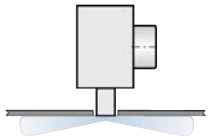




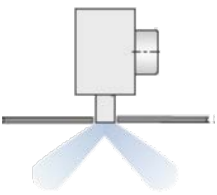
Various design options with black, grey and white air control elements



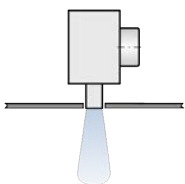
Asymmetrical plenum box



Horizontal air discharge



Angled airflow



Vertical airflow

# Slot diffusers for ceiling installation

## PURELINE50



### The clean solution for significantly less ceiling contamination

Unobtrusive slot diffuser for large volume flow rates, blends in perfectly with suspended ceiling systems

- Easy and quick installation – no tools required to fix the diffuser face
- New areas of application – such as air curtains to protect fresh food counters
- High flexibility thanks to numerous variants
- Extended range of applications, now available with 1 to 4 slots
- Very high comfort due to lower sound power levels and improved temperature and velocity reduction
- More energy efficient due to lower pressure losses

Optional equipment and accessories

- Attractive appearance due to extruded aluminium sections with anodised finish or powder coating
- Diffuser face can be placed symmetrically or asymmetrically
- Plenum box with lining
- End plates, end angles, corner sections
- Different looks due to choice of black, grey or white air control elements

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## General information

### Application

- Type PURELINE50 slot diffusers are used as supply air or extract air devices in comfort zones
- Suitable as mixed ventilation system for many applications due to the variety of variants and high flexibility
- Unobtrusive integration into suspended ceilings
- For room heights up to 4 m (lower edge of suspended ceiling)
- Suitable for large volume flow rates. Wide range of applications due to optional 1- to 4-slot front rail
- 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 temperature differences of -10 to +10 K

### Special characteristics

- 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 (according to RAL CLASSIC colour scale)
- The 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 slot front rail
- -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 front rail with B00 profile and screw fixing
- -DF: only front rail with B00 profile and spring clip
- -CD: Overflow rail which can be integrated into a slotted belt. The front rail has openings at the back through which air can flow. The fixing of the overflow rail must be done on site. The supplied connectors are used only for positioning and aligning the overflow rail
- -BD: Blind rail that can be integrated into a slotted band. The diffuser face is closed on the reverse side so that there is no air flow through the blind rail. The blind rail must be fixed on site. The supplied connectors are used only for positioning and aligning the overflow rail
- -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, GU50
- P1: Powder-coated RAL 9006, white aluminium, GU30
- P1: Powder-coated in any other RAL CLASSIC colour, GU70

### Attachments

- D: Damper blade for volume flow rate balancing
- LS: Lip seal
- L: inner lining
- EP: 2 end plates
- EA: 2 end angles

Single diffusers are factory fitted with end plates or end angles. Either end plates or end angles can be used for the front end for continuous linear arrangements.

### Accessories

- EP: 2 end plates
- EA: 2 end angles

For slot diffusers as continuous linear arrangement, the end plates or end angles must be ordered separately and installed on site. 2 alignment plates for connecting the front rails 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 lugs on plenum box for mounting by the customer
- 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 lip seal version)
- 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

**Material and surfaces**

- Diffuser face made from extruded aluminium section
- 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 made of mineral wool and closed-cell vinyl foam
- Diffuser face with anodised finish, E6-C-0, natural colour
- P1: powder-coated colour according to RAL CLASSIC
- Air control elements similar to RAL 9005, black
- G: Air control elements similar to RAL 9006, grey
- W: Air control blades 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
- Conforms to VDI 6022

**Maintenance**

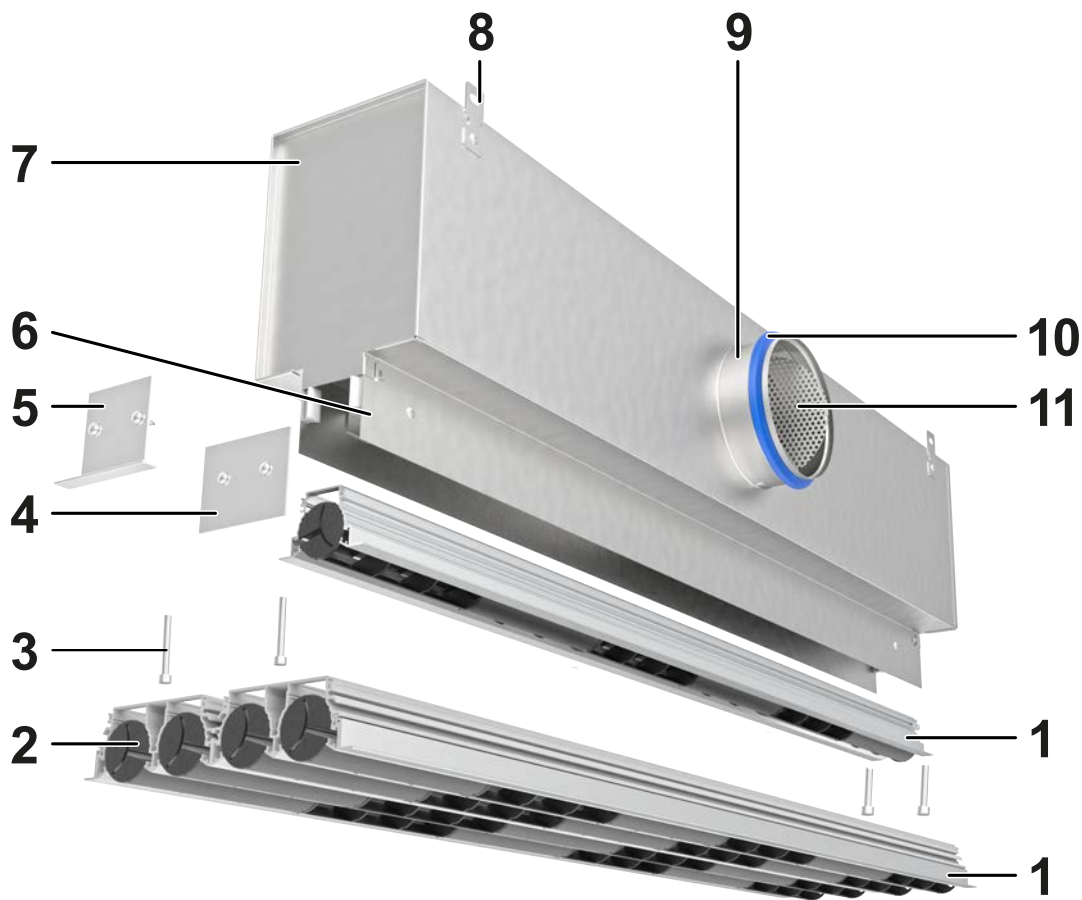
- Low maintenance, as there is no wear and tear due to design and materials used
- Inspection and cleaning according to VDI 6022

