288-core bundled optical cable structure



Overview

This cable shall contain 144 or 288 singlemode fibres for high density data center distribution applications.

Key Takeaways

A 288-core optical cable typically consists of multiple 12-fiber ribbons bundled into sub-unit tubes or a single buffer tube, with protective layers including strength members, armor, and an outer jacket for indoor or outdoor use.

Fiber Arrangement

A 288-core cable is usually organized as 12-fiber ribbons, with 24 ribbons in total to reach 288 fibers. These ribbons can be housed in sub-unit tubes for easier handling and mass fusion splicing, or in a single buffer tube for gel-free designs. The ribbons are often flexible, allowing them to be rolled or separated into smaller 12-fiber units for termination or splicing (Panduit, Corning).

Color coding is applied to each fiber and ribbon for identification, following standard TIA/EIA color codes (blue, orange, green, brown, gray, white, red, black, yellow, violet, pink, aqua).

Cable Core and Strength Members

The core may be loose tube or single-tube depending on the design. Loose tube designs often include water-blocking gel or dry water-swellable tapes, while single-tube gel-free designs use water-swellable foam tapes. Strength members, such as glass yarns or aramid fibers, are placed symmetrically under the jacket to provide tensile strength and anti-buckling support.

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For armored versions, corrugated steel tape (CST) or other rodent-resistant layers are added for mechanical protection, especially in outdoor or industrial environments.

Protective Layers

The outer jacket is typically Low Smoke Zero Halogen (LSZH) for indoor use or UV-resistant polyethylene for outdoor applications. Some designs include flame-retardant ratings for compliance with building codes in data centers or riser/backbone installations. The combination of sub-unit tubes, strength members, and outer jacket ensures the cable is flexible, compact, and durable, while maintaining high fiber density.

Applications288-core cables are used in high-density data centers, campus backbones, industrial networks, and telecom infrastructures. They support mass fusion splicing and MPO-style connector terminations, enabling efficient deployment in environments requiring large fiber counts in a compact footprint. The design allows for both indoor and outdoor use, depending on the specific cable construction and protective layers.

Summary

In essence, a 288-core optical cable is a high-density, ribbonized fiber cable with multiple protective and structural layers. Its design balances fiber density, mechanical protection, and ease of installation, making it suitable for modern high-capacity network deployments. The combination of ribbonized fibers, sub-unit or single-tube cores, strength members, optional armor, and LSZH or PE jackets defines the cable's structure and performance characteristics.

Article Content

Opti-Core 144 and 288-Fibre Indoor Ribbon Cables, LSZH and

This cable shall contain 144 or 288 singlemode fibres for high density data center distribution applications. The fibres shall be ribbonized for easy mass fusion splicing and termination with 12-fibre

288-Core Fiber Optic Cable

The term “288 core” refers to the number of individual optical fibers bundled within a single cable. Each core, or strand, is capable of transmitting data using pulses of light, enabling

GCCF288 Technical Data Sheet

Product feature: This cable has improved rodent protection by Corrugated Steel Tape (Full Rodent Protected). Existing out of 12 tubes with a diameter of 2.5mm with 288 fibers (12t x 24f) MM OM2.

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Enbeam OS2 Armoured CST Fibre Optic Cable Loose Tube 288 Core

The singlemode fibre is G.652.D compliant low water peak grade and offers OS2 performance and OS1 backwards compatibility. These compact, lightweight cables are extremely rugged, provide rodent

The FOA Reference For Fiber Optics

This has led to two new cable designs, microcables with up to 288 or even 432 fibers and high fiber count cables. High fiber counts began with loose tube cable

288 Core CST Fibre Cable Multi Loose Tube Armoured

Offers 4 core 24 core 48 core to 288 core with different cable structure. This 288 core CST fibre cable has a corrugated steel tape CST and a CSM, flame

2-288 Core Aerial Fig 8 Armored Fiber Optic Cable GYTC8S,

The 2-288 fibers are positioned in PBT loose tube filled with gel. Tubes (and fillers) are stranded around the central strength member (Steel or FRP) to form the cable core.

288 core optical cable joint box

A 288-core optical cable joint is an ideal solution for organizations that require high-capacity fiber optic networks. It offers several advantages, including high capacity, space-saving

Multi-Loose Tube Fiber Cable

Universal (Indoor/Outdoor) dry core optical fiber Multi Loose Tube cable with aramid yarns as strength member and Low Smoke Zero Halogen outer jacket. Existing out of 12 tubes with a diameter of

Custom 288 Strand Corning Outdoor Armored SM Fiber Optic Assembly

Our 288 Strand OSP Singlemode QuickTreX® Pre-Terminated Fiber Optic Assemblies Are Made In The USA With Corning Glass By Highly Trained Technicians.

GYTA53 Fiber Optic Cable (Direct buried)

Industrial-grade GYTA53 Outdoor Fiber Cable. Features Double Jacket (PE) and Double Armor (Aluminum + Steel) for direct burial applications. 100% Rodent-proof and moisture-resistant.

288 Fiber Count with OWIRE Solutions

When bundled into a 288-fiber configuration, the cumulative capacity becomes exceptionally powerful. These cables are typically deployed in core network segments where high

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The Fundamentals of Armored 288 Core Fiber Optic Cable: Structure ...

Discover the structure, properties, and performance of armored 288 core fiber optic cable. Explore specifications, durability, signal efficiency, and key engineering applications in demanding

SINGLE MODE OS2 MULTITUBE ARMOURED FIBER OPTIC CABLE

Structure Diagram & Description Our armoured loose tube cables are the product of choice as the backbone in Outside Plant (OSP) environments. tube design offers reliable transmission

288 core fiber optic cable – 288-Core Fiber Optic Cable

Among the various types available, the 288 core fiber optic cable stands out as a powerful solution designed for large-scale installations where maximum connectivity and future

FTTB Indoor Fiber Optic Cable 2-288 core Single Mode

Explore the details, specifications and video of our FTTB Indoor Fiber Optic Cable 2-288 cores Loose Tube, and order high-quality FTTB Indoor Fiber Optic Cable 2

288 Fibre Cable with OWIRE Solutions

The 288 fibre cable stands out in this context, offering a balance between capacity and manageability that few other solutions can match. A 288 fibre cable contains precisely 288 individual

Multi-Loose Tube Fiber Cable

Universal (Indoor/Outdoor) dry core optical fiber Multi Loose Tube cable with aramid yarns as strength member, Low Smoke Zero Halogen inner jacket, Corrugated Steel Tape (Full Rodent Protected)

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

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