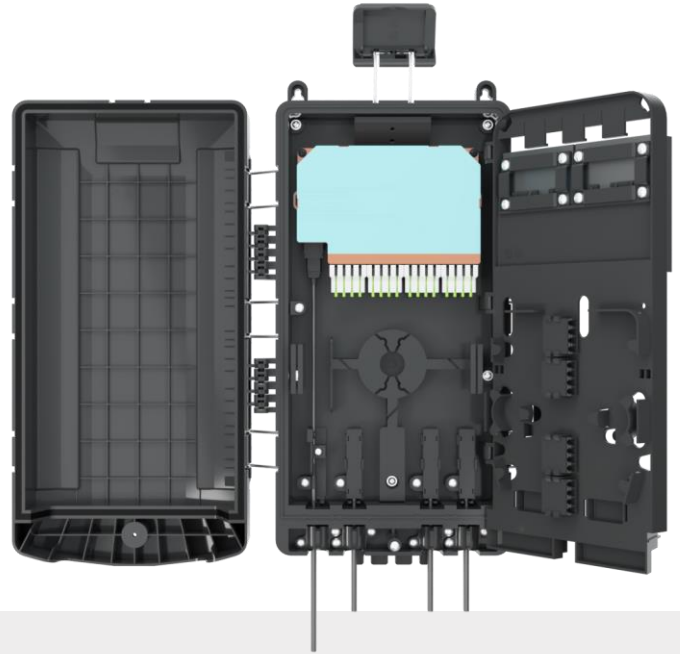


# CONCAT

## Spliceless Concatenated Fiber Cable Assembly System



STL CONCAT is a next-gen Spliceless Concatenated Fiber Cable Assembly System designed to simplify and accelerate fiber rollouts in FTTx networks. This innovative system **eliminates the need for fusion splicing** in the field by offering factory-assembled, pre-connectorized fiber segments that deliver plug-and-play functionality. By minimizing field complexities and labor dependency, it enables faster deployments, consistent quality, and significant cost savings.

The system is built around a modular architecture that includes four key components: the **CONCAT Closure**, which houses the Plug-n-play MPO and LC connectors; **CONCAT MPO - LC cable assemblies** that provide seamless interconnection from distribution to access points; **drop symmetrical splitter modules** that support signal distribution closer to the end user; and a **reusable reel system** designed for easy cable handling, deployment, and reduced onsite waste.

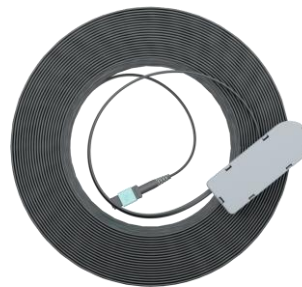
Each component is factory tested to ensure optical integrity, durability, and simplified installation. This approach speeds up time-to-service, making it ideal for greenfield builds or network upgrades. STL's spliceless system delivers a future-ready, high-performance fiber network with operational efficiency built in.



