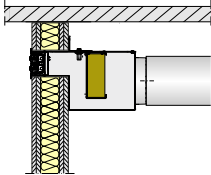
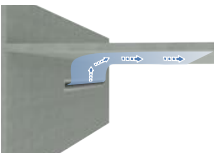




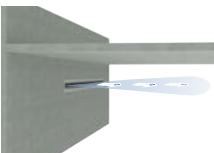
Various design options with black, grey and white air control blades



Installation opening in a lightweight partition wall



Air flow with ceiling influence



Direct air flow into the room

# Wall diffusers

## CHS



### Slot diffuser for wall installation

Wall diffusers with adjustable air control blades and optional splitter for cross-talk sound attenuation for different wall thicknesses

- Optionally with the front rails of PURELINE18, PURELINE35 or PURELINE50
- Available in nominal lengths 450 - 1200 mm
- Wide range of applications due to variants with 1 - 4 air slots
- Simple and tool-free assembly of the front rail, e.g. after completion of all preparatory work
- Installation in lightweight partition walls with 50, 75 or 100 mm stud frame width and 75, 100, 125 or 150 mm wall thickness
- Optionally for supply air, extract air or as supply air/extract air combination

Optional equipment

- Spigot for improved cross-talk sound attenuation
- Various looks thanks to powder-coated slotted profiles and manually adjustable air control blades, optionally in black, white or grey
- Damper blade in the spigot for flow rate balancing, adjustable via cable pulls when the front is mounted
- Fixing bracket for wall mounting

General information	2	Order code	16
Function	4	Variants	17
Technical data	7	Dimensions	19
Quick sizing	8	Product details	24
Specification text	15	Nomenclature	27

## General information

### Application

- Wall diffusers as supply air or extract air diffuser or as supply air/extract air combination in ventilation systems for comfort areas
- Wide range of applications due to the choice of different front rails:
  - PURELINE18, PURELINE 50 with 1 - 2 air slots
  - PURELINE35 with 1 - 4 air slots
- Air flow with ceiling effect or directly into the room as turbulent mixed ventilation
- Depending on the setting of the air control blades, the minimum installation height is defined
- High induction causes a rapid reduction of the temperature difference and the air velocity
- For constant and variable volume flows
- For supply air temperature differences of -10 to +10 K
- For room heights up to 4 m (lower edge of suspended ceiling)
- Different neck lengths for common wall thicknesses: 75, 100, 125 or 150 mm
- Space-saving installation preferably in lightweight partition walls
- Optionally with fixing bracket for wall mounting

### Special characteristics

- Uniform jet dispersion to reduce dirt deposits that occur on the wall due to induced room air
- The air flow is one-sided and is manually adjusted by air control blades
- Large penetration depths or throw distances due to direct air flow into the room
- Airflow with ceiling influence for positive effects on air velocities and comfort:
  - First, the air flows vertically along the wall and is redirected under the ceiling
- Splitter as cross-talk silencer (optional):
  - To reduce sound transmission to neighbouring rooms via the air duct system
- Tool-free fixing for easy and safe installation of the front rail
- Installation of the front rail still possible after completion of all preparatory work
- Comfortable indoor climate due to high induction and rapid reduction of temperature differences and airflow velocities
- High-quality appearance due to surface-treated extruded aluminium profiles with anodised coating or powder coating according to RAL-CLASSIC colour scale
- The front rail has been optimised for maximum volume flow rate at low sound power levels

### Nominal sizes

Nominal length  $L_N$ :

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

Spigot diameter  $\varnothing$

- 98, 123, 138, 158 mm

Neck length

- 75, 100, 125, 150 mm

### Variants

Diffuser face

- -18: PURELINE18 series front rail
- -35: PURELINE35 series front rail
- -50: PURELINE50 series front rail

Number of slots

- -\*: 1 - 4 air slots (3 or 4 air slots only with PURELINE35)

System

- -S: Supply air
- -E: Extract air
- -SE: Supply air/extract air combination from  $L_N$  900

### 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

Spigot

- -D: with damper blade for flow rate balancing
- -LS: with lip seal to reduce duct leakage

Splitter

- -CT: with splitter to improve cross-talk sound attenuation to reduce sound transmission via the air duct system

End pieces

- No entry: front rail equipped at the factory with end brackets for circumferential covering of the installation opening
- -NO: The front rail is equipped without end brackets. This means that the installation opening is not covered all the way round.

### Construction features

- Spigot suitable for circular ducts to EN 1506 or EN 13180
- Manually adjustable air control blades with detent for defined adjustment of the air flow
- Factory preset airflow that can be manually adjusted on site (only airflow with ceiling influence or direct airflow into the room)
- Spigot with groove for lip seal (only for lip seal version)
- Front rail available in nominal lengths of 450 mm - 1200 mm depending on slot diffuser width
- Fixing material for the front rail is enclosed loosely packed in a drawstring bag

### Accessories

End pieces

- The aluminium profiles of the PURELINE18, PURELINE35 and PURELINE50 series are used as front rails. This means that the front rails can also be retrofitted with the end plates and end brackets of the respective PURELINE series available as accessories. The end plates and end brackets must be ordered as a separate item

**Material and surfaces**

- Front rail made of extruded aluminium profiles
- End brackets made of aluminium
- Air control blades 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
- Front rail anodised, E6-C-0, natural colour or powder-coated (P1), colour shade according to RAL-CLASSIC
- Air control blades similar to RAL 9005, black
- -W: Air control blades similar to RAL 9010, white
- -G: Air control blades similar to RAL 9006, grey

**Mineral wool**

- Mineral wool on surfaces in contact with air are laminated with glass fibre fabric, abrasion-resistant up to 20 m/s
- According to EN13501, building material class A1, non-combustible

- RAL quality mark RAL-GZ 388
- Non-hazardous thanks to high biosolubility according to the German Ordinance on Hazardous Substances and Note Q of the European Regulation (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 there is no wear and tear due to design and materials used
- Inspection and cleaning according to VDI 6022

## Function

Wall diffusers allow the supply air of room air conditioning systems to flow with ceiling influence or directly into the room. The flow takes place with a high induction of the room air. This quickly reduces the air velocity and the temperature difference between supply air and room air. The result is a mixed ventilation system for comfort areas with good room air circulation and low turbulence in the occupied zone.

The wall diffusers can be combined with PURELINE 18, PURELINE35 or PURELINE50 range front rails. These have factory-set air control blades that can be manually adjusted on site. The airflow direction can be adjusted to meet various local requirements.

