

**Rittal – The System.**

Faster – better – everywhere.

VX IT

The world's fastest IT rack



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SOFTWARE & SERVICES

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# RiMatrix

## The system platform for a future-proof IT infrastructure

IT trends indicate that we will be facing enormous challenges in the years to come. Higher productivity, resource consolidation, planning reliability, cyber security and compliance – those are just a few important reasons for companies to invest in high-performance networks and powerful data centres. But what must a modern data centre offer to support a flexible response to constantly changing production and business demands? Our answer is RiMatrix – ultimate flexibility, security and efficiency in a perfectly co-ordinated system: From individual rack installations to edge, enterprise, colocation and even hyperscale data centres.

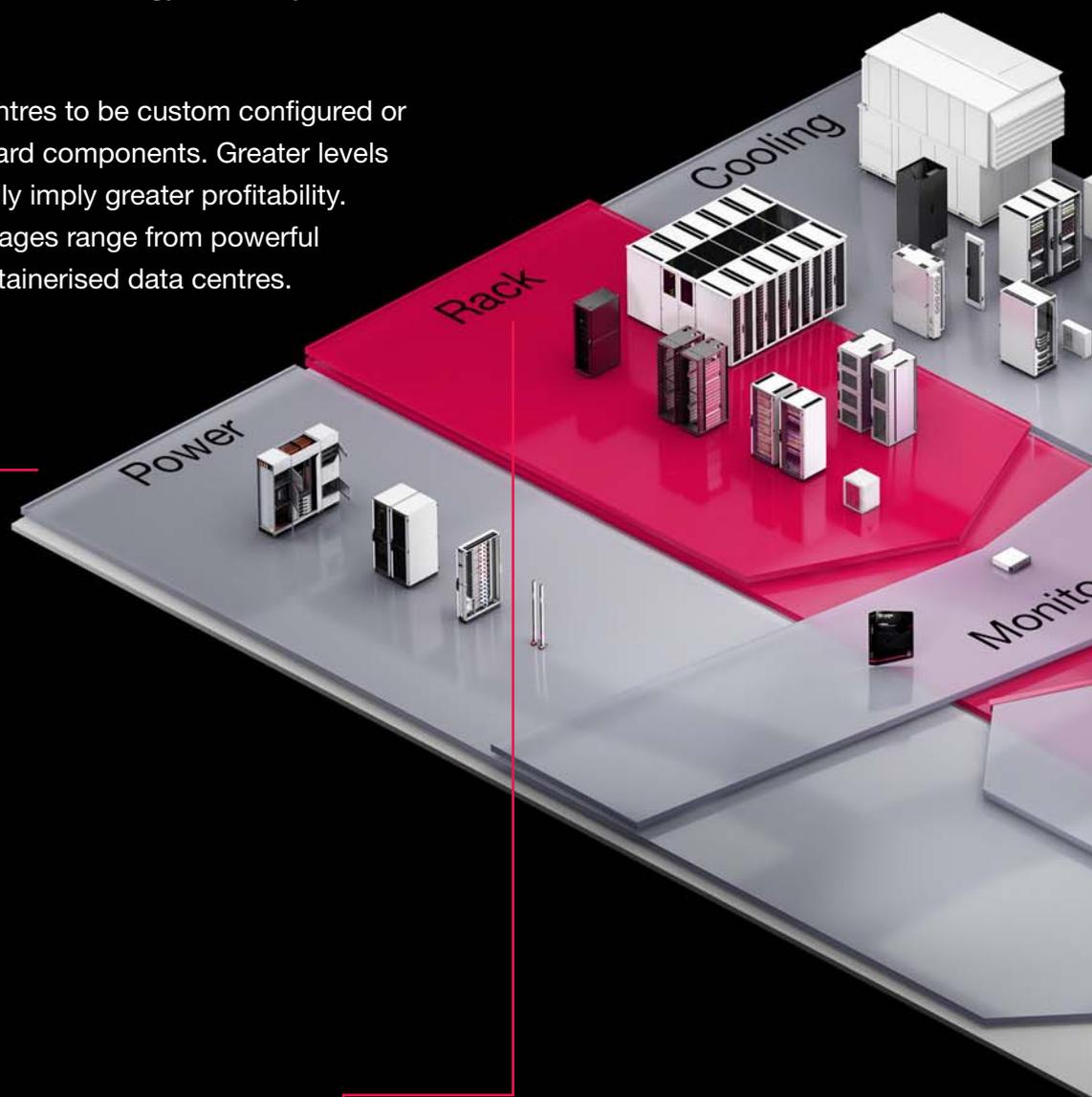


# RiMatrix

## Modular is the way forward

Digitisation and constantly changing market demands call for immediately available and flexibly scalable IT infrastructures. With RiMatrix, Rittal provides an open IT system platform which guarantees uninterrupted availability, high data quality, innovative cooling management, maximum energy efficiency and ultimate security.

RiMatrix enables data centres to be custom configured or alternatively, using standard components. Greater levels of standardisation naturally imply greater profitability. Our comprehensive packages range from powerful edge data centres to containerised data centres.



### Power with monitoring functions

Individually adaptable power supply for maximum reliability and efficiency, thanks to digital control of, for example, voltage, current, power factors, active and apparent power.

