

EP 1 pair of end plates extract air

EA 1 pair of end angles

CL Diffuser face connector

SF Replacement screw fixing

DF1 Clamp fixing, 1-slot

DF2 Clamp fixing, 2-slot

DF3 Clamp fixing, 3-slot

DF4 Clamp fixing, 4-slot

Key Setting key for air control elements

6 Surface

No entry required: With anodised finish, E6-C-0, natural colour

P1 Powder-coated, specify RAL CLASSIC colour

Gloss level

RAL9010 GE50

RAL9006 GE30

All RAL Classic colours (except luminous colours) GE70

4 Number of slots**Order example: PL50-ACC-EA/3**

Number of slots

3

Variant

1 pair of end angles

Extended border

Without

Surface

With anodised finish, E6-C-0, natural colour

Variants

Asymmetrical plenum box



Plenum box with two vertical spigots



Plenum box shorter than diffuser face, positioned on left with 2 horizontal spigots



Plenum box shorter than diffuser face, central position, with horizontal spigot



Diffuser face with black air control elements



Diffuser face with white air control elements



Diffuser face with grey air control elements

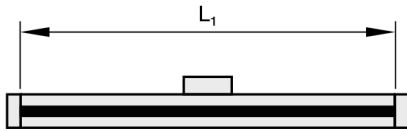


Corner section -CS

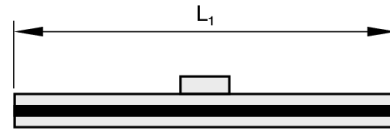


Dimensions and weight

Diffuser face end angles on both ends

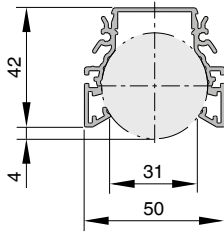


Diffuser face without end piece

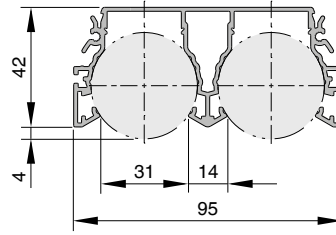


LN	L ₁
600	600
750	750
900	900
1050	1050
1200	1200
1350	1350
1500	1500
1650	1650
1800	1800
1950	1950

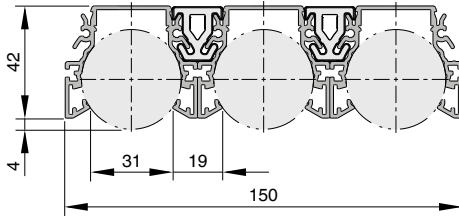
PL50-1 (without extended border)



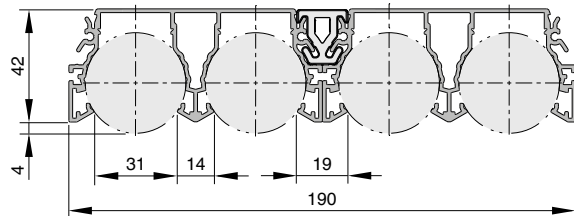
PL50-2 (without extended border)



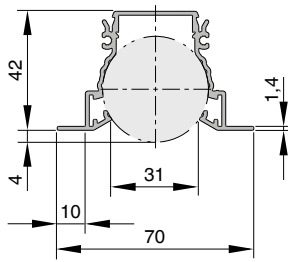
PL50-3 (without extended border)



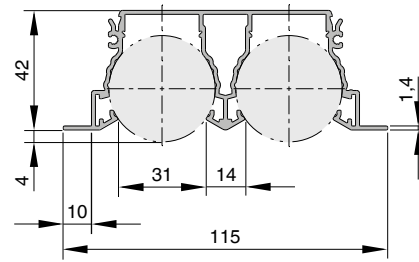
PL50-4 (without extended border)



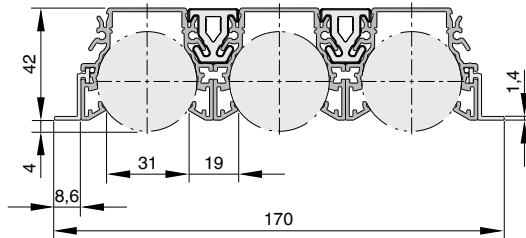
PL50-1/B00 (with extended border)