## 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.

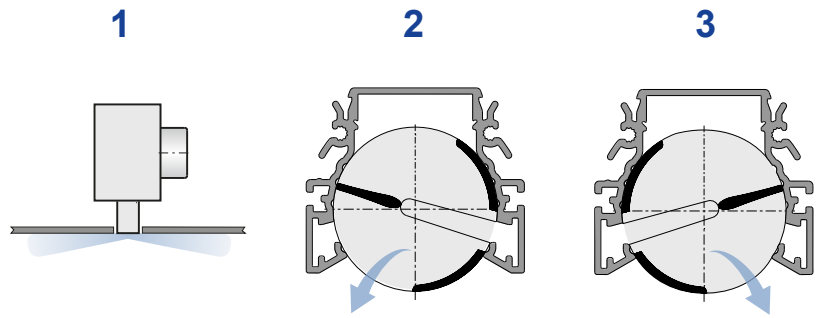
### Schematic illustration of PL50-\*-SF



- 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

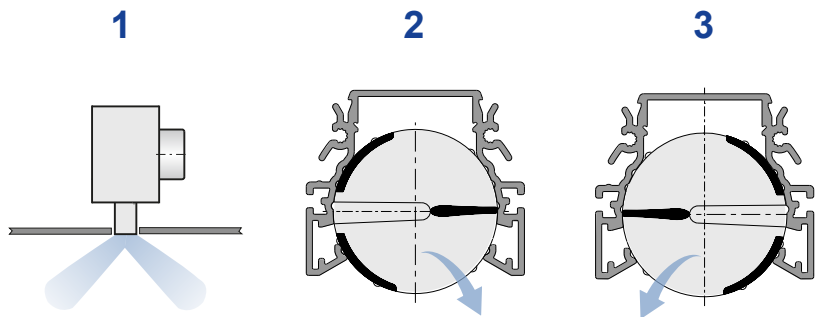
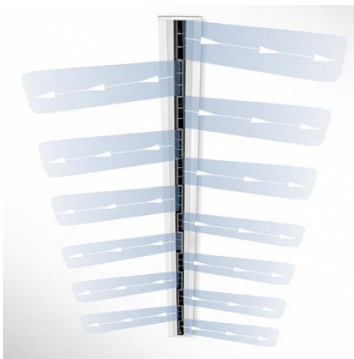
- Optional
- 4 End plate
- 5 End angle
- 10 Lip seal
- 11 Damper blade for volume flow rate balancing

**Supply air**  
**Alternating horizontal air discharge**



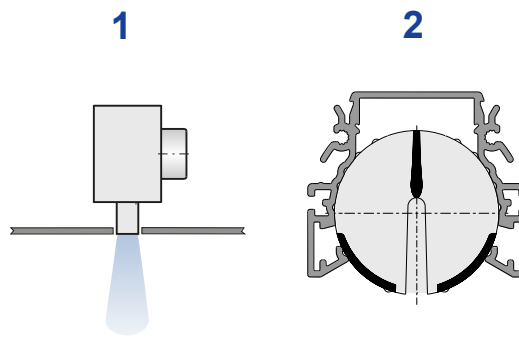
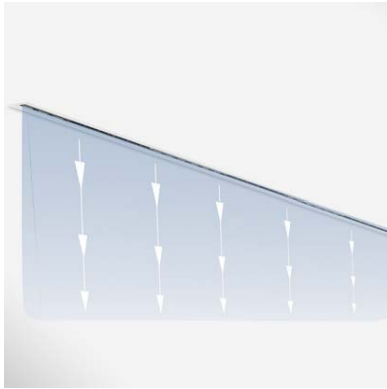
- 1 Setting of the air control elements
- 2 Air discharge: horizontal left
- 3 Air discharge: horizontal right

**Supply air**  
**Alternating angled air discharge**



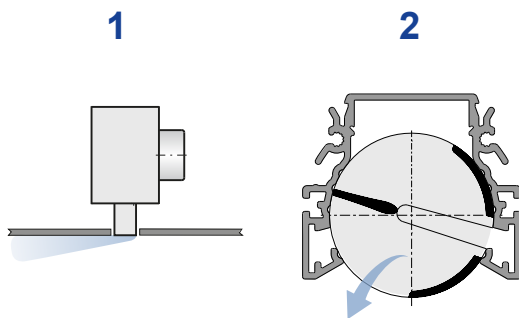
- 1 Setting of the air control elements
- 2 Air discharge: angled right
- 3 Air discharge: angled left

