

HYPERSCALE **DATA CENTER** **SOLUTIONS**

Empowering a Global Future of IT Infrastructure
Space with Passive Networking Solutions

HYPERSCALE DATA CENTER SOLUTIONS

Scalable. High-Performance. Future-Ready Data Center Infrastructure.



Built for the World's Largest
Data Environments

As global data demand continues to accelerate, hyperscale data centres have become the backbone of modern digital ecosystems. Designed for massive scalability, high performance, and uncompromising reliability, these next-generation facilities support cloud computing, AI workloads, edge connectivity, and enterprise transformation at unprecedented scale.

Our Hyperscale Data Centre Solutions deliver advanced fiber connectivity, high-density cabling systems, and intelligent infrastructure engineered to meet the speed, efficiency, and flexibility demands of today's largest data environments. From rapid deployment to seamless expansion, we enable data centres to operate smarter, faster, and more efficiently.

Cloud | AI Workloads | Edge Connectivity | 40G / 100G / 400G / 800G Ready



Advantages

- High-density connectivity for maximum space utilization.
- Scalable infrastructure for future expansion.
- Ultra-low loss fiber solutions for superior network performance.
- Faster deployment with pre-terminated plug-and-play systems.
- Reduced downtime through reliable and robust connectivity.
- Optimized airflow and cable management for improved cooling efficiency.
- Supports high-speed applications including 40G / 100G / 400G / 800G networks.
- Lower operational costs through efficient design and reduced maintenance.
- Enhanced flexibility for cloud, AI, and enterprise workloads.
- Future-ready solutions built for next-generation data demands.

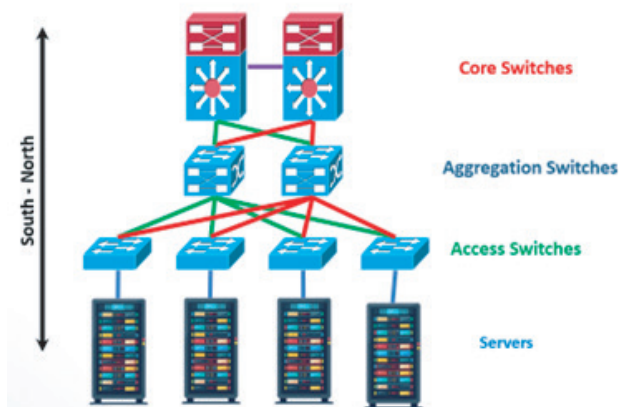
NETWORK ARCHITECTURE

High-Speed, Low-Latency Connectivity for Hyperscale Data Centres

Hyperscale data centre network architecture is designed to deliver high-speed, low-latency, and highly scalable connectivity across thousands of servers, storage systems, and applications. It uses a spine-leaf topology to ensure efficient east-west traffic flow, redundancy, and consistent performance. With support for high-density fiber cabling, automated management, and future-ready bandwidth upgrades, this architecture enables seamless expansion while maintaining reliability and operational efficiency.

A TRADITIONAL 3-TIER ARCHITECTURE

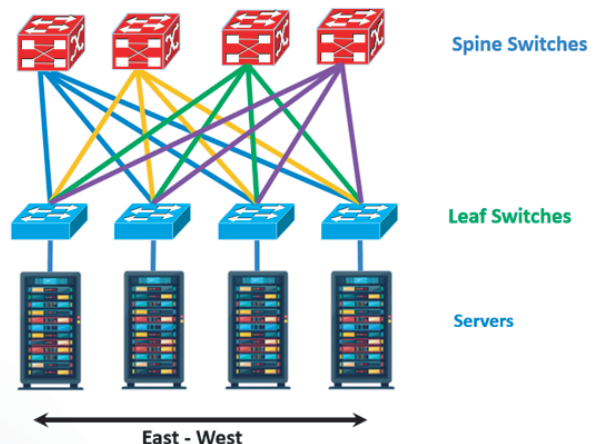
A 3-tier data centre network consists of Core, Aggregation, and Access layers, providing structured traffic management and clear separation of functions. It is widely used in traditional data centres where scalability and hierarchical control are important.



