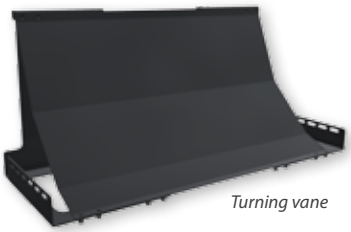
4.5 AIRFLOW MANAGEMENT PRODUCTS

TURNING VANE

The Turning Vane is designed to enhance the natural draw effect of the chimney and is designed to allow passage of cabling and power as well as effectively direct the airflow. Constructed from 1 and 2mm powder coated sheet steel, the clever design of the turning vane ensures optimum airflow for the hot exhaust. The turning vane requires a minimum of 200mm off-set on the rear extrusions.



Turning vane

CHIMNEY

The Chimney is designed to form a duct for the hot exhaust between the rack and the hot plenum. The chimney is constructed from 1mm powder coated sheet steel and comes complete with gasket kits to ensure optimum sealing between the rack and the hot plenum. The chimney height is adjustable from 750 to 1360mm according to your site requirements.

Chimney

Code	Description
DP-HPR-60/120-B	Kit consists of top plate, chimney, turning vane; designed for RSF-xx-60/120; color light grey (RAL 7035)
DP-HPR-60/120-H	Kit consists of top plate, chimney, turning vane; designed for RSF-xx-60/120; color black (RAL 9005)
DP-HPR-80/120-B	Kit consists of top plate, chimney, turning vane; designed for RDF/RSF-xx-80/120; color light grey (RAL 7035)
DP-HPR-80/120-H	Kit consists of top plate, chimney, turning vane; designed for RDF/RSF-xx-80/120; color black (RAL 9005)

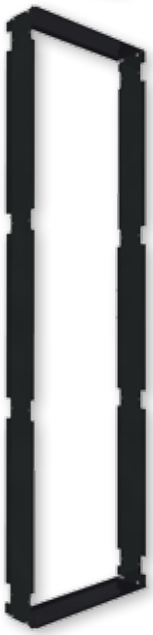
AIR FLOW DEFLECTOR

The deflector is located in the bottom part of the rack and is used to lead the cold air from the raised floor space directly to the cold zone in front part of a rack. Deflector is produced in 600 or 800mm width and can be installed into all ROF family racks of all depths – from 600 to 1200mm. Deflector can be equipped with louvre which helps to control air-flow rates or shut air supply off if no equipment is fitted into the rack. Information on compatibility of the air flow deflector with the PREMIUM rack series upon request.

Air flow deflector with louvre

AIR SEPARATION FRAME

The Air Separation frame is used for minimizing by-pass airflow between racks hot and cold zones. Using an Air Separation frame in a Room Feed with Plenum Return deployment forms a "cool zone" inside the rack between the front door and the equipment mounted on the 19" profiles. Cool zone depth is recommended as 150mm.



Air separation frame

Code	Requires H in U	Applicable for ROF/RDF	
		D in mm	W in mm
DP-AFD-ROF-60/80/20	2	800, 1200	600
DP-AFD-ROF-60/100/20	2	1000	600
DP-AFD-ROF-80/80/20	2	800, 1200	800
DP-AFD-ROF-80/100/20	2	1000	800
DP-AFD-VF-60	Variable Flow Rate Louvre – 600		
DP-AFD-VF-80	Variable Flow Rate Louvre – 800		

Code	Depth of cold zone in mm	Applicable for ROF/RHF/RSF	
		H in U	W in mm
DP-ROF-CW-42/60/15 [3]	150	42	600
DP-ROF-CW-42/80/15 [1,2,3]	150	42	800
DP-RHF-CW-42/60/15	150	42	600
DP-RHF-CW-42/80/15 [2]	150	42	800
DP-RSF-CW-42/60/15 [3]	150	42	600
DP-RSF-CW-42/80/15 [2,3]	150	42	800

