MINKELS
SOLUTIONS TO RELY ON

VARICON®
HOUSING SOLUTIONS

Switching & Routing

Minkels solutions for switching and routing equipment

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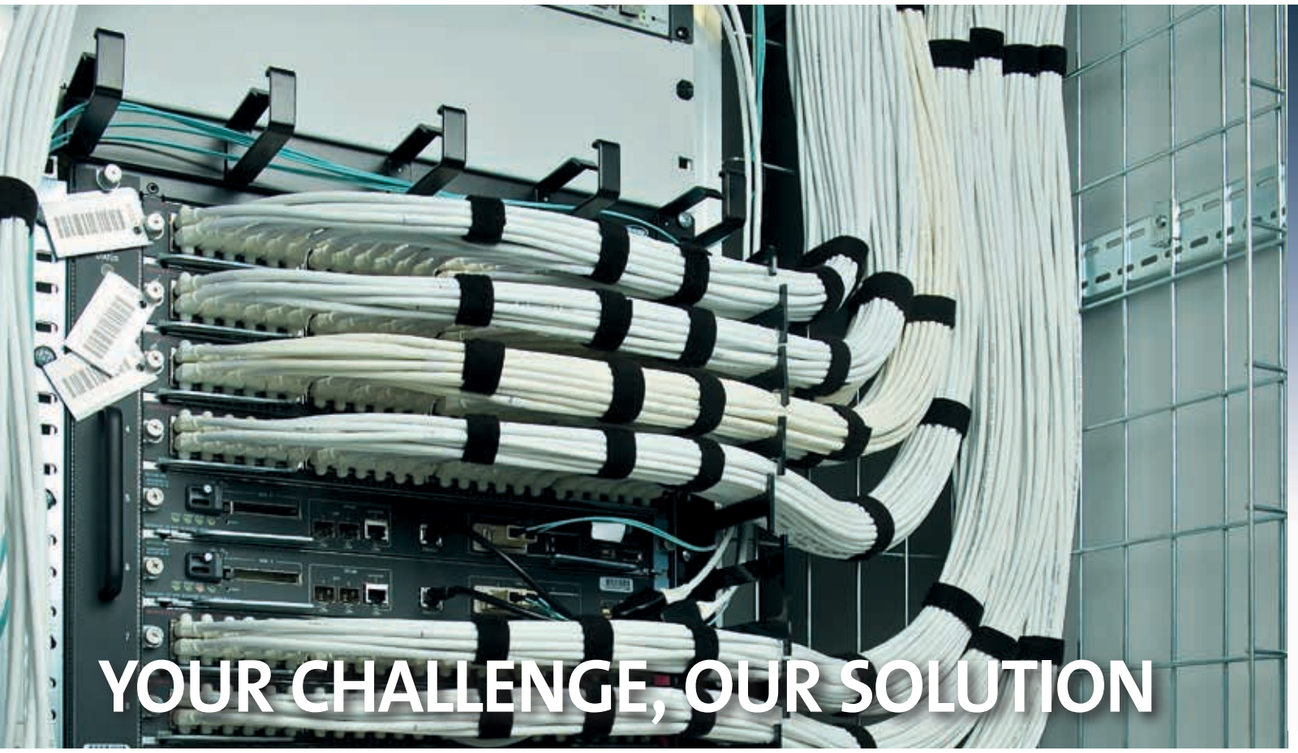
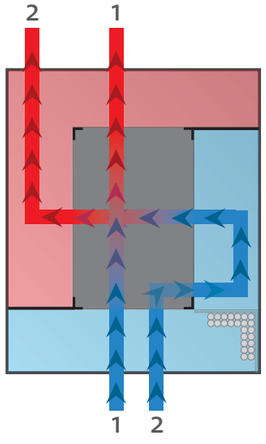


YOUR CHALLENGE, OUR SOLUTION

The airflow in some switching and routing equipment differs from the standard front to back cooling. If this type of switch is installed in a Cold Corridor® environment, it is important to make sure the equipment is receiving enough cold air, the air is not being recirculated internally, and one switch is not blowing hot air into the air intake of another switch. Besides airflow / cooling, you must also consider the number of cables and the exchange of any hot-swappable ventilation fans and power modules.