- Data travels hierarchically (South to North flow of data).
- The longer path will add latency and creates traffic bottlenecks.
- Allows only limited scalability.
- Redundancy is limited.

NEW 2-TIER ARCHITECTURE

A 2-tier data center network combines the Core and Aggregation layers into a single Spine layer connected to the Access (Leaf) layer. This modern design reduces latency, simplifies management, and is ideal for hyperscale environments requiring high-speed east-west traffic flow.



- Data travels East to West.
- Each Leaf Switches is connected to every Spine Switch, meaning the information will cross the same amount of devices, minimizing bottlenecks.
- Provides easier scalability/expansion.
- Provides redundancy, if one of the Spines would fail it will have a small impact in the DC.

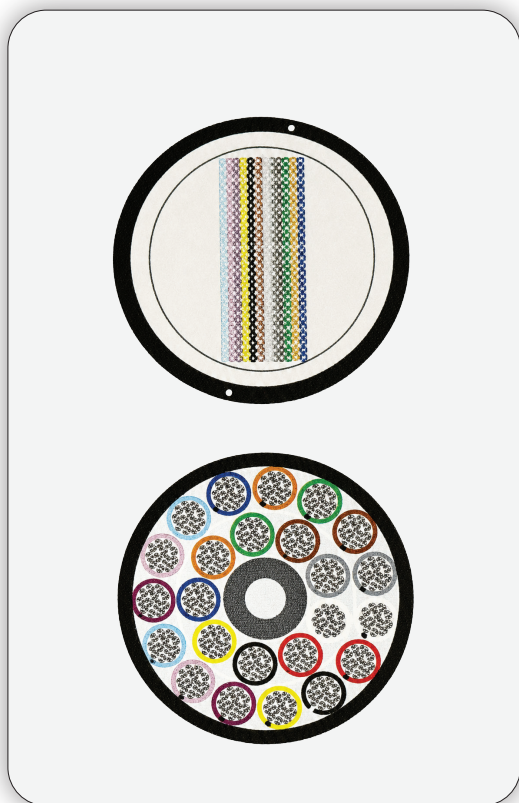
NETWORK DOMAINS

High-Speed Backbone for Hyperscale Data Center Connectivity

The network domain forms the high-speed backbone of a hyperscale data center, enabling seamless connectivity between compute, storage, and external networks. Built on a scalable leaf-spine architecture, it ensures low latency, high bandwidth, and predictable performance across thousands of servers.

Designed to handle heavy east-west traffic, the network leverages ultra-high-speed fiber links and intelligent automation for efficient data flow, resilience, and rapid scalability delivering reliable, always-on connectivity for cloud and enterprise workloads.

FIBER CABLING SOLUTIONS



RIBBON FIBER

Ribbon fiber is a specialized type of optical fiber designed for high-density data transmission applications. It is characterized by its flat ribbon-like structure, where multiple individual optical fibers are arranged side by side in a flat configuration. Ribbon fiber is commonly used in telecommunications, data centers, and other high-capacity networking environments.

Features

- Complies to ANSI/TIA-568.3-D, ITU-T G652.D, Telcordia GR-20, IEC 60794-2/ 60794-3- 10.
- HDPE Outer jacket.
- Waterproof layer & excellent Moisture resistance provided.
- Excellent consistence performance.

Application

- Long-Distance Telecommunications Networks.
- Data Centers.
- 5G and Mobile Backhaul.
- Cable Television (CATV) and Broadcast.

APPLICATION

In a network architecture, ribbon fiber cables are primarily deployed in the Outside Plant (OSP) network, Entrance Facility, and Meet-Me Room (MMR) for high fiber-count backbone connectivity. Within the data center, they are extensively used in spine-to-spine and spine-to-leaf interconnections.