Vertical air discharge



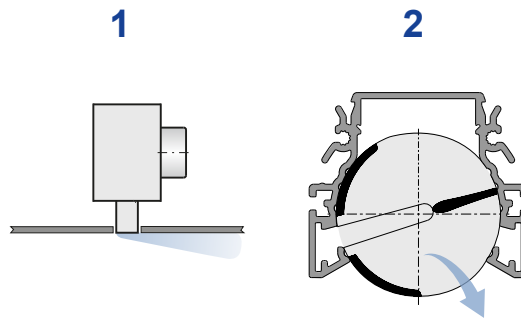
1 Setting of the air control elements  
2 Air discharge: vertical

One-way horizontal air discharge to the left



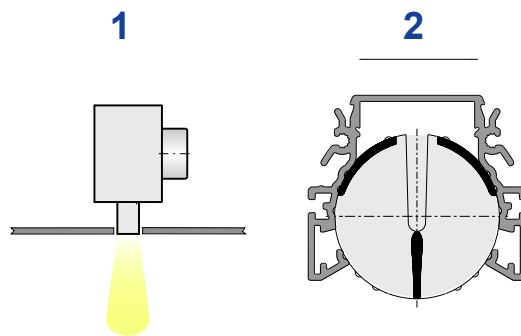
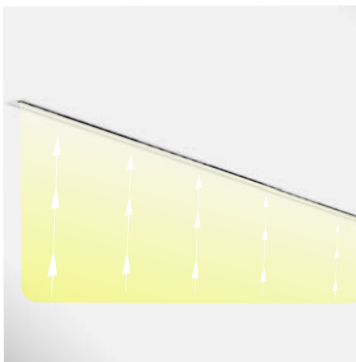
1 Setting of the air control elements  
2 Air discharge: one-way horizontal left

One-way horizontal air discharge to the right



- 1 Setting of the air control elements
- 2 Air discharge: one-way horizontal right

Extract air



- 1 Setting of the air control elements
- 2 Extract air E

### Technical data

Nominal lengths	600 – 1950 mm, in increments of 150 mm
No. of slots	1, 2, 3 or 4
Neck extension	22, 47, 72, 97, 121 mm
Minimum volume flow rate, with $\Delta t_z = -10$ K	10 l/s or 36 m <sup>3</sup> /h
Maximum volume flow rate, with LWA $\approx 50$ dB(A)	608 l/s or 2190 m <sup>3</sup> /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

L <sub>N</sub>	q <sub>v</sub> [l/s]	q <sub>v</sub> [m <sup>3</sup> /h]	Damper blade position					
			0°		45°		90°	
			Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [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
1350	121	436	108	60	246	61	530	61





L <sub>N</sub>	q <sub>v</sub> [l/s]	q <sub>v</sub> [m <sup>3</sup> /h]	Damper blade position					
			0°		45°		90°	
			Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]
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

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

L <sub>N</sub>	q <sub>v</sub> [l/s]	q <sub>v</sub> [m <sup>3</sup> /h]	Damper blade position					
			0°		45°		90°	
			Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [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
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



L <sub>N</sub>	q <sub>v</sub> [l/s]	q <sub>v</sub> [m <sup>3</sup> /h]	Damper blade position					
			0°		45°		90°	
			Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]
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

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

L <sub>N</sub>	q <sub>v</sub> [l/s]	q <sub>v</sub> [m <sup>3</sup> /h]	Damper blade position					
			0°		45°		90°	
			Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [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
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



L <sub>N</sub>	q <sub>v</sub> [l/s]	q <sub>v</sub> [m³/h]	Damper blade position					
			0°		45°		90°	
			Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]
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

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

L <sub>N</sub>	q <sub>v</sub> [l/s]	q <sub>v</sub> [m³/h]	Damper blade position					
			0°		45°		90°	
			Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [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
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



L <sub>N</sub>	q <sub>v</sub> [l/s]	q <sub>v</sub> [m³/h]	Damper blade position					
			0°		45°		90°	
			Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]
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

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

L <sub>N</sub>	q <sub>v</sub> [l/s]	q <sub>v</sub> [m³/h]	Damper blade position					
			0°		45°		90°	
			Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [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
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



L <sub>N</sub>	q <sub>v</sub> [l/s]	q <sub>v</sub> [m <sup>3</sup> /h]	Damper blade position					
			0°		45°		90°	
			Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]
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

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

L <sub>N</sub>	q <sub>v</sub> [l/s]	q <sub>v</sub> [m <sup>3</sup> /h]	Damper blade position					
			0°		45°		90°	
			Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [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
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



L <sub>N</sub>	q <sub>v</sub> [l/s]	q <sub>v</sub> [m <sup>3</sup> /h]	Damper blade position					
			0°		45°		90°	
			Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]
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



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

L <sub>N</sub>	q <sub>v</sub> [l/s]	q <sub>v</sub> [m <sup>3</sup> /h]	Damper blade position					
			0°		45°		90°	
			Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [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
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



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

L <sub>N</sub>	q <sub>v</sub> [l/s]	q <sub>v</sub> [m <sup>3</sup> /h]	Damper blade position					
			0°		45°		90°	
			Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [Pa]	LWA [dB(A)]	Δp <sub>t</sub> [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
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



## 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 black, grey or white air control elements.

Variants with plenum box have 1 or 2 spigots. Symmetrically positioned plenum boxes may have side entry or top entry spigots. Asymmetrically positioned plenum boxes have only side entry spigots.

The plenum boxes are fitted with 4 suspension lugs.