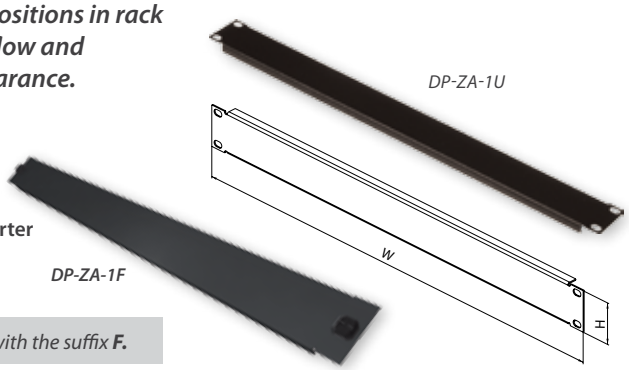
[1] *Can be used for RDF racks*
[2] *Necessary to use extrusions type C or P (with blank panels)*
[3] *Height 42U can be replaced by 45 or 48U*

19" BLANK AND FAST BLANK PANELS

Used to cover empty positions in rack to minimize by-pass airflow and enhance aesthetic appearance.

DESCRIPTION:

- Height 1, 2, 3, and 5U
- Color powder coated RAL (standard RAL 9005)
- **Tool-less solution uses quarter turn fasteners**



Code	H in U	Width
DP-ZA-1U	1	19"
DP-ZA-2U	2	19"
DP-ZA-3U	3	19"
DP-ZA-5U	5	19"
DP-ZA-1F	1	19"
DP-ZA-2F	2	19"
DP-ZA-3F	3	19"
DP-ZA-5F	5	19"

*For tool-less design use code with the suffix **F.***

19" VENTED PANEL

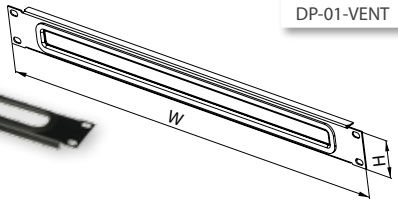
Enables front to rear cable passage through empty positions in rack.

Code	H in U	Width
DP-01-VENT	1	19"

DESCRIPTION:

- Height 1U
- Width 19"
- Color powder coated RAL (standard RAL 9005)

DP-01-VENT



19" VENTED PANEL WITH BRUSH

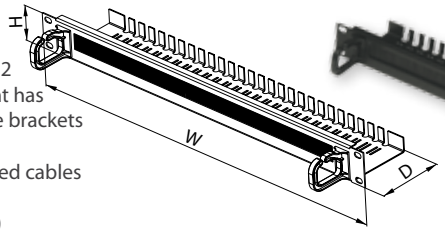
Enables front to rear cable passage through empty positions in rack. whilst helping to minimize by-pass airflow.

Code	H in U	Width	Depth in mm
DP-BP-02	1	19"	85
DP-BP-03	1	19"	--
DP-BP-03-D	1	19"	--

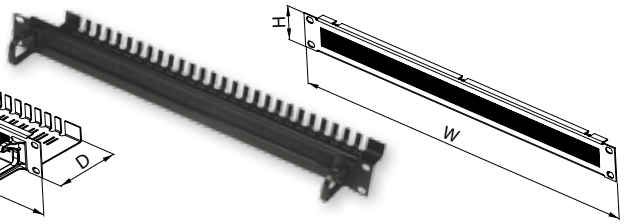
DESCRIPTION:

- Types:
  a) with brush DP-BP-03
  b) with brush, divided - DP-BO-03-D
  c) with brush and cable management DP-BP-02
- Vented panel with brush and cable management has cable management bar on back and two cable brackets 40x50mm on sides
- Divided version is possible to use on an installed cables
- Height 1U
- Color powder coated RAL (standard RAL 9005)

DP-BP-02



DP-BP-03



VENTILATION UNITS

Used to force airflow through a rack to assist with cooling.

