

Accessories

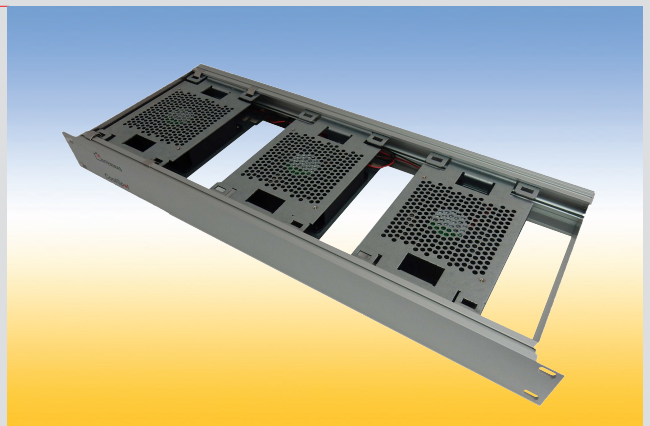
19" Cross-Flow Fan



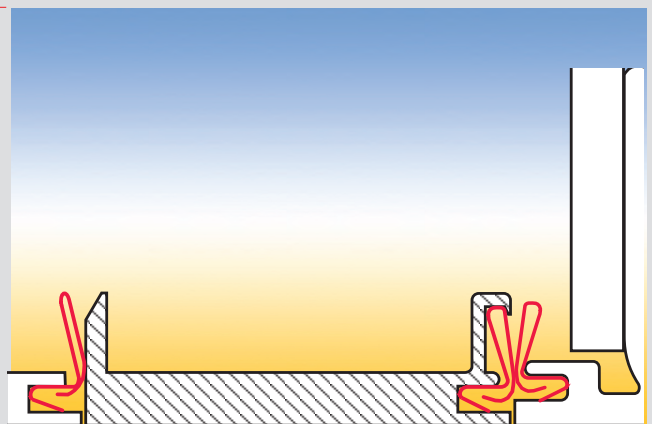
19" Fan Unit 1 U



CoolSpot



RFI Springs



19" Cross-Flow Fan



19" Cross-Flow Fan

For cooling of 160 mm deep modules.

Fan for cooling of 220 mm deep modules on request.

Delivery:

Cross-flow fan

Filter mat

Support grille for filter mat

Technical data

Power plant	current: squirrel-cage motor direct current: non commutator DC motor
Ambient temperature	current: -25 to +65 °C direct current: -25 to +55 °C
Bearings	grooved ball bearing
Life Expectancy	20.000 h
Protection class	IP 10 accordance to DIN 40050
Filter mat	Viledon PSB 145-S
Electrical connection	terminal strip on the back
Material	ventilator housing: steel side panel, flange, support grille, front grille: plastic
Finish	housing: galvanized and chromated

Ordering details 19" Cross-Flow Fan

	nom. depth [mm]	voltage [V]	frequency [Hz]	airflow [m³/h]	order no. 409.
for mounting into a cabinet EQR -160 KS	160	AC 230	50/60	260	091 833
GQR - 160 KS 24 VG	160	DC 24	-	260	091 844
for mounting into a housing EQR - 160 KG	160	AC 230	50/60	235	091 834

Accessories

	order no. 409.
Protection grille	091 836
Plastic motor protection hood	091 835
per pack 10 pieces	
Filter mat for EQR and GQR	026 519
Filter mat for EQR -160 KG	026 520

19" Fan Unit 1 U



Technical data

Ambient temperature	max. 70 °C
Max. static pressure	73 - 88 Pa
Noise level	56.5 - 60.2 dB (A)
Power consumption	45 / 42 W
Materials	front panel: 3 mm aluminum anodized, housing: 1 mm steel, al-zinc

Ordering details

	depth [mm]	voltage [V]	frequency [Hz]	airflow [m³/h]	order no. 409.
Fan unit 1U	193	AC 230	50/60	440-520	166 274

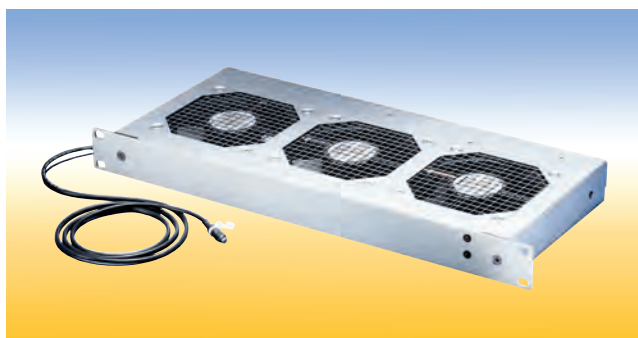
19" Fan Unit 1 U

For cooling of modules in cabinets or housings.

Delivery:

- 1 front panel
- 1 housing with grille
- 3 fans
- 1 power connector
- 1 strain-relief

Fan unit with 6 fans and other voltages on request.



Technical data

Ambient temperature	max. 65 °C
Max. static pressure	70 Pa
Noise level	63.5 dB (A)
Power consumption	15.9 W
Materials	front panel: 3 mm aluminum anodized, housing: 1 mm steel, al-zinc

Ordering details

	depth [mm]	voltage [V]	airflow [m³/h]	order no. 409.
Fan unit 1 U with speed monitoring and control	193	DC 24	467	166 276

19" Fan Unit 1 U with speed monitoring and control

For cooling of modules in cabinets or housings.

