3C3®
PERFORMANCE EXCELLENCE

DATA CENTER
SOLUTIONS

DATA CENTRE SOLUTIONS

With the exponential growth, reliability and scalability data center needed to be designed, implemented and maintained as they have become a critical part of any organization. Within the increase in technologies such as AI, VR, IoT and even in plant automation are the key drivers that are evolving Data Centre today.

High-density data center cabling solution can simplify deployment, provide reliable operation, and realize flexible expansion and quick upgrade with the ever-increasing business traffic requirements to adapt to changing market needs.

Today, they house numerous devices which address variety of application which define the type of Data center such as Process Based, Hosting Website, Hyperscale / Cloud Based, Maintain your financial records, Multitenant or even to route e-mails.

Therefore with the Type one needs to keep in mind in their design

- Weather the Data Centre is Scalability
- Is the Data Centre Flexibility and Manageable
- The Uptime or Availability of the Data Centre

Advantages

Stable Transmission:

- 40G and 100G Ethernet applications
- High bandwidth and low latency
- High performance and high density MTP®/MPO solutions

Scalability for Upgrades:

- High density solution for optimizing space
- More powerful compatibility, network upgrade without replacing the backbone cabling
- Flexible solution for easy replacement

Efficient Maintenance:

- Modular cabling is designed for simple deployment and reliable operation
- Reducing the cost and performance risk of changing or increasing product

ZETACORE ™ DC SOLUTIONS

Zetacore DC Solutions are engineered for ultra-high-density fiber connectivity, supporting 192 fibers (192F) in just 1U. Designed to maximize space efficiency and streamline installation, it is ideal for hyperscale, colocation, and ISP data centers. Offering MPO-MPO, MPO-LC FanOut, and LC-LC configurations, it supports 10G/40G/100G/400G and beyond with OM3, OM4, OM5, and OS2 fiber types. Equipped with Pull-Tab Fiber Patch Cords, it ensures easy management and quick deployment, making it the perfect solution for scalable and high-performance network infrastructure

Available with either MPO-MPO, MPO-LC FanOut, or LC-LC to support 10G/40G/100G/400G and above applications in any customized length

- Supports multiple fiber configurations to meet diverse connectivity requirements.
- MPO-MPO for high-speed backbone links, ensuring minimal loss and maximum bandwidth.
- MPO-LC FanOut options allow direct connections to network equipment without requiring additional breakout modules.
- LC-LC connections cater to traditional point-to-point fiber links.
- Available in customized lengths to suit specific data center layouts and cabling distances.

Pull-Tab Fiber Patch Cords for Easy Management

- Designed with pull-tab connectors for quick insertion and removal, reducing downtime and maintenance effort.
- Ideal for high-density patch panels where traditional fiber connectors are difficult to access.
- Enhances cable management by eliminating the need for excessive force during installation or removal.

Applications

Hyperscale Data Centers
Massive-scale cloud data centers requiring ultra-high fiber connectivity.

Colocation (Colo) Data Centers
Shared facilities where multiple businesses operate their IT infrastructure.

ISP Data Centers
Telecom and internet service providers' networking hubs, requiring high-speed fiber backbone connectivity

Hosting Data Centers
Facilities that host web services, cloud applications, and enterprise servers, demanding scalable fiber infrastructure.

Available in Standard, High, and Ultra High Density (1U: 144F, 2U: 288F & 4U: 576F)

- **Standard Density:** Ideal for small to medium-scale deployments, balancing capacity and space efficiency.
- **High Density:** Suitable for growing networks requiring more fiber connections within limited rack space.
- **Ultra High Density:** Best for large-scale data centers and hyperscale environments, maximizing fiber connectivity per rack unit.
- Configurable in different rack unit sizes (1U, 2U, 4U) for scalability.

Designed to Save Space and Reduce Installation Time

- The solution is optimized for high-density environments where space is limited.
- By using compact cable management and high-fiber-count solutions, it minimizes rack space usage
- Pre-terminated fiber solutions reduce the need for on-site splicing, significantly cutting down installation time.
- Simplified design reduces the complexity of fiber routing, leading to a cleaner and more organized cabling infrastructure.

