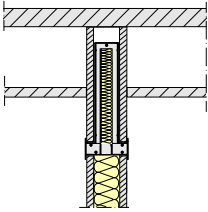




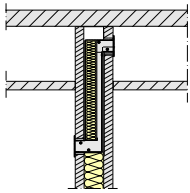
# Wall diffusers

## CFE

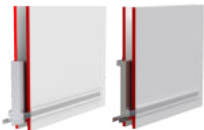
Design options  
with perforated sheet cover  
or  
slot diffuser face



T-style construction, for  
lightweight partition walls



Z-style construction, for  
lightweight partition walls



Installation in lightweight  
partition walls  
with metal support  
structure



### Free design options for builders and architects with high aesthetic demands

Crossflow element in different variants

- With recess for air diffusers – with fronts with different optics
- Without recess for air diffusers – for free design options in the choice of wall opening
- With integrated cross talk silencer and sealing strips for sound insulation
- Nominal lengths from 550 - 1175 mm in mm steps
- Nominal heights from 290 - 440 mm in mm steps
- The wide range of dimensions allows a large selection of different installation situations, with low pressure loss and high sound insulation values
- Installation in lightweight partition walls with a thickness of 100 mm or 125 mm and with 50 mm or 75 mm wide metal frame

Optional equipment

- Diffuser face powder-coated in RAL CLASSIC colours

General information	2	Order code	7
Function	3	Variants	8
Technical data	4	Dimensions	10
Quick sizing	4	Product details	12
Specification text	6	Nomenclature	14

## General information

### Application

- Crossflow elements are suitable as cross talk silencers for air transfer flows in comfort zones
- Due to their diversity of variants and high flexibility, they can be used for many applications

### Special features

- Different construction styles allow individual adaptation to local conditions
- Low differential pressure
- Crossflow elements in T- and Z-design without recess for an air diffuser are suitable for (system) partition walls
- Cross talk silencers reduce noise transmission to adjacent rooms
- To prevent sound transmission via the casing, insulation strips are attached to the crossflow element
- Tool-free assembly of the diffuser face enables quick installation after completion of the drywall work
- High-quality appearance of diffuser face due to powder coating according to RAL-CLASSIC colour scale
- Crossflow elements without recess: free design options of the wall openings for builders and architects while maintaining the free cross-section  $\geq 51\%$
- Nominal length and nominal heights selectable in mm steps

### Nominal sizes

Nominal length  $L_N$ :

- 550 - 1175 mm in mm steps

Nominal height  $H_N$ :

- 290 - 440 mm in mm steps

### Variants

CFE-...:

- -\*: in Z or T design
- -\*: with or without recess for diffuser face
- -PP: Perforated sheet cover
- -SC: Slot diffuser face

### Construction

Surface finish of diffuser faces:

- Powder-coated RAL 9010, pure white, GE 50
- P1: powder-coated RAL 9006, white aluminium, GE 30
- P1: powder-coated in other RAL CLASSIC colours, GE 70

### Construction features

- With or without recess for diffuser face
- A diffuser face requires a construction with recess for the diffuser face
- Nominal lengths from 550 - 1175 mm and nominal heights from 290 - 440 mm available in mm steps
- The perforated sheet cover PP has a free cross-section of approx. 51 %, the hole diameter is 6 mm, and the rows of holes are arranged offset to each other
- The slot diffuser face SC offers the largest possible free cross-section for very low pressure loss

### Materials and surfaces

- Casings and diffuser faces made of galvanised sheet steel
- Acoustic lining made of mineral wool
- Insulation strips on the casing made of closed cell PE foam
- Diffuser faces powder-coated RAL9010, GE 50
- P1: powder-coated colour according to RAL CLASSIC

Mineral wool:

- Mineral wool on surfaces in contact with air are laminated with glass fibre fabric, abrasion-resistant up to 20 m/s
- Acc. to EN 13501, fire rating 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 air-regenerated noise measured according to DIN EN ISO 5135
- Conforms to VDI 6022
- Sound reduction index according to DIN EN ISO 10140 and DIN EN ISO 717-1