SPECIALISED RACKS

A special rack will be necessary to create sufficient space for the network cables and to allow the air to flow from right to left. Some Cisco® equipment requires a rack that is 800 mm (31.5”) wide while other equipment requires a rack that is 1000 mm (39.4”) wide.

Open spaces in the rack must be filled. You can fill the right side of the rack with cover plates and install front panels on the front side of the server rack. Cables must be routed carefully along the side of the rack. It is common practice to route all the cables from left to right along the front of the switch when installing the ventilation fan module(s).

BENEFITS OF THE MINKELS SWITCHING & ROUTING RACKS AND ACCESSORIES

Flexible
The racks have been especially designed to hold a lot of cables, which can be routed either from the top or from the bottom of the rack. PDUs are also easy to install.

Proper equipment cooling
The products and racks keep the equipment properly cooled.

Integration capability
The products can be integrated with Minkels racks. The switching and routing racks can then be easily installed in a Cold Corridor or a Hot Corridor environment.

Racks

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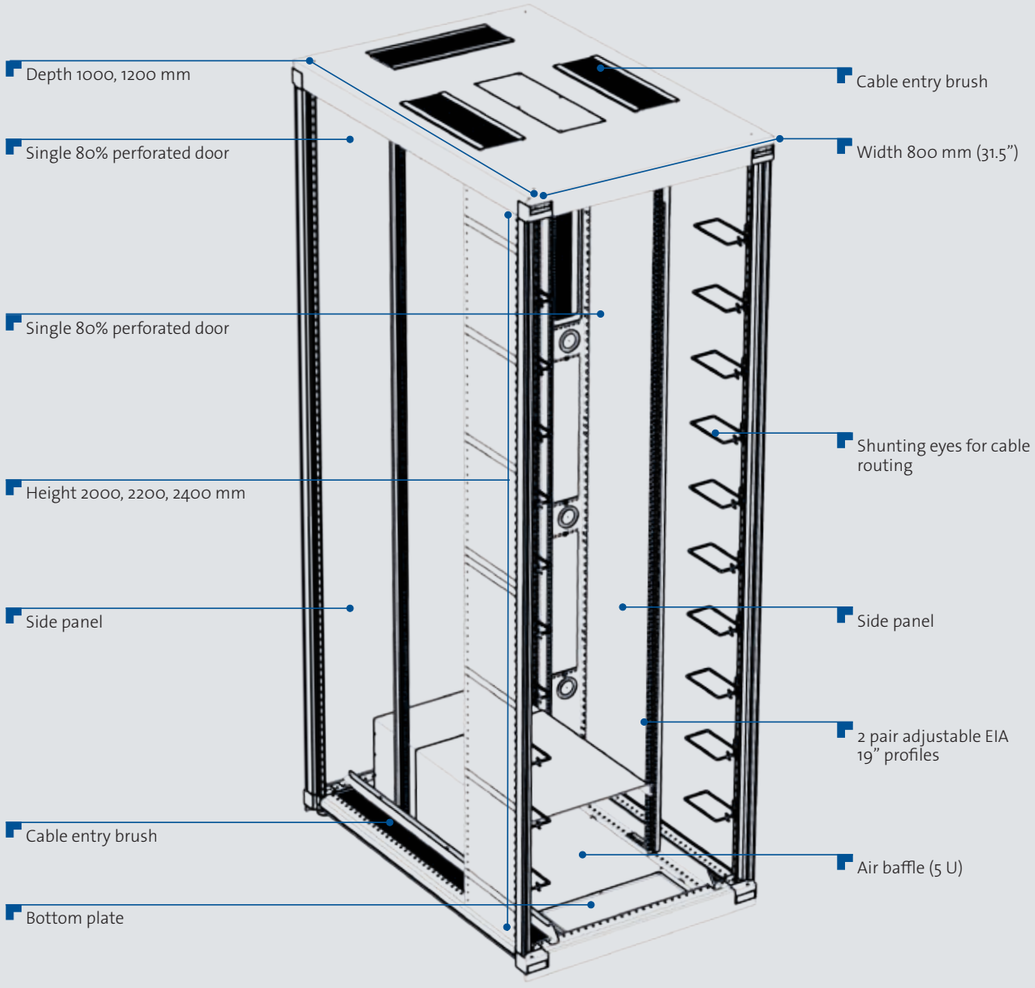
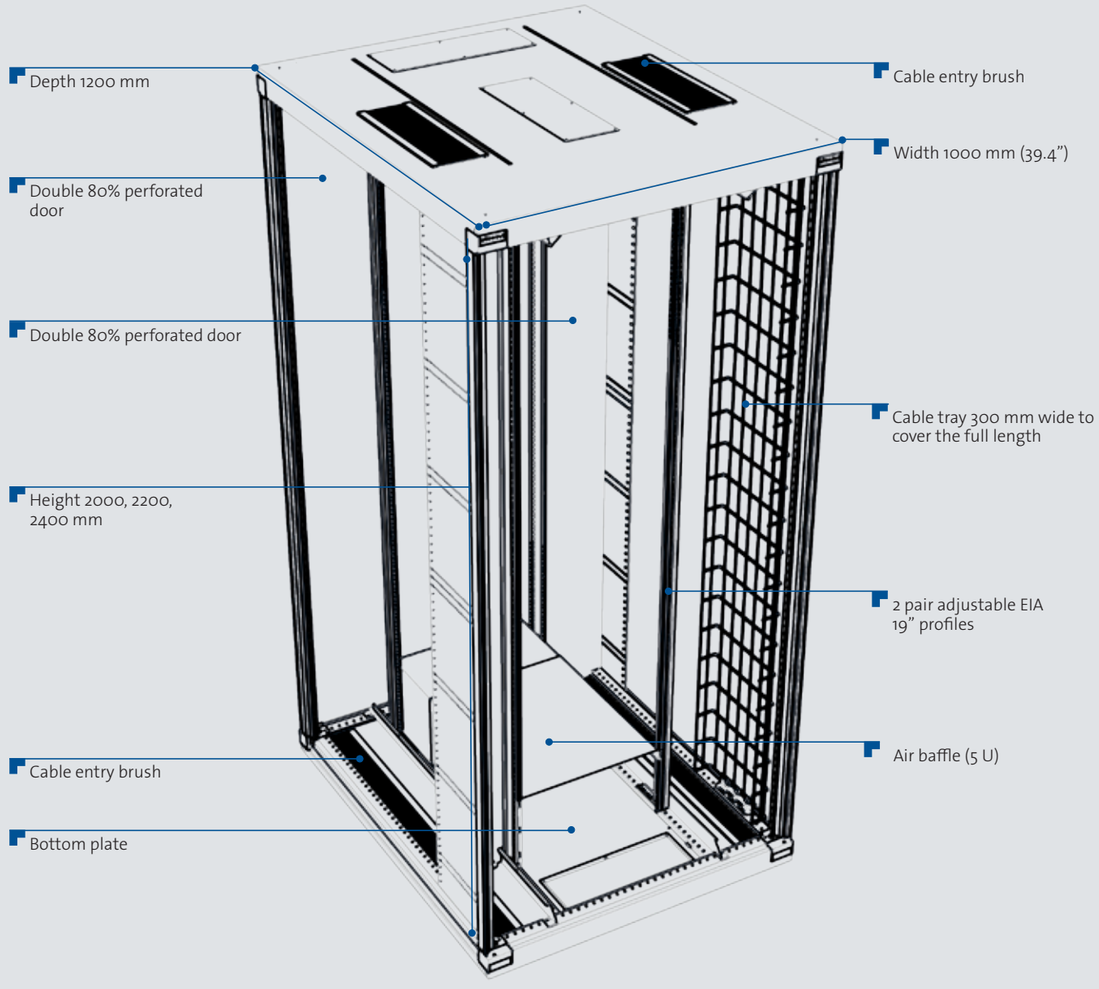