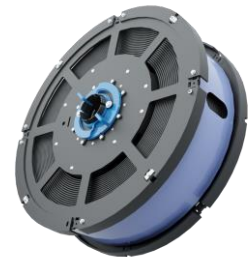
Closure



Drop Splitter  
Module



MPO - LC  
Cable Assembly



Reusable Reel

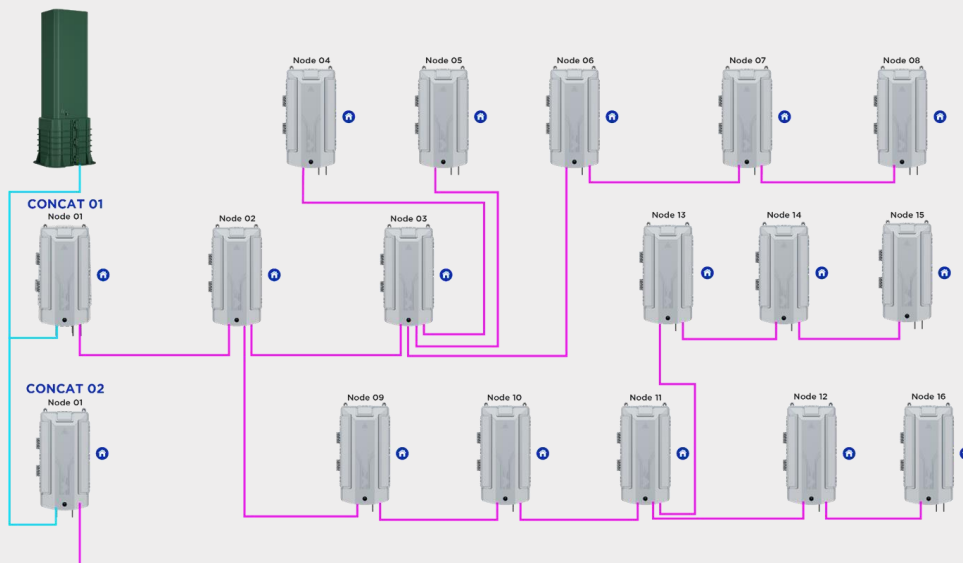
## Applications

STL CONCAT is ideal for fiber-to-the-home (FTTH) and fiber-to-the-building (FTTB) applications. Its flexibility supports aerial and underground deployments across both urban and rural geographies. The solution is particularly suited for large-scale rollouts in underserved areas, where labor constraints and deployment speed are critical factors. It is equally effective in dense city blocks and low-density rural settings. Whether used in new installations or network expansions, STL's spliceless system has the ability to deliver consistent performance and fast turn-up times, it is a valuable asset for service providers aiming to expand broadband access across underserved communities.

