COETZER OPTICAL SYSTEMS (Pty) Ltd

Fiber optic logging cable models and specifications

Overview

Encapsulated Cable The 11.8mm Fiber Optic Double Steel Wire Armored Logging Cable is specially designed for oil and gas well logging, downhole Optical Fibe.

Key Takeaways

Fiber optic logging cables vary by fiber type, core count, attenuation, bandwidth, and installation environment, with multiple models available from leading manufacturers.Overview of Fiber Optic Logging Cable Types

Fiber optic logging cables are designed for high-bandwidth, long-distance data transmission in industrial, telecommunications, and data center applications. They are typically categorized by:

• Fiber Type: Single-mode (SM) for long-distance, Multi-mode (MM) for shorter distances and higher bandwidth.

• Core Count: Ranges from 2 fibers to 144 fibers or more depending on application.

• Attenuation: Measured in dB/km, lower values indicate less signal loss.

• Bandwidth: Specified in MHz·km for MM fibers, or wavelength range for SM fibers.

• Environment: Indoor, outdoor, aerial, plenum, or direct burial.
Representative Specifications TableModel / ManufacturerFiber TypeFiber CountCore TypeMax DistanceAttenuation (dB/km)Bandwidth / WavelengthInstallation EnvironmentNotesCorning SMF-28® ULLSingle-mode1–144SM40 km+0.17 @ 1550 nm1310/1550 nmIndoor/OutdoorUltra low loss, ITU-T G.652.D compliant Briticom OS1/OS2Single-mode2–48SM20–40 km0.35 @ 1310 nm1310/1550 nmIndoor/OutdoorPlenum and duct options available Briticom OM3/OM4Multi-mode2–24MM300–550 m3.0 @ 850 nm850/1300 nmIndoorHigh bandwidth for data centers Proterial G.657A1Single-mode2–12SM20 km0.36 @ 1310 nm1310/1550 nmIndoor/OutdoorBend-insensitive, suitable for tight installations Proterial Indoor/Outdoor HybridSM/MM12–72SM/MM10–40 km0.35–0.36850/1310/1550 nmIndoor/OutdoorHybrid design for flexible deployment Key Considerations
• Single-mode vs Multi-mode: SM fibers are preferred for long-distance logging and telemetry, while MM fibers are suitable for high-speed, short-range connections.

• Bend Insensitivity: Modern cables like G.657A1 reduce signal loss in tight bends, critical for industrial logging installations.

• Environmental Ratings: Plenum-rated cables are required for air-handling spaces, while outdoor-rated cables resist UV, moisture, and temperature extremes.

• Standards Compliance: Look for ITU-T, ANSI/TIA, and RoHS compliance to ensure interoperability and safety .
Manufacturer Resources
• Corning: Offers detailed product information sheets for all fiber types, including SMF-28® and bend-insensitive fibers .

• Briticom: Provides a catalog covering indoor/outdoor, plenum, and aerial fiber optic cables with OS1/OS2 and OM3/OM4 options .

• Proterial Cable America: Features hybrid and high-performance fiber optic cables with lifetime warranty for certified installations . This table and overview provide a comprehensive reference for selecting fiber optic logging cables based on application requirements, fiber type, and environmental conditions.

Article Content

Encapsulated Cable

The 11.8mm Fiber Optic Double Steel Wire Armored Logging Cable is specially designed for oil and gas well logging, downhole

Wireline Fiber Optic Cable | Fibercore

By working closely with our partners, Fibercore ensures that our designs meet the rigorous requirements of wireline logging cables in

Fiber Optic Cable Catalog

Whether it''s installing the very latest in cable manufacturing technology, or designing and building custom equipment for a one of a

Fiber Optic Cables

The types of cables used in the industry include: permanently installed fiber optic cables, logging cables (both wireline and slickline)

Cable Logging? Optical Fiber Logging?--JASON is ready for you!

Difference between Optic-Fiber logging and traditional cable logging The electrical-based sensors used in cable logging can not work

Fiber-Optic Technology Allows Real-Time Production Logging Well

It will also illustrate a multiwell logging campaign in the Marcellus shale, which highlights the benefits of fiber-optic

An Armored Fiber Optic Logging Cable

An ultralow stretch armored cable containing 3 optical fibeRs and 8 electrical conductors has been developed for use in oil well

Fiber Optic Cables | Corning

With 2 billion kilometers of fiber optic cables installed around the globe, Corning continues to lead the industry in product quality and

Fiber Optic Cable Catalog

Since 1986, Proterial Cable America has been developing technologically advanced copper and fiber optic communication cables.

Wireline Fiber Optic Cable | Fibercore

The optical fibers are protected in a hermetic metal tube to provide the necessary protection for incorporation into the wireline cable.

Downhole Logging

Fiber optic and hybrid wireline cables are built for applications that require real-time data transmission, advanced diagnostics, or

Fiber Optic Cables | Corning

The first consideration in choosing a fiber optic cable is the environment that you will be using it in. Corning has fiber optic cables for

Fiber Optic Cable

Belden''s extensive line of indoor and outdoor cable products is offered in tight buffer and loose tube designs. Learn more about each

Fiber Optic Cables | Fibercore

Fibercore brings over 25 years of cable design knowledge and manufacturing expertise to create cable designs that are customized

Specifications For Fiber Optic Networks

Per current standards and specs, maximum supportable distances and attenuation for optical fiber applications by fiber type. Not

Fiber Optic Cables

Fibercore ofers a range of slickline fiber optic cables suitable for logging wells directly or to be incorporated into a coiled tube. The

Fiber Optic Cables Technical Data

These cables will generally offer longer sensing ranges. Smaller diameter bundles provide greater resolution and the ability to detect

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