Rack 800 mm wide



Rack 1000 mm wide

A SOLUTION FOR EVERY SITUATION

Minkels has developed a 1000 mm wide rack for the Cisco Nexus 7004, 7009 and 7018, which takes the specific features of these products into account. Minkels has developed a rack with a width of 800 mm for amongst others the Cisco Catalyst 6500 series and Cisco MDS 9500 series. These 800 and 1000 mm wide switching and routing racks are available in different heights: 2000, 2200 and 2400 mm. The racks are equipped with 80% ventilated doors. The integrated air baffle ensures that there is always sufficient cold air on hand for keeping the sides cool. Two PDUs can be mounted vertically (A and B feed) in all racks. Vertical cable management accessories for routing network cables are included.

Racks

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	S&R Rack 800	S&R Rack 1000
Measurements & weight		
Height (mm))	2000 / 2200 / 2400 mm	
Height (U)	41/ 46 / 50	
Height (free)	36/ 41 / 45 U [1]	
Depth (D)	1000 / 1200 mm	1200 mm
Width (W)	800 mm (31,5")	1000 mm (39,4")
Weight	±150 kg	±185 kg
Load capacity (static)	1500 kg	
Specifications		
Front - back	Single 80% perforated door with swing handle – K333 cylinder	Double 80% perforated door with swing handle – EK333 cylinder
Top	With cable entry brush – Compatible with Minkels cable duct system	
Bottom	Sealed with bottom plate and cable entry brushes	
Side	Left and right side panels – 4x 6mm square locks	
Interior	4 x 19" -profiles	
19" Profile distance in front	300 mm	350 mm
19" Profile distance front - back	500 mm (for a rack that is 1000 mm deep) 600 mm (for a rack that is 1200 mm deep)	740 mm
19" HE - indicator	Yes	
Airflow	From front to back – right to left	
Cable management	2x (right and left) 8x shunting eye 85 x 165 mm (for a 41 U / 2000 mm rack) 2x (right and left) 9x shunting eye 85 x 165 mm (for a 46 U / 2200 mm rack) 2x (right and left) 10x shunting eye 85 x 165 mm (for a 50 U / 2400 mm rack)	Front right: Cable tray 300 mm full height
Power management	Standard (aluminium) Minkels PDUs can be integrated (MPSxxxx series)	
Switch compatibility[2]		
Cisco	Catalyst: 4900M/ 6504-E/ 6506/ 6506-E/ 6509/ 6509-E/ 6513-E MDS: 9506 / 9509 / 9513 7603/ 7603-S/ 7604/ 7606/ 7606-S/ 7613	Cisco Nexus 7004, 7009, 7018
Juniper	EX8208 / EX8216[3]	-
Brocade	FXS 1600[4]	-
Other	Other switches are also possible. We would be happy to advise you.	
Accessories		
Front plates	Minkels 1 U, plastic RAL 9005, 25 units	
Cover plates right side	2 U adjustable 450 – 550 mm, RAL 9011 3 U adjustable 450 – 550 mm, RAL 9011	2 U adjustable 700 – 800 mm, RAL 9011 3 U adjustable 700 – 800 mm, RAL 9011
Cable guides	41 U / 2000 mm - 10 cable guides incl. accessory mounting rails 46 U / 2200 mm - 10 cable guides incl. accessory mounting rails 50 U / 2400 mm - 10 cable guides incl. accessory mounting rails	

1 Air baffle is 5 U
2 Installed in the front of the rack
3 Adjustment settings 19-inch distance front – back side to minimum 673 mm
4 Adjustment settings 19-inch distance front – back side to minimum 573 mm (in a rack that is 1000 mm deep)