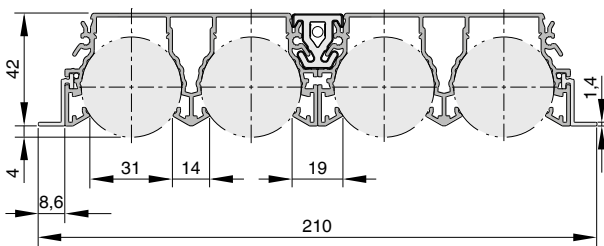
PL50-2/B00 (with extended border)



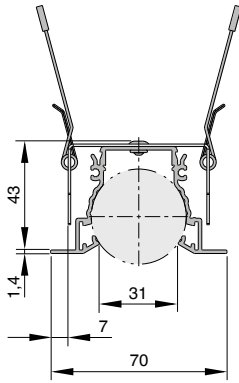
PL50-3/B00 (with extended border)



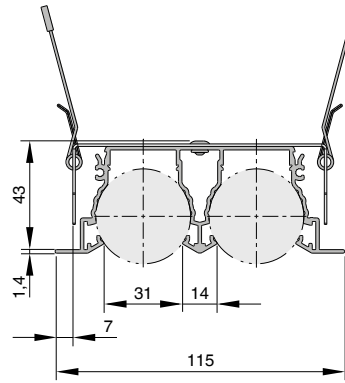
PL50-4/B00 (with extended border)



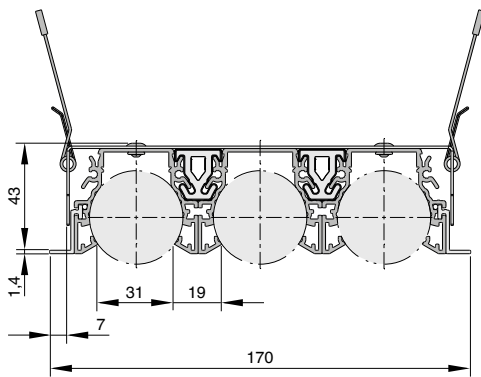
Diffuser face with spring clip PL50-1-DF/.../B00



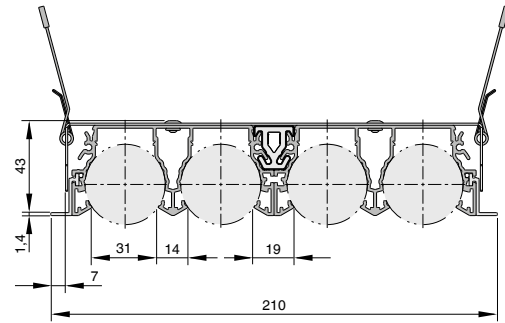
Diffuser face with spring clip PL50-2-DF/.../B00



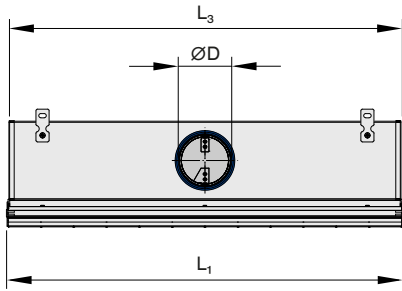
Diffuser face with spring clip PL50-3-DF/.../B00



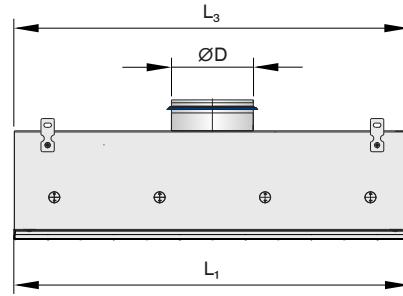
Diffuser face with spring clip PL50-4-DF/.../B00



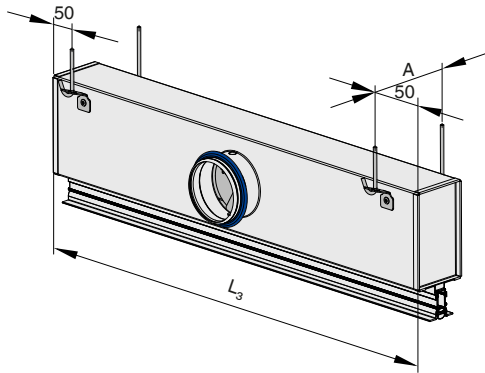
Plenum box with horizontal spigot (HS / HA)



