

CFC

Clean Filter Cassettes for Clean Areas



Ordering codes

			CFC-
Design type	Classic		C
	Basic		B
	Gel filter gasket		G
	Rectangular inlet (low height profile)		R
	Wall (for mounting into the wall)		W
Front panel fitting surface ¹	Simple		2
	With alignment rim		1
Supply ²	Horizontal		H
	Vertical		V
Filter dimensions	Length × width × thickness (80 mm as standard)	L × W × T	
Connection nominal size ⁶	DN (mm)	DN100 ... DN315	
Filter class ⁵	Acc. to EN1822	H11 ... H14	
Front panel – diffuser ⁷	NOVA-A for type W	NA	
	Perforated panel, fixing type 4, type C, B, G, R	PP	
	SINUS-F, fixing type 4, only square dimensions, type C, B, G, R	SF	
	ADQ, fixing type 1, only square dimensions, type C, B, G, R	AQ	
	VVKR, fixing type 1, only square dimensions, type C, B, G, R	VR	
	VVKN, fixing type 1, only square dimensions, type C, B, G, R	VN	
Ceiling type, raster ³	Plasterboard	P	
	Metal plate ceiling, raster 600	S600	
	Metal plate ceiling, raster 625	S625	
	T-bar ceiling, raster 600	T600	
Surface finish ⁴	White RAL9010, 30% gloss	RAL9010	
	Other RAL colors	RALxxxx	

Ordering codes – example:

CFC - C - 1 - H - 535×535×80 - VR - RAL9010

Clean filtering cassette, „Classic“ design, front panel fitting surface with an alignment rim, with horizontal connection, filter dimensions 535×535×80, front panel VR mounted by 1 central bolt, white surface.

NOTES:

1. See „Detail“ in Fig. 1... Fig. 4. Not defined for design type W (Wall).
2. For the design type R (rectangular supply) the only possible supply orientation is horizontal.
3. Details of mounting can be found in Fig. 8 - 10, for a specified „S“ or T-bar „T“ ceiling type and raster size the clean hood will be delivered including a mounted ledge (position 4 on Fig. 8, 9) to enable adjustment to the installation opening size. If type P or no type is specified, the clean filtering cassette will be delivered without the ledge.
4. If no RAL color finish is defined, so RAL 9010 will be delivered.
5. If no filter class is defined, so the class H14 will be delivered as standard.
6. For some CFC with circular connection there are 2 standard dimensions defined. If no dimension of connection is defined, the the bigger one of the two possible dimensions will be delivered. See the filter cassettes size tables.
7. Front panel fixing (ceiling installation); type1: 1 bolt in center of the plate; type 4: 4 bolts in the edges of the plate

Description

The clean filtering cassettes for clean areas are intended for filtering the air supplied into areas with high requirements for hygiene and dust-free environment, such as operating rooms, intensive care units, laboratories, dust-free manufacturing areas etc. It is possible to install filters that have a filtration class up to H14 with rubber sealings or gel gaskets into the filtering cassettes for the highest possible tightness.

The design range enables clean filtering cassette selection

- for mounting into different types of ceilings as well as walls.
- for narrowed-down ceiling spaces with a clearance height of 300 mm.
- for horizontal and vertical supply air ducts.
- for less challenging applications with lower price requirements.
- for the highest requirements for supply air cleanliness and airtightness of the ventilation elements.
- with front panels with diffuser functionality and ventilation grilles with different air flow patterns for installation heights up to 4m from the occupied zone.
- with an option to check the filter tightness and clogging level by measurement, with a simple maintenance.

Information about accessories for CFC is available on page 9.

- VN, VR, AQ, SF, PP - Front diffuser panels
- NA - Ventilation grille
- Ledge for mounting into the ceiling

Design

Material used

All the clean filtering cassette types are manufactured from a steel sheet with a powder lacquer surface finish, white RAL9010 gloss 30 as standard. The structural joints on the clean filtering cassette casings are consistently welded to ensure the cassette airtightness in front of as well as behind the filter.

Type B's (basic) joints in front of the filter are spot point welded, which means they are, from the tightness perspective, sufficient for applications that do not require absolute tightness.

The sealing areas for the filters are smooth for rubber sealings for types C, B, R, W. For type G the blade sealing area is used for the gel gasket.

The filter installation into the clean filtering cassette and sealing pressure onto the sealing areas for types C, B, R, W are ensured by 4 thread pressure mechanisms in the filtering cassette corners. Type G uses 4 spring mechanisms in the filtering cassette corners.

For a more detailed description, please see chapter "Mounting" (page 10).

The ceiling filtering cassette types are delivered with two types of diffuser fitting surface designs – the filtering cassette face in the fitting area can be ended either with an alignment rim (type 1) or without it (type 2).

