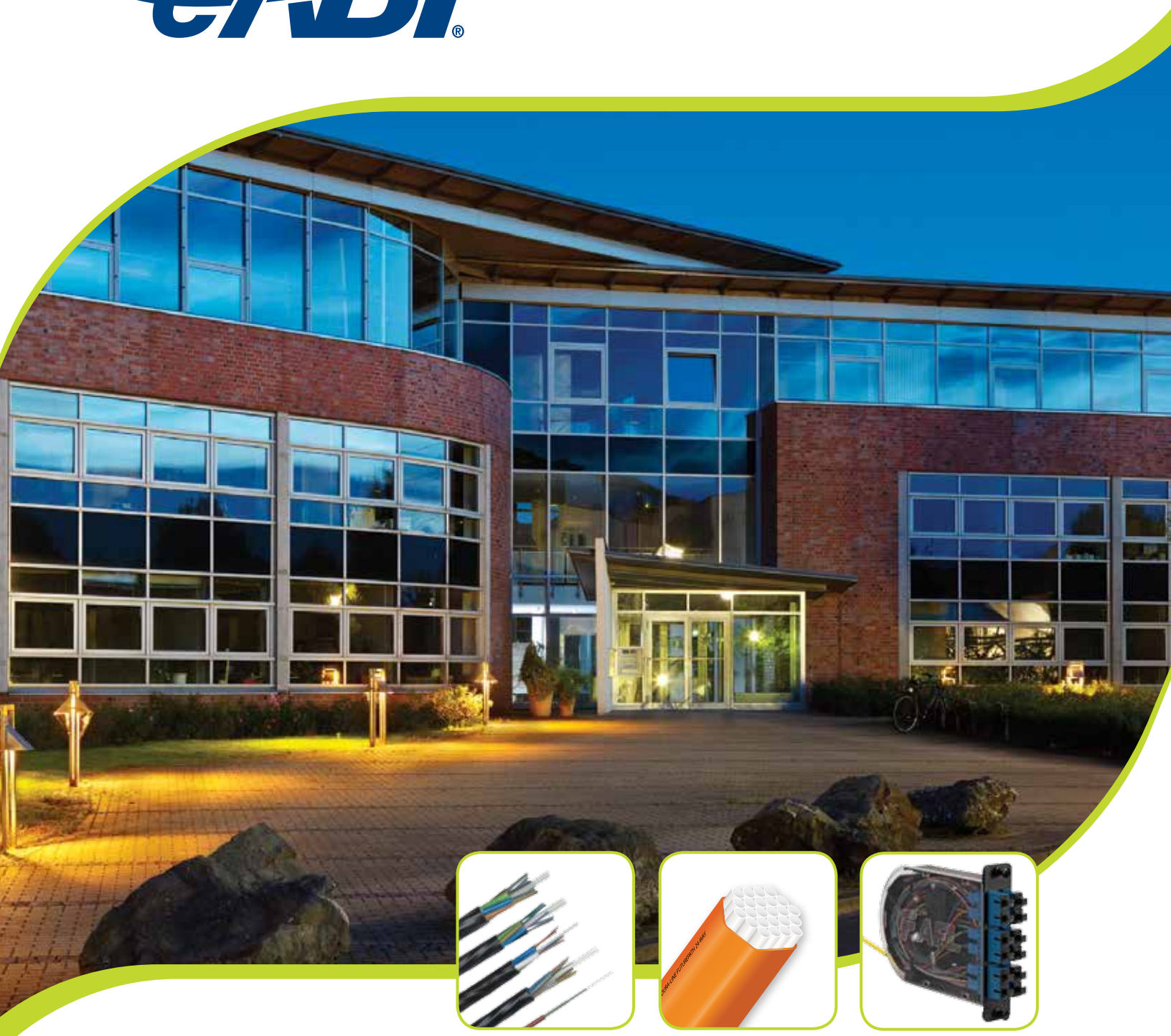
eABF®



Enterprise Blown Fiber Solutions

MicroDuct Systems | eABF Cables | Connectivity

OSP MicroCore® Cables | Test & Inspection | Fusion Splicers

Founded in 1984, AFL is a global leader providing fiber optic products, equipment, and engineering services to the telecommunications, electric utility, wireless, energy, private network and OEM markets. AFL also serves a diverse mix of industry segments that include service providers, military and defense, mining, oil and gas, and biomedical.

AFL brings years of experience in developing solutions for customers, fostering a creative culture to drive and deploy innovative technologies that will improve communications for years to come. Our product line consists of fiber optic cable, transmission and substation accessories, outside plant equipment, connectors, fusion splicers, test equipment and training.

AFL's service portfolio includes market-leading positions with the foremost communications companies supporting inside plant central office, EF&I, outside plant, enterprise and wireless areas.

AFL is dedicated to bringing our customers a quality product as well as delivering superior value.

Dura-Line is a leading international manufacturer and distributor of communication and energy infrastructure products and systems including conduit, cable-in-conduit, pipe, and accessories as well as provide the "mission critical" elements of networks and infrastructure.

A unified system of Dura-Line products provides for protection and fast, safe installation of communication networks, power cables, and pressure pipe for a wide variety of markets, including telecommunications, CATV, energy, oil and gas, electrical transmission and distribution, transportation, municipal, hospitals, universities, industrial automation, Irrigation systems, geothermal energy, and aquaculture.

Table of Contents

eABF Solutions

eABF Cable

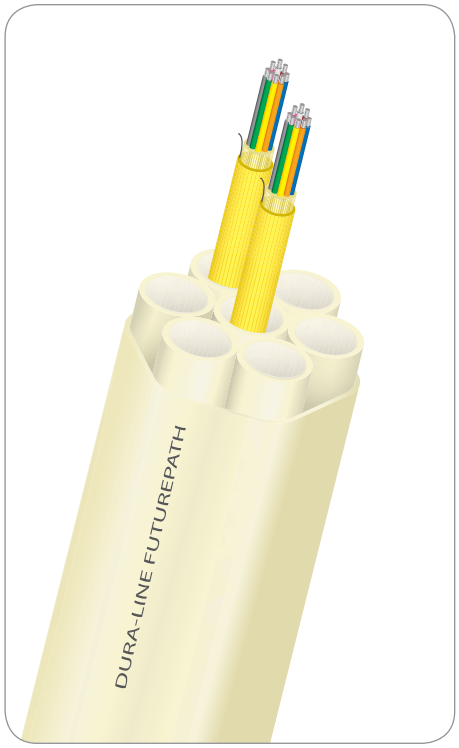
At the heart of the eABF solution is the cable and the duct. The eABF cable has been designed to offer exceptional air-jetting qualities yet rugged enough to comply with Telcordia's GR-409 Premise Cabling standard and NEC Riser and Plenum flame ratings even outside of the MicroDuct. As a result, the cable can be deployed once exiting the pathway without the need for additional costly furcation tubing as required by other less robust alternatives. The cable is available in fiber counts from six through 96 with all fiber types including SMF, OM2, OM3 and OM4, and employs bend-insensitive fiber technology.

eABF MicroDuct

The eABF pathway system is comprised of Enterprise FuturePath® MicroDuct products engineered and produced by Dura-Line, the premier communications-oriented fiber optic duct system. The eABF duct options include indoor/outdoor riser, plenum, low-smoke zero halogen (LSZH) and HDPE product lines. All eABF ducts incorporate low-contact ribbed inner surface and ultra-low friction Silicore®. The eABF FuturePath MicroDuct comes in tube counts from two through 24.

System

AFL and Dura-Line have joined together to produce a high-performance blown fiber optic cabling system with applications across a broad spectrum of networking configurations. The solution, eABF (Enterprise Blown Fiber) cabling system is engineered to offer a reliable, easy-to-install optical fiber network communications infrastructure that has one of the highest fiber density solutions in the blown fiber market. The eABF solution has all the key elements that, when combined, yield a state-of-the-art and highly flexible "living" communications pathway.



eABF

- **AFL eABF Cables**
- **Dura-Line Enterprise FuturePath MicroDuct**
- **AFL Connectivity**
- **AFL Test Equipment and Fusion Splicers**
- **CLi® 25-year Warranty**
- **Design, BOM and SOW Support**
- **Contractor Training and Project Management**

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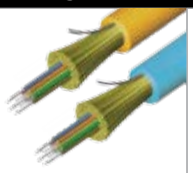
eABF Solutions

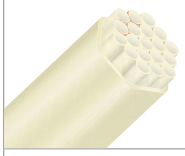
CABLES



Enterprise Blown Cable (6-96 fibers)
Specifically designed for air-jetting applications through MicroDuct pathways. The proprietary high-drag, light-weight design yields a cable that performs well during installation and yet offers a very robust and compact package for direct routing through congested point-of-termination cable management locations. These cables are GR-409 compliant and come in OFNP and OFNR ratings.

Enterprise Blown OSP MicroCore® Cable (LM Series)
Available in fiber counts up to 432 in blowable and pullable designs. Stranded buffer tubes simplify splicing/handling and allow for mid-span access to the fibers. The AFL OSP MicroCore series includes one of the industry's highest fiber densities yet maintains a minimum 300-lb load rating for installation.

MICRODUCT SYSTEMS



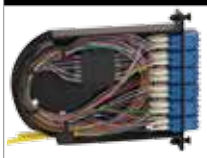
Enterprise FuturePath
Enterprise FuturePath is available in many sizes and configurations including riser, plenum and LSZH. MicroDuct sizes include 12.7 mm, 8.5 mm and 5 mm to accommodate your fiber requirements. Configurations from single MicroDucts to 24 pathways allow for rapid deployment of fiber today with permanent pathways in place for future growth.

OSP FuturePath
OSP FuturePath is available in many sizes and configurations for outside plant network installations. The same broad range of MicroDuct options found in the Enterprise products plus a large range of inner duct sizes are available. All FuturePath products come in armored and non-armored designs.

CABLE JETTING EQUIPMENT

Plumett UltimaZ® V-20
Ideal for pushing and jetting Enterprise MicroCables and eABF cables into standard or riser-rated single or bundled FuturePath MicroDuct products. Powered by common electric corded and cordless drills. The UltimaZ can be outfitted with inserts to accept Enterprise MicroDucts (5 mm, 7 mm, 8 mm, 8.5 mm, 12 mm, 12.7 mm OD) and cables ranging from 1 - 4.5 mm OD. Other UltimaZ models and inserts available.

CONNECTIVITY AND TEST EQUIPMENT



Poli-MOD® Patch and Splice Module
The Poli-MOD is an innovative patch and splice module which allows for increased densities in an incremental growth platform. Based on the LGX® 118 footprint, this product is capable of supporting up to 144 patch and splices in a standard 4U panel, resulting in 1296 patch and splices within a seven foot rack (38RU).

Field-Installable Connectors
FASTConnect®: Factory pre-polished, field-installable connectors that completely eliminate the need for hand polishing in the field.
FUSEConnect®: With a factory pre-polished ferrule, its innovative field-termination process eliminates polishing, adhesives and crimping in the field, minimizing the potential for operator error and expensive connector scrap.

Test & Inspection Equipment
AFL's test and inspection products consistently meet and exceed customer needs. AFL delivers exceptional fiber optic test equipment and outstanding service. Our ISO 9001:2008 certification and quality practices ensure you receive excellent products and documentation.

25-YEAR END-TO-END SYSTEM WARRANTY

CERTIFIED LINK INSTALLER

CLi 25 Year Warranty
Standards-based 25-year performance warranty written around performance standards to give your customers peace of mind for the 25-year design life of their fiber installation.

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eABF Solutions

25-year End-to-End Fiber Optic-based Structured Cabling Warranty

AFL offers a 25-year system warranty for eABF projects when installed in accordance with the AFL Certified Link Installer (CLi) program.

CERTIFIED LINK INSTALLER

The CLi program is designed to educate, train and certify select installers to perform system builds that comply with standards-based communications network infrastructure requirements. When a system is designed and installed by an AFL CLi certified contractor, the resulting cabling network is eligible for 25-year performance warranty coverage. The CLi program also supports the same warranty coverage for the eABF blown fiber solution when the installer has taken and passed the additional eABF training class. The ultimate goal of this extensive training and contractor qualification approach is to provide the customer with a high-performance and very robust communications cabling infrastructure that will support current and future high bandwidth network transmission requirements.

