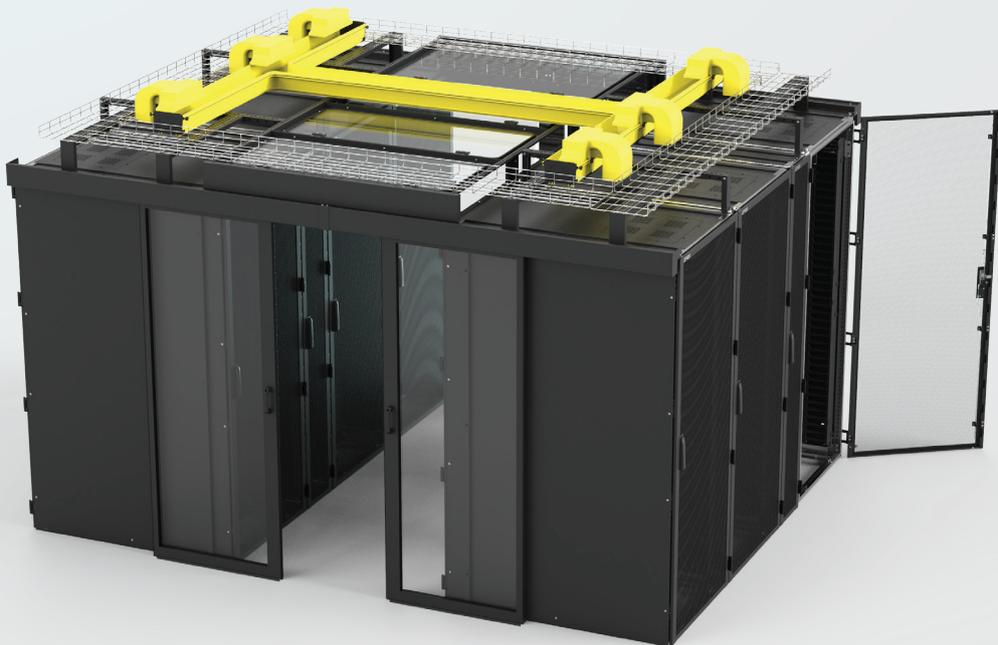


# EFB-SERVER

PREMIUM SERVER CABINETS FOR DATA CENTERS





# PROFILE OF EFB-ELEKTRONIK

EFB-Elektronik GmbH is a leading manufacturer and system provider of networking technology and industrial system solutions. Our expertise ranges from structured cabling using certified high-end products for data centres to custom developments for industrial clients.

Our team services customers worldwide from our headquarters in Bielefeld, Germany. Our customer base includes renowned household names from the IT and security industry, as well as medium sized companies and large corporations.

Our membership in the international TKH Group based in the Netherlands, with more than 6,500 employees and production facilities around the globe, gives us additional leverage for the benefit of our customers. The EFB group of companies has 330 employees across nine locations in Europe, five of them in Germany, three subsidiary companies located in Istanbul, Copenhagen and Vienna and one production site in Slovakia.

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# THE EFB-SERVER

## PREMIUM SERVER CABINETS FOR DATA CENTERS

The premium line ‚EFB-Server‘ represents a high-quality system of server cabinets and the matching accessories. Due to the excellent manufacturing, this sophisticated products are optimally suited for demanding requirements of complex data centers.

Convince yourself of the numerous contemporary and practical features offered by this product line from EFB-Elektronik.



### Robust, Rugged, EFB-Server

The extremely solid profile frame is completely dismantlable and offers a high load capacity of 1500 kg (optionally higher load capacity possible).



### Extremely Flexible

Different side panels for different requirements: horizontally split, door opening up to 270°, lateral PDU mounting or bulkhead.



### Tool-Less & Efficient

Multiple TOOL-LESS features for accessory mounting and customisation save installation time and costs.



### Highest Security

Doors with 5-point or 3-point locking and a perforated area of up to 86 % provide access protection with high air flow.



### Custom Solutions Possible

The EFB-Server is customisable to your individual requirements for dimensions, doors or equipment.



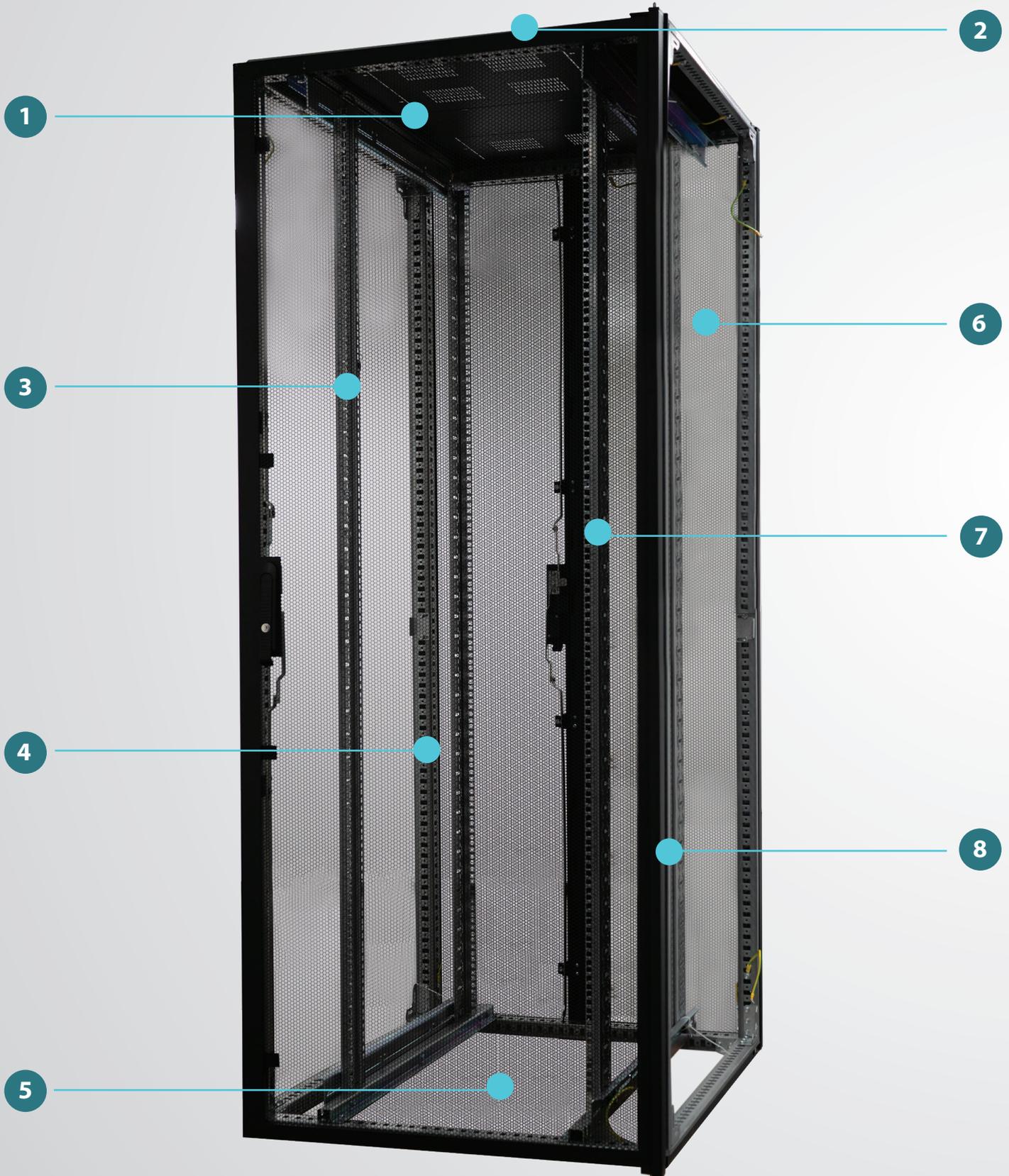
### Comprehensive Accessories

You can choose from an extensive range of accessories. Find the right products to equip your EFB-Server perfectly.



# CONVINCING DETAILS

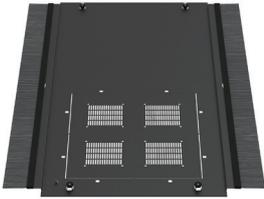
ROBUST, UNIVERSAL & WITH TOOL-LESS MOUNTING OPTIONS



**1 TOOL-LESS ASSEMBLY**  
of roof and other accessories

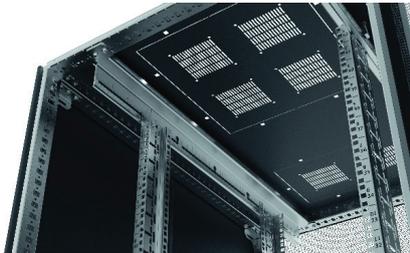


**2 CABLE ENTRY**  
in the roof over the entire cabinet depth

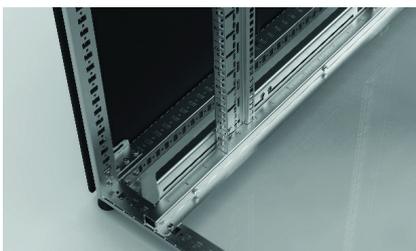


**3 INFINITELY VARIABLE DEPTH ADJUSTMENT**  
of the 19" levels with mm-scaling

- 19" level extendable to ETSI/21" as standard



**4 PROFILE FRAME**  
with surrounding raster holes,  
completely dismantlable



**5 HIGH LOAD CAPACITY OF 1500 KG**  
(optionally higher load capacity possible)

**6 5 DIFFERENT SIDEWALL VARIANTS AVAILABLE**

- Horizontally split for easy access and door opening angle of 270°
- Lateral PDUs mountable also for cabinet width 600 mm  
Bulkheads for use with or without levelling feet, between or inside of the cabinet frame
- Bulkheads can be retrofitted at any time



**7 AIR ROUTING COMPONENTS**

- Vertical and horizontal
- air routing possible



**8 DOORS WITH HIGH SAFETY AND AIR FLOW**

- One-part doors with 5-point locking
- Two-part doors with 3-point locking
- 80 % degree of perforation / 86 % perforated area



## 19" Server Cabinets ,EFB-Server'

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### ORDER UNCOMPLICATED FROM YOUR CONTACT PERSON



Put together the right selection with your personal contact. Let the experts advise you on the application and equipment options offered by the EFB Server.