### Racks to suit your requirements

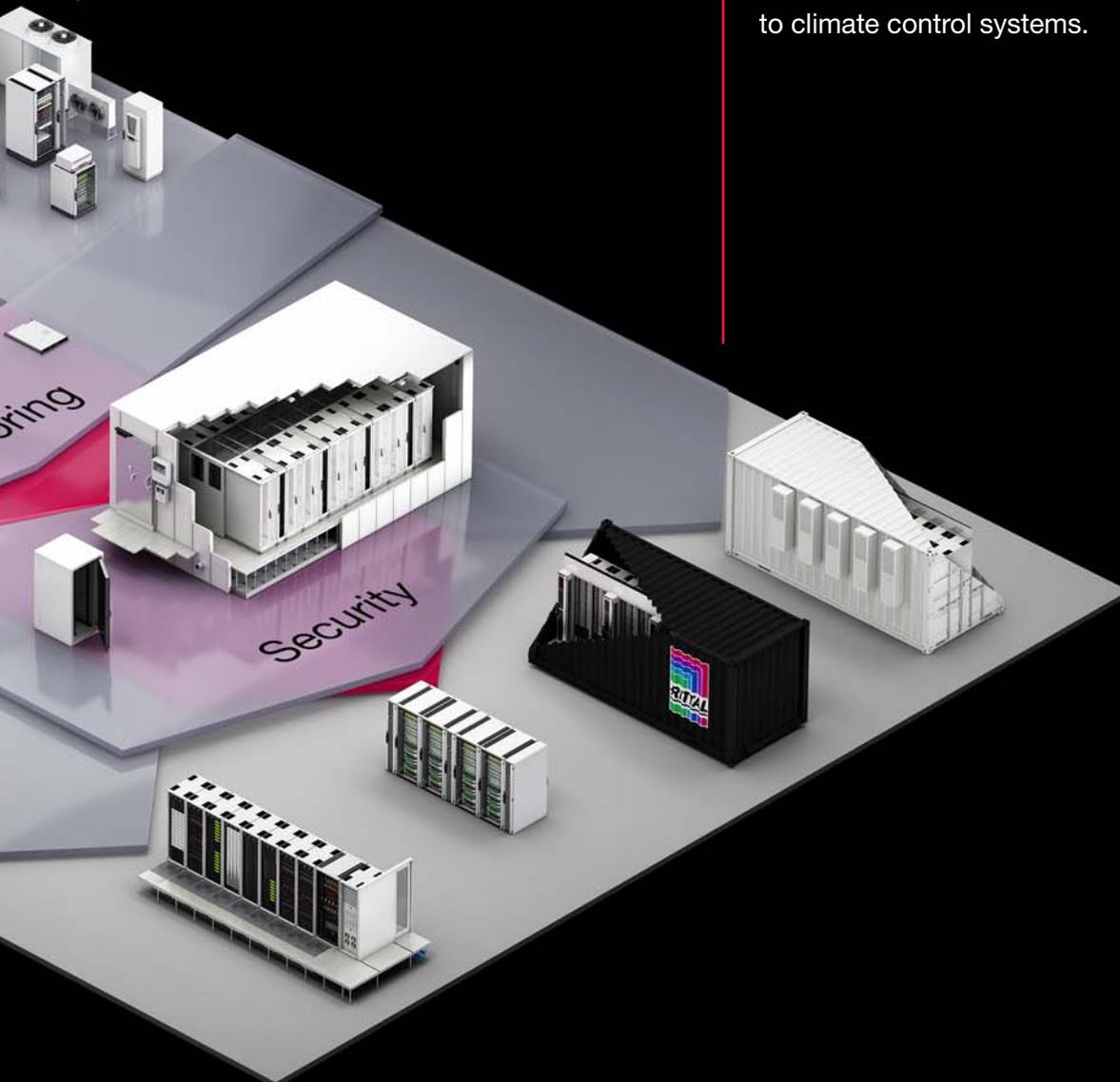
As the world's leading manufacturer of server and network racks, Rittal offers a comprehensive range of racks and accessories for every individual IT application.

## Cooling: from racks to rooms

Scalable climate control concepts such as the Liquid Cooling Package (LCP) and the highly efficient direct chip cooling technology offer a more flexible response to changing market conditions and demands.

## Rittal Edge Data Center: your complete solution for large data volumes

Whether for compact rack combinations, larger data centres in location-flexible containers or complete high-volume data centres, Rittal can supply all the necessary components from racks to power solutions to climate control systems.





# VX IT

## The solution for all network and server applications

Whether you need a network rack to house a distribution board, or server racks for an edge, cloud or hyperscale data centre, the VX IT provides the ideal platform. All the demands of a modern IT infrastructure are met.

### **Dependable customer focus**

The VX IT is modular in concept with a customer-focused configurator which guides you quickly and easily to a solution that is tailored to your specific requirements. Our state-of-the-art production lines and optimised logistics ensure availability and on-time delivery.

### **Matching modules**

The VX IT is the basis for RiMatrix – the proven Rittal IT system platform.

### **Seamless compatibility**

A data centre infrastructure outlives its individual servers. Compatibility with established RiMatrix systems is therefore crucial. The VX IT and RiMatrix are ideally suited for extending existing data centres and replacing individual components.

### **Future-proof**

We know the trends and understand what factors concern you as an IT expert and your company so that we can supply a solution that is future-proofed. Constant and ongoing developments to both VX IT and RiMatrix ensure continuous innovations to meet future technology trends.