DESCRIPTION:

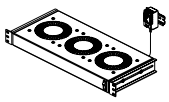
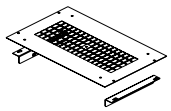
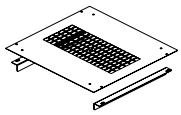
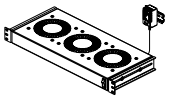
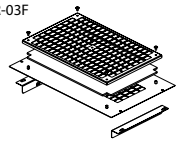
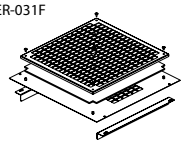
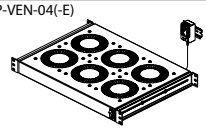
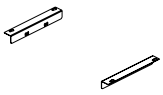
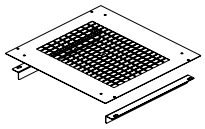
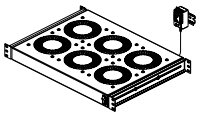
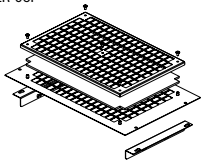
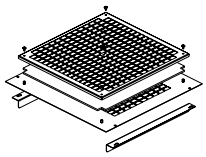
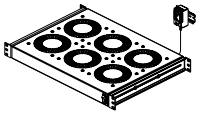
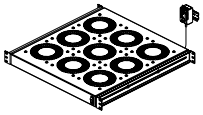
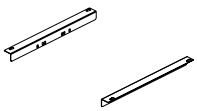
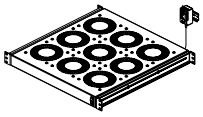
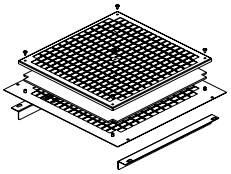
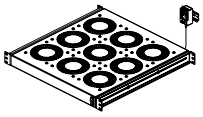
- Two to nine fans
- Possible to install:
  a) in 19" extrusions – horizontally
  b) in top or bottom frame of free-standing rack
- Connecting kit for ventilation unit is needed when installing in top or bottom frame
- Temperature range -10°C to 55°C
- Thermostat in the range 0°C – 60°C included; optionally no thermostat
- Voltage range 230V/50Hz (optionally 48V DC)
- Protection category to EN 60 529 IP 20
- Color powder coated RAL (standard RAL 9005)
- Enhanced option DP-VEN-xx-E

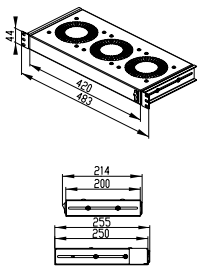
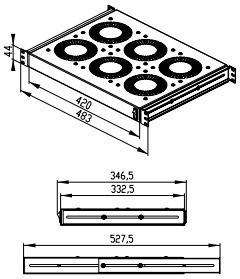
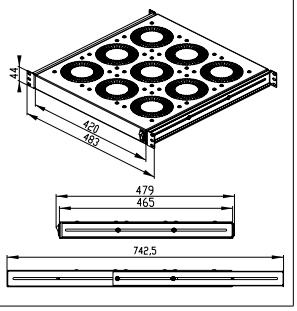
DP-VEN-03

DP-VEN-06

DP-VEN-09

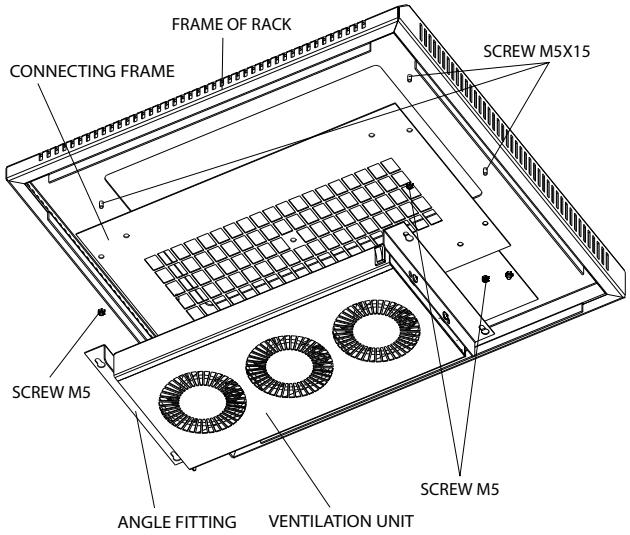
Information on installation options (into top or bottom frame of ROR rack series) on request