Delivery:

- 1 front panel
- 1 housing with grille
- 3 fans
- 1 connection cable, cable length 2.5 m, open end
- 1 temperature sensor external, NTC resistor, cable length 1.5 m

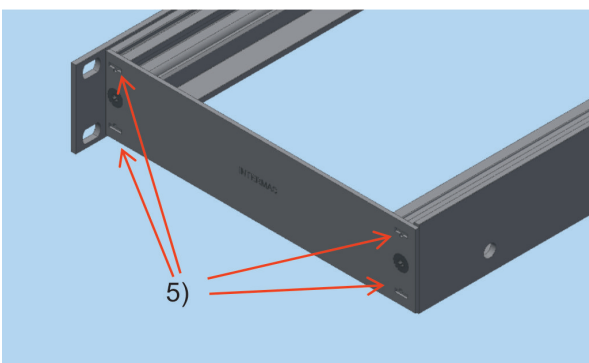
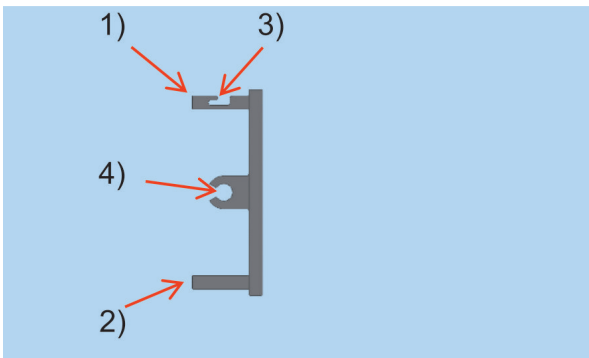
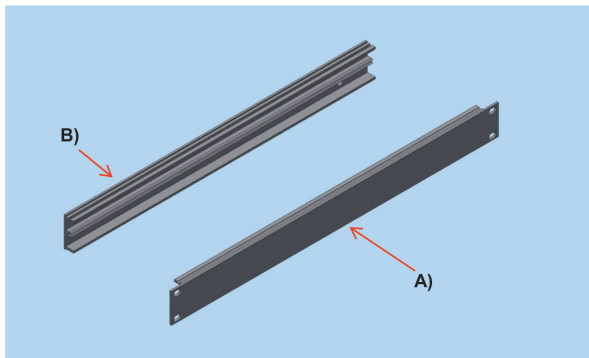
Technical Data, Control & Monitoring

Switching control range	20 - 40 °C to 30 - 50 °C
Sensor connection	rear connector for temperature sensor
Signal for	speed < 20 % of the nom. speed; switch-on delay < 4 s, signal delay < 1 s
Signaling	display via LEDs floating contact switching capacity 20 W switching voltage max. 100 V

CoolSpot - 19" 1 U Fan Tray with infinitely variable Fan Modules



CoolSpot is a 19" 1U fan tray with the possibility to vary the number and position of fans according to the current heat load. It is designed for an economical but highly effective and precise cooling of electronic components within 19" cabinets and housings. Cooling air is directly supplied at the hot spots due to the infinitely variable positioning of the fans.

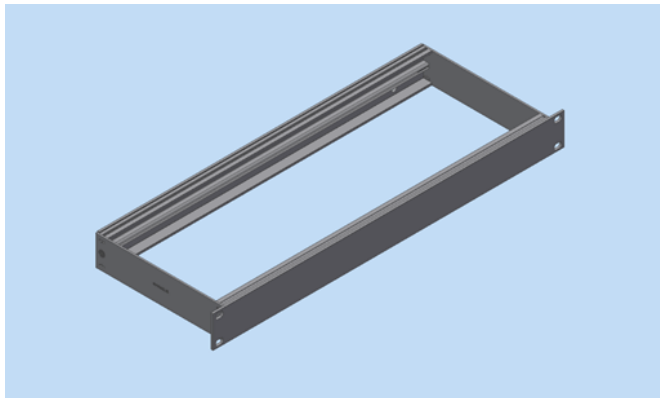
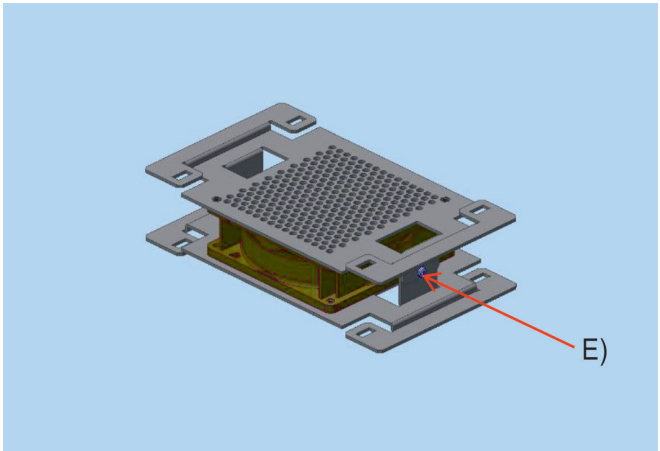
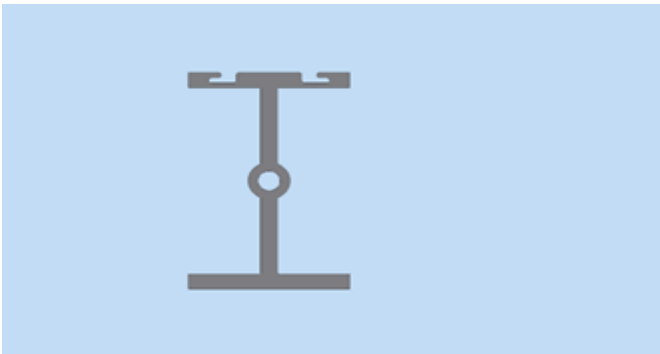
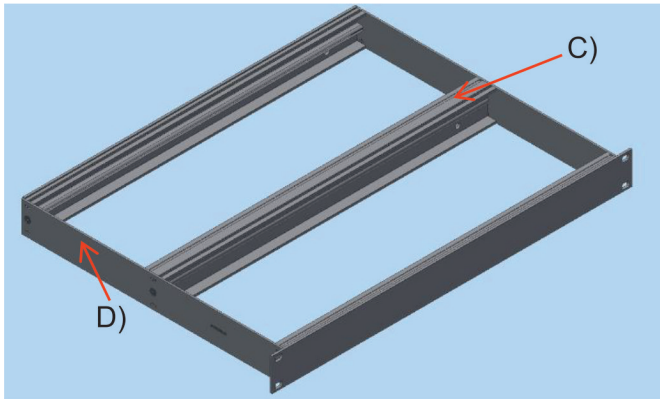