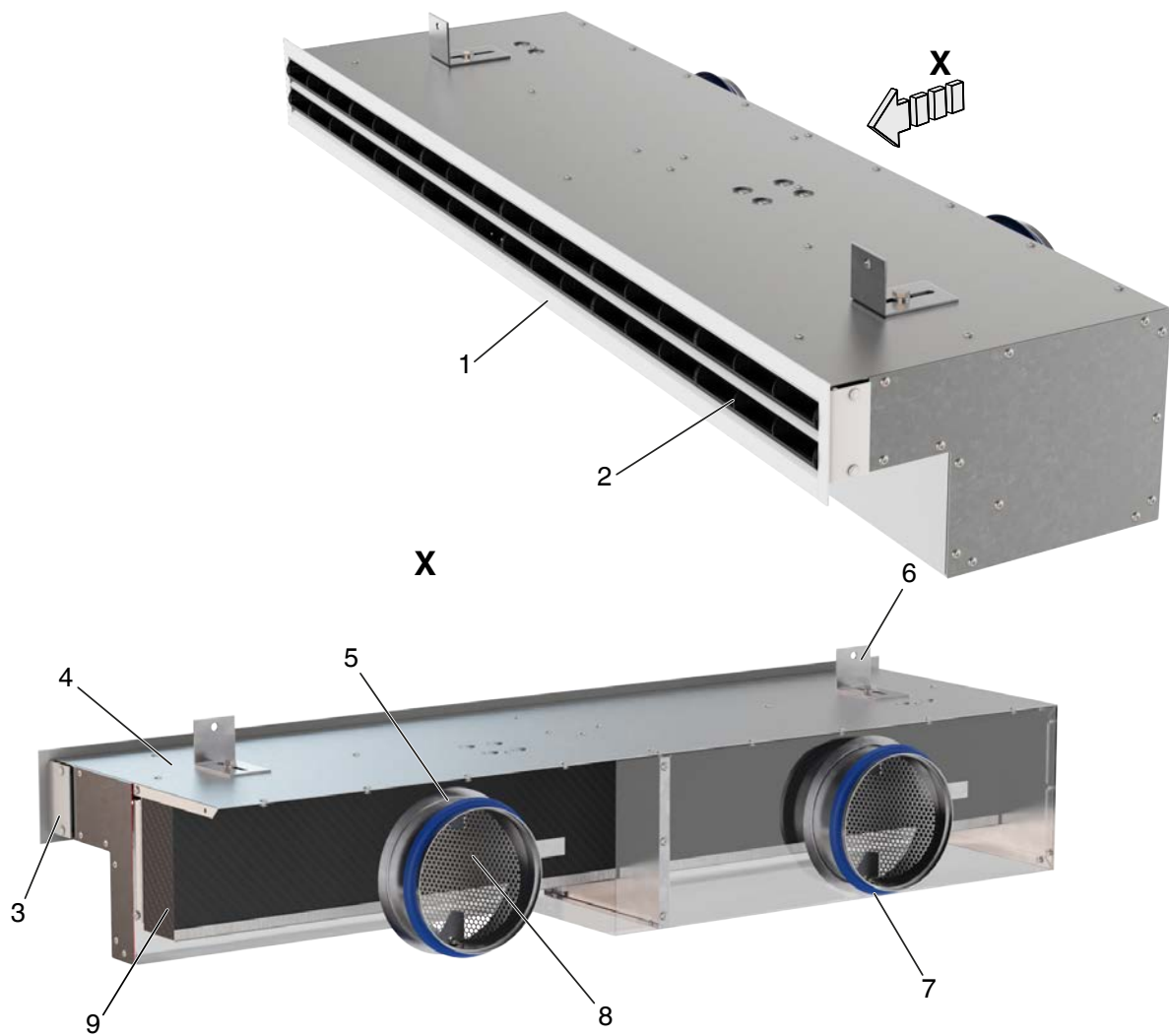
The supply air to room air temperature difference may range from  $-10$  to  $+10$  K.

A spigot can be optionally integrated in the plenum box to increase the passage attenuation and reduce the sound transmission into neighbouring rooms.

Damper blades (optional) in the spigot enable the volume flow rate to be balanced during commissioning. The damper blade is adjusted via cable pulls and can also be adjusted when the diffuser face is mounted.

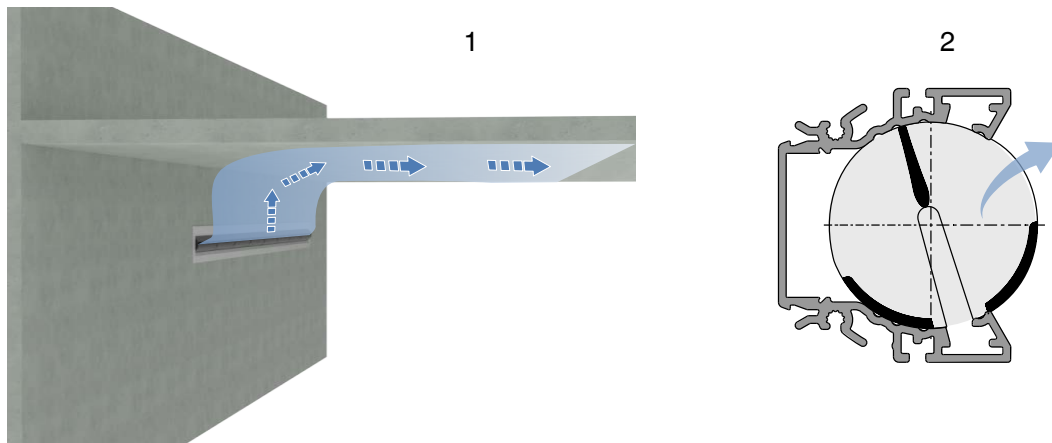
For an architecturally uniform design, the wall diffusers are used as extract air diffusers or as supply air/extract air combinations.

## Schematic representation, CHS-50-\* as supply air/extract air combination

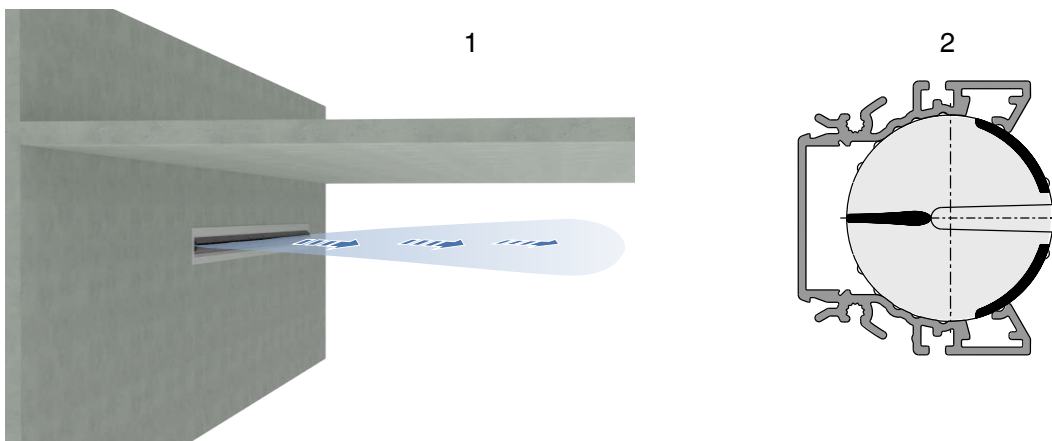


- 1 Front rail
- 2 Adjustable air control blade
- 3 End angle
- 4 Plenum box
- 5 Spigot

- Optional
- 6 Fixing brackets
  - 7 Lip seal
  - 8 Damper blade for volume flow rate balancing
  - 9 Splitter as cross-talk silencer

