

**AFL HYPERSCALE.**

# Data Center Interconnect (DCI)

Splice Solutions



Reference Architecture Document



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# Seamlessly Connect Your Data Centers With Speed

## Data Center Interconnect (DCI) Splice Solutions

To meet the ever-increasing need for secure, reliable data networks and infrastructures, our company offers DCI Splice Solutions to help balance workloads and resources between multiple data centers. Our cable and connectivity products provide fast, reliable connections across campuses or metropolitan areas - all with minimal installation time and overhead costs.



### Enhance Network Performance

Our DCI Splice solutions cater to short, medium, and long-distance interconnects across various fiber densities, designed to seamlessly transition from the outside to the inside of the data center, reducing latency and optimizing network performance and deployment time.



### Future-Proof Your Network

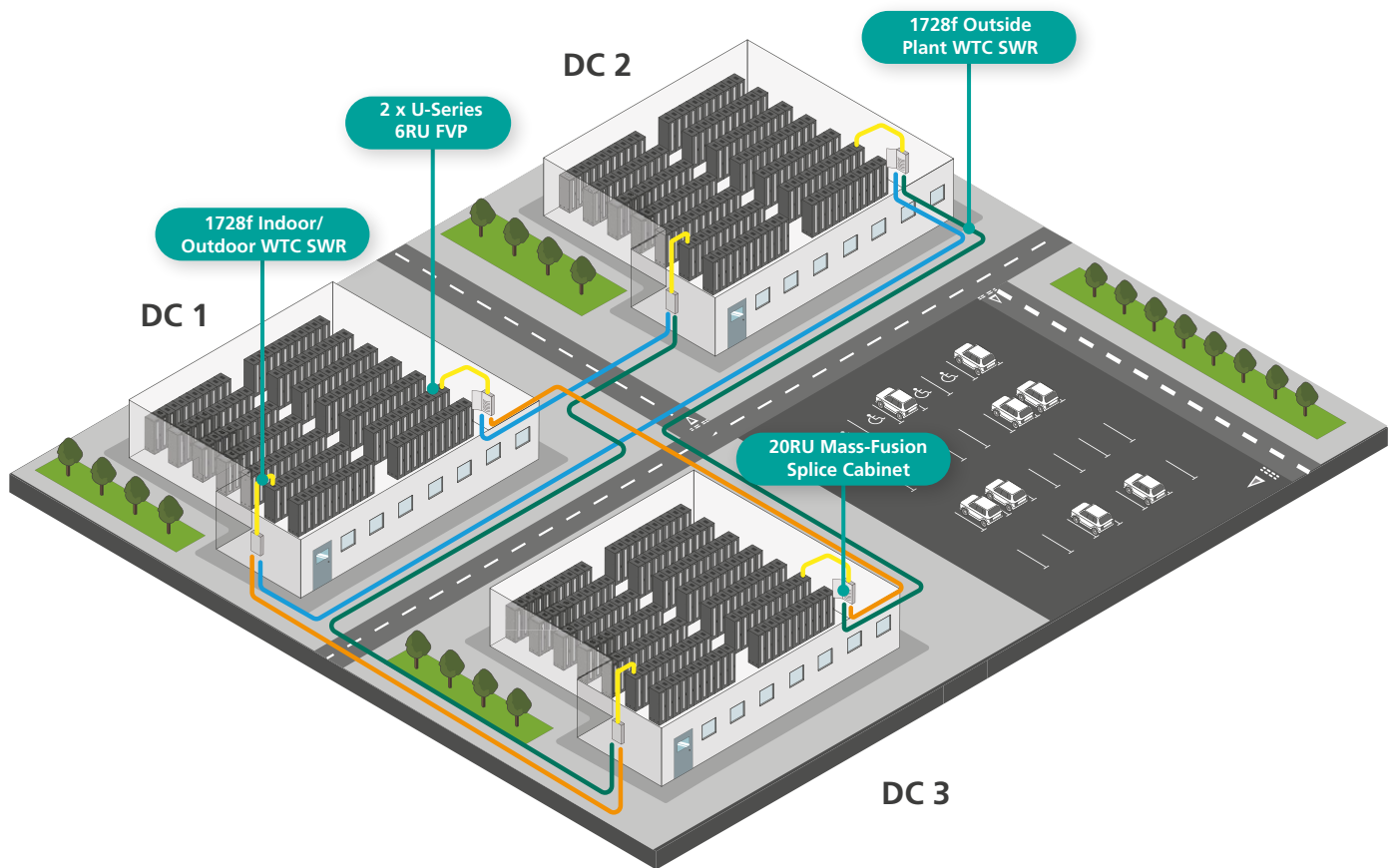
Our compact, high-fiber count Wrapping Tube Cables (WTC) provides an abundance of fiber that can surpass immediate network needs. This surplus of fiber means you can scale your network in the future without additional cable installations between the same data centers. Consequently, this significantly reduces costs and enhances your network's agility and scalability, setting you up for seamless future expansion.