Specification CoolSpot basic frame

The CoolSpot fan tray is characterized by the following constructive features:

- ✓ The fan tray's basic frame consists of a front panel, two side stripes and an end profile.
- ✓ The side stripes are made of colorless pre-anodized aluminum. The cutting edges, which are a result of processing, are blank. Front panel and end profile are also colorlessly anodized.
- ✓ Front panel A as well as end profile B are manufactured from the same source profile in order to keep the construction as cost-effective as possible. The cutting edges are blank due to the necessary machining.
- ✓ There are two wings (pos. 1 & 2) on the profiles' inside to enable a linear guidance of the fan modules.
- ✓ The upper wing has a groove (pos. 3) to include retaining clips. These retaining clips secure the fan modules against unintended shifting.
- ✓ There is a screw channel in the centre (pos. 4) which enables the assembly of thread-forming screws to the side strips.
- ✓ Each side strip has four stamped nubs (pos. 5). These guarantee a sufficient protection against twisting during the basic frame's assembly, even though the entire basic frame is put together installation-friendly with only four screws.

CoolSpot - 19" 1 U Fan Tray with infinitely variable Fan Modules



Specification CoolSpot extension kit

An extension kit is available as the CoolSpot basic frame only allows an installation of a maximum of four fan modules in a single-row arrangement.

- ✓ The extension kit uses the already existing basic frame's front panel and end profile and adds an intermediate profile C).
- ✓ The basic frame's both side panels are replaced by longer side panels D).
- ✓ These reconstruction measures enable the installation of a maximum of eight fan modules in a two-row arrangement.

Specification CoolSpot fan module

- ✓ The CoolSpot fan module is characterized by its easy assembly.
- ✓ The fan module either consists of a fan in the standard measures of 92x92x25 mm and two mounting plates or of a fan in the standard measures of 120x120x32 mm and the corresponding mounting plates.
- ✓ Each of both mounting plates has two pins. These pins are used for positioning the fan and act as protection against twisting when assembling the fan module.
- ✓ Both mounting plates are connected with two thread-forming screws E). Thus the fan is clamped between both mounting plates. There is no additional screw connection necessary for the fan itself.
- ✓ Any desired fan up until a height of 32 mm can be inserted by exchanging the mounting plates.
- ✓ Every fan module's construction kit contains four retaining clips in order to secure the fan modules against unintended shifting within the fan tray.
- ✓ We use either SEPA oder EBM-Papst fans in our fan trays to satisfy all demands regarding long service life and cost-benefit ratio. Other fan types can be delivered on request.