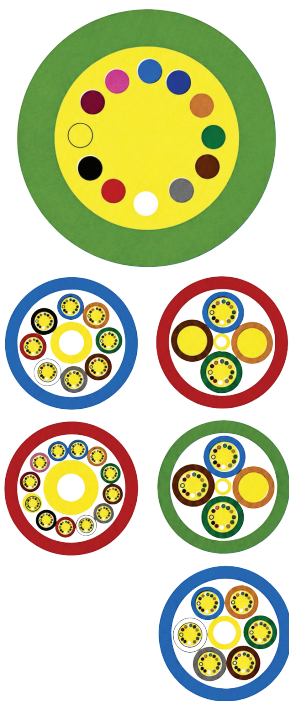
INDOOR CABLE

High-Speed Backbone for Hyperscale Data Center Connectivity

Indoor cable designed for indoor use, primarily in datacenter or buildings where fiber optic connections are required. These cables can use different types of optical fibers, including single-mode (SM) and multi-mode (MM) fibers. The choice of fiber type depends on factors like the required data transmission distance and bandwidth.

Indoor cables usually have a tight buffer design. This means that each individual optical fiber is protected by its own buffer material, which provides additional mechanical and environmental protection.

Indoor cable typically has a PVC (Polyvinyl Chloride) or LSZH (Low Smoke Zero Halogen) jacket, which provides protection to the optical fibers inside and determines its fire safety characteristics. LSZH jackets are preferred in areas where smoke and toxic fumes need to be minimized in case of a fire.



Features

- Conformance to ANSI/TIA-568.3-D, Telcordia GR-20, IEC 60794-2 Flame retardant LSZH jacket.
- Fiber count Upto 288F.
- Fiber Color: blue/ orange/ green/ brown/ grey/ white/ red/ black/ yellow/ purple/ pink/ aqua.
- Aramid yarn for round strength(High Stenth & With Stand High Tension Forces.
- Out jacket: LSZH.
- Temperature range -20°C ~ + 70°C.

Application

- Indoor applications.
- Data Centers.
- Local area network (LANs).
- Campus networks.
- Telecommunications installations within buildings.

APPLICATION

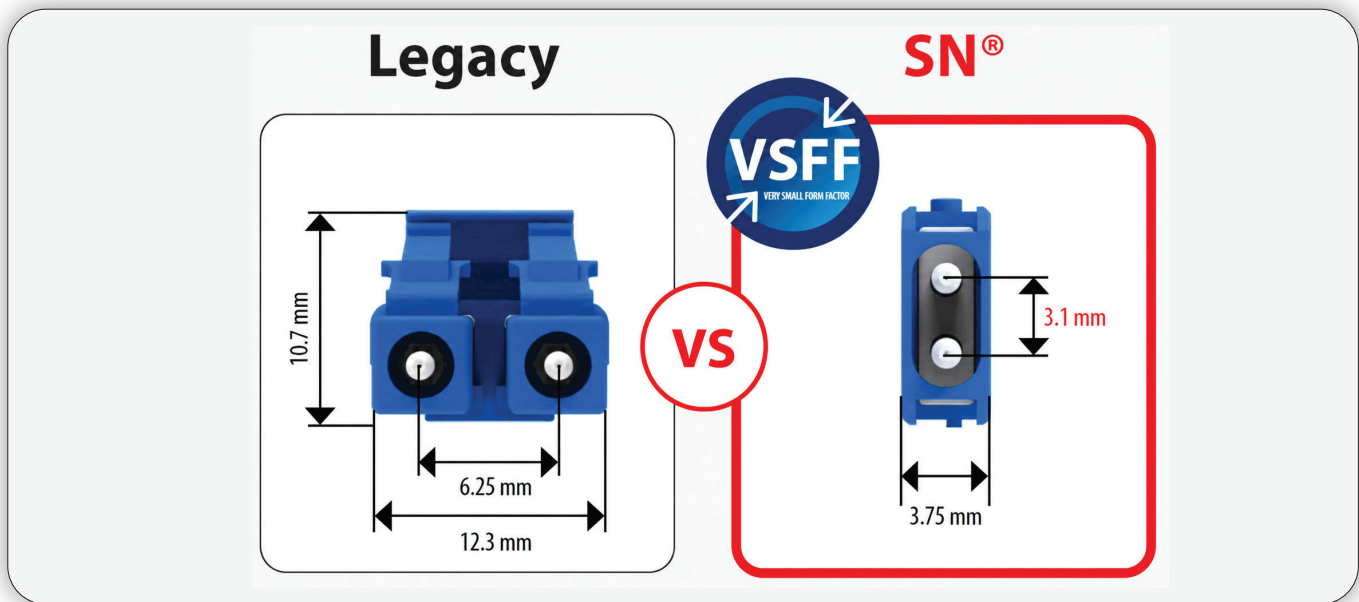
In network architecture, indoor fiber cables are primarily deployed within Meet-Me Room (MMR), Main Distribution Area (MDA), Horizontal Distribution Area (HDA), and Equipment Distribution Area (EDA). They are extensively used for rack-to-rack connections, switch-to-server links, and intra-data center backbone cabling. Indoor cables support both structured cabling systems and high-speed interconnects (10G to 400G and beyond), providing flexible, scalable, and efficient connectivity within the data center environment.