### Accelerate Network Deployment

Our DCI Splice Solutions are equipped with industry-leading SpiderWeb Ribbon® (SWR®) technology that, when mass-fusion spliced, is 60-75% faster to install than single fiber splicing. The compact diameter of our WTC SWR cables also helps to maximize existing duct space, lessening the risk of damaging existing buried infrastructure while reducing the need for costly, time-intensive civil works.

This document outlines the cable and connectivity products required to build a high-performance data center interconnections, along with Bill of Materials and ordering information for each configuration.



## Data Center Interconnect (DCI) Splice Solution

Previously, companies used data center interconnects (DCI) for business continuity and disaster recovery. Today, it still performs that function, but now it also helps data center operators to manage their resources and support critical load-balancing functions across many different data centers, which is essential as internet traffic grows and cloud migration becomes more vital.

At AFL Hyperscale, we provide Data Center Interconnection Splicing Solutions that offer a fast and effective way to provide connections across a campus or metro environment. The solution identified in this document shows how market-leading Wrapping Tube Cable (WTC) incorporating SpiderWeb Ribbon® (SWR®) technology - which is a small diameter high-fiber count cable, can be installed 60-75% faster when using mass-fusion splicing compared to single fiber splicing.

The high fiber count cables can be terminated to either the 2RU or 6RU front access V-panels (FVP), providing 288F or 864F presented with an LC footprint. The 6RU FVP has been designed with the growth of infrastructure in mind, Companies primarily used data center interconnection (DCI) for business continuity and disaster recovery. Today, it is also used to help data center operators manage their resources and support critical load-balancing functions across many different data centers, which is essential as internet traffic grows, and cloud migration becomes more vital.

Previously, companies mainly dealt with north-south traffic, which refers to information from outside the data center. However, with the increasing amount of east-west traffic moving data from one data center system to another, optical connections between data center locations have become critical.

At AFL Hyperscale, we provide Data Center Interconnection Splicing Solutions that offer a fast and effective way to provide connections across a campus or in a metro

environment. The solution identified in this document shows how market-leading Wrapping Tube Cable (WTC) incorporating SpiderWeb Ribbon® (SWR®) technology - which is a small diameter high fiber count cable, can be installed 60-75% faster when using mass-fusion splicing compared to single fiber splicing.

This reference architecture document provides two ways to achieve a DCI link depending on customer preference, duct condition, distance, and environment. Firstly, we offer a WTC high-fiber count cable with an Indoor/Outdoor rated cable jacket that meets the needs of external environmental conditions with water-blocking and UV protection. It also has a suitable Euroclass rating for indoor needs, as required in Europe by the Construction Product Regulations (CPR). The advantage of this solution is that there is no need to transition the cable from an external type to an indoor-rated cable, removing the need for an additional splice point at the building entry, which reduces splice losses and labor costs. These high-fiber count cables can then be terminated to an LC presentation via our Front Access V-Panels (FVP), available in 6RU (432 LC ports, 864 fibers) and 2RU (144 LC ports, 288 fibers). Our FVP panels are stackable with configurations that can support 288 fibers, up to 6,912 fibers, when used with an appropriate cable breakout box.