CLi Program Highlights

- Cutting-edge technology—better understanding of fiber technology in addition to updates to ensure you remain ahead of your competition.
- Standards-based 25-year performance warranty written around TIA/EIA-568-A, TIA/EIA 568-C.3 and ISO/IEC 11801 performance standards to give your customers peace of mind for the 25-year design life of their fiber installation.
- Fiber training, design and support—become more proficient in designing, installing and testing a fiber system.
- BICSI credits—AFL's CLi training programs are BICSI-certified and qualify for BICSI continuing education credits (CEC).
- Engineering support—an engineer on call to help you better understand any technical issues enabling you to find the solution that best fits your customers' needs and applications.
- Marketing incentives—gain access to the power behind the AFL and Dura-Line brands, including links on our web sites promoting you as a CLi or CLi eABF contractor.
- Rebate program—achieve rebates based on AFL and Dura-Line product purchases from an authorized distributor.


CERTIFICATION

This certificate has been issued to verify

Individual Name

has successfully completed the applicable requirements and is hereby recognized as an authorized

Certified Link Installer

for AFL

eABF

CERTIFIED LINK INSTALLER

Authorizing Official: _____

Certification Date: Month 00, 2013

Certification Number: 00000000

Certification is valid for a period of 18 months from the above date

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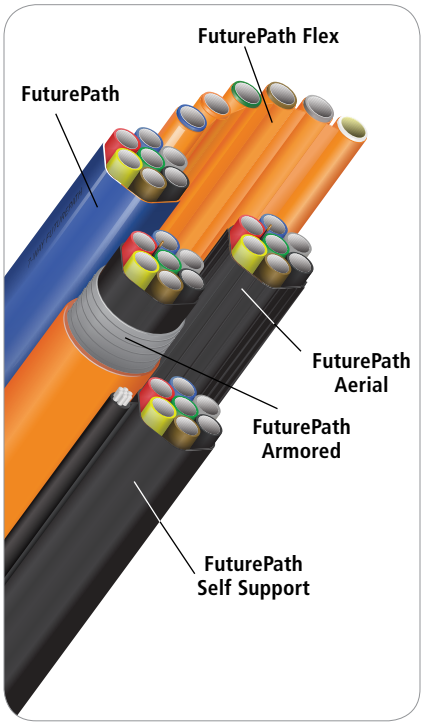

FuturePath Family of MicroDuct Products

Applications

- Campus settings
- Military
- Hospitals
- Industrial
- Government

Enterprise FuturePath Family

MicroTechnology is a forward-thinking, future-oriented technology that you can put in place today. As network infrastructure demands continue to grow, it becomes more important to better utilize the available space in your existing duct systems. Dura-Line MicroDucts and FuturePath allow for controlled growth of your network infrastructure, meeting bandwidth requirements as needed. With the multiple pathways in FuturePath, as your network grows, you will have available pathways without additional construction costs.

FuturePath is available in many sizes and configurations to suit your network installation needs. Manufacturing materials available are HDPE, riser, LSHF, plenum and armored. MicroDuct sizes include 12.7 mm, 8.5 mm and 5 mm to accomodate your fiber requirements. Configurations from single MicroDucts to 24 pathways will allow for rapid deployment of fiber today with permanent pathways in place for future growth.

A comprehensive line of Micro Accessories is available to complete your network. With our Enterprise End-to-End Solutions, Dura-Line offers micro couplers, cross-connect cabinets, splice closures, optical termination hardware and tools.

Versatile

With so many different styles, configurations and sizes of FuturePath available, there is virtually no fiber optic project that could not benefit from the use of FuturePath in both reducing initial construction costs and future proofing the network. FuturePath can be used in every facet of the network build, and by utilizing the different versions it can easily be installed in almost any scenario.

Expansion

With its many configurations, FuturePath can be utilized for expanding your network infrastructure, whether new or retrofit. MicroDuct(s) within FuturePath can be left open to accept a fiber optic cable in the future, for a cost effective way to add bandwidth. Crowded easements, both aerial and buried, can benefit from FuturePath for network expansion while requiring minimal space and disruption. When it comes to expanding your network, minimize expenditures and maximize capacity with FuturePath.

Features

- HDPE, riser, LSHF, plenum and armored options available
- 12.7 mm, 8.5 mm and 5 mm MicroDuct sizes
- Fiber counts up to 144
- Configurations include 24-way, 19-way, 12-way, 7-way, 4-way, 3-way or 2-way or single MicroDucts
- SILICORE™ and SuperSILICORE™ Super Slick Permanent Linings allow for higher speed cable jetting and longer cable installs
- Internal ribs—reduced friction for longer, faster cable installs
- Lightweight and flexible
- Cable jetting equipment also available

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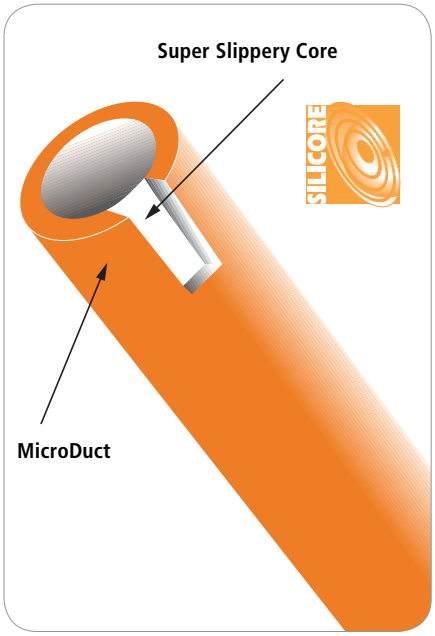


Enterprise FuturePath Family (cont.)

SILICORE™ and SuperSILICORE™

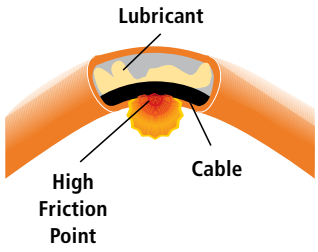
SILICORE or SuperSILICORE are co-extruded on the inside of our tough, durable, FuturePath microducts creating a super slick permanent lining. SILICORE and SuperSILICORE lined ducts allow for higher speed cable jetting and longer cable pulls. The permanent pathway remains for future repairs, replacements or upgrades.

Features—SILICORE™

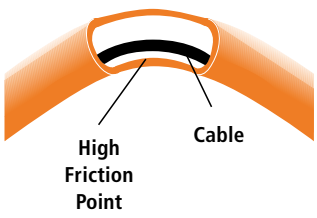
- Standard on Riser, Plenum and LSZH products
- Permanent—remains unchanged for life of MicroDuct
- Easier and faster cable installations
- Compatible with any cable jacket
- Identifiable by it's bright white jacket

Features—SuperSILICORE™

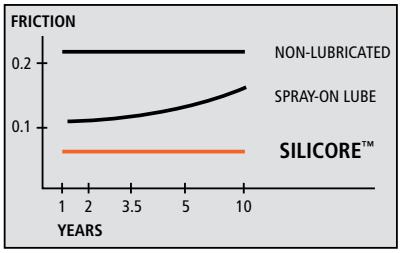
- Standard on all HDPE/OSP products
- Super slippery interior lining
- Permanent—remains unchanged for life of MicroDuct
- Easiest, fastest and farthest cable installs
- Lowest co-efficient of friction
- Compatible with any cable jacket
- Identifiable by it's bright yellow jacket



Heat builds and lubricant dissipates causing direct contact between cable and MicroDuct wall. Installation friction increases causing damage where the cable contacts the MicroDuct.



Cable remains in contact with SILICORE or SuperSILICORE. No burn through. Low coefficient of friction. Easier and longer installations.



Low Coefficient of Friction

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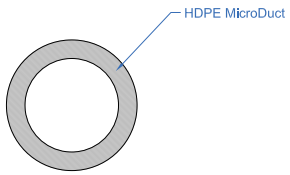
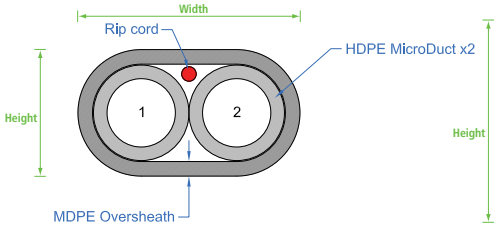
Enterprise FuturePath MicroDuct System

FuturePath is available in many sizes and configurations to suit your network installation needs. Manufacturing materials are HDPE, riser, LSHF, plenum and armored. MicroDuct sizes include 12.7 mm, 8.5 mm and 5 mm to accomodate your fiber requirements. Configurations from single MicroDucts to 24 pathways will allow for rapid deployment of fiber today with permanent pathways in place for future growth.

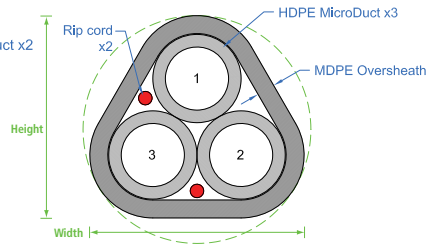
Configurations



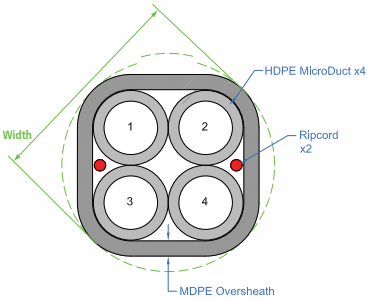
Individual



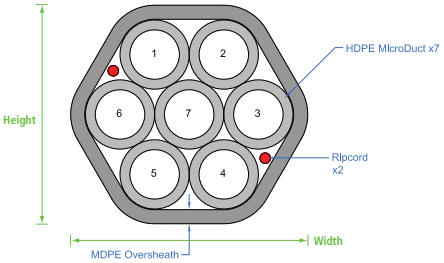
2-Way



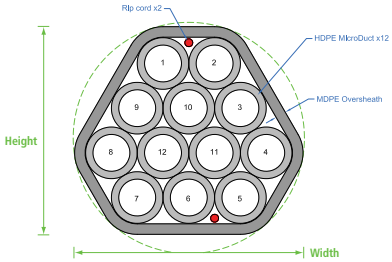
3-Way



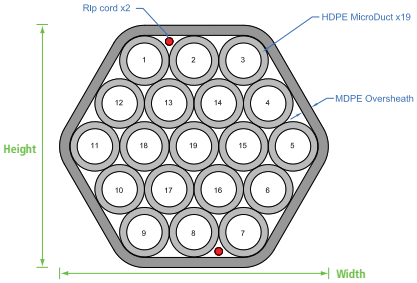
4-Way



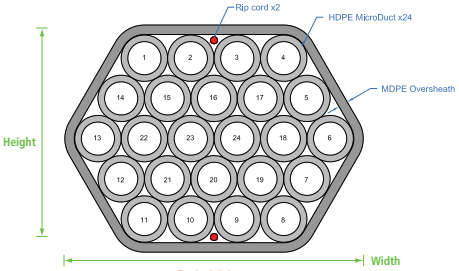
7-Way



12-Way



19-Way



24-Way

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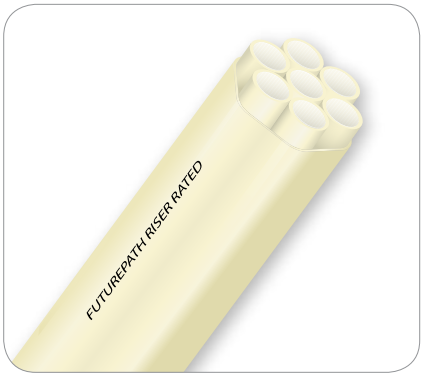
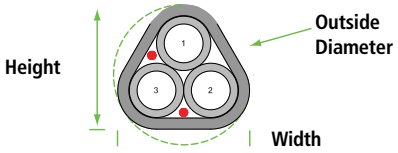
Enterprise FuturePath MicroDuct System—12.7 mm/10 mm