### Maintenance

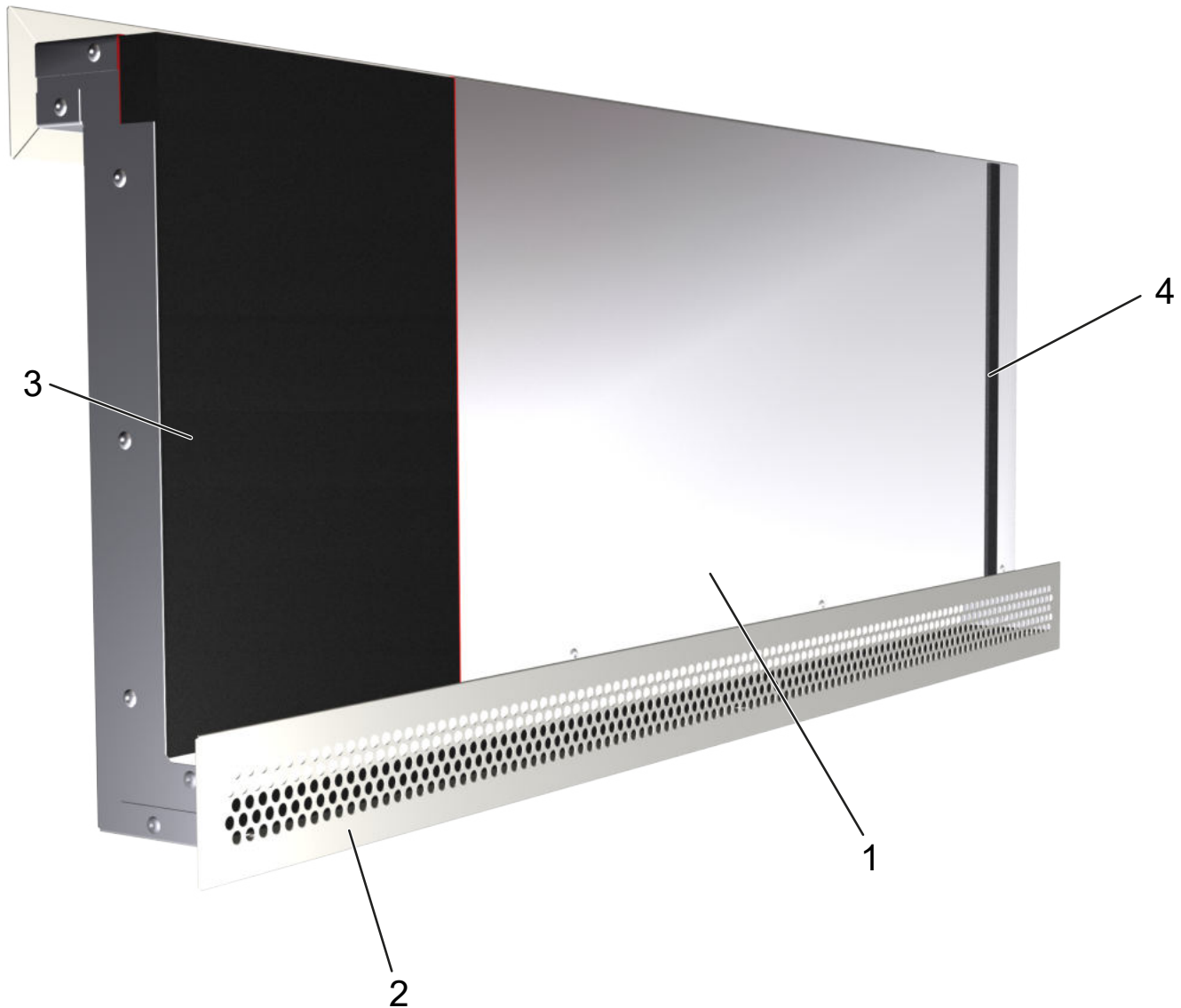
- Low maintenance, as there is no wear and tear due to design and materials used
- Inspection and cleaning according to VDI 6022

## Function

Type CFE crossflow elements can be installed in lightweight partition walls. Due to the pressure difference, the air flows e.g. from the office area as exhaust air into the hallway, into indoor zones or neighbouring areas with suspended ceilings. A central

exhaust air system can be used there. Integrated acoustic lining reduces noise transmission into adjacent rooms. To avoid sound transmission on lightweight walls, insulation strips are attached to the casing for sound decoupling.