In conditions where an outside plant cable is required, we provide an example of how this can be achieved using our compact and easy-to-install wall-mount splice cabinets. These cabinets provide a convenient way to transition between external and internal grade cables, allowing mass fusion splicing to take advantage of the reduction in installation time.

Lastly, Bills of Materials are available towards the end of this Reference Architecture Document for both OSP and ISP/OSP cables across various fiber counts.

## Flame-Retardant RI Indoor Wrapping Tube Cable (WTC) with SpiderWeb Ribbon® (SWR®)

This cable construction can be used for indoor network applications where Riser-Rated, LSZH, or CPR classifications are required. The FR RI-WTC-SWR incorporates the leading-edge SpiderWeb Ribbon technology in a robust, flame-retardant cable package that can be used within buildings.

### Ultra-high fiber counts

- Cables available in 144 fiber to 3456 fiber constructions

### Ground-breaking SpiderWeb Ribbon technology

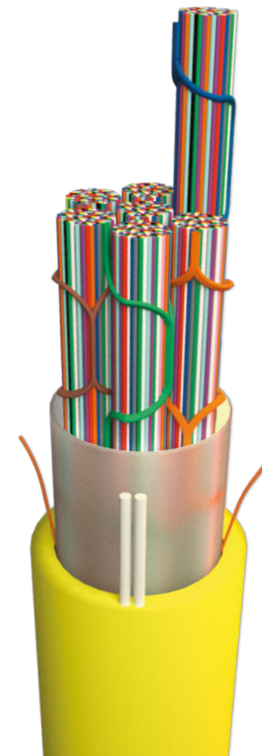
- Flexible, collapsible bonded fiber ribbon design that allows for highly efficient ribbon splicing or individual fiber splicing

### Innovative Wrapping Tube Cable construction

- As ribbons can roll and conform, more fibers can be packed into smaller diameter cables. Fibers are innovatively bundled and wrapped in a gel-free, water blocked construction for straight forward installation.

### Jackets suitable for multiple qualifications

- Meets LSZH, UL 1666 Riser Rated, CPR Classifications



[View Product Datasheet](#)

## Flame-Retardant RIO Indoor/Outdoor Wrapping Tube Cable (WTC) with SpiderWeb Ribbon® (SWR®)

This cable construction can be used for both indoor and outdoor network applications where Riser-Rated, LSZH, or CPR classifications are required. The robust, flame-retardant cable construction enables use both inside buildings as well as outside when routed externally in covered pathways such as duct banks or cable trays due to core water-blocking features.

### Ultra-high fiber counts

- Cables available in 144 fiber to 3456 fiber constructions

### Ground-breaking SpiderWeb Ribbon technology

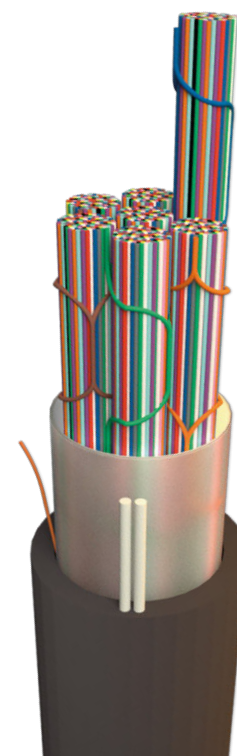
- Flexible, collapsible bonded fiber ribbon design that allows for highly efficient ribbon splicing or individual fiber splicing

### Innovative Wrapping Tube Cable construction

- As ribbons can roll and conform, more fibers can be packed into smaller diameter cables. Fibers are innovatively bundled and wrapped in a gel-free, water blocked construction for straight forward installation.