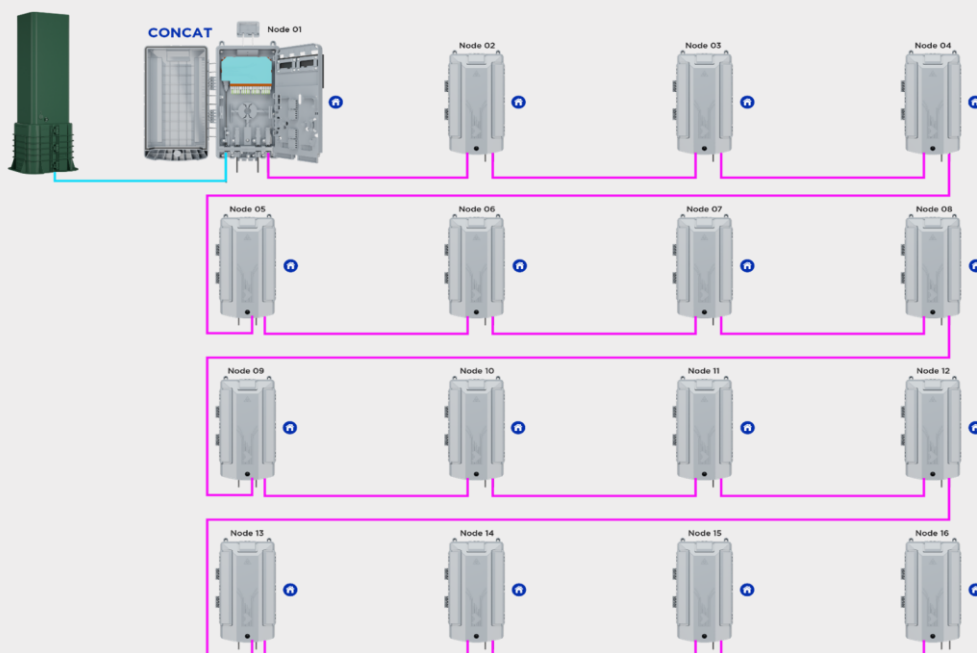
## CONCAT Architecture

The architecture of STL CONCAT is designed for high performance and deployment flexibility. It features a **concatenated, pre-connectorized MPO-to-LC cable assembly** integrated with a versatile enclosure and cassette arrangement. This setup is **suitable for both aerial and buried applications**. The system supports **three branching architectures**, enabling efficient distribution in complex network topologies. Using MPO-to-LC connections, rather than MPO-to-MPO, enhances attenuation performance while maintaining plug-and-play simplicity. The use of flat ADSS cable enables longer pole-to-pole spans, while IBR flat drop cables support quick mass fusion splicing to the FDH. Ganged LC connectors allow intuitive handling, and the closure offers ample slack storage and clear fiber routing paths for drop splicing. It can accommodate up to **two plug-in symmetrical optical splitters (1×8 or 1×4 or 1×2)**, providing enhanced test access points, and ensures clear separation between feeder, distribution, and subscriber drop compartments.

### Branched Forward-feed Architecture

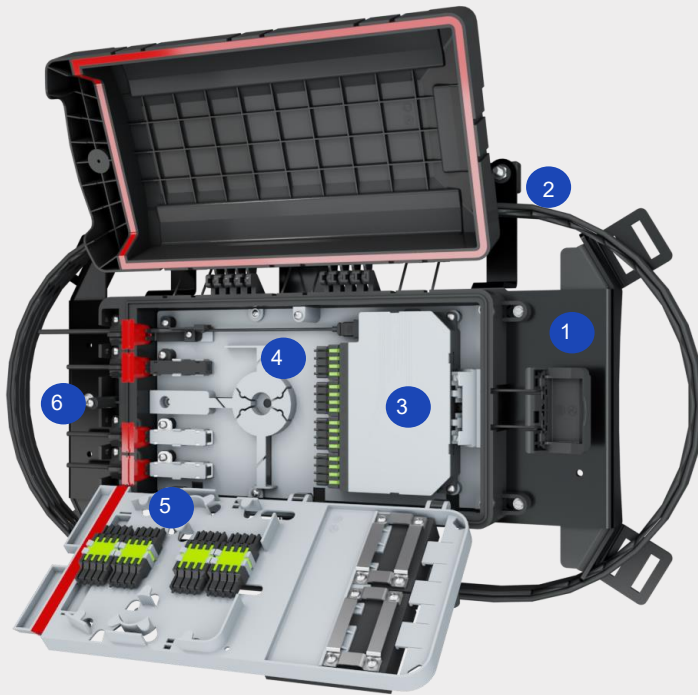


### Linear Forward-feed Architecture



# CONCAT Closure

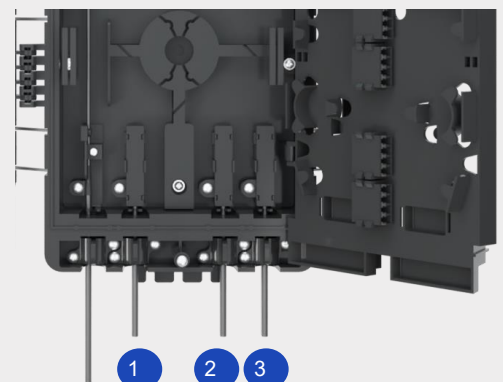
STL CONCAT Closure is a robust, pre-connectorized solution engineered for fast, reliable FTTx deployments. Tested to Telcordia GR-771 and GR-2866 standards, this closure enables seamless MPO-to-LC concatenation through a modular cassette setup.