### Schematic illustration, CFE-Z-PP



- 1 Casing
- 2 Perforated sheet metal diffuser face
- 3 Sound insulation material made of mineral wool
- 4 Sealing strips

## Technical data

Nominal lengths	550 - 1175 in mm increments
Nominal height	290 - 440 in mm increments
maximum volume flow at $\Delta p_t = 5$ Pa, T-style construction, with slot cover	124 m <sup>3</sup> /h
maximum volume flow at $\Delta p_t = 5$ Pa, Z-style construction, with slot cover	120 m <sup>3</sup> /h
maximum volume flow at $\Delta p_t = 10$ Pa, T-style construction, with slot cover	175 m <sup>3</sup> /h
maximum volume flow at $\Delta p_t = 10$ Pa, Z-style construction, with slot cover	169 m <sup>3</sup> /h

## 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.

### Weighted sound reduction index, standard sound pressure level and sound power level, $L_N = 550$ , $S = 0.019$ m<sup>2</sup>

Variant	$H_N$	$R_w$ [dB]	$D_{n,e,w}$ [dB]	$\Delta p_t = 5$ Pa		$\Delta p_t = 10$ Pa	
				$q_v$ [m <sup>3</sup> /h]	$L_{wa}$ [dB(A)]	$q_v$ [m <sup>3</sup> /h]	$L_{wa}$ [dB(A)]
CFE-T-SC	290	13.5	40.7	58	<15	82	16
CFE-T-SC	340	16	43.2	57	<15	80	15
CFE-T-SC	440	19.2	46.4	54	<15	77	<15
CFE-T-PP	290	13.5	40.7	49	<15	70	<15
CFE-T-PP	340	16.5	43.7	48	<15	68	<15
CFE-T-PP	440	19.4	46.6	47	<15	66	<15
CFE-Z-SC	290	13.4	40.6	56	<15	79	19
CFE-Z-SC	340	14.8	42	55	<15	78	19
CFE-Z-SC	440	20.8	48	53	<15	75	18
CFE-Z-PP	290	13.3	40.5	47	<15	66	17
CFE-Z-PP	340	15	42.2	46	<15	65	17
CFE-Z-PP	440	20.8	48	45	<15	63	16

### Weighted sound reduction index, standard sound pressure level and sound power level, $L_N = 850$ , $S = 0.030$ m<sup>2</sup>

Variant	$H_N$	$R_w$ [dB]	$D_{n,e,w}$ [dB]	$\Delta p_t = 5$ Pa		$\Delta p_t = 10$ Pa	
				$q_v$ [m <sup>3</sup> /h]	$L_{wa}$ [dB(A)]	$q_v$ [m <sup>3</sup> /h]	$L_{wa}$ [dB(A)]
CFE-T-SC	290	13.5	38.8	90	<15	127	18
CFE-T-SC	340	16	41.3	88	<15	124	17
CFE-T-SC	440	19.2	44.5	84	<15	119	16
CFE-T-PP	290	13.5	38.8	76	<15	108	<15
CFE-T-PP	340	16.5	41.8	74	<15	105	<15
CFE-T-PP	440	19.4	44.7	73	<15	103	<15
CFE-Z-SC	290	13.4	38.7	87	<15	123	21
CFE-Z-SC	340	14.8	40.1	85	<15	121	21
CFE-Z-SC	440	20.8	46.1	82	<15	116	19
CFE-Z-PP	290	13.3	38.6	72	<15	102	19
CFE-Z-PP	340	15	40.3	71	<15	100	19
CFE-Z-PP	440	20.8	46.1	69	<15	98	18

**Weighted sound reduction index, standard sound pressure level and sound power level,  $L_N = 1000$ ,  $S = 0.035 \text{ m}^2$** 

Variant	$H_N$	$R_w$ [dB]	$D_{n,e,w}$ [dB]	$\Delta p_t = 5 \text{ Pa}$		$\Delta p_t = 10 \text{ Pa}$	
				$q_v$ [m <sup>3</sup> /h]	$L_{wa}$ [dB(A)]	$q_v$ [m <sup>3</sup> /h]	$L_{wa}$ [dB(A)]
CFE-T-SC	290	13.5	38.1	105	<15	149	18
CFE-T-SC	340	16	40.6	103	<15	146	18
CFE-T-SC	440	19.2	43.8	99	<15	140	17
CFE-T-PP	290	13.5	38.1	90	<15	127	15
CFE-T-PP	340	16.5	41.1	87	<15	124	<15
CFE-T-PP	440	19.4	44	85	<15	121	<15
CFE-Z-SC	290	13.4	38	102	<15	144	22
CFE-Z-SC	340	14.8	39.4	100	<15	142	21
CFE-Z-SC	440	20.8	45.4	96	<15	136	20
CFE-Z-PP	290	13.3	37.9	85	<15	120	20
CFE-Z-PP	340	15	39.6	83	<15	117	19
CFE-Z-PP	440	20.8	45.4	81	<15	115	19

