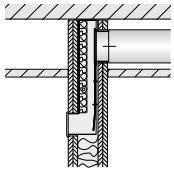
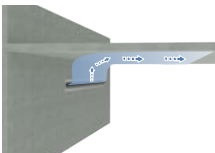




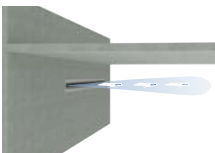
Various design options with black, grey and white air control elements



Installation in lightweight partition walls



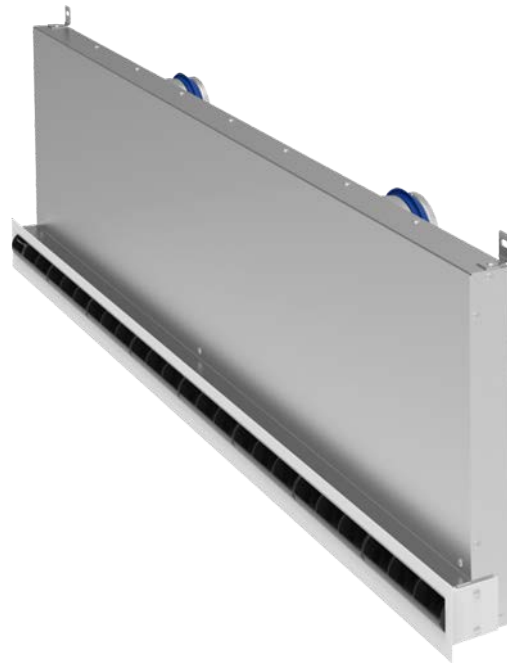
Vertical air discharge (upwards)



Horizontal air discharge

# Slot diffusers for wall installation

## CFS



### Many variants for the space saving installation into lightweight partition walls

Slot diffusers for wall installation, with adjustable air control elements

- Can be combined with PURELINE18, PURELINE35 und PURELINE50 diffuser faces
- Nominal sizes from 450 to 1200 mm
- Up to 3 slots allow for more applications
- Simple and quick installation, no tools required to fix the diffuser face
- Installation in lightweight partition walls with a thickness of 100 mm and with a 50 mm wide metal frame
- Plenum box with acoustic lining
- Available for supply air, for extract air or for both supply and extract air

Optional equipment

- Different looks due to choice of black, grey or white air control elements

General information	2	Order code	14
Function	4	Variants	16
Technical data	7	Dimensions	17
Quick sizing	7	Product details	21
Specification text	13	Nomenclature	25

## General information

### Application

- Type CFS slot diffusers for wall installation can be used for supply air, for extract air or as a supply and extract air combination in comfort zones.
- Wide area of application thanks to choice of PURELINE18, PURELINE35 or PURELINE50 diffuser faces of various widths with 1, 2 or 3 slots
- One-way horizontal or vertical air discharge creates a turbulent mixed airflow
- Air distribution with or without ceiling effect (depending on installation height)
- High induction results in a rapid reduction of the temperature difference and airflow velocity
- For variable and constant volume flows
- For supply air to room air temperature differences from -10 to +10 K
- For room heights up to 4 m (lower edge of suspended ceiling)
- Installation in lightweight partition walls with a thickness of 100 mm and with a 50 mm wide metal frame

### Special features

- Uniform air pattern reduces contamination of the wall caused by the induction of room air
- Horizontal or vertical air discharge by means of manually adjustable air control elements
- Horizontal air discharge allows for longer throw distances
- The vertical airflow moves along the wall, towards the ceiling and eventually across the entire ceiling area, having a positive effect on airflow velocities and comfort levels
- Acoustic lining reduces noise transmission through ducting between adjacent rooms
- Easy and safe installation of the diffuser face without any tools after drywalling is complete
- 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

### Nominal sizes

Nominal length  $L_N$ :

- PL18: 500 – 1200 mm (in increments of 100 mm)
- PL35/50: 450 – 1200 mm (in increments of 150 mm)

Nominal height  $H_N$ :

- 290 – 440 mm (in increments of 1 mm)

Spigot diameter  $\varnothing$ D

- 98, 123, 138, 158 mm

### Variants

CFS-... :

- -\*: With PURELINE18, PURELINE35 or PURELINE50 diffuser faces
- -\*: 1, 2 or 3 slots (3 slots only with diffuser face 35)
- -S: Supply air
- -E: Extract air
- -SE: Supply and extract air combination

### 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

### Construction features

- Spigot suitable for circular ducts to EN 1506 or EN 13180
- Two adjustable suspension lugs on the plenum box allow for fixing the diffuser to the wall, suspending it from the ceiling or fixing it to the ceiling (by others)
- Manually adjustable air control elements with grooves to lock the elements for a particular air pattern
- Factory set for a particular air pattern, manually adjustable on site (adjustment by others, only for horizontal and vertical air discharge in case of wall installation)
- Spigot with groove for lip seal (if an accessory with lip seal has been ordered)
- Diffuser face nominal lengths from 450 mm to 1200 mm, depending on slot diffuser width
- Diffuser face with two end angles
- Plenum box available in nominal heights from 290 to 440 mm
- Fixing material for the diffuser face is supplied separately in a drawstring bag.

### Materials and surfaces

- Diffuser face made from extruded aluminium sections
- End angles made of aluminium
- Air control elements made of ABS plastic, UL 94, V-0, flame retardant
- Plenum box made of galvanised sheet steel
- Lip seal made of Evoprene
- Acoustic lining made of mineral wool
- Diffuser face with anodised finish, E6-C-0, natural colour
- P1: Powder-coated in a RAL CLASSIC colour
- Air control elements similar to RAL 9005, black
- W: Air control elements similar to RAL 9010, white
- G: Air control elements similar to RAL 9006, grey

Mineral wool

- Mineral wool that comes into contact with air is faced with glass fibre fabric as a protection against erosion due to airflow velocities 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
- Transmission loss to ISO 7235



**Maintenance**

- Low maintenance as construction and materials are not subject to wear and tear
- Inspection and cleaning to VDI 6022

## Function

Slot diffusers for wall installation discharge the air from air conditioning systems into the room, either horizontally or vertically along the wall and towards the ceiling. 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 ventilation in comfort zones, with good overall room ventilation, creating only very little turbulence in the occupied zone.

Type CFS slot diffusers can be combined with PURELINE18, PURELINE35 or PURELINE50 diffuser faces and are fitted with factory set air control elements that can be manually adjusted on site. The airflow direction can be adjusted to meet various local requirements.

The supply air to room air temperature difference can range from -10 to +10 K.

