Rittal – The System.

Faster – better – everywhere.

▶ **RiMatrix S**

Make **IT** easy.

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Rittal – The System.

The whole is more than the sum of its parts.

The same is true of "Rittal – The System." With this in mind, we have bundled our innovative enclosure, power distribution, climate control and IT infrastructure products together into a single system platform. Complemented by our extensive range of software tools and global service, we create unique added value for all industrial applications: Production plant, test equipment, facility management and data centres. In accordance with our simple principle, "Faster – better – everywhere", we are able to combine innovative products and efficient service to optimum effect.

Faster – with our "Rittal – The System." range of modular solutions, which guarantees fast planning, assembly, conversion and commissioning with its system compatibility.

Better – by being quick to translate market trends into products. In this way, our innovative strength helps you to secure competitive advantages.

Everywhere – thanks to global networking across 150 locations. Rittal has over 60 subsidiaries, more than 150 service partners with over 1,000 service engineers worldwide. For more than 50 years, we have been on hand to offer advice, assistance and product solutions.
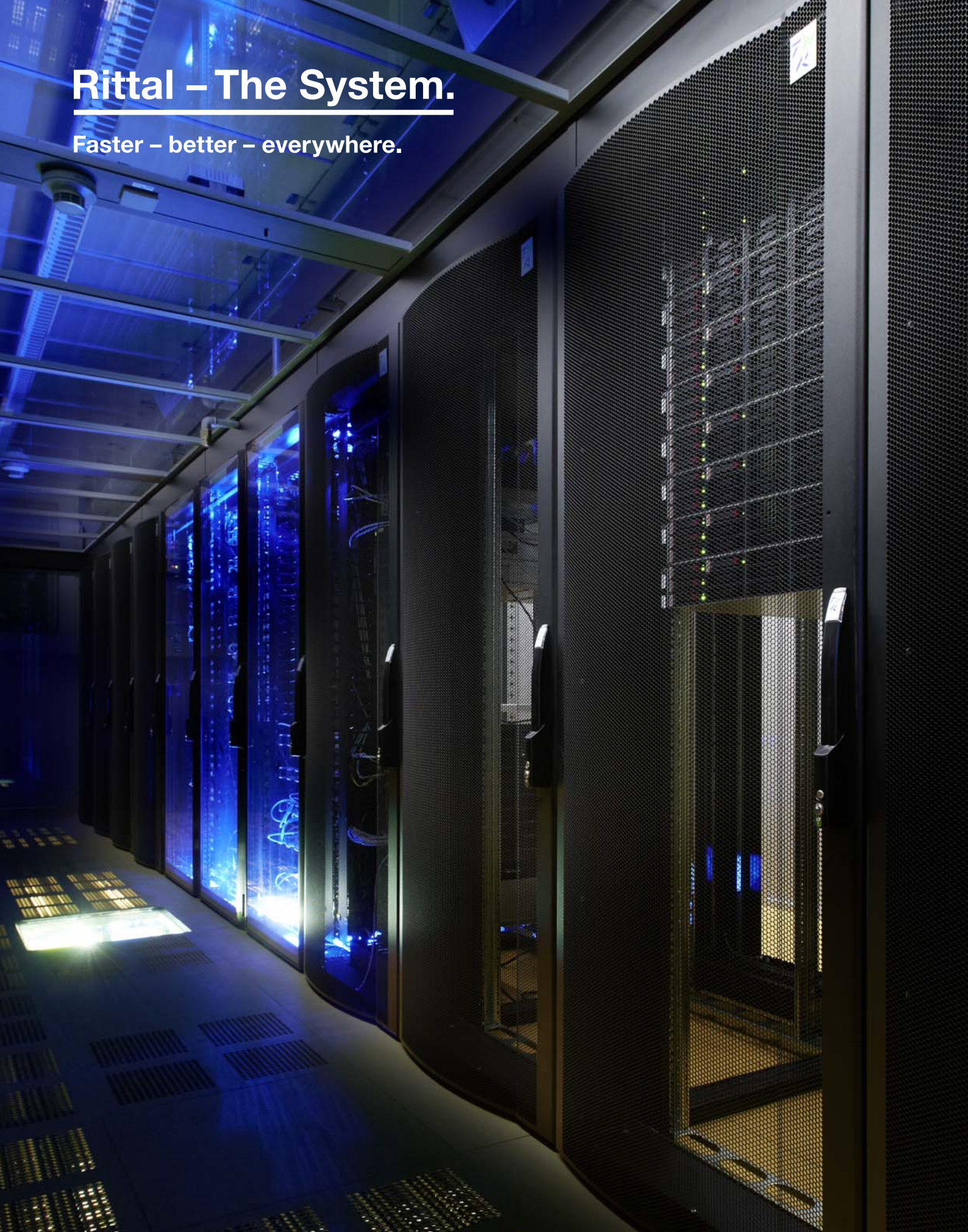
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Contents