**Weighted sound reduction index, standard sound pressure level and sound power level,  $L_N = 1175$ ,  $S = 0.041 \text{ m}^2$** 

Variant	$H_N$	$R_w$ [dB]	$D_{n,e,w}$ [dB]	$\Delta p_t = 5 \text{ Pa}$		$\Delta p_t = 10 \text{ Pa}$	
				$q_v$ [m <sup>3</sup> /h]	$L_{wa}$ [dB(A)]	$q_v$ [m <sup>3</sup> /h]	$L_{wa}$ [dB(A)]
CFE-T-SC	290	13.5	37.4	124	<15	175	19
CFE-T-SC	340	16	39.9	121	<15	171	18
CFE-T-SC	440	19.2	43.1	116	<15	164	17
CFE-T-PP	290	13.5	37.4	105	<15	149	16
CFE-T-PP	340	16.5	40.4	103	<15	145	15
CFE-T-PP	440	19.4	43.3	100	<15	142	<15
CFE-Z-SC	290	13.4	37.3	120	<15	169	22
CFE-Z-SC	340	14.8	38.7	118	<15	167	22
CFE-Z-SC	440	20.8	44.7	113	<15	160	21
CFE-Z-PP	290	13.3	37.2	100	<15	141	21
CFE-Z-PP	340	15	38.9	98	<15	138	20
CFE-Z-PP	440	20.8	44.7	95	<15	135	19

## 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

Crossflow elements with cross talk silencers are used for air transfer flow into adjacent rooms and are suitable for comfort areas.

The crossflow element is available in rectangular Z or T design.

The nominal height and nominal length are variable within the limits in mm steps. Therefore, the crossflow element can be optimally adapted to project-specific requirements.

The design without recess for an air diffuser offers builders and architects, in compliance with the free cross section of  $\geq 51\%$ , various design options. For the version with recess for an air diffuser, a choice can be made between different diffuser fronts.

The perforated diffuser face -PP has a free area of approx. 51%. The hole diameter is 6 mm, staggered pitch.

Fixing a diffuser face to the crossflow element after the drywalling has been completed is quick and easy.

The crossflow element includes a cross talk silencer with acoustic lining that reduces noise transmission to adjacent rooms. To prevent sound transmission via the casing, sealing strips are attached to the crossflow element.

Suitable for the space saving or concealed installation in lightweight partition walls with different stand widths.

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

Sound reduction index according to DIN EN ISO 10140 and DIN EN ISO 717-1.

Crossflow element and diffuser face made of galvanised sheet steel.

Sound insulation material made of mineral wool.

Mineral wool:

- Mineral wool on surfaces in contact with air are laminated with glass fibre fabric, abrasion-resistant up to 20 m/s
- Acc. to EN 13501, fire rating 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

### Equivalence criteria

- Different construction styles and sizes allow for meeting local and project-specific requirements
- Low differential pressure
- The crossflow element in Z-style construction without a recess for the diffuser face is suitable for thin lightweight partition walls with metal support structure
- An integrated cross talk silencer reduces noise transmission into adjacent rooms.
- Sealing strips on the casing minimise noise transmission
- Diffuser face powder-coated in a RAL CLASSIC colour scale

### Variants

Surface finish of diffuser faces:

- Powder-coated RAL 9010, pure white, GU 50
- P1: powder-coated RAL 9006, white aluminium, GU30
- P1: powder-coated in other RAL CLASSIC colours, GU 70

### Technical data

- Nominal length: 550 to 1175 mm (in increments of 1 mm)
- Nominal height: 290 to 440 mm (in increments of 1 mm)
- Maximum volume flow rate  $\Delta p_t = 5 \text{ Pa}$ : 124 m<sup>3</sup>/h
- Maximum volume flow rate  $\Delta p_t = 10 \text{ Pa}$ : 175 m<sup>3</sup>/h