The diffuser face fixing can be detachable or non-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)
- The 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 is mineral wool with vinyl closed cell 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, GU50
- P1: Powder-coated RAL 9006, white aluminium, GU30
- P1: Powder-coated in any other RAL CLASSIC colour, GU70

### Technical data

- Nominal lengths: 600 – 1950 mm, in increments of 150 mm
- Diffuser face: up to 4 slots
- Minimum volume flow rate with  $\Delta t_z = -10$  K: 10 l/s or 36 m<sup>3</sup>/h
- Maximum volume flow rate, at  $L_{WA} \approx 50$  dB(A): 608 l/s or 2190 m<sup>3</sup>/h
- Supply air to room air temperature difference: -10 to +10 K

### Sizing data

- $q_v$  [m<sup>3</sup>/h]
- $\Delta p_t$  [Pa]
- $L_{WA}$  [dB(A)]

Order code

PL50-1-S-SF-HS / 1200 × 1050 × 123 × 30 / 2-D-LS-L-RI/AS/B00/EA/P1 - RAL 9016 / W  
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

**1 Type**

**PL50** Slot diffuser PURELINE50

**2 No. of slots**

1, 2, 3, 4

**3 System**

**S** Supply air

**E** Extract air (with air control elements)

**4 Connection**

**DF** Diffuser face with spring clip (only together with B00)

**DS** Diffuser face with fixing screws (only together with B00)

**CD** Air transfer section

**BD** Non-active diffuser

**PB** Plenum box only

**PF** Diffuser face fixed to the plenum box, non-detachable

**SF** Diffuser face fixed to the plenum box, detachable (only together with B00)

**5 Plenum box variant**

**HS** Symmetrical, with horizontal spigot

**VS** Symmetrical, with vertical spigot

**HA** Asymmetrical, with horizontal spigot

**6 Nominal size [mm]**

Diffuser face length × plenum box length × spigot diameter × neck extension

Diffuser face length

**600 – 1950**

Plenum box length

**600 – 1950** (in increments of 150 mm)

Spigot diameter ØD

**123** (with 1 slot)

**158** (with 1 or 2 slots)

**198** (with 2 or 3 slots)

**248** (with 3 or 4 slots)

**313** (with 4 slots)

Neck extension

No entry: without neck extension

**22, 47, 72, 97, 121**

**7 No. of spigots**

**1** (up to plenum box length 1500 mm)

**2** (from plenum box length 1200 mm)

**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

**8 Damper screen for flow rate balancing**

No entry: without damper screen

**D** with damper screen

**9 Lip seal**

No entry: without lip seal

**LS** With lip seal

**10 Lining**

No entry: without lining

**L** With lining

**11 Position of plenum box**

No entry: centre

**LE** left

**RI** right

**12 Air pattern**

No entry: alternating horizontal

**AS** Alternating angled

**HL** Horizontal left

**HR** Horizontal right

**V** vertical

**13 Extended border – diffuser face**

No entry: without extended border

**B00** with extended border

**14 End pieces**

No entry: without end pieces

**EP** End plate

**EA** End angle

To be ordered separately for continuous linear runs

**15 Surface**

No entry: anodised, E6-C-0 (no colour)

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

Gloss level

RAL 9010 GU 50

RAL 9006 GU 30

All other RAL colours GU 70

**16 Colour of air control elements**

No entry: similar to RAL 9005 (jet black)

**W** Similar to RAL 9010 (pure white)

**G** Similar to RAL 9006 (white aluminium)



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

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

### 1 Type

**PL50** Slot diffuser PURELINE50

Angle [°]  
**90**

### 2 No. of slots

**1, 2, 3, 4**

### 6 Extended border – diffuser face

No entry: without extended border

**B00** with extended border

### 3 System

**S** Supply air

**E** Extract air (with air control elements)

### 7 Surface

No entry: anodised, E6-C-0 (no colour)

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

### 4 Variant

**CS** Corner section

### 5 Dimensions

Leg length E × leg length F × angle

Leg length E [mm]

**100 – 300** (in increments of 1 mm)

Gloss level

RAL 9010 GU 50

RAL 9006 GU 30

All other RAL colours GU 70

Leg length F [mm]

**100 – 300** (in increments of 1 mm)

### 8 Colour of air control elements

No entry: similar to RAL 9005 (jet black)

**W** Similar to RAL 9010 (pure white)

**G** Similar to RAL 9006 (white aluminium)

### 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-EA/2-B00/P1 - RAL 9016**

|   |   |   |   |  
**1   2   3   4   5**

### 1 Type

**PL50** Slot diffuser PURELINE50

No entry: without extended border

**B00** with extended border

### 2 Variant

**EP** 1 pair of end plates

**EA** 1 pair of end angles

### 5 Surface

No entry: anodised, E6-C-0 (no colour)