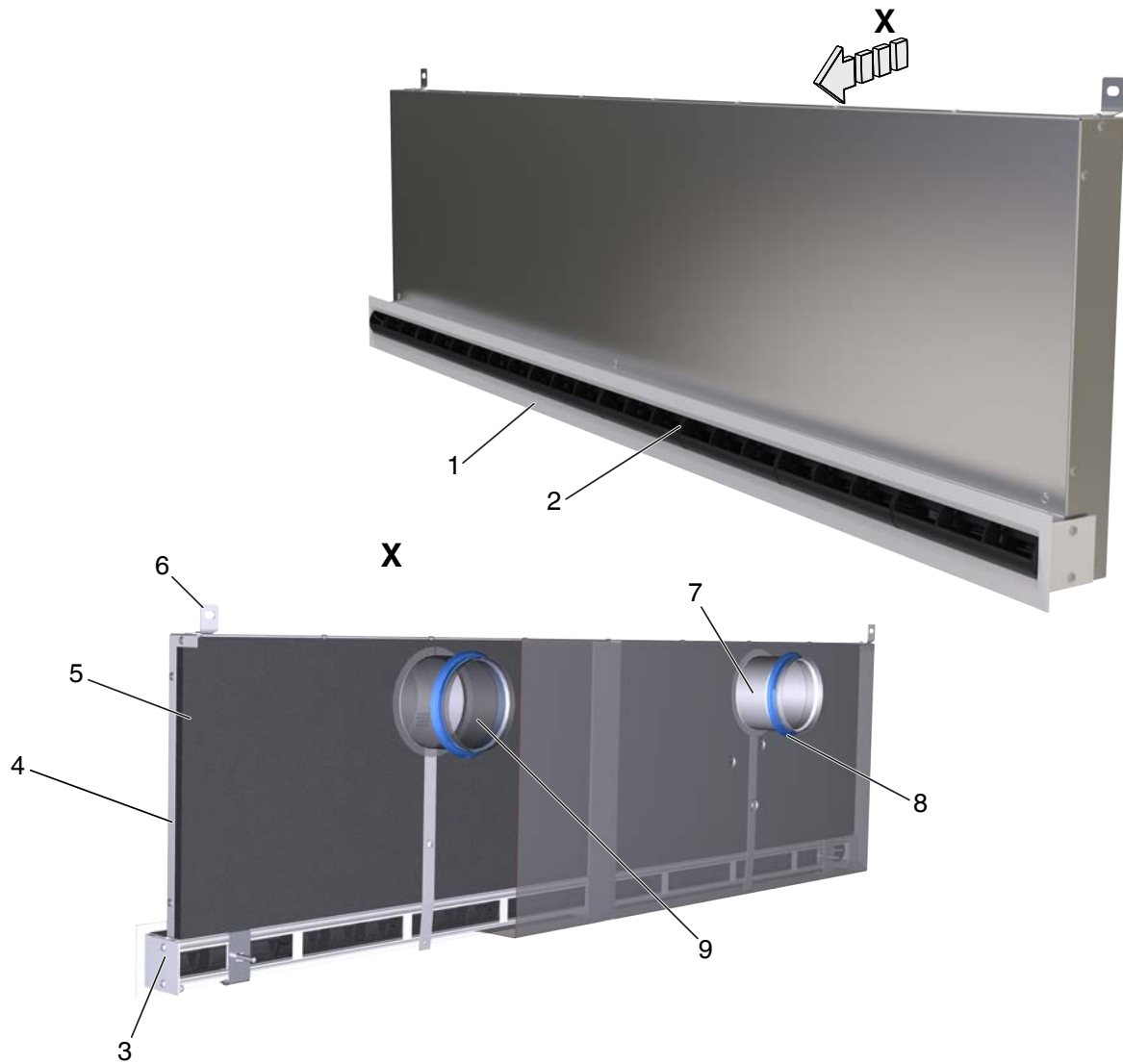
To increase transmission loss and reduce room-to-room crosstalk the plenum box is fitted with acoustic lining.

A damper blade (optional) enables volume flow rate balancing for commissioning. The damper blade of CFS-18 can be adjusted with cords even with the diffuser face in place.

The damper blades of CFS-35 and CFS-50 can be adjusted by sticking a screwdriver or similar object through the diffuser face.

To give rooms an aesthetic, uniform look, Type CFS diffusers may be used for supply air, for extract air or as a supply and extract air combination.

Schematic illustration of CFS-50-\* as supply and extract air combination



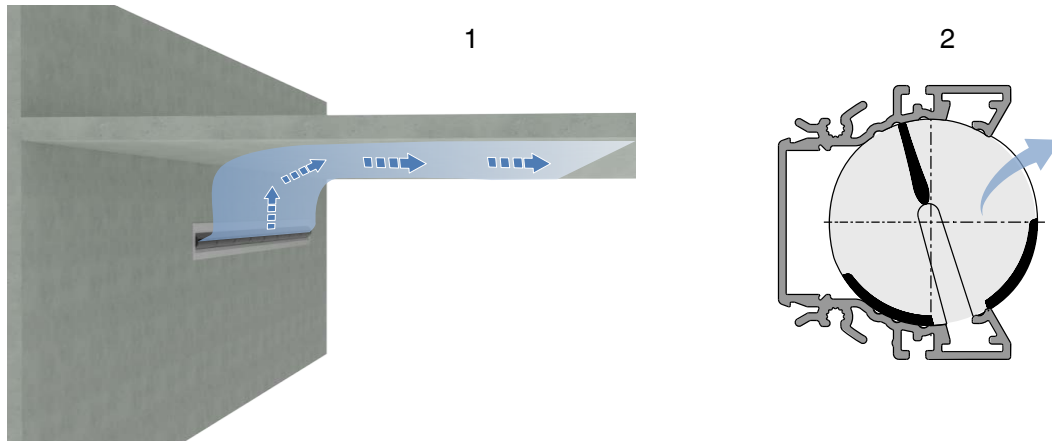
- 1 Diffuser face
- 2 Adjustable air control element
- 3 End angle
- 4 Plenum box
- 5 Acoustic lining
- 6 Suspension lug
- 7 Spigot

- Optional
- 8 Lip seal
- 9 Damper blade for volume flow rate balancing

The PURELINE diffuser faces have originally been designed for ceiling installation, which is why for wall installation a few things have to be considered with regard to the setting of the air control elements. Do not set the air control elements for angled or alternating air discharge when the diffuser faces are installed in a wall. Horizontally set air control elements create a vertical airflow along the wall and towards the ceiling. Vertically set air control elements create a horizontal airflow into the room; a possible ceiling effect depends on the distance between diffuser face and ceiling.

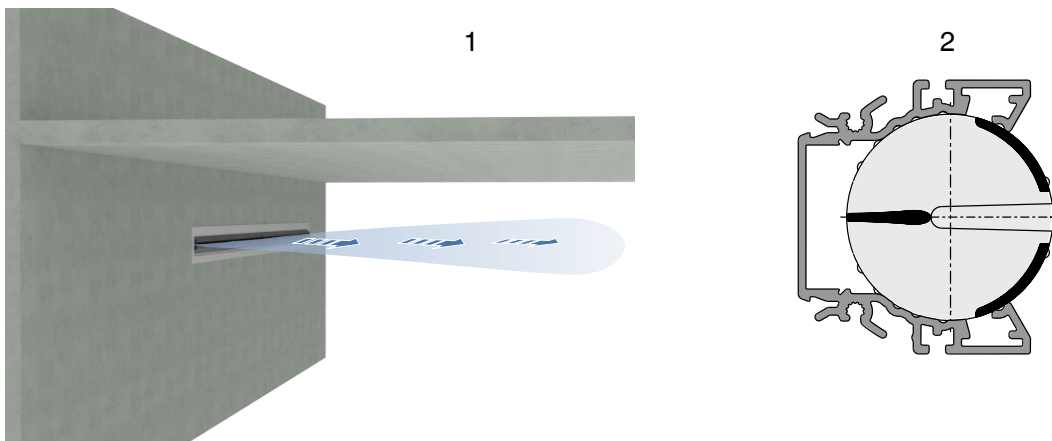
### Supply air

#### Air control elements horizontal, air discharge vertical (upwards)



- 1 Vertical air discharge (upwards)
- 2 Setting of the air control elements

#### Air control elements vertical, air discharge horizontal



- 1 Horizontal air discharge
- 2 Setting of the air control elements

In supply and extract air combinations the air control elements for supply air and extract air are set as shown above.