The revolutionary alternative to individual data centre construction: RiMatrix S

RiMatrix S configurator – Microsite RiMatrix S at www.rittal.com
RiMatrix S app for iOS available at App Store

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We set standards – RiMatrix S.

Rittal opens up brand new perspectives for the IT world.

- Standardised, mass-produced data centre modules
- Only one item number
- Fully functional including server and network racks, climate control, power distribution and back-up, monitoring and DCIM (Data Center Infrastructure Management)
- Available for immediate delivery

The revolutionary alternative to individual data centre construction: RiMatrix S

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Advice and decision-making

RiMatrix S is based on ingenious data centre modules with defined interfaces for power, cooling and monitoring, dimensions and functions. This considerably reduces the amount of planning work required:

- Simple selection of the required modules
- Fast integration into an existing supply infrastructure
- Complete ROI calculation including planning expenditure, investments, operating costs, personnel and servicing
- Defined parameters for scalability, availability, efficiency and performance
- Data centre automation through monitoring and controlling

For you, this translates into a host of benefits in terms of investments, operating costs, future-proofness and scalability.

Advice

Decision

ENCLOSURES   **POWER DISTRIBUTION**   **CLIMATE CONTROL**

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Faster.

Delivery and commissioning

All data centre modules are pre-manufactured, available ex-works, and designed for rapid configuration of a customised solution:

- Short delivery times
- Very fast commissioning
- Complete documentation of the data centre module
- Simplified final certification of the ready-to-use data centre

Delivery

Commissioning

Better.

RiMatrix S provides peace of mind, thanks to:

- Reduced complexity
- Tested, quality-verified components
- Defined, monitored production processes
- Documented system test of the entire data centre module

For you as the user, this translates into:

- Low investment costs
- Guaranteed PUE (Power Usage Effectiveness) up to 1.15 dependent on environment
- Tested characteristic curves and data sheets
- Simplified approval procedures and final certification

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Everywhere.

The RiMatrix S modules are disengaged from the
physical cover and defined infrastructure interfaces,
which makes them extremely flexible.
For you as the user, this translates into:

- Simple integration into new or existing rooms
  with hot or cold aisle containment
- Installation in system-tested security rooms ...
- ... or as a flexible container solution
- Standardised modules for simplified worldwide delivery
- Commissioning by our 1,000 international service
  engineers

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RiMatrix S Single 6/Double 6

- Space-saving climate control in the raised floor
- Two separate, optimised climate zones for the server and technology zones

- Consistent separation of cold air intake and warm exhaust air integrated into the mechanical concept
- Cable routing above the racks
- 6 sever enclosures, 1 network enclosure
- UPS, battery rack and distribution enclosure
- In the Double 6, the second module is a mirror image with integral cold aisle

| ENCLOSURES | POWER DISTRIBUTION | CLIMATE CONTROL |

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The system.

RiMatrix S data centre modules are ready to use immediately. Depending on whether there is a central UPS infrastructure available, the modules RiMatrix S Single 6/Double 6 or RiMatrix S Single 9/Double 9 are used.

RiMatrix S Single 9/Double 9

- When using an existing UPS
- One climate zone for the server section
- Space-saving climate control in the raised floor

- Cable routing above the racks
- 8 sever enclosures, 1 network enclosure
- Distribution enclosure
- In the Double 9, the second module is a mirror image with integral cold aisle