19" mounting ventilation unit	Connecting kit for installation in top or bottom frame of free standing racks depth 600, 800 or 1200mm	Connecting kit for installation in top or bottom frame of free standing racks depth 1000mm
DP-VEN-02(-E) 	DP-VER-03 	DP-VER-031 
DP-VEN-03(-E) 	DP-VER-03F 	DP-VER-031F 
DP-VEN-04(-E) 	DP-VER-06 	DP-VER-061 
DP-VEN-05(-E) 	DP-VER-06F 	DP-VER-061F 
DP-VEN-06(-E) 		
DP-VEN-07(-E) 		DP-VER-091 
DP-VEN-08(-E) 		DP-VER-091F 
DP-VEN-09(-E) 		

DP-VEN-02 (03) (-E)	DP-VEN-04 (05, 06) (-E)	DP-VEN-07 (08, 09) (-E)
		

Code	Air through put (m3.h-1)	Rated current max. (A)	Power (W)	Noise level* (dB)
DP-VEN-02	210	0,18	38	48,0
DP-VEN-03	315	0,27	57	49,8
DP-VEN-04	420	0,36	76	51,0
DP-VEN-05	525	0,45	95	52,0
DP-VEN-06	630	0,54	114	52,8
DP-VEN-07	735	0,63	133	53,5
DP-VEN-08	840	0,72	152	54,0
DP-VEN-09	945	0,81	171	54,5
DP-VEN-02-E	330	0,28	44	53,0
DP-VEN-03-E	495	0,42	66	54,8
DP-VEN-04-E	660	0,56	88	56,0
DP-VEN-05-E	825	0,70	110	57,0
DP-VEN-06-E	990	0,84	132	57,8
DP-VEN-07-E	1155	0,98	154	58,5
DP-VEN-08-E	1320	1,12	176	59,0
DP-VEN-09-E	1485	1,26	198	59,6

** Approximate value. Real noise level depends on conditions at installation site.*



FANS

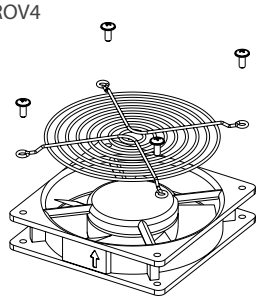
Used to force airflow through a rack where ventilation unit is not used.

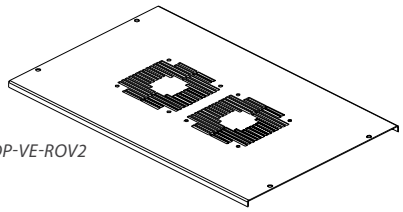
DESCRIPTION:

- Possible to install:
  a) on side or top of wall-mounting rack – special perforation needed (ordering code of the wall mounting rack to be extended: -VH for 2x side perforation or –TH for 2x top cover perforation)
  b) in top or bottom frame of distribution rack
  - requires perforated gland plate DP-VE-ROV2 or DP-VE-ROV4
- Mounting kit included
- Without thermostat
- Code: DP-VE-01

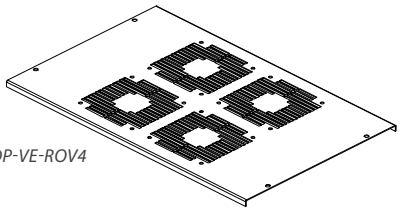
Side panel installation

Special perforation

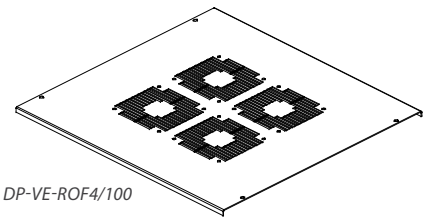




DP-VE-ROV2



DP-VE-ROV4



DP-VE-ROF4/100

ACTIVE DOOR

The active door is designed for mounting of up to 3 ventilation units, each with 6 fans (for racks of 600mm width) and 9 fans (for racks of 800mm width). Front mounted active door ensures effective air delivery in to the rack. The rear mounted active door removes heated air from the rack. Active doors can be where higher density heat loads are required by augmenting the delivery or extraction of air for cooling purposes.