HYPER SN SOLUTION

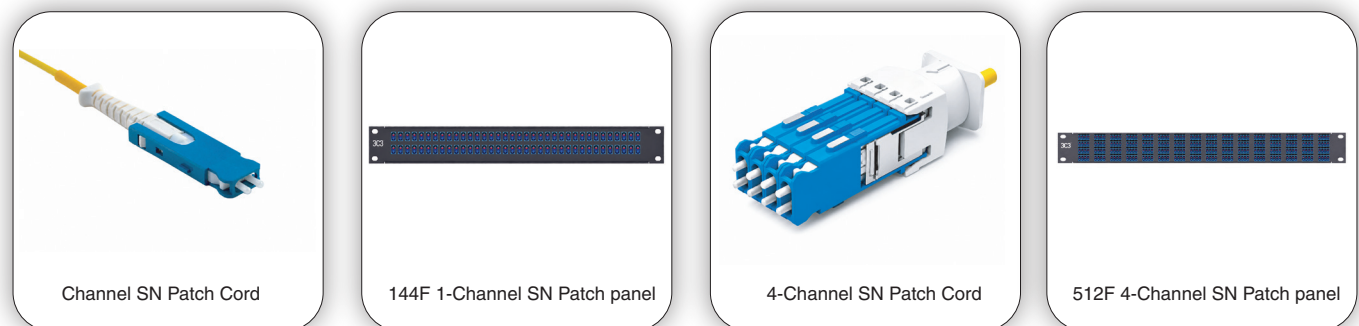
Ultra-High-Density Fiber Connectivity for Hyperscale Data Centers

SN connectors are a newer generation of ultra-high-density Fiber optic connectors designed for data centres and high-performance networks. They are significantly smaller than traditional LC connectors, typically about half the size, allowing more ports within the same physical space.

Because of their compact design, SN connectors enable significantly higher port density in rack-mounted panels, making them an ideal choice for hyperscale data center environments where space optimization is critical. Their smaller duplex form factor allows more fiber connections to be accommodated within the same rack space compared to traditional LC connectors.