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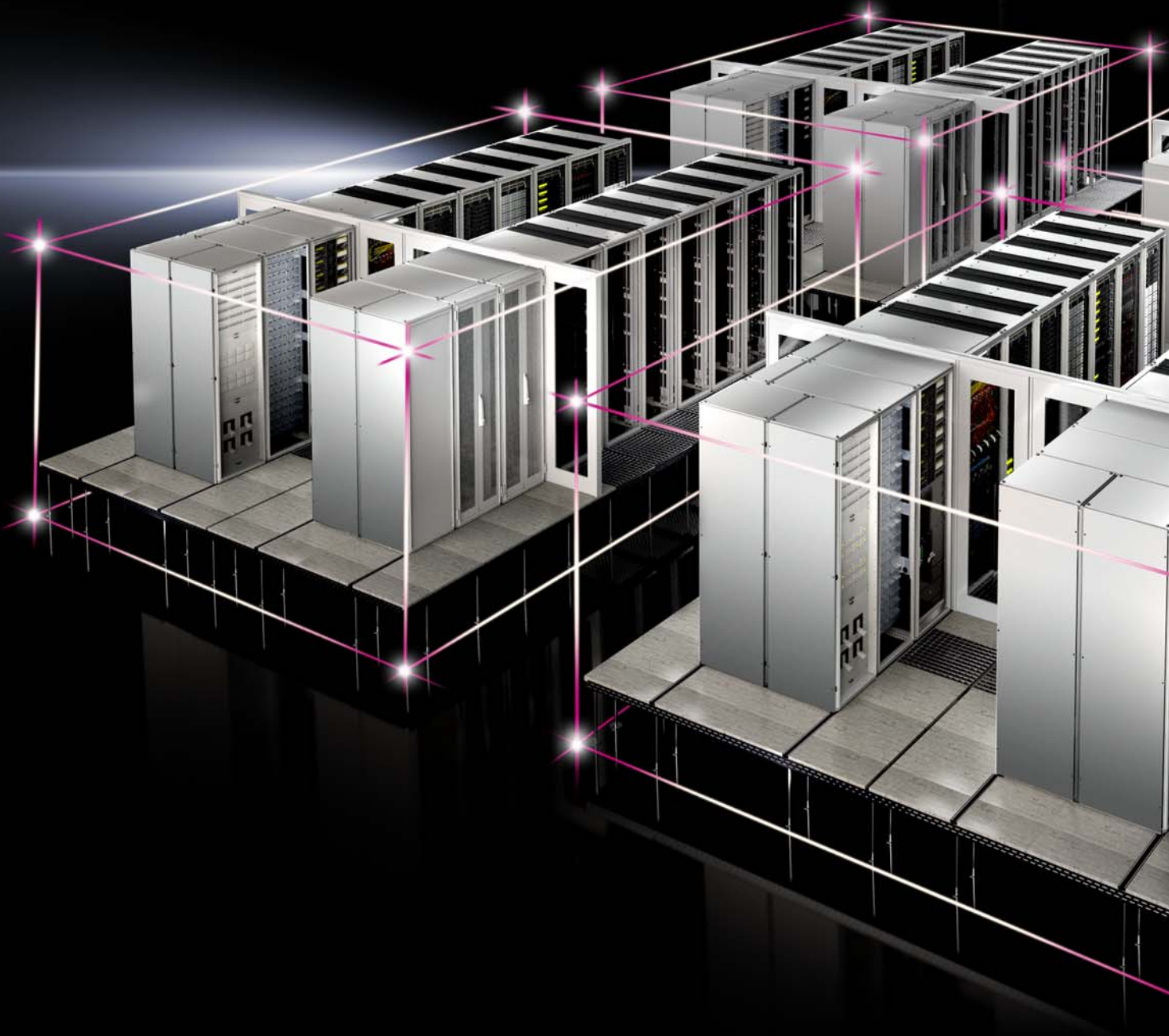
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Make IT easy.