FuturePath 7-Way Configuration



Outside Dimensions: Height x Width

Outside Diameter: Used to Calculate Fill Ratios

MicroDuct Specifications

PARAMETER	VALUE
OD	12.7 mm ± 0.10 (0.500' ± 0.004")
Wall Min.	1.30 mm (0.051")
Wall Max.	1.40 mm (0.055")
ID Min.	9.80 mm (0.386")
Materials	HDPE, Riser, Plenum, LSHF, Armored
Fiber Count	24, 36, 48, 72, 96, 144 strand MicroCable SM, MM
Shipping Length (in feet per reel)	1,000 2,500 5,000 6,000 Custom lengths available

FuturePath Mechanical Specifications

	CONFIGURATION			
PARAMETER	2-WAY	3-WAY	4-WAY	7-WAY
Outside Dimensions HxW (inches)	0.60/1.10	1.08/1.14	1.14/1.35	1.51/1.64
Outside Dimensions HxW (mm)	15.3/28.0	27.4/29.1	29.1/34.3	38.4/41.8
Outside Diameter (inches)	1.10	1.22	1.35	1.64
Outside Diameter (mm)	28.0	31.0	34.3	41.8
Over-Sheath Thickness	0.050"	0.070"	0.070"	0.070"
HDPE Over-Sheath Color	Orange	Orange	Orange	Orange
Rated Over-Sheath Color	Natural	Natural	Natural	Natural
MicroDuct Color	Natural	Natural	Natural	Natural
HDPE Locate Wire (optional)	20 ga.	20 ga.	20 ga.	20 ga.
Rated Locate Wire	No	No	No	No
Ripcords	2	2	2	2
Bend Radius Supported	6"	11"	12"	15"
Bend Radius Un-Supported	12"	22"	24"	30"

Ordering Information

	DURA-LINE NO.				
DESCRIPTION	1000 FT	2500 FT	3250 FT	5000 FT	6000 FT
12.7 mm x 10 mm 1-way HDPE					
12.7 mm x 10 mm 2-way HDPE	10008852	10008853	—	10008854	—
12.7 mm x 10 mm 3-way HDPE	10008855	10008856	—	10008857	—
12.7 mm x 10 mm 4-way HDPE	10004748	10008858	—	10007545	—
12.7 mm x 10 mm 7-way HDPE	10004811	10008859	—	—	10004813
12.7 mm x 10 mm 1-way Riser	10008757	—	—	—	—
12.7 mm x 10 mm 2-way Riser	10004589	10008951	—	10008952	—
12.7 mm x 10 mm 3-way Riser	10004604	10008953	—	10008954	—
12.7 mm x 10 mm 4-way Riser	10004606	10008955	—	10008956	—
12.7 mm x 10 mm 7-way Riser	10004608	10004609	—	—	10004610
12.7 mm x 10 mm 1-way LSHF					
12.7 mm x 10 mm 2-way LSHF	10008889	10008890	—	10008891	—
12.7 mm x 10 mm 3-way LSHF	10008892	10008893	—	10008894	—
12.7 mm x 10 mm 4-way LSHF	10008895	10008896	—	10008897	—
12.7 mm x 10 mm 7-way LSHF	10008898	10008899	—	—	10008900
12.7 mm x 10.2 mm 1-way Plenum	10007408	—	—	—	—
12.7 mm x 10.2 mm 2-way Plenum	10008946	—	—	—	—
12.7 mm x 10.2 mm 3-way Plenum	10008947	—	—	—	—
12.7 mm x 10.2 mm 4-way Plenum	10008948	—	—	—	—
12.7 mm x 10.2 mm 7-way Plenum	10008949	—	—	—	—
12.7 mm x 10 mm 4-way Armored	—	—	—	10004891	—
12.7 mm x 10 mm 7-way Armored	—	—	10003729	—	—

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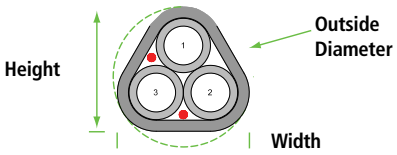
Enterprise FuturePath MicroDuct System—8.5 mm/6 mm

FuturePath 24-Way Configuration

MicroDuct Specifications

PARAMETER	VALUE
OD	8.5 mm ± 0.10 (0.335" ± 0.004")
Wall Min.	1.14mm (0.045")
Wall Max.	1.24mm (0.049")
ID Min.	5.92mm (0.233")
Materials	HDPE, Riser, Plenum, LSHF, Armored
Fiber Count	6, 12, 24, 48, 72, 96 strand MicroCable SM, MM
Shipping Length (in feet per reel)	1,000 2,500 4,000 5,000 6,000 Custom lengths available



Outside Dimensions: Height x Width

Outside Diameter: Used to Calculate Fill Ratios

FuturePath Mechanical Specifications

	CONFIGURATION						
PARAMETER	2-WAY	3-WAY	4-WAY	7-WAY	12-WAY	19-WAY	24-WAY
Outside Dimensions HxW (inches)	0.44/0.77	0.75/0.79	0.79/0.93	1.04/1.13	1.33/1.46	1.62/1.80	1.62/2.13
Outside Dimensions HxW (mm)	11.2/19.7	19.0/20.2	20.2/23.7	26.4/28.7	33.8/37.2	41.1/45.7	41.1/54.2
Outside Diameter (inches)	0.77	0.85	0.93	1.13	1.48	1.80	2.13
Outside Diameter (mm)	19.7	21.5	23.7	28.7	37.7	45.7	54.2
Over-Sheath Thickness	0.050"	0.060"	0.060"	0.060"	0.060"	0.060"	0.060"
HDPE Over-Sheath Color	Orange	Orange	Orange	Orange	Orange	Orange	Orange
Rated Over-Sheath Color	Natural	Natural	Natural	Natural	Natural	Natural	Natural
MicroDuct	Natural	Natural	Natural	Natural	Natural	Natural	Natural
HDPE Locate Wire (optional)	20 ga.	20 ga.	20 ga.	20 ga.	20 ga.	20 ga.	20 ga.
Rated Locate Wire	No	No	No	No	No	No	No
Ripcords	2	2	2	2	2	2	2
Bend Radius Supported	5"	8"	8"	11"	14"	16"	16"
Bend Radius Un-Supported	10"	16"	16"	22"	28"	32"	32"

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Enterprise FuturePath MicroDuct System—8.5 mm/6 mm (cont.)

Ordering Information

DESCRIPTION	DURA-LINE NO.				
	1000 FT	2500 FT	4000 FT	5000 FT	6000 FT
8.5 mm x 6 mm 1-way HDPE	10005861	—	—	—	—
8.5 mm x 6 mm 2-way HDPE	10004625	10008884	—	10004624	—
8.5 mm x 6 mm 3-way HDPE	10004654	10008885	—	10008886	—
8.5 mm x 6 mm 4-way HDPE	10004655	10004656	—	10008887	—
8.5 mm x 6 mm 7-way HDPE	10004659	10004874	—	—	10008888
8.5 mm x 6 mm 12-way HDPE	10004662	10004663	—	—	10004664
8.5 mm x 6 mm 19-way HDPE	10004665	10008882	—	—	10006770
8.5 mm x 6 mm 24-way HDPE	10004668	10008883	—	—	10004669
8.5 mm x 6 mm 1-way Riser	10008758	—	—	—	—
8.5 mm x 6 mm 2-way Riser	10004866	10004586	—	10008986	—
8.5 mm x 6 mm 3-way Riser	10008987	10008988	—	10008989	—
8.5 mm x 6 mm 4-way Riser	10004591	10004867	—	10008990	—
8.5 mm x 6 mm 7-way Riser	10004592	10008992	—	—	10004594
8.5 mm x 6 mm 12-way Riser	10004596	10008979	—	—	10008980
8.5 mm x 6 mm 19-way Riser	10004599	10008981	—	—	10008982
8.5 mm x 6 mm 24-way Riser	10004601	10008984	—	—	10008985
8.5 mm x 6 mm 1-way LSHF					
8.5 mm x 6 mm 2-way LSHF	10008934	10008935	—	10008936	—
8.5 mm x 6 mm 3-way LSHF	10008937	10008938	—	10008939	—
8.5 mm x 6 mm 4-way LSHF	10008940	10008941	—	10008942	—
8.5 mm x 6 mm 7-way LSHF	10008943	10008944	—	—	10008945
8.5 mm x 6 mm 12-way LSHF	10008925	10008926	—	—	10008927
8.5 mm x 6 mm 19-way LSHF	10008928	10008929	—	—	10008930
8.5 mm x 6 mm 24-way LSHF	10008931	10008932	—	—	10008933
8.5 mm x 6.7 mm 1-way Plenum	10008755	—	—	—	—
8.5 mm x 6.7 mm 2-way Plenum	10004851	—	—	—	—
8.5 mm x 6.7 mm 3-way Plenum	10008950	—	—	—	—
8.5 mm x 6.7 mm 4-way Plenum	10004853	—	—	—	—
8.5 mm x 6.7 mm 7-way Plenum	10004856	—	—	—	10009153
8.5 mm x 6.7 mm 12-way Plenum	10004857	—	—	—	—
8.5 mm x 6.7 mm 19-way Plenum	10004858	—	—	—	—
8.5 mm x 6.7 mm 24-way Plenum	10004859	—	—	—	—
8.5 mm x 6 mm 4-way Armored	—	—	10004888	—	—
8.5 mm x 6 mm 7-way Armored	—	—	10004889	—	—
8.5 mm x 6 mm 19-way Armored	—	—	10004890	—	—

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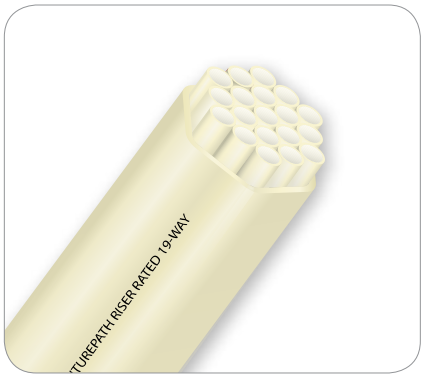
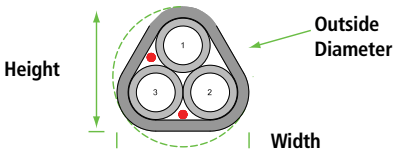
Enterprise FuturePath MicroDuct System—5 mm/3.5 mm



FuturePath 24-Way Configuration

MicroDuct Specifications

PARAMETER	VALUE
OD	5 mm ± 0.10 (0.197" ± 0.004")
Wall Min.	0.66 mm (0.026")
Wall Max.	0.76 mm (0.030")
ID Min.	3.38 mm (0.133")
Materials	HDPE, Riser, Plenum, LSHF
Fiber Count	2, 6, 12 Fiber Unit SM, MM
Shipping Length (in feet per reel)	1,000 2,500 4,000 5,000 6,000 Custom lengths available



Outside Dimensions: Height x Width

Outside Diameter: Used to Calculate Fill Ratios

FuturePath Mechanical Specifications

	CONFIGURATION						
PARAMETER	2-WAY	3-WAY	4-WAY	7-WAY	12-WAY	19-WAY	24-WAY
Outside Dimensions HxW (inches)	0.26/0.46	0.45/0.48	0.48/0.56	0.62/0.68	0.79/0.87	0.96/1.07	0.96/1.27
Outside Dimensions HxW (mm)	6.6/11.6	11.5/12.1	12.1/14.2	15.8/17.1	20.1/22.1	24.5/27.2	24.5/32.2
Outside Diameter (inches)	0.46	0.51	0.56	0.68	0.88	1.07	1.27
Outside Diameter (mm)	11.6	12.9	14.2	17.1	22.4	27.2	32.2
Over-Sheath Thickness	0.030"	0.040"	0.040"	0.040"	0.040"	0.040"	0.040"
HDPE Over-Sheath Color	Orange	Orange	Orange	Orange	Orange	Orange	Orange
Rated Over-Sheath Color	Natural	Natural	Natural	Natural	Natural	Natural	Natural
MicroDuct	Natural	Natural	Natural	Natural	Natural	Natural	Natural
HDPE Locate Wire (optional)	20 ga.	20 ga.	20 ga.	20 ga.	20 ga.	20 ga.	20 ga.
Rated Locate Wire	No	No	No	No	No	No	No
Ripcords	2	2	2	2	2	2	2
Bend Radius Supported	3"	5"	5"	6"	8"	10"	10"
Bend Radius Un-Supported	6"	10"	10"	12"	16"	20"	20"

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Enterprise FuturePath MicroDuct System—5 mm/3.5 mm (cont.)