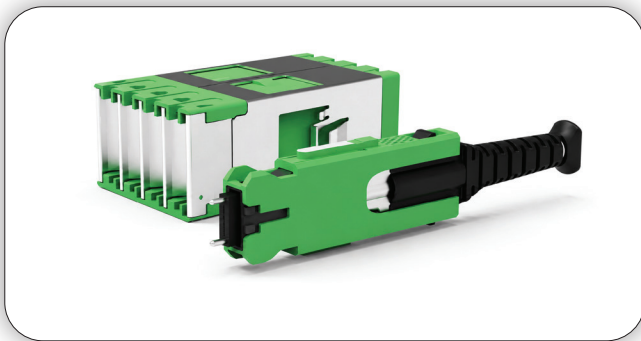
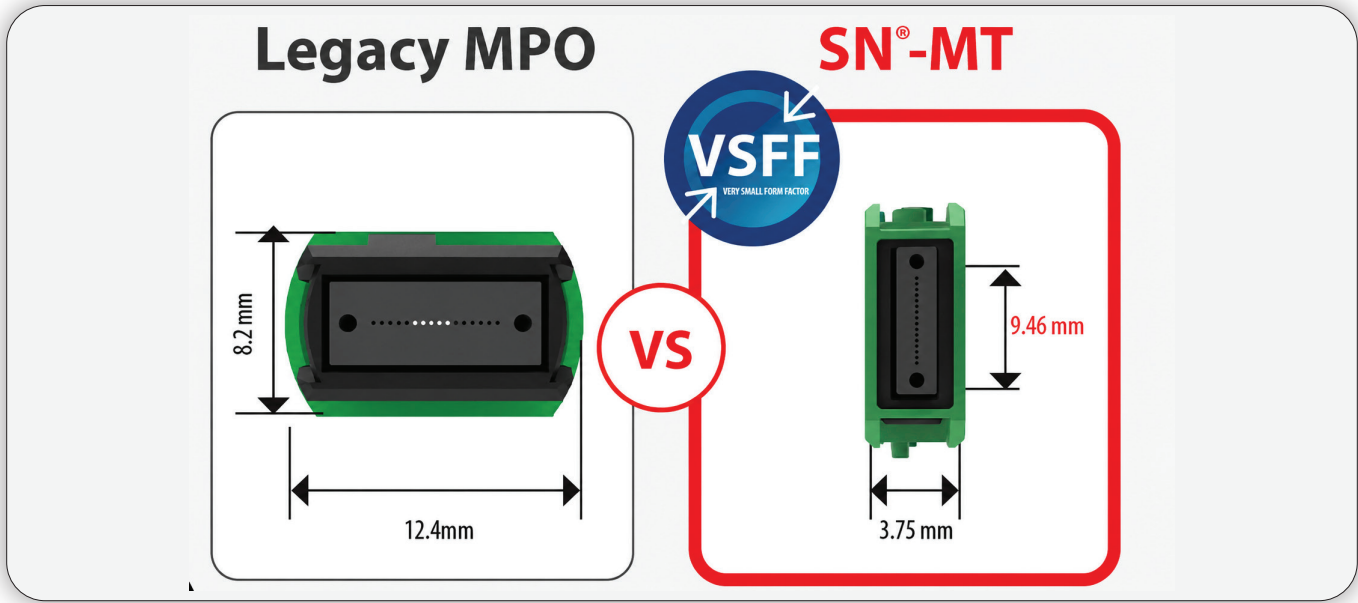
CHANNEL SN PATCH CORD AND PATCH PANEL



SN patch cords give an edge over MPO because they offer easier handling, simpler polarity management, and more flexible duplex connectivity for high-density fiber networks.

SN-MT SOLUTION

SN MT connectors are an advanced high-density multi-fiber connectivity solution developed for modern data centres and high-speed networks. Their compact design allows greater port density than conventional MPO-style interfaces, while supporting multiple fibers in a smaller footprint. This helps optimize rack space, improve airflow, simplify cable management, and enable faster migration to higher-speed applications such as 400G and 800G networks.



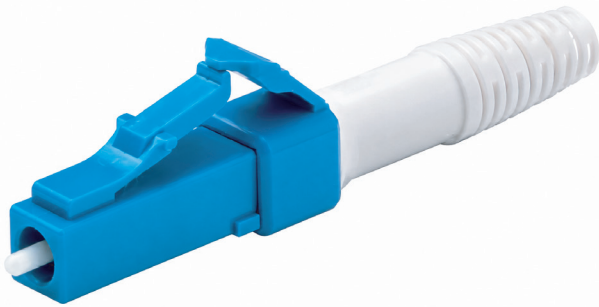
Similar to our SN-LC we can offer both 1 and 4 channel depending on the solution.