### **Industry-specific solutions**

The Compartment Rack version rounds out the VX IT range and is available in 2 options each with 2 or 4 compartments. These IT racks satisfy the standards of those customers who have come to expect the usual high quality from Rittal.

# VX IT as an integral part of RiMatrix

## VX IT in typical applications



### Innovative platform

- RiMatrix has been extended and improved with numerous additional products and features, such as pre-set data centre modules and built-in OCP technology.
- Continuous further development guarantees seamless adaptation to future technology trends.
- Energy-efficient components form the basis for implementing customer-specific sustainability concepts.

### Easily customised

- RiMatrix adapts and underpins the IT life-cycle – from planning, via operation through to optimisation.
- RiMatrix is easily scalable in every aspect, be it output range, installation size, availability or fail-safe operation.
- As an open system platform, RiMatrix permits the integration of approved products and solutions from third-party providers.
- Variable financing options allow for demand-oriented and scalable investments.



### **Consistent availability**

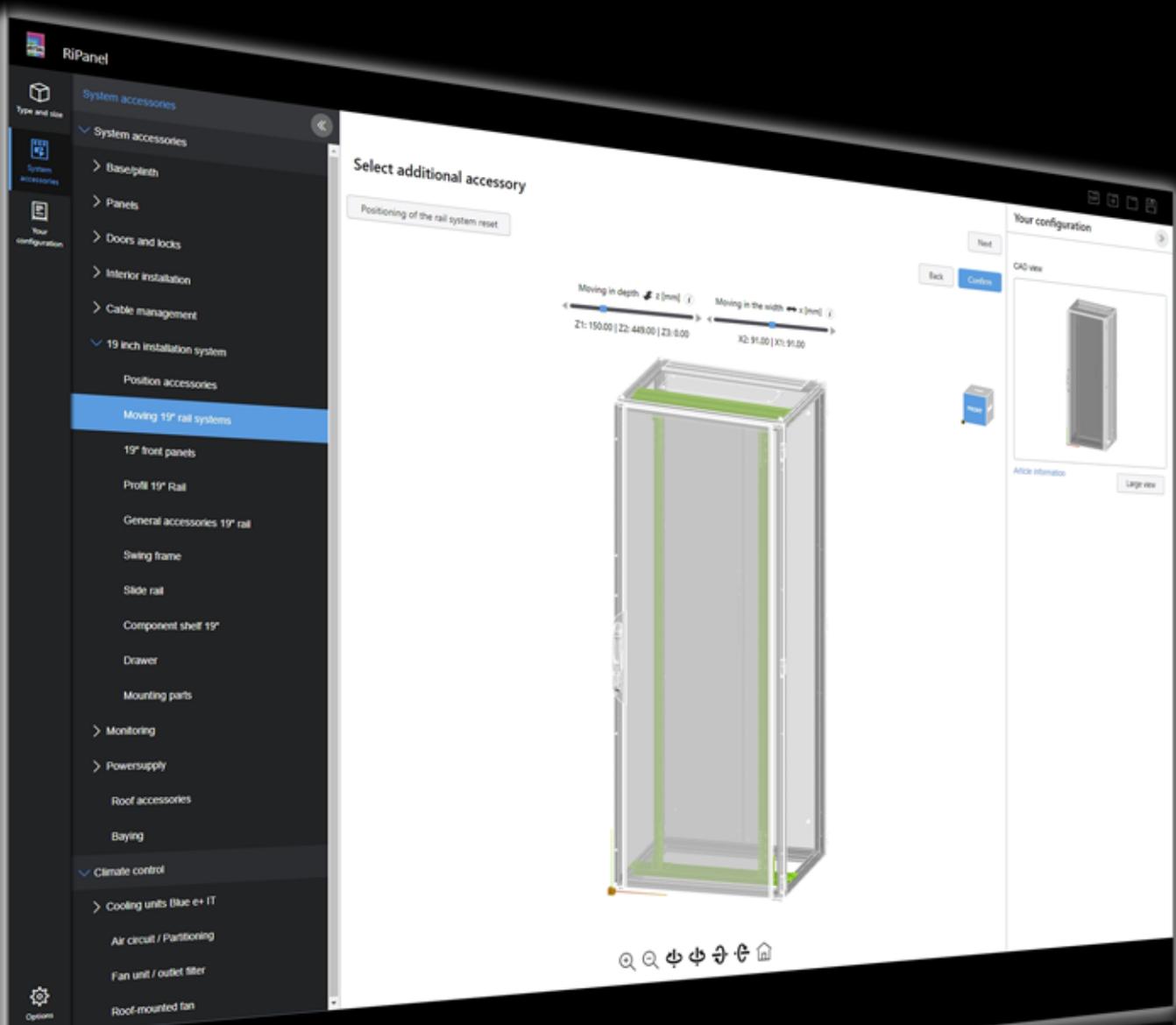
- Pre-defined system solutions such as edge and container data centres simplify planning and purchasing.
- RiMatrix is perfectly suited to IT components, higher-level management systems and applications; it enables the swift deployment of complete solutions (XaaS).