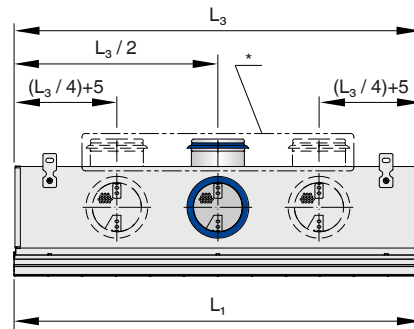
Plenum box with vertical spigot (VS)



Plenum box fixing points

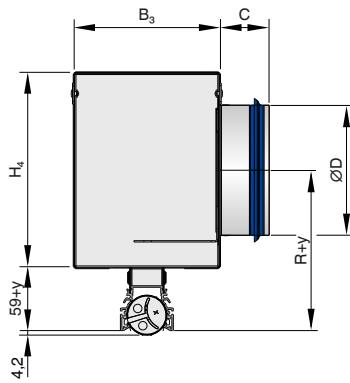


Spigot arrangement

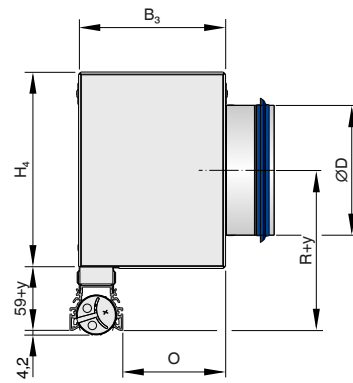


* The vertical spigot arrangement only applies to the VS variant

PL50-PF-HS (symmetrical plenum box with horizontal connection)



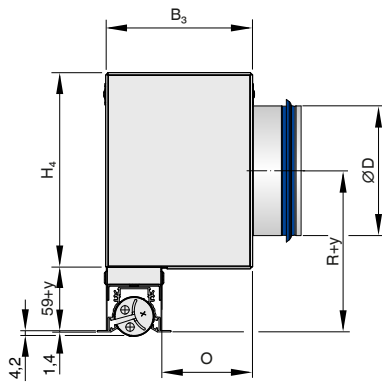
PL50-PF-HA (asymmetrical plenum box with horizontal connection)



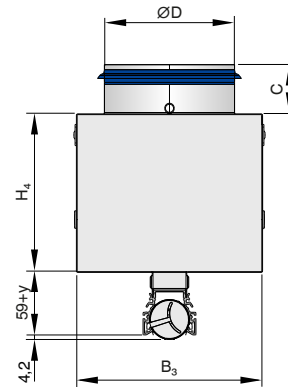
PL50-1-PF-HS

PL50-1-PF-HA

PL50-SF-*-HA (asymmetrical plenum box with horizontal connection)



PL50-PF-*-VS (symmetrical plenum box with vertical connection)



PL50-1-SF-HA

PL50-1-PF-VS

1	LN	L ₁	L ₂
1	600	600	595
1	750	750	745
1	900	900	895
1	1050	1050	1045
1/2	1200	1200	1195
1/2	1350	1350	1345
1/2	1500	1500	1495
2	1650	1650	1645
2	1800	1800	1795
2	1950	1950	1945

1 No. of spigots

LN = Nominal length

	B3		H4		R	A		O	
	1	2	1	2		1	2	3	4
PL50-1	138	176	185	150	152	178	216	98	84
PL50-2	183	214	225	150	172	223	254	98	84
PL50-3	238	270	275	175	197	278	310	98	82
PL50-4	278	335	340	210	229	318	375	98	82

Note: Neck extension Y = 22, 47, 72, 97, 121

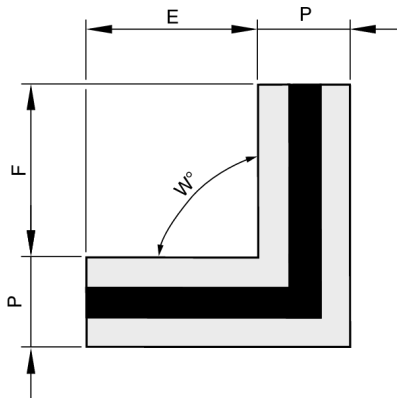
	ØD	C
PL50-1	123/158	48/50
PL50-2	158/198	50/50
PL50-3	198/248	50/48
PL50-4	248/313	48/50

