Three-kilometer optical cable



Overview

SEA-ME-WE3 or South-East Asia - Middle East - Western Europe 3 was an linking those regions and is the longest in the world. Completed in late 2000, it is led by and, and is administered by, a telecommunications operator owned by the. The Consortium is formed by 92 other investors from the telecom industry. It was commissioned in March 2000. A fiber optic drone is an (UAV), usually a first-person view (), which uses an as its primary guidance and link. These drones usually have fiber optic cables between 5 and 20 km (3.1 and 12.4 mi) long, although prototypes with up to 50 km (31 mi) range have been developed. They are impossible for defence forces to and very difficult to detect.

Key Takeaways

A 3 km optical cable is typically a single-mode fiber designed for long-distance, high-speed, and low-attenuation data transmission, ideal for UAV, FPV, and telecom applications.

Key Specifications

Fiber Type: Most 3 km optical cables use G657A2 or G. 652. D single-mode fiber, which ensures stable, interference-free transmission over long distances.

Attenuation: Low signal loss is critical; typical attenuation is ≤0. 35 dB/km at 1310 nm and ≤0. 25 dB/km at 1550 nm, allowing high-speed data transfer across the full 3 km length.



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Diameter and Flexibility: Compact outer diameters (e.g., 0. 27 mm) improve flexibility while maintaining durability, making deployment easier in field conditions. Load and Bend Radius: Designed to withstand installation and operational stresses, with minimum bend radii around 30 mm and tensile strength suitable for smooth unwinding and handling.

Applications

Drone Telemetry and FPV Systems: Provides reliable, uninterrupted video and control signal transmission for UAVs, supporting dual-path video output and wireless signal pairing. Telecommunications: Suitable for indoor and outdoor telecom networks, offering CE-certified single-mode fiber capable of transmission distances up to 20 km. Industrial and Defense Communication: Used in modular fiber systems for precise control and stable image transmission in complex environments.

Deployment ConsiderationsOptical-Electric Conversion: Often paired with optical-electric modules to convert signals for controllers or ground stations, ensuring precise control over the fiber length. Lightweight Drum Design: Many 3 km spools come on lightweight drums for easy transport and deployment in field operations. Environmental Resistance: High tensile strength, abrasion resistance, and flexibility allow operation in outdoor and industrial conditions.

Summary

A 3 km optical cable is a professional-grade solution for long-distance, high-speed data transmission. Its single-mode fiber, low attenuation, and flexible design make it ideal for UAV telemetry, FPV systems, telecom networks, and industrial communication setups. When selecting a cable, consider fiber type, attenuation, environmental durability, and compatibility with optical-electric conversion modules to ensure optimal performance.

Article Content

Fiber Optical Spool – 3KM | OFC Single Mode UAV Cable

The Fiber Optical Spool – 3KM is a professional-grade optical cable designed for drone telemetry systems, FPV ground stations, and long-distance UAV communication setups.

SEA-ME-WE 3

OverviewLanding pointsHistoryService disruptionsInterceptionSEA-ME-WE 2SEA-ME-WESee also

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SEA-ME-WE3 or South-East Asia - Middle East - Western Europe 3 was an optical submarine telecommunications cable linking those regions and is the longest in the world. Completed in late 2000, it is led by France Telecom and China Telecom, and is administered by Singtel, a telecommunications operator owned by the Government of Singapore. The Consortium is formed by 92 other investors from the telecom industry. It was commissioned in March 2000.

Fiber optic drone

OverviewHistoryCharacteristicsCountermeasuresEnvironmental concerns

A fiber optic drone is an unmanned aerial vehicle (UAV), usually a first-person view (FPV) loitering munition, which uses an optical fiber as its primary guidance and teleoperation link. These drones usually have fiber optic cables between 5 and 20 km (3.1 and 12.4 mi) long, although prototypes with up to 50 km (31 mi) range have been developed. They are impossible for defence forces to jam and very difficult to detect.

IEEE 802.3 Single-mode Optical Fiber Ethernet Standards

Single-mode optical fiber connectors require greater mechanical precision for proper alignment and higher wavelength transmitters consume more power, so single-mode optical fiber networks and

FPV Drone Fiber Optic Cable 0.3mm to 0.6mm, 1km to 30km Lengths

Optical Fiber cables from 0.3mm to 0.6mm diameter, available in lengths from 1km to 30km. Ideal for FPV UAV applications. High accuracy, easy operation.| Alibaba

Invisible highways: The vast network of undersea

These invisible highways, consisting of fiber-optic wires connecting landing points, are placed hundreds of metres below the surface of the ocean by

Indicator 1: Cable length

For the purposes of clarity on the map, optical fibre cable can also be differentiated into cable which is either buried (usually along the rights of way of roads or railways) or is deployed aerially (usually

Fiber Optic Cable Types Explained

Learn all about the differences between single mode and multimode cables, as well as the various fiber wavelengths and standard core sizes used in fiber optics.

Submarine Cable Directory: 705 Active and Planned Cables

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Submarine cables are fiber-optic lines laid on the ocean floor, carrying over 95% of international internet traffic, financial transactions, and telecommunications data between continents. Each cable in this

Network Topologies and Distances

Insertion loss measurements of installed fiber cables are made in accordance with ANSI/TIA/EIA-526-14A/method B and, ANSI/TIA/EIA-526-7/method A-1. The maximum horizontal distance is 90 m

Optical networks

An optical transport network is a high-speed communication system that sends light signals over fiber-optic cables to move large amounts of data across long

Camtel to roll out additional 3,500 km fiber optic cable in 2024

Incumbent operator CAMTEL will kick off the rollout of an additional 3,500 kilometers of terrestrial fiber across Cameroon in 2024. The plan was announced by Judith Yah Sunday, CAMTEL''s CEO, in her

Fiber Optic Cable Types Explained

Our comprehensive guide to types of fiber optic cables. Learn all about the differences between single mode and multimode cables, as well as the various fiber wavelengths and standard core sizes used

4-Core Single mode Fiber Optic Cable

4-Core Single mode Fiber Optic Cable also called 4-core Optical fiber cable,is a type of communications optic cable which has the same transmission speed as

Fiber Optic Cable Types: Single-Mode, Multimode, and Beyond – A ...

In the landscape of network infrastructure, three primary cable categories dominate connectivity: twisted-pair copper cables, coaxial cables, and fiber optic cables. While copper-based

Submarine Cable FAQs

Submarine Cable 101 How many cables are there? As of 2026, we track more than 600 active and planned submarine cables. The total number of active cables is constantly changing as new cables

1G Bidirectional Single-Mode Optical Module

SFP transceiver that supports 1G connections up to 3 km using single-mode fiber with a simplex LC UPC connector.

Fiber Optic Cables | Corning

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

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

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