## Technical data

**CFS-18**

Nominal length	500 – 1200 mm (in increments of 100 mm)
Nominal height	290 – 440 mm (in increments of 1 mm)
No. of slots	1 or 2
Minimum volume flow rate, with $\Delta t_z = -10$ K	3 l/s or 12 m <sup>3</sup> /h
Maximum volume flow rate, at $L_{WA} \cong 50$ dB(A)	92 l/s or 330 m <sup>3</sup> /h
Supply air to room air temperature difference	-10 to +10 K

**CFS-35**

Nominal length	450 – 1200 mm (in increments of 150 mm)
Nominal height	290 – 440 mm (in increments of 1 mm)
No. of slots	1, 2 or 3
Minimum volume flow rate, with $\Delta t_z = -10$ K	5 l/s or 18 m <sup>3</sup> /h
Maximum volume flow rate, at $L_{WA} \cong 50$ dB(A)	119 l/s or 430 m <sup>3</sup> /h
Supply air to room air temperature difference	-10 to +10 K

**CFS-50**

Nominal length	450 – 1200 mm (in increments of 150 mm)
Nominal height	290 – 440 mm (in increments of 1 mm)
No. of slots	1 or 2
Minimum volume flow rate, with $\Delta t_z = -10$ K	7 l/s or 27 m <sup>3</sup> /h
Maximum volume flow rate, at $L_{WA} \cong 50$ dB(A)	122 l/s or 440 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. The quick sizing values apply to constructions with one spigot.

**CFS-18-1, supply air, air control elements horizontal, sound power level and total differential pressure**

$L_N$	$\varnothing D$	$q_v$ [l/s]	$q_v$ [m <sup>3</sup> /h]	Damper blade position						$A_{eff}$ [m <sup>2</sup> ]
				OPEN		50%		CLOSED		
				$\Delta p_t$ [Pa]	$L_{WA}$ [dB(A)]	$\Delta p_t$ [Pa]	$L_{WA}$ [dB(A)]	$\Delta p_t$ [Pa]	$L_{WA}$ [dB(A)]	
600	98	4	15	<5	<15	<5	<15	<5	<15	0.0024
600	98	12	45	16	27	18	27	26	27	0.0024
600	98	21	75	46	41	50	41	73	41	0.0024
600	98	29	105	90	50	99	50	144	50	0.0024
600	123	4	15	<5	<15	<5	<15	<5	<15	0.0024
600	123	13	47	16	26	17	26	21	26	0.0024
600	123	22	79	46	41	50	41	58	41	0.0024
600	123	31	111	91	50	98	50	115	50	0.0024
800	98	5	20	<5	<15	<5	<15	<5	<15	0.0032
800	98	16	57	18	27	20	27	33	28	0.0032
800	98	26	94	48	41	56	41	91	41	0.0032
800	98	36	131	94	50	108	50	178	50	0.0032
800	123	5	20	<5	<15	<5	<15	<5	<15	0.0032
800	123	16	58	16	27	18	27	22	27	0.0032
800	123	26	95	44	41	49	41	62	41	0.0032
800	123	37	133	85	50	96	50	120	50	0.0032
1000	98	7	25	<5	<15	<5	<15	6	<15	0.004

L <sub>N</sub>	ØD	q <sub>v</sub> [l/s]	q <sub>v</sub> [m³/h]	Damper blade position						A <sub>eff</sub> [m²]
				OPEN		50%		CLOSED		
				Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	
1000	98	19	70	21	28	25	28	45	28	0.004
1000	98	32	115	57	41	68	41	122	42	0.004
1000	98	44	160	111	50	132	50	236	50	0.004
1000	123	7	25	<5	<15	<5	<15	<5	<15	0.004
1000	123	19	70	18	27	21	27	28	29	0.004
1000	123	32	115	49	41	56	41	75	42	0.004
1000	123	45	161	94	50	109	50	145	51	0.004
1200	98	8	30	<5	<15	<5	<15	8	<15	0.0048
1200	98	23	84	26	28	32	29	61	29	0.0048
1200	98	39	139	72	41	88	42	166	42	0.0048
1200	98	54	194	139	50	170	51	322	51	0.0048
1200	123	8	30	<5	<15	3	<15	4	<15	0.0048
1200	123	24	85	22	27	26	27	36	30	0.0048
1200	123	39	140	59	41	70	41	97	43	0.0048
1200	123	54	195	114	50	136	50	189	51	0.0048

### CFS-18-2, supply air, air control elements horizontal, sound power level and total differential pressure

L <sub>N</sub>	ØD	q <sub>v</sub> [l/s]	q <sub>v</sub> [m³/h]	Damper blade position						A <sub>eff</sub> [m²]
				OPEN		50%		CLOSED		
				Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	
600	98	8	30	<5	<15	<5	<15	7	<15	0.0048
600	98	22	79	22	29	28	30	53	30	0.0048
600	98	36	128	59	42	73	42	139	42	0.0048
600	98	49	178	113	50	139	50	267	51	0.0048
600	123	8	30	<5	<15	<5	<15	<5	<15	0.0048
600	123	22	79	16	28	20	28	29	30	0.0048
600	123	36	129	43	41	53	41	76	43	0.0048
600	123	50	178	83	50	101	50	146	51	0.0048
800	98	11	40	<5	<15	6	<15	12	<15	0.0065
800	98	28	101	28	29	37	31	78	32	0.0065
800	98	45	162	73	42	95	43	202	44	0.0065
800	98	62	224	139	50	180	51	383	51	0.0065
800	123	11	40	<5	<15	<5	<15	6	<15	0.0065
800	123	28	102	19	28	25	28	39	33	0.0065
800	123	46	164	49	41	64	41	102	44	0.0065
800	123	63	226	93	50	122	50	193	52	0.0065
1000	98	14	49	6	<15	8	<15	18	<15	0.0081
1000	98	32	114	31	30	42	33	95	34	0.0081
1000	98	50	179	77	42	104	44	233	44	0.0081
1000	98	68	244	143	50	192	51	432	52	0.0081
1000	123	14	49	<5	<15	5	<15	8	15	0.0081
1000	123	33	118	20	29	28	29	48	35	0.0081
1000	123	52	187	50	41	71	42	119	45	0.0081
1000	123	71	255	94	50	132	51	223	52	0.0081
1200	98	16	59	8	<15	11	16	25	17	0.0097
1200	98	34	122	33	31	46	34	106	35	0.0097
1200	98	52	185	76	42	104	44	244	45	0.0097
1200	98	69	249	136	50	188	51	438	52	0.0097



L <sub>N</sub>	ØD	q <sub>v</sub> [l/s]	q <sub>v</sub> [m³/h]	Damper blade position						A <sub>eff</sub> [m²]
				OPEN		50%		CLOSED		
				Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	
1200	123	16	59	<5	<15	6	<15	11	19	0.0097
1200	123	36	130	21	30	31	31	54	36	0.0097
1200	123	56	200	50	42	73	43	129	46	0.0097
1200	123	75	270	91	50	134	51	236	52	0.0097