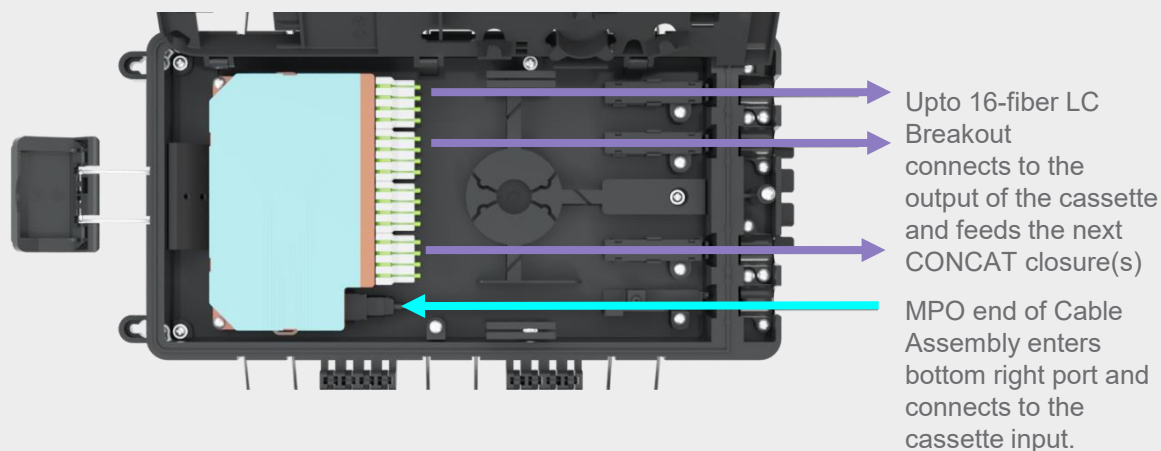
- 1 Aerial Strand Mount Bracket
- 2 Slack Storage
- 3 MPO - LC Cassette (16 Positions)
- 4 LC Fan-out slack storage
- 5 Branch Cable Parking Lot
- 6 Feeder/ Distribution/ Branch Entry Ports

## Features and Benefits

- **Tested to Telcordia Standards:** Tested to GR-771 and GR-2866 standards, ensuring the system meets stringent mechanical and environmental performance requirements for long-term reliability.
- **Spliceless MPO - LC Concatenation:** The 16F pre-connectorized cassette simplifies installation by eliminating field splicing. This plug-and-play architecture reduces skilled labor requirements and accelerates deployment timelines.
- **Dual-Compartment Closure Design:** Dedicated compartments for feeder/distribution and subscriber drops improve cable organization, reduce installation errors, and allow for quicker troubleshooting and maintenance.
- **Splitter Module Integration:** Can accommodate up to two plug-in optical splitters (1x2, 1x4, or 1x8), offering flexibility in signal routing and enabling efficient use of fiber assets closer to the end user.
- **High Drop and Parking Capacity:** Supports up to eight subscriber drop cables with easy push-in retention and provides 32 parking slots for dark pigtails, allowing for future expansion and fiber reallocation.
- **Multiple Branching Options:** Capable of handling up to three branching fiber architectures, offering scalability and reducing the need for additional field enclosures.
- **Aerial Mount Bracket with Slack Storage:** The CONCAT Closure's aerial bracket allows quick pole mounting and integrates up to 250 feet of slack storage for neat cable management without extra hardware.



# MPO - LC Cassette



## Product Specification

|                        |                                 |
|------------------------|---------------------------------|
| Fiber Type             | G.657.A2                        |
| Capacity               | 16F                             |
| Front End Adaptor      | Green                           |
| MPO Adaptor            | Type A (Key Up key down), Black |
| MPO Connector Type     | Base 16                         |
| MPO Connector Polarity | Male (Pinned)                   |
| Material               | ABS                             |

