

RIVO MULTITRADE OPTICAL SYSTEMS

Butterfly-shaped single-mode four-core optical fiber



Overview

National standard telecommunications grade optical cable! self. To sum it up: if you're looking for a stable, high-speed, durable, and affordable fiber.

Key Takeaways

A butterfly-shaped single-mode four-core optical fiber is a flat, compact fiber cable designed for FTTH applications, featuring four single-mode fibers at the center, reinforced by parallel strength members, and encased in a flexible LSZH or PVC sheath.

Structure and Design

Butterfly-shaped optical fibers, also known as flat drop or butterfly FTTH cables, have a distinctive figure-eight or butterfly cross-section. The four single-mode fibers are positioned at the geometric center, while reinforcing members—either FRP (fiber-reinforced plastic) or steel—run parallel on both sides to provide tensile strength and crush resistance. The outer sheath is typically LSZH (low-smoke, zero-halogen) or PVC, offering fire safety and environmental protection for indoor and outdoor installations. This flat geometry prevents rolling and twisting, simplifying routing along walls, corners, and conduits.

Optical Fiber Characteristics

The fibers used are usually G.657A1 or G.657A2 single-mode fibers, which are bend-insensitive, allowing tight indoor routing with minimal signal loss. These fibers support high-bandwidth communication and are optimized for FTTH networks, enabling reliable last-mile connectivity . The four-core configuration allows multiple connections or redundancy in a compact cable.

Mechanical and Installation Advantages

- Flexibility and compactness: The flat, butterfly shape reduces bending stress and simplifies installation in tight spaces .
- Strength and durability: Parallel FRP or steel members provide high tensile strength for aerial or indoor pulling .
- Ease of handling: The flat design prevents rolling, making splicing, stripping, and routing easier .
- Environmental resistance: LSZH jackets reduce toxic emissions indoors, while UV-resistant PE sheaths allow outdoor deployment .

Applications

Butterfly-shaped four-core single-mode fibers are widely used in:

- FTTH networks for residential and commercial buildings
- Indoor and outdoor drop cables connecting distribution points to end users
- Last-mile fiber access where space efficiency and mechanical reliability are critical
- Environments requiring tight bending and compact routing, such as wall-mounted or conduit installations

Summary

The butterfly-shaped single-mode four-core optical fiber combines high optical performance, mechanical strength, and installation convenience. Its flat, reinforced design, bend-insensitive fibers, and LSZH or PVC sheath make it ideal for modern FTTH deployments, ensuring reliable, high-speed connectivity in both indoor and outdoor environments .

Article Content

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To sum it up: if you're looking for a stable, high-speed, durable, and affordable fiber optic cable, then this national

FTTH Butterfly Optic Cables: Practical Design, Installation, and ...

FTTH Butterfly Optic Cables provide a balance between durability and ease of installation. Their flat geometry prevents

FTTH Butterfly Optic Cables: Types, Specs & Installation Guide

This geometry gives the cable its distinctive look — and its core advantages. Unlike round drop cables, the butterfly

Amazon : GHZHANG 4 Core Butterfly Flat Fiber Optic Patch Cord

This quality patch cord is compatible with LC-LC/SC/FC/ST connectors and is suitable for single-mode fiber optic

Optical fiber low-frequency vibration sensor based on Butterfly-Shape ...

A novel and in-line fiber low-frequency vibration sensor with Butterfly-Shape MZI is proposed and demonstrated. The

GJYXFCH FTTH Butterfly Drop Cable 1 2 4 Core Non-Metal FRP

Adopting high bend insensitive G657A1/G657A2 single mode fiber and high-strength FRP non-metallic strength member, the cable

Single-Mode Fiber Coupled Single-Mode Fiber

Innovative Photonic Solutions'' proprietary single-mode wavelength-stabilized laser diode features high output power with ultra

From Installation to Longevity: A Complete Guide to FTTH Butterfly ...

What Is an FTTH Butterfly Optical Cable? An FTTH butterfly optical cable — also referred to as a flat drop fiber cable

Outdoor Single Mode Butterfly Fiber Optic Cable

Although it is said that outdoor single-mode butterfly fiber optic cable is widely used for long-distance transmission in

FTTH Butterfly Optic Cables: Practical Design, Installation, and ...

FTTH Butterfly Optic Cables are specifically designed to meet the growing demand for high-speed fiber-to-the-home

Microstructured Fibers: Butterfly microstructured fiber complements

FIGURE 1. A scanning electron microscope (SEM) photograph shows the cross-section of a fabricated "butterfly MOF"

FTTH4Core-SM-Indoor Fiber Drop Cable

4Core Indoor FTTH Drop Cable FTTH indoor drop cable is constructed with two single mode fiber. The cable is protected by a

4 Core Single Mode Fiber Optic Cable

Features: Single Mode Design: 9/125 μ core-to-core diameter provides high bandwidth and long range with single mode fiber

Single Mode Fiber Coupled Butterfly Package

Our single mode fiber coupled butterfly laser diode is wavelength stabilized and comes with an "Ultra-Track" Linear Tracking

Square-core single-mode-fiber (SC-SMF) with high ...

Abstract Square-core optical fiber has been proposed recently for high optical power delivery in industrial processing

G657A1/A2 Singlemode Butterfly Type Drop Fiber Optic Cable

Main products are optical fiber cables, data cables, communications cables etc. Its yearly productive capabilities are 4 million core

4 Core Single Mode G657 FTTH Fiber Optic Drop Cable

4 Core Single Mode Outdoor G657 G657a G657a1 G657a2 G657 Fiber Optical Cable Drop Cable Ftt Description The optical fiber

4 Core Single Mode Fiber Optic Cable

Discover 4 core single mode fiber optic cable for reliable fiber-optic communication. Ideal for indoor/outdoor use with

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