SWITCHING & ROUTING RACK	
MRS208010	Switching & routing rack 800 x 2000 x 1000 (W x H x D) RAL 7047
MRS208010B	Switching & routing rack 800 x 2000 x 1000 (W x H x D) RAL 9011
MRS228010	Switching & routing rack 800 x 2200 x 1000 (W x H x D) RAL 7047
MRS228010B	Switching & routing rack 800 x 2200 x 1000 (W x H x D) RAL 9011
MRS248010	Switching & routing rack 800 x 2400 x 1000 (Wx H x D) RAL 7047
MRS248010B	Switching & routing rack 800 x 2400 x 1000 (W x H x D) RAL 9011
MRS208012	Switching & routing rack 800 x 2000 x 1200 (W x H x D) RAL 7047
MRS208012B	Switching & routing rack 800 x 2000 x 1200 (W x H x D) RAL 9011
MRS228012	Switching & routing rack 800 x 2200 x 1200 (W x H x D) RAL 7047
MRS228012B	Switching & routing rack 800 x 2200 x 1200 (W x H x D) RAL 9011
MRS248012	Switching & routing rack 800 x 2400 x 1200 (W x H x D) RAL 7047
MRS248012B	Switching & routing rack 800 x 2400 x 1200 (W x H x D) RAL 9011
MRS201012	Switching & routing rack 1000 x 2000 x 1200 (W x H x D) RAL 7047
MRS201012B	Switching & routing rack 1000 x 2000 x 1200 (W x H x D) RAL 9011
MRS221012	Switching & routing rack 1000 x 2200 x 1200 (W x H x D) RAL 7047
MRS221012B	Switching & routing rack 1000 x 2200 x 1200 (W x H x D) RAL 9011
MRS241012	Switching & routing rack 1000 x 2400 x 1200 (W x H x D) RAL 7047
MRS241012B	Switching & routing rack 1000 x 2400 x 1200 (W x H x D) RAL 9011

SWITCHING & ROUTING RACK ACCESSORIES	
MFE1105	Minkels 1 U front panels, plastic RAL 9005, 25 units
MRS0102	Adjustable cover plate 450 – 550 mm 2 U, RAL 9011
MRS0103	Adjustable cover plate 450 – 550 mm 3 U, RAL 9011
MRS0112	Adjustable cover plate 700 – 800 mm 2 U, RAL 9011
MRS0113	Adjustable cover plate 700 – 800 mm 3 U, RAL 9011
MCM2016	Cable guides 10x, 2000 mm accessory mounting rails
MCM2017	Cable guides 10x, 2200 mm accessory mounting rails
MCM2018	Cable guides 10x, 2400 mm accessory mounting rails
MCM2009	20 cable guides (to be ordered separately)

Accessories

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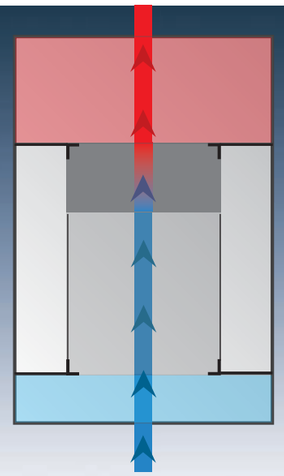
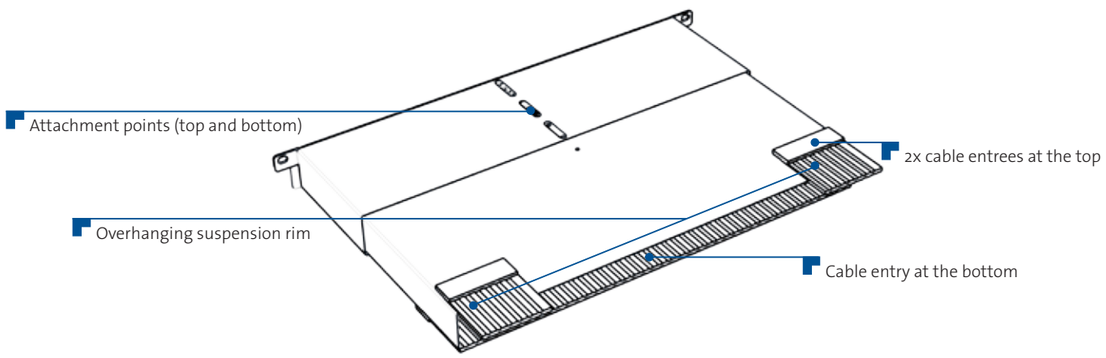