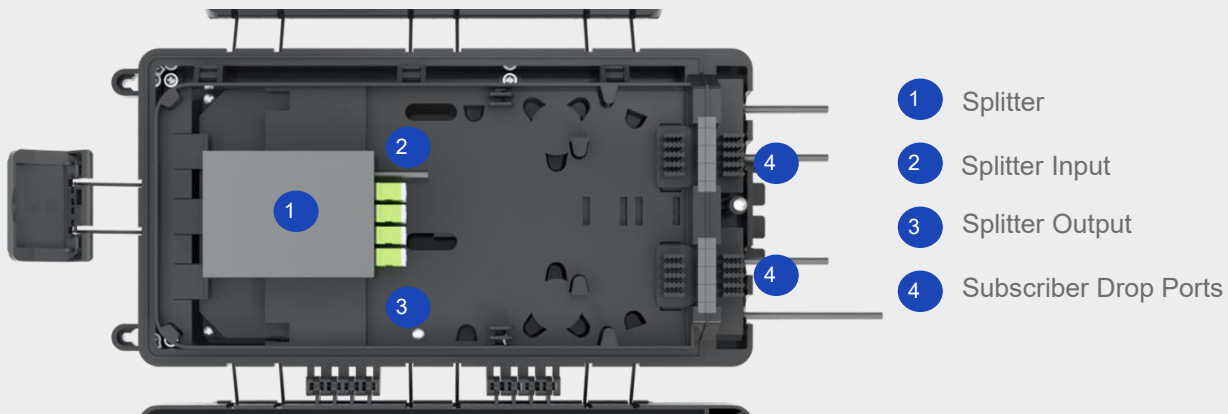
## Optical Specifications

| MPO - LC Cassette   |          | SM IL (dB)  | SM RL(dB)       |
|---------------------|----------|---|-----------------|
| Connector           | Loss     | @1310/1550nm  | @1310/1550nm    |
| MPO/APC - LC PC/APC | Low Loss | MPO: $\leq 0.35\text{dB}$<br>LC Connector: $\leq 0.20\text{dB}$ | $> 60\text{dB}$ |

## Ordering Information

| Part Number      | Description                           |
|------------------|---------------------------------------|
| ODPL11CU03       | CONCAT Closure                        |
| ODPL22CU03       | CONCAT HARD SPLICE TRAY KIT           |
| PCSC010501090.4M | SCA LCA 900um G657A2 Patchcord 0.4mtr |
| CONCATHANGERASS  | CONCAT Aerial Bracket                 |

# CONCAT Drop Splitter Module



STL Splitter Symmetrical Modules are compact, high-performance optical splitters designed for efficient signal distribution in FTTx and access network applications. Available in 1x2, 1x4, and 1x8 variants, these splitters operate across a wide wavelength range of 1260 to 1650 nm, making them ideal for a variety of network configurations. Housed in an ultra-small form factor with an integrated mounting solution, they offer seamless integration into closures, cabinets, and distribution boxes. Engineered to perform in harsh environments, the splitters are rated for industrial temperature ranges from -40°C to +70°C and tested to Telcordia GR-1209, GR-1221, and GR-20 standards for reliability and optical performance.



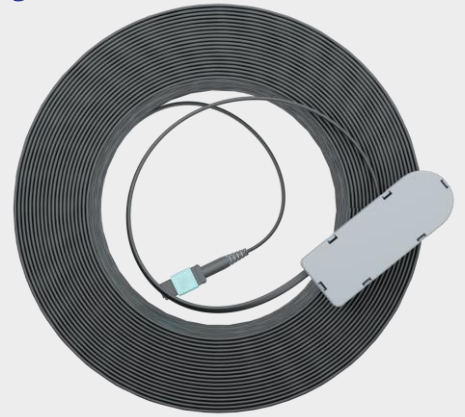
## Features and Benefits

- **Multiple Split Ratios:** Available in 1x2, 1x4, and 1x8 variants to suit different network architectures.
- **Broad Operating Wavelength:** Supports 1260 to 1650 nm for compatibility with various PON technologies.
- **Ultra-Compact Design:** Small form factor saves space in closures and simplifies integration.
- **Integrated Mounting Solution:** Allows easy installation into fiber management systems without additional hardware.
- **Field-Ready Performance:** Operates reliably in extreme temperatures from -40°C to +70°C for outdoor and indoor deployments.
- **Low Insertion Loss:** Ensures minimal signal degradation, improving overall network efficiency.
- **Standards Compliant:** Tested to Telcordia GR-1209, GR-1221, and GR-20 for assured quality and long-term durability.