APPLICATION

In network architecture, SN-LC and SN-MT connectivity is primarily deployed across Main Distribution Areas (MDA), Horizontal Distribution Areas (HDA), and Equipment Distribution Areas (EDA) within data centers. SN-LC is widely used for switch-to-server links and short-reach interconnects, while SN-MT is utilized for spine-to-leaf and high-capacity trunk connections. Together, they support scalable, high-density cabling systems, enabling efficient migration to higher data rates while optimizing space, airflow, and cable management in modern data center designs.

ULL SOLUTIONS

Ultra Low Loss (ULL) fiber optic connectors are designed to deliver exceptional optical performance in high-speed, high-density network environments where minimizing signal attenuation is critical. These connectors are engineered with precision ferrule alignment and superior polishing techniques to achieve very low insertion loss and high return loss, making them ideal for next-generation data center and telecom applications.



ULL LC Connector



ULL MPO Connector

APPLICATION

In network architecture, ultra-low loss connectors are primarily deployed in Meet-Me Rooms (MMR), Main Distribution Areas (MDA), and spine/core layers, where long-distance links and multiple interconnect points can accumulate insertion loss. They are extensively used in MPO trunk connections, high-speed patching, cross-connect fields, and backbone cabling systems, ensuring reliable performance across complex fiber infrastructures.

ULTRATRUNK MPO SOLUTION

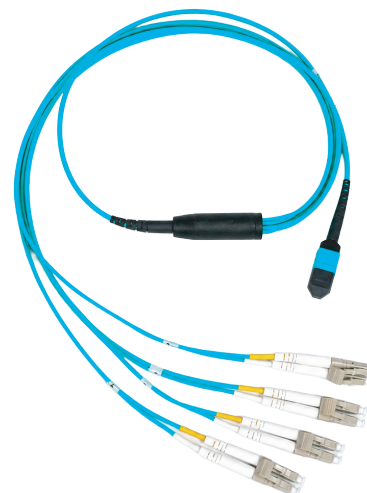
FIBER OPTIC MPO TO MPO TRUNK CABLE (40G/100G CABLE)

Trunk MPO solutions simplify high-density fiber connectivity with organized cable assemblies. They enable faster deployment, reduced cable clutter, ultra-low loss performance, and easy scalability for modern data centres and networks.



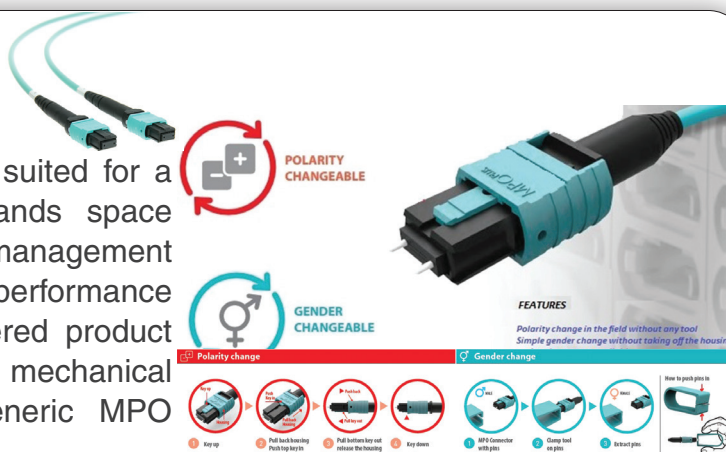
FIBER OPTIC MPO TO LC BREAKOUT CABLE (40G/100G CABLE)

MPO to LC Breakout cabling System is ideally suited for high density environment that demands space saving cable density and innovative cable management solutions. MPO connectors have realized multiple fiber connexions within a conventional cable, this advantage allows data center designers to deploy ten or twenty times of fiber counts in same storage. Simply install the MPO & MPO trunk cable within the building and connect to rear of a MPO Patch Panel or fan out.



FIBER OPTIC MPO TO LC BREAKOUT CABLE (40G/100G CABLE)

MPO Fiber Cabling System is ideally suited for a high density environment that demands space savings and innovative cable management solutions. The MPO connector is a high performance MPO connector with multiple engineered product enhancements to improve optical and mechanical performance when compared to generic MPO connectors.