### Sizing data

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

## Order code

CFE – T – SC / 850 × 340 / P1 - RAL 9016  
| 1 | 2 | 3 | 4 | 5

**1 Type**

CFE Crossflow element

Nominal length

**550 – 1175****2 Construction**

Z Z-style

Nominal height

T T-style

**290 – 440** (standard height 340)**3 Air terminal device**

No entry: without recess for diffuser face

**5 Diffuser face surface**

No entry: powder-coated RAL 9010 (pure white)

With recess for diffuser face

**P1** Powder-coated, specify RAL CLASSIC colour**PP** Perforated metal diffuser faces

Gloss level

**SC** Slot diffuser faces

RAL 9010 GU50

RAL 9006 GU30

**4 Nominal size [mm]**

Nominal length × nominal height

All other RAL colours GU70

**Order example: CFE-T-SC/850×300/P1-RAL9016**

Type	CFE
Construction	T-style
Air terminal device	Slot diffuser faces
Nominal size [mm]	Nominal length 850, nominal height 300
Diffuser face surface	Powder-coated RAL 9016 (traffic white)

**Order example: CFE-Z/1000×340**

Type	CFE
Construction	Z-style
Air terminal device	Without recess for diffuser face
Nominal size [mm]	Nominal length 1000, nominal height 340

**Order example: CFE-T-PP/1175×440/P1-RAL9006**

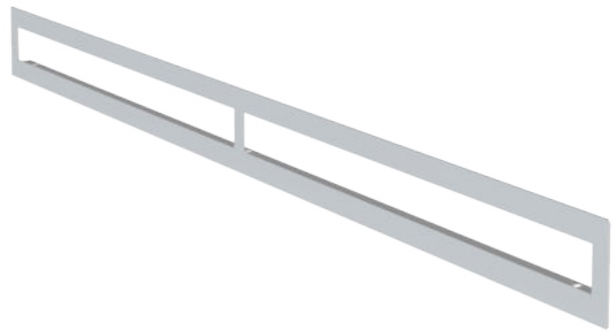
Type	CFE
Construction	T-style
Air terminal device	Perforated metal diffuser faces
Nominal size [mm]	Nominal length 1175, nominal height 440
Diffuser face surface	Powder-coated RAL 9006, white aluminium

