
WHITE PAPER

MONOLITH

Data Center / Enterprise / Colocation
Rack Cabinet

PROTON^X



INTRODUCTION.

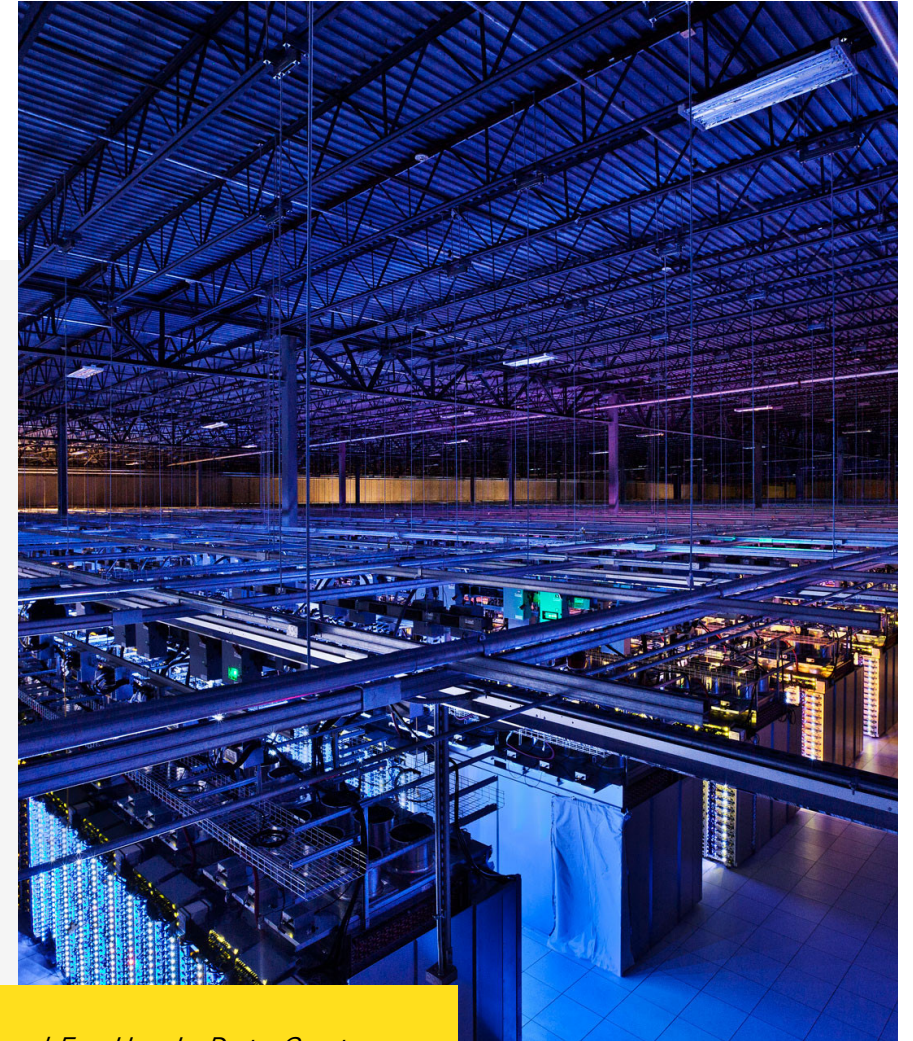
The Monolith series server racks are an infrastructure mounting solution designed to house 19-inch server equipment in data centers and for use within hot/cold aisle containment systems. These racks are engineered to meet the latest energy efficiency and safety requirements, providing optimal conditions for server and IT infrastructure operation.

A solution for professionals focused on the reliability and security of server systems—this product sets new standards, exceeding expectations!

GENERAL ISSUES.

Modern data centers face significant challenges:

1. **High cooling costs** are driven by inefficient airflow optimization, leading to increased energy consumption.
2. **Cable management**—ease of cable routing and organization within the rack impacts heat dissipation, maintenance, and the fault tolerance of installed equipment.
3. **Scalability**—designs must ensure flexible scalability, high load capacity, and equipment density.



Monolith Server Racks From Proton X™ Are Designed For Use In Data Centers.