CoolSpot - 19" 1 U Fan Tray with infinitely variable Fan Modules

Specification CoolSpot wiring kit

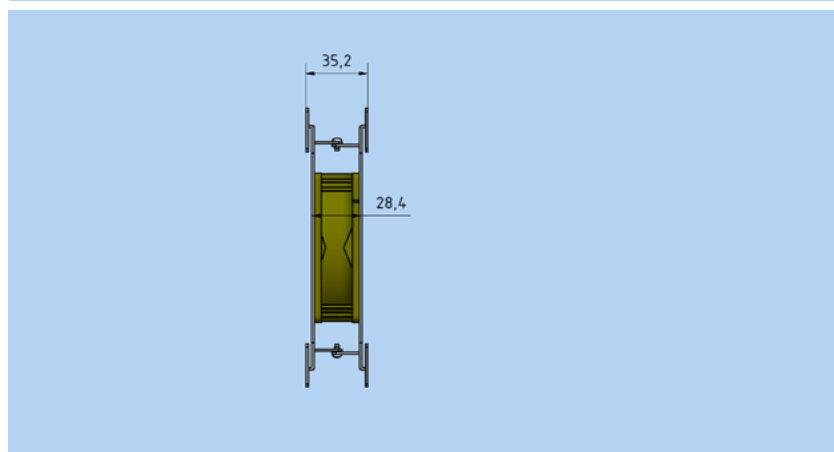
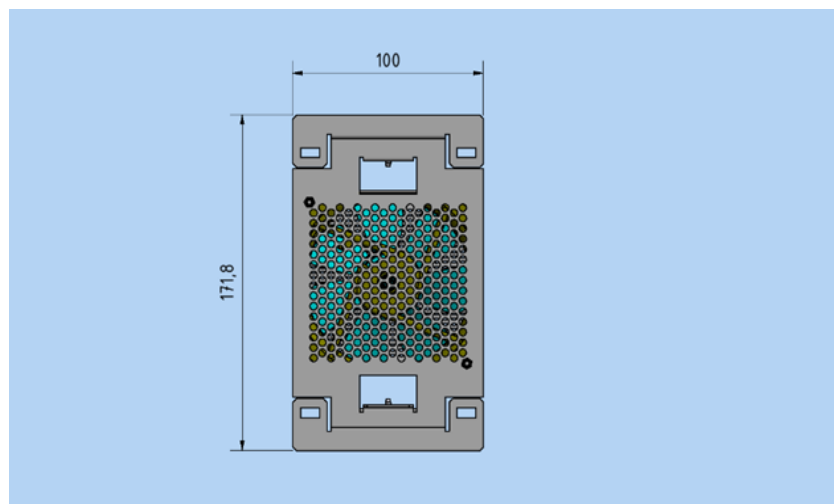
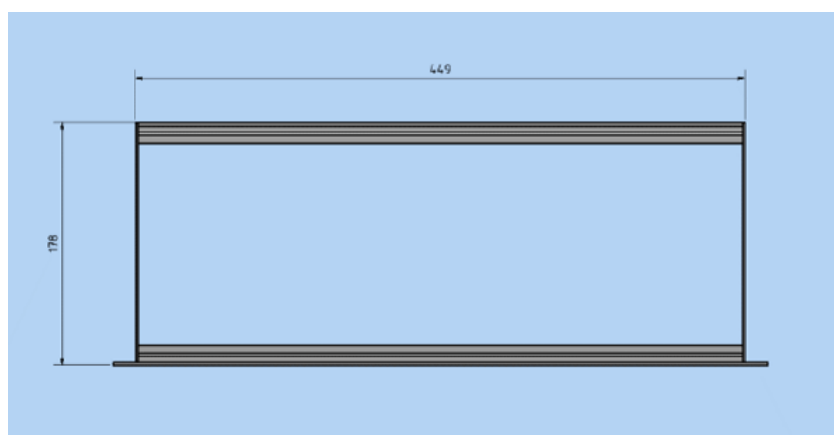
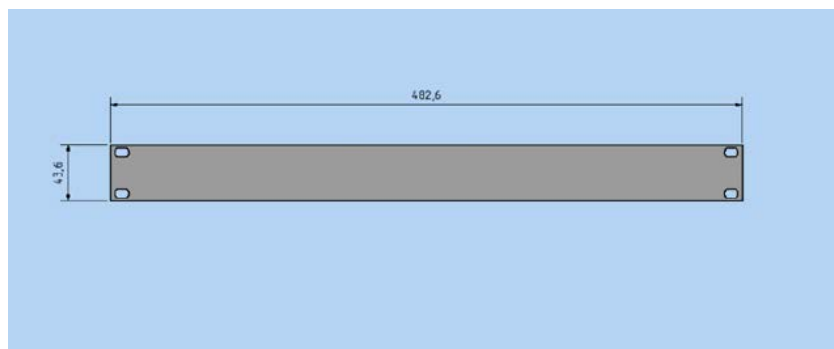
- ✓ By default the wiring kit contains a 2-pole Phoenix plug for the fan tray's power connector.
- ✓ Different connectors can be ordered optionally.
- ✓ Small parts such as cable holders, cable ties, cable glands etc. are also part of the wiring kit.

Technical data

Dimensions of front panel	Width: 19" (482,6 mm) Height: 1 U (43,6 mm)
Housing depth basic frame	single row 92 fan size: 178 mm single row 120 fan size: 205 mm
Housing depth incl. assembled extension kit	two-rowed 92 fan size: 353,2 mm two-rowed 120 fan size: 407,2 mm
Materials	Screws: steel, galvanized with user-friendly torx drive Retaining clips: stainless steel Mounting plates: galvanized steel sheet All other parts: aluminum
Surfaces	Aluminum parts anodized natural Steel parts galvanized and passivated
Rated voltage	12 VDC (other voltages on request)
Rated output	dependent upon fan module
Protection class	IP20
Operating temperature	-10°C ... +70°C
Storage temperature	-40°C ... +70°C
Level above mean sea level	until 2000 m
volume flow	dependent upon fan module

CoolSpot - 19" 1 U Fan Tray with infinitely variable Fan Modules

Dimensions



CoolSpot - 19" 1 U Fan Tray with infinitely variable Fan Modules

Ordering details assembly kit

CoolSpot basic frame	order no. 409.
92 fan size	208 590
120 fan size	146 533

Delivery basic frame

1 front panel
2 side stripes
1 end profile
4 countersunk screws Taptite M4x16 Torx

Ordering details assembly kit

CoolSpot extension kit	order no. 409.
92 fan size	208 380
120 fan size	146 534

Delivery extension kit

1 intermediate profile
2 side stripes long
2 countersunk screws Taptite M4x16 Torx

Ordering details assembly kit

	order no. 409.
CoolSpot wiring kit	208 591

Delivery wiring kit

1 cable gland
1,5 m 2-wire cable flexible
3 mini cable holder
3 cable ties
2 ferrules
1 Phoenix Combicon connector, 2-pole, grid 5,08 mm
0,1 m heat-shrink tubing
2 connecting clamps

Ordering details assembly kit

CoolSpot fan module 92 fan size	order no. 409.
with SEPA fan	208 592
with EBM-Papst fan	146 537

CoolSpot fan module 120 fan size	order no. 409.
with SEPA fan	146 538
with EBM-Papst fan	146 539

Delivery fan module 92

2 mounting plates
1 fan 92x92x25 mm
2 oval-head screws Taptite M2,5x5 Torx
4 retaining clips