- Perforated sheet metal or vented door
- Preparation for mounting of 3 ventilation units, each with 6 fans
- Multipoint swivel handle lock
- Universal keys
- Colour design – powdered paint RAL 7035 or RAL 9005

Apply the appropriate codes in positions describing door type/door lock type in the rack ordering matrix:

- JW for sheet steel perforated door, ready for up to 3 x 6 (3 x 9)-position ventilation unit, multipoint swivel handle lock, universal key
- KW for vented door, ready for up to 3 x 6 (3 x 9)-position ventilation unit, multipoint swivel handle lock, universal key

AUTOMATIC DOOR HANDLE

For easy and secure automated access to the Contained Cold Aisle we have developed the Automatic Door Handle. Using the Automatic Door Handle the Contained Cold Aisle doors can be controlled and opened/closed either locally via push buttons or integrated with your access control system. The ADH can also be integrated with RAMOS to provide alarms and further increase the flexibility of the system.

Code	Description
CA-DS-ADH	Automatic door handle system for CA-DS-42-45/120, including engines, control buttons and needed accessories

CONTAINED AISLE – DOOR

The contained aisle door assembly comprises a metal frame equipped with dual leaf opening doors (2212 x 620mm) to allow access into the contained cold aisle. The door frame is easily assembled on site and attached to the end of the row of racks, after installation of the sealing strip, the doors can be easily hung to provide air separation, security and comfortable access. The doors feature a large glass window for clear vision into the cold aisle. Doors are supplied with handle and locking mechanisms as standard, options for automatic door handling systems are available.

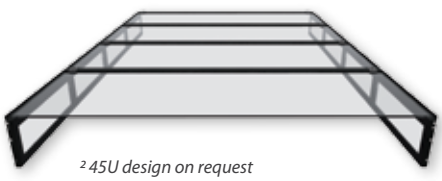
Code	Description
CA-DS-42-45/120	Double door and doorframe; width 1200mm[1], height 2212/2245mm (door/doorframe), color powder coated RAL 7045/7040, compatible with all ROF family racks; applicable in contained cold aisle design with height 42 and 45U

[1] *1800mm wide door on request*

Modular Contained Aisle system is available upon request. This system is the ideal solution when a row of racks with different heights or even with gaps because of missing racks is required to be contained. System is based on self-supporting construction with clear polycarbonate panels on the top of the roof. Vertical side sections of the roof feature PVC foil strips, which can be easily cut to the required length. Modular Contained Aisle can work with standard aisle door (see above) or with PVC foil strips instead of standard door. Contact us for more information.

CONTAINED AISLE – ROOF

The modular roof sections are bolted onto the top of racks to prevent mixing of cooled air and warm exhaust. The assembly is made from 1.5mm powder coated steel and is available in widths of 600, 800, 900 & 1100mm to suit all deployment options. The vertical sections feature a glass insert panel to allow easy access to the top of installed racks whilst allowing maximum light into the cold aisle. The roof panel is made from 6mm clear polycarbonate to allow easy integration of fire suppression systems into the cold aisle.



[2] *45U design on request*

Code	Description
CA-RS-42/60-H	Top cover and vertical side panels, for 600mm wide/42U high[2] rack design, sheet steel parts in RAL 9005
CA-RS-42/80-H	Top cover and vertical side panels, for 800mm wide/42U high[2] rack design, sheet steel parts in RAL 9005
CA-RS-42/90-H	Top cover and vertical side panels, for 600+300mm (covers neighbouring section) wide/42U high[2] rack design, sheet steel parts in RAL 9005
CA-RS-42/110-H	Top cover and vertical side panels, for 800+300mm (covers neighbouring section) wide/42U high[2] rack design, sheet steel parts in RAL 9005