You don't know your contact person yet? You can easily find out who your EFB contact is at [www.efb-elektronik.de/en/contact](http://www.efb-elektronik.de/en/contact).

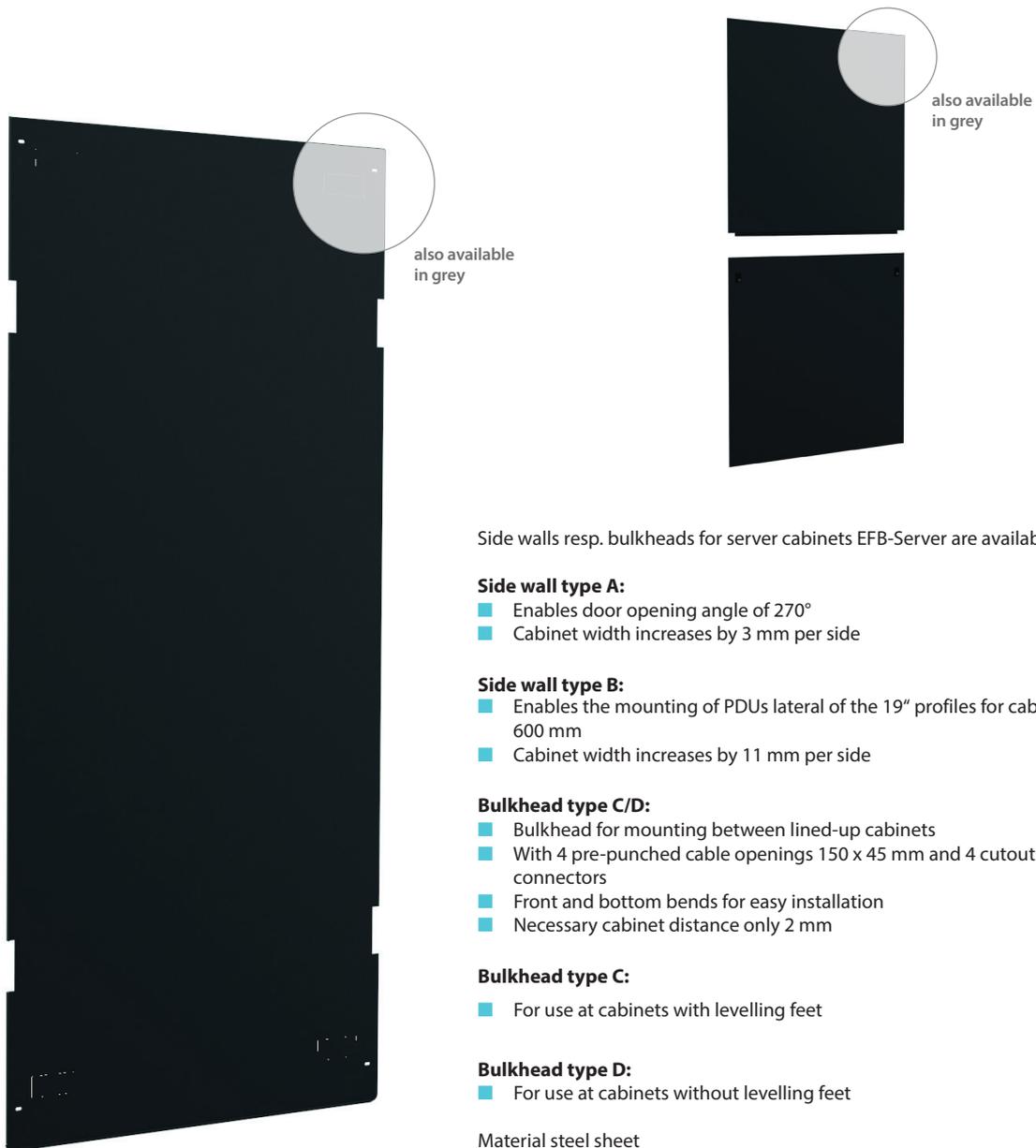
- 19" server cabinet according to DIN41494
- Steel sheet housing with screwed profile frame, completely pre-assembled, dismantlable
- Inside front and rear 4 x 19" profile rails (2 front, 2 rear), galvanised, toolless stepless depth-adjustable
- Scaling for depth-adjustment at the profile carrying rails
- Contrariwise numbering of rack units at the 19" profiles
- Front- and rear door steel, perforated, 1-part or 2-part, perforation degree > 80 %, perforation area up to 86 %
- 1-part door with 5-point locking and turning handle, lockable, incl. profile half-cylinder acc. to DIN18252 / EN1303, door stop right or left-sided possible
- 2-part door with 3-point bar locking and turning handle, lockable, incl. profile half-cylinder acc. to DIN18252 / EN1303
- Profile half-cylinder exchangeable by customer (30/10 mm)
- Door opening angle up to 270°
- Delivery without side walls, side walls available in 4 variants:
  - Type A – Side wall, horizontally divided, door opening angle 270°
  - Type B – Side wall, horizontally divided, enables lateral PDU mounting in cabinet width 600 mm
  - Type C – Bulkhead, 1-part, for cabinets with levelling feet
  - Type D – Bulkhead, 1-part, for cabinets without levelling feet
- Cabinets stackable side-by-side with stacking set Art.-No. ESV-ANR01
- Bulkheads are retrofittable onto already stacked cabinets
- Roof toolless mountable, with pre-punched ventilation openings for use of up to 2 fan units (2-fan or 4-fan type)
- Roof with cable entries over full cabinet length after toolless removal of the pre-punched lateral covers
- Delivery without bottom
- Max. load 1500 kg, higher max. load optionally possible
- All cabinet parts inside completely grounded
- Paint finish RAL7035, light grey / RAL9005, jet black
- Protection degree IP20 (except of bottom area)
- Scope of supply: 1 x set of captive nuts (PU 20 pcs), 4 x levelling feet M12, 2 x key
- Delivery in transport packaging on disposable pallet

Art.-No.	U	Width	Depth	Height	Front Door	Rear Door
ESV-4260TS.P10S	42	600 mm	1000 mm	2000 mm	Steel perforated 1-part	Steel perforated 1-part
ESV-4260TS.P1P20S	42	600 mm	1000 mm	2000 mm	Steel perforated 1-part	Steel perforated 2-part
ESV-4262TS.P10S	42	600 mm	1200 mm	2000 mm	Steel perforated 1-part	Steel perforated 1-part
ESV-4262TS.P1P20S	42	600 mm	1200 mm	2000 mm	Steel perforated 1-part	Steel perforated 2-part
ESV-4280TS.P10S	42	800 mm	1000 mm	2000 mm	Steel perforated 1-part	Steel perforated 1-part
ESV-4280TS.P1P20S	42	800 mm	1000 mm	2000 mm	Steel perforated 1-part	Steel perforated 2-part
ESV-4282TS.P10S	42	800 mm	1200 mm	2000 mm	Steel perforated 1-part	Steel perforated 1-part
ESV-4282TS.P1P20S	42	800 mm	1200 mm	2000 mm	Steel perforated 1-part	Steel perforated 2-part
ESV-4760TS.P10S	47	600 mm	1000 mm	2200 mm	Steel perforated 1-part	Steel perforated 1-part
ESV-4760TS.P1P20S	47	600 mm	1000 mm	2200 mm	Steel perforated 1-part	Steel perforated 2-part
ESV-4762TS.P10S	47	600 mm	1200 mm	2200 mm	Steel perforated 1-part	Steel perforated 1-part
ESV-4762TS.P1P20S	47	600 mm	1200 mm	2200 mm	Steel perforated 1-part	Steel perforated 2-part
ESV-4780TS.P10S	47	800 mm	1000 mm	2200 mm	Steel perforated 1-part	Steel perforated 1-part
ESV-4780TS.P1P20S	47	800 mm	1000 mm	2200 mm	Steel perforated 1-part	Steel perforated 2-part
ESV-4782TS.P10S	47	800 mm	1200 mm	2200 mm	Steel perforated 1-part	Steel perforated 1-part
ESV-4782TS.P1P20S	47	800 mm	1200 mm	2200 mm	Steel perforated 1-part	Steel perforated 2-part

Prefix	U	Cabinet Width	Cabinet Depth	Colour	Door Assembly	Options
ESV-	42	8	0	GR	.P1P2	OS = Without Side Walls
	47	6 = 600 mm	0 = 1000 mm	TS = RAL9005, Jet Black	.P1 = Steel Door, Perforated, 1-Part	
	42	8 = 800 mm	2 = 1200 mm	GR = RAL7035, Light Grey	.P2 = Steel Door, Perforated, 2-Part	

The first and second digit after the point define the front door, third and fourth define the rear door. For only one type, front and rear door are identically.