**Supply air: Air flow with ceiling effect**

- 1 -HR: Airflow with ceiling influence - distance from lower edge of ceiling to lower edge of front rail  $\leq 0.5$  m  
2 Setting of the air control blades

**Supply air: direct air flow into the room**

- 1 -V: direct air flow into the room - distance from lower edge of ceiling to lower edge of front rail  $\leq 0.3$  m  
2 Setting of the air control blades

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

## Technical data

### CHS-18

Nominal length	500 – 1200 mm (in increments of 100 mm)
Number of slots	1 or 2
minimum volume flow at $\Delta t_z = -10$ K	4 l/s or 13 m <sup>3</sup> /h
maximum volume flow at $L_{WA} 50$ dB (A)	83 l/s or 300 m <sup>3</sup> /h
Supply air to room air temperature difference	-10 – +10 K

### CHS-35

Nominal length	450 – 1200 mm (in increments of 150 mm)
Number of slots	1, 2, 3 or 4
minimum volume flow at $\Delta t_z = -10$ K	5 l/s or 19 m <sup>3</sup> /h
maximum volume flow at $L_{WA} 50$ dB (A)	160 l/s or 575 m <sup>3</sup> /h
Supply air to room air temperature difference	-10 – +10 K

### CHS-50

Nominal length	450 – 1200 mm (in increments of 150 mm)
Number of slots	1 or 2
minimum volume flow at $\Delta t_z = -10$ K	8 l/s or 27 m <sup>3</sup> /h
maximum volume flow at $L_{WA} 50$ dB (A)	153 l/s or 550 m <sup>3</sup> /h
Supply air to room air temperature difference	-10 – +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.

### CHS-18-1, supply air (-S), air flow with ceiling effect (-HR), sound power level and total pressure difference

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]
				0°		45°		90°		
				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)]	
500	98	4	13	2	<15	2	<15	3	<15	0.002
500	98	14	52	31	34	33	34	46	34	0.002
500	98	25	90	92	50	100	50	139	50	0.002
600	98	4	15	2	<15	2	<15	3	<15	0.0024
600	98	17	62	32	34	36	34	54	34	0.0024
600	98	30	108	97	50	108	50	164	50	0.0024
700	98	5	18	2	<15	2	<15	4	<15	0.0028
700	98	20	72	33	34	39	34	63	34	0.0028
700	98	35	125	101	50	116	50	191	50	0.0028
800	98	6	20	2	<15	3	<15	4	<15	0.0032
800	98	22	80	34	34	40	34	71	34	0.0032
800	98	39	140	103	50	123	50	217	50	0.0032
900	98	6	23	2	<15	3	<15	5	<15	0.0036
900	98	25	89	35	34	43	35	81	35	0.0036
900	98	43	155	107	50	131	51	246	51	0.0036
1000	98	7	25	2	<15	3	<15	6	<15	0.004
1000	98	26	95	35	34	44	35	87	35	0.004
1000	98	46	165	105	50	133	51	263	51	0.004
1100	98	8	28	3	<15	3	<15	7	<15	0.0044
1100	98	28	102	36	35	46	35	96	36	0.0044
1100	98	49	175	105	50	136	51	282	51	0.0044
1200	98	8	30	3	<15	4	<15	8	<15	0.0048
1200	98	29	105	34	34	45	35	98	36	0.0048
1200	98	50	180	101	50	133	51	288	51	0.0048

### CHS-18-2, supply air (-S), airflow with ceiling effect (-HR), sound power level and total pressure difference

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]
				0°		45°		90°		
				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)]	
500	98	7	25	3	<15	3	<15	6	<15	0.004
500	98	24	85	30	34	37	34	72	34	0.004
500	98	40	145	87	50	108	50	209	50	0.004
500	123	7	25	2	<15	2	<15	3	<15	0.004
500	123	26	93	26	33	29	33	44	33	0.004
500	123	44	160	76	50	86	50	131	50	0.004
600	98	8	30	3	<15	4	<15	8	<15	0.0048
600	98	29	103	34	34	44	35	95	35	0.0048
600	98	49	175	98	50	128	51	275	51	0.0048
600	123	8	30	2	<15	2	<15	4	<15	0.0048
600	123	30	108	26	34	30	34	51	34	0.0048
600	123	51	185	76	50	89	50	149	50	0.0048





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]
				0°		45°		90°		
				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)]	
700	98	10	35	3	<15	4	<15	10	<15	0.0057
700	98	32	115	35	34	48	36	111	36	0.0057
700	98	54	195	99	50	137	51	319	51	0.0057
700	123	10	35	2	<15	3	<15	5	<15	0.0057
700	123	33	120	26	34	31	34	56	34	0.0057
700	123	57	205	75	50	90	50	165	50	0.0057
800	98	11	40	4	<15	5	<15	13	<15	0.0065
800	98	36	128	37	34	53	37	131	38	0.0065
800	98	60	215	103	50	149	51	370	53	0.0065
800	123	11	40	2	<15	3	<15	6	<15	0.0065
800	123	37	133	26	34	33	34	64	34	0.0065
800	123	63	225	75	50	94	50	183	50	0.0065
900	98	13	45	4	<15	6	<15	16	<15	0.0073
900	98	38	138	38	34	57	38	148	39	0.0073
900	98	64	230	105	50	157	52	410	53	0.0073
900	123	13	45	3	<15	3	<15	7	<15	0.0073
900	123	40	145	27	34	35	34	72	35	0.0073
900	123	68	245	77	50	99	50	205	50	0.0073
1000	98	14	50	4	<15	7	<15	19	<15	0.0081
1000	98	41	148	39	34	61	39	166	40	0.0081
1000	98	68	245	107	50	167	53	454	55	0.0081
1000	123	14	50	3	<15	4	<15	8	<15	0.0081
1000	123	43	155	27	34	36	34	79	35	0.0081
1000	123	72	260	77	50	102	50	222	50	0.0081
1100	98	15	55	5	<15	8	<15	22	<15	0.0089
1100	98	44	158	41	35	66	40	186	42	0.0089
1100	98	72	260	112	50	179	54	502	56	0.0089
1100	123	15	55	3	<15	4	<15	10	<15	0.0089
1100	123	47	168	29	35	40	35	90	36	0.0089
1100	123	78	280	81	50	110	50	249	51	0.0089
1200	98	17	60	6	<15	9	<15	26	<15	0.0097
1200	98	46	165	42	35	69	41	199	43	0.0097
1200	98	75	270	113	50	185	54	534	57	0.0097
1200	123	17	60	3	<15	5	<15	11	<15	0.0097
1200	123	50	180	31	35	43	36	100	36	0.0097
1200	123	83	300	86	50	119	51	278	51	0.0097