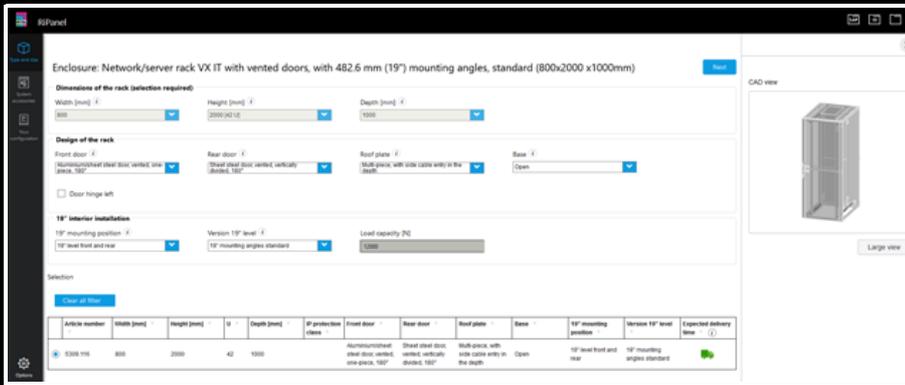
### **Reliable solutions**

- RiMatrix boasts the same tried-and-tested Rittal quality that meets international standards and norms.
- Compatible with existing installed systems and guarantees flexible future proofing
- Full documentation, training and comprehensive customer services as part of our customer care package

# Individual IT racks

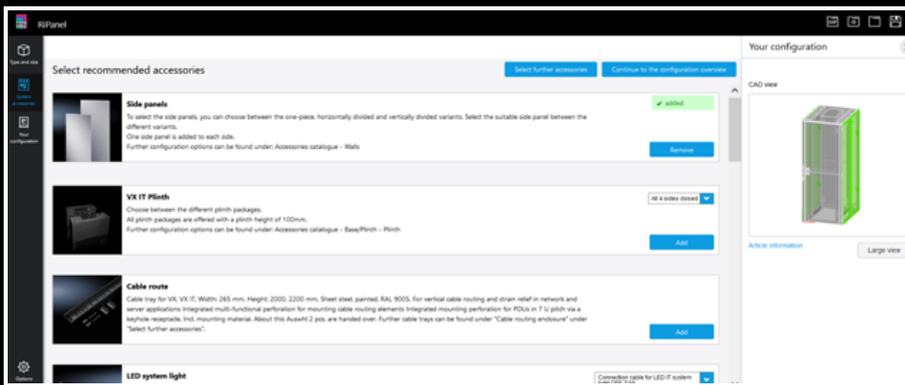
With the VX IT configurator





## Configure individual racks to your specific requirements

- Customised, application-specific rack models are created quickly with our Web-based configurator.
- Configuration is based on a modular principle: Starting with the basic rack and all the way up to include any internal parts and other accessories to create a fully customised solution.
- The VX IT configurator provides a wide range of configurable rack options that extend far beyond the standard rack portfolio.



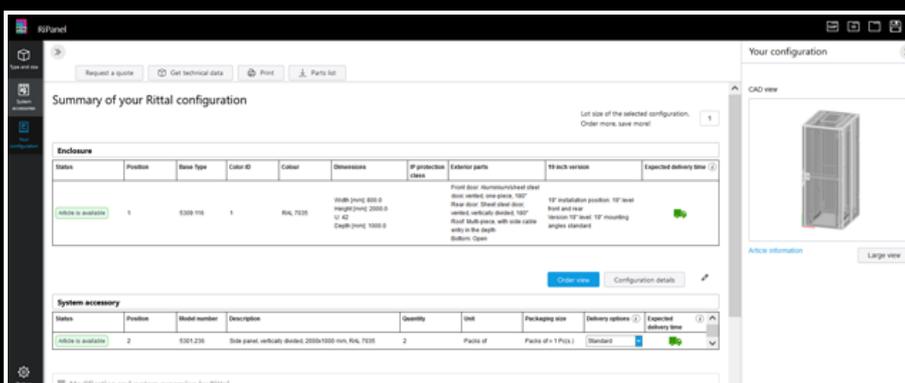
## Maximum flexibility and control reviews to ensure precise configuration

- To prevent configuration errors and mis-ordering, all configuration stages are immediately checked for correctness.
- At the configuration stage, our recommended accessories are displayed automatically for easy, fast selection.
- Other accessories may be selected at any time depending on your requirements and installed in predefined positions. Individual positioning of the components is also possible.
- Accessories can be delivered separately, enclosed with the order or supplied pre-fitted, depending on your preference.



## Complete clarity and optimal delivery times

- The configurator provides complete clarity about anticipated delivery times.
- Every rack ordered via the configurator is supplied fully assembled, although delivery times will vary depending on the rack's level of customisation.



# Comprehensive modular system

The correct solution for every application



## Versatility for all applications

- Even the standard options are available in up to 28 sizes (EU series) – 2 widths, 6 heights and 4 depths.
- There's a 482.6 mm (19") configuration to suit your specific requirements, thanks to a comprehensive range of racks, components and accessories plus two different load classes (see detailed rack specifications for "dynamic" or "standard") and your chosen 482.6 mm (19") interior installation option with load limits of up to 15,000 N or 18,000 N.
- 8 VX IT Compartment Racks are available in two options with 2 or 4 compartments in different dimensions.

## Tailored door concept

The choice of door depends on the space situation and your individual requirements with regard to access, climate control and protection category.

