

Screen Core Optical Cable



Overview

TPU Armour Fiber Optic Cables for LED Screens and AV Applications!.

Key Takeaways

Screen Core Optical Cables are specialized fiber optic cables designed for LED screens and AV applications, featuring multiple cores, armored protection, and high-speed data transmission capabilities. Core Structure and Function

The core of a fiber optic cable is the central glass or plastic medium through which light signals travel, typically made of ultra-pure silica for high-speed data transmission . Its diameter varies depending on the type of fiber: single-mode cores are around 9 microns, while multimode cores range from 50 to 62.5 microns . The core is surrounded by cladding with a slightly lower refractive index, enabling total internal reflection to keep light signals contained and minimize loss . This structure directly affects signal quality, transmission distance, and bandwidth.

Cable Types and Fiber Counts

Screen Core Optical Cables are available in single-mode and multi-mode variants. Single-mode fibers support long-distance, high-speed transmission, while multimode fibers are suitable for shorter distances with high bandwidth . These cables often come in 4, 6, 8, or 12-core configurations, allowing multiple simultaneous data channels for LED video walls and AV systems . Connector types such as LC, SC, or ST are integrated at the endpoints for reliable connections.

Armored and Protective Features

Unlike standard fiber cables, Screen Core Optical Cables are often armored with stainless steel, Kevlar, and metal braided layers, providing tensile and compressive strength . The outer sheath is typically made of TPU or other wear-resistant materials, protecting the cable from mechanical stress, bending, and environmental damage. Protective caps at the connectors further prevent breakage and contamination.

Performance and Applications

These cables can maintain 10 Gbps bandwidth over distances up to 2 km for single-mode and 300 m for multimode fibers . They are widely used in LED video walls, broadcast setups, and AV installations, where high-speed, low-latency, and durable cabling is essential. The combination of multiple cores, armored protection, and high-quality connectors ensures reliable performance in both indoor and outdoor environments.

Summary

Screen Core Optical Cables are engineered for high-performance LED and AV applications, combining ultra-pure fiber cores, multiple cores for parallel data transmission, armored protection, and durable connectors. Their design ensures long-distance, high-bandwidth, and reliable operation, making them ideal for professional video and broadcast installations .

Article Content

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