Offered in OM3, OM4, OM5, and OS2

- **OM3 & OM4:** Laser-optimized multimode fiber (LOMMF) supporting 10G, 40G, and 100G applications over short distances.
- **OM5:** Enhanced multimode fiber designed for wavelength-division multiplexing (SWDM), reducing fiber count for 100G/400G applications.
- **OS2:** Single-mode fiber optimized for long-distance, high-speed data transmission with minimal attenuation.

ULTRACORE ™ DC SOLUTIONS

Ultracore DC Solutions are built for space-efficient, high-performance data centers, accommodating 120 fibers (120F) in 1U. Designed to support 10G/40G/100G applications, it offers MPO-MPO and MPO-LC FanOut configurations for seamless integration. Available in OM3, OM4, OM5, and OS2, it ensures low-loss, high-speed data transmission for hyperscale, colocation, and ISP data centers. With Pull-Tab and Uniboot Polarity changeable patch cords, it enables quick deployment and easy management, making it the ideal solution for scalable fiber infrastructure

Designed to Save Space and Reduce Installation Time

- **Compact Design:** The high-density fiber solution minimizes the footprint required in racks, allowing for more efficient space utilization.
- **Pre-terminated Solutions:** Reduces on-site splicing needs, simplifying deployment and lowering labor costs.
- **Tool-less Installation:** Designed for easy mounting and quick connections, cutting down installation time.
- **Improved Cable Management:** Organized patching with optimized routing options ensures a clean and manageable infrastructure.

Supports High Density (1U: 120F & 2U: 288F)t

- **1U: 120 Fibers (120F):** Compact solution offering high fiber density in minimal rack space.
- **2U: 288 Fibers (288F):** Scalable solution for environments requiring high port density.
- **Optimized for Data Centers:** Best suited for hyperscale, colocation, and enterprise data centers where space efficiency is critical.

Accepts both Pull-Tab and Uniboot Polarity Changeable Fiber Optic Patch Cord

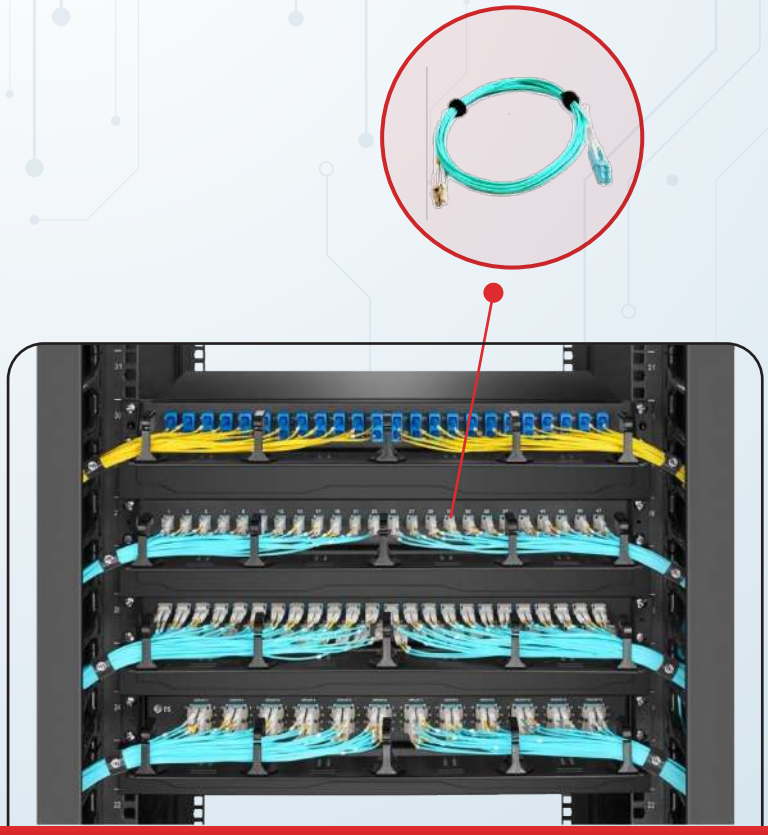
- **Pull-Tab Patch Cords:** Allows easy insertion and removal in dense patch panels, minimizing maintenance time.
- **Uniboot Polarity Changeable Cords:** Enables quick polarity switching without the need for re-terminating connectors, ensuring flexibility in deployment.
- **Enhanced Cable Management:** Reduces clutter and improves airflow within racks for better thermal management.