- The 180° hinge ensures a maximum door opening angle even when bayed plus a large-scale handle system including security lock with profile half-cylinder.
- We have the right door to suit any climate control system, be it rack, suite or room cooling.
- New options include automatic door opening to provide emergency cooling or to ensure extinguishing of the racks when using a gas-based room extinguisher system.
- Glazed doors for optimal viewing or to ensure a closed climate control zone in conjunction with high-performance cooling applications, such as high-capacity heat exchangers.

## Roof options with the required protection category

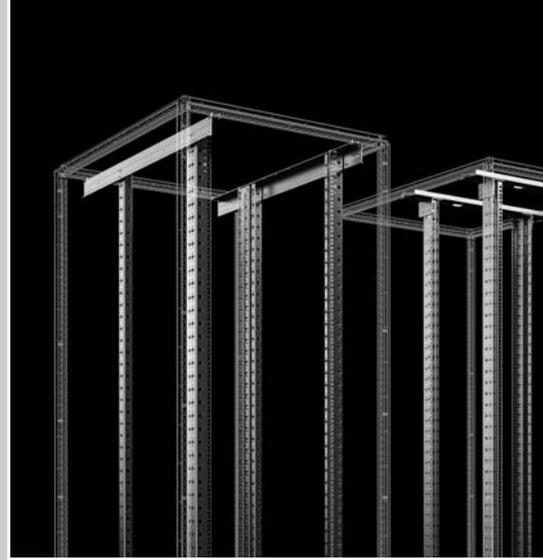
The choice of roof solution will depend on your planned cable entry and prescribed protection category, for example:

- One-piece, solid, with a protection category of up to IP 55
- With brush strip on both sides across the entire rack depth
- Cable entry via brush strip horizontally at the rear, across the entire rack width
- Cable entry in the corner zones via brush strips

## User-friendly side panel solutions

Your choice of side panel will depend on the required level of access and the prescribed security and protection category parameters, for example:

- For individual racks: Optional one-piece, multi-piece, horizontally divided, plug-in or vertically divided, hinged
- To complete a suite of racks or as partitions to have physical separation of individual enclosures within the rack suite



# High load capacity

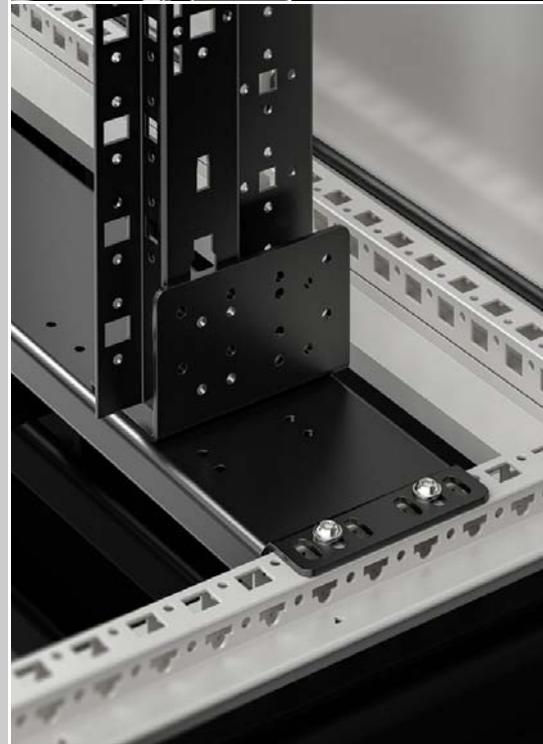
With maximum flexibility



## Flexible 482.6 mm (19") installation

Choose from two 482.6 mm (19") installation systems, depending on your requirements:

- Standard – Load capacity up to a maximum of 15,000 N or 12,000 N to UL 2416
- Dynamic – Load capacity up to a maximum of 18,000 N or 15,000 N to UL 2416
- Different installation options are available for the 482.6 mm (19") mounting angles, depending on the rack dimensions. While 600 mm wide racks are mounted directly onto the rack frame, in 800 mm wide racks the 482.6 mm (19") levels are mounted on depth stays or cross-members. For 800 mm wide racks, alternative mounting dimensions of 21", 23" and 24" are also supported, together with asymmetrical arrangement of the 482.6 mm (19") mounting level. The standard installation option with cross-members is used with rack depths of up to 800 mm and is ideally suited for use as a network distributor by supporting fast, simple cable management across the entire rack width in any height unit.
- An asymmetrical arrangement of the 482.6 mm (19") level gains additional installation space on one side which may be used for optimised cable routing or to integrate a Liquid Cooling Unit (LCU).