## CHS-35-1, supply air (-S), airflow with ceiling effect (-HR), sound power level and total pressure difference

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]
				0°		45°		90°		
				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)]	
450	98	5	19	3	<15	3	<15	5	<15	0.003
450	98	17	60	26	36	30	36	47	36	0.003
450	98	28	100	73	50	83	50	130	50	0.003
450	123	5	19	2	<15	2	<15	3	<15	0.003
450	123	16	57	20	36	21	36	27	36	0.003
450	123	26	95	55	50	55	50	55	50	0.003
600	98	7	25	3	<15	3	<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]
				0°		45°		90°		
				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	22	80	29	35	35	36	66	36	0.004
600	98	38	135	82	50	100	50	188	50	0.004
600	123	7	25	2	<15	2	<15	4	<15	0.004
600	123	22	80	23	35	25	35	37	35	0.004
600	123	38	135	65	50	72	50	104	50	0.004
750	98	9	31	3	<15	4	<15	9	<15	0.0049
750	98	28	101	33	36	43	36	92	36	0.0049
750	98	47	170	94	50	122	51	261	51	0.0049
750	123	9	31	2	<15	3	<15	4	<15	0.0049
750	123	29	103	26	35	30	35	48	35	0.0049
750	123	49	175	74	50	86	50	140	50	0.0049
900	98	10	37	3	<15	5	<15	11	<15	0.0059
900	98	33	119	36	36	50	37	118	38	0.0059
900	98	56	200	102	50	142	51	333	52	0.0059
900	123	10	37	2	<15	3	<15	5	<15	0.0059
900	123	34	124	28	36	33	36	61	36	0.0059
900	123	58	210	79	50	96	50	174	50	0.0059
1050	98	12	43	4	<15	6	<15	15	<15	0.0069
1050	98	37	134	38	36	56	38	142	39	0.0069
1050	98	63	225	108	50	158	52	400	53	0.0069
1050	123	12	43	3	<15	3	<15	7	<15	0.0069
1050	123	39	139	27	35	35	35	69	36	0.0069
1050	123	65	235	79	50	99	50	197	50	0.0069
1200	98	14	49	4	<15	7	<15	18	<15	0.0079
1200	98	41	147	40	36	62	39	165	40	0.0079
1200	98	68	245	111	50	171	53	458	55	0.0079
1200	123	14	49	3	<15	4	<15	8	<15	0.0079
1200	123	43	155	28	36	37	36	80	36	0.0079
1200	123	72	260	80	50	105	50	224	51	0.0079

## CHS-35-2, supply air (-S), airflow with ceiling effect (-HR), sound power level and total pressure difference

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]
				0°		45°		90°		
				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)]	
450	123	10	37	3	<15	3	<15	6	<15	0.0059
450	123	29	105	23	37	27	37	47	38	0.0059
450	123	44	160	54	50	63	50	108	50	0.0059
450	138	10	37	3	<15	3	<15	5	<15	0.0059
450	138	31	110	23	38	26	38	40	38	0.0059
450	138	47	170	56	50	62	50	96	50	0.0059
600	123	14	49	3	<15	4	<15	8	<15	0.0079
600	123	39	140	26	36	34	36	68	36	0.0079
600	123	64	230	71	50	91	50	185	51	0.0079
600	138	14	49	3	<15	3	<15	6	<15	0.0079
600	138	39	140	24	36	27	36	51	36	0.0079
600	138	64	230	63	50	74	50	137	50	0.0079
750	123	17	61	4	<15	5	<15	12	<15	0.0099
750	123	48	171	29	35	40	36	92	36	0.0099



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]
				0°		45°		90°		
				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)]	
750	123	78	280	79	50	108	50	246	50	0.0099
750	138	17	61	3	<15	4	<15	8	<15	0.0099
750	138	49	176	27	36	33	36	70	36	0.0099
750	138	81	290	72	50	89	50	189	51	0.0099
900	123	20	73	4	<15	6	<15	16	<15	0.0119
900	123	56	202	33	36	48	37	121	38	0.0119
900	123	92	330	89	50	129	51	322	52	0.0119
900	138	20	73	4	<15	5	<15	11	<15	0.0119
900	138	56	202	27	35	36	35	84	37	0.0119
900	138	92	330	73	50	95	50	224	50	0.0119
1050	123	24	85	5	<15	8	<15	21	<15	0.0139
1050	123	61	220	34	36	52	37	138	39	0.0139
1050	123	99	355	88	50	135	51	358	52	0.0139
1050	138	24	85	4	<15	6	<15	14	<15	0.0139
1050	138	64	230	30	36	40	36	103	38	0.0139
1050	138	104	375	79	50	107	50	274	51	0.0139
1200	123	27	98	6	<15	10	<15	27	16	0.0158
1200	123	68	244	37	37	59	39	165	41	0.0158
1200	123	108	390	96	50	152	52	421	54	0.0158
1200	138	27	98	5	<15	7	<15	18	<15	0.0158
1200	138	71	254	32	36	45	37	121	39	0.0158
1200	138	114	410	82	50	116	50	315	52	0.0158

## CHS-35-3, supply air (-S), airflow with ceiling effect (-HR), sound power level and total pressure difference

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]
				0°		45°		90°		
				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)]	
450	138	15	55	3	<15	4	<15	8	<15	0.0089
450	138	41	148	25	35	29	35	55	36	0.0089
450	138	67	240	65	50	77	50	145	50	0.0089
450	158	15	55	3	<15	4	<15	6	<15	0.0089
450	158	40	143	22	36	24	36	38	36	0.0089
450	158	64	230	56	50	62	50	100	50	0.0089
600	138	20	73	4	<15	5	<15	11	<15	0.0119
600	138	52	187	26	35	33	36	75	36	0.0119
600	138	83	300	67	50	86	50	192	50	0.0119
600	158	20	73	4	<15	4	<15	8	<15	0.0119
600	158	52	187	23	36	27	36	52	36	0.0119
600	158	83	300	60	50	70	50	134	50	0.0119
750	138	26	92	5	<15	7	<15	17	<15	0.0149
750	138	62	224	29	36	39	36	98	38	0.0149
750	138	99	355	72	50	97	50	247	51	0.0149
750	158	26	92	4	<15	5	<15	11	<15	0.0149
750	158	64	231	26	36	32	36	70	36	0.0149
750	158	103	370	66	50	82	50	179	50	0.0149
900	138	31	110	6	<15	8	<15	23	16	0.0179
900	138	71	255	31	36	44	37	121	39	0.0179
900	138	111	400	76	50	108	50	298	52	0.0179

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]
				0°		45°		90°		
				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	158	31	110	5	<15	6	<15	15	<15	0.0179
900	158	76	273	28	36	37	37	90	37	0.0179
900	158	121	435	72	50	95	51	228	51	0.0179
1050	138	36	128	7	<15	10	<15	30	20	0.0208
1050	138	80	289	35	37	51	38	150	42	0.0208
1050	138	125	450	84	50	125	51	365	53	0.0208
1050	158	36	128	5	<15	7	<15	19	<15	0.0208
1050	158	84	302	29	36	40	36	104	37	0.0208
1050	158	132	475	72	50	99	50	258	51	0.0208
1200	138	41	146	8	<15	12	16	38	23	0.0239
1200	138	88	318	38	37	58	39	178	43	0.0239
1200	138	136	490	90	50	139	51	423	55	0.0239
1200	158	41	146	6	<15	9	<15	24	<15	0.0239
1200	158	93	333	31	36	44	37	123	38	0.0239
1200	158	144	520	76	50	108	50	299	51	0.0239