All RiMatrix S modules may be scaled to almost any output between 10 kW and 450 kW. Only the container solution is limited to scaling with the Single 6/Single 9 modules, due to the spatial conditions inside the containers.
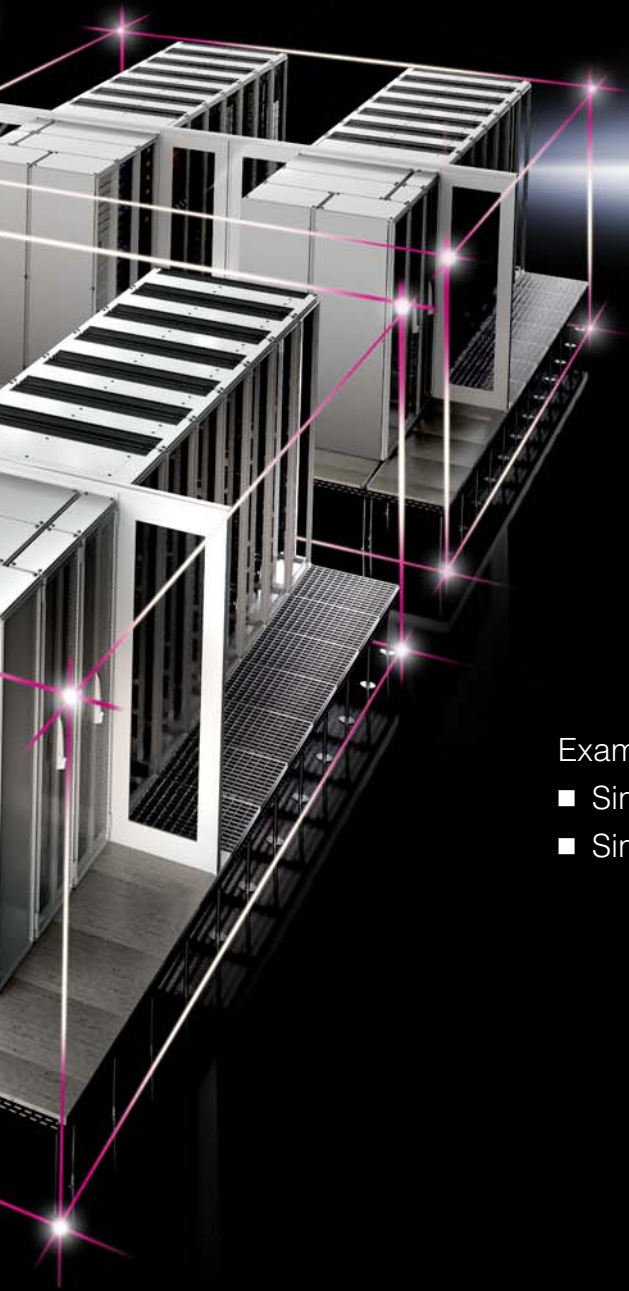
Examples:
- Simple assembly of chessboard-like structures
- Simple connection to supply infrastructures

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System accessories – Rack/Cooling.

- Space-saving climate control in the raised floor
- n+1 redundancy in climate control
- Simple air routing with high energy efficiency
- TS IT racks with 482.6 mm (19˝) frame, including compart-mentalisation for consistent separation of hot and cold zones
- TS IT accessories may be installed without the need for tools
- Rack depth 1,200 mm, installation height 42 U
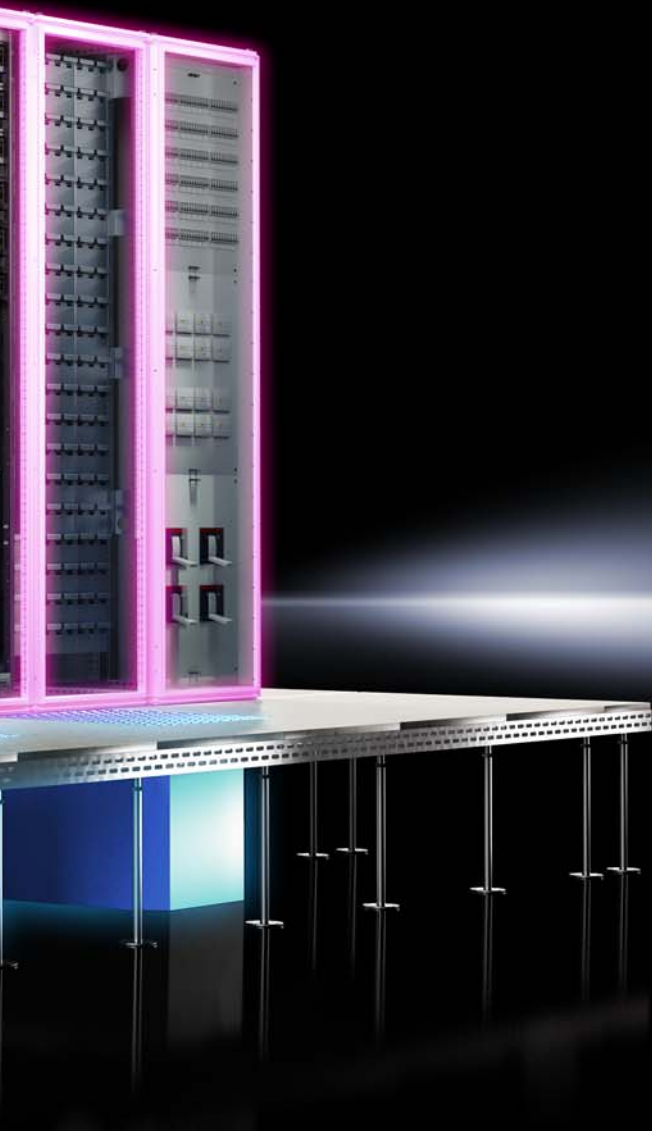
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System accessories – Cooling.

