Open Fiber Optic Cable Trays



Overview

Our Fiber Cable Tray System is a comprehensive raceway solution for data center, enterprise, central office, and mobile switching center applications.

Key Takeaways

Open fiber optic cable trays are designed to route and protect fiber optic cables while providing easy access for installation and maintenance, but require careful handling to prevent damage.

Overview

Open fiber optic cable trays, often referred to as open basket trays or wire mesh trays, are widely used in data centers, enterprise networks, and industrial facilities to support and organize fiber optic cables. Unlike fully enclosed raceways, open trays provide point-to-point support and allow for flexible cable routing, easy inspection, and future expansion. They are particularly useful in overhead installations where accessibility is important.

Types and Materials

Wire Mesh Cable Trays: Constructed from welded steel wire, these trays provide a lightweight, ventilated structure that reduces heat buildup and allows for easy cable management. Ladder Trays: Feature side rails with rungs, suitable for heavier cable bundles or mixed power and communication cables. Fiber Routing Channels: Specialized raceways designed for fiber optic patch cords and multi-fiber assemblies, often suspended from ceilings for direct routing.

Materials are typically steel or aluminum, sometimes coated for corrosion resistance, and may include flame-retardant or V0-rated components for safety.

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Installation Considerations

Open trays require careful installation to protect delicate fiber optic cables: Support and Bracket Spacing: Gaps in the mesh create pressure points; proper bracket spacing is critical to prevent fiber damage. For example, a 10m horizontal run may require at least 7 brackets. Bend Radius Protection: Use bend radius protectors at all direction changes to avoid signal attenuation.

Tools and Components: Installation typically requires laser distance measurers, torque wrenches, cable cutters, UV-resistant cable ties, and stainless steel fasteners. Environmental Factors: Consider temperature, humidity, EMI sources, and vibration when planning tray layout.

Compliance and Standards

According to the 2014 National Electric Code (NEC), any listed optical fiber cable is acceptable for tray applications, including OFNP, OFCP, OFNR, OFCR, OFNG, OFCG, and OFN types. Cable trays are distinct from fully enclosed raceways and must comply with Article 392 for tray fill, grounding, and capacity, and Article 770 for optical fiber cables.

Advantages

Easy access for maintenance and future expansionLightweight and cost-effective compared to enclosed racewaysFlexible routing options for complex installationsVentilated design reduces heat accumulationLimitationsMinimal physical protection compared to enclosed racewaysSharp edges and gaps can damage fiber if not properly managedRequires precise installation and adherence to standards to ensure long-term reliability Product SolutionsManufacturers like Primus Cable, LongXing, and AZE Systems offer comprehensive fiber cable tray systems with channels, transitional fittings, drops, and support structures. Many systems feature tool-free assembly, snap-on covers, and configurable layouts to accommodate various installation environments.

In summary, open fiber optic cable trays provide a flexible and accessible solution for routing fiber cables, but successful installation depends on careful planning, proper support, adherence to NEC standards, and protection of the fiber from mechanical stress.

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Article Content

Fiber Cable Trays

Our Fiber Cable Tray System is a comprehensive raceway solution for data center, enterprise, central office, and mobile switching center applications. Designed to route and protect fiber optic and high

Fiber Optic Cable Tray

Fiber cable trays are designed to protect and route fiber optic patch cords, multi-fiber cable assemblies, and intrafacility fiber cable (IFC) to and from fiber splice

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GUIDE CABLE TRAYS TECHNICAL

NEMA VE 1-2017 Specifies requirements for metal cable trays and associated fittings designed for use in accordance with the rules of Canadian Electrical Code, Part I and the National Electrical Code®

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