Available with either MPO-MPO, MPO-LC FanOut to support 10G/40G/100G

- **MPO-MPO:** Ideal for high-speed backbone connections, reducing the number of individual fiber strands needed.
- **MPO-LC FanOut:** Enables direct connection to switches, routers, and servers, supporting breakout applications for high-bandwidth links.
- **Supports 10G, 40G, and 100G:** Compatible with modern data center and enterprise network requirements for high-speed data transmission.

Offered in OM3, OM4, OM5, and OS2

- **OM3 & OM4:** Multimode fiber optimized for VCSEL-based transmission, suitable for 10G, 40G, and 100G over short distances.
- **OM5:** Extended-wavelength multimode fiber (WBMMF) designed for shortwave division multiplexing (SWDM) to support higher-speed applications.
- **OS2:** Single-mode fiber designed for long-distance, low-loss transmission, ideal for hyperscale and metro network environments.



GIGACORE ™ DC SOLUTIONS

Gigacore DC Solutions are built for space-efficient, high-performance data centers, accommodating 96 fibers (96F) in 1U. Designed to support 10G/40G applications, it offers MPO-MPO and MPO-LC FanOut configurations for seamless integration. Available in OM3, OM4, OM5, and OS2, it ensures low-loss, high-speed data transmission for hyperscale, colocation, and ISP data centers. With Pull-Tab and Uniboot Polarity changeable patch cords, it enables quick deployment and easy management, making it the ideal solution for scalable fiber infrastructure

Preparing the Data Center for the Next Level of Transmission Rate (40/100 Gbit/s)

- **High-Speed Data Transmission:** Designed to support next-generation networking speeds, including 40G and 100G Ethernet, ensuring seamless scalability for growing data centers.
- **Optimized for Hyperscale & Cloud Deployments:** Supports high-bandwidth applications required for AI, machine learning, and high-performance computing environments.
- **Future-Ready Architecture:** Enables a smooth transition to even higher transmission rates, reducing the need for frequent infrastructure upgrades.

Accommodates up to 4 Nos of 6 MPO Port Modular Adapter Plates in a 1U Panel

- **High-Density Solution:** Supports up to 24 MPO ports in a single 1U panel, accommodating massive fiber connections in minimal space.
- **Scalability:** Allows modular expansion based on network requirements, making it an ideal choice for growing data centers.
- **Efficient Cable Management:** Organizes fibers effectively, reducing clutter and improving airflow within server racks.

Pull Buckle Fixed Modular Adapter Plate

- **Enhanced Stability:** The pull buckle mechanism ensures a secure, vibration-resistant fit, preventing accidental disconnections.
- **Quick Access Design:** Simplifies maintenance by allowing easy insertion and removal of MPO adapters without disrupting operations.
- **Durable Construction:** Designed for high-reliability environments, ensuring longevity in mission-critical applications.

Cabling with MPO-MPO Over Four Parallel Fibers

- **Parallel Fiber Technology:** Uses four pairs of multimode or single-mode fibers for efficient data transmission, reducing latency and signal loss.
- **MPO-MPO Connectivity:** Provides high-density, pre-terminated cabling solutions that simplify deployment and minimize installation errors.
- **Ideal for Spine-Leaf Architectures:** Enhances network performance in modern data center topologies, reducing complexity in high-speed interconnects.

Offered in OM3, OM4, OM5, and OS2 (LC-LC Type)