For the type 2 fitting surface, the front panels (diffusers) are mounted either using one central bolt into the mounting bridge, or using four bolts in the filtering cassette corners. More specific details regarding the fitting surface types, their mounting and their purpose assignment for different installation approaches can be found in Fig. 8 - 10 and Tab. 1 - 7. The front panels (diffusers) supplied along with the ceiling filtering cassettes correspond in type names, parameters and design with the standard Systemair diffusers.

The wall filtering cassette type is by default delivered including a ventilation grille NOVA-A.

CFC-C

- Whole box hermetically welded
- Ceiling installation
- Flat rubber gasket filter sealing surface
- Air tight circular connection, horizontal or vertical
- Front plate fixing type 1 (1 central bolt) or type 4 (4 edge bolts)
- Front plate fitting surface type 1 (for plaster ceiling) or type 2 (for T-bar or plate ceiling)

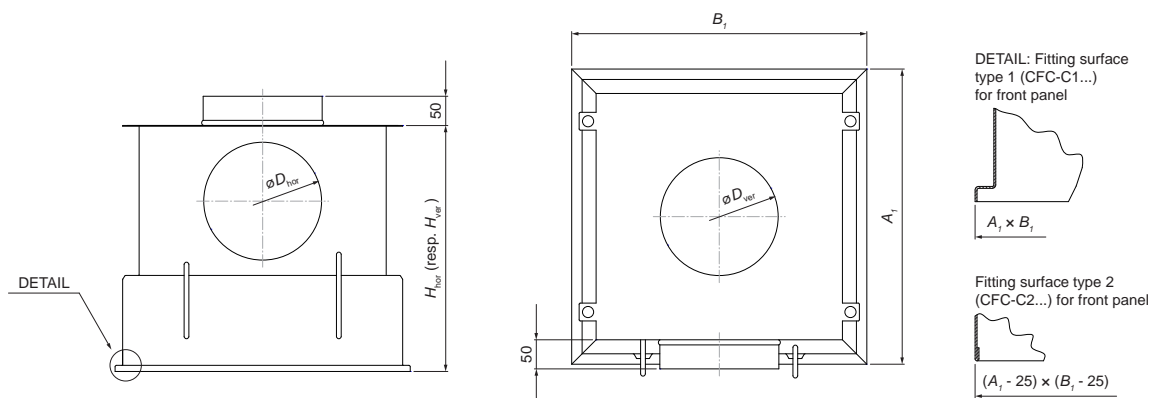


Fig. 1: Ceiling clean filtering cassette CFC-C (Classic)

NOTES: H_{hor} is specified for the horizontal supply connection; H_{ver} is specified for the vertical supply connection.

CLASSIC - type 1 panel fitting surface	Filter dimensions $A \times B \times T$	A_1	B_1	$\phi D / DN$	H_{hor} Supply (horizontal)	H_{ver} Supply (vertical)
Label - dimension	(mm)					
CFC-C1-H(V)-305×305×80	305 × 305 × 80	343	343	158 / 160	338	260
CFC-C1-H(V)-305×305×150	305 × 305 × 150				408	330
CFC-C1-H(V)-457×457×80	457 × 457 × 80	495	495	198 / 200	388	260
CFC-C1-H(V)-457×457×150	457 × 457 × 150				458	330
CFC-C1-H(V)-535×535×80	535 × 535 × 80	573	573	198 / 200	388	260
CFC-C1-H(V)-535×535×150	535 × 535 × 150				458	330
CFC-C1-H(V)-557×557×80	557 × 557 × 80	595	595	198 / 200	388	260
CFC-C1-H(V)-557×557×150	557 × 557 × 150				458	330
CFC-C1-H(V)-575×575×80	575 × 575 × 80	613	613	198 / 200	388	260
CFC-C1-H(V)-575×575×150	575 × 575 × 150				458	330
CFC-C1-H(V)-610×610×80	610 × 610 × 80	648	648	313 / 315	388	260
CFC-C1-H(V)-610×610×150	610 × 610 × 150				558	330

Tab. 1: Ceiling clean filtering cassette CFC-C (Classic) – type 1 front panel fitting surface