## Side Walls and Bulkheads for EFB-Server, Type A-B-C-D



Side walls resp. bulkheads for server cabinets EFB-Server are available in 4 variants:

### Side wall type A:

- Enables door opening angle of 270°
- Cabinet width increases by 3 mm per side

### Side wall type B:

- Enables the mounting of PDUs lateral of the 19" profiles for cabinet width 600 mm
- Cabinet width increases by 11 mm per side

### Bulkhead type C/D:

- Bulkhead for mounting between lined-up cabinets
- With 4 pre-punched cable openings 150 x 45 mm and 4 cutouts for line-up connectors
- Front and bottom bends for easy installation
- Necessary cabinet distance only 2 mm

### Bulkhead type C:

- For use at cabinets with levelling feet

### Bulkhead type D:

- For use at cabinets without levelling feet

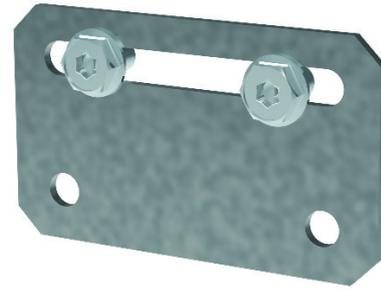
Material steel sheet

Scope of delivery: 1 x side wall/partition

Art.-No.	Description	U	For Cabinet Depth	Type	Colour
ESV-W420A.GR	Side Wall for EFB-Server	42	1000	Door opening angle 270°	RAL7035
ESV-W420B.GR	Side Wall for EFB-Server	42	1000	PDU in W=600 mm	RAL7035
ESV-W420C.GR	Bulkhead for EFB-Server	42	1000	Bulkhead for cabinet with feet	RAL7035
ESV-W420D.GR	Bulkhead for EFB-Server	42	1000	Bulkhead for cabinet without feet	RAL7035
ESV-W422A.GR	Side Wall for EFB-Server	42	1200	Door opening angle 270°	RAL7035
ESV-W422B.GR	Side Wall for EFB-Server	42	1200	PDU in W=600 mm	RAL7035
ESV-W422C.GR	Bulkhead for EFB-Server	42	1200	Bulkhead for cabinet with feet	RAL7035
ESV-W422D.GR	Bulkhead for EFB-Server	42	1200	Bulkhead for cabinet without feet	RAL7035
ESV-W420A.TS	Side Wall for EFB-Server	42	1000	Door opening angle 270°	RAL9005
ESV-W420B.TS	Side Wall for EFB-Server	42	1000	PDU in W=600 mm	RAL9005
ESV-W420C.TS	Bulkhead for EFB-Server	42	1000	Bulkhead for cabinet with feet	RAL9005
ESV-W420D.TS	Bulkhead for EFB-Server	42	1000	Bulkhead for cabinet without feet	RAL9005
ESV-W422A.TS	Side Wall for EFB-Server	42	1200	Door opening angle 270°	RAL9005
ESV-W422B.TS	Side Wall for EFB-Server	42	1200	PDU in W=600 mm	RAL9005
ESV-W422C.TS	Bulkhead for EFB-Server	42	1200	Bulkhead for cabinet with feet	RAL9005
ESV-W422D.TS	Bulkhead for EFB-Server	42	1200	Bulkhead for cabinet without feet	RAL9005

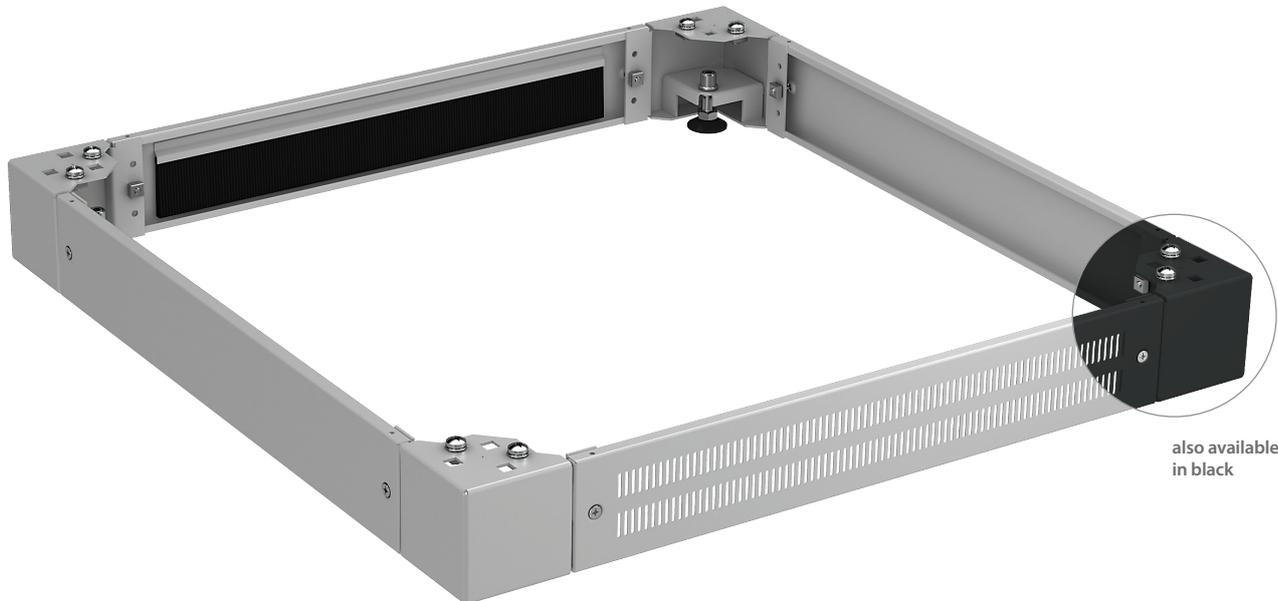
## Line-Up Connectors for EFB-Server, Set 4 Pieces

Connector set for stacking of two cabinets EFB-Server  
 Screw mounting directly at the profile frame  
 Material steel  
 Scope of delivery: 4 x connector incl. mounting material



Art.-No.	Description
ESV-ANR01	Line-Up Connector for EFB-Server, Set 4 Pieces

## Plinth 100 mm for EFB-Server



### Cabinets, EFB-Server' use the same plinths as cabinet series PRO

Consisting of 4 very solid, levelable plinth corners and 4 covers  
 Front cover perforated, rear cover with cable entry via brush  
 Side covers closed  
 Material steel sheet  
 Paint finish RAL7035, light grey / RAL9005, jet black  
 Delivery unassembled, incl. mounting material

Further variants can be combined from the plinth corners and covers of the PRO series

Art.-No.	Description	For Cabinet Width	For Cabinet Depth	Colour
PRO-SOK60PB.GR	Plinth H=100 mm	600 mm	1000 mm	RAL7035
PRO-SOK62PB.GR	Plinth H=100 mm	600 mm	1200 mm	RAL7035
PRO-SOK80PB.GR	Plinth H=100 mm	800 mm	1000 mm	RAL7035
PRO-SOK82PB.GR	Plinth H=100 mm	800 mm	1200 mm	RAL7035
PRO-SOK60PB.TS	Plinth H=100 mm	600 mm	1000 mm	RAL9005
PRO-SOK62PB.TS	Plinth H=100 mm	600 mm	1200 mm	RAL9005
PRO-SOK80PB.TS	Plinth H=100 mm	800 mm	1000 mm	RAL9005
PRO-SOK82PB.TS	Plinth H=100 mm	800 mm	1200 mm	RAL9005

## 4 Plinth Corners for EFB-Server, Levellable, H=100/200 mm



also available in black



also available in black

### Cabinets, EFB-Server' use the same plinths as cabinet series PRO

Set of 4 very stable plinth corners

Plinth height 100 or 200 mm, levellable

Suitable for individual assembly with plinth covers PRO-SOBxx

Material steel sheet

Paint finish RAL7035, light grey / RAL9005, jet black

Art.-No.	Description	Colour
PRO-SOE100N.GR	4 Plinth Corners, Levellable, H=100 mm	RAL7035
PRO-SOE200N.GR	4 Plinth Corners, Levellable, H=200 mm	RAL7035
PRO-SOE100N.TS	4 Plinth Corners, Levellable, H=100 mm	RAL9005
PRO-SOE200N.TS	4 Plinth Corners, Levellable, H=200 mm	RAL9005

## 4 Plinth Corners for EFB-Server, Fixed, H=100/200 mm



also available in black



also available in black

### Cabinets, EFB-Server' use the same plinths as cabinet series PRO

Set of 4 very stable plinth corners

Plinth height 100 or 200 mm fix (not levellable)

Suitable for individual assembly with plinth covers PRO-SOBxx

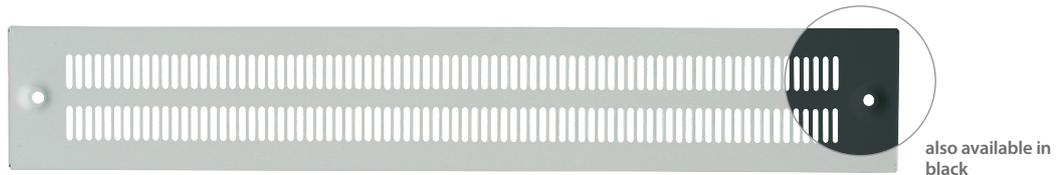
Suitable for screwing at the floor and for use with vibration dampers PRO-VIB01