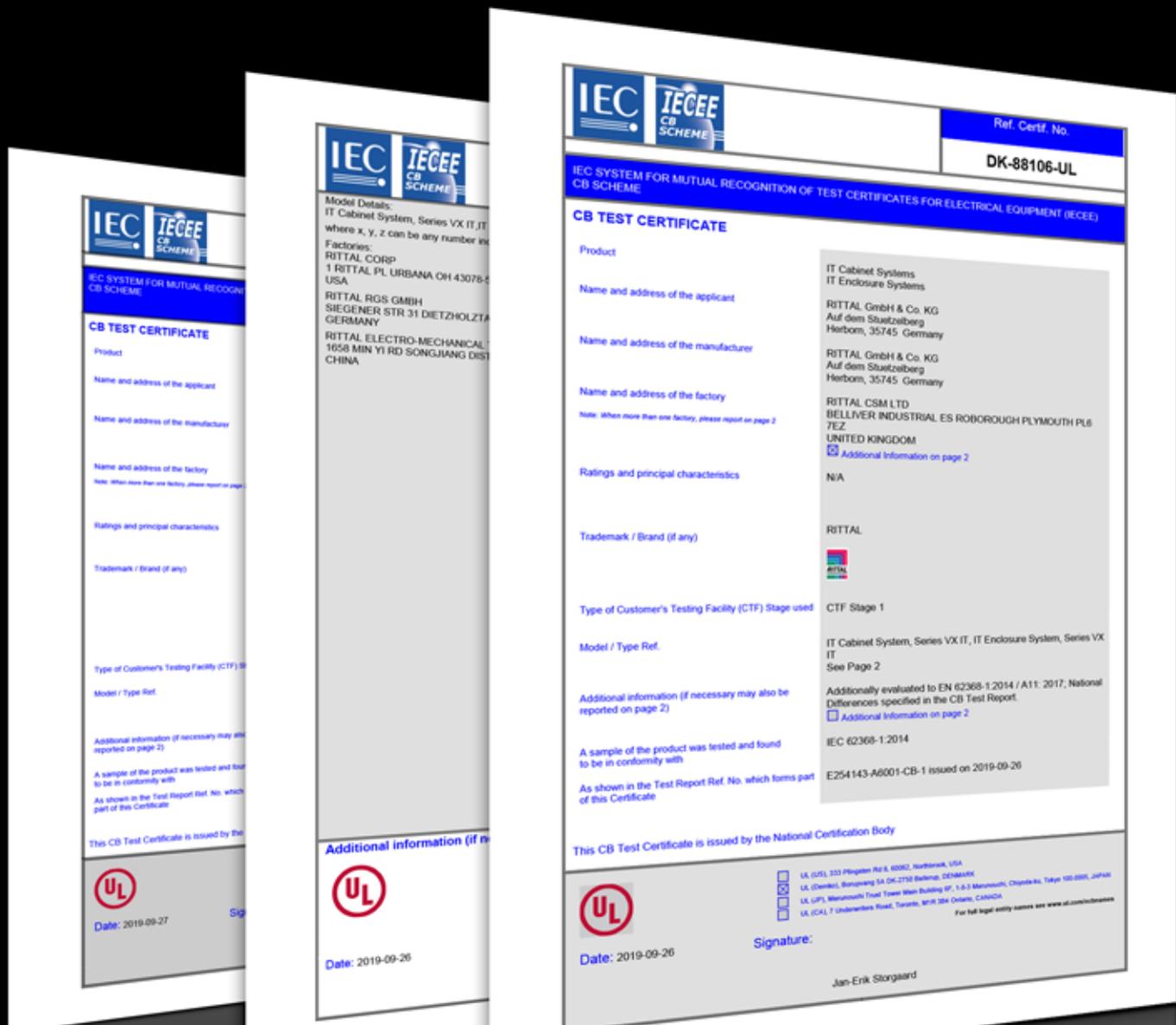
## Easily extend your existing systems

- The VX IT is also compatible with all existing IT infrastructure solutions using the TS IT and DK TS systems – in other words, the VX IT allows for additional configuration and buying.
- Thanks to the new buying option with 3 mm buying gap, entire racks or liquid cooling packages can easily be removed from the rack suite and replaced with updated hardware.



# High security standards

With UL certification and CB test report



## Certification to international safety standards

- Rittal is compliant with the latest international standards and our products are certified accordingly.
- For example, our products meet the stringent new testing requirements for mechanical load capacity as defined by international standard IEC/EN 62 368-1 and American standard UL 2416.
- The quality of the VX IT, including all materials and components, is verified by UL certification.



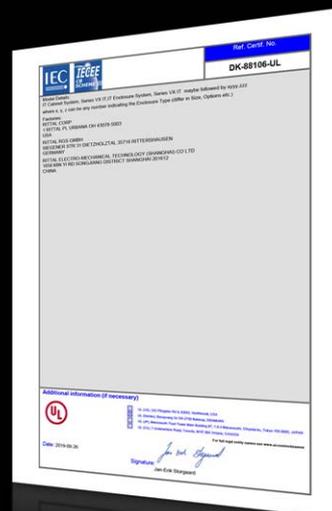
## CB test report and country-specific approval

- If required, country-specific certificates for local market access can be obtained from the CB test report (DK-88106-M1-UL).
- The VX IT meets all applicable requirements to EN/IEC 62368 and UL 2416 and is therefore compliant with IT security standards, including any national variations between the EU, USA and Canada.



## UL certification

- The VX IT is available in two versions certified to UL 2416 (E254143): The VX IT “standard” version is certified for 1200 kg static load, while the VX IT “dynamic” version is certified for 1500 kg static load.