### CFS-35-1, supply air, air control elements horizontal, sound power level and total differential pressure

L <sub>N</sub>	ØD	q <sub>v</sub> [l/s]	q <sub>v</sub> [m³/h]	Damper blade position						A <sub>eff</sub> [m²]
				OPEN		50%		CLOSED		
				Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	
600	98	7	24	<5	<15	<5	<15	6	<15	0.004
600	98	18	65	21	28	24	28	41	29	0.004
600	98	29	106	55	41	64	41	109	42	0.004
600	98	41	147	105	50	123	50	210	50	0.004
600	123	7	24	<5	<15	<5	<15	<5	<15	0.004
600	123	18	64	14	27	16	27	22	28	0.004
600	123	29	105	37	41	43	41	58	42	0.004
600	123	40	145	70	50	82	50	111	50	0.004
900	98	10	36	<5	<15	5	<15	10	<15	0.0059
900	98	25	90	23	29	30	30	63	31	0.0059
900	98	40	143	59	41	76	42	159	43	0.0059
900	98	54	196	112	50	144	51	299	51	0.0059
900	123	10	36	<5	<15	<5	<15	5	<15	0.0059
900	123	25	91	16	28	21	28	32	32	0.0059
900	123	41	146	41	41	53	41	83	43	0.0059
900	123	56	201	77	50	100	50	156	51	0.0059
1200	98	13	49	5	<15	7	<15	17	<15	0.0079
1200	98	31	110	27	30	37	32	86	33	0.0079
1200	98	48	172	66	42	90	43	210	44	0.0079
1200	98	65	233	122	50	167	51	387	52	0.0079
1200	123	13	49	<5	<15	5	<15	8	15	0.0079
1200	123	31	113	18	29	25	29	43	34	0.0079
1200	123	49	178	44	41	62	42	106	45	0.0079
1200	123	67	243	82	50	116	51	198	52	0.0079

### CFS-35-2, supply air, air control elements horizontal, sound power level and total differential pressure

L <sub>N</sub>	ØD	q <sub>v</sub> [l/s]	q <sub>v</sub> [m³/h]	Damper blade position						A <sub>eff</sub> [m²]
				OPEN		50%		CLOSED		
				Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	
600	123	13	49	<5	<15	5	<15	8	15	0.0079
600	123	28	102	17	28	23	28	37	34	0.0079
600	123	43	155	39	41	53	41	87	45	0.0079
600	123	58	208	71	50	96	50	156	52	0.0079
600	138	13	49	<5	<15	5	<15	7	<15	0.0079
600	138	28	102	16	28	21	29	29	29	0.0079
600	138	43	155	38	41	48	41	67	41	0.0079
600	138	58	208	68	50	86	50	121	50	0.0079
900	123	20	73	6	<15	9	<15	17	23	0.0119
900	123	39	140	23	29	34	31	61	38	0.0119



L <sub>N</sub>	ØD	q <sub>v</sub> [l/s]	q <sub>v</sub> [m³/h]	Damper blade position						A <sub>eff</sub> [m²]
				OPEN		50%		CLOSED		
				Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	
900	123	58	207	50	41	75	43	134	46	0.0119
900	123	76	274	87	50	131	51	235	53	0.0119
900	138	20	73	5	<15	8	<15	12	<15	0.0119
900	138	38	138	20	30	27	31	43	31	0.0119
900	138	57	204	42	42	59	43	93	43	0.0119
900	138	75	269	74	50	104	51	162	51	0.0119
1200	123	27	97	9	15	15	19	28	29	0.0159
1200	123	46	166	27	31	44	34	82	40	0.0159
1200	123	65	236	55	42	87	44	165	48	0.0159
1200	123	85	305	92	50	146	52	276	53	0.0159
1200	138	27	97	8	<15	12	18	19	19	0.0159
1200	138	47	170	24	31	36	34	59	34	0.0159
1200	138	67	243	49	42	73	44	121	45	0.0159
1200	138	88	316	83	50	124	51	204	52	0.0159

## CFS-35-3, supply air, air control elements horizontal, sound power level and total differential pressure

L <sub>N</sub>	ØD	q <sub>v</sub> [l/s]	q <sub>v</sub> [m³/h]	Damper blade position						A <sub>eff</sub> [m²]
				OPEN		50%		CLOSED		
				Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	
600	138	20	73	7	<15	9	16	13	16	0.0119
600	138	35	124	20	31	26	32	39	32	0.0119
600	138	49	176	40	42	53	43	77	43	0.0119
600	138	63	227	67	50	88	50	129	50	0.0119
600	158	20	73	7	<15	8	15	10	15	0.0119
600	158	34	123	19	30	23	32	29	32	0.0119
600	158	48	174	38	42	46	42	57	42	0.0119
600	158	62	225	63	50	76	50	95	50	0.0119
900	138	30	109	11	21	16	23	26	24	0.0178
900	138	46	166	26	34	37	36	59	36	0.0178
900	138	62	222	46	43	67	44	106	44	0.0178
900	138	77	279	73	50	105	51	167	51	0.0178
900	158	30	109	10	20	13	23	18	24	0.0178
900	158	46	164	24	33	30	35	41	36	0.0178
900	158	61	220	42	43	54	44	73	44	0.0178
900	158	76	275	66	50	85	50	114	50	0.0178
1200	138	40	146	17	26	26	30	43	30	0.0238
1200	138	56	200	33	36	49	39	82	39	0.0238
1200	138	71	255	53	44	80	46	132	46	0.0238
1200	138	86	310	78	50	118	51	195	52	0.0238
1200	158	40	146	16	23	21	28	29	28	0.0238
1200	158	58	207	32	35	43	37	59	37	0.0238
1200	158	75	269	54	43	72	44	100	44	0.0238
1200	158	92	331	82	50	109	50	152	50	0.0238

## CFS-50-1, supply air, air control elements horizontal, sound power level and total differential pressure

L <sub>N</sub>	ØD	q <sub>v</sub> [l/s]	q <sub>v</sub> [m³/h]	Damper blade position						A <sub>eff</sub> [m²]
				OPEN		50%		CLOSED		
				Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	
600	123	10	36	<5	<15	<5	<15	5	<15	0.0058
600	123	23	82	16	29	20	29	29	31	0.0058
600	123	36	129	39	42	48	42	71	43	0.0058
600	123	49	175	72	50	89	50	132	51	0.0058
600	138	10	36	<5	<15	<5	<15	<5	<15	0.0058
600	138	23	82	15	28	18	28	23	28	0.0058
600	138	36	129	36	41	43	41	56	41	0.0058
600	138	49	175	67	50	80	50	104	50	0.0058
900	123	15	54	<5	<15	6	<15	10	17	0.0088
900	123	33	119	21	29	29	30	49	35	0.0088
900	123	51	185	50	41	70	42	118	45	0.0088
900	123	70	251	92	50	129	51	216	52	0.0088
900	138	15	54	<5	<15	5	<15	7	<15	0.0088
900	138	33	118	17	28	23	29	34	29	0.0088
900	138	51	182	42	41	55	42	82	42	0.0088
900	138	68	246	76	50	101	50	150	51	0.0088
1200	123	20	71	6	<15	9	<15	16	23	0.0117
1200	123	39	142	23	30	35	32	63	38	0.0117
1200	123	59	212	52	42	78	43	141	46	0.0117
1200	123	78	282	93	50	139	51	250	53	0.0117
1200	138	20	71	<5	<15	7	<15	11	<15	0.0117
1200	138	39	142	19	29	27	31	43	31	0.0117
1200	138	59	212	42	41	61	43	97	43	0.0117
1200	138	79	283	75	50	108	51	172	51	0.0117