### CHS-35-4, supply air (-S), airflow with ceiling effect (-HR), sound power level and total pressure difference

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]
				0°		45°		90°		
				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)]	
450	158	20	73	4	<15	5	<15	9	<15	0.0119
450	158	45	162	21	36	24	36	42	36	0.0119
450	158	69	250	49	50	56	50	101	50	0.0119
600	158	27	98	5	<15	6	<15	13	<15	0.0159
600	158	61	219	24	36	30	36	64	36	0.0159
600	158	94	340	59	50	72	50	154	50	0.0159
750	158	34	122	6	<15	7	<15	18	<15	0.0198
750	158	75	271	28	36	37	37	88	37	0.0198
750	158	117	420	67	50	88	50	212	50	0.0198
900	158	41	146	7	<15	9	<15	24	15	0.0238
900	158	86	311	30	36	41	37	110	38	0.0238
900	158	132	475	70	50	97	50	256	50	0.0238
1050	158	47	170	8	<15	11	15	32	18	0.0278
1050	158	97	350	33	37	47	38	134	39	0.0278
1050	158	147	530	75	50	109	51	307	51	0.0278
1200	158	54	195	9	16	14	18	40	21	0.0317
1200	158	107	385	36	37	53	39	158	40	0.0317
1200	158	160	575	79	50	119	51	352	52	0.0317

### CHS-50-1, supply air (-S), airflow with ceiling effect (-HR), sound power level and total pressure difference

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]
				0°		45°		90°		
				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)]	
450	123	8	27	2	<15	3	<15	4	<15	0.0044
450	123	26	94	26	35	32	35	46	36	0.0044
450	123	44	160	75	50	94	50	133	51	0.0044
450	158	8	27	2	<15	2	<15	3	<15	0.0044
450	158	26	94	27	34	28	34	34	34	0.0044



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]
				0°		45°		90°		
				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)]	
450	158	44	160	79	50	82	50	100	50	0.0044
600	123	10	36	2	<15	3	<15	5	<15	0.0058
600	123	32	116	24	35	34	36	54	36	0.0058
600	123	54	195	67	50	95	50	154	51	0.0058
600	158	10	36	2	<15	2	<15	3	<15	0.0058
600	158	32	116	24	35	26	35	35	35	0.0058
600	158	54	195	68	50	73	50	100	50	0.0058
750	123	13	45	2	<15	4	<15	7	<15	0.0073
750	123	38	138	23	36	37	36	67	37	0.0073
750	123	64	230	65	50	104	51	186	52	0.0073
750	158	13	45	2	<15	3	<15	4	<15	0.0073
750	158	38	138	23	35	25	35	39	35	0.0073
750	158	64	230	63	50	70	50	107	50	0.0073
900	123	15	54	3	<15	5	<15	9	<15	0.0088
900	123	44	157	23	36	41	37	79	38	0.0088
900	123	72	260	63	50	113	51	217	52	0.0088
900	158	15	54	3	<15	3	<15	5	<15	0.0088
900	158	45	162	23	35	26	35	45	35	0.0088
900	158	75	270	64	50	73	50	124	50	0.0088
1050	123	18	63	3	<15	6	<15	12	<15	0.0102
1050	123	49	177	24	37	47	37	95	38	0.0102
1050	123	81	290	64	50	126	51	256	52	0.0102
1050	158	18	63	3	<15	3	<15	6	<15	0.0102
1050	158	52	187	24	35	28	35	53	35	0.0102
1050	158	86	310	65	50	77	50	145	50	0.0102
1200	123	20	72	3	<15	7	<15	15	<15	0.0117
1200	123	53	191	24	36	50	37	107	38	0.0117
1200	123	86	310	62	50	133	51	281	52	0.0117
1200	158	20	72	3	<15	3	<15	7	<15	0.0117
1200	158	60	216	26	35	31	35	64	35	0.0117
1200	158	100	360	72	50	87	50	179	50	0.0117

**CHS-50-2, supply air (-S), air flow with ceiling effect (-HR), sound power level and total pressure difference**

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]
				0°		45°		90°		
				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)]	
450	158	15	54	3	<15	3	<15	6	<15	0.0088
450	158	41	147	23	35	26	35	41	35	0.0088
450	158	67	240	61	50	68	50	109	50	0.0088
600	158	20	72	3	<15	4	<15	8	<15	0.0117
600	158	52	186	23	35	27	35	51	35	0.0117
600	158	83	300	60	50	70	50	134	50	0.0117
750	158	25	90	4	<15	5	<15	11	<15	0.0146
750	158	65	233	26	36	33	36	71	36	0.0146
750	158	104	375	67	50	84	51	183	51	0.0146
900	158	30	108	4	<15	6	<15	14	<15	0.0175
900	158	75	269	27	36	36	36	87	36	0.0175
900	158	119	430	70	50	92	50	223	50	0.0175



$L_N$	$\varnothing D$	$q_v$ [l/s]	$q_v$ [m <sup>3</sup> /h]	Damper blade position						$A_{\text{eff}}$ [m <sup>2</sup> ]
				0°		45°		90°		
				$\Delta p_t$ [Pa]	$L_{WA}$ [dB (A)]	$\Delta p_t$ [Pa]	$L_{WA}$ [dB (A)]	$\Delta p_t$ [Pa]	$L_{WA}$ [dB (A)]	
1050	158	35	126	5	<15	7	<15	18	<15	0.0204
1050	158	86	308	30	36	42	36	108	37	0.0204
1050	158	136	490	77	50	105	51	275	51	0.0204
1200	158	40	143	6	<15	8	<15	23	<15	0.0234
1200	158	96	347	34	36	48	37	133	39	0.0234
1200	158	153	550	85	50	121	51	334	52	0.0234

## 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

Wall diffusers as supply air or extract air diffusers or supply air/extract air combinations for ventilating rooms in ventilation and air conditioning systems. Consisting of a plenum box with spigot for connection to the on-site duct system and the front rail. The air into the room is provided by air control blades integrated in the front rails. These air control blades are manually adjustable and enable airflow with ceiling influence or direct airflow into the room. Optional splitter for improved cross-talk sound attenuation.

### Material

- Plenum box and spigot made of galvanised sheet steel
- Fixing bracket made of galvanised sheet steel
- Aluminium front rail
- Air control blades made of plastic ABS UL94 V-0
- Sound insulation material made of mineral wool, laminated with glass fibre fabric on surfaces in contact with air

### Surfaces

- Front rail natural anodised (E6 C-0)
- Front rail powder-coated according to RAL CLASSIC
- Air control blades black, similar to RAL 9005
- Air control blades white, similar to RAL 9010
- Air control blades grey, similar to RAL 9006

### Nominal size

#### Length [mm]

450, 500, 600, 700, 750, 800, 900, 1000, 1050, 1100, 1200

#### Spigot diameter [mm]

98, 123, 138, 158

#### Neck length [mm]

75, 100, 125, 150

### Technical data / design data

- Design-specific

### Standards and guidelines

- Conforms to VDI 6022
- Sound power level in air-regenerated noise measured according to EN ISO 5135

- Transmission loss to ISO 7235
- Mineral wool according to EN13501 of building material class A1, non-combustible, with RAL quality mark RAL-GZ 388
- Mineral wool according to the German Ordinance on Hazardous Substances and Note Q of the European Regulation (EC) No. 1272/2008