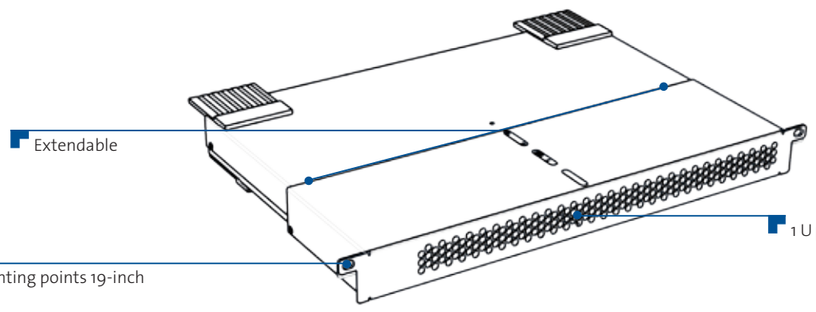
Air inlet duct 1 U

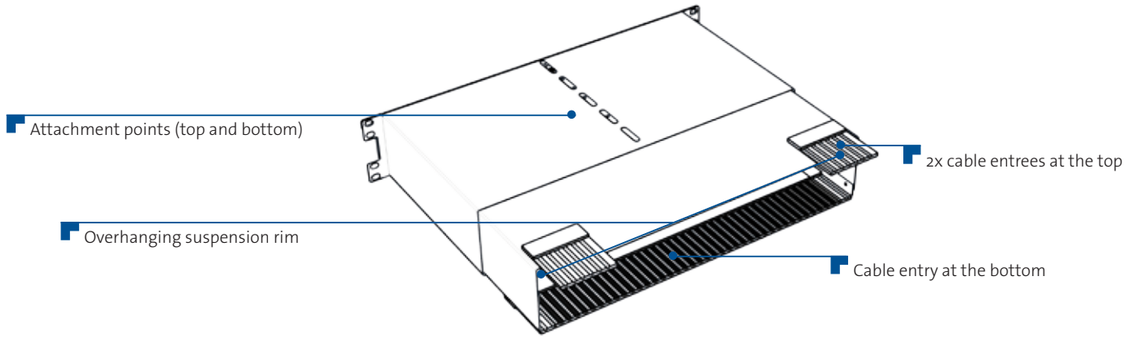
Air inlet duct 2 U

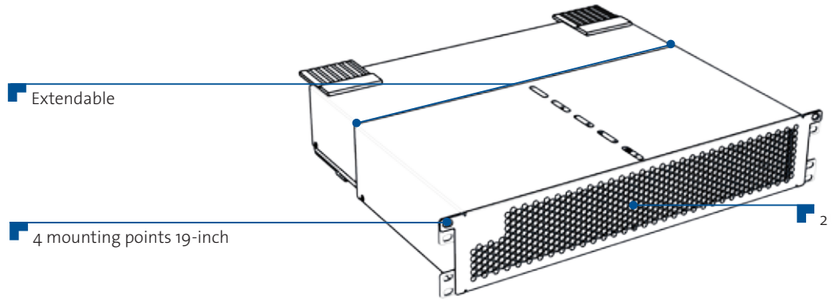
PRODUCTS

Minkels has developed a “letter box” for the 1 U and 2 U switches. The equipment is mounted on the back of the rack and receives cold air from the front of the rack (Cold Corridor). This allows the cables to be routed alongside the back of the equipment, while still cooling the product with cold air. These products are easy to mount in the rack.