Ordering Information

DESCRIPTION	DURA-LINE NO.			
	1000 FT	2500 FT	5000 FT	6000 FT
5 mm x 3.5 mm 1-way HDPE	10005859	—		—
5 mm x 3.5 mm 2-way HDPE	10008870	10008871	10008872	—
5 mm x 3.5 mm 3-way HDPE	10008873	10008874	10008875	—
5 mm x 3.5 mm 4-way HDPE	10006726	10008876	10008877	—
5 mm x 3.5 mm 7-way HDPE	10008878	10008879	10008880	—
5 mm x 3.5 mm 12-way HDPE	10004618	10008860	—	10008861
5 mm x 3.5 mm 19-way HDPE	10008862	10008863	—	10008864
5 mm x 3.5 mm 24-way HDPE	10008865	10008866	—	10004619
5 mm x 3.5 mm 1-way Riser				
5 mm x 3.5 mm 2-way Riser	10008969	10008970	10004584	—
5 mm x 3.5 mm 3-way Riser	10008971	10008972	10008973	—
5 mm x 3.5 mm 4-way Riser	10008974	10008975	10008976	—
5 mm x 3.5 mm 7-way Riser	10004585	10008977	10008978	—
5 mm x 3.5 mm 12-way Riser	10008957	10008958	—	10008959
5 mm x 3.5 mm 19-way Riser	10008960	10008961	—	10008962
5 mm x 3.5 mm 24-way Riser	10008963	10008964	—	10008965
5 mm x 3.5 mm 1-way LSHF				
5 mm x 3.5 mm 2-way LSHF	10008913	10008914	10008915	—
5 mm x 3.5 mm 3-way LSHF	10008916	10008917	10008918	—
5 mm x 3.5 mm 4-way LSHF	10008919	10008920	10008921	—
5 mm x 3.5 mm 7-way LSHF	10008922	10008923	10008924	—
5 mm x 3.5 mm 12-way LSHF	10008901	10008902	—	10008903
5 mm x 3.5 mm 19-way LSHF	10008904	10008905	—	10008906
5 mm x 3.5 mm 24-way LSHF	10008907	10008908	—	10008909
5 mm x 3.5 mm 1-way Plenum	10005363	—	—	—
5 mm x 3.5 mm 2-way Plenum	10008746	—	—	—
5 mm x 3.5 mm 3-way Plenum	10008747	—	—	—
5 mm x 3.5 mm 4-way Plenum	10008748	—	—	—
5 mm x 3.5 mm 7-way Plenum	10008749	—	—	—
5 mm x 3.5 mm 12-way Plenum	10008750	—	—	—
5 mm x 3.5 mm 19-way Plenum	10008751	—	—	—
5 mm x 3.5 mm 24-way Plenum	10008752	—	—	—

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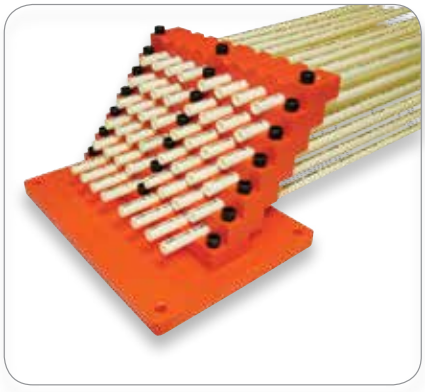
MicroDuct Distribution Box

The MicroDuct Distribution Box or MDB is a convenient indoor junction box where multiple MicroDucts can be joined together. For example, this would be used to drop a tube to an adjacent floor, while allowing other MicroDucts to pass thru to the next MDB. The box is available in two basic sizes as noted below, and is a NEMA 12, continuous hinge wall mount type box. The box is used in conjunction with the ETA and DETA enclosure connectors.

Ordering Information

DURA-LINE NO.	CONFIGURATION	DESCRIPTION
20002884	16 x 14 x 8 NEMA 12	Box 16x14x8 NEMA 12 JIC 1 Door Continuous Hinge Wall Mount — MDB
20003021	20 x20 x 7 NEMA 12	Box 20x20x7 NEMA 12 JIC 1 Door Continuous Hinge Wall Mount — MDB



MicroDuct Organizer

The MicroDuct organizer is designed for neat and orderly termination of MicroDucts. It requires only a minimum amount of space to mount and is a modular system. For the first 1-8 MicroDucts, order one Mounting Plate (includes base bracket) and one Mounting Bracket. For additional expansion (9 or more MicroDucts), only the Mounting Brackets are required.

Ordering Information

DURA-LINE NO.	DESCRIPTION
20002120	8.5 mm MicroDuct Wall Mounting Plate (includes wall plate, base bracket and 3 screws; top mounting bracket not included)
20001719	8.5 mm MicroDuct Mounting Bracket with 3 screws (each bracket secures a row of 8 MicroDucts, with 3 screws)
20002121	12.7 mm MicroDuct Wall Mounting Plate (includes wall plate, base bracket and 3 screws; top mounting bracket not included)
20001929	12.7 mm MicroDuct Mounting Bracket with 3 screws (each bracket secures a row of 8 MicroDucts, with 3 screws)

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UltimaZ V-20 Model

MicroJet PR-196 Model

MiniJet Pneumatic-Drive Model

Cable Jetting Equipment

Plumett UltimaZ V-20

The UltimaZ® V-20 is ideal for pushing and jetting Enterprise MicroCables and ABF cables into standard or riser-rated single, or bundled FuturePath MicroDuct products. It is powered by common electric corded and cordless drills. The UltimaZ can be outfitted with inserts to accept Enterprise MicroDucts (5 mm, 7 mm, 8 mm, 8.5 mm, 12 mm, 12.7 mm OD) and cables ranging from 1 - 4.5 mm OD. Other UltimaZ models and inserts available.

Plumett MicroJet

The MicroJet® PR-196 is ideal for pushing and jetting Enterprise MicroCables and ABF cables into standard or riser-rated single, or bundled FuturePath MicroDuct products. The MicroJet can be outfitted with inserts to accept typical Enterprise MicroDucts (5 mm, 7 mm, 8 mm, 8.5 mm, 12 mm, 12.7 mm OD) and cables ranging from 1 - 8.5 mm OD. Other MicroJet models and inserts available.

Plumett MiniJet

The MiniJet® is ideal for Enterprise applications where larger micro or conventional optical fiber cables are being placed in ducts up to 1.66" (42 mm) OD, or FuturePath and single MicroDuct sections, such as feeder routes between structures in a campus or MDU environment. The MiniJet is a highly versatile jetting machine that is available with a pneumatic drive system.

Specifications

PARAMETER	VALUE		
	PLUMETT ULTIMAZ V-20	PLUMETT MICROJET PR-196	PLUMETT MINIJET
Cable OD	1 mm - 4.5 mm (0.03" - 0.18")	1 mm - 8.5 mm (0.20" - 0.50")	4.0 mm - 16. 0 mm (0.16" - 0.63")
Duct OD	5 mm - 12.7 mm (0.20" - 0.47")	5 mm - 16.0 mm (0.20" - 0.63")	7.0 mm - 42.0 mm (0.28" - 1.65")
Operation	Corded or Cordless Drill Output torque exceeding 0.3 Nm (2.6 inch-pounds) at 250 - 500 RPM	Pneumatic	Pneumatic

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Cable Jetting Equipment

Ordering Information

PRODUCT TYPE	DESCRIPTION	DURA-LINE NO.
ULTIMAZ V20-01 SYSTEM	Kit includes: ULTIMAZ Core, Variable Drive, Counter, Air Connector, Cartridge, Carrying Case, Tools and Spares	20001702
ORDER SEPARATELY		
Cable/Duct Insert	Duct Insert Set 8.5 mm/12.7 mm	20001618
Duct Seal	O-Rings for 8 mm OD Duct	20001684
Duct Seal	O-Rings for 12 mm OD Duct	20001678
Cable Seal	Lip Seal Set 3.4-4.3 mm Cable	20001636
Cable Seal	Lip Seal Set for 2.4-3.3mm Cable	20001635
Wheel	Pressure Wheel PU (Plastic)	20001691
Wheel	Drive Wheel 3.6-4.0 mm Cable	20001573
MICROJET PR-196 SYSTEM	Kit includes: PR-196 Unit, Counter, Air Connector, Air Controls, Carrying Case, Tools and Spares	20001659
ORDER SEPARATELY		
Duct Insert	Duct Insert Set OD 8.5 mm (3.1-5.6 mm Cable)	20001599
Duct Insert	Duct Insert Set OD 12.7 mm (3.0-8.0mm Cable)	20001587
Cable Insert	Cable Insert Set Dia. 4-8 mm	20001565
Duct Seal	Duct O-Ring for 8 mm	20001668
Duct Seal	Duct O-Ring for 12 mm	20001665
Cable Seal	Lip Seal Set 3.4-4.3 mm	20001888
Wheel	Steel Tire with U-Groove 3.1-3.5 mm Cable	20001878
Wheel	Steel Tire with U-Groove 3.6-4.0 mm Cable	20001890
Aux. Duct Clamp	Duct Clamp Accessory—External	20001582
MINIJET P-01 SYSTEM	Kit includes: Pneumatic-powered Tractor Drive, Counter, Air Controls, Accessory Case, Storage Box, Tools and Spares	20001661
ORDER SEPARATELY		
Duct Insert	Duct Insert Set OD 12.7 mm	20001586
Cable Insert	Cable Insert Set Dia. 6-8 mm	20001566
Cable Seal	Lip Seal Set for Cable Dia. 7.0-7.5 mm	20001640
Cable Seal	Lip Seal Set for Cable Dia. 7.5-8.0 mm	20001641

Additional Jetting Accessories

PRODUCT TYPE	DESCRIPTION	DURA-LINE NO.
Lube Sponge	Spreaders 7 mm for 6 mm ID, 20/PK	20001938
Lube Sponge	Spreaders 12 mm for 10mm ID, 20/PK	20001697
Lubricant	MicroJet Lube, 8 oz. Bottle	20001927
Cable Caps/Tips	Cable Caps 3.5 mm, 10/PK	20001549
Cable Caps/Tips	Cable Caps 4.0 mm, 10/PK	20001554


Spreaders

MicroJet Lube


Cable Cap

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Couplers, End Caps and Plugs

Bulkhead Fitting

Gas Block Connector

MicroDuct Round Cutter

MicroDuct Straight Cutter

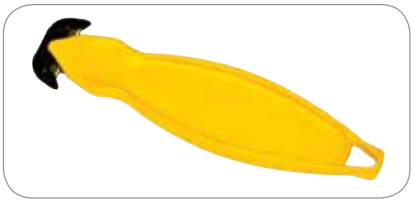
Ratchet Cutter

Accessories

A comprehensive line of Micro Accessories are available to complete your network. With our Enterprise End-to-End Solutions, we offer Micro Couplers, Cross-Connect Cabinets, Splice Closures, Optical Termination Hardware and Tools.

Ordering Information—Accessories

PRODUCT TYPE	DESCRIPTION	DURA-LINE NO.
COUPLERS		
12.7 mm x 12.7 mm	Straight Coupler	20001832
8.5 mm x 8.5 mm	Straight Coupler	20001834
5 mm x 5 mm	Straight Coupler	20001462
TRANSITIONS		
8.5 mm x 8 mm	Reducer Coupler	20001884
8.5 mm x 5 mm	Reducer Coupler	20001883
8 mm x 5 mm	Reducer Coupler	20003016
10 mm x 8.5 mm	Reducer Coupler	20001881
END CAPS		
12.7 mm	End Cap	20001482
8.5 mm	End Cap	20001819
5.0 mm	End Cap	20002863
PLUGS		
12.7 mm	End Plug	20002828
8.5 mm	End Plug (for HDPE and Riser Only)	20001523
BULKHEAD FITTINGS		
12.7 mm	12.7 mm Bulkhead Connector with Lock Ring	20003017
8.5 mm	8.5 mm Bulkhead Connector with Lock Ring	20001712
GAS BLOCK CONNECTORS		
8.5 mm	8.5/6 mm Gas Block Connector for cable 3.3-4.0 mm	20002104
5 mm	5/3.5 mm Gas Block Connector for cable 0.9-2.5 mm	20001801
TOOLS		
Cutter 8-19 mm	MicroDuct Straight Cutter 8-19 mm OD	20001856
Cutter Round	Round MicroDuct Cutter	20001745
Cutter Ratchet	2 in. Ratchet Cutter	20001803
Cutter Ratchet 1-1/2"	1-1/2" Ratchet Cutter	20001923
Slitter	Slitter Longitudinal	20001937
Slitter	Disposable Slitter	20001876
Unlocking Tool	Tool MicroDuct Coupler Collet Unlocking Tool	20001866
CLOSE-DOWN ASSEMBLY		
8.5 mm	CO Close-Down Assembly, 8.5 mm	20003018



Disposable Slitter

Close-Down Assembly

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Accessories (cont.)