CLASSIC - type 2 panel fitting surface	Filter dimensions $A \times B \times T$	A_1	B_1	$\phi D / DN$	H_{hor} Supply (horizontal)	H_{ver} Supply (vertical)	Ceiling type, raster *			
							S600	S625	T600	T625
Label - dimension	(mm)									
CFC-C2-H(V)-305×305×80	305 × 305 × 80	318	318	158 / 160	333	255	✓	✓	✓	✓
CFC-C2-H(V)-305×305×150	305 × 305 × 150				403	325				
CFC-C2-H(V)-457×457×80	457 × 457 × 80	470	470	198 / 200	383	255	✓	✓	✓	✓
CFC-C2-H(V)-457×457×150	457 × 457 × 150				453	325				
CFC-C2-H(V)-535×535×80	535 × 535 × 80	548	548	198 / 200	383	255	✓	✓	✓	✓
CFC-C2-H(V)-535×535×150	535 × 535 × 150				453	325				
CFC-C2-H(V)-557×557×80	557 × 557 × 80	570	570	198 / 200	383	255	✓	✓	✓	✓
CFC-C2-H(V)-557×557×150	557 × 557 × 150				453	325				
CFC-C2-H(V)-575×575×80	575 × 575 × 80	588	588	198 / 200	383	255	✓	✓	✓	✓
CFC-C2-H(V)-575×575×150	575 × 575 × 150				453	325				
CFC-C2-H(V)-610×610×80	610 × 610 × 80	623	623	313 / 315	383	255	✗	✗	✗	✗
CFC-C2-H(V)-610×610×150	610 × 610 × 150				553	325	✗	✗	✗	✗

Tab. 2: Ceiling clean filtering cassette CFC-C (Classic) – type 2 front panel fitting surface

NOTES: * S600 - Metal plate ceiling, raster 600; S625 - Metal plate ceiling, raster 625; T600 - T-bar, raster 600; T625 - T-bar, raster 625

CFC-G

- Whole box hermetically welded
- Ceiling installation
- Blade gel gasket filter sealing surface (absolute tight)
- Air tight circular connection, horizontal or vertical
- Front plate fixing type 1 (1 central bolt)
- Front plate fitting surface type 1 (for plaster ceiling)

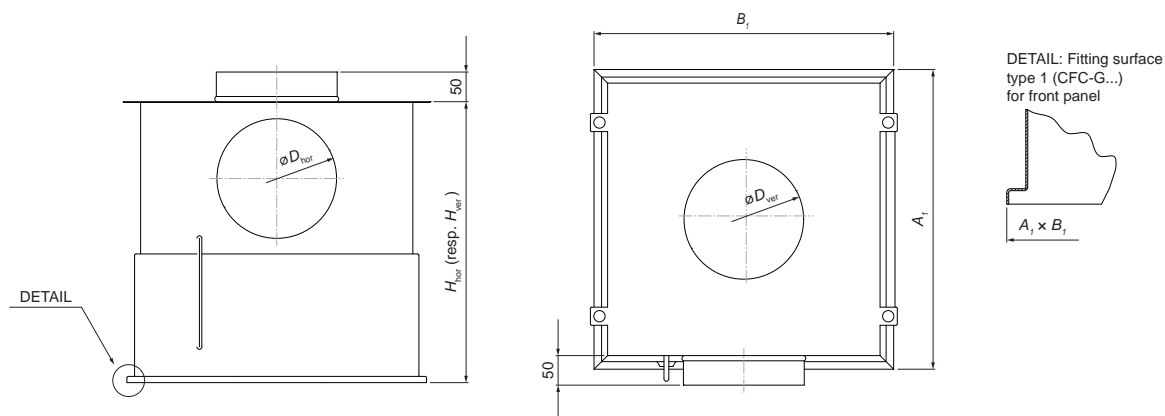


Fig. 3: Ceiling clean filtering cassette CFC-G (Gel gasket)

GEL - type 1 panel fitting surface	Filter dimensions $A \times B \times T$	A_1	B_1	H_{hor} Supply (horizontal)	H_{ver} Supply (vertical)	$\phi D_{hor} / \phi D_{ver}$
Label - dimension	(mm)					
CFC-G-H(V)-610×610-128	610 × 610 × 128	649	649	563	361	248
CFC-G-H(V)-610×610-80	610 × 610 × 80			465		
CFC-G-H(V)-545×545-80	545 × 545 × 80	584	584	425	313	198
CFC-G-H(V)-457×457-80	457 × 457 × 80	496	496			
CFC-G-H(V)-305×305-80	305 × 305 × 80	344	344			

Tab. 5: Ceiling clean filtering cassette CFC-G (Gel gasket)

CFC-R

- Whole box hermetically welded
- Ceiling installation
- Box height 290 mm for low ceiling spaces
- Flat rubber gasket filter sealing surface
- Flanged rectangular connection, horizontal
- Front plate fixing type 1 (1 central bolt) or type 4 (4 edge bolts)
- Front plate fitting surface type 1 (for plaster ceiling) or type 2 (for T-bar or plate ceiling)