ZUCS (Zero U-Space Cooling Systems) are provided for climate control, i.e. more installation space for servers.

- The heat exchangers are located beneath the racks.
- The heat exchanger connection is easily accessible via the raised floor behind the racks.

- The n+1 redundancy allows a high level of availability, i.e. even if one ZUCS should fail, the required cooling output is still provided.
- EC fans ensure a low energy consumption, and the system is dimensioned to enable operation in energy-saving part-load mode.
- The fans are arranged in front of the server racks in the raised floor, in a maintenance-friendly configuration.
- Intelligent air routing guarantees optimum operation.
- Optional humidification and dehumidification system for optimum ambient air conditions.

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System accessories – Power.

- A modular rack-mounted online UPS system is used for power back-up of the IT in the rack.
- The complete N+1 redundancy with consistent parallel architecture ensures a high degree of availability.
- The batteries provide a suitable autonomy for a reliable shutdown of the servers or until a generator can be used.
- The maximum IT load is 60 kW for the Single 6 module and 120 kW for the Double 6 module.
- Each IT rack is equipped with two professional and space-saving power distributors (A+B).

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System accessories – Monitoring.

- Monitoring of all relevant parameters with the CMC monitoring system, such as temperature, humidity, leakage etc.
- Connection of security products, such as a smoke extraction system or an optional automatic fire alarm/extinguisher system
- Optional efficiency package provides a simple interface to monitor the efficiency and power consumption of the active systems, such as PUE:
  - Power Distribution Unit with energy measurement and monitoring functions
  - Continuous monitoring and evaluation of operating states using the DCIM RiZone software
  - Intelligent workflows in the alarm management for optimisation and protection

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RiMatrix S at a glance

	Standard room				
	Integration of the RiMatrix S modules into an existing property. In order to achieve optimum air routing, precise-fit aisle containment is included with the supply.	Aisle containment is a combination of door and roof components which allow consistent separation of the hot and cold air. – Enhanced energy efficiency – Superior output density, due to guaranteed cold air supply – Protection against contact and foreign bodies in the protected area above the raised floor IP 20 to IEC 60 529			
	Single 6	**Double 6**	**Single 9**	**Double 9**	
Model No.	**7998.106**	**7998.107**	**7998.406**	**7998.407**	
Fire protection	–	–	–	–	
Burglar resistance	–	–	–	–	
Acrid gas-tightness	–	–	–	–	
Dust and water protection	–	–	–	–	
Early fire detection	■	■	■	■	
Room extinguisher system	7998.805	7998.806	7998.805	7998.806	
Humidification and dehumidification system	7998.705	7998.705	7998.705	7998.705	
Efficiency package	7998.905	7998.906	7998.907	7998.908	
External dimensions					
Width mm	2828	4854	2828	4854	
Height mm	2750	2750	2750	2750	
Depth mm	7080	7080	7080	7080	
Rack configuration					
Server enclosure (600 x 2000 x 1200 mm)	6	12	8	16	
Combined network-server enclosure (800 x 2000 x 1200 mm)	1	2	1	2	
Uninterruptible power supply (partner product)	60 kW + 20 kW	2 x (60 kW + 20 kW)	–	–	