# Security and ease of use

Customised at all levels



## Roof

- A wide range of customer-specific roof solutions
- Ideal solutions for secure, simple cable entry, even with high cable volumes
- Closed option for a high protection category of IP 55



## Walls

- Split side panels for problem-free one-man assembly
- Vertically divided, hinged side panels for easy access without dismantling the side panel
- Side panels latched from the inside for improved access protection



## Doors

- Vented or solid, to suit the individual climate control requirement
- Mechanical and electronic lock systems for optimum security
- Door control systems to automatically open the doors in the event of a cooling failure or for room-based extinguisher systems



## Base

- Individual base modules for optimum, secure cable entry from below
- Base/plinth systems with integral cable management solutions



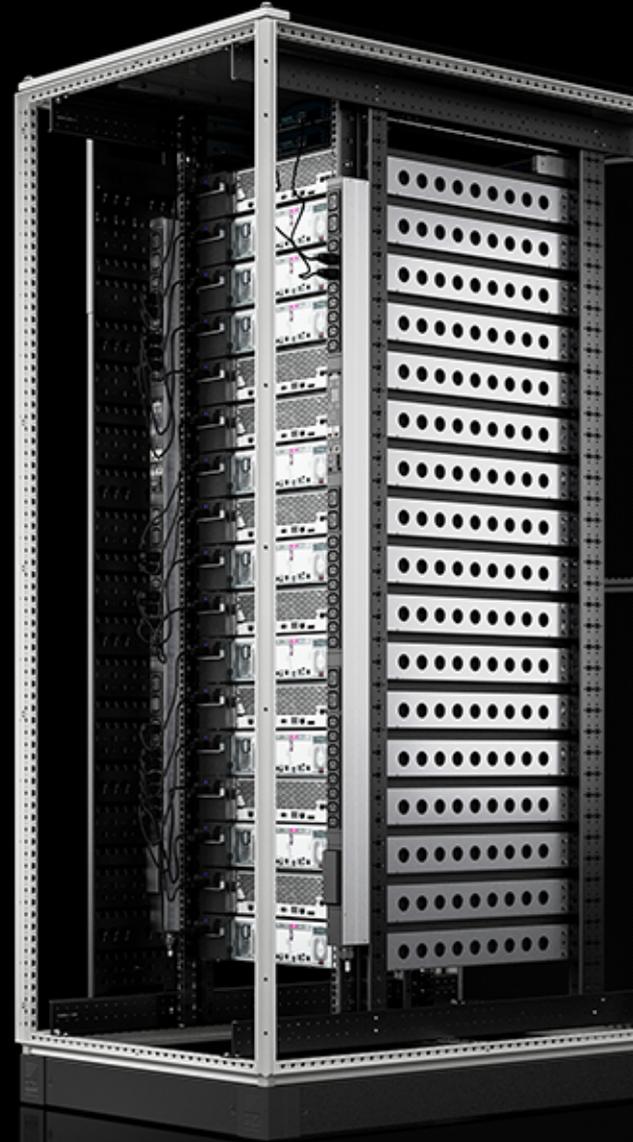
## Room integration

- Perfectly adapted modules for achieving cold or hot aisle solutions



# Interior installation

With limitless versatility





## Power

- Wide range of socket strips and power distribution systems
- Power distribution unit in the zero-U space
- Professional monitoring and link to DCIM software (such as RiZone)
- Measurement of voltage, current, power factor, active and apparent power



## Cooling

- Customer-specific climate control solutions for rack, suite and room cooling up to 55 kW per rack
- Minimised operating costs thanks to energy-efficient systems



## Monitoring

- CMC III for preventive intervention to help minimise the risk of downtime
- Mechanical and electronic lock systems for optimum security



## Security

- Fire alert and extinguishing systems for early fire detection and automatic extinguishing in the event of a cooling failure or when room-based extinguishing is triggered



## Interior installation

- Practical cable routing vertically and horizontally in the rack – even with high port density
- Component shelves, for static or extendable installation
- Air baffle systems for optimised airflow in the rack, tailored to the individual climate control solution



# Extended and improved VX IT product range

## Compartment Racks



## Standard solution

- We have added 8 Compartment Racks to the VX IT range
- 2 standard options available off the shelf with a further 6 built-to-order items
- These rack options are available with 2 and 4 compartments (each with two widths and depths and a height of 2200 mm).

## Flexible 482.6 mm (19") installation

- The mounting levels are comprised of separately adjustable 482.6 mm (19") mounting angles (including U labelling) for each individual compartment (11 and 23 U each). With a material thickness of 2.5 mm, a static load capacity of 10,000 N per enclosure (250/500 kg per compartment) is supported.
- Air baffle plates pre-integrated into the mounting angles ensure maximum energy efficiency by minimising cooling airflow losses.
- The dividing shelves between compartments prevent unauthorised access and are designed for the interim storage of tools and documents with a load capacity of 100 N.

## Independent separation

- The pre-installed divider panels on both sides ensure "spatial" separation from the adjacent compartment. No additional partitioning is needed.
- Individual installation of accessories from the Rittal range, including easy integration of 482.6 mm (19") PDU systems into each individual compartment.
- Cable routing systems are easily installed on the front and rear hole patterns already provided in the divider panel – in front of the mounting level. A half-height PDU can likewise be positioned vertically and easily mounted directly on the machined keyhole of the divider panel of a 2-compartment rack.