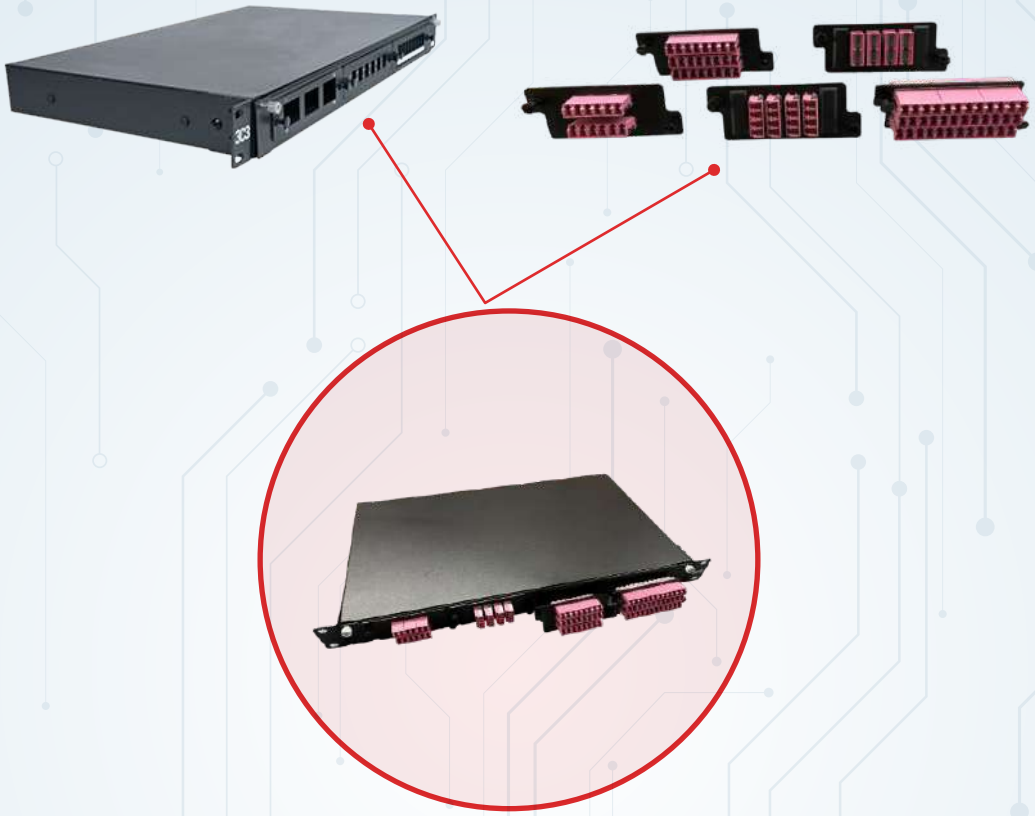
- **OM3 & OM4:** Optimized for VCSEL-based transmission, supporting 40G and 100G over short distances with minimal signal loss.
- **OM5:** Extended-wavelength multimode fiber (WBMMF) for shortwave division multiplexing (SWDM), allowing multiple wavelengths on a single fiber pair.
- **OS2:** Low-loss single-mode fiber, ideal for long-distance 40G/100G transmission, ensuring reliable performance across large-scale networks.
- **LC-LC Type Support:** Provides versatility for connecting to various network devices, switches, and patch panels.

Factory Terminated

- **Plug-and-Play Installation:** Pre-terminated at the factory to eliminate on-site splicing, reducing deployment time and labor costs.
- **High-Quality Precision Termination:** Ensures low insertion loss and consistent optical performance, meeting stringent data center standards.
- **Reduced Downtime:** Enables rapid deployment and quick replacements, minimizing disruptions to operations.

Faster Installation and Upgrades

- **Tool-Free or Minimal-Tool Deployment:** Modular design speeds up installation, reducing overall setup time.
- **Seamless Integration with Existing Infrastructure:** Compatible with both legacy and next-gen networking hardware.
- **Future-Proof Scalability:** Supports easy expansion and migration to higher-speed technologies with minimal additional investment.



CONTAINMENT SOLUTIONS

COLD AISLE CONTAINMENT

Cold Aisle Containment (CAC) solutions are advanced airflow management systems designed to optimize cooling efficiency, reduce energy consumption, and enhance equipment performance in data centers. By enclosing cold aisles and preventing hot and cold air from mixing, CAC solutions ensure consistent cooling, improved thermal management, and cost savings for data centers of all sizes.

Key Features & Benefits

Improved Cooling Efficiency:

- Eliminates Hot & Cold Air Mixing: Cold aisles are enclosed using doors, walls, or ceiling panels, ensuring that chilled air remains within the contained space.
- Enhanced Cooling Effectiveness: Directs cold air to server intakes, preventing recirculation and ensuring optimal temperature control.
- Higher Cooling Capacity Utilization: Supports higher rack densities by allowing cooling systems to work at peak efficiency.

Energy Savings & Cost Reduction:

- Reduces Cooling Power Consumption: By containing cold air, CAC reduces the amount of energy required to maintain ideal temperatures.
- Increases CRAC/CRAH Efficiency: Cooling units operate more effectively at higher return air temperatures, reducing overall energy costs.
- Potential for Free Cooling: In certain climates, CAC enables economizer (free cooling) operations, further cutting cooling expenses.