### Variants

- Without damper blade
- With damper blade
- Without lip seal
- With lip seal
- Without splitter
- With splitter
- Without end pieces
- With end brackets

### Accessories

- Wall fixing bracket
- End pieces to match the front rails

### Equivalence criteria

- Choice of 3 different slot sizes
- Uniform jet spread to reduce dirt deposits on the wall
- Air conduction with ceiling influence or direct air flow into the room through manually adjustable air control blades
- Air control blades selectable in 3 different colours
- One to four slot front rails made of extruded aluminium profiles
- Splitter for improved cross-talk sound attenuation
- Glass fibre fabric abrasion resistant up to 20 m/s
- Mineral wool harmless to health due to high biosolubility
- Mineral wool with glass fibre fabric inert to fungal and bacterial growth
- Easy and quick installation of the front rail due to tool-free fastening after completion of the drywall work

### Make of the tender

- TROX

### Type

- CHS

## Order code

CHS - 35 - 2 - SE / 1200 × 123 × 125 / 1 / D / LS / CT / NO / HR / F / P1 - RAL 9016 / W  
 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14

**1 Type**

CHS Wall diffuser

**2 Front rail**

18 PURELINE18  
 35 PURELINE35  
 50 PURELINE50

**3 Number of slots**

1, 2, 3, 4

**4 System**

S Supply air  
 E Extract air  
 SE Supply and extract air combination

**5 Dimensions [mm]**

Nominal length  
 450, 500, 600, 700, 750, 800, 900, 1000, 1050, 1100, 1200

Spigot diameter  
 98, 123, 138, 158

Neck length  
 75, 100, 125, 150

**6 Number of spigots**

1  
 2 (from nominal 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 Splitters**

No entry: without splitters  
 CT with splitters

**10 End pieces**

No entry: with end angles  
 NO without end finishes

**11 Airflow settings**

HR Airflow with ceiling effect  
 V direct airflow into the room

**12 Fixing**

No entry: without bracket for wall mounting  
 F with bracket for wall mounting

**13 Surface front rail**

No entry: anodised, E6-C-0 (natural colour)  
 P1 powder-coated, specify RAL CLASSIC colour  
 Gloss level  
 RAL 9010 GE 50  
 RAL 9006 GU 30  
 All other RAL colours GU 70 (except luminous colours)

**14 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: CHS-35-2-SE/1200×123×125/2/D/LS/CT/NO/HR/F/P1-RAL9016/W**

Type	CHS
Front rail	PURELINE35
Number of slots	2
System	Supply and extract air combination
Dimensions [mm]	Nominal length 1200, spigot diameter 123, neck length 125
Number of spigots	2
Damper blade for volume flow rate balancing	with damper blade
Lip seal	with lip seal
Splitters	with splitters
End pieces	without end angles
Settings airflow	Airflow with ceiling effect
Fixing	with bracket for wall mounting
Surface front rail	powder-coated, RAL 9016 (traffic white)
Colour of air control blades	similar to RAL 9010 (pure white)



## Variants

**CHS-\*-2-\***

Front rail with black air control blades

**CHS-\*-2-\*-W**

Front rail with white air control blades

**CHS-\*-2-\*-G**

Front rail with grey air control blades

### Application

- Air control blades available in 3 colours:
  - Black (similar to RAL9005), white (similar to RAL9010), grey (similar to RAL 9006)
  - Different design possibilities in combination with the slot profiles
- For supply air: Air flow with ceiling effect or direct air flow into the room through manually adjustable air control elements
- For extract air: Factory setting of the air control blades to air flow -V (direct air flow into the room)
- Supply air/extract air combinations: identical factory setting of the extract air blades to the supply air blades for a uniform appearance in the unit

## 2. Spigot from $L_N \geq 900$ mm

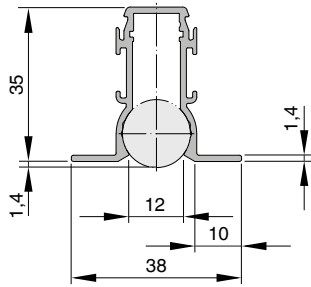


### Application

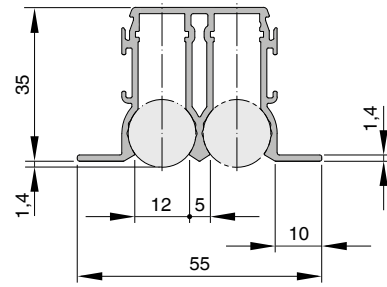
- Supply air and extract air combinations (-SE):
  - Available from a nominal length of 900 mm
  - Always with 2 spigots (one for supply air and one for extract air)
- CHS-18 and CHS-35 variants:
  - Available as supply air (-S) or extract air (-E) units optionally with 2 connection spigots (from nominal length 900 mm)
- Variant CHS-50:
  - Available as supply air (-S) or extract air units (-E) optionally with 2 spigots (from nominal length 1200 mm)
- Spigot optionally available with lip seal and damper blade. If the options are selected, these applies to all spigots of one unit