## CFS-50-2, supply air, air control elements horizontal, sound power level and total differential pressure

L <sub>N</sub>	ØD	q <sub>v</sub> [l/s]	q <sub>v</sub> [m³/h]	Damper blade position						A <sub>eff</sub> [m²]
				OPEN		50%		CLOSED		
				Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	Δp <sub>t</sub> [Pa]	L <sub>WA</sub> [dB(A)]	
600	138	20	71	6	<15	9	15	13	15	0.0117
600	138	35	124	20	31	26	32	38	32	0.0117
600	138	49	177	40	42	53	42	78	42	0.0117
600	138	64	230	67	50	89	50	131	50	0.0117
600	158	20	71	6	<15	7	15	9	15	0.0117
600	158	34	123	18	30	22	31	28	32	0.0117
600	158	48	174	37	42	45	42	56	42	0.0117
600	158	63	226	62	50	75	50	95	50	0.0117
900	138	30	107	10	20	15	23	24	23	0.0175
900	138	45	164	24	34	35	35	57	36	0.0175
900	138	61	220	44	43	64	44	103	44	0.0175
900	138	77	277	69	50	101	51	162	51	0.0175
900	158	30	107	10	19	13	22	17	23	0.0175
900	158	46	165	23	33	30	35	40	35	0.0175
900	158	62	223	42	43	55	44	74	44	0.0175
900	158	78	281	67	50	87	50	117	50	0.0175
1200	138	40	143	16	26	24	29	41	30	0.0233



$L_N$	$\varnothing D$	$q_v$ [l/s]	$q_v$ [m <sup>3</sup> /h]	Damper blade position						$A_{eff}$ [m <sup>2</sup> ]
				OPEN		50%		CLOSED		
				$\Delta p_t$ [Pa]	$L_{WA}$ [dB(A)]	$\Delta p_t$ [Pa]	$L_{WA}$ [dB(A)]	$\Delta p_t$ [Pa]	$L_{WA}$ [dB(A)]	
1200	138	55	199	31	36	47	39	79	39	0.0233
1200	138	71	254	50	44	77	45	129	46	0.0233
1200	138	86	310	75	50	114	51	191	52	0.0233
1200	158	40	143	15	26	20	29	28	29	0.0233
1200	158	55	197	28	36	38	38	53	38	0.0233
1200	158	70	251	45	44	61	45	85	45	0.0233
1200	158	85	305	67	50	90	50	126	50	0.0233

## Specification text

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

### Specification text

Slot diffusers for wall installation, diffuser face with up to three slots and individually manually adjustable air control elements for horizontal or vertical air discharge.

The slot diffusers for wall installation can be used for supply air, for extract air or as a supply and extract air combination. Installation in lightweight partition walls with metal support structure.

Ready-to-install component which consists of the diffuser face with individually adjustable black, white or grey air control elements and of a plenum box with side entry spigot. The mineral wool lining reduces noise transmission.

The diffuser face can be mounted to the plenum box without any tools after drywalling is complete. As no tools are required, fixing is easy and quick after drywalling is complete.

Two adjustable suspension lugs on the plenum box allow for fixing the diffuser to the wall or suspending it from the ceiling (by others).

The spigots are suitable for circular ducts to EN 1506 or EN 13180.

Sound power level of the air-regenerated noise measured according to EN ISO 5135.

Diffuser face made from extruded aluminium sections.

End angles made of aluminium.

Plenum box made of galvanised sheet steel.

Air control elements made of ABS plastic, UL 94, V-0, flame retardant. Lip seal made of Evoprene.

Mineral wool

- Mineral wool that comes into contact with air is faced with glass fibre fabric as a protection against erosion due to airflow velocities 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

### Equivalence criteria

- Uniform air pattern reduces contamination of the wall caused by the induction of room air

- Horizontal or vertical air discharge by means of manually adjustable air control elements
- Acoustic lining in the plenum box reduces room-to-room cross talk as well as fan noise transmission through the ductwork
- Easy and quick installation of the slot profile without any tools after drywalling is complete
- Comfortable indoor climate due to high induction and rapid reduction of temperature differences and airflow velocities
- 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

### Variants

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

Colour of air control elements

- 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

### Technical data

- Nominal lengths:
  - PL18: 500, 600, 700, 800, 900, 1000, 1100, 1200 mm
  - PL35/50: 450, 600, 750, 900, 1050, 1200 mm
- No. of slots: 1, 2 or 3 slots (3 slots only with slot profile 35)
- Nominal height: 290 to 440 mm (in increments of 1 mm)
- Spigot diameter ØD: 98, 123, 138, 158 mm
- Minimum volume flow rate, with  $\Delta t_z = -10\text{K}$ : 3 l/s or 12 m<sup>3</sup>/h
- Maximum volume flow rate, at  $L_{WA} \approx 50\text{ dB(A)}$ : 122 l/s or 440 m<sup>3</sup>/h
- Supply air to room air temperature difference: -10 - +10 K

### Sizing data

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

Order code

CFS - 50 - 2 - SE / 900 × 340 × 98 / 2 - D - LS / V / P1 - RAL 9016 / W  
 1 2 3 4 5 6 7 8 9 10 11

**1 Type**

CFS Slot diffuser for lightweight partition walls

**2 Diffuser face**

- 18 PURELINE18
- 35 PURELINE35
- 50 PURELINE50

**3 No. of slots**

1,2,3 (3 slots only in diffuser face 35)

**4 System**

- S Supply air
- E Extract air
- SE Supply and extract air combination (from length 900 mm)

**5 Nominal size [mm]**

Nominal length × nominal height × spigot diameter

Nominal length

Diffuser face 18

500 – 1200 (in increments of 100 mm)

Diffuser face 35 or 50

450 – 1200 (in increments of 150 mm)

Nominal height

290 – 440 (standard height 340)

Spigot diameter ØD

98, 123, 138, 158

**6 No. of spigots**

Only with system S or E

1.2 (2 spigots are optional from length 900)

**7 Damper blade for volume flow rate balancing**

No entry: without damper blade

D With damper blade

**8 Lip seal**

No entry: without lip seal

LS With lip seal

**9 Air pattern**

No entry: Air control elements horizontal, air discharge vertical (upwards)

V Air control elements vertical, air discharge horizontal

**10 Diffuser face finish**

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

P1 Powder-coated, specify RAL CLASSIC colour

Gloss level

RAL 9010 GU50

RAL 9006 GU30

All other RAL colours GU70 (except luminous colours)

**11 Colour of air control elements**

No entry: similar to RAL 9005 (black)

W Similar to RAL 9010 (pure white)

G Similar to RAL 9006 (grey)

**Order example: CFS-50-2-SE/900×340×98-D-LS/V/P1-RAL9016/W**

Type	CFS
Diffuser face	PURELINE50
Number of slots	2
System	Supply and extract air combination
Nominal size [mm]	Nominal length 900, nominal height 340, spigot diameter 98
Damper blade for volume flow rate balancing	With damper blade
Lip seal	With lip seal
Air pattern	Air control elements vertical, air discharge horizontal
Diffuser face finish	Powder-coated, RAL 9016 (traffic white)
Colour of air control elements	Similar to RAL 9010 (pure white)