## Variants

Perforated sheet cover PP



Slot diffuser face SC



CFE-T-PP



CFE-T-SC





CFE-Z-PP



CFE-Z-SC



CFE-T

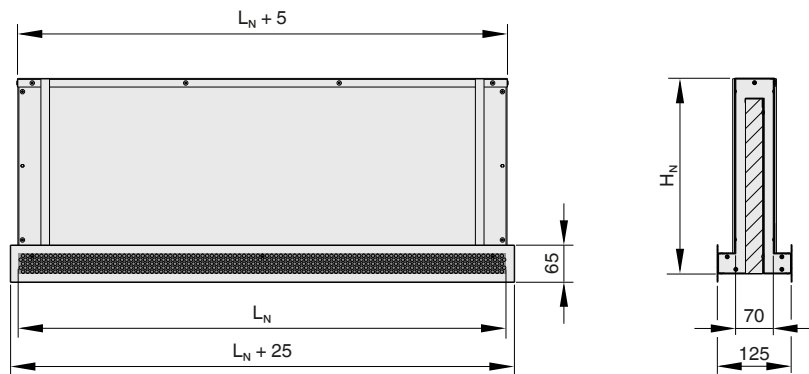


CFE-Z



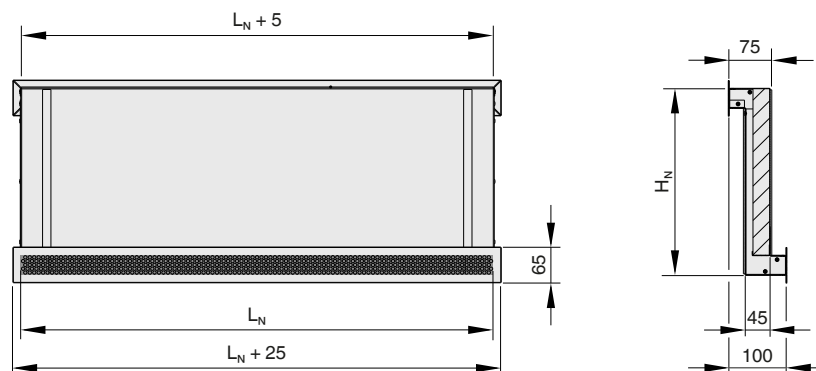
## Dimensions

### CFE-T-PP/SC, with recess and front cover



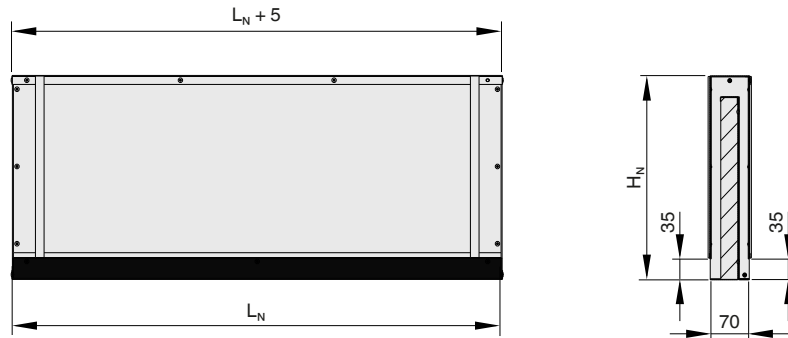
$L_N \geq 1000$  with 3 sealing strips

### CFE-Z-PP/SC, with recess and front cover



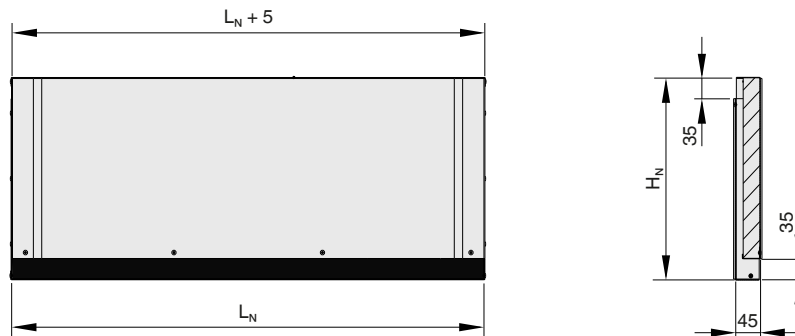
$L_N \geq 1000$  with 3 sealing strips

**CFE-T, without recess**



$L_N \geq 1000$  with 3 sealing strips

**CFE-Z, without recess**



$L_N \geq 1000$  with 3 sealing strips

**Weight [kg]**

$L_N$	Diffuser face PP/SC	T-style casing						Z-style casing					
		without recess for diffuser face			with recess for air diffuser			without recess for diffuser face			with recess for air diffuser		
		$H_N = 290$	$H_N = 340$	$H_N = 440$	$H_N = 290$	$H_N = 340$	$H_N = 440$	$H_N = 290$	$H_N = 340$	$H_N = 440$	$H_N = 290$	$H_N = 340$	$H_N = 440$
550	0.3	4.6	5.4	6.8	4.9	5.7	7.2	2.6	3	4	3.0	3.5	4.3
850	0.5	6.9	8	10.3	7.4	8.5	10.8	4	4.6	5.8	4.5	5.2	6.4
1000	0.6	8	9.4	12	8.6	10	12.6	4.6	5.4	6.8	5.3	6	7.5
1175	0.7	9.4	11	14	10	11.6	14.7	5.4	6.2	8	6.2	7	8.7

Version with recess for air diffuser: Total weight = 2 × weight of cover + weight of casing.

Version without recess for air diffuser = casing weight.