## Dimensions

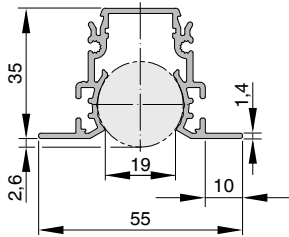
Front rail 18-1



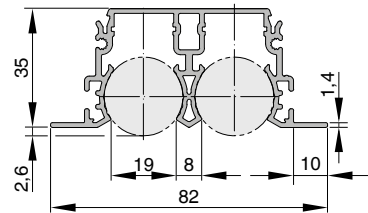
Front rail 18-2



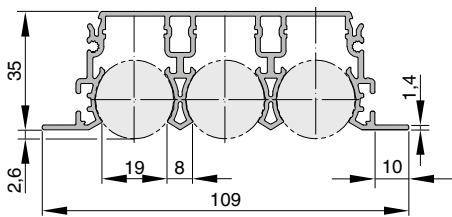
Front rail 35-1



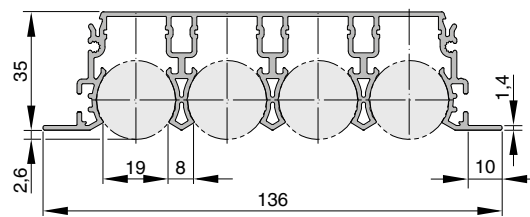
Front rail 35-2



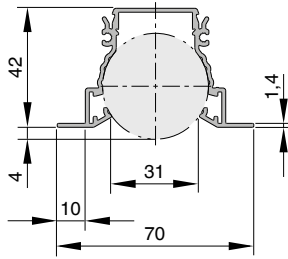
Front rail 35-3



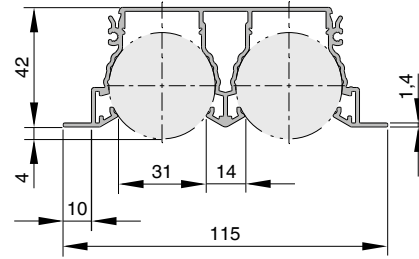
Front rail 35-4



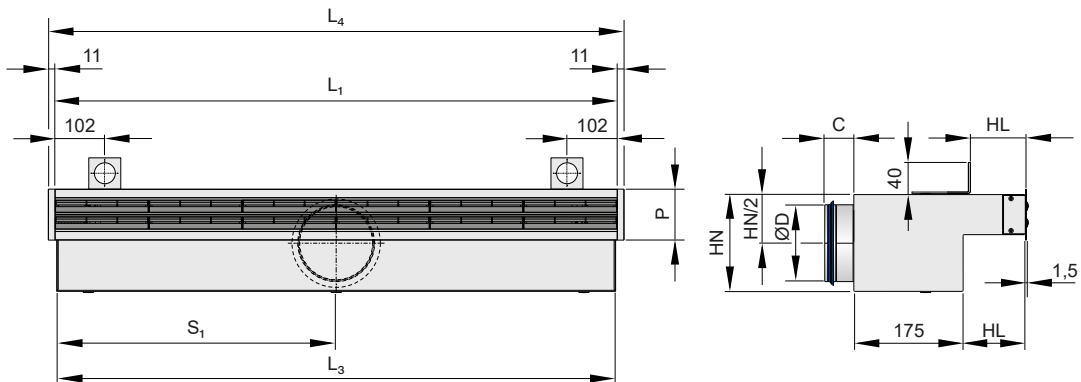
Front rail 50-1



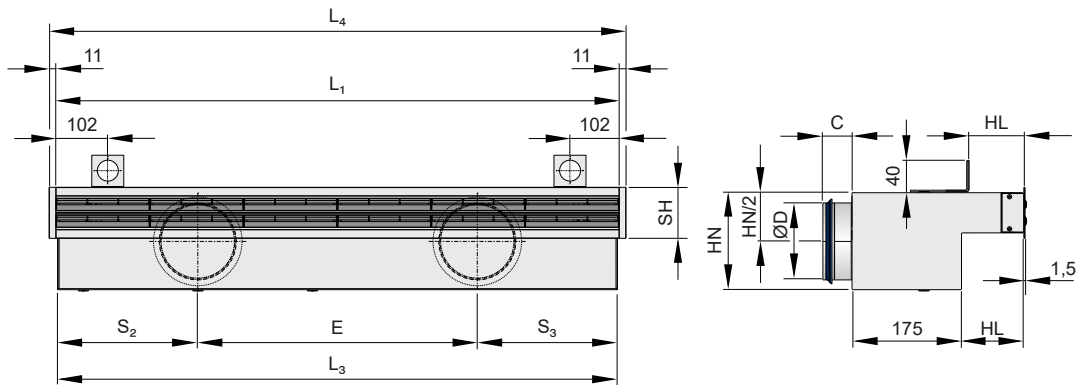
Front rail 50-2



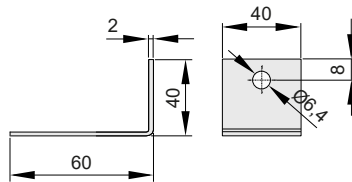
CHS - Variant 1 spigot



CHS - Variant 2 spigot



Bracket for wall mounting



CHS-18

Number of slots	ØD	HN	P
1	98	130	38
2	98	130	55
2	123	155	55

CHS-35

Number of slots	ØD	HN	P
1	98	130	55
1	123	155	55
2	123	155	82
2	138	170	82
3	138	170	109
3	158	190	109
4	158	190	136

CHS-50

Number of slots	ØD	HN	P
1	123	155	70
1	158	190	70
2	158	190	115

CHS-18

L <sub>1</sub>	L <sub>4</sub>	L <sub>3</sub>	S/E				SE		
			S <sub>1</sub>	S <sub>2</sub>	E	S <sub>3</sub>	S <sub>2</sub>	E	S <sub>3</sub>
500	522	495	248	-	-	-	-	-	-
600	622	595	298	-	-	-	-	-	-
700	722	695	348	-	-	-	-	-	-
800	822	795	398	-	-	-	-	-	-
900	922	895	448	224	447	224	199	447	249
1000	1022	995	498	249	497	249	249	497	249
1100	1122	1095	548	274	547	274	249	547	299
1200	1222	1195	598	299	597	299	299	597	299

**CHS-35**

L <sub>1</sub>	L <sub>4</sub>	L <sub>3</sub>	S/E				SE		
			S <sub>1</sub>	S <sub>2</sub>	E	S <sub>3</sub>	S <sub>2</sub>	E	S <sub>3</sub>
450	472	445	223	-	-	-	-	-	-
600	622	595	298	-	-	-	-	-	-
750	772	745	373	-	-	-	-	-	-
900	922	895	448	224	447	224	224	447	224
1050	1072	1045	523	262	522	262	224	522	299
1200	1222	1195	598	299	597	299	299	597	299

**CHS-50**

L <sub>1</sub>	L <sub>4</sub>	L <sub>3</sub>	S/E				SE		
			S <sub>1</sub>	S <sub>2</sub>	E	S <sub>3</sub>	S <sub>2</sub>	E	S <sub>3</sub>
450	472	445	223	-	-	-	-	-	-
600	622	595	298	-	-	-	-	-	-
750	772	745	373	-	-	-	-	-	-
900	922	895	448	-	-	-	224	447	224
1050	1072	1045	523	-	-	-	224	522	299
1200	1222	1195	598	299	597	299	299	597	299

**CHS-18, CHS-35, CHS-50**

ØD	C
98	50
123	48
138	42
158	50

**CHS-18, CHS-35, CHS-50**

HL
75
100
125
150

**Weights CHS-18**

L <sub>1</sub>	m [kg]							
	500	600	700	800	900	1000	1100	1200
Anschlusskasten	3.7	4.3	4.9	5.5	6.1	6.7	7.3	7.9
Front rail PL18-1	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6
Front rail PL18-2	0.4	0.5	0.6	0.7	0.8	0.8	0.9	1
Splitter	0.5	0.7	0.8	0.9	1	1	1.1	1.2

Total weight = plenum box + front rail + splitter (if any)

**Weights CHS-35**

L <sub>1</sub>	m [kg]					
	450	600	750	900	1050	1200
Anschlusskasten	3.4	4.2	5.1	6	6.9	7.8
Front rail PL35-1	0.4	0.5	0.6	0.8	0.9	1
Front rail PL35-2	0.6	0.8	0.9	1.1	1.3	1.5
Front rail PL35-3	0.8	1	1.2	1.5	1.7	2
Front rail PL35-4	1	1.3	1.6	1.9	2.3	2.6
Splitter	0.5	0.7	0.8	1	1	1.2

Total weight = plenum box + front rail + splitter (if any)



**Weights CHS-50**

L <sub>1</sub>	m [kg]					
	450	600	750	900	1050	1200
Anschlusskasten	4.2	5.1	6	6.9	7.8	8.7
Front rail PL50-1	0.5	0.6	0.8	0.9	1.1	1.2
Front rail PL50-2	0.8	1	1.2	1.5	1.7	2
Splitter	0.5	0.7	0.8	1	1	1.2

Total weight = Plenum box + front rail + splitter (if any)