**Order example: CFS-35-3-S/900×300×138/2**

Type	CFS
Diffuser face	PURELINE35
Number of slots	3
System	Supply air
Nominal size [mm]	Nominal length 900, nominal height 300, spigot diameter 138
No. of spigots	2
Damper blade for volume flow rate balancing	Without damper blade
Lip seal	Without lip seal
Air pattern	Air control elements horizontal, air discharge vertical (upwards)
Diffuser face finish	Anodised, E6-C-0, natural colour
Colour of air control elements	Similar to RAL 9005 (black)

**Order example: CFS-18-1-E/500×440×123/1-D/P1-RAL9006/G**

Type	CFS
Diffuser face	PURELINE18
Number of slots	1
System	Extract air
Nominal size [mm]	Nominal length 500, nominal height 440, spigot diameter 123
No. of spigots	1
Damper blade for volume flow rate balancing	With damper blade
Lip seal	Without lip seal
Air pattern	Air control elements horizontal, air discharge vertical (upwards)
Diffuser face finish	Powder-coated, RAL 9006 (white aluminium)
Colour of air control elements	Similar to RAL 9006 (grey)

## Variants

Slot diffuser for wall installation, with 2 spigots



CFS-50-1 with black air control elements



CFS-18-1 with white air control elements



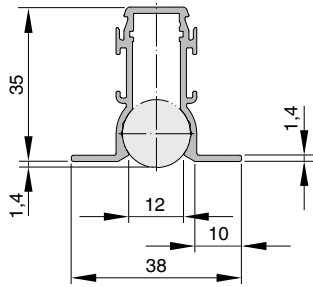
CFS-35-1 with grey air control elements



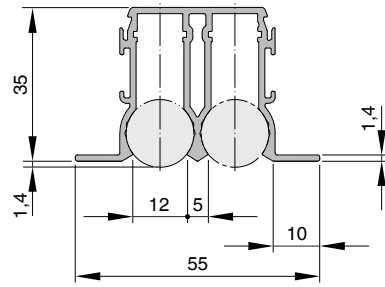


## Dimensions

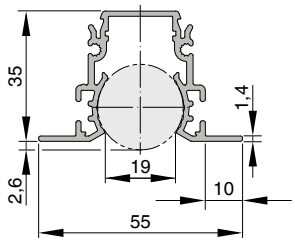
Diffuser face 18-1



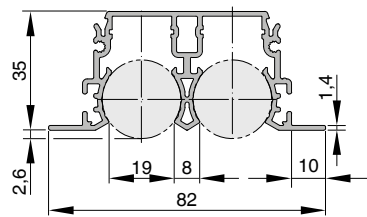
Diffuser face 18-2



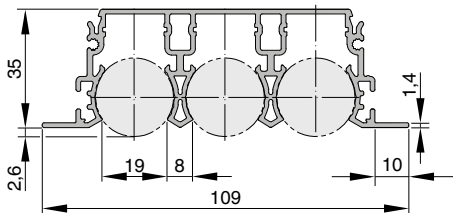
Diffuser face 35-1



Diffuser face 35-2

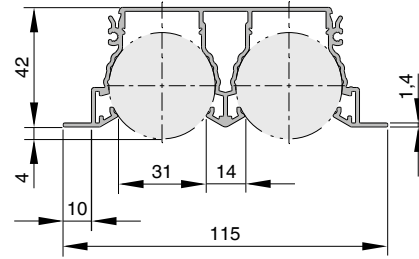
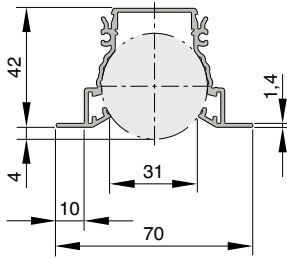


Diffuser face 35-3



Diffuser face 50-1

Diffuser face 50-2



CFS variant with 1 spigot

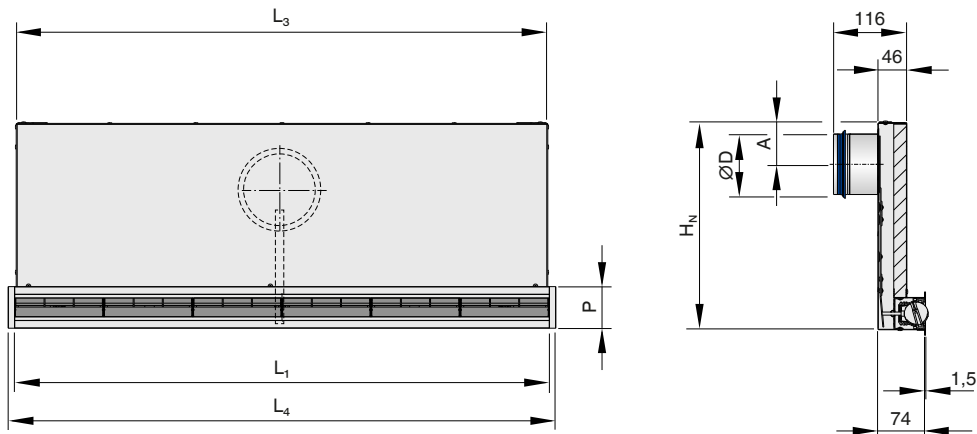


Illustration shows D and LS  
 $H_N$  According to order code

CFS variant with 2 spigots

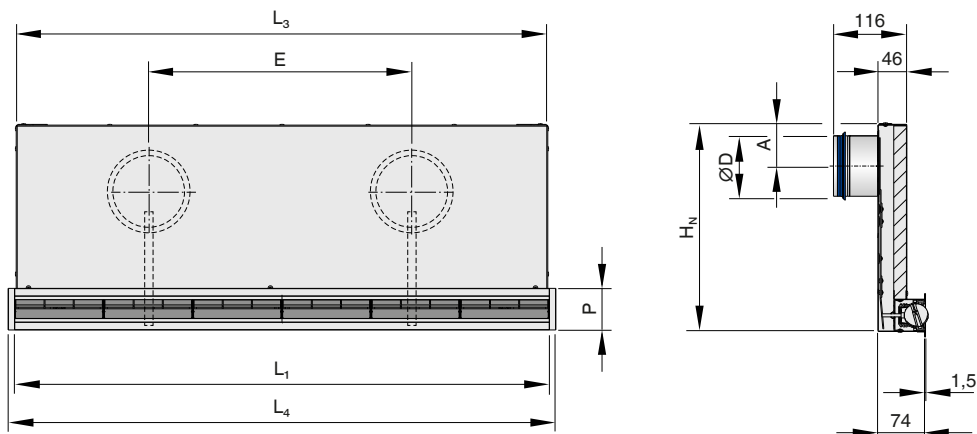


Illustration shows D and LS  
 $H_N$  According to order code  
 System S or E with 2 spigots from  $L_N$  900 mm as an option

**CFS-18**

L <sub>N</sub>	L <sub>1</sub>	L <sub>3</sub>	L <sub>4</sub>	E	No. of spigots
500	500	495	522		1
600	600	595	622		1
700	700	695	722		1
800	800	795	822		1
900	900	895	922	446	1/2*
1000	1000	995	1022	496	1/2*
1100	1100	1095	1122	546	1/2*
1200	1200	1195	1222	596	1/2*