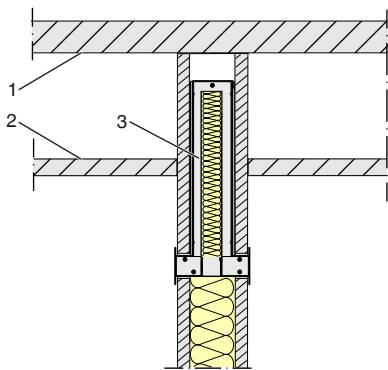
## Product details

### Installation and commissioning

- Preferably for rooms with a clear height up to 4.0 m
- Installation in lightweight partition walls
- Construction lengths partly suitable for the common distances of the metal stud frame; some change may be required for the CW profiles
- Suitable fixing material and additional material to prevent noise transmission is to be provided on site

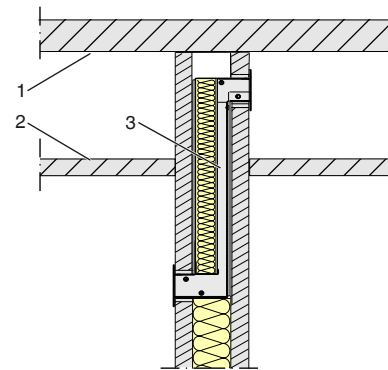
The schematic diagrams are provided to illustrate installation details.

### CFE-T-PP/SC, installation in lightweight partition wall



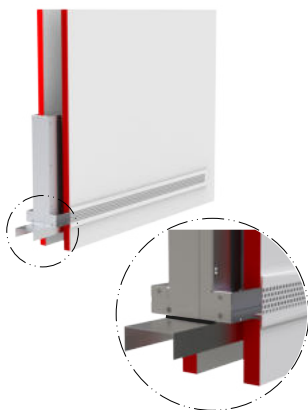
- 1 Ceiling slab
- 2 Suspended ceiling
- 3 Crossflow element

### CFE-Z-PP/SC, installation in lightweight partition wall



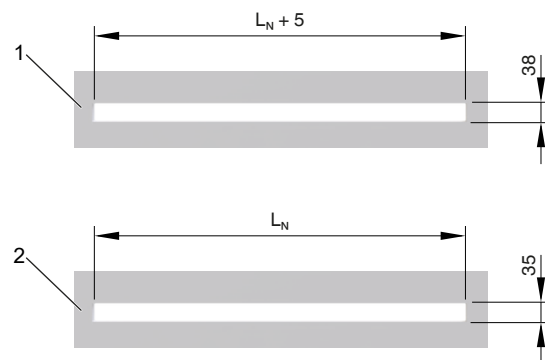
- 1 Ceiling slab
- 2 Suspended ceiling
- 3 Crossflow element

### Installation on a C-section



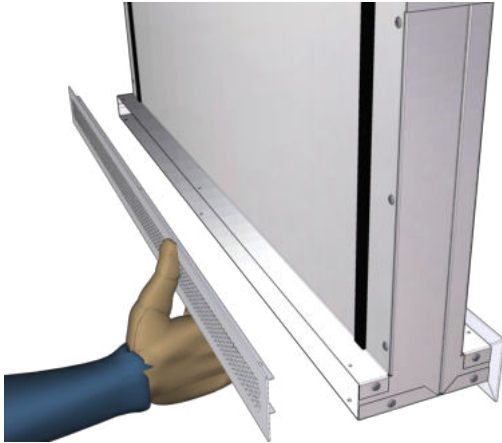
Installation in lightweight walls with metal stud frame  
Noise insulation between C-section and crossflow element on site

### Wall opening

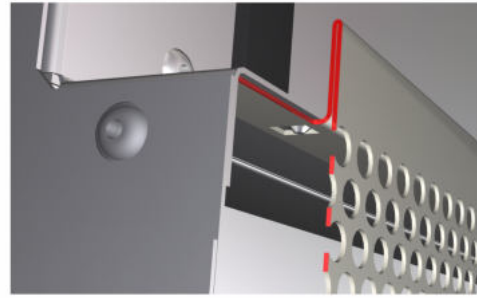


- 1 With recess for air diffuser
- 2 Without recess for diffuser face, maximum wall opening

Fitting of the diffuser face



Indentation in the casing



The diffuser face has to lock into the indentations. Make sure that it sits correctly and firmly.

## Nomenclature

**m** [kg]

Weight

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

Nominal height

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

Nominal length

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

A-weighted sound power level of air-regenerated noise

**D<sub>n,e,w</sub>** [dB]

Standard sound power level difference

**R<sub>w</sub>** [dB]

Weighted sound reduction index

**S** [m<sup>2</sup>]

Test area (part)

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

Volume flow rate

**Δp<sub>t</sub>** [Pa]

Total differential pressure

### Lengths

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