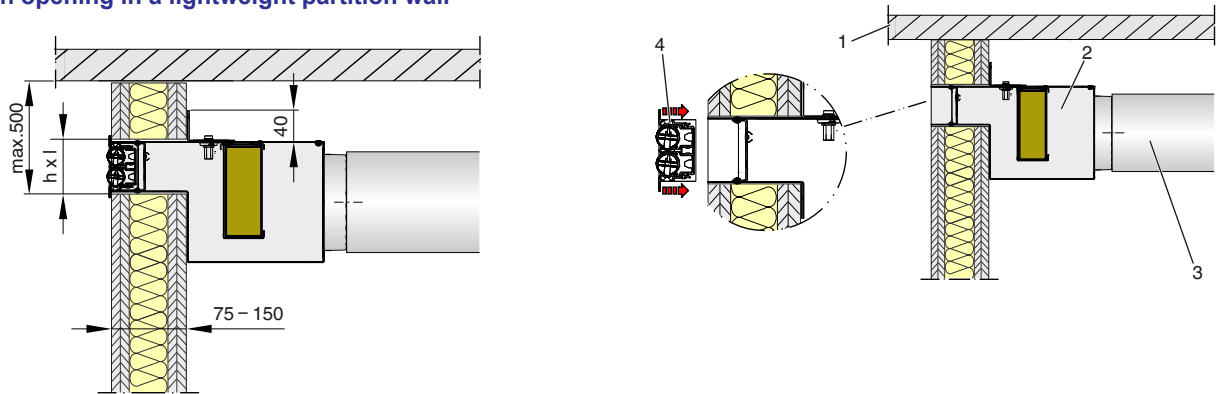
## Product details

### Installation and commissioning

- Preferably for rooms with a clear height up to 4.0 m
- Installation in lightweight partition walls and ceiling box-outs
- Horizontal duct connection
- The available neck lengths are matched to common drywall thicknesses that can be achieved with common metal stud frames. Trimmers might be required for the CW profiles
- If necessary, carry out volume flow rate balancing with the damper blade
- Suitable fastening material must be provided by the qualified personnel according to the structural conditions

The schematic diagrams are provided to illustrate installation details.

### Installation opening in a lightweight partition wall



Installation opening:

$$h = P - 12$$

$$l = L1 + 9$$

The fixing bracket can be moved by +17 mm and -23 mm through the slotted hole.

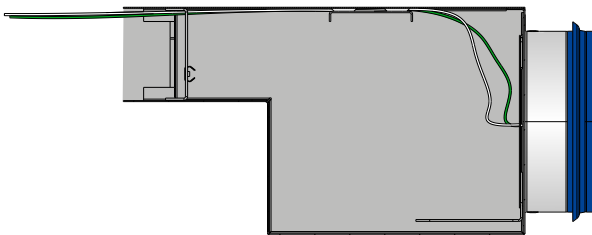
1 Ceiling slab

2 Slot diffuser for wall installation

3 Duct

4 Front rail

### Volume flow rate balancing CHS



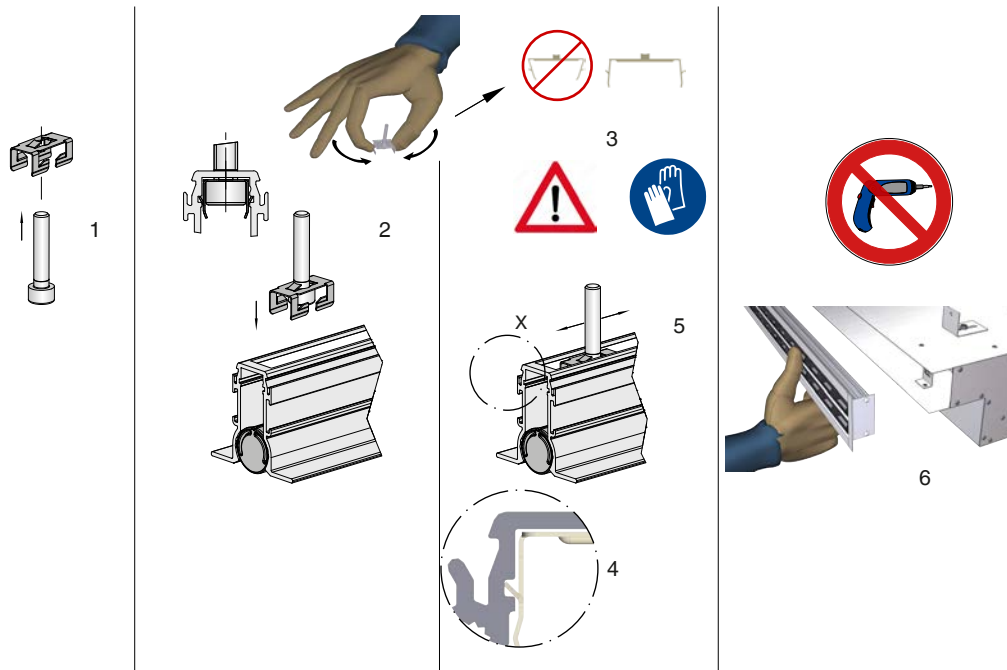
Adjustment via cords (closed position shown, maximum damping)

Green = CLOSE

White = OPEN

### Fixing the front rail





1 Assemble loosely supplied fixing material as shown.

2 Insert into front rail.

3 Caution, do not squeeze the clamp too tightly!

4 Ensure correct fit!

5 Position in the longitudinal direction.

6 Insert the front rail together with the screws into the fixing holes on the plenum box.

Note:

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

**Volume flow rate balancing**

If several wall diffusers are assigned to one volume flow controller, it may be necessary to balance the volume flows.

- The damper blade (variant -D) can also be operated with mounted front rail
- The damper blades are adjusted via cable pulls (green = closed, white = open)

## Nomenclature

<b>ØD</b> [mm] Outer diameter of the spigot	Distance between 2 spigots
<b>C</b> [mm] Length of the spigot	<b>P</b> [mm] Width of slot section
<b>m</b> [kg] Weight	<b>L<sub>WA</sub></b> [dB(A)] Sound power level of air-regenerated noise A-weighted
<b>L<sub>N</sub></b> [mm] Nominal length	<b>q<sub>v</sub></b> [m <sup>3</sup> /h]; [l/s] Volume flow rate
<b>L<sub>1</sub></b> [mm] Length of front rail	<b>Δt<sub>z</sub></b> [K] Supply air to room air temperature difference, supply air minus room air
<b>L<sub>3</sub></b> [mm] Length of plenum box	<b>Δp<sub>t</sub></b> [Pa] Total differential pressure
<b>L<sub>4</sub></b> [mm] Length of front rail including end piece	<b>A<sub>eff</sub></b> [m <sup>2</sup> ] Effective free cross section
<b>HL</b> [mm] Neck length	<b>h</b> [mm] Height of installation opening
<b>HN</b> [mm] Height of a plenum box	<b>l</b> [mm] Length of installation opening
<b>S<sub>1</sub>, S<sub>2</sub>, S<sub>3</sub></b> [mm] Spigot distance	<b>Längenangaben</b> [mm] The unit of measurement millimetres [mm] applies to all length specifications without a unit of measurement shown
<b>E</b> [mm]	