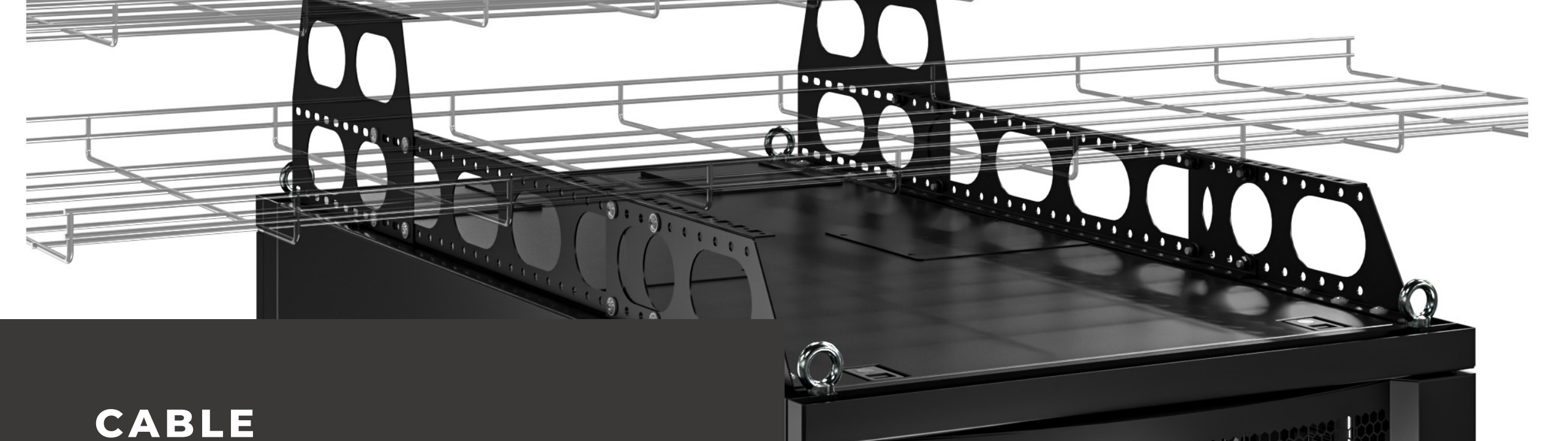
ADVANTAGES OF MONOLITH RACKS.

01

Airflow optimization. The design prevents air recirculation, eliminating the mixing of hot and cold air streams inside the enclosure:

- **Brush seals** integrated vertically along the 19" mounting profiles across the entire height of the rack's front section effectively block hot air recirculation into the front zone.
- **Minimal gaps** between the equipment and the enclosure at the top and bottom ensure directed airflow through the equipment, improving heat dissipation and extending the lifespan of components.





CABLE MANAGEMENT SYSTEM.

02

Mounting brackets: For convenient attachment of cable trays, mounting brackets are installed on the top of the rack.



CABLE MANAGEMENT SYSTEM.

02

- **Cable entries:** For installation convenience, the rear and middle sections of the rack's top are equipped with 4 cable entries, allowing flexible cable entry configuration.
- **Cable management:** The rack is equipped with a cable management system based on vertical and horizontal organizers, ensuring clear cable routing and airflow optimization.
- **PDU installation:** For mounting primary and backup power distribution units (PDUs), the vertical cable organizers are equipped with special mounting holes for securely fixing the devices.

USAGE IN DATA CENTERS.

03

- **Hot/cold aisle containment:** The front and rear sections of the rack are equipped with sealing elements (curtains) for integration into data center air containment systems.
- **Modular design:** The racks support the capability to be linked in rows for scalability and the construction of complex Data Center configurations.

Open Compute Project (OCP)

We are prepared to adapt our designs to the Open Compute Project standards, which aim to create open standards and equipment architectures for building energy-efficient and cost-effective data centers.





EFFICIENT USE OF SPACE.