PRE TERMINATED FIBER OPTIC ASSEMBLIES

Pre Terminated Fiber Optic Assemblies are tight buffer cable offering 6 to 24 core fiber with ruggedized tails at both ends to protect the optical fiber in the demanding- environments outside the patch panel or ODF and allowing direct equipment to equipment connection. Each tail length can be a unique length and up to 1.5m long. The network topology can be reduced and simplified by direct connection, bypassing wall boxes, ODFs or fiber patch panels, the end result is greatly improved fiber management.



Features

- 6 - 24 core full breakout cable with 1.6mm ruggedized pigtails.
- Internal Low Smoke Zero Halogen cable jacket.
- Available with all standard connectivity.
- Factory terminated and tested.
- Cost Savings.
- Time Optimization.
- Direct Connection to Equipment/Panel.

APPLICATION

In network architecture, MPO–MPO trunk cables are primarily deployed in spine-to-leaf interconnections, backbone cabling, and between Main Distribution Areas (MDA) and Horizontal Distribution Areas (HDA). MPO–LC breakout cables are commonly used in Equipment Distribution Areas (EDA) and switch interfaces for server connectivity and port breakout applications. Together, these solutions enable high-density, scalable, and efficient cabling systems that support 40G, 100G, and higher-speed data center networks.

ZETACORE™ DATA CENTER SOLUTIONS

*Ultra-High-Density Fiber Connectivity for
Next-Generation Data Centers.*

Built for Hyperscale & Cloud Environments

ZETACORE™ enables 192 fibers in just 1U, delivering unmatched density without compromising performance or manageability.

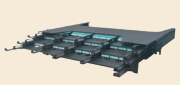
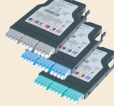
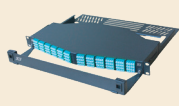
High Density | 10G to 400G+ Ready | Plug-and-Play | Cloud Scale



Why ZETACORE™?

- 192F in 1U – Maximum rack optimization
- Supports 10G / 40G / 100G / 400G+
- OM3 / OM4 / OM5 / OS2 compatibility
- Pre-terminated plug-and-play design
- Easy pull, uniboot & polarity change patch cords

Product Showcase

					
Zetacore™ Fiber Panel 144F 1U Loaded 12 Slot	Zetacore™ MPO-LC Cassette	Zetacore™ Fiber Panel Loaded, 1U 192F	MPO to LC Uniboot Duplex Breakout Cable	Uniboot Patch Cord	Pre-Terminated Fiber Optic Breakout Cable

Ideal For:

				
Hyperscale Data Centers	Cloud Providers	ISPs	Colocation Facilities	Large Enterprises

ULTRACORE™ DATA CENTER SOLUTIONS

High Density | 120F in 1U

Designed for Space-Constrained Data Centers

ULTRACORE™ delivers compact, high-performance connectivity for modern enterprises and colocation facilities.

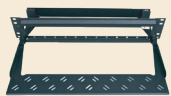
Compact Density | 10G to 100G Ready | Tool-Less | Low-Loss Transmission



Key Highlights:

- 120F in 1U / 288F in 2U
- 10G / 40G / 100G ready
- Tool-less installation
- MPO-MPO / MPO-LC / LC-LC options
- Low-loss transmission

Product Showcase



Ultracore™ Fiber
Panel Unloaded,
2U 288F



Ultracore™ MPO
Adapter Plate



Ultracore™
MPO-LC Cassette



MPO to LC
Uniboot Duplex
Breakout Cable



Uniboot
Patch Cord

Ideal For:

 Enterprise DCs |  Growing Networks |  ISP Backbone |  Mid-Scale Colocation

GIGACORE™ DATA CENTER SOLUTIONS

Scalable | 96F in 1U

Compact. Efficient. Future-Ready

GIGACORE™ provides reliable high-speed fiber infrastructure with modular scalability, enabling efficient deployment for enterprise, edge, ISP, and performance-driven network environments.