Accessories

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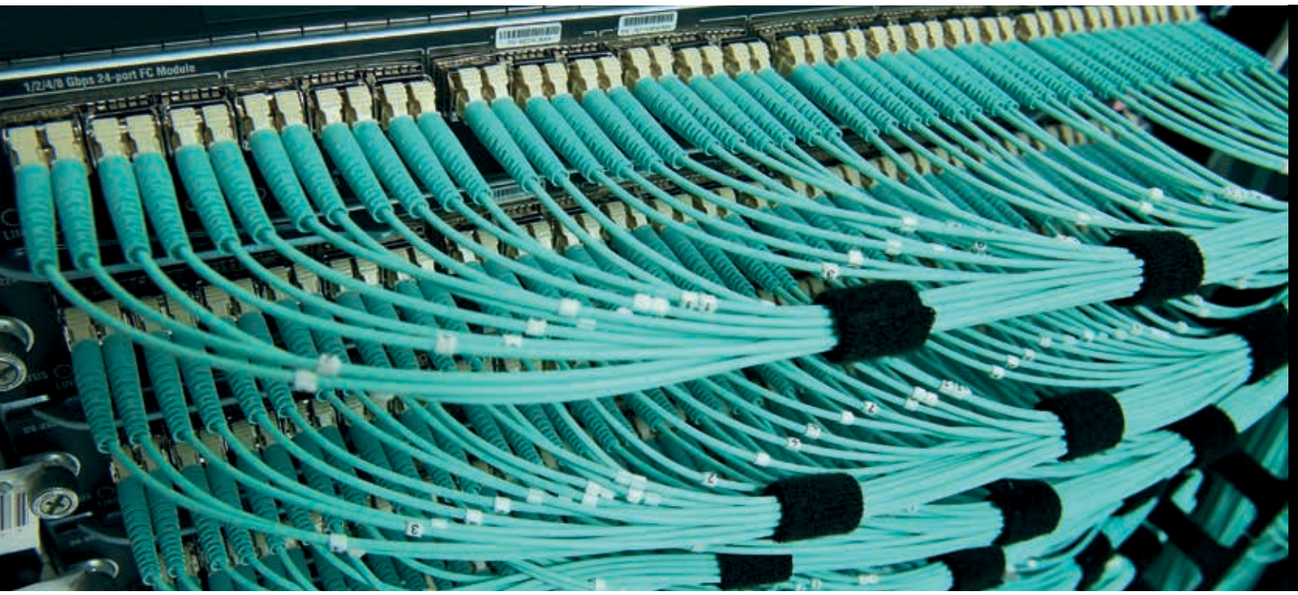

INLET DUCT 1 U-2 U SPECIFICATIONS	
General	
Colour	Sendzimir RAL 9011 (perforated front panel)
Measurements and weight	
Height (H)	1 U, 2 U (44, 88 mm)
Depth (D)	210-300 mm adjustable (1 U version) 350-500 mm adjustable (2 U version)
Width (W)	19-inch
Weight	± 2,6 kg (1 U version) ± 2,8 kg (2 U version)
Specifications	
Cable entry	Bottom and top
Switch compatibility 1 U[1]	
Cisco	Nexus: 2148, 2224, 2232, 2248, 3016, 3048, 3064-T, 3064-X, 3548, 4948E, 4948E-F
Brocade	300, 5300, 6505, 6510, 7800, FCX 624, FCX 648, ICX 6610, ICX 6650, VA-40FC, VDX 6710, VDX 6720-24, VDX 6730-32, VDX 6740, VDX 6740T
Juniper	EX3300, QFX3500, QFX3600
Other	Other switches are also possible, we would be happy to advise you..
Switch compatibility 2 U[1]	
Brocade	6520, VDX 6720-60, VDX 6730-76, Encryption
Overige	Other 2x one compatible 1 U switch Other switches can also be used. We would be happy to advise you.

1 Mounted on the back of the rack

SWITCHING & ROUTING PRODUCTS	
MRS0001	Air Duct 1 U for the back, extendable 210-300 mm Sendzimir
MRS0002	Air Duct 2 U for the back, extendable 350-500 mm Sendzimir

KNOWLEDGE AND EXPERIENCE

The experts at Minkels are happy to advise you about the best enclosures for your switching and routing equipment. We would like to help you make the right product and design choices.

The Minkels sales & service team is here to serve you! Please do not hesitate to contact us.

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