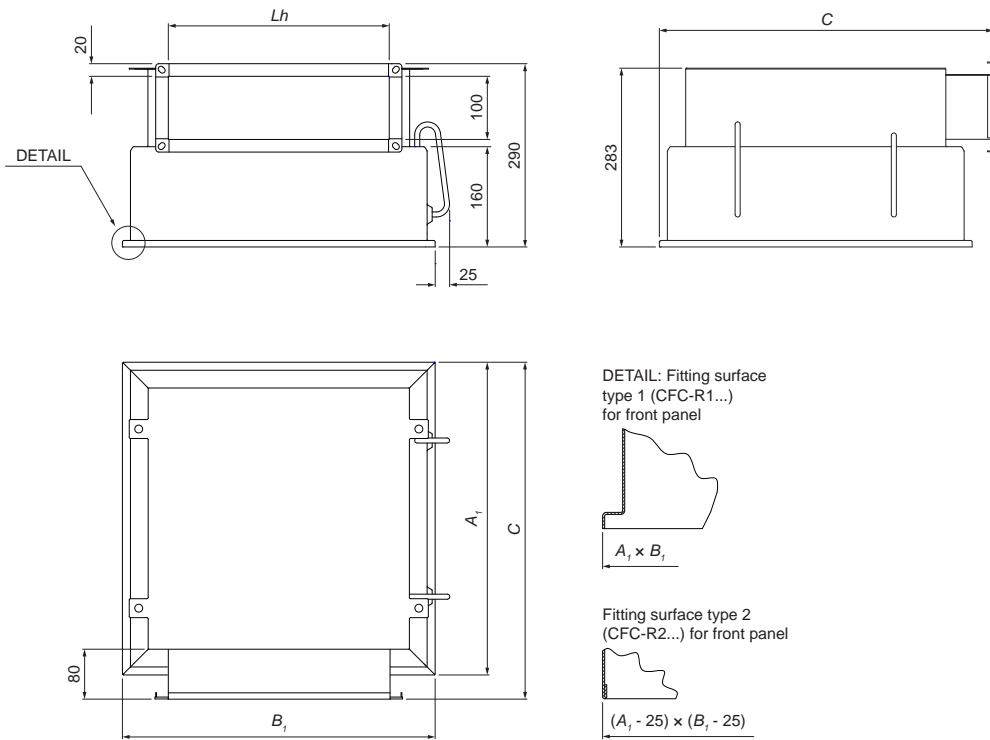


Fig. 4: Ceiling clean filtering cassette CFC-R (with a right-angle supply connection)

RECTANGULAR - type 1 panel fitting surface	Filter dimensions $A \times B \times T$	A_1	B_1	C	L_h
Label - dimension	(mm)				
CFC-R1-H-305×305×80	305 × 305 × 80	343,0	343,0	382,0	200
CFC-R1-H-457×457×80	457 × 457 × 80	495,0	495,0	534,0	350
CFC-R1-H-535×535×80	535 × 535 × 80	573,0	573,0	612,0	450
CFC-R1-H-557×557×80	557 × 557 × 80	595,0	595,0	634,0	
CFC-R1-H-575×575×80	575 × 575 × 80	613,0	613,0	652,0	500
CFC-R1-H-610×610×80	610 × 610 × 80	648,0	648,0	687,0	

Tab. 6: Ceiling clean filtering cassette CFC-R (with a right-angle supply connection) – type 1 front panel fitting surface

RECTANGULAR - type 2 panel fitting surface	Filter dimensions $A \times B \times T$	A_1	B_1	C	L_h	Ceiling type, raster *			
Label - dimension	(mm)					S600	S625	T600	T625
CFC-R2-H-305×305×80	305 × 305 × 80	318	318	368	200				
CFC-R2-H-457×457×80	457 × 457 × 80	470	470	520	350				
CFC-R2-H-535×535×80	535 × 535 × 80	548	548	598	450	✓	✓	✓	✓
CFC-R2-H-557×557×80	557 × 557 × 80	570	570	620					
CFC-R2-H-575×575×80	575 × 575 × 80	588	588	638	500	✗		✗	
CFC-R2-H-610×610×80	610 × 610 × 80	623	623	673		✗	✗	✗	✗

Tab. 7: Ceiling clean filtering cassette CFC-R (with a right-angle supply connection) – type 2 front panel fitting surface

NOTES: * S600 - Metal plate ceiling, raster 600; S625 - Metal plate ceiling, raster 625; T600 - T-bar, raster 600; T625 - T-bar, raster 625

CFC-W

- Whole box hermetically welded
- Wall installation
- Flat rubber gasket filter sealing surface
- Air tight circular connection, horizontal
- Front grille slide-in fixing