Delivery fan module 120

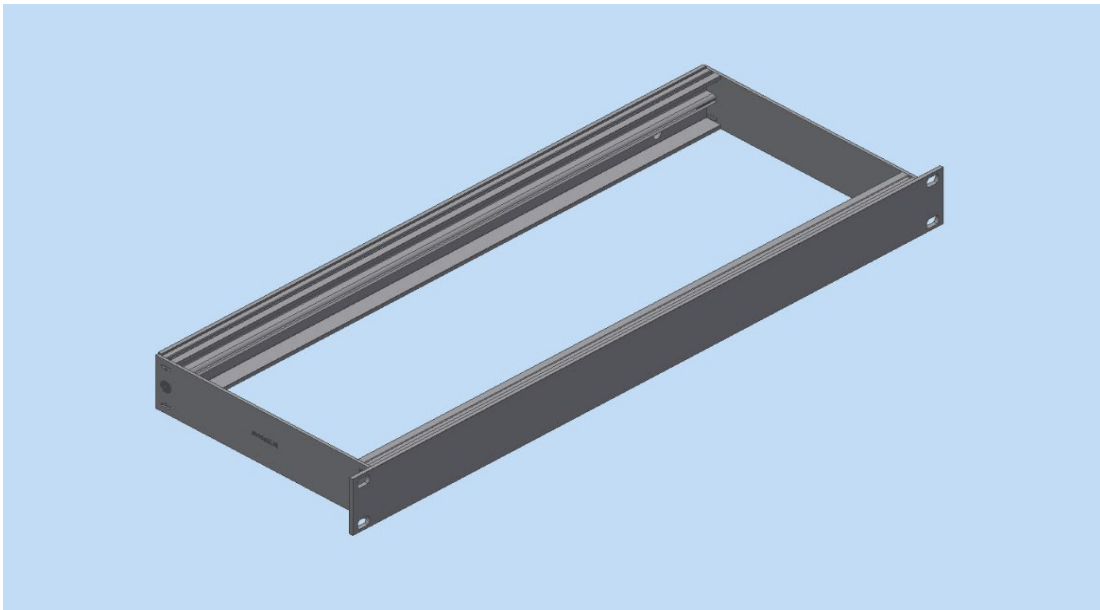
2 mounting plates
1 fan 92x92x25 mm
2 oval-head screws Taptite M2,5x5 Torx
4 retaining clips

CoolSpot - 19" 1 U Fan Tray with infinitely variable Fan Modules

Configuration example

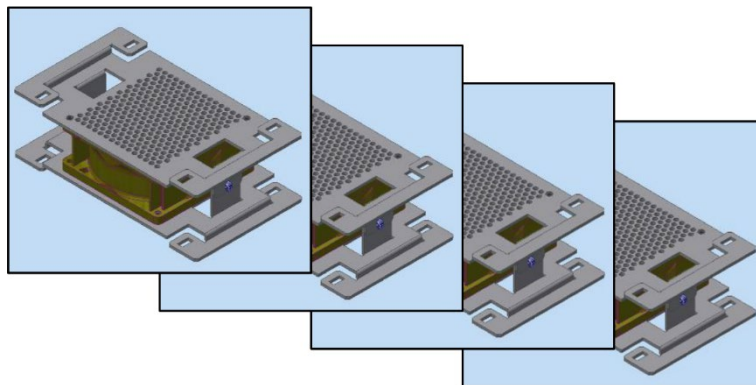
Step 1: Selection of required CoolSpot basic frame.

In this example: simple basic frame 409. 208 590 for a fan size of 92 mm.

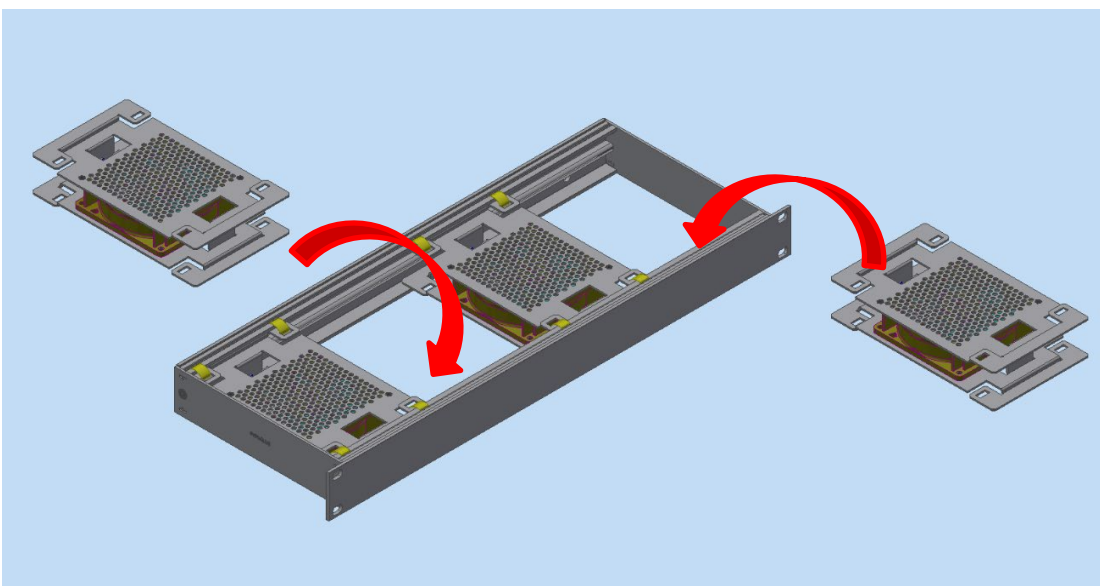


Step 2: Selection of required CoolSpot fan module in desired quantity (maximum of 4).

In this example: fan module 409. 208 592 with SEPA fan in size 92 mm.

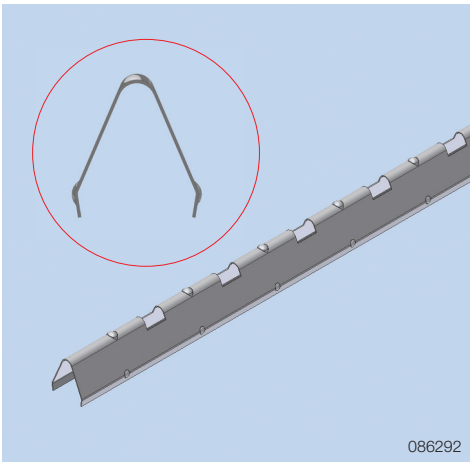


The configured fan of choice can also be delivered as an assembled version.