04

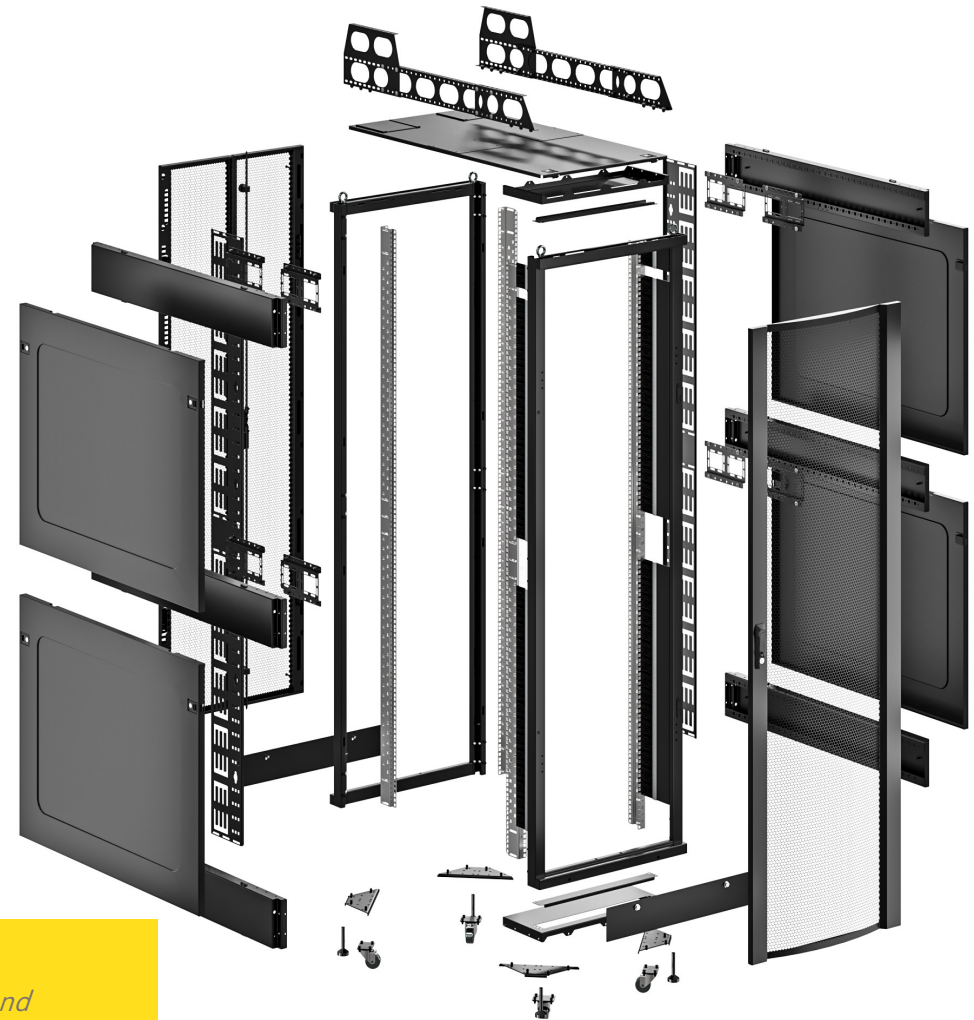
- **Functional 1U hatches:** The top and bottom front sections of the rack include universal 1U hatches, allowing the installation of various accessories (19-inch lighting panels, brush cable entries, etc.) to enhance functionality.

OTHER ADVANTAGES

- **Welded frame construction:** With a static load capacity of up to 1450 kg, the rack can accommodate heavy server equipment.
- **Equipment density:** With the maximum dimensions for this series—height of 52U and depth of 1200 mm—the rack ensures optimal space utilization, allowing more equipment to be installed in a smaller area.

TECHNICAL SPECIFICATIONS.

- Sizes: 42U, 47U, 52U; width 600 and 800 mm; depth up to 1100 and 1200 mm.
- Load capacity: up to 1450 kg static load.
- Dust and moisture protection: IP20, IP41, IP51 for various operating conditions.
- Door perforation: up to 80% for enhanced cooling.
- Grounding: All rack components are grounded for increased safety.
- Color: Black RAL9005.



Monolith ensures your equipment operates reliably, efficiently, and with minimal operational costs.



TARGET AUDIENCE.

- Data centers
- Cloud providers
- System integrators
- Installation and service organizations
- Multibrand IT distributors
- Small and medium-sized businesses (SMB)
- Telecommunications companies

Racks with dimensions 42U 600x1100

50%



Racks with dimensions 52U 600x1200

20%



VALUE FOR THE TARGET AUDIENCE.

For Data Center Managers:

- Data Center Infrastructure: Racks designed for seamless integration within Hot Aisle/Cold Aisle Containment systems.
- Reduced Operational Costs: Energy-efficient cooling systems lower electricity expenses.
- Increased Equipment Density: Space optimization allows for more servers in a limited area.
- Reliability and Stability: Minimized downtime through effective cooling and robust construction.
- Flexibility and Scalability: Easy adaptation of racks to growing demands.

For Engineers:

- Ease of Installation and Maintenance: Cable organizers and PDU mounts simplify setup and servicing.
- Energy Efficiency: Preventing air recirculation reduces overheating risks.
- Safety: Integration with access control systems (ACS) enhances security.
- Configuration Flexibility: Modular design allows for easy adaptation to changing needs.



For Investors:

- High ROI: Reduced operational expenses and extended equipment lifespan ensure a high return on investment.
- ESG Compliance: Environmental responsibility through the use of recyclable materials and energy-efficient technologies.
- Lower Capital Expenditure: Modular design reduces upgrade costs.

For Segments:

- For Data Centers and Cloud Providers: Scalability and reliability of solutions.
- For Installation Organizations: Ease of installation and maintenance.
- For Small and Medium Enterprises: Ease of use, and optimal acquisition and ownership costs.

PRODUCT ENVIRONMENTAL PROFILE (PEP)

Hazardous Substance Evaluation:

- The product fully complies with the European RoHS directive and either contains no prohibited substances or maintains them within allowable limits.

Manufacturing Process:

- Production takes place at facilities certified to ISO 14001 standards, ensuring high environmental management practices at every stage.