# Extended and improved VX IT product range

## Compartment Racks



## Secure cable management

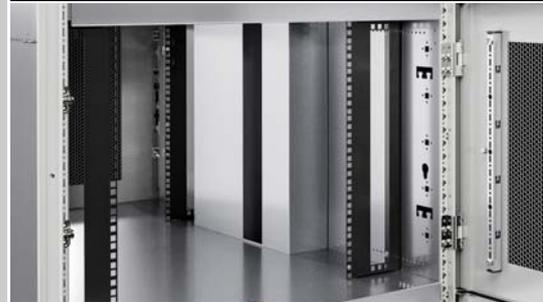
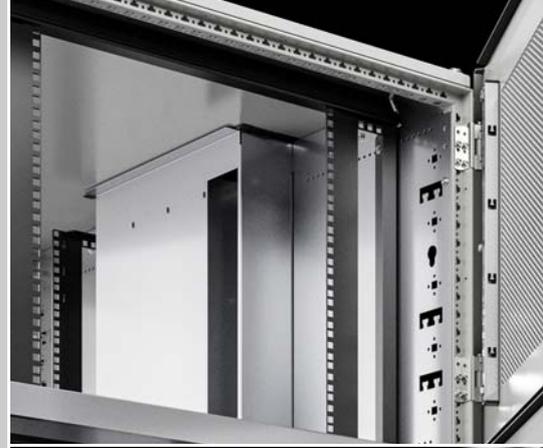
Separate cable entry and cable routing inside the enclosure in specific and separate ducts allows for a dedicated, access-protected supply to each compartment.

- Cable routing can be completed to the front or to the rear of each compartment, within the overall secured compartment itself.
- Generously dimensioned openings for cable routing in the roof, base and duct make it easier to install the power supply including a solid PDU connector up to 36 A.
- Cable entry can be from either side, from above via brush strips in the roof plate, or from below via the divided gland plate, directly into the protected cable ducts to the individual compartments.
- The integrated air baffle plates in the 800 mm wide options feature extra cut-outs in the 1 U mounting standard for any additionally installed equipment or for cable routing.

## Data centre-appropriate door solutions

The doors of all compartments have a free ventilation area of 85% to ensure the airflow required for component cooling.

- The comfort handle and double hinged and latched doors provide individual access protection.
- Security lock 3524 E is supplied as standard and may be exchanged for distinct or particular lock systems.
- Additional security options are available by combining with a CMC III monitoring system and electronic handle systems.



# Examples of VX IT applications

## The IT rack as distributor rack



**Scenario:**  
IT managers and engineers are often confronted with the challenging task of equipping office buildings etc. with suitable IT distributor racks. Cable management with tidy cable routing and fasteners, the ability to accommodate different network components such as patch panels or switches, the improved distribution of mechanical loads and structured cable routing are all particularly crucial.

**The solution:**  
The VX IT provides the greatest possible flexibility with a variety of width options available to accommodate the nature and quantity of cabling as well as offering depth-variable rails or combination rails to support cable routing using cable ties or cable supports using cable clamps. The glazed door provides ease of handling and allows for more convenient monitoring and control of free ports or active components, for example. Vertically divided side panels provide optimum access to the front and rear from the sides, as well as to the components and cabling. Snap fasteners with an integrated internal latch on the side panels ensure the best access security and protection.

## IT enclosures in an industrial environment



**Scenario:**  
Industrial environments such as warehouses and production halls are often typified by harsh conditions. One of the key requirements of an IT rack is to protect sensitive components from dust, water etc. It must also guarantee protection from electromagnetic radiation and physical damage by transport vehicles such as fork-lift trucks.

**The solution:**  
The VX IT enclosure with solid base assembly, one-piece solid roof plate, solid glazed door at the front and sheet steel door at the rear, with a protection category of IP 55, provides optimum protection from environmental and ambient conditions. Additionally, one-piece, screw-fastened side panels protect against unauthorised access. The additional internal latch on the side panel is a further security enhancement. A closed-loop LCU provides climate control while also ensuring the required level of protection to IP 55.

## Server racks in the data centre



### Scenario:

A key issue with data centres is how to dissipate waste heat in a confined space, and how to protect against overheating. In confined spaces, temperature control of the room is rarely possible, so measures should be taken to ensure adequate cooling of the rack. Energy efficiency is also a key consideration.

### The solution:

To this end, the VX IT offers the option of rack climate control with a solid sheet steel and glazed door, optionally available with an automatic door opening system. If the cooling system should fail, or in the event of a fire, the new “door-within-a-door” concept allows for the automatic opening of two integral door inserts. For room and suite climate control, vented doors front and rear can provide the ideal cooling strategy.

As such, and if the room height permits, the VX IT with height units of up to 52 U allows for a high concentration of component installation and hence extremely efficient use of the room and space.

When using the new 180° baying hinge, the 180° door opening angle including comfort handle allows for greater space optimisation as well as greater installation freedom, particularly with bayed racks. This results in superior access and reduced aisle widths while complying with relevant safety standards for escape routes.

## Compartmentalised IT racks with separate areas and separate access for different applications



### Scenario:

There are countless examples of one rack with multiple users, such as companies and subcontractors who combine different applications or functions in a shared installation with defined and distinct access authorisations, or expanding companies who opt to rent differently sized compartments rather than a complete rack to ensure a reliable supply e.g. of air-conditioning or power through a hosting service provider.

### The solution:

VX IT Compartment Racks have customisable locking systems that only allow authorised parties access to their own application, thereby preventing third-party access. What's more, the ability to consistently separate routing of data and supply cables makes them ideal for avoiding interference and disruption in multi-use racks. Cable entry is either from above via brush strips in the roof plate or from below via the divided gland plate, directly into the protected, separate cable ducts to the individual compartments in the rack.

# Rittal – The System.

Faster – better – everywhere.

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

You can find the contact details of all Rittal companies throughout the world here.



[www.rittal.com/contact](http://www.rittal.com/contact)

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