Increased Equipment Lifespan & Reliability:

- Prevents Overheating: Ensures a consistent and controlled airflow to IT equipment, reducing the risk of thermal hotspots.
- Enhances Server Performance: Stable temperatures lead to improved reliability and longer hardware lifespan.
- Reduces Cooling-Related Downtime: Minimizes temperature fluctuations, decreasing the likelihood of equipment failures due to overheating.

Scalable & Customizable Designs:

- Modular Configurations: Available in various designs, including sliding doors, swing doors, soft curtains, and rigid panels, to fit any data center layout.
- Adaptable to Different Rack Heights & Widths: Can be configured to match existing racks or new infrastructure.
- Retrofitting Capabilities: Easily integrates with existing data centers without major structural changes.

Compliance & Sustainability:

- Supports Industry Standards: Aligns with ASHRAE TC 9.9 guidelines and helps meet energy efficiency goals.
- Enhances PUE (Power Usage Effectiveness): Optimizes power usage, reducing PUE and making data centers more sustainable.
- Contributes to Green Initiatives: Lowers carbon footprint by reducing excessive energy consumption.

PATHWAY SOLUTIONS

Passive pathway solutions, such as OOPS and OHMS, are essential components of a structured cabling system that provide a safe and organized route for cables to traverse within a building or data center. These solutions ensure proper cable management, protection, and easy access for maintenance and expansion. OOPS are designed to accommodate and protect fiber optic cables along their paths. These pathways ensure the orderly routing of fiber cables, preventing tangling, bending, and potential damage. Fiber runners come in various materials, sizes, and configurations to meet different installation requirements. OHMS also serve a similar purpose to OOPS but are specifically designed for copper cables, such as Ethernet cables. OHMS provide a pathway for copper cables to run along walls, ceilings, or under floors while maintaining organization and protection.

Overhead Optical Pathway Systems(OOPS)

High Overhead Optical Pathway Systems (OOPS) are designed to protect and route fiber optic patch cords, cable assemblies to and from network cabinets, ODF and other terminal devices. Optical cable tray offers ideal solutions for optical raceway requirements & application with pleasing appearance and easy maintenance

Features

- Faster Deployment
- Quick, Easy & Speedy of Installation
- Optical Fiber Protection
- Modular & Flexibility Optical Pathway Systems
- Durable and Strong System
- Constructed with Frame-retardant materials rated V0
- Maintains bend radius & safely routes & guides optical fiber cables
- Tool-less design to enhance the system for easy and quick installation including snap- on cover, hinged over option as well as quick exists
- Available in five sizes without covers, or with regulars, or hinged covers
- Slotted ducking ideal for cable with varying exit locations

Overhead Patching Frame

Overhead Patching Frame is a 19" width frame that attaches directly to overhead cable management systems above racks or enclosures for patching or installation of small switches. Patching Frame provides flexibility in network and datacenter design by decoupling the physical network cabling from the enclosure, allowing easy movement of racks and upgrades to the network.

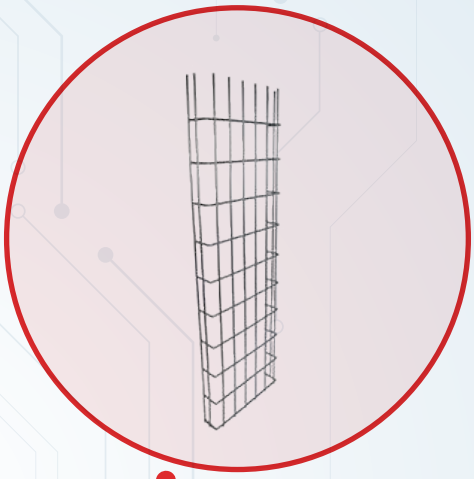
Over Head Mesh Systems(OHMS)