Ordering Information—Connectors

PRODUCT TYPE	DESCRIPTION	DURA-LINE NO.
FUTUREPATH ENCLOSURE CONNECTORS		
5/3.5 X 1	Enterprise - FuturePath Enclosure Connector D 5 mm x 1	20003039
5/3.5 X 2	Enterprise - FuturePath Enclosure Connector D 5 mm x 2	20003040
5/3.5 X 3	Enterprise - FuturePath Enclosure Connector D 5 mm x 3	20003041
5/3.5 X 4	Enterprise - FuturePath Enclosure Connector D 5 mm x 4	20003042
5/3.5 X 7	Enterprise - FuturePath Enclosure Connector D 5 mm x 7	20003043
5/3.5 X 12	Enterprise - FuturePath Enclosure Connector D 5 mm x 12	20003044
5/3.5 X 19	Enterprise - FuturePath Enclosure Connector D 5 mm x 19	20003045
5/3.5 X 24	Enterprise - FuturePath Enclosure Connector D 5 mm x 24	20003046
5/3.5 X 25	Enterprise - FuturePath Enclosure Connector D 5 mm x 25	20003047
8.5/6 X 1	Enterprise - FuturePath Enclosure Connector D 8. 5 mm x 1	20003048
8.5/6 X 2	Enterprise - FuturePath Enclosure Connector D 8. 5 mm x 2	20001915
8.5/6 X 3	Enterprise - FuturePath Enclosure Connector D 8.5 mm x 3	20003049
8.5/6 X 4	Enterprise - FuturePath Enclosure Connector D 8.5 mm x 4	20001916
8.5/6 X 7	Enterprise - FuturePath Enclosure Connector D 8.5 mm x 7	20001917
8.5/6 X 12	Enterprise - FuturePath Enclosure Connector D 8.5 mm x 12	20001918
8.5/6 X 19	Enterprise - FuturePath Enclosure Connector D 8.5 mm x 19	20001919
8.5/6 X 24	Enterprise - FuturePath Enclosure Connector D 8.5 mm x 24	20001920
12.7/10 X 1	Enterprise - FuturePath Enclosure Connector D 12.7 mm x 1	20003050
12.7/10 X 2	Enterprise - FuturePath Enclosure Connector D 12.7 mm x 2	20003051
12.7/10 X 3	Enterprise - FuturePath Enclosure Connector D 12.7 mm x 3	20003052
12.7/10 X 4	Enterprise - FuturePath Enclosure Connector D 12.7 mm x 4	20003053
12.7/10 X 7	Enterprise - FuturePath Enclosure Connector D 12.7 mm x 7	20003054

FuturePath Enclosure Connector

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Enterprise Blown Fiber (eABF) Cable

eABF cables are designed by AFL to offer the most rugged and reliable enterprise-based blown fiber solution in the market today. The patent pending cable design combines a light-weight, high-drag jacketing system that allows the cable to be blown long distances. The cable series also features additional attributes that set this product above and beyond traditional blown fiber cables. These enhanced features include mechanical strengthening that permits the cable to comply with industry-standard premise interconnect specifications. In addition, the eABF cable series feature flame-resistance characteristics which result in stand-alone riser and plenum rated options suitable for routing outside of the micro-duct system. Because of these mechanical, environmental and optical qualifications, eABF cables can also be installed in third-party, flame-rated duct and pathway systems.

Applications

- Designed for Data Center Interconnect
- Horizontal Distribution
- Backbone Distribution
- Indoor/outdoor optical circuits
- Low-cost fiber upgrade migration strategies

Features and Benefits

FEATURES	BENEFITS
Flame rating options include: • Plenum OFNP per NFPA 262 OFNP • Riser OFNR per NFPA NEC 2005 Art 770.51(B)	Complies with NFPA/NEC build codes for fire resistance. Can be installed in eABF duct or third-party rated duct systems.
GR-20 Water-blocking	Reduces risk of moisture migration
GR-409-CORE compliant	Standards compliant stand-alone interconnect cable
Complete range of single-mode and multimode fibers	Supports 10G, 40G and 100G Ethernet architectures
Aramid-strengthened cable core	Robust tensile load bearing capable
OD compatible with 6 mm ID Micro-ducts	Higher density fiber pathway solutions
96-Fiber count fits into 8.5 mm x 6 mm Micro-duct	Up to 2,304 fibers per 24-way FuturePath Duct

Specifications—eABF Optical Fiber

FIBER TYPE	ISO DESIGNATION	MAXIMUM ATTENUATION (DB/KM)			OVERFILL LAUNCH MIN. BANDWIDTH (MHZ-KM)		EMBC (MHZ-KM)	GIGABIT ETHERNET MIN. LINK DISTANCE (METERS)		10 GIGABIT ETHERNET MIN. LINK DISTANCE (METERS)	
		850 NM	1300 NM	1550 NM	850 NM	1300 NM		850 NM	1300 NM	850 NM	1300 NM
62.5/125	OM1	3.5	1.2	N/A	200	600	N/A	300	550	32	N/A
50/125	OM2 BIF	3.5	1.2	N/A	500	500	N/A	600	600	82	N/A
50/125	OM3 BIF	3.5	1.2	N/A	1500	500	2000	1000	550	300	N/A
50/125	OM4 BIF	3.5	1.2	N/A	3500	550	4700	1040	550	550	N/A
SM	OS2 (G.652D/ G.657.A1)	N/A	0.4	0.4	N/A	N/A	N/A	N/A	5000	N/A	10000

BIF = Bend Insensitive Fiber

Estimated Installation Distances

OD/ID	DISTANCE (FT)
V-20 Install Distance—eABF 3.6 mm (6-24 Fibers)	
8.5 x 6	>4,500
V-20 Install Distance—eABF 3.8 mm (48 Fibers)	
8.5 x 6	>4,000
V-20 Install Distance—eABF 4.5 mm (96 Fibers)	
8.5 x 6	>3,000

Standard eABF Cable Packaging

PACKAGE TYPE	STD P-U (FT)	PACKAGE WEIGHT	
		WEIGHT REEL	REEL + FULL LENGTH P-U
30 x 15 x 12	15,000	34 (15.5)	208 (311)
Reel-in-Box	2,000	10 (4.5)	23 (34)

Temperature

OPERATING/INSTALLATION*	-40°C to + 70°C
STORAGE	-40°C to +70°C
INSTALL	0°C to + 70°C

*Not intended for OSP access during operational use.

continued

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Specifications are subject to change without notice.

Enterprise Blown Fiber (eABF) Cable (cont.)

Mechanical Data—Riser (OFNR)

DURA-LINE NO.	DESCRIPTION	PRODUCT TYPE	FIBER COUNT	NOMINAL DIAMETER	WEIGHT	MAXIMUM TENSILE LOAD		MINIMUM BEND RADIUS	
				INCHES (MM)	LBS/1,000 FT (KG/KM)	SHORT TERM LBS (N)	LONG TERM LBS (N)	SHORT TERM INCHES MM)	LONG TERM INCHES (MM)
20002960	MicroCable Riser ENT-A SM-6	SMF	6	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002866	MicroCable Riser ENT-A SM-12	SMF	12	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20000729	MicroCable Riser ENT-A SM-24	SMF	24	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20000730	MicroCable Riser ENT-A SM-48	SMF	48	0.15 (3.8)	5.9 (8.8)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20003201	MicroCable Riser ENT-A SM-72	SMF	72	0.18 (4.5)	7.5 (10)	22 (100)	7 (30)	3.6 (90)	1.8 (45)
NEW 20003630	MicroCable Riser ENT-A SM-96	SMF	96	0.18 (4.5)	7.5 (10)	22 (100)	7 (30)	3.6 (90)	1.8 (45)
20002961	MicroCable Riser ENT-A OM1-6	OM1 (62.5/125)	6	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002848	MicroCable Riser ENT-A OM1-12	OM1 (62.5/125)	12	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002962	MicroCable Riser ENT-A OM1-24	OM1 (62.5/125)	24	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002963	MicroCable Riser ENT-A OM1-48	OM1 (62.5/125)	48	0.15 (3.8)	5.9 (8.8)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20003333	MicroCable Riser ENT-A OM1-72	OM1 (62.5/125)	72	0.18 (4.5)	7.5 (10)	22 (100)	7 (30)	3.6 (90)	1.8 (45)
20002964	MicroCable Riser ENT-A OM2-6	OM2 (50/125)	6	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002965	MicroCable Riser ENT-A OM2-12	OM2 (50/125)	12	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002966	MicroCable Riser ENT-A OM2-24	OM2 (50/125)	24	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002967	MicroCable Riser ENT-A OM2-48	OM2 (50/125)	48	0.15 (3.8)	5.9 (8.8)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20003334	MicroCable Riser ENT-A OM2-72	OM2 (50/125)	72	0.18 (4.5)	7.5 (10)	22 (100)	7 (30)	3.6 (90)	1.8 (45)
20002968	MicroCable Riser ENT-A OM3-6	OM3 (50/125)	6	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002969	MicroCable Riser ENT-A OM3-12	OM3 (50/125)	12	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20000695	MicroCable Riser ENT-A OM3-24	OM3 (50/125)	24	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002883	MicroCable Riser ENT-A OM3-48	OM3 (50/125)	48	0.15 (3.8)	5.9 (8.8)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20003335	MicroCable Riser ENT-A OM3-72	OM3 (50/125)	72	0.18 (4.5)	7.5 (10)	22 (100)	7 (30)	3.6 (90)	1.8 (45)
20002970	MicroCable Riser ENT-A OM4-6	OM4 (50/125)	6	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002971	MicroCable Riser ENT-A OM4-12	OM4 (50/125)	12	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002972	MicroCable Riser ENT-A OM4-24	OM4 (50/125)	24	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20000696	MicroCable Riser ENT-A OM4-48	OM4 (50/125)	48	0.15 (3.8)	5.9 (8.8)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20003272	MicroCable Riser ENT-A OM4-72	OM4 (50/125)	72	0.18 (4.5)	7.5 (10)	22 (100)	7 (30)	3.6 (90)	1.8 (45)

BIF = Bend Insensitive Fiber

continued

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Enterprise Blown Fiber (eABF) Cable (cont.)