This catalog contains stock and standard parts. Other products and sizes on request.

RFI Spring A2 and F3



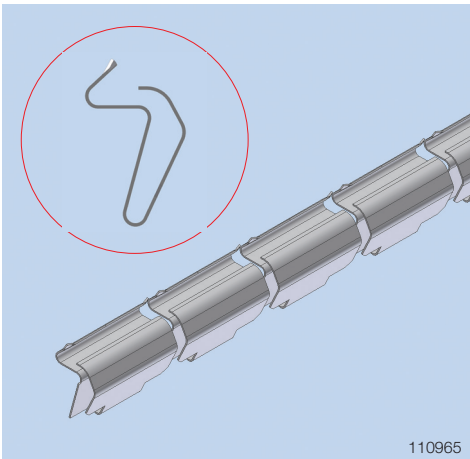
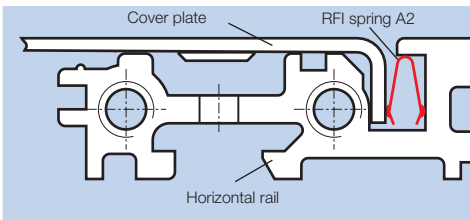
RFI Spring A2

Shielding between the cover plates and the subrack. The spring is snapped into the profile channel at the horizontal rail. It can be cut in 10 mm lengths.

Material: stainless steel, 0.1 mm thick

Ordering details

	nom. width [HP]	length [mm]	order no. 409.
RFI spring A2	36	182	107 724
RFI spring A2	42	217	090 800
RFI spring A2	84	427	085 011



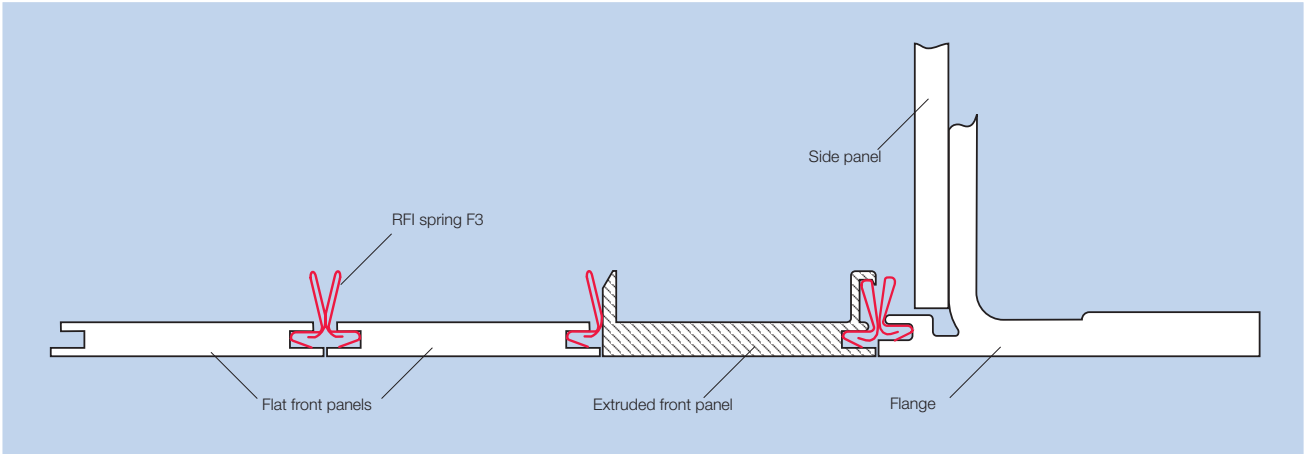
RFI Spring F3

Shielding between the front panels and between front panel and flange as well as shielding the cover plates of the *DiVar* housing. It can be cut in 7.41 mm lengths.

Material: stainless steel, 0.08 mm thick

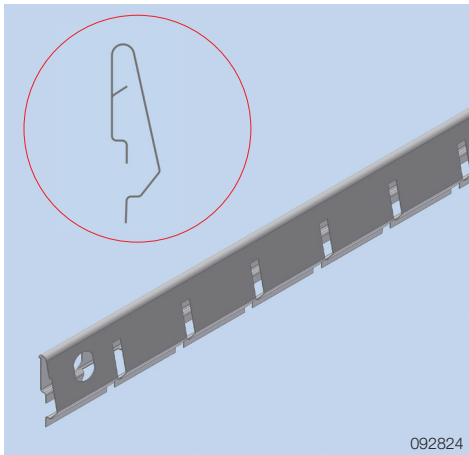
Ordering details

	nom. height [U]	height [mm]	order no. 409.
RFI spring F3-2	2	51.37	112 386
RFI spring F3-3-IEEE	3	95.83	111 112
RFI spring F3-3	3	110.65	111 636
RFI spring F3-4	4	155.11	112 387
RFI spring F3-6-IEEE	6	229.21	111 116
RFI spring F3-6	6	244.03	111 637



Shielding between the front panel and between front panel and flange

RFI Spring F1, Contact Profile and RFI Spring P2



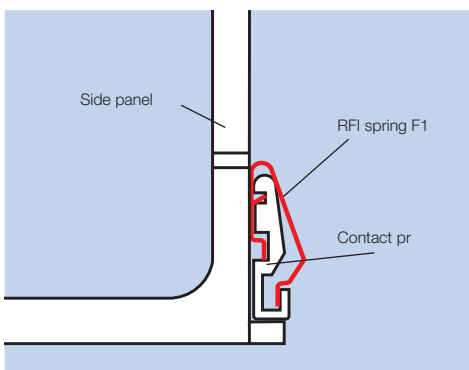
RFI Spring F1

Shielding between the front panel and side panel with the contact profile of the *InterRail* subrack.