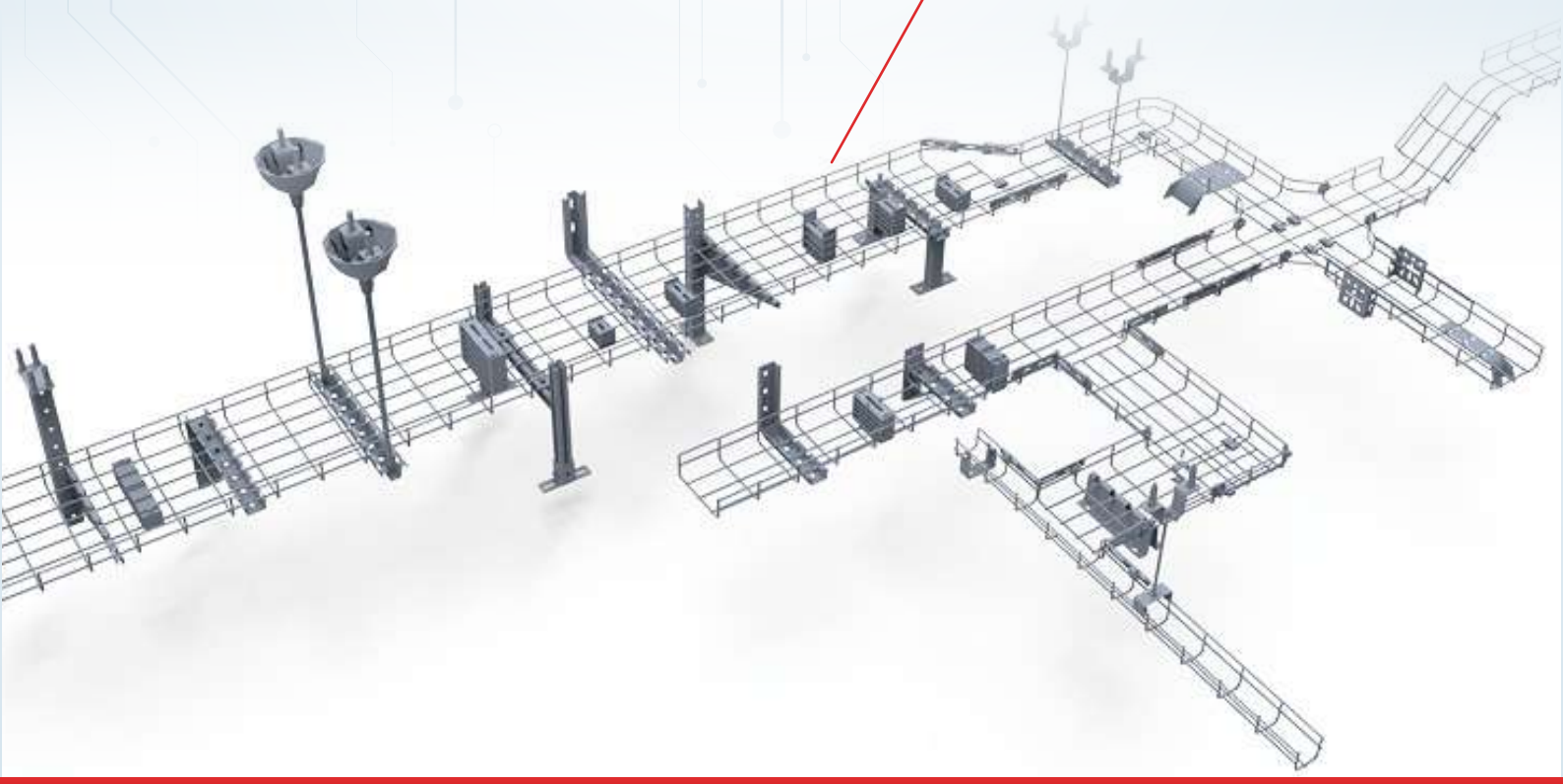
Over Head Mesh System (OHMS) utilizes high quality mechanical strength wires welded in a 2"4" grid pattern, producing a strong, versatile & economical cable support system & is designed for maximum flexibility. These prefabricated fittings are a time-saving and cost effective and can be easily field cut, bent, assembled & can have convenient cable drops.

The Over Head Mesh System is designed to route and manager copper data cables within a data center, connected building & industrial automation application. In addition OHMS provide a segregated copper and fiber cabling system and available in Electroplated Zinc finish after fabrication

Features

- Faster Deployment
- Time-saving and cost effective
- Field fabrication for Easy transitions & Adaptability
- Excellent ventilation
- Maximum strength for minimum weight
- Reduce dust retention and improve hygiene of the working environment.
- Ideal for routing and supporting cables throughout fiber cable networks.
- OMHS can be installed from the ceiling, on the wall or over the Network/ Server Cabinets using different accessories





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