Mechanical Data—Plenum (OFNP)

DURA-LINE NO.	DESCRIPTION	PRODUCT TYPE	FIBER COUNT	NOMINAL DIAMETER	WEIGHT	MAXIMUM TENSILE LOAD		MINIMUM BEND RADIUS	
				INCHES (MM)	LBS/1,000 FT (KG/KM)	SHORT TERM LBS (N)	LONG TERM LBS (N)	SHORT TERM INCHES MM)	LONG TERM INCHES (MM)
20002973	MicroCable Plenum ENT-A SM-6	SMF	6	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002974	MicroCable Plenum ENT-A SM-12	SMF	12	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002975	MicroCable Plenum ENT-A SM-24	SMF	24	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20001451	MicroCable Plenum ENT-A SM-48	SMF	48	0.15 (3.8)	5.9 (8.8)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20003337	MicroCable Plenum ENT-A SM-72	SMF	72	0.18 (4.5)	7.5 (10)	22 (100)	7 (30)	3.6 (90)	1.8 (45)
20003631	MicroCable Plenum ENT-A SM-96	SMF	96	0.18 (4.5)	7.5 (10)	22 (100)	7 (30)	3.6 (90)	1.8 (45)
20002976	MicroCable Plenum ENT-A OM1-6	OM1 (62.5/125)	6	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002977	MicroCable Plenum ENT-A OM1-12	OM1 (62.5/125)	12	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002978	MicroCable Plenum ENT-A OM1-24	OM1 (62.5/125)	24	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002979	MicroCable Plenum ENT-A OM1-48	OM1 (62.5/125)	48	0.15 (3.8)	5.9 (8.8)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20003338	MicroCable Plenum ENT-A OM1-72	OM1 (62.5/125)	72	0.18 (4.5)	7.5 (10)	22 (100)	7 (30)	3.6 (90)	1.8 (45)
20002980	MicroCable Plenum ENT-A OM2-6	OM2 (50/125)	6	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002981	MicroCable Plenum ENT-A OM2-12	OM2 (50/125)	12	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002982	MicroCable Plenum ENT-A OM2-24	OM2 (50/125)	24	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002983	MicroCable Plenum ENT-A OM2-48	OM2 (50/125)	48	0.15 (3.8)	5.9 (8.8)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20003339	MicroCable Plenum ENT-A OM2-72	OM2 (50/125)	72	0.18 (4.5)	7.5 (10)	22 (100)	7 (30)	3.6 (90)	1.8 (45)
20002984	MicroCable Plenum ENT-A OM3-6	OM3 (50/125)	6	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002985	MicroCable Plenum ENT-A OM3-12	OM3 (50/125)	12	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002986	MicroCable Plenum ENT-A OM3-24	OM3 (50/125)	24	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002987	MicroCable Plenum ENT-A OM3-48	OM3 (50/125)	48	0.15 (3.8)	5.9 (8.8)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20003340	MicroCable Plenum ENT-A OM3-72	OM3 (50/125)	72	0.18 (4.5)	7.5 (10)	22 (100)	7 (30)	3.6 (90)	1.8 (45)
20002988	MicroCable Plenum ENT-A OM4-6	OM4 (50/125)	6	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002989	MicroCable Plenum ENT-A OM4-12	OM4 (50/125)	12	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002990	MicroCable Plenum ENT-A OM4-24	OM4 (50/125)	24	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20002919	MicroCable Plenum ENT-A OM4-48	OM4 (50/125)	48	0.15 (3.8)	5.9 (8.8)	22 (100)	7 (30)	1.2 (30)	0.8 (20)
20003341	MicroCable Plenum ENT-A OM4-72	OM4 (50/125)	72	0.18 (4.5)	7.5 (10)	22 (100)	7 (30)	3.6 (90)	1.8 (45)

NEW

BIF = Bend Insensitive Fiber

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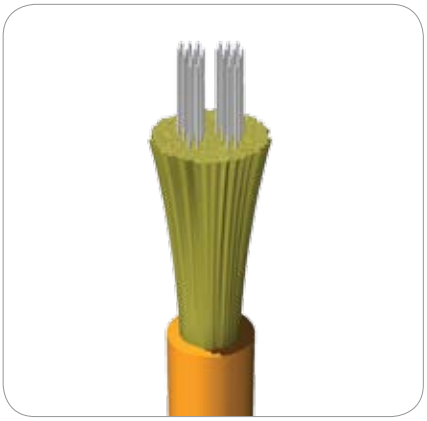
NEW
eABF SWR



eABF® SWR Enterprise Air-Jetted Fiber Cable

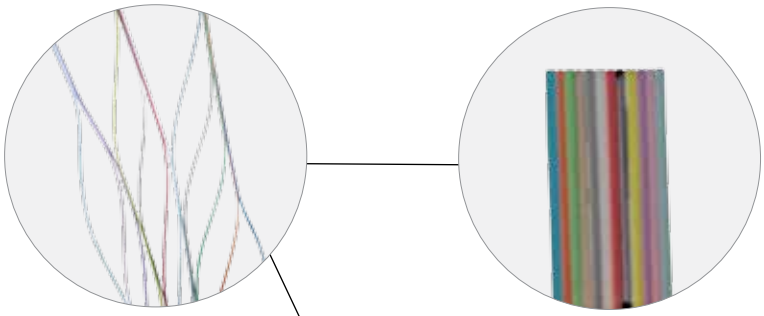
The AFL eABF SWR (Spider Web Ribbon) is a new innovation that combines the best of ribbon fiber mass-fusion functionality and single fiber-bundle packing density to enterprise fiber optic structured cabling materials. The SWR fiber bundle used in this version of the eABF air-jetted fiber optic cable allows for the design of round, high-fiber density geometry yet offers the installer the ability to quickly and efficiently install MPO multi-fiber connectors or mass-fusion splicing without having to sort out and arrange individual fibers. In addition, because of SWR fiber binding system, the individual optical fibers can be easily separated and terminated as single fiber units.

The eABF SWR cable meets the interconnect standards of Telcordia GR-409 and is rated to meet NFPA/NEC flame-safety requirements as a stand-alone cable yet can be jetted thousands of feet in the eABF 8.5/6 mm Dura-Line FuturePath MicroDuct pathway system.

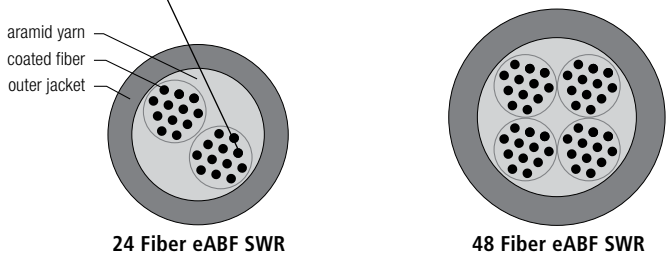
Features

- 24, 48 and 72 fiber options increase design flexibility without increasing space or installation time (labor costs) requirements
- NFPA/NEC Riser and Plenum options for use in riser or plenum pathway environments (outside of micro-duct)
- Innovative fiber-ribbon bonding allows for higher density cable than traditional flat, fiber-ribbon
- Spider Web Ribbon technology reduces cable diameter to improve pathway space and cooling channel efficiencies
- Telcordia GR-409 Interconnect-compliant means cable can be routed within cable management pathways (outside of micro-duct)
- TIA and IEC/ISO OM3, OM4 and single-mode optical fiber options which support easy migration to IEEE 802.3ba 40GbE and 100GbE applications
- Optimized for high-density terminations for excellent integration with MPO-based and mass-fusion spliced connectivity solutions
- Compliant to Directive 2002/95/EC (RoHS) – environment-safe materials reduces concern for handling of cables
- Cables can be de-installed and reused to meet LEED-design guidelines for green building initiatives

SWR Technology



Cable Components



24 Fiber eABF SWR

48 Fiber eABF SWR

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eABF® SWR Enterprise Air-Jetted Fiber Cable

Temperature Specifications

TEMPERATURE RANGE	
OPERATING/INSTALLATION	STORAGE
0°C to +70°C	-40°C to +75°C

Ordering Information and Mechanical Data

DURA-LINE NO.	DESCRIPTION	FIBER TYPE	FIBER COUNT	NOMINAL DIAMETER	WEIGHT	MAXIMUM TENSILE LOAD LBS (N)		MINIMUM BEND RADIUS INCHES (MM)	
				INCHES (MM)	LBS/KFT (KG/KM)	SHORT TERM	LONG TERM	SHORT TERM	LONG TERM
PLENUM									
20003374	MicroCable SWR Plenum ENT-A SMF-SWR-24	SMF-SWR	24	0.14 (3.5)	5.5 (8.2)	22 (100)	7 (30)	2.0 (56)	1.5 (35)
20003375	MicroCable SWR Plenum ENT-A OM3-SWR-24	OM3-SWR	24	0.14 (3.5)	5.5 (8.2)	22 (100)	7 (30)	2.0 (56)	1.5 (35)
20003376	MicroCable SWR Plenum ENT-A OM4-SWR-24	OM4-SWR	24	0.14 (3.5)	5.5 (8.2)	22 (100)	7 (30)	2.0 (56)	1.5 (35)
20003306	MicroCable SWR Plenum ENT-A SMF-SWR-48	SMF-SWR	48	0.16 (4.0)	5.9 (8.8)	22 (100)	7 (30)	2.5 (60)	1.5 (35)
20003307	MicroCable SWR Plenum ENT-A OM3-SWR-48	OM3-SWR	48	0.16 (4.0)	5.9 (8.8)	22 (100)	7 (30)	2.5 (60)	1.5 (35)
20003308	MicroCable SWR Plenum ENT-A OM4-SWR-48	OM4-SWR	48	0.16 (4.0)	5.9 (8.8)	22 (100)	7 (30)	2.5 (60)	1.5 (35)
RISER									
20003425	MicroCable Riser ENT-SWR SM-24	SMF-SWR	24	0.14 (3.5)	5.5 (8.2)	22 (100)	7 (30)	2.0 (56)	1.5 (35)
20003424	MicroCable Riser ENT-SWR OM3-24	OM3-SWR	24	0.14 (3.5)	5.5 (8.2)	22 (100)	7 (30)	2.0 (56)	1.5 (35)
20003428	MicroCable Riser ENT-SWR OM4-24	OM4-SWR	24	0.14 (3.5)	5.5 (8.2)	22 (100)	7 (30)	2.0 (56)	1.5 (35)
20003303	MicroCable Riser ENT-SWR SM-48	SMF-SWR	48	0.16 (4.0)	5.9 (8.8)	22 (100)	7 (30)	2.5 (60)	1.5 (35)
20003304	MicroCable Riser ENT-SWR OM3-48	OM3-SWR	48	0.16 (4.0)	5.9 (8.8)	22 (100)	7 (30)	2.5 (60)	1.5 (35)
20003305	MicroCable Riser ENT-SWR OM4-48	OM4-SWR	48	0.16 (4.0)	5.9 (8.8)	22 (100)	7 (30)	2.5 (60)	1.5 (35)
20003446	MicroCable SWR Riser ENT-A OM3-SWR-72	OM3-SWR	72	0.18 (4.5)	6.3 (9.4)	22 (100)	7 (30)	2.7 (67)	1.8 (45)
20003447	MicroCable SWR Riser ENT-A OM4-SWR-72	OM4-SWR	72	0.18 (4.5)	6.3 (9.4)	22 (100)	7 (30)	2.7 (67)	1.8 (45)
20003448	MicroCable SWR Riser ENT-4 SMF-SWR-72	SMF-SWR	72	0.18 (4.5)	6.3 (9.4)	22 (100)	7 (30)	2.7 (67)	1.8 (45)

Optical Specifications

FIBER TYPE	MAXIMUM ATTENUATION (DB/KM)			OVERFILL LAUNCH MIN. BANDWIDTH (MHZ•KM)		EMBc (MHZ•KM)	GIGABIT ETHERNET MIN. LINK DISTANCE (METERS)		10 GIGABIT ETHERNET MIN. LINK DISTANCE (METERS)	
	850 NM	1300 NM	1550 NM	850 NM	1300 NM		850 NM	1300 NM	850 NM	1300 NM
OM3	3.0	1.2	N/A	1500	500	2000	1000	550	300	—
OM4	3.0	1.2	N/A	3500	550	4700	1040	550	550	—
OS2	N/A	0.5	0.5	N/A	N/A	N/A	N/A	5000	N/A	10000

Tested to meet or exceed EIA/TIA 568-B3 / Telcordia GR-409-CORE

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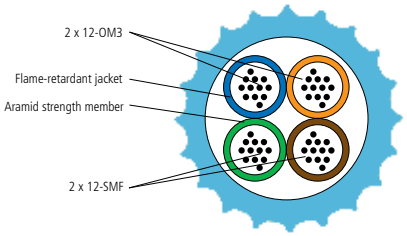

Hybrid Enterprise Blown Fiber (eABF®) Cable with 24-SMF and 24-OM3

eABF cables are designed by AFL to offer the most rugged and reliable enterprise-based blown fiber solution in the market today. The patent pending cable design combines a light-weight, high-drag jacketing system that allows the cable to be blown long distances. The cable series also features additional attributes that set this product above and beyond tra-ditional blown fiber cables. These enhanced features include mechanical strengthening that permits the cable to comply with industry-standard premise interconnect specifications. In addition, the eABF cable series feature flame-resistance characteristics which result in stand-alone riser rated options suitable for routing outside of the micro-duct system. Because of these mechanical, environmental and optical qualifications, eABF cables can also be installed in third-party flame-rated duct and pathway systems.