Material steel sheet

Paint finish RAL7035, light grey / RAL9005, jet black

Art.-No.	Description	Colour
PRO-SOE100F.GR	4 Plinth Corners, Fixed, H=100 mm	RAL7035
PRO-SOE200F.GR	4 Plinth Corners, Fixed, H=200 mm	RAL7035
PRO-SOE100F.TS	4 Plinth Corners, Fixed, H=100 mm	RAL9005
PRO-SOE200F.TS	4 Plinth Corners, Fixed, H=200 mm	RAL9005

## Plinth Cover for EFB-Server, Perforated

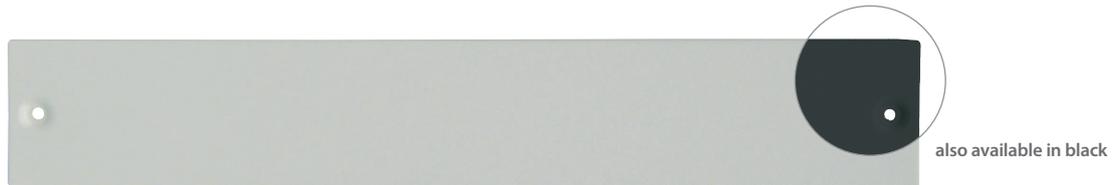


### Cabinets, EFB-Server' use the same plinths as cabinet series PRO

Covers for plinths of cabinet series EFB-Server  
 Suitable for use at all 4 corners of the plinth (front/rear/left/right)  
 Material steel sheet  
 Paint finish RAL7035, light grey / RAL9005, jet black  
 Scope of delivery: 1 cover incl. mounting accessories

Art.-No.	For Cabinet Width	For Cabinet Depth	Colour
PRO-SOB06P.GR	600 mm	600 mm	RAL7035
PRO-SOB08P.GR	800 mm	800 mm	RAL7035
PRO-SOB10P.GR	1000 mm	1000 mm	RAL7035
PRO-SOB12P.GR	1200 mm	1200 mm	RAL7035
PRO-SOB06P.TS	600 mm	600 mm	RAL9005
PRO-SOB08P.TS	800 mm	800 mm	RAL9005
PRO-SOB10P.TS	1000 mm	1000 mm	RAL9005
PRO-SOB12P.TS	1200 mm	1200 mm	RAL9005

## Plinth Cover for EFB-Server, Full



### Cabinets, EFB-Server' use the same plinths as cabinet series PRO

Covers for plinths of cabinet series EFB-Server  
 Suitable for use at all 4 corners of the plinth (front/rear/left/right)  
 Material steel sheet  
 Paint finish RAL7035, light grey / RAL9005, jet black  
 Scope of delivery: 1 cover incl. mounting accessories

Art.-No.	For Cabinet Width	For Cabinet Depth	Colour
PRO-SOB06V.GR	600 mm	600 mm	RAL7035
PRO-SOB08V.GR	800 mm	800 mm	RAL7035
PRO-SOB10V.GR	1000 mm	1000 mm	RAL7035
PRO-SOB12V.GR	1200 mm	1200 mm	RAL7035
PRO-SOB06V.TS	600 mm	600 mm	RAL9005
PRO-SOB08V.TS	800 mm	800 mm	RAL9005
PRO-SOB10V.TS	1000 mm	1000 mm	RAL9005
PRO-SOB12V.TS	1200 mm	1200 mm	RAL9005

## Plinth Cover for EFB-Server, with Brush



### Cabinets, EFB-Server' use the same plinths as cabinet series PRO

Covers for plinths of cabinet series EFB-Server  
 Suitable for use at all 4 corners of the plinth (front/rear/left/right)  
 Material steel sheet  
 Paint finish RAL7035, light grey / RAL9005, jet black  
 Scope of delivery: 1 cover incl. mounting accessories

Art.-No.	For Cabinet Width	For Cabinet Depth	Colour
PRO-SOB06B.GR	600 mm	600 mm	RAL7035
PRO-SOB08B.GR	800 mm	800 mm	RAL7035
PRO-SOB10B.GR	1000 mm	1000 mm	RAL7035
PRO-SOB12B.GR	1200 mm	1200 mm	RAL7035
PRO-SOB06B.TS	600 mm	600 mm	RAL9005
PRO-SOB08B.TS	800 mm	800 mm	RAL9005
PRO-SOB10B.TS	1000 mm	1000 mm	RAL9005
PRO-SOB12B.TS	1200 mm	1200 mm	RAL9005

## Roof Fan 2-/4-Way for EFB-Server



Step switch for „Silent“- and „Normal“-Mode (4-fan variant only)



Power connector IEC C14

### In cabinets EFB-Server roof fans of cabinet series PRO are usable

Fan unit with integrated thermostat for use in opening A of cabinets EFB-Server (380 x 380 mm, cabinet width 800 mm only)

### For 4-fan variant: 3-stage switch (0/I/II) for speed reduction („Silent-Mode“) for especially quietly operation

For 2-fan variant: ON/OFF switch

Easy mounting at prepared opening (380 x 380 mm) hanging at cabinet roof

Housing material plastic

Paint finish RAL7035, light grey / RAL9005, jet black

Scope of delivery: fan unit incl. thermostat, mounting accessories

Art.-No.	Volume Flow, Free-Blowing	Noise Level	Remark
PRO-LFD04AT.GR	660 (Silent Mode: 330) m <sup>3</sup> /h	54 (Silent Mode: 44) dB	Switchable Silent Mode
PRO-LFD04AT.TS	660 (Silent Mode: 330) m <sup>3</sup> /h	54 (Silent Mode: 44) dB	Switchable Silent Mode
PRO-LFD02AT.GR	330 m <sup>3</sup> /h	48 dB	
PRO-LFD02AT.TS	330 m <sup>3</sup> /h	48 dB	

## Roof Fan 2-Way for EFB-Server

also available in black

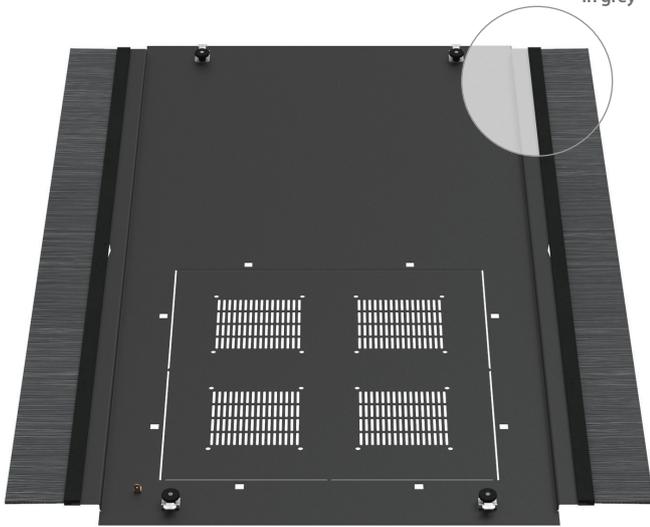


Fan unit for use in roof of Co-Location Racks PRO and EFB-Server  
 Installation in mounting opening type B (210 x 380 mm)  
 Material steel sheet  
 Colour RAL7035, light grey / RAL9005, jet black  
 Note: thermostat not included in delivery  
 Scope of delivery: fan unit incl. cable without plug (open end)

Art.-No.	Volume Flow, Freeblowing	Noise Level
PRO-LFD02B0.GR	330 m³/h	48 dB
PRO-LFD02B0.TS	330 m³/h	48 dB

## Brush Strip for Roof EFB-Server, 1 Piece

also available in grey

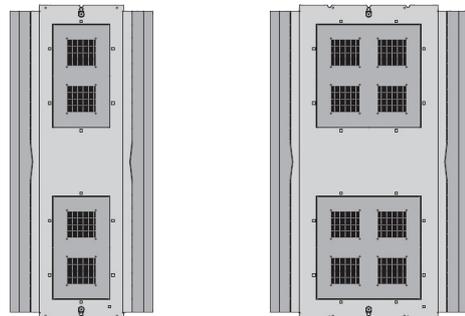


Brush strip for use at the side edge of the roof  
 Mounting after removal of the pre-punched cover

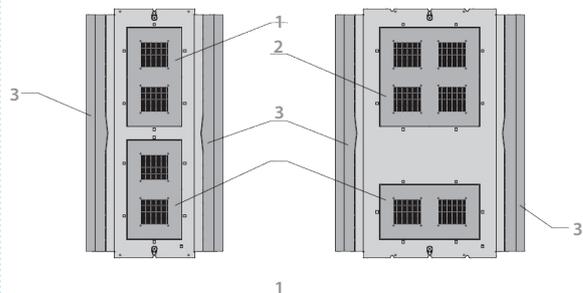
Material plastic, black  
 Scope of delivery: 1 x brush strip

Art.-No.	Description	Length
ESV-BRS10	Brush Strip for Roof EFB-Server, 1 Piece	1000 mm
ESV-BRS12	Brush Strip for Roof EFB-Server, 1 Piece	1200 mm

Roof plates EFB-Server,  
 (Cabinet depth 1200 mm)



Roof plates EFB-Server,  
 (Cabinet depth 1000 mm)



**Legend:**

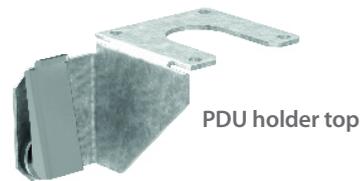
- 1 - Mounting cutout type B, 380 x 210 mm
- 2 - Mounting cutout type A, 380 x 380 mm
- 3 - Lateral cover for cable entry, pre-punched

## PDU Holder for EFB-Server, Set 2 Pieces

For vertical mounting of socket strips (PDU) lateral at the cabinet frame  
**Note: with side walls type B a lateral mounting of PDUs is possible even for cabinet width 600 mm**

Material steel sheet, galvanised

Scope of delivery. 2 x PDU holder incl. mounting material (toolless)



Also suitable for cabinet width 600 mm:  
 Side walls type B allow the mounting of socket strips between 19" profile and side wall

Art.-No.	Description
ESV-PDU01	PDU Holder for EFB-Server, 2 Pieces

## Multi Function Rails Horizontal for EFB-Server

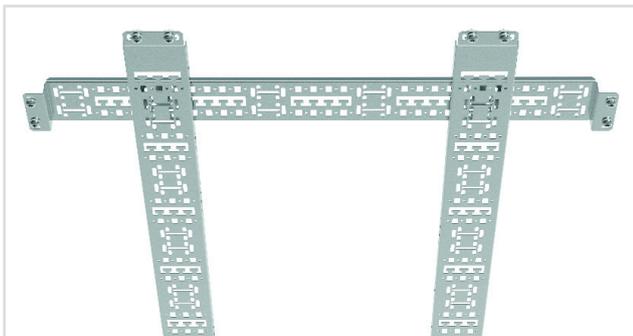
Multi function rail for mounting between the cabinet poles>For universal mounting of accessories, cable routing etc.