\* System SE: always with 2 spigots

**CFS-35/50**

L <sub>N</sub>	L <sub>1</sub>	L <sub>3</sub>	L <sub>4</sub>	E	No. of spigots
450	450	445	472		1
600	600	595	622		1
750	750	745	772		1
900	900	895	922	446	1/2*
1050	1050	1045	1072	521	1/2*
1200	1200	1195	1222	596	1/2*

\* System SE: always with 2 spigots

ØD	A
98	70
123	82
138	90
158	100

**Weights**

**CFS-18**

L <sub>N</sub>	1 slot				2 slots			
	Diffuser face	Plenum box			Diffuser face	Plenum box		
		H <sub>N</sub> =290	H <sub>N</sub> =340	H <sub>N</sub> =440		H <sub>N</sub> =290	H <sub>N</sub> =340	H <sub>N</sub> =440
500	0.3	2.8	3.2	3.9	0.4	2.7	3.1	3.8
600	0.3	3.2	3.7	4.6	0.5	3.1	3.6	4.5
700	0.4	3.7	4.2	5.2	0.6	3.6	4.1	5.1
800	0.4	4.2	4.8	5.8	0.6	4.1	4.7	5.7
900	0.5	4.6	5.3	6.5	0.7	4.5	5.2	6.4
1000	0.5	5.1	5.8	7.1	0.8	5	5.7	7
1100	0.6	5.5	6.3	7.7	0.9	5.4	6.2	7.6
1200	0.6	6	6.8	8.3	1	5.9	6.7	8.2

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

**CFS-35**

L <sub>N</sub>	1 slot				2 slots				3 slots			
	Diffuser face	Plenum box			Diffuser face	Plenum box			Diffuser face	Plenum box		
		H <sub>N</sub> =290	H <sub>N</sub> =340	H <sub>N</sub> =440		H <sub>N</sub> =290	H <sub>N</sub> =340	H <sub>N</sub> =440		H <sub>N</sub> =290	H <sub>N</sub> =340	H <sub>N</sub> =440
450	0.4	2.7	3	3.6	0.5	2.6	2.9	3.5	0.7	2.5	2.8	3.4
600	0.5	3.4	3.8	4.6	0.7	3.3	3.7	4.5	1	3.2	3.6	4.4
750	0.6	4.1	4.5	5.6	0.9	4	4.4	5.4	1.2	3.8	4.3	5.3
900	0.7	4.7	5.3	6.6	1.1	4.6	5.1	6.4	1.4	4.4	5	6.2
1050	0.8	5.4	6.1	7.5	1.3	5.3	5.9	7.3	1.7	5	5.7	7.1
1200	1	6.1	6.9	8.5	1.4	6	6.7	8.3	2	5.7	6.4	8.1

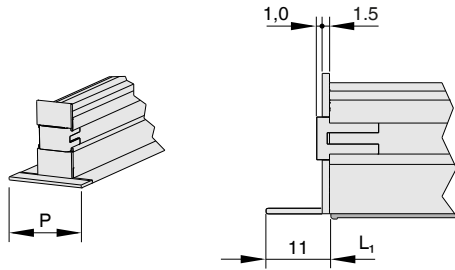
Total weight = weight of diffuser face + weight of plenum box

**CFS-50**

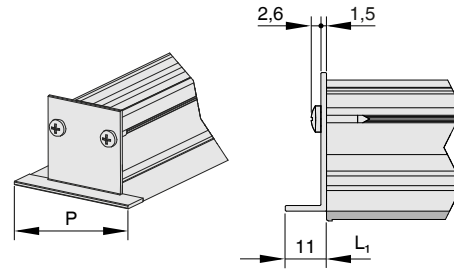
L <sub>N</sub>	1 slot				2 slots			
	Diffuser face	Plenum box			Diffuser face	Plenum box		
		H <sub>N</sub> =290	H <sub>N</sub> =340	H <sub>N</sub> =440		H <sub>N</sub> =290	H <sub>N</sub> =340	H <sub>N</sub> =440
450	0.5	2.6	2.9	3.5	0.7	2.5	2.8	3.4
600	0.6	3.2	3.6	4.4	1	3.1	3.5	4.3
750	0.8	3.9	4.4	5.3	1.2	3.7	4.2	5.1
900	0.9	4.5	5.1	6.3	1.4	4.3	4.9	6
1050	1.1	5.2	5.9	7.2	1.7	4.9	5.6	6.9
1200	1.2	5.8	6.6	8.1	1.9	5.5	6.3	7.8

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

**End angle – diffuser face 18**



**End angle – diffuser face 35/50**



Variant	P
Diffuser face 18-1	38
Diffuser face 18-2	55
Diffuser face 35-1	55
Diffuser face 35-2	82
Diffuser face 35-3	109
Diffuser face 50-1	70
Diffuser face 50-2	115

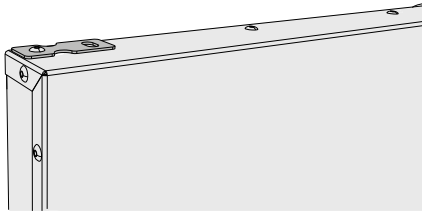
## Product details

### Installation and commissioning

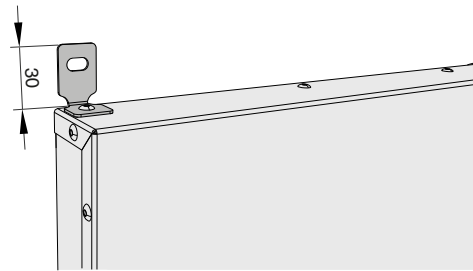
- Preferably for rooms with a clear height up to 4.0 m
- Installation in lightweight partition walls
- Horizontal duct connection; some lengths fit the usual distances of the metal studs, while in some cases it may be necessary to make changes for the CW sections
- If necessary, carry out volume flow rate balancing with the damper blade
- Fixing material for the slot diffusers is to be provided by others

These are only schematic diagrams to illustrate installation details.

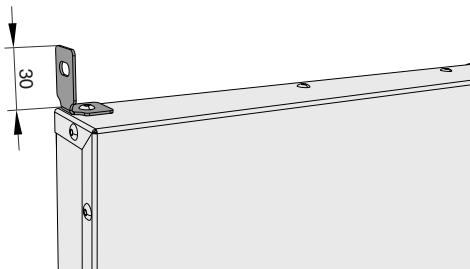
### Factory condition



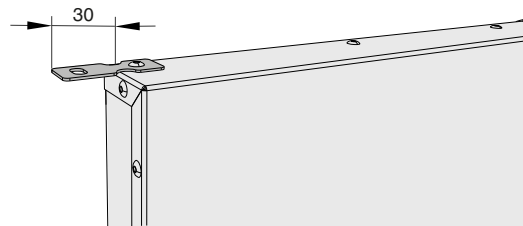
### Suspension lug bent and turned sideways For wall installation