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

### 3 No. of slots

**1, 2, 3, 4**

Gloss level

RAL 9010 GU 50

RAL 9006 GU 30

All other RAL colours GU 70

### 4 Extended border – diffuser face

### 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



Corner section -CS



Diffuser face with black air control elements



Diffuser face with white air control elements

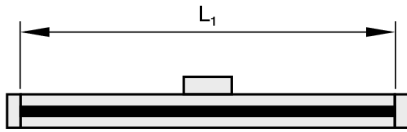


Diffuser face with grey air control elements

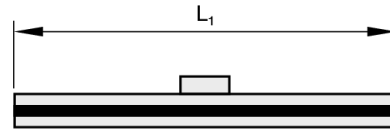


## Dimensions and weight

Front rail end angles on both ends

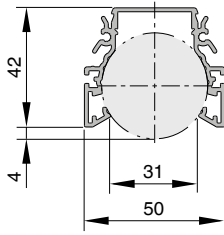


Front rail without end piece

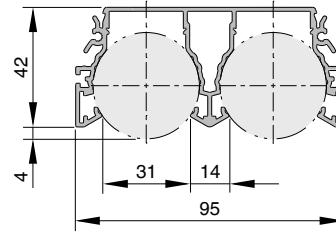


$L_N$	$L_1$
600	600
750	750
900	900
1050	1050
1200	1200
1350	1350
1500	1500
1650	1650
1800	1800
1950	1950

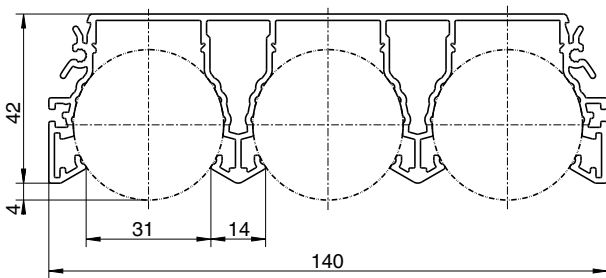
PL50-1



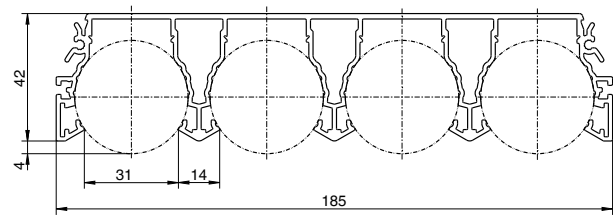
PL50-2



PL50-3

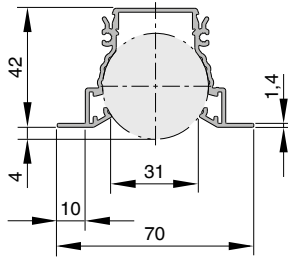


PL50-4

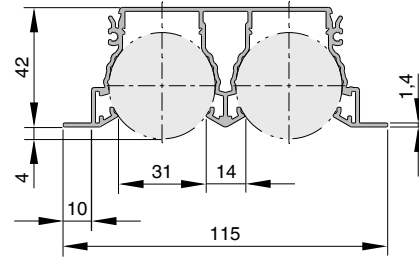




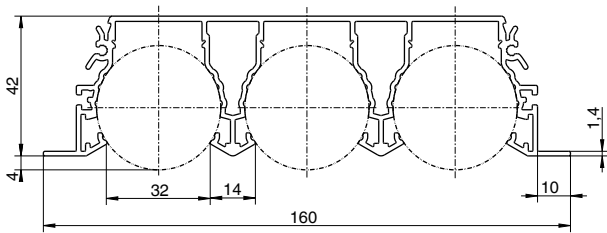
PL50-1/B00



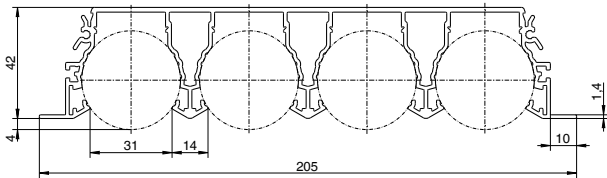
PL50-2/B00



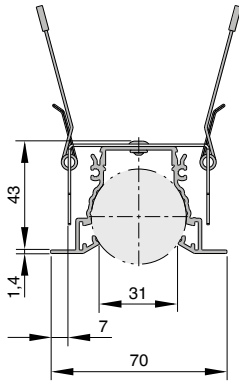
PL50-3/B00



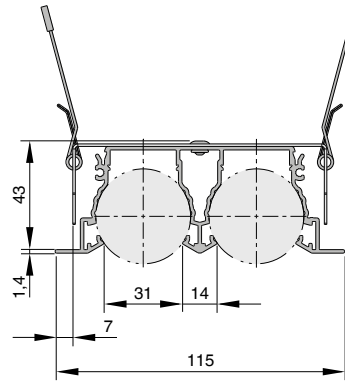
PL50-4/B00



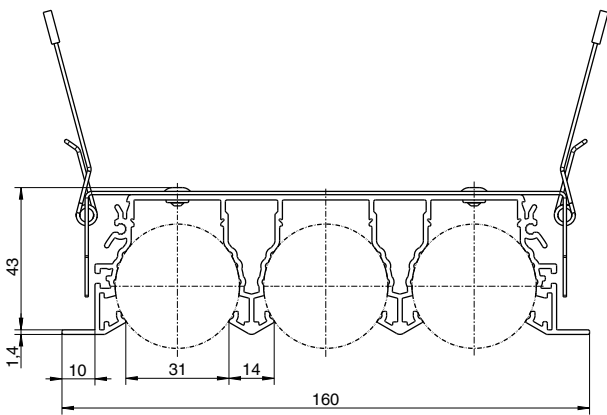
PL50-1-\***-DF**-\***-B00** (diffuser face with spring clip)



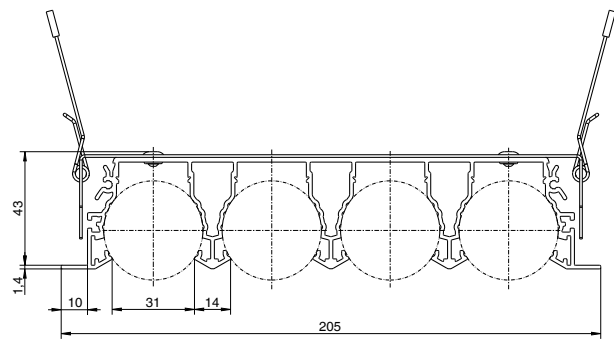
PL50-2-\***-DF**-\***-B00** (diffuser face with spring clip)



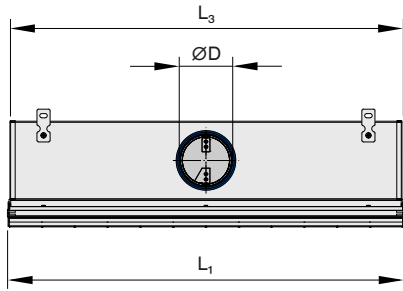
PL50-3-\***-DF**-\***-B00** (diffuser face with spring clip)