Positioning in any height possible

Material steel

Delivery 1 x rail incl. mounting material

Art.-No.	Description	For Cabinet Depth
ESV-MFH10	Multi Function Rail Horizontal for EFB-Server	1000 mm
ESV-MFH12	Multi Function Rail Horizontal for EFB-Server	1200 mm



Horizontal and vertical multi function rails are mountable together

## Multi Function Rails Vertical for EFB-Server

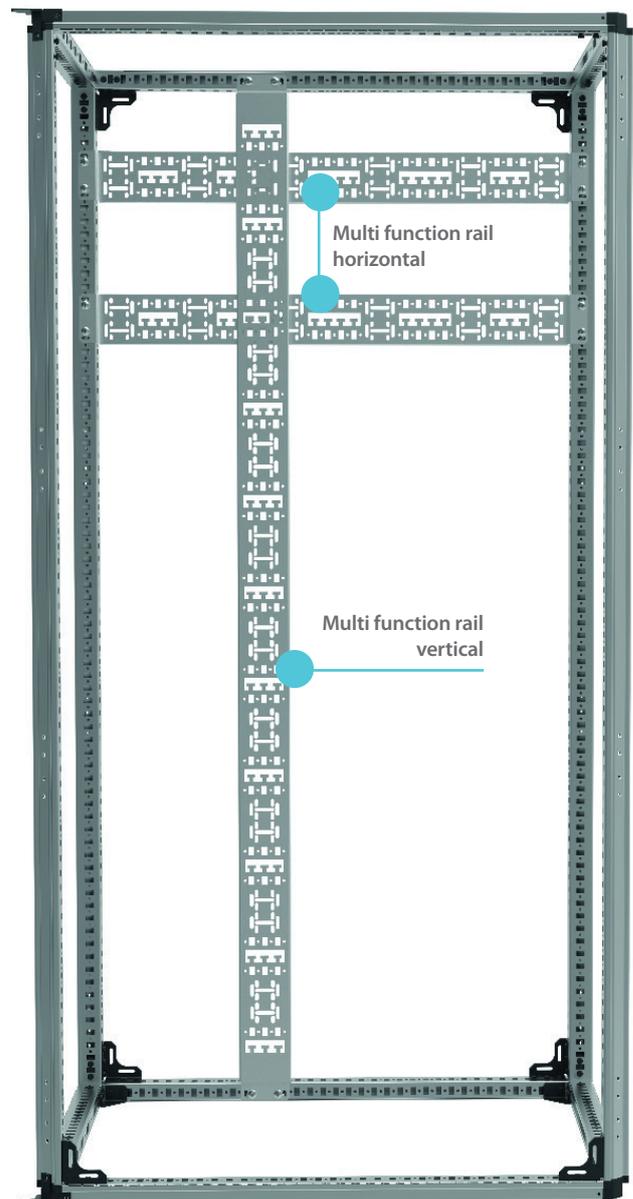
Multi function rail for mounting between the cabinet poles  
 For universal mounting of accessories, cable routing etc.

Mounting at any position possible

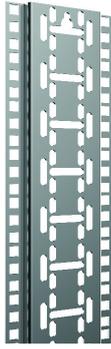
Material steel

Delivery 1 x rail incl. mounting material

Art.-No.	Description	For Cabinet Height
ESV-MFV42	Multi Function Rail Vertical for EFB-Server	42 U
ESV-MFV47	Multi Function Rail Vertical for EFB-Server	47 U

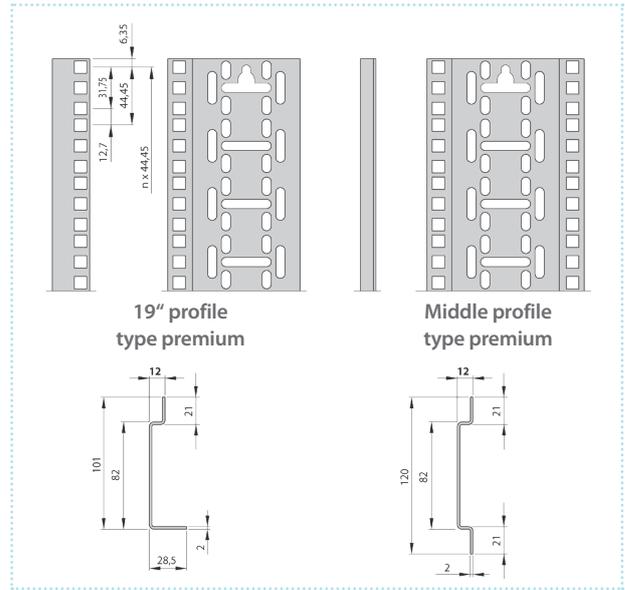


## Middle Profile for EFB-Server



Vertical middle profile for support of heavy devices  
 Mounting between the front and rear 19" level  
 Material steel, galvanised  
 Scope of delivery: 1 x middle profile, mounting accessories (toolless)

Art.-No.	Description	U
ESV-MPR42	Middle Profile for EFB-Server	42
ESV-MPR47	Middle Profile for EFB-Server	47



## Vertical Cable Combs for EFB-Server



Vertical cable comb

For vertical cable routing in the cabinet  
 Suitable for cabinet widths 600 mm and 800 mm  
 Toolless mounting at the 19" profiles  
 Material plastic, black resp. steel sheet, RAL7035, light grey / RAL 9005, jet black  
 Scope of delivery: 1 x vertical cable comb incl. mounting material

Art.-No.	Description	U	Colour
ESV-VKK42.GR	Vertical Cable Comb for EFB-Server	42	RAL7035
ESV-VKK47.GR	Vertical Cable Comb for EFB-Server	47	RAL7035
ESV-VKK42.TS	Vertical Cable Comb for EFB-Server	42	RAL9005
ESV-VKK47.TS	Vertical Cable Comb for EFB-Server	47	RAL9005

## Vertical Cable Management with Cover for EFB-Server



Vertical cable duct with cover

Vertical cable duct with cover  
 Suitable for cabinet width 800 mm  
 Toolless mounting at the 19" profiles  
 Material plastic, black resp. steel sheet RAL7035, light grey / RAL9005, jet black  
 Scope of delivery: 1 x vertical cable duct with cover incl. mounting accessories

Art.-No.	Description	U	Colour
ESV-VKM42.GR	Vertical Cable Management for EFB-Server	42	RAL7035
ESV-VKM47.GR	Vertical Cable Management for EFB-Server	47	RAL7035
ESV-VKM42.TS	Vertical Cable Management for EFB-Server	42	RAL9005
ESV-VKM47.TS	Vertical Cable Management for EFB-Server	47	RAL9005

## Side Cover/Air Routing for EFB-Server W=600 mm

For covering the area beside the 19" level in cabinets EFB-Server in width 600 mm

Serves as blinding and control of the air flow

Toolless mounting left- and right-sided of the 19" profiles

Material steel sheet

Paint finish RAL7035, light grey / RAL9005, jet black

Scope of delivery: 2 x panel incl. mounting accessories (toolless)

Art.-No.	Description	U	Colour
ESV-SA3426.GR	Side Cover/Air Routing for EFB-Server	42	RAL7035
ESV-SA3476.GR	Side Cover/Air Routing for EFB-Server	47	RAL7035
ESV-SA3426.TS	Side Cover/Air Routing for EFB-Server	42	RAL9005
ESV-SA3476.TS	Side Cover/Air Routing for EFB-Server	47	RAL9005

## Side Cover/Air Routing for EFB-Server W=800 mm

For covering the area beside the 19" level in cabinets EFB-Server in width 800 mm

With cutouts 3 x 19" 1U per side for cable routing or accessory mounting

Serves as blinding and control of the air flow

Toolless mounting left- and right-sided of the 19" profiles

Material steel sheet

Paint finish RAL7035, light grey / RAL9005, jet black

Scope of delivery: 2 x panel incl. mounting accessories (toolless)

Art.-No.	Description	U	Colour
ESV-SA3428.GR	Side Cover/Air Routing for EFB-Server	42	RAL7035
ESV-SA3478.GR	Side Cover/Air Routing for EFB-Server	47	RAL7035
ESV-SA3428.TS	Side Cover/Air Routing for EFB-Server	42	RAL9005
ESV-SA3478.TS	Side Cover/Air Routing for EFB-Server	47	RAL9005