Weights

	1	kg/m
Diffuser face	1-2-3-4-slot	1.0 / 1.6 / 3.1 / 3.4
Plenum box HS/HA		4.1 / 5.1 / 6.1 / 7.3
Plenum box HS/HA+L		4.8 / 6.0 / 7.2 / 8.5
Plenum box VS		4.8 / 5.2 / 6.0 / 7.3
Plenum box VS+L		5.9 / 6.3 / 7.2 / 8.2

Note: Total weight = weight of diffuser face + weight of plenum box
1 Number of slots

Corner section PL50*-CS

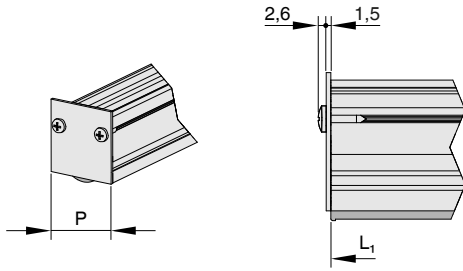


	1	2
PL50-1	50	70
PL50-2	95	115
PL50-3	150	170
PL50-4	190	210

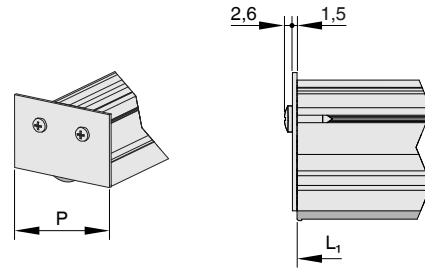
1 Without extended border P
2 With extended border P

	E	F	W [°]
Minimum input value	100	100	90
Maximum input value	300	300	90

End plate for diffuser face without B00



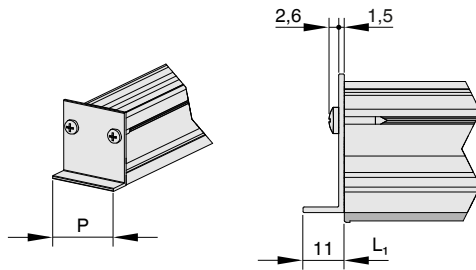
End plate for diffuser face with B00



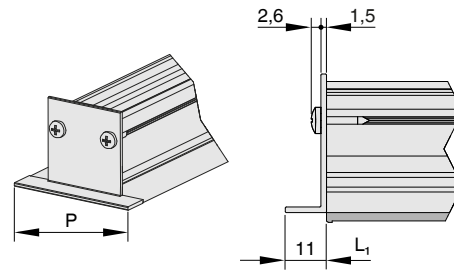
PL50-1-*

PL50-1-*

End angle for diffuser face without B00



End angle for diffuser face with B00



PL50-1-*

PL50-1-*

	1	2
PL50-1	50	70
PL50-2	95	115
PL50-3	150	170
PL50-4	190	210

1 P Without extended border

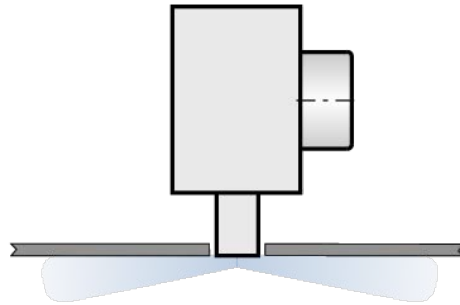
2 P With extended border

Air patterns

Alternating horizontal air discharge

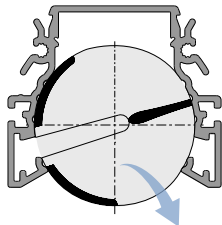


Alternating horizontal air discharge



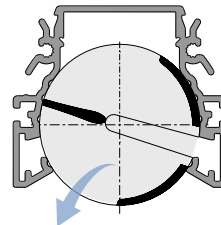
Horizontal air discharge

Setting of the air control elements



Horizontal right air discharge

Setting of the air control elements

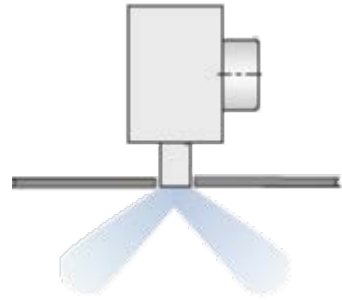


Horizontal left air discharge

Alternating angled air discharge

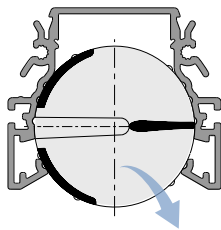


Alternating angled air discharge (AS)