# CONCAT MPO-LC Cable Assembly

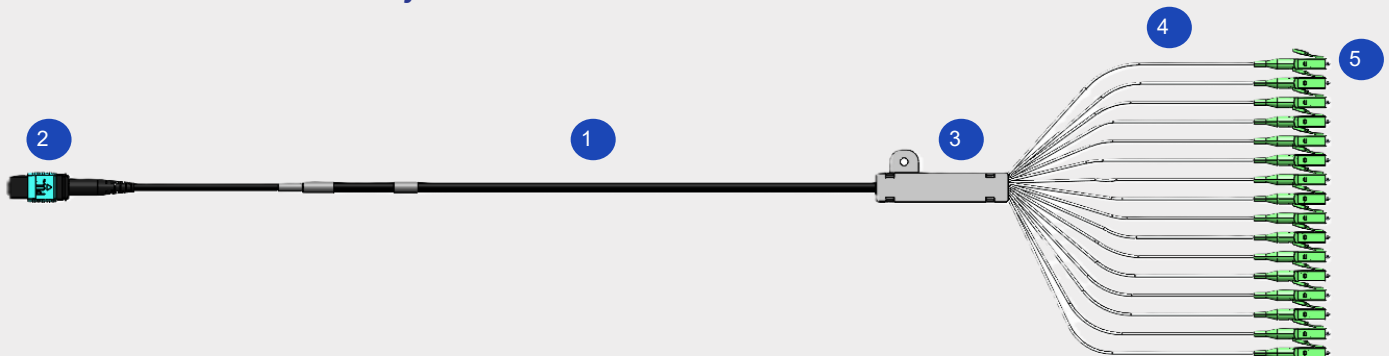
STL CONCAT MPO - LC pre-connectorized fiber cable assembly is purpose-built for fast, high-performance fiber deployments in FTTx access and drop networks. Designed to reduce installation time and minimize handling, it supports pre-coiled lengths from 30 to 1,000 feet, making it ideal for aerial, buried, or duct applications. The solution features a flat, all-dielectric self-supporting (ADSS) IBR cable for extended pole-to-pole spans and compatibility with mass fusion splicing at the FDH. A factory-integrated MPO to LC/APC fanout, housed in a protective LC connector box, ensures that connector integrity is maintained from factory to field.



## Features and Benefits

- **Flat, ADSS IBR Cable Design:** Enables longer aerial spans and supports easy fusion splicing at distribution hubs, reducing installation time and cost
- **Efficient Fanout Construction:** 16F MPO to 16F LC/APC fanout enables high-density terminations with reduced field work.
- **Duct-Ready MPO Protection:** Pulling sock supports routing through 14/18 mm ducts while shielding the MPO end.
- **4X LC Connectors:** Allows insertion of four LC connectors for faster, easier installations.
- **Integrated Dust Protection:** Pre-installed dust caps safeguard connectors from contamination prior to use.
- **Protective LC Connector Box:** Ensures connector protection during handling and transport, preserving factory polish and alignment.
- **Customizable Coil Lengths:** Supports factory-prepared coils from 30 to 1,000 feet for deployment flexibility and minimal field prep.
- **Tested as per Industry Standards:** Fully tested to GR-2866, GR-20, IEC 60793/60794, ANSI/ICEA S-110-717, and ITU-T. RoHS and REACH compliant.

## MPO - LC Fanout Assembly



- |                           |   |              |
|---------------------------|---|--------------|
| 1 24F Flat Drop IBR Cable | 2 16F MPO Connector (Outer end of the coil) | 3 16F Fanout |
| 4 0.9mm Fanout Tube       | 5 LC/APC Connector (Inner end of coil)      |              |