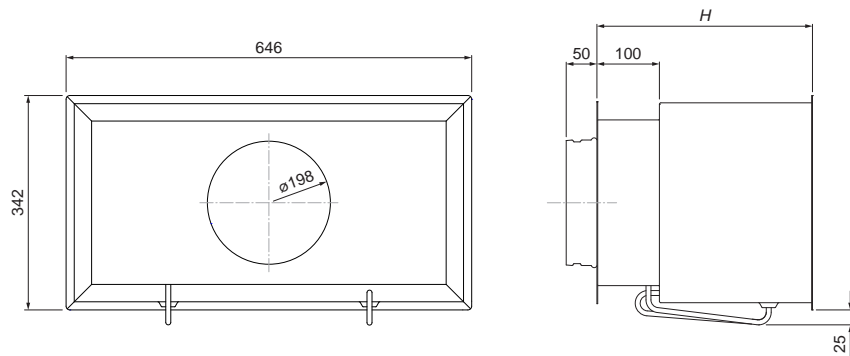


Fig. 5: Wall clean filtering cassette CFC-W

WALL - type 1 panel fitting surface	Filter dimensions A×B×T	H
Label - dimension	(mm)	
CFC-W-305×610×80	305 × 610 × 80	278
CFC-W-305×610×150	305 × 610 × 150	348

Tab. 8: Wall clean filtering cassette CFC-W

Design and mounting properties, accessories			Clean filtering cassette design type				
			C	B	G	R	W
Simple front panel fitting surface (type 2)		Mounting 1	VN, VR, AQ	VN, VR, AQ	✗	VN, VR, AQ	✗
		Mounting 4	SF, PP	SF, PP	✗	SF, PP	✗
Front panel fitting surface with an alignment rim (type 1)		Mounting 1	VN, VR	VN, VR	VN, VR	VN, VR	✗
		Mounting 4	SF, PP	SF, PP	✗	SF, PP	✗
Including a slide-in wall ventilation grille			✗	✗	✗	✗	NA
Supply connection	Horizontal	Round	Tight	Untight	Tight	✗	Tight
		Square	✗	✗	✗	Flange	✗
	Vertical	Round	Tight	✗	Tight	✗	✗
Filter sealing	Rubber		✓	✓	✗	✓	✓
	Gel gasket		✗	✗	✓	✗	✗
Mounting	Ceiling		✓	✓	✓	✓	✗
	Wall		✗	✗	✗	✗	✓

Tab. 9: An overview of the design and mounting properties and accessories
 NOTE: VN, VR, AQ, SF, PP, NA = front panel diffuser types, details can be found in Tab. 10