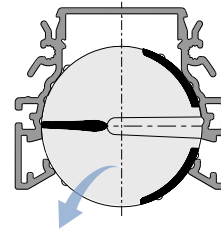


Angled airflow

Setting of the air control elements



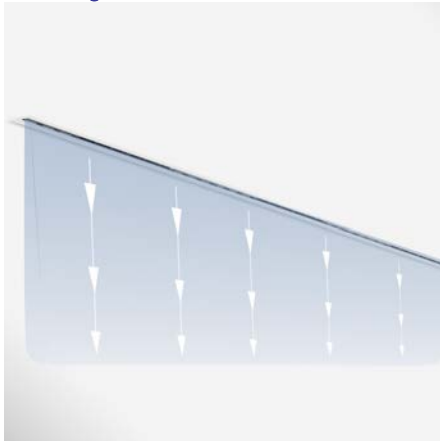
Setting of the air control elements



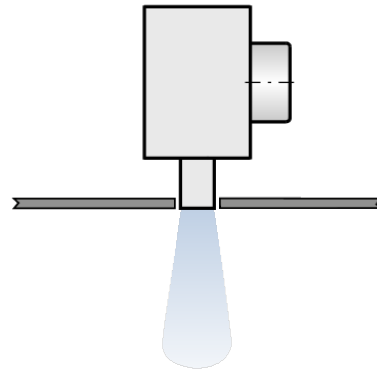
Air discharge angled to the right

Air discharge angled to the left

Vertical air discharge

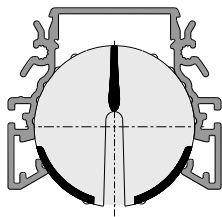


Vertical air discharge (V)



Vertical airflow

Setting of the air control elements

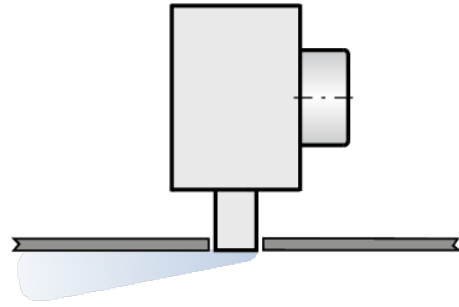


Vertical air discharge

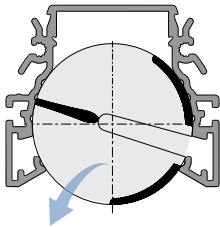
One-way horizontal air discharge to the left



One-way horizontal air discharge to the left (HL)



Setting of the air control elements

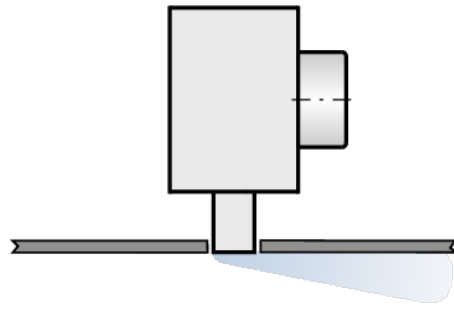


Horizontal left air discharge

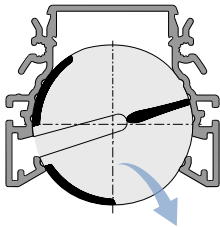
One-way horizontal air discharge to the right



One-way horizontal air discharge to the right (HR)