## Product Specification

|                                    |  |
|------------------------------------|--|
| Fiber Type                         | STL Stellar Fiber (Comply ITU-T G.657.A1/G.657.A2 & G.652.D)                     |
| Capacity                           | 24F  |
| No. of Ribbons (12F IBR)           | 2  |
| Outer Sheath Material              | UV Proof Black Polyethylene  |
| Maximum Cabled Attenuation (dB/km) | 1310nm: 0.4, 1550nm: 0.3 & 1625nm: 0.4   |
| PMD LDV (ps/sqrt.km)               | </= 0.1  |
| Fiber Color Sequence in IB Ribbon  | Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose, Aqua |
| Strength Member                    | High strength aramid yarns along with fibres                                     |
| Water Blocking                     | Water Swellable Yarns  |
| No of Tubes                        | 1  |
| Tube Color                         | Black  |
| Jacket Cable Diameter mm (in)      | 4.1 x 8.2 (0.161 x 0.322)  |
| Fan-out Cable Diameter             | 3.0  |
| MPO Connector                      | <b>Housing:</b> Yellow<br><b>Boot:</b> Black                                     |
| MPO Connector                      | <b>Female</b> = Unpinned   |
| LC Connector                       | Green  |

## Optical Specifications

| MPO - LC Fan-out Cable Assemblies |          | SM IL (dB)                              | SM RL(dB)    |
|-----------------------------------|----------|---|--------------|
| Connector                         | Loss     | @1310/1550nm                            | @1310/1550nm |
| MPO/APC -<br>LC PC/APC            | Low Loss | MPO: ≤ 0.35dB<br>LC Connector: ≤ 0.20dB | > 60dB       |

## Testing Standards

|                          |   |
|--------------------------|---|
| End Face Characteristics | As per IEC 61300-3-35   |
| Optical performance      | <b>Insertion loss (IL):</b> as per IEC 61300-3-4<br><b>Return loss (RL):</b> as per IEC 61300-3-6 |

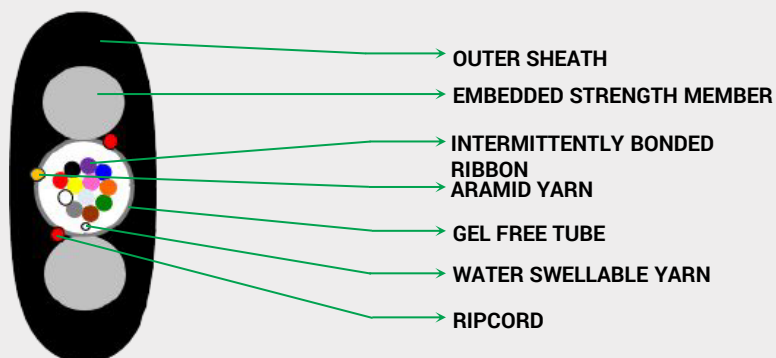
## Ordering Information <sup>1</sup>

| Part Number          | Description                 |
|----------------------|-----------------------------|
| MFCLA124BKXH LLLL FD | CONCAT 16F MPO-LCA IBR Flat |

Note 1: In the part number, replace LLLL with appropriate cable length in ft.

Available options: 0030 - 30ft, 0050 - 50ft, 0100- 100ft, 0150 - 150 ft, 0200 - 200ft, 0250 - 250 ft, 0300 - 300ft, 0350 - 350ft, 0400 - 400ft, 0450 - 450ft, 0500 - 500ft, 0600 - 600ft, 0750 - 750ft, 1000 - 1000ft

# STL Celesta 24F Flat IBR Cable



## Product Details

STL Celesta Flat Drop Dielectric Fiber Optic Cable offers the ease of installation in an easy access, single-tube design. This cable has optical Fibers presented in dry tube filled with water swellable yarns and is enclosed in a thermoplastic sheath. The cables have two embedded strength members for anti-buckling property. The dielectric version eliminates any bonding and grounding requirements.

## Features & Benefits

- Embedded strength members for anti-buckling properties
- All dry design for easy and fast end preparation
- Easy access to Fiber due to its Unitube construction
- Tensile and crush resistant
- UV protected

## Fibers and Cable Performance Standards

Cable complies to the following standards IEC 60793, IEC 60794, ANSI/ICEA S-110-717, Telcordia GR-20, ITU-T, RoHS, REACH.