## Horizontal Cover/Air Routing for EFB-Server W=600 mm

For covering the area above and below of the 19" level in cabinets EFB-Server in width 600 mm

Serves as blinding and control of the air flow

Toolless mounting at the side covers

Material steel sheet

Paint finish RAL7035, light grey / RAL9005, jet black

Scope of delivery: 2 x panel incl. mounting accessories (toolless)

Art.-No.	Description	U	Colour			
ESV-HAB426.GR	Horizontal Cover/Air Routing for EFB-Server	42	RAL7035			
ESV-HAB476.GR	Horizontal Cover/Air Routing for EFB-Server	47	RAL7035			
ESV-HAB426.TS	Horizontal Cover/Air Routing for EFB-Server	42 </tr <tr> <td>ESV-HAB476.TS</td> <td>Horizontal Cover/Air Routing for EFB-Server</td> <td>47</td> <td>RAL9005</td> </tr>	ESV-HAB476.TS	Horizontal Cover/Air Routing for EFB-Server	47	RAL9005
ESV-HAB476.TS	Horizontal Cover/Air Routing for EFB-Server	47	RAL9005			

## Horizontal Cover/Air Routing for EFB-Server W=800 mm

For covering the area above and below of the 19" level in cabinets EFB-Server in width 800 mm

Serves as blinding and control of the air flow

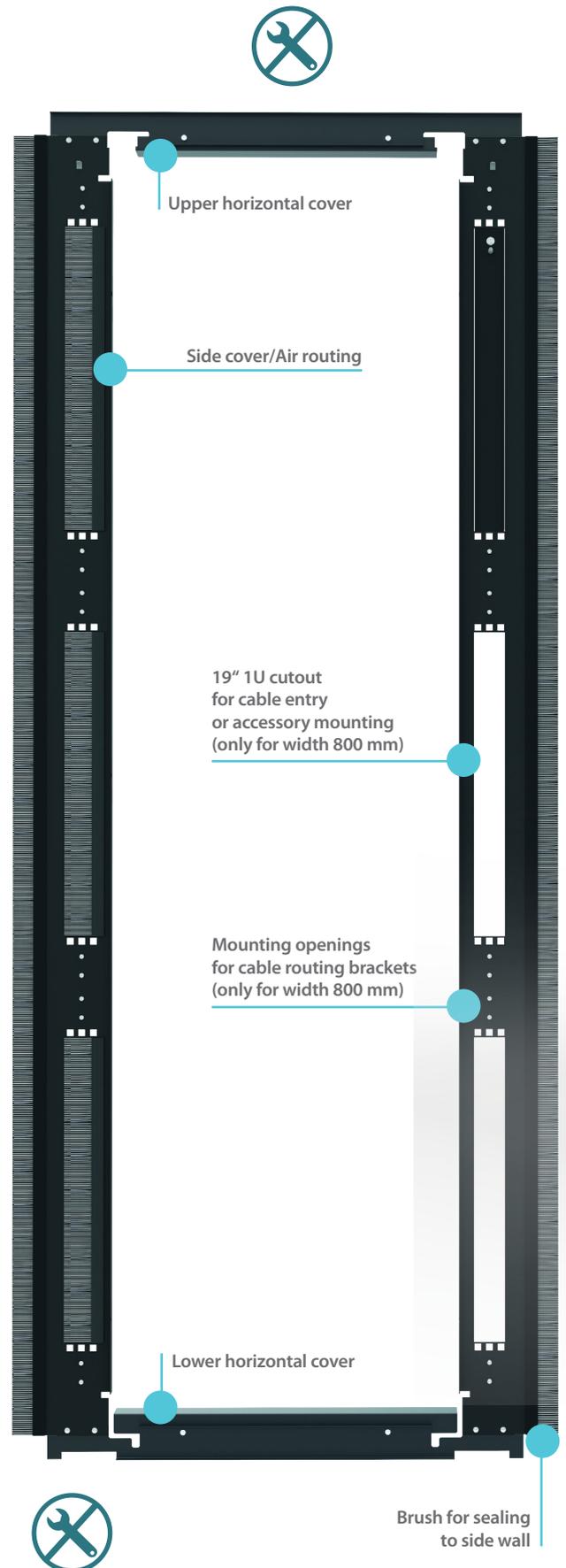
Toolless mounting at the side covers

Material steel sheet

Paint finish RAL7035, light grey / RAL9005, jet black

Scope of delivery: 2 x panel incl. mounting accessories (toolless)

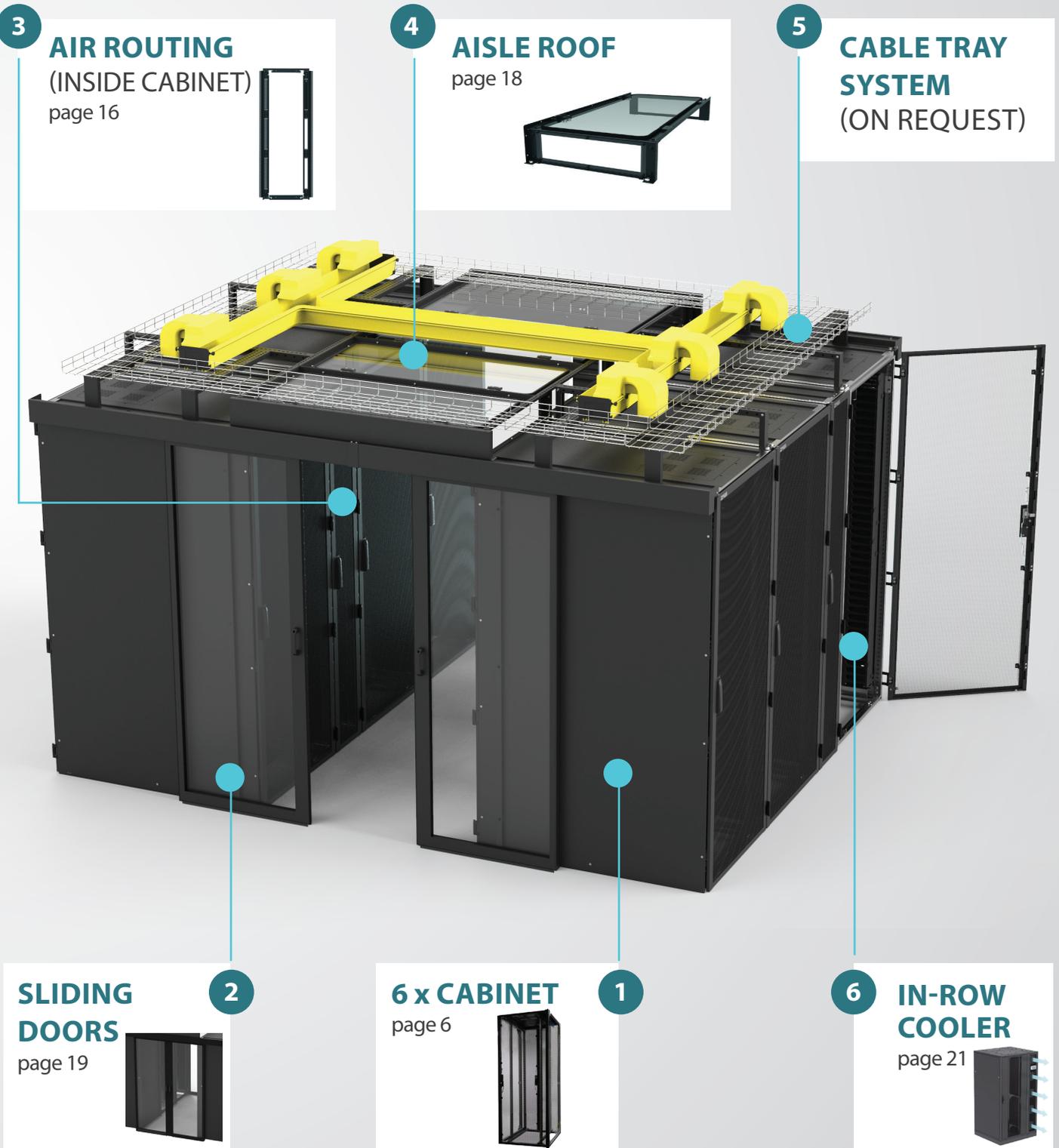
Art.-No.	Description	U	Colour
ESV-HAB428.GR	Horizontal Cover/Air Routing for EFB-Server	42	RAL7035
ESV-HAB478.GR	Horizontal Cover/Air Routing for EFB-Server	47	RAL7035
ESV-HAB428.TS	Horizontal Cover/Air Routing for EFB-Server	42	RAL9005
ESV-HAB478.TS	Horizontal Cover/Air Routing for EFB-Server	47	RAL9005



# EXAMPLE CONFIGURATION FOR DATA CENTERS

Example configuration of a cold aisle containment consist of 6 server cabinets, 2 In-row coolers, 2 sliding doors as well as 3 aisle roof elements.

Certified copper and fibre optic cabling systems according to ISO 11801 / EN 50173 and active components can be found in the EFB portfolio - don't hesitate to request advice.