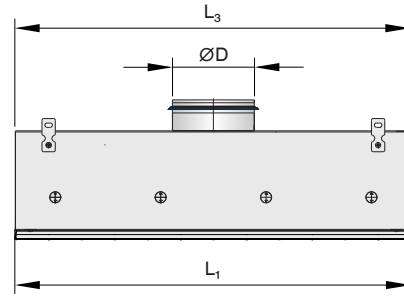
PL50-4-\***-DF**-\***-B00** (diffuser face with spring clip)



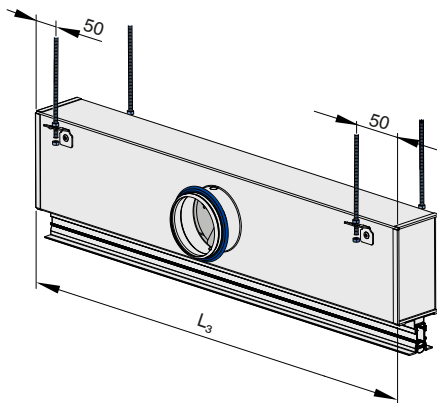
Plenum box with horizontal spigot (HS/HA)



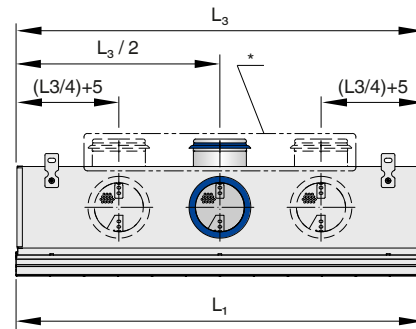
Plenum box with vertical spigot (VS)



Plenum box fixing points



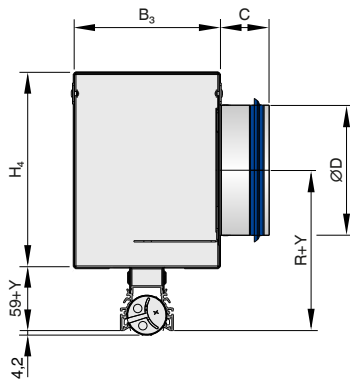
Spigot arrangement



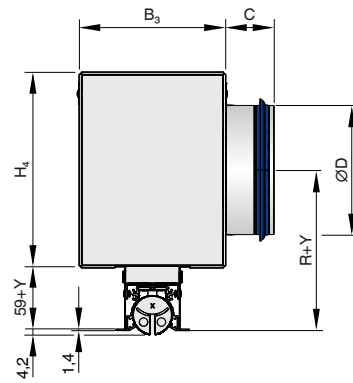
\* Spigot arrangement for plenum box variant VS

$L_N$	No. of spigots	$L_1$	$L_3$
600	1	600	595
750	1	750	745
900	1	900	895
1050	1	1050	1045
1200	1/2	1200	1195
1350	1/2	1350	1345
1500	1/2	1500	1495
1650	2	1650	1645
1800	2	1800	1795
1950	2	1950	1945

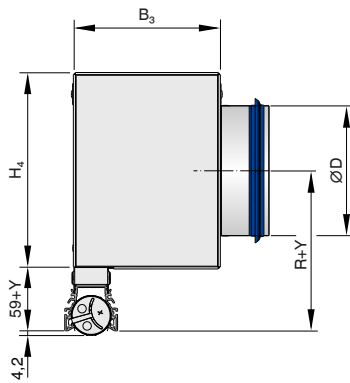
**PL50\*-PF-HS (symmetrical plenum box with horizontal spigot)**



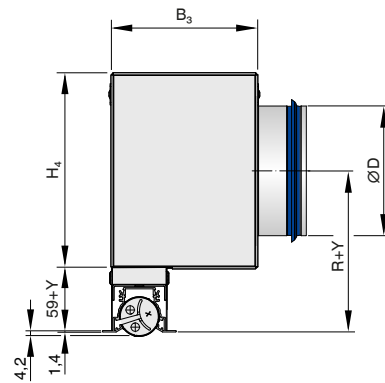
**PL50\*-SF-HS (symmetrical plenum box with horizontal spigot)**



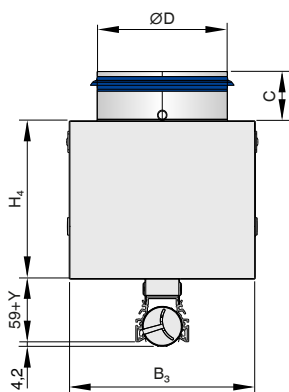
**PL50\*-PF-HA (asymmetrical plenum box with horizontal spigot)**



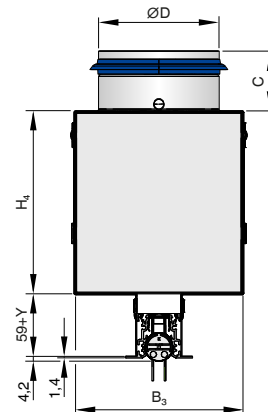
**PL50\*-SF-HA (asymmetrical plenum box with horizontal spigot)**



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



**PL50\*-SF-VS (symmetrical plenum box with vertical spigot)**



Variant	B3		H4		R + Y
	HS/HA	VS	HS/HA	VS	
PL50-1	138	176	185	150	152 + Y
PL50-2	183	214	225	150	172 + Y
PL50-3	238	270	275	175	197 + Y
PL50-4	278	335	340	210	229 + Y

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

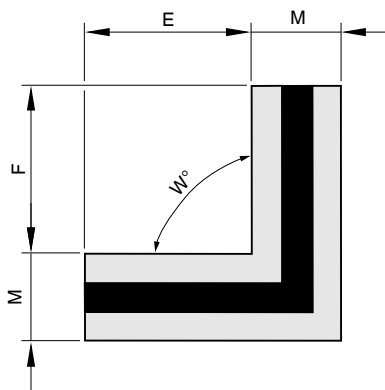
Variant	ØD	C
PL50-1	123/158	48/50
PL50-2	158/198	50/50
PL50-3	198/248	50/48
PL50-4	248/313	48/50