### Jackets suitable for multiple qualifications

- Meets LSZH, UL 1666 Riser Rated, CPR Classifications



[View Product Datasheet](#)



## Product Overview:

### Outside Plant Wrapping Tube Cable (WTC) with SpiderWeb Ribbon® (SWR®)

This cable construction is the smallest cable diameter and lowest weight, high-fiber count ribbon cable in the industry and is compliant to the latest issues of outside plant cable standard, Telcordia GR-20.

#### Ultra-high fiber counts

- Cable constructions available from 144 fiber to 1728 fibers

#### Compatible with a wide range of deployment methods

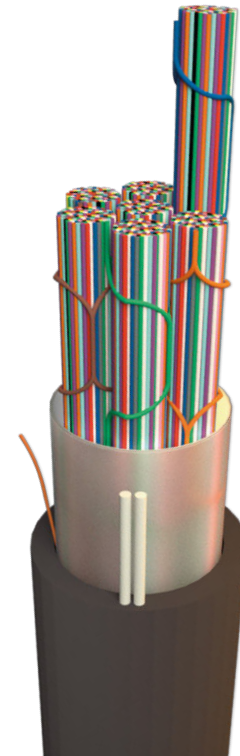
- Suitable for aerial lashing, pulling-in-duct, air-jetted-in-duct

#### Ground-breaking SpiderWeb Ribbon technology

- Flexible, collapsible bonded fiber ribbon design that allows for highly efficient ribbon splicing or individual fiber splicing

#### Innovative Wrapping Tube Cable construction

- As ribbons can roll and conform, more fibers can be packed into smaller diameter cables. Fibers are innovatively bundled and wrapped in a gel-free, water blocked construction for straight forward installation.



[View Product Datasheet](#)

## Mass-Fusion Splice Cabinet

Designed to provide a transition between outside plant (OSP) cable and inside plant (ISP) cables with ultra-high fiber counts or provide a distribution function for single high fiber count cable to be spliced to several lower count cables.

#### High-Density

- Available in 14RU (up to 288 single fiber or 1152 ribbon fibers), 20RU (up to 3456 fibers with ribbon as standard), and 37RU (up to 6912 fibers as standard).

#### Integrated Cable Management

- Interchangeable cable tie off brackets accommodate flexibility for various sizes of entry/exit cables.

#### Flexible Mounting Options

- Can be mounted on wall or installed in a 19" frame



[View Product Datasheet](#)

## Product Overview:

### U-Series Front-Access V-Panel (FVP) 6RU



Our Front-Access V-Panels (FVP) are designed for speed of deployment in a high-density environment. These rack-mountable units are V-shaped in design and can easily be installed or mounted by one person. In addition, slide-out drawers allow concurrent splicing away from the housing.

#### V-Shaped Design with 3 Slide-Out Drawers

- Allows for simultaneous splicing in a modular, sleek interface and accommodates 864f over 3 drawers, each containing 12 x 24f U-Series LC Cassettes

#### 19" Rack-Mount Panels

- Features integrated mounting points for cable transitions ensure appropriate management of breakout from cable to splicing area.

#### Pre-Loaded and Pre-Routed Pigtailed

- Each slide-out drawer comes pre-loaded with 12 x 24f FVP LC Cassettes with SpiderWeb Ribbon® (SWR®) LC Pigtailed.