- Sliding door for Cold/Warm Aisle Containment basing on cabinet series, EFB-Server'
- Glass sliding door with operating handles, without lock (locking optional on demand)
- Manual operation, self-closing or automatic operation available (optional)
- Variants for use with/without levelling feet or plinth available
- Materials steel, aluminium, certified safety glass
- Paint finish RAL7035, light grey / RAL9005, jet black
- Delivery as complete set incl. 2 x door element, upper cover, 2 side walls and mounting material



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## Aisle Roof for Cold/Warm Aisle EFB-Server



Roof elements for cold / warm aisle containment basing on EFB-Server  
 Toolless mounting  
 Raised construction +150 mm  
 Material steel sheet, polycarbonat  
 Paint finish RAL7035, light grey / RAL9005, jet black  
 Scope of delivery: 1 x aisle roof incl. mounting material



Art.-No.	Description	Cabinet Width	Aisle Width	Colour
ESV-GDE62F.GR	Aisle Roof for EFB-Server	600 mm	1200 mm	RAL7035
ESV-GDE82F.GR	Aisle Roof for EFB-Server	800 mm	1200 mm	RAL7035
ESV-GDE62F.TS	Aisle Roof for EFB-Server	600 mm	1200 mm	RAL9005
ESV-GDE82F.TS	Aisle Roof for EFB-Server	800 mm	1200 mm	RAL9005

## Sliding Doors for EFB-Server 42U, Cabinet Depth 1000 mm, Aisle 1200 mm

Art.-No.	Description	U	Cabinet Depth	Installation	Operation	Aisle width	Colour
ESV-STR4200M.GR	Sliding Door for EFB-Server	42	1000	Without feet	Manual	1200 mm	RAL7035
ESV-STR420FM.GR	Sliding Door for EFB-Server	42	1000	With feet	Manual	1200 mm	RAL7035
ESV-STR4200S.GR	Sliding Door for EFB-Server	42	1000	Without feet	Self-closing	1200 mm	RAL7035
ESV-STR4200M.TS	Sliding Door for EFB-Server	42	1000	Without feet	Manual	1200 mm	RAL9005
ESV-STR420FM.TS	Sliding Door for EFB-Server	42	1000	With feet	Manual	1200 mm	RAL9005
ESV-STR4200S.TS	Sliding Door for EFB-Server	42	1000	Without feet	Self-closing	1200 mm	RAL9005

## Sliding Doors for EFB-Server 42U, Cabinet Depth 1200 mm, Aisle 1200 mm

Art.-No.	Description	U	Cabinet Depth	Installation	Operation	Aisle width	Colour
ESV-STR4220M.GR	Sliding Door for EFB-Server	42	1200	Without feet	Manual	1200 mm	RAL7035
ESV-STR422FM.GR	Sliding Door for EFB-Server	42	1200	With feet	Manual	1200 mm	RAL7035
ESV-STR4220S.GR	Sliding Door for EFB-Server	42	1200	Without feet	Self-closing	1200 mm	RAL7035
ESV-STR4220M.TS	Sliding Door for EFB-Server	42	1200	Without feet	Manual	1200 mm	RAL9005
ESV-STR422FM.TS	Sliding Door for EFB-Server	42	1200	With feet	Manual	1200 mm	RAL9005
ESV-STR4220S.TS	Sliding Door for EFB-Server	42	1200	Without feet	Self-closing	1200 mm	RAL9005

## Sliding Doors for EFB-Server 47U, Cabinet Depth 1000 mm, Aisle 1200 mm

Art.-No.	Description	U	Cabinet Depth	Installation	Operation	Aisle width	Colour
ESV-STR4700M.GR	Sliding Door for EFB-Server	47	1000	Without feet	Manual	1200 mm	RAL7035
ESV-STR470FM.GR	Sliding Door for EFB-Server	47	1000	With feet	Manual	1200 mm	RAL7035
ESV-STR4700S.GR	Sliding Door for EFB-Server	47	1000	Without feet	Self-closing	1200 mm	RAL7035
ESV-STR4700M.TS	Sliding Door for EFB-Server	47	1000	Without feet	Manual	1200 mm	RAL9005
ESV-STR470FM.TS	Sliding Door for EFB-Server	47	1000	With feet	Manual	1200 mm	RAL9005
ESV-STR4700S.TS	Sliding Door for EFB-Server	47	1000	Without feet	Self-closing	1200 mm	RAL9005

## Sliding Doors for EFB-Server 47U, Cabinet Depth 1200 mm, Aisle 1200 mm

Art.-No.	Description	U	Cabinet Depth	Installation	Operation	Aisle width	Colour
ESV-STR4700M.GR	Sliding Door for EFB-Server	47	1000	Without feet	Manual	1200 mm	RAL7035
ESV-STR470FM.GR	Sliding Door for EFB-Server	47	1000	With feet	Manual	1200 mm	RAL7035
ESV-STR4700S.GR	Sliding Door for EFB-Server	47	1000	Without feet	Self-closing	1200 mm	RAL7035
ESV-STR4700M.TS	Sliding Door for EFB-Server	47	1000	Without feet	Manual	1200 mm	RAL9005
ESV-STR470FM.TS	Sliding Door for EFB-Server	47	1000	With feet	Manual	1200 mm	RAL9005
ESV-STR4700S.TS	Sliding Door for EFB-Server	47	1000	Without feet	Self-closing	1200 mm	RAL9005

# IN-ROW AND SIDE HEAT EXCHANGERS

## OPTIMAL CLIMATISATION ENSURES HIGH AVAILABILITY

In data center environments, where a lot of heat is produced by numerous of devices, reliable cooling is crucial to ensure the high availability of the active technology at any time.

By using the high-quality in-row or side heat exchangers suitable for the PRO and EFB-Server cabinet

series, there is a permanent, constantly controlled exchange of air, so hot spots can be prevented. No additional cold air needs to be blown into the room: temperature and humidity are controlled by the precision cooling units directly in the cold aisle or in individual cabinets.



### HIGH-QUALITY COOLING SOLUTIONS

- DX („Direct Expansion“ / Split) and cold water versions available
- Simple installation without intervention inside the cabinet
- Ensuring short cold air paths to the active units
- Direct hot air discharge from the active units
- No single point of failure due to simple n+1 redundancy
- Filters can be changed easily at any time
- Humidity and temperature measurement
- Numerous options: EC fan, communication via Ethernet (optional), and more

### CLOSED CIRCUIT

Cooling directly in the cabinet by means of side heat exchanger



### OPEN CIRCUIT

Cooling via cold aisle by means of in-row heat exchanger



## In-Row Cooler 42U, 300x1000, 4.4 ..21.2 kW, DX



In-Row coolers suitable for use with cabinet series PRO and EFB-Server (ESV)  
 Operation combined with outdoors units PRO-ADX1 or PRO-ADX2  
 Cooling performance with PRO-ADX3 10.3 kW, PRO-ADX4 12.8 kW and PRO-ADX5 21.2 kW  
 Easy installation without access to inside of the cabinet  
 Ensuring a constant air flow and avoiding hot spots  
 Short distance between cold air supply and active devices  
 Immediate discharge of hot air from the active devices  
 Easy realisation of N+1 redundancy  
 Supply of the cooling medium from above or below of the heat exchanger  
 Hydraulic connectors enable the connection at the top or bottom side of the heat exchanger  
 Different dimensions possible: 42U .. 47U, depths 1000 or 1200 mm  
 Change of filter possible while operation  
 Collection and discharge of condensate via condensat pump  
 Measuring of humidity and temperature  
 Sophisticated control unit for control of operation modi  
 Communication via Ethernet (optional)  
 Material steel  
 Paint finish RAL7035, light grey / RAL9005, jet black  
 Delivery in transport packaging on disposable pallet



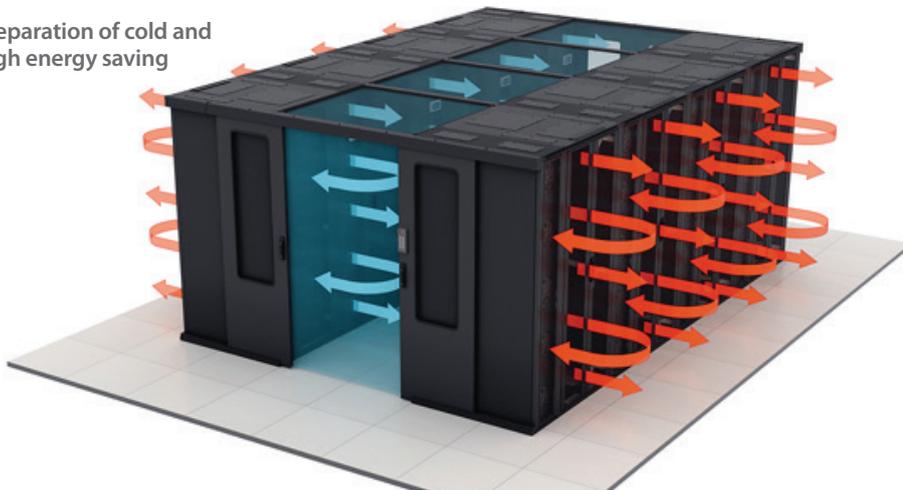
A certified climate technician  
 is required to connect and fill  
 with refrigerant

Art.-No.	Description	Cooling Power	Refridgerant	Suitable for	Options
PRO-RKL4230TS.DX1	In-Row Cooler 42U, 300x1000, DX1, RAL9005	4,4 / 8 kW	DX / R410a	ADX1 / ADX2	3 x EC-Fans, Ethernet
PRO-RKL4230TS.DX2	In-Row Cooler 42U, 300x1000, DX2, RAL9005	10,3 / 12,8 / 21,2 kW	DX / R410a	ADX3 / ADX4 / ADX5	5 x EC-Fans, Ethernet

The cooling capacity is dimensioned by combining the indoor units (evaporator) DX1 / DX2 with the external unit ADX1 / ADX2 / ADX3 / ADX 4 / ADX 5 corresponding to the power requirement.