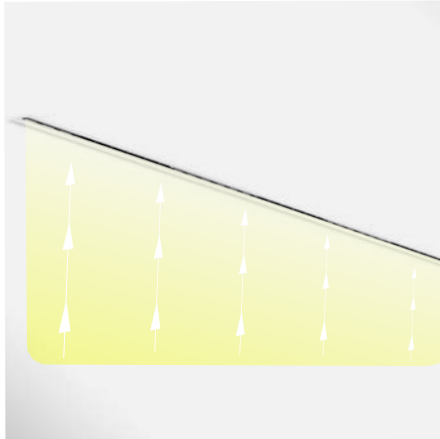


Setting of the air control elements

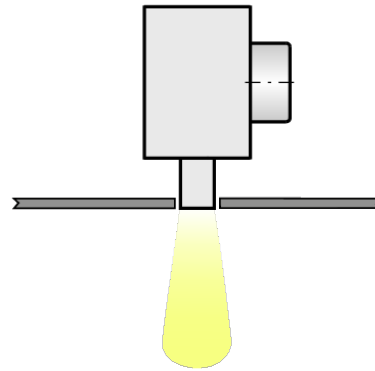


Horizontal right air discharge

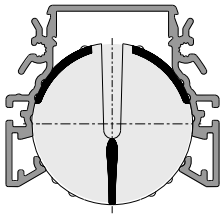
Extract air



Extract air



Setting of the air control elements



Position of the air control elements for extract air

Product details

PL50-1/.../B00, installation in continuous ceilings



With anodised finish, E6-C-0, natural colour

PL50-2/.../B00/P1-RAL 9010, installation in continuous ceilings



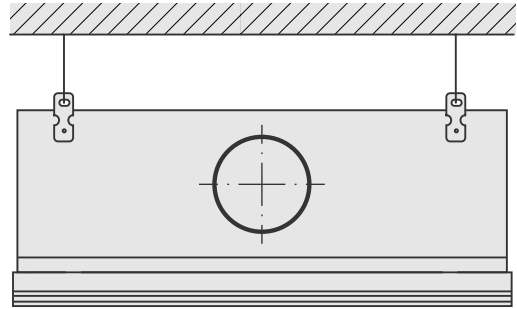
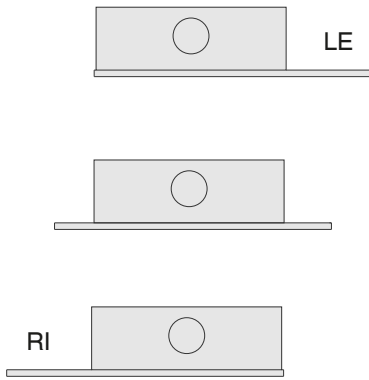
Powder-coated RAL 9010, pure white

Installation and commissioning

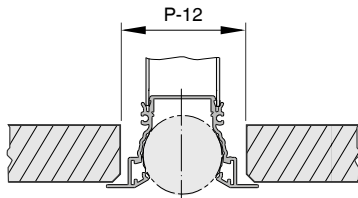
- Preferably for rooms with a clear height up to 4.0 m
- Flush ceiling installation
- Horizontal or vertical duct connection
- Diffuser faces with shorter plenum boxes and non-active diffusers have a slot cover on the rear
- For a continuous linear arrangement, connect the diffuser faces with alignment plates
- If necessary, carry out volume flow rate balancing with the damper blade
- Suitable material for fixing the slot diffusers must be provided by others

These are only schematic diagrams to illustrate installation details.

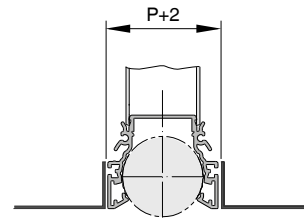
PL plenum box, positioned on the left, in the centre, on the right



Installation opening



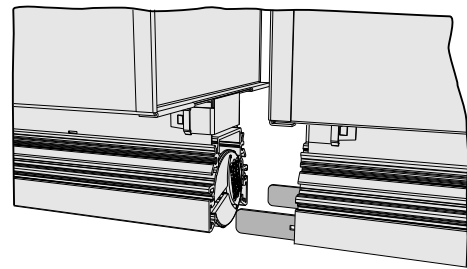
Installation opening



Continuous ceiling (with extended border)

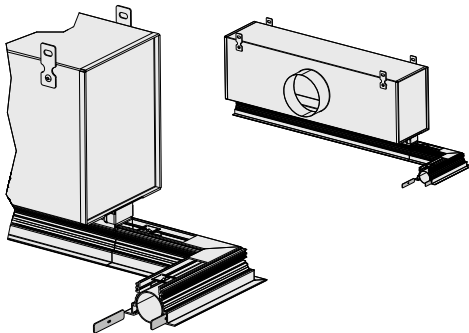
Long field plates (without extended border)