Material: CuSn 0.1 mm thick

Ordering details

	nom. height [U]	height [mm]	order no. 409.
RFI spring F1-3	3	106.9	093 400
RFI spring F1-6	6	240.25	093 401



Contact Pr

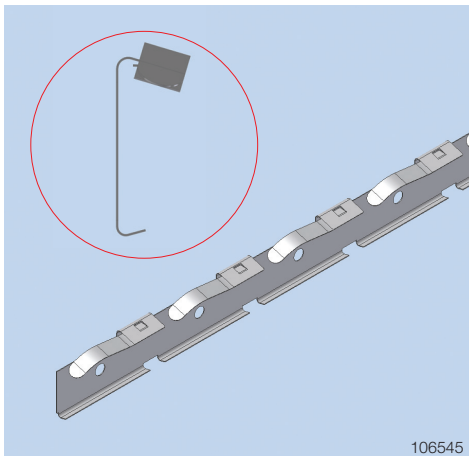
Shielding between front panel and side panel with the RFI spring F1 of the *InterRail* subrack.

Material: aluminum

Finish: passivated

Ordering details

	nom. height [U]	height [mm]	order no. 409.
Contact pr -3	3	107.5	092 923
Contact pr -6	6	240.85	092 924



RFI Spring P2

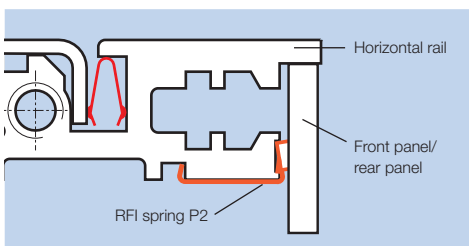
Shielding front panels and rear panel to the horizontal rail.

The spring is snapped into the pr
It can be cut in 15.24 mm lengths.

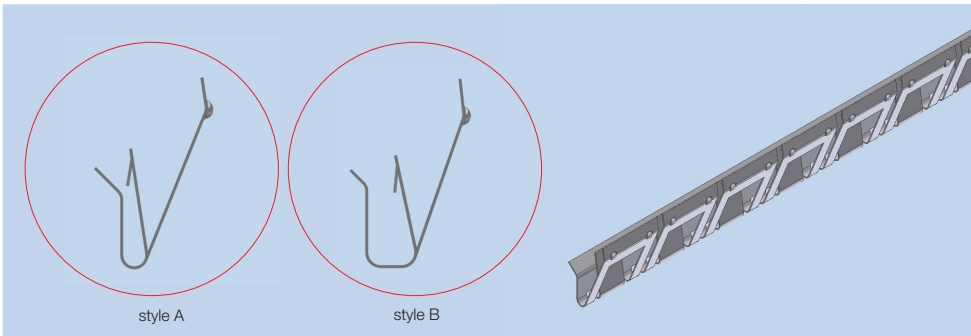
Material: stainless steel, 0.08 mm thick

Ordering details

	nom. width [HP]	length [mm]	order no. 409.
RFI spring P2	42	212.36	106 546
RFI spring P2	84	425.72	106 547



RFI Spring U1 and U2

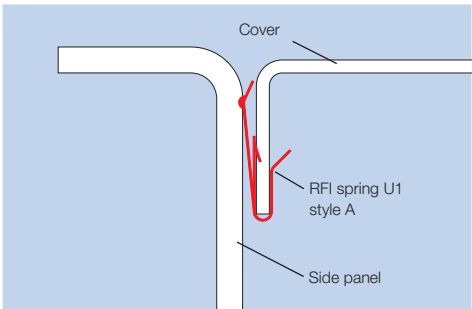


RFI Spring U1
Multiple applications. Shielding subracks, housings and cabinets with 1 mm - 2.5 mm sheet thickness. The spring can be cut in 10 mm lengths.

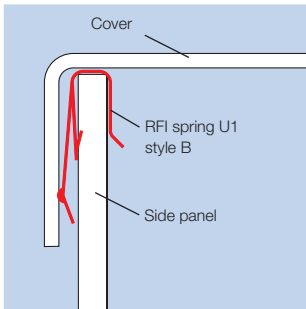
Material:
stainless steel, 0.1 mm thick

Ordering details

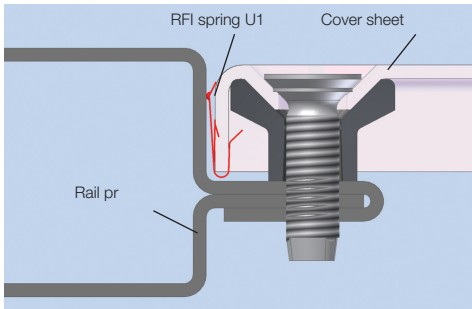
	style	sheet thick- ness [mm]	length [mm]	order no. 409.
RFI spring U1-1,0-230	A	1.0	229	114 840
RFI spring U1-1,5-400	A	1.5	399	101 830
RFI spring U1-2,0-270	B	2.0	269	107 323