[View Product Datasheet](#)

# Bill of Material (BOM) Examples

## Data Center Interconnects with Inside / Outside Plant Cable

288 Fibers	Part number	Qty
AFLHS U-Series 2RU Front Access V Panel Splice Patch BK Premium LC G.657A1 288F (200um-pitch Pigtail)	F7HAADBPAx-15AM	2
AFL Flame-Retardant RIO ISP/OSP WTC SWR 200µm Fiber/200µm Pitch, 288f, SM G.657A1 non-armored Black Cca-s1b,d1,a1	RIO-OGNM12WTZTWBE SR15E-P200x288C	xx

864 Fibers	Part number	Qty
AFLHS U-Series 6RU Front Access V Panel Splice Patch BK Premium LC G.657A1 864F (200um-pitch Pigtail)	F7HAAFBPAx-14AM	2
AFL Flame-Retardant RIO ISP/OSP WTC SWR 200µm Fiber/200µm Pitch, 864f, SM G.657A1 non-armored Black Cca-s1b,d1,a1	RIO-OGNM12WTZTWBE SR15E-P200x864C	xx

1728 Fibers	Part number	Qty
AFLHS U-Series 6RU Front Access V Panel Splice Patch BK Premium LC G.657A1 864F (200um-pitch Pigtail)	F7HAAFBPAx-14AM	2
AFL Flame-Retardant RIO ISP/OSP WTC SWR 200µm Fiber/200µm Pitch, 1728f, SM G.657A1 non-armored Black Cca-s1b,d1,a1	RIO-OGNM12WTZTWBE SR15E-P200x1728C	xx

## Data Center Interconnects with Outside Plant Cable transitioning to Inside Plant Cable

864f with 288f Mass Fusion Splice Cabinet	Part number	Qty
AFLHS U-Series 6RU Front Access V Panel Splice Patch BK Premium LC G.657A1 864F (200um-pitch Pigtail)	F7HAAFBPAx-14AM	2
AFL OSP 864f G.657A1 WTC SWR Non-armored, Gel-free PE BLACK	LWSE-864-BD-C-72-12-00N1D	xx
AFL Flame-Retardant RI ISP WTC SWR 200µm Fiber/200µm Pitch, 864f, SM G.657A1 non-armored Black Cca-s1b,d1,a1	RI-OGNM12WTZTWBE SR15E-P200x864C	xx
AFL Mass-Fusion Splice Cabinet 14RU 288f Single Splice (Black)	FXHCXXBXXX-02ZZ	2
AFLHS Fiber Splice Tray Mass Splice 96F in 12x Pack GY 7035 (for 14RU only)	FXSAXXDXXX-18ZZ	2

1728f with 3456f Mass Fusion Splice Cabinet	Part number	Qty
AFLHS U-Series 6RU Front Access V Panel Splice Patch BK Premium LC G.657A1 864F (200um-pitch Pigtail)	F7HAAFBPAx-14AM	2
AFL OSP 1728f G.657A1 SR15E-200 WTC SWR Non-armored, Gel-free PE BLACK	LWSE-1728-BE-C-144-12-00N1D	xx
AFL Flame-Retardant RI ISP WTC SWR 200µm Fiber/200µm Pitch, 1728f, SM G.657A1 non-armored Black Cca-s1b,d1,a1	RI-OGNM12WTZTWBE SR15E-P200x1728C	xx
AFL Mass-Fusion Splice Cabinet 20RU 3456f Mass Splice (Grey RAL7035)	FXHCAKDXXX-03ZZ	2





# AFL HYPERSCALE®

## Data Center Cabling and Connectivity Experts

AFL Hyperscale is the first cabling and connectivity solution provider focused on the ever-evolving needs of data centers.

Hyperscale, colocation, and enterprise data centers are united in their pursuit to connect the unconnected, yet their infrastructure, performance, and operational challenges are totally unique.

We work collaboratively with our customers to create connectivity solutions tailored to their current needs and to the requirements of future networks. We then use our responsive, global operational capabilities and distribution network for fast delivery.

This approach has transformed how many data centers grow worldwide and is built on 70 years' combined experience in the design and manufacture of high-performance optical fiber networks, a global presence, and the backing and innovation sharing of our parent and grandparent companies, AFL and Fujikura, the pioneer in optical technology. AFL Hyperscale is your dependable partner to build a more connected world.

AFL Hyperscale - The World, Connected.

[www.aflhyperscale.com](http://www.aflhyperscale.com)