Scalable | MPO Ready | Spine-Leaf Architecture | Low Insertion Loss



Features:

- 96F in 1U
- MPO parallel fiber technology
- Spine-Leaf architecture ready
- Factory terminated assemblies
- Low insertion loss

Product Showcase



Gigacore™ Fiber Panel, 1U, 4 Cutout, Unloaded



Gigacore™ 1U 144 Fiber Patch Panel



Gigacore™ Internal Shutter Adapter Plate



Gigacore™ MPO-LC Cassette



Uniboot Patch Cord



MPO to MPO Patch

Best Suited For:

Enterprise DC

Edge Data Centers

ISP Network Nodes

HPC Environments

CONTAINMENT SOLUTIONS

Cold Aisle Containment (CAC)

Smart Cooling | Lower PUE | Higher Efficiency



Cold Aisle Containment eliminates hot and cold air mixing to improve cooling efficiency, reduce operational cost, and enhance data center performance.



Benefits

- Improved cooling performance
- Reduced energy consumption
- Increased equipment lifespan
- Better airflow control
- ASHRAE TC 9.9 aligned



Impact

- Lower power usage effectiveness (PUE)
- Reduced cooling cost
- Higher rack density support

PATHWAY SOLUTIONS

Complete Structured Cable Routing Solutions for Fiber & Copper Networks.

Pathway Solutions are engineered to protect, organize, and optimize cable routing across modern data centers and technical environments, ensuring clean cable management, easier maintenance, and scalable infrastructure growth.

Fiber Routing | Copper Pathways | Clean Management | Scalable Infrastructure



Overhead Patching Frame

Designed to decouple cabling from racks for more flexible data center layouts and structured patching.

- 19" mounting width
- Decouples cabling from racks
- Ideal for flexible DC design
- Supports small switches and patching



Zero U Panel

A side-mounted connectivity solution designed to increase usable rack space while supporting high-density network environments.

- Mounts alongside rack
- Supports 6 LC Quad adapters
- Supports 4 Keystone modules
- Ideal for high-density DC environments



Overhead Optical Pathway Systems (OOPS)

Dedicated Fiber Routing & Protection

A dedicated overhead pathway system designed to protect fiber integrity, maintain bend radius, and keep overhead fiber routing clean and scalable.

- Maintains bend radius
- Tool-less snap-on installation
- Flame-retardant V0 materials
- Modular and scalable
- Clean cable management

Ideal for fiber routing between racks, ODF, and network cabinets.

Overhead Mesh Systems (OHMS)

Copper Cable Management Made Efficient

A structured overhead copper cable routing solution designed for airflow, strength, customization, and long-term durability.

- 2" by 4" welded grid structure
- Strong yet lightweight
- Excellent ventilation
- Field-customizable
- Zinc-coated durability

Used for routing copper cables in data centers, building networks, and industrial automation.

OUR COMMITMENT

At 3C3, culture is our ultimate strategy. It shapes how we think, work, and win together. These principles are the foundation of how we deliver excellence and grow as one team.

Integrity & Trust: We act with honesty and transparency. We keep promises, admit mistakes, and own outcomes.

Customer Obsession: We put customers at the heart of every decision listening, anticipating, and delivering beyond expectations.

Innovation & Excellence: We challenge the status quo, embrace new ideas, and continuously raise the bar in technology and execution.

Ownership & Accountability: We think and act like owners. We take initiative, follow through, and measure success by results.

Collaboration & Respect: We value diverse perspectives, work as one team, and communicate openly with empathy and respect.

Growth & Learning: We learn fast, share knowledge, and invest in the growth of our people and our company.

Every leader at 3C3 is accountable for living these values daily making decisions, recognizing role models, and integrating culture into hiring, onboarding, and reviews.

Culture is not a poster it is what we do every day. Together, we create the 3C3 we are proud to build.



Manufacturing Plant

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THINK SOLUTIONS, THINK 3C3



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