Indoor / Outdoor Unit	PRO-ADX1	PRO-ADX2	PRO-ADX3	PRO-ADX4	PRO-ADX5
PRO-RKL4230TS.DX1	4,4 kW	8 kW	-	-	-
PRO-RKL4230TS.DX2	-	-	10,3 kW	12,8 kW	21,2 kW

The consequent separation of cold and warm air offers high energy saving potentials:



Containment of 8 server cabinets in variant „Cold Aisle“:  
 the In-Row Coolers transport cooled air into the corri-  
 dor. From there, it streams through the cabinets while  
 cooling the devices and the hot air exits at the rear side.



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 SOLUTIONS FOR YOUR PROJECT.  
 PLEASE CONTACT US!

## Side Cooler 42U, 300x1000, 4.5 .. 22.3 kW, DX



- Side coolers suitable for use with cabinet series PRO and EFB-Server (ESV)
- Operation combined with outdoors units PRO-ADX3, PRO-ADX4 or PRO-ADX5
- Cooling performance with PRO-ADX3 4.5 kW, PRO-ADX4 14 kW and PRO-ADX5 22.3 kW
- Easy installation without access to inside of the cabinet
- Ensuring a constant air flow and avoiding hot spots
- Short distance between cold air supply and active devices
- Immediate discharge of hot air from the active devices
- Easy realisation of N+1 redundancy
- Supply of the cooling medium from above or below of the heat exchanger
- Hydraulic connectors enable the connection at the top or bottom side of the heat exchanger
- Different dimensions possible: 42U .. 47U, depths 1000 or 1200 mm
- Change of filter possible while operation
- Collection and discharge of condensate via condensat pump
- Measuring of humidity and temperature
- Sophisticated control unit for control of operation modi
- Communication via Ethernet (optional)
- Material steel
- Paint finish RAL7035, light grey / RAL9005, jet black
- Delivery in transport packaging on disposable pallet



A certified climate technician is required to connect and fill with refrigerant

Art.-No.	Description	Cooling Power	Refridgerant	Suitable for	Options
PRO-SKL4230TS.DX1	In-Row Cooler 42U, 300x1000, DX1, RAL9005	4,5 / 8,4 kW	DX / R410a	ADX1 / ADX2	3 x EC-Fans, Ethernet
PRO-SKL4230TS.DX2	In-Row Cooler 42U, 300x1000, DX2, RAL9005	11,2 / 14 / 22,3 kW	DX / R410a	ADX2 / ADX3 / ADX4	5 x EC-Fans, Ethernet

The cooling capacity is dimensioned by combining the indoor units (evaporator) DX1 / DX2 with the external unit ADX1 / ADX2 / ADX3 / ADX 4 / ADX 5 corresponding to the power requirement.

Indoor / Outdoor Unit	PRO-ADX1	PRO-ADX2	PRO-ADX3	PRO-ADX4	PRO-ADX5
PRO-SKL4230TS.DX1	4,5 kW	8,4 kW	-	-	-
PRO-SKL4230TS.DX2	-	-	11,2 kW	14 kW	22,3 kW

## Outdoor Units for In-Row / Side Cooler DX1

Condenser / outdoor unit for use with In Row or Side Coolers PRO-RKL DX1 / PRO-SKL DX1  
Dimensioning of cooling power of the complete system is done by choosing the corresponding outdoor unit

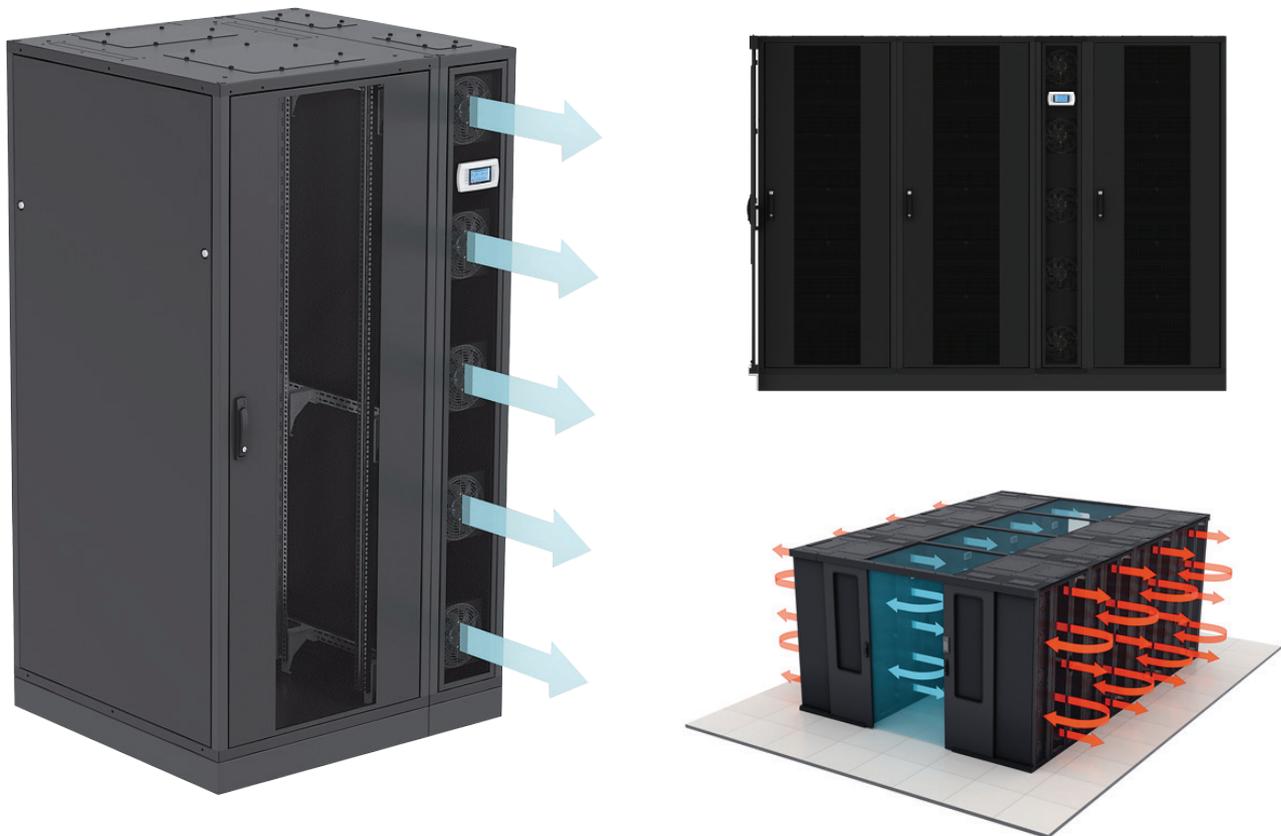
Art.-No.	Description	Cooling Power	Refridgerant	Suitable for
PRO-ADX1	Outdoor Unit for In-Row Cooler DX1	4,5 kW	DX / R410a	RKL/SKL DX1
PRO-ADX2	Outdoor Unit for In-Row Cooler DX1	8,4 kW	DX / R410a	RKL/SKL DX1

## Outdoor Units for In-Row / Side Cooler DX2

Condenser / outdoor unit for use with In Row or Side Coolers PRO-RKL DX2 / PRO-SKL DX2  
Dimensioning of cooling power of the complete system is done by choosing the corresponding outdoor unit

Art.-No.	Description	Cooling Power	Refridgerant	Suitable for
PRO-ADX3	Outdoor Unit for In-Row Cooler DX2	11,2 kW	DX / R410a	RKL/SKL DX2
PRO-ADX4	Outdoor Unit for In-Row Cooler DX2	14 kW	DX / R410a	RKL/SKL DX2
PRO-ADX5	Outdoor Unit for In-Row Cooler DX2	22,3 kW	DX / R410a	RKL/SKL DX2

## In-Row Cooler 42U, 300x1000, 12.3 / 16 / 19.5 kW, Cold Water



In-Row coolers suitable for use with cabinet series PRO and EFB-Server (ESV)  
 Variant for cooling medium cold water in performance steps 12.3 kW, 16 kW or 19.5 kW  
 Easy installation without access to inside of the cabinet  
 Ensuring a constant air flow and avoiding hot spots  
 Short distance between cold air supply and active devices  
 Immediate discharge of hot air from the active devices  
 Easy realisation of N+1 redundancy  
 Supply of the cooling medium from above or below of the heat exchanger  
 Hydraulic connectors enable the connection at the top or bottom side of the heat exchanger  
 Different dimensions possible: 42U .. 47U, depths 1000 or 1200 mm  
 Change of filter possible while operation  
 Collection and discharge of condensate via condensat pump  
 Measuring of humidity and temperature  
 Sophisticated control unit for control of operation modi  
 Communication via Ethernet (optional)  
 Material steel  
 Paint finish RAL7035, light grey / RAL9005, jet black  
 Scope of delivery: 1 x in-row cooler complete, consisting of heat exchanger, AC-fans, condensate pump, control unit, housing  
 Delivery in transport packaging on disposable pallet

Art.-No.	Description	Cooling Power	Refridgerant	Options
PRO-RKL4230TS.KW1	In-Row Cooler 42U, 300x1000, Cold Water, RAL9005	12,3 kW	Cold water	3 x EC-Fans, Ethernet, HTOP
PRO-RKL4230TS.KW2	In-Row Cooler 42U, 300x1000, Cold Water, RAL9005	16 kW	Cold water	5 x EC-Fans, Ethernet, HTOP
PRO-RKL4230TS.KW3	In-Row Cooler 42U, 300x1000, Cold Water, RAL9005	19,5 kW	Cold water	5 x EC-Fans, Ethernet, HTOP

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