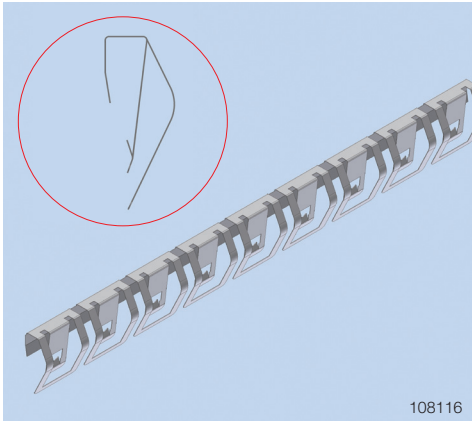
Subrack example of use



Subrack example of use



System cabinet example of use

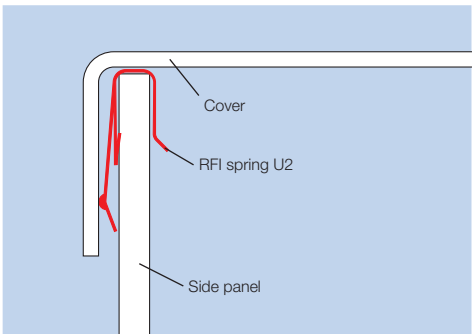


RFI Spring U2
Multiple applications. Shielding subracks, housings and cabinets with 2.5 mm sheet thickness. The spring can be cut in 10 mm lengths.

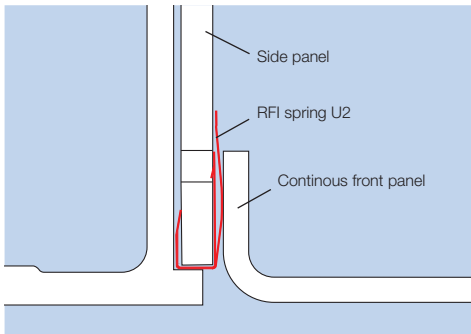
Material: stainless steel, 0.08 mm thick

Ordering details

	sheet thick- ness [mm]	length [mm]	order no. 409.
RFI spring U2	2.5	98.79	108 107
RFI spring U2	2.5	232.14	108 108
RFI spring U2	2.5	632.19	109 537

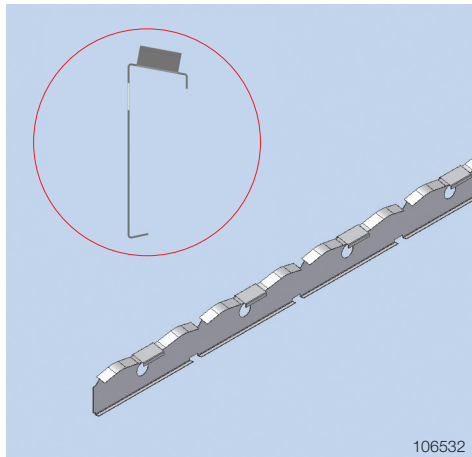


Subrack example of use



Subrack example of use

RFI Spring M-P2, G-A2, G-P2 and RFI Fabric Gasket



RFI Spring M-P2

Shielding between side panel and backplane with a mounting strip.
The spring can be cut in 25 mm lengths.

Material: stainless steel, 0.08 mm thick

Dimensions: 85 x 5 mm

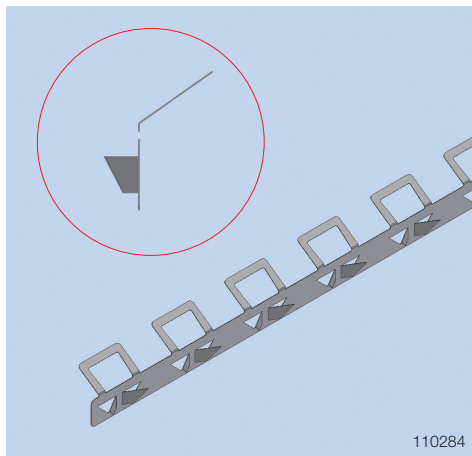
Length: 424 mm

order no.: **409. 106 533**

Accessories

Mounting strip

order no.: **409. 111 691**



RFI Spring G-A2

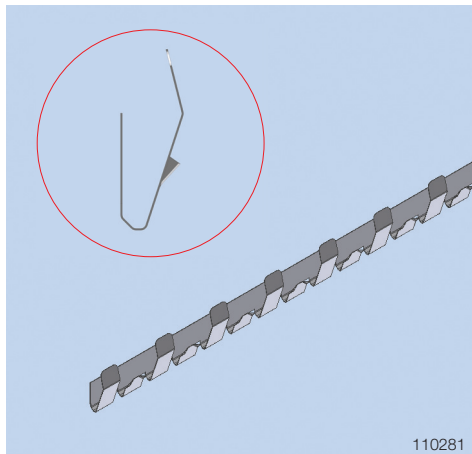
Shielding between the profiles and the cover plates of the *InterMeZo* housing.

The spring can be cut in 25 mm lengths.

Material: stainless steel, 0.15 mm thick

Length: 469 mm

order no.: **409. 110 960**



RFI Spring G-P2

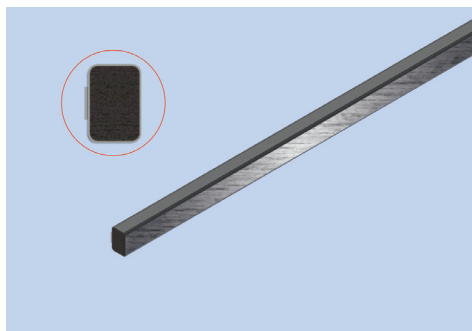
Shielding between the door/rear panel and the profile of the *InterMeZo* housing.

The spring can be cut in 14.815 mm lengths.

Material: stainless steel, 0.15 mm thick

Length: 471.83 mm

order no.: **409. 111 534**



RFI Fabric Gasket, self-adhesive

Shielding between the door/rear panel and the profile of the housing.

Material: polyurethane foam core covered with copper-nickel (CuNi) metal fabric

Dimensions: height 9.5 x width 6.4 x length 1000 mm

Fire protection class: UL 94 V-0

order no.: **409. 175 397**