## Mechanical & Environmental Characteristics <sup>2</sup>

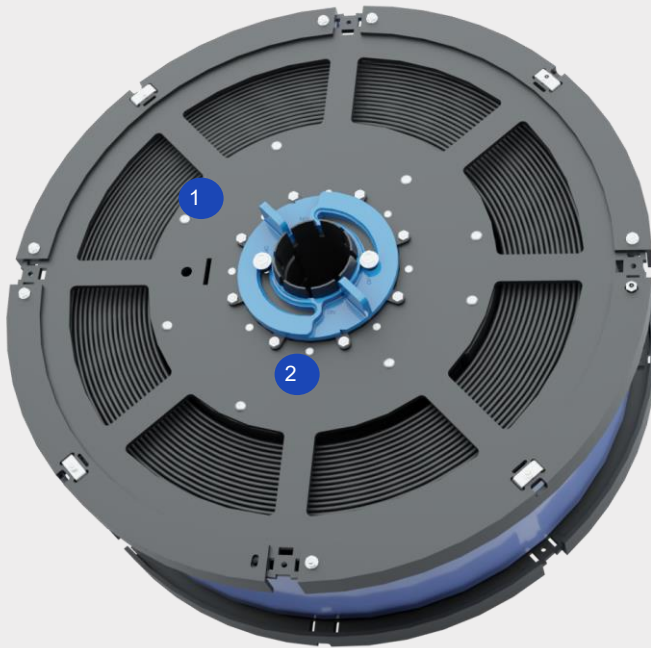
| Cable Characteristics                  | Testing Standard Method | Cable Performance              |
|--|-------------------------|--------------------------------|
| Tensile Strength (N) (lbf)             | ICEA 110-717   FOTP-33  | 1336 N (300.3)                 |
| Crush Resistance (N/100 mm) (lbf/in)   | ICEA 110-717   FOTP-41  | 500 (28.55)                    |
| Impact Strength (Nm) (lbf.in)          | ICEA 110-717   FOTP-25  | 5 (44.2)                       |
| Torsion                                | ICEA 110-717   FOTP-85  | ±180°                          |
| Min. Bend Radius (During Installation) | ICEA 110-717   FOTP-88  | 20 D                           |
| Min. Bend Radius (After Installation)  | ICEA 110-717   FOTP-88  | 15 D                           |
| Water Penetration Test                 | ICEA 110-717   FOTP-82  | 1m waterhead, 3m samples, 24 h |
| Temperature Performance                | ICEA 110-717   FOTP-33  |                                |
| Installation                           |                         | -30°C to +70 °C                |
| Operation                              |                         | -30°C to +70°C                 |
| Storage                                |                         | -40°C to +70°C                 |

Note 2: All tests shall be carried out as per ICEA 110-717 standards, the change in attenuation shall be  $\leq$  0.4 dB at 1550 nm



# REUSABLE REEL

The Reusable Reel Assembly is a field-friendly cable deployment solution designed to support pre-connectorized fiber coils ranging from 250 to 1,000 feet. Engineered for reusability and efficiency, it features a robust, symmetric design that allows for quick coil loading, easy transport, and controlled cable payout. The reel incorporates a simple yet effective anti-free-spin braking system that ensures smooth, tangle-free deployment of flat fiber cables. Built for repeat use across multiple deployments, this reel system significantly reduces packaging waste and improves installation productivity in both aerial and underground applications.



1 Locking Key and Retaining Bolt

2 Anti-spin braking mechanism

## Features and Benefits

- **Supports Various Coil Sizes:** Accommodates fiber coil lengths up to 1,000 ft for deployment flexibility.
- **Anti-Free-Spin Braking Feature:** Easy-to-activate braking system eliminates uncontrolled reel spin and ensures smooth cable payout.
- **Symmetric, Lockable Design:** Allows quick coil reloading and easy reel separation for efficient handling and reuse.
- **Sustainable & Reusable:** Designed for multiple uses, reducing packaging waste and total cost of ownership in large-scale fiber rollouts.

## Ordering Information

| Part Number | Description           |
|-------------|-----------------------|
| ODPL01CU03  | CONCAT Re-Usable Reel |

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For additional information please contact your sales representative.

You can also visit our website at [www.stl.tech](http://www.stl.tech)

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