Technical parameters

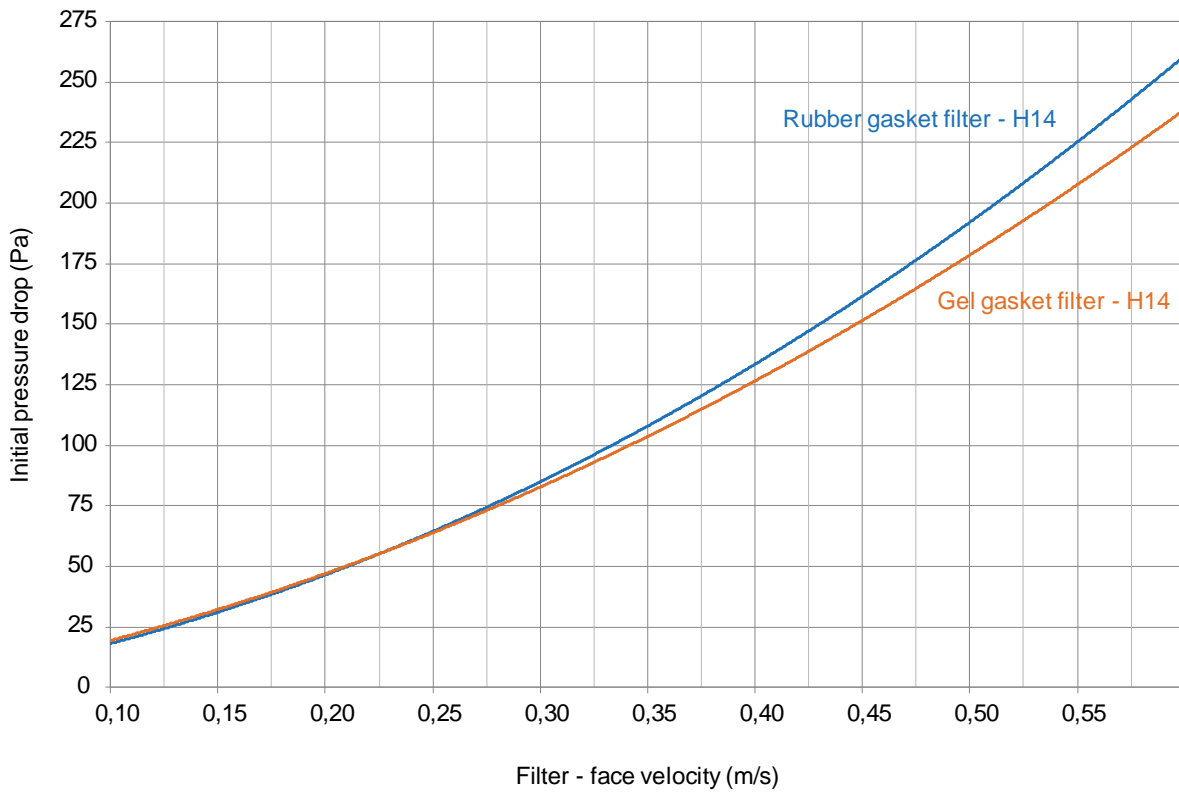


Diagram 1: Relation between filter face velocity and pressure drop on filtering cassettes without diffuser plate, equipped by 80 mm thick H14 filter with gel or rubber gasket respectively

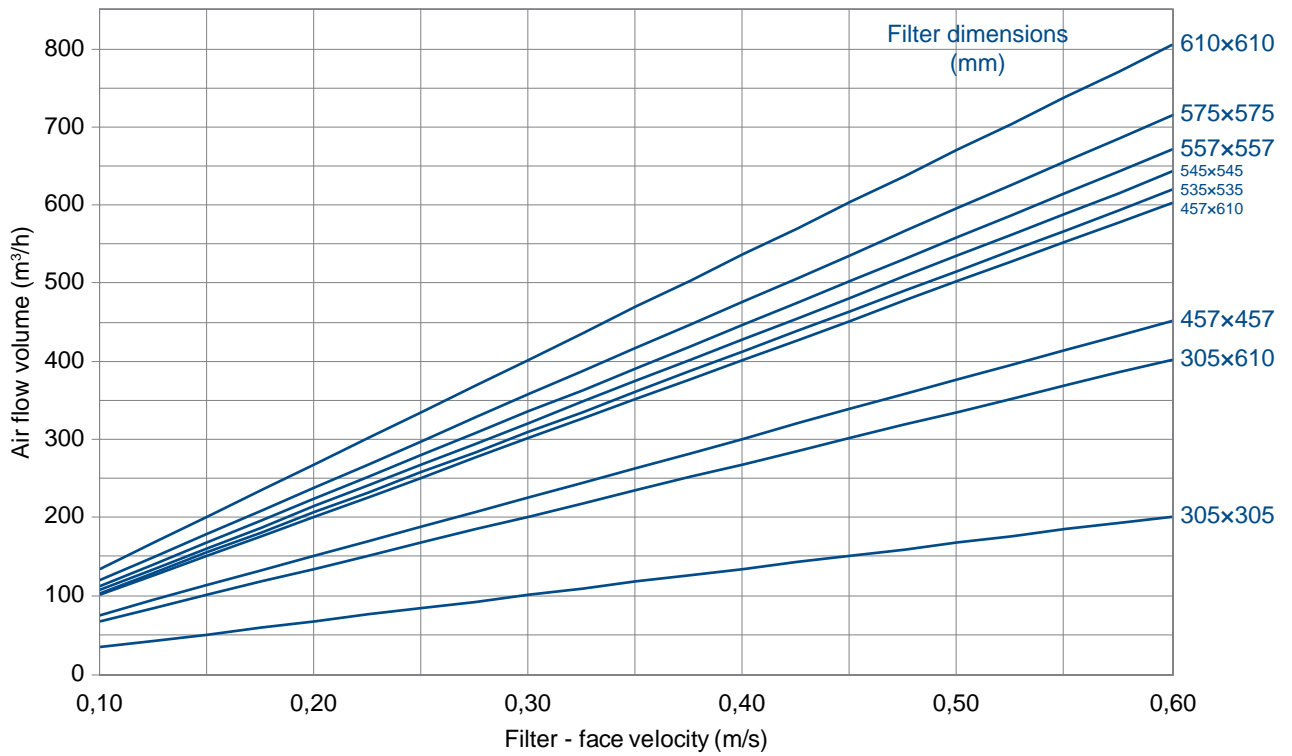


Diagram 2: Relation between filter face velocity and air flow volume on filtering cassettes without diffuser plate, equipped by 80 mm thick H14 filter with gel or rubber gasket

Accessories

Front diffuser panels, ventilation grilles

The clean filtering cassettes are delivered with diffuser panels, or grilles, respectively. From the design and parameter perspective they are identical to the standard systemair products, the only difference is in the outer dimensions. Further information about the parameters is therefore available in the technical documentation for the standard products. The technical documentation codes (TPI...) can be found in Tab. 10. The dimensions of the corresponding standard products are in the dimension part of Tab. 10, entered in brackets and marked with an asterisk (*). These accessories are standardly ordered along with the clean filtering cassette. It is needed to specify the panel or grille type in the ordering code. The surface finish and dimensions will be automatically adjusted to match the specific clean filtering cassette.