Applications

- Designed for Data Center Interconnect
- Horizontal Distribution
- Vertical Distribution
- Inter and Intra-building optical circuits
- Low-cost fiber upgrade migration strategies

Features and Benefits

FEATURES	BENEFITS
Flame rating: • Riser OFNR per NFPA NEC 2005 Art 770.51(B)	Complies with NFPA/NEC build codes for fire resistance.
GR-409-CORE compliant	Standards compliant stand-alone interconnect cable
Complete range of single-mode and multimode fibers	Supports 10G, 40G and 100G Ethernet architectures
Aramid-strengthened cable core	Robust tensile load bearing capable
OD compatible with 6 mm ID Micro-ducts	Higher density fiber pathway solutions
48-Fiber count fits into 8.5 mm x 6 xx Micro-duct	Over 1,152 fibers per 24-way FuturePath Duct

Specifications—eABF Optical Fiber

FIBER TYPE	ISO DESIGNATION	MAXIMUM ATTENUATION (DB/KM)			OVERFILL LAUNCH MIN. BANDWIDTH (MHZ-KM)		EMBC (MHZ-KM)	GIGABIT ETHERNET MIN. LINK DISTANCE (METERS)		10 GIGABIT ETHERNET MIN. LINK DISTANCE (METERS)	
		850 NM	1300 NM	1550 NM	850 NM	1300 NM		850 NM	1300 NM	850 NM	1300 NM
50/125	OM3	3.5	1.2	N/A	1500	500	2000	1000	550	300	N/A
SM	OS2	N/A	0.4	0.4	N/A	N/A	N/A	N/A	5000	N/A	10000

Mechanical Data—Riser (OFNR)

DURA-LINE NO.	DESCRIPTION	PRODUCT TYPE	FIBER COUNT	NOMINAL DIAMETER	WEIGHT	MAXIMUM TENSILE LOAD		MINIMUM BEND RADIUS	
				INCHES (MM)	LBS/1,000 FT (KG/KM)	SHORT TERM LBS (N)	LONG TERM LBS (N)	SHORT TERM INCHES MM)	LONG TERM INCHES (MM)
20003015	MicroCable Riser ENT-A OM3-24 + SMF24 Hybrid	SMF/OM4	24/24	0.14 (3.6)	5.5 (8.2)	22 (100)	7 (30)	1.2 (3.0)	0.8 (2.0)

Estimated Installation Distances

OD/ID	AIR (FT/90°S)
8.5 x 6 , V-20 Install Distance—eABF 3.8 mm (6-24 Fibers)	2,300 / 24
8.5 x 6 , V-20 Install Distance—eABF 3.8 mm (48 Fibers)	2000 / 19

Standard eABF Cable Packaging

PACKAGE TYPE	STD P-U (FT)	PACKAGE WEIGHT	
		WEIGHT REEL	REEL + FULL LENGTH P-U
30 x 15 x 12	15,000	34 (15.5)	208 (311)
Reel-in-Box	1,000	10 (4.5)	23 (34)

Temperature

OPERATING/INSTALLATION	-40°C to + 70°C
STORAGE	-40°C to +70°C
INSTALL	0°C to + 70°C

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OSP MicroCore®
Telcordia GR-20 Micro-Technology
Air-Blown Loose Tube

AFL OSP MicroCore® cable series is designed for outside plant installation in microduct conduit systems. The unique, high-fiber density geometry yields a cable construction that can safely accommodate 12 up to 432 fibers and can be blown into microducts ranging in inside diameters from 10 mm to 16 mm.

For example, with a 7-way 12.7 mm x 10 mm (conduit with seven microducts) in place, the system designer has the flexibility to install from 12 to 144 fibers per microduct. With this approach, only the number of fibers required for initial networking requirements need to be installed. Then as future network upgrades and expansions are required, the spare microducts can be jetted with addition OSP MicroCore cables without having to add additional pathway space and the associated installation labor cost.

Applications

- Designed for long -haul, middle-mile and metro-loop
- Campus inter-building backbone distribution
- Low-cost fiber upgrade migration strategies

Features

- GR-20 compliant water-blocked cable core and buffer tubes
- Colored binder threads for easily identifiable optical fiber bundles
- High installation tensile load rating
- OD compatible with 10 mm to 16 mm inside diameter microducts
- 12 up to 432 fibers

Fiber Specifications

	MAXIMUM ATTENUATION (DB/KM)				OVERFILL LAUNCH MIN. BANDWIDTH (MHZ•KM)		GIGABIT ETHERNET MIN. LINK DISTANCE (METERS)	
FIBER TYPE	850 NM	1300 NM	1310 NM	1550 NM	850 NM	1300 NM	850 NM	1300 NM
(6) 62.5/125 GIGA-Link™ 300	3.5	1.2	N/A	N/A	200	600	300	550
(5) 50/125 GIGA-Link™ 600	2.9	0.9	N/A	N/A	500	500	600	600
(L) 50/125 Laser-Link™ 300	2.9	0.9	N/A	N/A	1500	500	900	550
(9) Single-mode	N/A	N/A	0.35	0.25	N/A	N/A	N/A	5000
(Q) Non-zero Dispersion-shifted Single-mode	N/A	N/A	N/A	0.25	N/A	N/A	N/A	N/A
(K) AFL G.657.A1 Single-mode	N/A	N/A	0.35	0.25	N/A	N/A	N/A	5000

Gigabit Ethernet Minimum Link Distances are based on "bandwidth"/modal dispersion constraints.
Actual link distances may be constrained by attenuation, depending on specific loss budget.

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OSP MicroCore®
Telcordia GR-20 Micro-Technology Air-Blown Loose Tube

Mechanical Data

LM-SERIES AFL NO.	FIBER COUNT	FIBERS/ TUBE	NOMINAL DIAMETER		MIN. DUCT I.D.		NOMINAL WEIGHT		MAXIMUM TENSILE LOAD LBS (KG)		MINIMUM BEND RADIUS INCHES (CM)	
			IN.	MM	IN.	MM	LBS/1,000 FT	KG/KM	INSTALLATION	OPERATION	INSTALLATION	OPERATION
LM012✶C6101NS	12	12/1 (5 fillers)	0.299	7.6	0.394	10	31	46	300 (136)	90 (41)	5 (13)	4 (10)
LM024✶C6101NS	24	12/2 (4 fillers)	0.299	7.6	0.394	10	31	46	300 (136)	90 (41)	5 (13)	4 (10)
LM048✶C6101NS	48	12/4 (2 fillers)	0.299	7.6	0.394	10	33	49	300 (136)	90 (41)	5 (13)	4 (10)
LM072✶C6101NS	72	12/6 (no fillers)	0.299	7.6	0.394	10	34	51	300 (136)	90 (41)	5 (13)	4 (10)
LM096✶O6101NS	96	24/4 (2 fillers)	0.311	7.9	0.394	10	34	51	300 (136)	90 (41)	7 (16)	5 (13)
LM144✶O6101NS	144	24/6 (no fillers)	0.311	7.9	0.394	10	36	53	300 (136)	90 (41)	7 (16)	5 (13)
LM288✶R6101NS	288	48/6 (no fillers)	0.409	10.4	0.512	13	63	93	350 (150)	100 (45)	19 (21)	7 (17)
LM432✶OI301NS	432	24/18 (no fillers)	0.496	12.6	0.630	16	90	134	300 (136)	90 (41)	10 (26)	6 (15)

✶ Fiber Types – Replace asterisk (✶) in AFL number with number in the Fiber Specifications table on previous page.

Temperature Specifications

TEMPERATURE RANGE	
INSTALLATION	-10°C to +40°C
OPERATING	-30°C to +70°C
STORAGE	-30°C to +75°C

Standard P-U

Length	6,000 m (20,000 ft)
Reel Type	Wood
Reel Size	58 x 32 x 28 in.

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Fiber Inside Plant

AFL's Inside Plant solutions connect your network to years of engineering and application-based research in optical termination and fiber management. From our high-volume connectivity lines through our innovative niche solutions we build products that answer the challenges of your business and your network.

Cable Assemblies

AFL provides a complete line of fiber optic cable assemblies, each specifically designed to link equipment together. These assemblies have been used in multiple applications, including building interconnections on college campuses, as trunking lines to telecom closets and as links between patch panels and communications closets. Fiber optic cable assemblies are available in simplex, duplex, quad and trunk configurations.

Field Installable Connectors

Field installable connectors are used to quickly and efficiently terminate fiber cable to custom lengths in the field. AFL has rapidly advanced field installable connector technology in recent years, and now offers three unique field installable connector solutions:

- Field Master anaerobic connectors enable the skilled technician to reliably and repeatedly terminate optical fibers in the field, using this tried and true technology.
- FAST Connectors offer some of the fastest terminations in the industry. These are mechanical, true, no epoxy / no polish (NENP) connectors that do not require a crimp or a tool for installation.
- FuseConnect is installed using a fusion splicer and bring factory quality, reliability, performance and repeatability in optical termination to the field.

Rack-mounted Interconnect

Rack-mounted interconnection panels are used within a rack system to manage connections. Rack-mounted interconnect panels house optical connections are quite often the primary point of flexibility in an optical network. AFL manufactures three product families to address varying density requirements in rack-based installations:

- LS series products embody the traditional patch panel product family, and also facilitate fusion splicing.
- Xpress Fiber Management® (XFM®) products are an enhanced version of the LS series, offering additional depth and routing features to manage higher densities.
- Xpress Fiber Management High Density (XFM-HD) are the ultimate in rack-mounted, high-density fiber management, efficiently managing up to 576 fibers in a 4RU space.

Wall-mounted Interconnect

AFL's complete line of wall-mounted interconnect panels provide a convenient location for connection and splicing for co-location sites, customer premises, hub/OTN sites, telecom closets and campus/enterprise environments.

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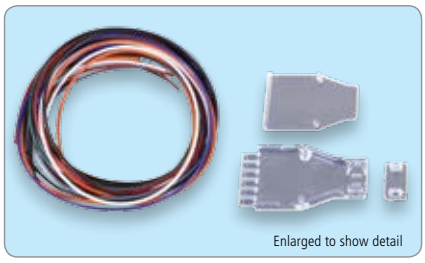
Fanout Kits

Fanout kits route 250 µm fiber into 900 µm tubes ready for connectorization. Easily installed in minutes, these kits require no special tools. Color-coded tubing allows easy identification. The furcation unit snaps together, eliminating epoxy. Loose tube fanout kits are available in 6 and 12 fiber configurations.

Ordering Information

CABLE TYPE	FIBER COUNT	LENGTH	AFL NO.
Loose Tube Fanout Kit (for 3.0 mm tube)	6 Fibers	24 inches	C189826
Loose Tube Fanout Kit (for 3.0 mm tube)	12 Fibers	24 inches	C189818
Ribbon-Link® Fanout Kit	6 Fibers	36 inches	C189842
Ribbon-Link Fanout Kit	12 Fibers	36 inches	C189834
Uni-Tube Fanout Kit	6 Fibers	36 inches	C193114
Uni-Tube Fanout Kit	12 Fibers	36 inches	C193122



Cable Router Kits

The AFL Cable Router Kit is used to furcate the individual 12-fiber bundles within the eABF cable. Each of the individual tubes can then be routed to patch panels, splice trays or further branched using the Fanout Kit.