## Weight

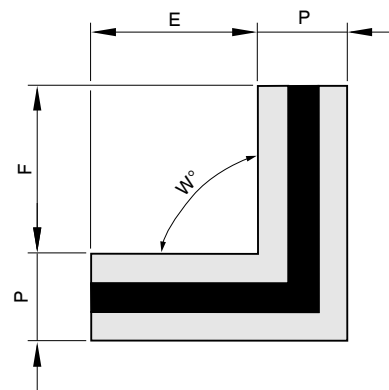
Plenum box variant	Number of slots	kg/m
Diffuser face	1, 2, 3 or 4 slots	1.0 / 1.6 / 3.1 / 3.4
Plenum box HS/HA	1, 2, 3 or 4 slots	4.1 / 5.1 / 6.1 / 7.3
Plenum box HS/HA+L	1, 2, 3 or 4 slots	4.8 / 6.0 / 7.2 / 8.5
Plenum box VS	1, 2, 3 or 4 slots	4.8 / 5.2 / 6.0 / 7.3
Plenum box VS+L	1, 2, 3 or 4 slots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

Total weight = weight of diffuser face + weight of plenum box

## Corner section PL35-\*-CS



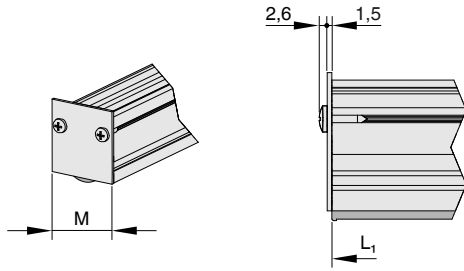
## Corner piece PL50-\*-CS\*/B00



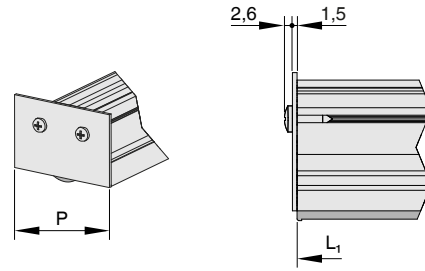
Variant	M (without extended border)	P (with extended border)
PL50-1	50	70
PL50-2	95	115
PL50-3	140	160
PL50-4	185	205

Dimensions	E	F	W [°]
Minimum	100	100	90
Maximum	300	300	90

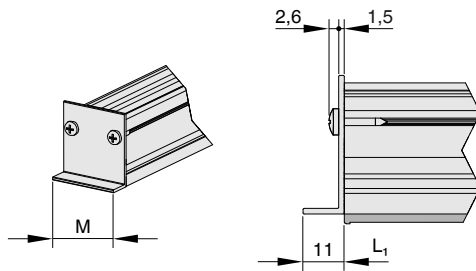
**End plate EP for diffuser face without B00**



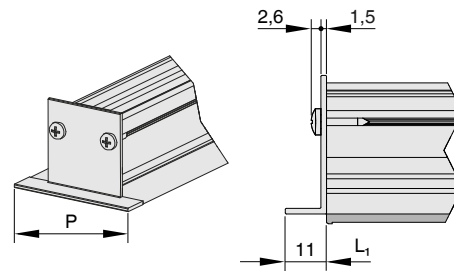
**End plate for diffuser face with B00**



**End angle for diffuser face without B00**



**End angle for diffuser face with B00**



Variant	M (without extended border)	P (with extended border)
PL50-1	50	70
PL50-2	95	115
PL50-3	150	170
PL50-4	190	210

## 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

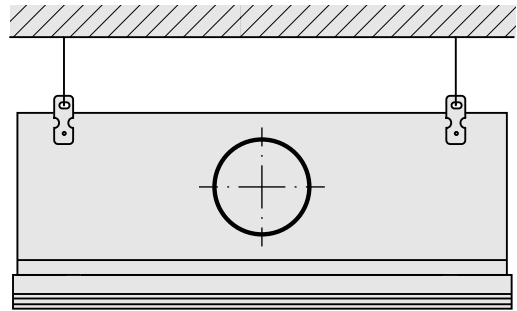
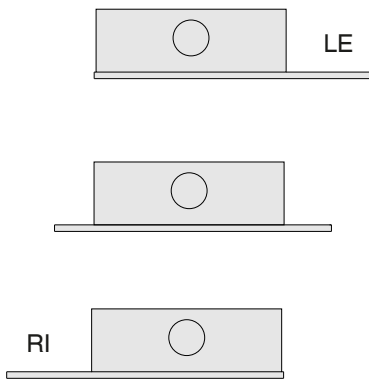
### Installation and commissioning

- 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.

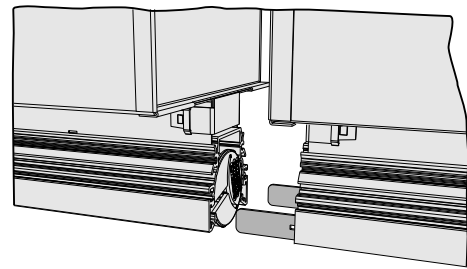
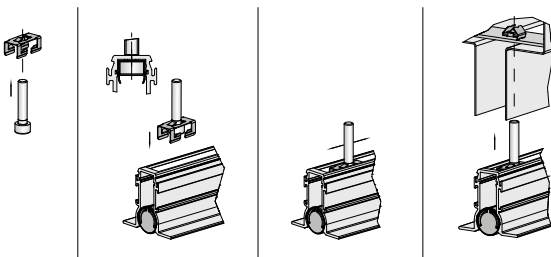
PL plenum box, positioned on the left, in the centre, on the right