Ledge for mounting into a metal plate ceiling or T-bar ceiling

When mounting the clean filtering cassette into a metal plate ceiling or a T-bar ceiling, the clean filtering cassette is equipped with ledges to adjust the given clean filtering cassette dimensions to the installation opening size (position 4 on Fig. 8, 9). It is needed to specify the respective information into the „Ceiling type, raster“ field in the ordering code. The ledges are manufactured from a steel sheet with the same surface finish as the one chosen for the clean filtering cassette.



Fig. 6: The ledge for mounting into a metal plate ceiling or a T-bar ceiling

NOTE: By default, the ledge is supplied already mounted onto the clean filtering cassette, if the mounting into a specific ceiling type is entered in the ordering code.

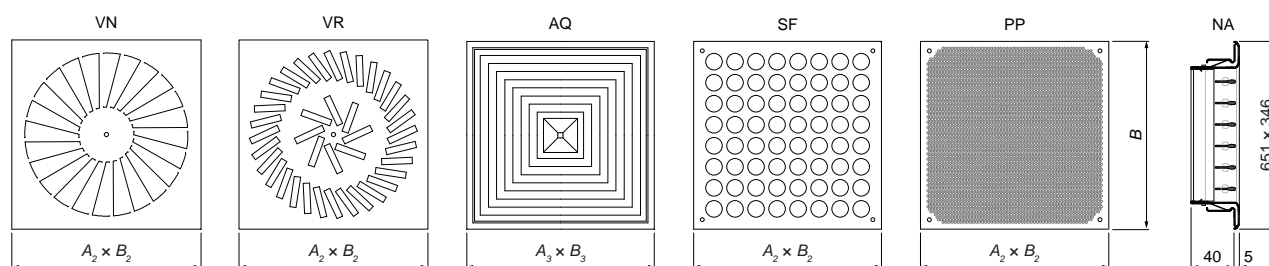


Fig. 7: Dimensions of front diffuser panels and grilles for the clean filtering cassettes.

Front panel for the clean filtering cassette	Corresponding ¹⁾	Front panel depiction	Mounting type	Panel shape	Installation	Dimensions	Dim.-Corresp. ²⁾	p ³⁾	Filter size (see Tab. 11)
						A ₁ × B ₁ resp. A ₂ × B ₂ (mm)			
VN	VVKN-A TPI-31		1	square	ceiling	338 × 338	300 × 300	8	S1
						490 × 490	500 × 500	16	S2
						568 × 568	600 × 600	24	S3
						580 × 580	600 × 600	24	S4
						590 × 590	600 × 600	24	S5
						608 × 608	600 × 600	24	S6
						643 × 643	600 × 600	24	S7
VR	VVKR-A TPI-19		1	square	ceiling	338 × 338	300 × 300	10	S1
						490 × 490	500 × 500	24	S2
						568 × 568	600 × 600	32	S3
						580 × 580	600 × 600	32	S4
						590 × 590	600 × 600	40	S5
						608 × 608	600 × 600	40	S6
						643 × 643	600 × 600	40	S7
AQ	ADQ TPI-21		1	square	ceiling	338 × 338	300 × 300	-	S1
						490 × 490	500 × 500	-	S2
						568 × 568	600 × 600	-	S3
						580 × 580	600 × 600	-	S4
						590 × 590	600 × 600	-	S5
						608 × 608	600 × 600	-	S6
						643 × 643	625 × 625	-	S7
SF	SINUS-F TPI-56		4	square	ceiling	338 × 338	-	-	S1
						490 × 490	-	-	S2
						568 × 568	-	-	S3
						580 × 580	-	-	S4
						590 × 590	-	-	S5
						608 × 608	-	-	S6
						643 × 643	-	-	S7
PP	-		4	square	ceiling	338 × 338	-	-	S1
						490 × 490	-	-	S2
						568 × 568	-	-	S3
						580 × 580	-	-	S4
						590 × 590	-	-	S5
						608 × 608	-	-	S6
						643 × 643	-	-	S7
NA	NOVA-A NOVA catalogue		SLIDE-IN	rectangle	wall	621 × 316	625 × 325	-	S8