Operation:

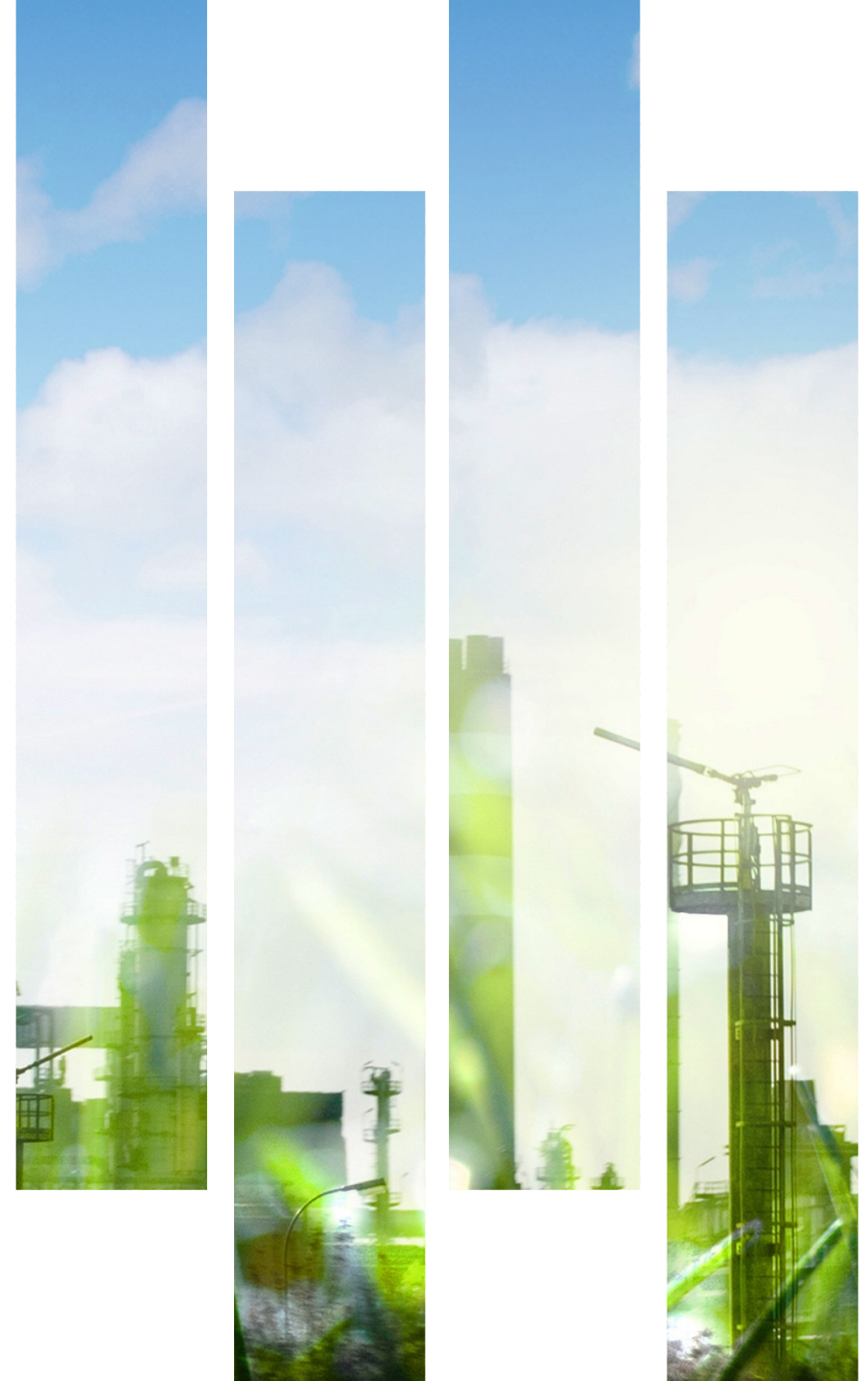
- The product emits no harmful substances, generates no noise, and requires no special precautions during use.
- It consumes no electricity, and maintenance does not require any special procedures.

End of Life Cycle:

- The product is designed with up to 95% recyclability by weight, including metals and plastics that can be processed using existing methods.
- No special disposal measures are needed; the product can be recycled through standard procedures.

Systematic Approach:

- The product complies with the RoHS directive and is suitable for use in assemblies and installations without restrictions.
- It is designed with eco-friendly principles, reducing its environmental impact.



PROTON

Exceeding Expectations!

The Monolith series server racks from Proton X™ are the perfect solution for those who value quality, reliability, and innovation. These racks exceed expectations by offering high energy efficiency, reliability, and ease of use. By choosing Monolith, you are taking a step into the future, where reliability and efficiency go hand in hand with environmental responsibility.