Continuous linear arrangement



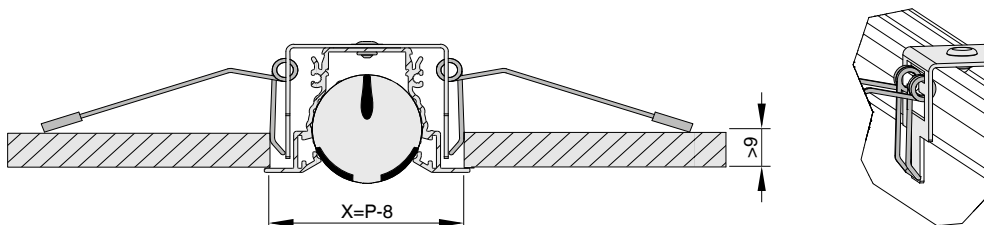
For continuous linear arrangement, the slot diffusers are connected to each other using the connectors supplied separately.

Connecting corner sections



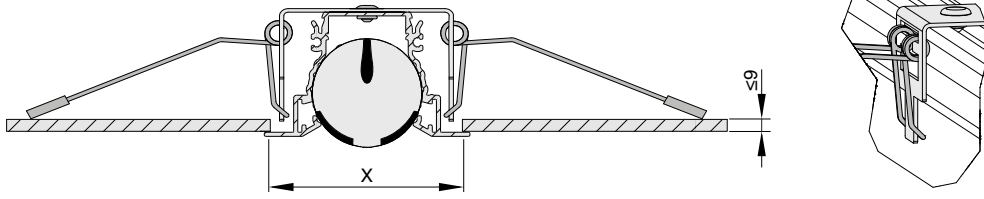
The connection between the corner section and slot diffuser is made using the connectors supplied separately. If necessary, the corner section must be additionally fixed by the customer.

PL50-DF spring clip fixing



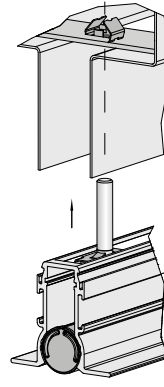
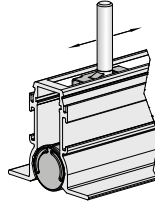
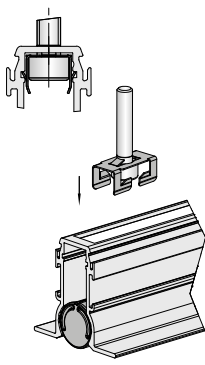
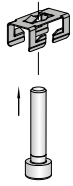
If ceiling thickness is > 9 mm

PL50-DF spring clip fixing



If ceiling thickness is ≤ 9 mm

PL50 with detachable connection



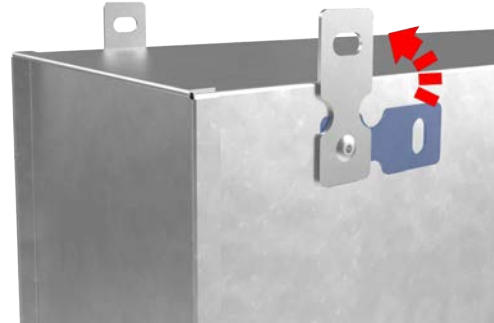
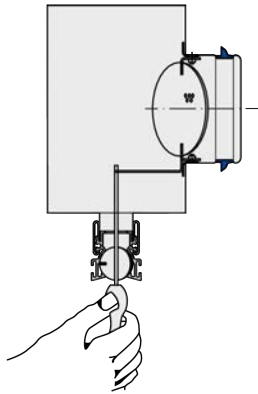
For the DS and SF variants, the fixing material for fastening the diffuser face to the plenum box is supplied in a bag.

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 elements near the spigot in such a way that it is possible to insert a screw driver

The plenum box is delivered with the suspension lugs turned by 90°

Nomenclature

ØD [mm]

Outer diameter of the spigot

C [mm]

Length of the spigot

m [kg]

Weight

L₁ [mm]

Length of front rail

L₃ [mm]

Length of plenum box

P [mm]

Width of slot section

H₄ [mm]

Height of plenum box

A [m²]

Upstream cross section

LN [mm]

Nominal length

B₃ [mm]

Width of plenum box

L_{WA} [dB(A)]

A-weighted sound power level of air-regenerated noise

q_v [m³/h]; [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

Length specifications

For all length specifications without the unit of measurement shown, the unit millimetre [mm] applies.