	Security rooms				Container		
	Standard security room		**Construction of standard security room**		**Standard container**		
	– Fire protection category EI 90 to EN 1363/F90 to DIN 4102 – Protection from unauthorised access – Resistance class II to DIN V ENV 1630 – Basic EMC protection – Acrid gas-tightness based on DIN 18 095 – Impact test with 3,000 Nm energy after 30 minutes flame impingement over uniform temperature curve – Dust and water protection to IP 56 to IEC 60 529		– Element core made of thermally effective insulating material – Robust, encapsulated sheet steel cassettes – Innovative connection system using patented profile technology – Use of temperature- and humidity-resistant seals – Use of climate control valves with electromagnetic drive – Dismantling and reassembly are possible at any time		Robust sheet steel container specifically designed for IT applications. The reinforced frame structure allows optimum weight distribution. Encapsulated interior wall structure with thermal insulating materials. – Vandal-proof interior in accordance with resistance class II to EN 1630 – Fire protection category EI 30 to EN 1363 – Basic EMC protection – Dust and water protection to IP 55 to IEC 60 529		
	Single 6	**Double 6**	**Single 9**	**Double 9**	**Single 6**	**Single 9**	
	7998.306	**7998.307**	**7998.606**	**7998.607**	**7998.206**	**7998.506**	
	EI 90/F90	EI 90/F90	EI 90/F90	EI 90/F90	EI 30	EI 30	
	WK II	WK II	WK II	WK II	RC II	RC II	
	■	■	■	■	–	–	
	IP 56	IP 56	IP 56	IP 56	IP 55	IP 55	
	■	■	■	■	■	■	
	7998.807	7998.808	7998.807	7998.808	7998.809	7998.809	
	7998.705	7998.705	7998.705	7998.705	7998.705	7998.705	
	7998.905	7998.906	7998.907	7998.908	7998.905	7998.907	
	2950	4974	2950	4974	3000	3000	
	2800	2800	2800	2800	3000	3000	
	7500	7500	7500	7500	7250	7250	
	6	12	8	16	6	8	
	1	2	1	2	1	1	
	60 kW + 20 kW	2 x (60 kW + 20 kW)	–	–	60 kW + 20 kW	–	

RiMatrix S

RiMatrix S Single 6/Double 6
- 6 sever enclosures, 1 network enclosure
- Two separate, optimised climate zones for server and technology zones
- UPS, battery rack and distribution enclosure
- Space-saving climate control in the raised floor

- Consistent separation of cold air intake and warm exhaust air integrated into the mechanical concept
- Cable routing above the racks
- In the Double 6, the second module is a mirror image with integral cold aisle

RiMatrix S Single 9/Double 9
- 8 sever enclosures, 1 network enclosure
- 1 climate zone for the server section
- When using an existing UPS
- Distribution enclosure
- Space-saving climate control in the raised floor

- Consistent separation of cold air intake and warm exhaust air integrated into the mechanical concept
- Cable routing above the racks
- In the Double 9, the second module is a mirror image with integral cold aisle

Standard room

		Single 6	Double 6	Single 9	Double 9
External dimensions mm	Width	2828	4854	2828	4854
	Height	2750	2750	2750	2750
	Depth	7080	7080	7080	7080
Internal dimensions mm	Width	2750	4774	2750	4774
	Height	2700	2700	2700	2700
	Depth	7000	7000	7000	7000
Model No.		**7998.106**	**7998.107**	**7998.406**	**7998.407**
Physical security					
Fire protection		–	–	–	–
Burglar resistance		–	–	–	–
Acrid gas-tightness		–	–	–	–
Dust and water protection		–	–	–	–
Early fire detection		■	■	■	■
Room extinguisher system		7998.805	7998.806	7998.805	7998.806
Humidification and dehumidification system		7998.705	7998.705	7998.705	7998.705
Efficiency package		7998.905	7998.906	7998.907	7998.908
Infrastructure					
Server enclosure (600 x 2000 x 1200 mm)		6	12	8	16
Combined network-server enclosure (800 x 2000 x 1200 mm)		1	2	1	2
Uninterruptible power supply (partner product)		60 kW + 20 kW	2 x (60 kW + 20 kW)	–	–
Redundancy		n+1	2 x (n+1)	–	–
Min. autonomy		13 minutes			
Low-voltage main distributor		1	2	1	2
PDU Basic		14	28	18	36
Climate control (ZUCS)		60 kW + 10 kW	2 x (60 kW + 10 kW)	90 kW + 10 kW	2 x (90 kW + 10 kW)
Redundancy		n+1	2 x (n+1)	n+1	2 x (n+1)

RiMatrix S Single 6/Double 6
- 6 sever enclosures, 1 network enclosure
- Two separate, optimised climate zones for server and technology zones
- UPS, battery rack and distribution enclosure
- Space-saving climate control in the raised floor