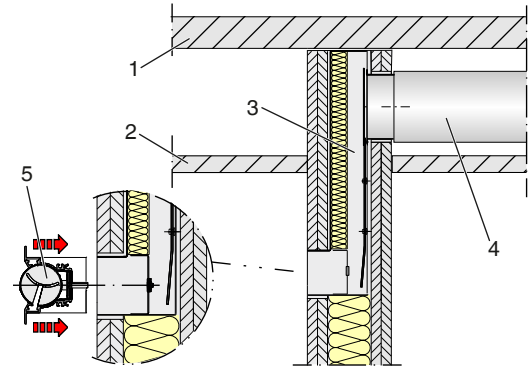
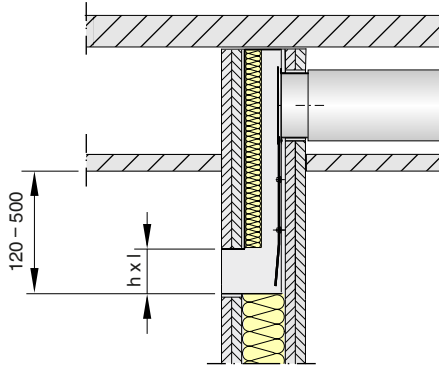
### Suspension lug bent and turned sideways For suspended installation



### Suspension lug turned sideways For ceiling installation



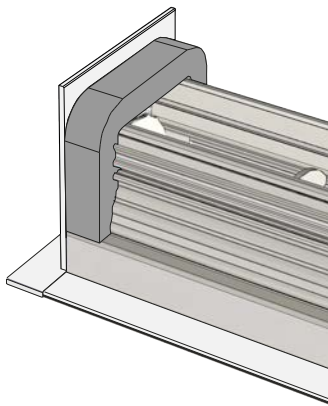
**Installation opening in a lightweight partition wall**



Height of installation opening h: P - 12  
 Length of installation opening l: L<sub>1</sub> + 9

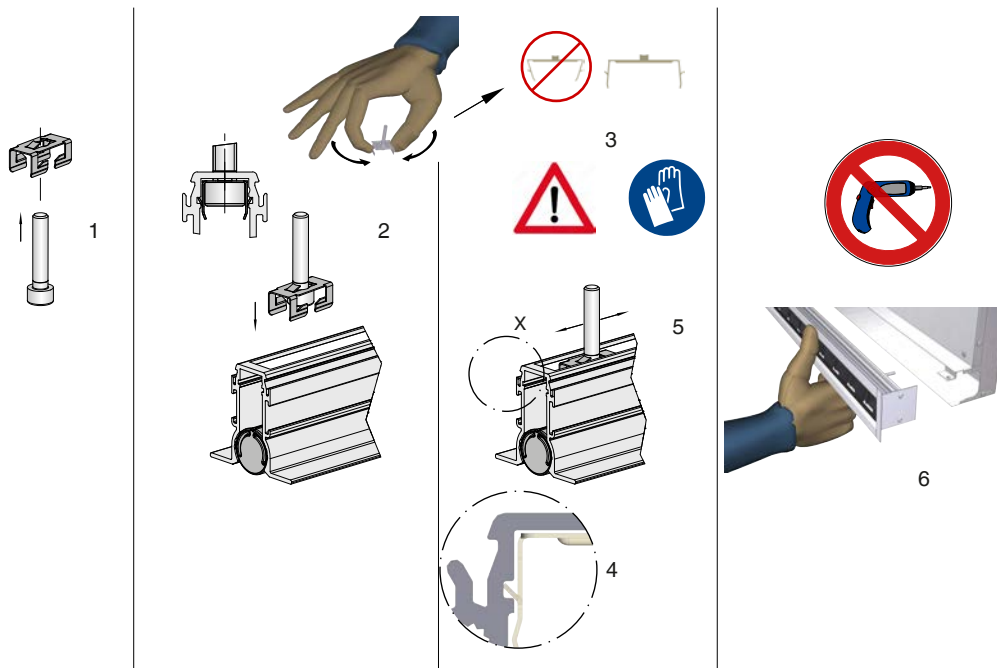
- 1 Ceiling slab
- 2 Suspended ceiling
- 3 Slot diffuser for wall installation
- 4 Duct
- 5 Diffuser face

**Fitting the seal**



- 1 Cut the seal to length
- 2 Fix it with glue at the back of the diffuser face near the end angles

## Fixing the diffuser face



Assemble the separately supplied fixing material 1 as shown.

Then insert it into the diffuser face 2 (don't press the clamp too much 3 and make sure you position it correctly 4) and align it 5 with the diffuser face.

Move the diffuser face towards the plenum box so that the screws fit into the supplied fixing holes 6 in the plenum box.

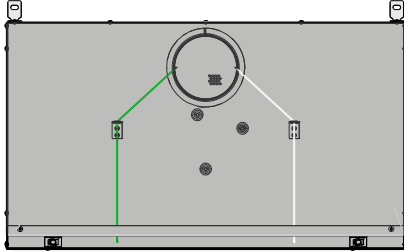
Using an Allen key (SW4) simplifies the fixing procedure.

### Volume flow rate balancing

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

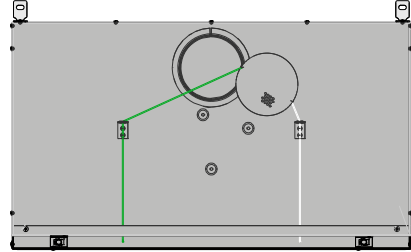
- Damper blade (variant -D): The damper blade can be adjusted even with the diffuser face in place.
- CFS-18: The damper blade can be adjusted with cords (green = close, white = open)
- CFS-35/50: Move the air control element near the diffuser face in such a way that it is possible to insert a screw driver.

### Volume flow rate balancing CFS-18



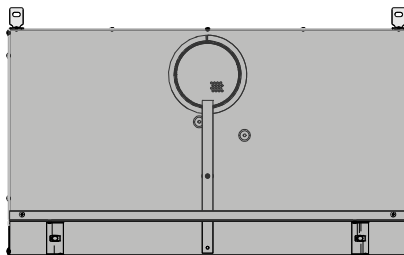
Adjusted with cords (closed position shown)  
Green = CLOSE  
White = OPEN

### Volume flow rate balancing CFS-18



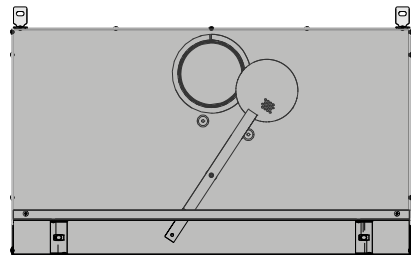
Adjusted with cords (fully open position shown)  
Green = CLOSE  
White = OPEN

### Volume flow rate balancing CFS-35/50



Adjusted by moving the lever (closed position shown)

### Volume flow rate balancing CFS-35/50



Adjusted by moving the lever (fully open position shown)



## Nomenclature

**ØD** [mm]

Outer diameter of the spigot

**m** [kg]

Weight

**L<sub>1</sub>** [mm]

Length diffuser face

**L<sub>3</sub>** [mm]

Length of plenum box

**L<sub>4</sub>** [mm]

Total length of diffuser face

**A** [mm]

Spigot height

**E** [mm]

Distance between 2 spigots

**P** [mm]

Width of slot section

**L<sub>N</sub>** [mm]

Nominal length

**H<sub>N</sub>** [mm]

Nominal height

**l** [mm]

Length of installation opening

**h** [mm]

Height of installation opening

**L<sub>WA</sub>** [dB(A)]

A-weighted sound power level of air-regenerated noise

**Dt** [dB]

Transmission loss

**q<sub>v</sub>** [m<sup>3</sup>/h]; [l/s]

Volume flow rate

**Δt<sub>z</sub>** [K]

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

**Δp<sub>t</sub>** [Pa]

Total differential pressure

**Lengths**

All lengths are given in millimetres [mm] unless stated otherwise.