Tab. 10: Front diffuser panels and grilles

NOTES:

- Corresponding** = Standard Systemair product corresponding in parameters and design
- Dim.-Corresp.** = Dimensions of a standard Systemair product with corresponding parameters and design
- p** = Number of vents on plate

Filter	Filter dimensions
	(mm)
S1	305 × 305
S2	457 × 457
S3	535 × 535
S4	545 × 545
S5	557 × 557
S6	575 × 575
S7	610 × 610
S8	305 × 610

Tab. 11: Main filter sizes

Mounting

The clean filtering cassettes that are intended for ceiling installation are mounted by suspension into a supporting ceiling. For this purpose they are equipped with suspension ears. The details of embedding for the respective types of suspension ceilings are demonstrated on Fig. 8 - 10. Clean filtering cassettes with type 1 fitting surface are by default intended for installation into a metal plate ceiling suspension ceiling (Fig. 8) and a T-bar suspension ceiling (Fig. 10). For mounting into a plasterboard suspension ceiling it is by default recommended to use the clean filtering cassette with the type 2 fitting surface (Fig. 9).

The wall clean filtering cassette mounting is done, depending on the wall type, the same way as it is done for standard plenum boxes along with a ventilation grille.

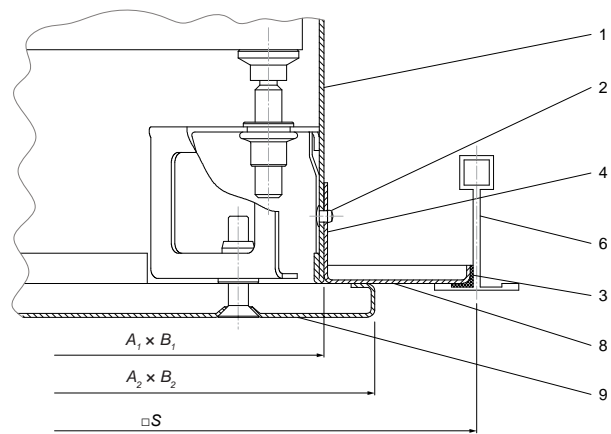


Fig. 10: Mounting of the clean filtering cassettes with the type 1 front panel fitting surface into a suspension T-bar ceiling.

Legend:

1. Clean filtering cassette
2. Rivet
3. Sealant
4. Ledge (CFC accessories)
5. Buffer section
6. Ceiling T-section
7. Plasterboard
8. Ceiling surface
9. Front panel (CFC accessories)
10. Ceiling panel

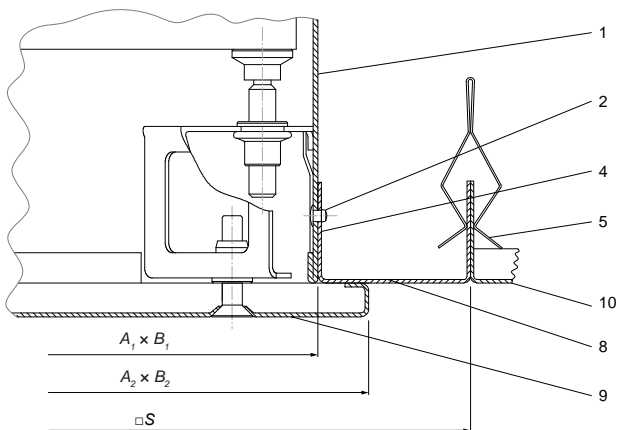


Fig. 8: Mounting of the clean filtering cassettes with the type 1 front panel fitting surface into a suspension metal plate ceiling.

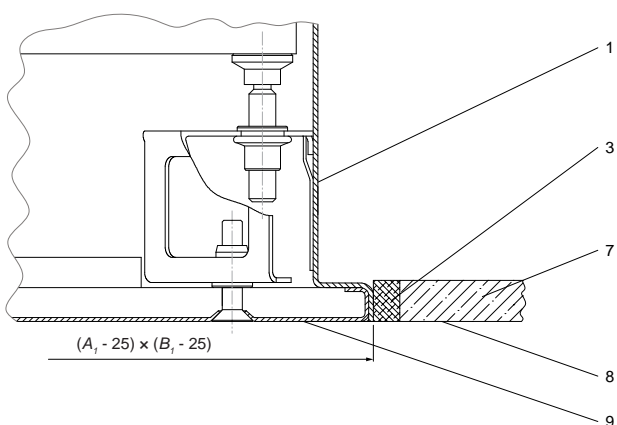


Fig. 9: Mounting of the clean filtering cassettes with the type 2 front panel fitting surface into a suspension plasterboard ceiling.