- Consistent separation of cold air intake and warm exhaust air integrated into the mechanical concept
- Cable routing above the racks
- In the Double 6, the second module is a mirror image with integral cold aisle

RiMatrix S Single 9/Double 9
- 8 sever enclosures, 1 network enclosure
- 1 climate zone for the server section
- When using an existing UPS
- Distribution enclosure
- Space-saving climate control in the raised floor

- Consistent separation of cold air intake and warm exhaust air integrated into the mechanical concept
- Cable routing above the racks
- In the Double 9, the second module is a mirror image with integral cold aisle

Standard security room

		Single 6	Double 6	Single 9	Double 9
External dimensions mm	Width	2950	4974	2950	4974
	Height	2800	2800	2800	2800
	Depth	7500	7500	7500	7500
Internal dimensions mm	Width	2750	4774	2750	4774
	Height	2700	2700	2700	2700
	Depth	7300	7300	7300	7300
Model No.		**7998.306**	**7998.307**	**7998.606**	**7998.607**
Physical security					
Fire protection		EI 90/F90	EI 90/F90	EI 90/F90	EI 90/F90
Burglar resistance		WK II	WK II	WK II	WK II
Acrid gas-tightness		■	■	■	■
Dust and water protection		IP 56	IP 56	IP 56	IP 56
Early fire detection		■	■	■	■
Room extinguisher system		7998.807	7998.808	7998.807	7998.808
Humidification and dehumidification system		7998.705	7998.705	7998.705	7998.705
Efficiency package		7998.905	7998.906	7998.907	7998.908
Infrastructure					
Server enclosure (600 x 2000 x 1200 mm)		6	12	8	16
Combined network-server enclosure (800 x 2000 x 1200 mm)		1	2	1	2
Uninterruptible power supply (partner product)		60 kW + 20 kW	2 x (60 kW + 20 kW)	–	–
Redundancy		n+1	2 x (n+1)	–	–
Min. autonomy		13 minutes			
Low-voltage main distributor		1	2	1	2
PDU Basic		14	28	18	36
Climate control (ZUCS)		60 kW + 10 kW	2 x (60 kW + 10 kW)	90 kW + 10 kW	2 x (90 kW + 10 kW)
Redundancy		n+1	2 x (n+1)	n+1	2 x (n+1)

RiMatrix S

RiMatrix S Single 6
- 6 sever enclosures, 1 network enclosure
- Two separate, optimised climate zones for server and technology zones
- UPS, battery rack and distribution enclosure
- Space-saving climate control in the raised floor
- Consistent separation of cold air intake and warm exhaust air integrated into the mechanical concept
- Cable routing above the racks

RiMatrix S Single 9
- 8 sever enclosures, 1 network enclosure
- 1 climate zone for the server section
- When using an existing UPS
- Distribution enclosure
- Space-saving climate control in the raised floor
- Consistent separation of cold air intake and warm exhaust air integrated into the mechanical concept
- Cable routing above the racks

Our services include:
- Advice and ROI calculation
- Delivery and integration into the customer infrastructure
- Commissioning and handover
- Documentation, training and instruction
- Hotline and service

Standard container

		Single 6	Single 9
External dimensions mm	Width	3000	3000
	Height	3000	3000
	Depth	7250	7250
Internal dimensions mm	Width	2750	2750
	Height	2685	2685
	Depth	7000	7000
Model No.		**7998.206**	**7998.506**
Physical security			
Fire protection		EI 30	EI 30
Burglar resistance		RC II	RC II
Acrid gas-tightness		–	–
Dust and water protection		IP 55	IP 55
Early fire detection		■	■
Room extinguisher system		7998.809	7998.809
Humidification and dehumidification system		7998.705	7998.705
Efficiency package		7998.905	7998.907
Infrastructure			
Server enclosure (600 x 2000 x 1200 mm)		6	8
Combined network-server enclosure (800 x 2000 x 1200 mm)		1	1
Uninterruptible power supply (partner product)		60 kW + 20 kW	–
Redundancy		n+1	–
Min. autonomy		13 minutes	
Low-voltage main distributor		1	2
PDU Basic		14	18
Climate control (ZUCS)		60 kW + 10 kW	90 kW + 10 kW
Redundancy		n+1	n+1

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The first standardised data centre. Simply plug in and it's ready to use.

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- Enclosures
- Power Distribution
- Climate Control
- IT Infrastructure
- Software & Services

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