Suspension



PL50 with detachable connection

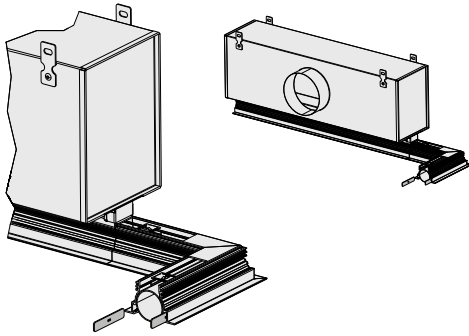
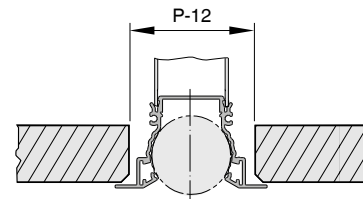
Continuous linear arrangement



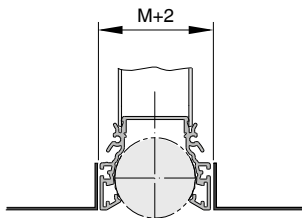
DS and SF variants: Fixing material for fastening the diffuser face to the plenum box is supplied.

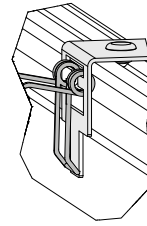
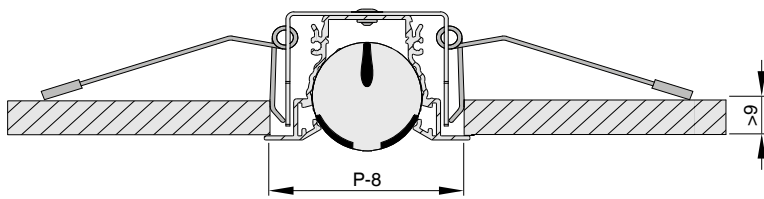
For a continuous linear arrangement the slot diffusers can be connected with the alignment plates supplied separately.



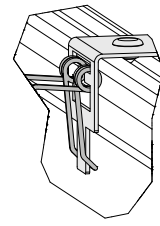
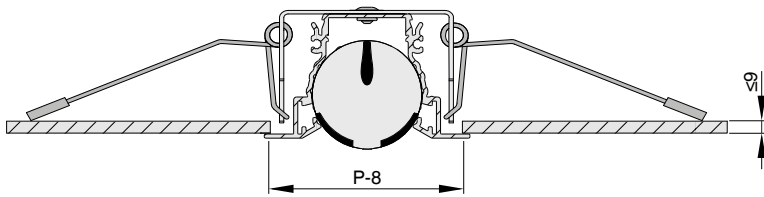
**Connecting corner sections****Continuous ceiling**

Separately supplied connectors are used to connect corner sections to slot diffusers. If necessary, the corner section has to be fixed additionally (by others).

**Rectangular panels**

**PL50-DF spring clip fixing**

If ceiling thickness is  $> 9$  mm

**PL50-DF spring clip fixing**

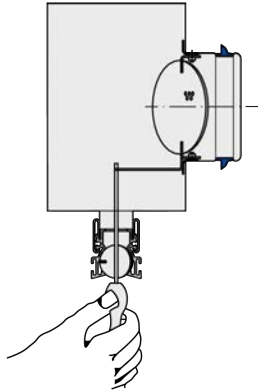
If ceiling thickness is  $\leq 9$  mm

### Volume flow rate balancing

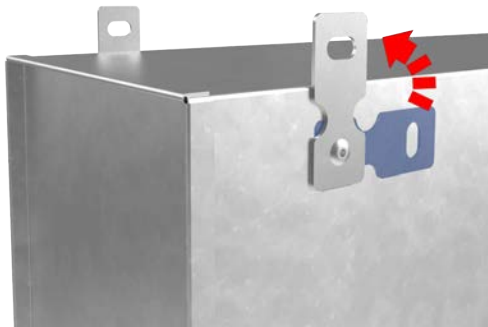
When several diffusers are connected to just one volume flow controller, it may be necessary to balance the volume flow rates.

- 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

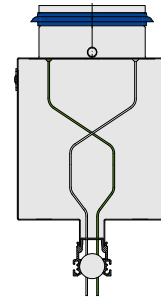


Move the air control element near the spigot in such a way that it is possible to insert a screw driver.



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

### With a vertical spigot: volume flow rate balancing using cords



White cord for opening the damper blade,  
green cord for closing the damper blade

## Explanation

<b>ØD</b> [mm] Outer diameter of the spigot	Position of the spigot, defined by the distance of the spigot centre line to the lower edge of the suspended ceiling
<b>C</b> [mm] Length of the spigot	<b>E</b> [mm] Inside leg length 1, corner section
<b>m</b> [kg] Weight	<b>F</b> [mm] Inside leg length 2, corner section
<b>L<sub>1</sub></b> [mm] Length diffuser face	<b>L<sub>N</sub></b> [mm] Nominal length
<b>L<sub>3</sub></b> [mm] Length of plenum box	<b>B<sub>3</sub></b> [mm] Width of plenum box
<b>P</b> [mm] Width slot profile with B00	<b>L<sub>WA</sub></b> [dB(A)] A-weighted sound power level of air-regenerated noise
<b>M</b> [mm] Width slot profile without B00	<b>q<sub>v</sub></b> [m <sup>3</sup> /h]; [l/s] Volume flow rate
<b>H<sub>4</sub></b> [mm] Height of plenum box	<b>Δt<sub>z</sub></b> [K] Supply air to room air temperature difference, i.e. supply air temperature minus room temperature
<b>Y</b> [mm] Neck extension	<b>Δp<sub>t</sub></b> [Pa] Total differential pressure
<b>R</b> [mm]	<b>Lengths</b> All lengths are given in millimetres [mm] unless stated otherwise.