Ordering Information

DESCRIPTION	AFL NO.
1X6 Cable Router Kit	FC000070
1X8 Cable Router Kit	FC000008

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Connector Specifications

PARAMETER	CONNECTOR													
	SC		FC		ST		LC		MTP		MT-RJ		MU	
Single-mode Assemblies														
Image														
	Ultra	**Angle**	**Ultra**	**Angle**	**Ultra**	**Angle**	**Ultra**	**Angle**	**Flat**	**Angle**	**Ultra**	**Angle**	**Ultra**	**Angle**
Insertion loss (dB)														
Maximum	0.2	0.25	0.2	0.25	0.2	—	0.2	0.25	—	0.75	0.5	—	0.25	—
Typical	0.15	0.2	0.25	0.2	0.15	—	0.15	0.15	—	0.35	0.25	—	0.2	—
Return Loss (dB)														
Minimum	-55 dB	-65 dB	-55 dB	-65 dB	-55 dB	—	-55 dB	-65 dB	—	-55 dB	-35 dB	—	-55 dB	—
Temp Range (°C)	-40 to +85		-40 to +85		-40 to +85		-40 to +85		-40 to +75		-40 to +75		-40 to +85	
Durability Cycles	500		500		500		500		200		200		500	

Multimode Assemblies														
Insertion loss (dB)														
Maximum	0.5	—	0.5	—	0.5	—	0.5	—	0.75	—	0.5	—	0.5	—
Typical	0.25	—	0.25	—	0.25	—	0.25	—	0.35	—	0.25	—	0.25	—
Return Loss (dB)														
Minimum	-30 dB	—	-30 dB	—	-30 dB	—	-30 dB	—	-30 dB	—	-20 dB	—	-20 dB	—
Temp Range (°C)	-40 to +85		-40 to +85		-40 to +85		-40 to +85		-40 to +75		-40 to +75		-40 to +85	
Durability Cycles	500		500		500		500		200		200		500	
Cable Options	Simplex/Duplex 900 µm 1.6 mm 2.0 mm 2.4 mm 3.0 mm		Simplex/Duplex 900 µm 1.6 mm 2.0 mm 2.4 mm 3.0 mm		Simplex/Duplex 900 µm 1.6 mm 2.0 mm 2.4 mm 3.0 mm		Simplex/Duplex 900 µm 1.6 mm 2.0 mm		Bare Ribbon Jacketed Ribbon 8-12 Fiber Count		Bare Ribbon Jacketed Ribbon Dual Link Zipcord		900 µm 2.0 mm	
Applications	Telephony CATV/Broadband Telco Backplanes LAN/WAN		Telephony CATV/Broadband Telco Backplanes LAN/WAN		Telephony CATV/Broadband Telco Backplanes LAN/WAN		Telephony CATV/Broadband Telco Backplanes LAN/WAN		Telephony CATV/Broadband Telco Backplanes LAN/WAN		Telephony CATV/Broadband Telco Backplanes LAN/WAN		Telephony CATV/Broadband Telco Backplanes LAN/WAN	

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Simplex Cable Assemblies

Simplex cable assemblies are offered with a variety of combinations. Connectors include SC, FC, ST and LC. 3.0 mm, 2.0 mm, 1.6 mm and 900 µm simplex cables in riser and plenum are available.

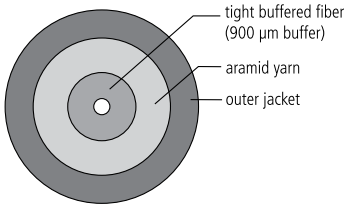
Features

- 3.0 mm, 2.0 mm, 1.6 mm, and 900 µm cable diameter available
- RoHS compliant – Riser, Plenum, and LSZH rated cables available
- Cable compliant with Telcordia® GR-409
- Connectors compliant with Telcordia GR-326

Applications

- Building interconnections (campus LAN)
- Trunking lines direct to telecommunications closet
- Fiber patch panels within communications closets
- Links between electronic equipment and fiber patch panels

Cable Components



Ordering Information

ASC	ASC	RS	001	Q	0010
Connector End A	Connector End B	Cable Type	Fiber Count	Fiber Type	Cable Length (meters)
Single-mode ASC = Angle SC AFC = Angle FC ALC = Angle LC USC = Ultra SC UFC = Ultra FC UST = Ultra ST ULC = Ultra LC	**Single-mode** ASC = Angle SC AFC = Angle FC ALC = Angle LC USC = Ultra SC UFC = Ultra FC UST = Ultra ST ULC = Ultra LC XXX = No connector	RS = 3.0 mm Riser PS = 3.0 mm Plenum RT = 2.0 mm Riser PT = 2.0 mm Plenum RM = 1.6 mm Riser PM = 1.6 mm Plenum JH = 900 µm	001 = 1	Q = Single-mode ITU-TG652D X = Single-mode ITU-T-G657ABIF 2 = Multimode 62.5/125 OM1 R = Multimode 50/125 OM2 L = Multimode 50/125 OM3 C = Multimode 50/125 OM4 4 = Corning® SMF-28® Ultra	0010 = 10 meters (specify length)
Multimode PSC = SC MM PFC = FC MM PLC = LC MM PST = ST MM	**Multimode** PSC = SC MM PFC = FC MM PLC = LC MM PST = ST MM XXX = No connector				

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Two-Fiber Cable Assemblies

Zipcord, DUAL-Link and Ribbon cables are used to meet the requirements for two-fiber cable assemblies, utilizing SC, FC, ST and LC connectors.

Features

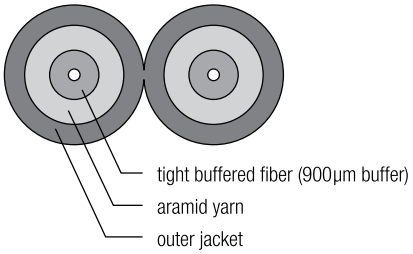
- Flexible, 2-fiber design
- RoHS compliant – Riser, Plenum and LSZH rated cables available
- Cable compliant with Telcordia® GR-409
- Connectors compliant with Telcordia GR-326

Applications

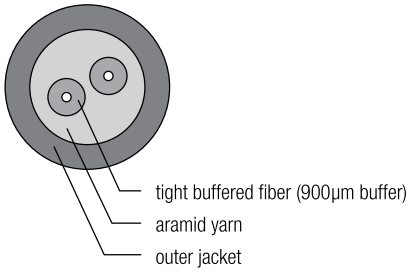
- FDDI, 10 Gigabit Ethernet, ATM and Fiber Channel protocols
- Communications closet to wall outlet
- Wall outlet to desk
- Interconnect and cross-connect applications

Cable Components

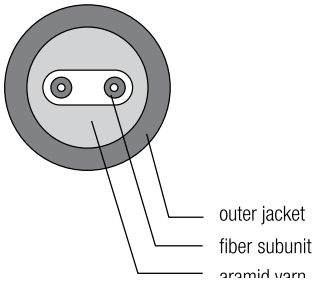
Zipcord



DUAL-Link



Ribbon-link



Ordering Information

UST	UST	RZ	002	Q	0010
Connector End A	Connector End B	Cable Type	Fiber Count	Fiber Type	Cable Length (meters)

Connector End A

Single-mode
ASC = Angle SC
AFC = Angle FC
USC = Ultra SC
UFC = Ultra FC
UST = Ultra ST
ULC = Ultra LC
*
USF = Ultra SC Duplex
UDL = Ultra LC Duplex

Multimode
PSC = SC MM
PFC = FC MM
PLC = LC MM
PST = ST MM
*
PSF = SC Duplex MM
PDL = LC Duplex MM

Connector End B

Single-mode
ASC = Angle SC
AFC = Angle FC
USC = Ultra SC
UFC = Ultra FC
UST = Ultra ST
ULC = Ultra LC
*
USF = Ultra SC Duplex
UDL = Ultra LC Duplex
XXX = No connector

Multimode
PSC = SC MM
PFC = FC MM
PLC = LC MM
PST = ST MM
*
PSF = SC Duplex MM
PDL = LC Duplex MM
XXX = No connector

Cable Type
RZ = 3.0 mm Riser Zipcord
PZ = 3.0 mm Plenum Zipcord
R20Z = 2.0 mm Riser Zipcord
P20Z = 2.0 mm Plenum Zipcord
R16Z = 1.6 mm Riser Zipcord
P16Z = 1.6 mm Plenum Zipcord
R20D = 2.0 mm Riser DUAL-LINK
P20D = 2.0 mm Plenum DUAL-Link
R24D = 2.4 mm Riser DUAL-Link
P24D = 2.4 mm Plenum DUAL-Link

Fiber Count
002 = 2

Fiber Type
Q = Single-mode ITU-T G.652D
X = Single-mode ITU-T G.657A BIF
2 = Multimode 62.5/125 OM1
R = Multimode 50/125 OM2
L = Multimode 50/125 OM3
C = Multimode 50/125 OM4
4 = Corning® SMF-28® Ultra

Cable Length (meters)
XXXX (specify length)
0010 = 10 meters

NOTES: 1. Refer to Connector Specifications page.

* Single connector options, quantity two per end. Duplex connectors are assembled with removable clip.

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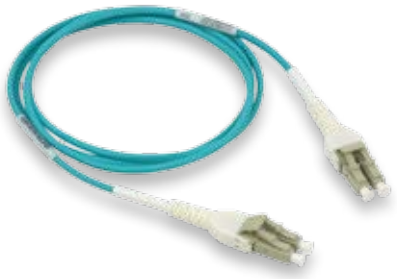


LC Uniboot Cable Assemblies

AFL's LC Uniboot cable assemblies offer a more compact design when compared to traditional duplex zipcord assemblies. These assemblies contain two LC connectors encased in a common housing with one boot, terminated on a single, round, two-fiber cable. Utilizing AFL's DUAL-Link 2.0 and 2.4 mm premise cable, LC Uniboot assemblies condense the cable management to half the space used by regular zipcord assemblies. AFL's LC Uniboot cable assemblies offer the best solution for high-density applications.

Features

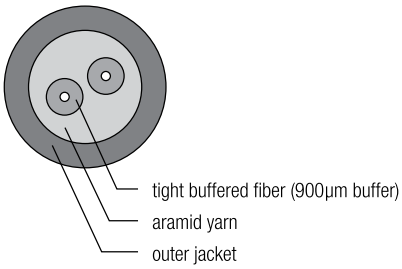
- LC duplex connector uses a single housing and single boot
- 2.0 and 2.4 mm DUAL-Link cable
- RoHS compliant
- Connectors compliant with Telcordia® GR-326, TIA/EIA-604-10A(FOCIS 10)
- Cable compliant with Telcordia GR-409

Applications

- Private networks
- Data centers
- High density applications
- Interconnect and cross-connect
- Premise installations

Cable Components

DUAL-Link



Specifications

PARAMETER	VALUE
Insertion Loss (typical)	0.15 dB (SM/MM)
Return Loss (typical)	-55 dB (SM), -30 dB (MM)
Durability	500 cycles
Operating Temperature	-40°C to +85°C
Ferrule	Zirconia

Ordering Information:

2.0 mm Plenum DUAL-Link Cable Assemblies

FIBER TYPE	AFL NO.
Singlemode	CS011378-XXXX
Multimode 62.5/125 (OM1)	CS011381-XXXX
Multimode 50/125 (OM3)	CS010640-XXXX
Multimode 50/125 (OM4)	CS011386-XXXX

2.4 mm Plenum DUAL-Link Cable Assemblies

FIBER TYPE	AFL NO.
Singlemode	CS011389-XXXX
Multimode 62.5/125 (OM1)	CS011394-XXXX
Multimode 50/125 (OM3)	CS011397-XXXX
Multimode 50/125 (OM4)	CS011400-XXXX

XXXX = Length (meters)
Example: 0010 = 10

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Circular Premise Cable (CPC) Assemblies

High-fiber count Circular Premise Cable (CPC) assemblies provide safe and cost effective installation for many applications. These assemblies help eliminate labor-intensive field termination, yet guarantee reliable performance. Featuring a unified construction for easy fiber identification and rapid installation, these assemblies are built to exceed all TIA and Telcordia® requirements.

Features

- 6-144 fibers with aramid yarn reinforcement for rugged protection
- Highly flexible for ease of routing
- RoHS compliant - Riser, Plenum and LSZH rated cables available
- Pre-installed pulling eye kits available on certain products
- 1 meter standard breakout (other lengths are custom)
- 900 µm tight buffered fibers allows direct termination; 2.0 mm furcation available
- Cable tested to meet or exceed EIA/TIA 568-A/GR-409-CORE
- Telcordia GR-326 compliant connectors

Applications

- Head-end termination to a fiber "backbone"
- Termination of fiber rack systems
- Multi-floor deployment where select fibers are used at each floor
- Intrabuilding "backbones"

Ordering Information

ASC	ASC	RC	012	Q	0010	NN
Connector End A	**Connector End B**	**Cable Type**	**Fiber Count**	**Fiber Type**	**Cable Length (meters)**	
Single-mode ASC = Angle SC AFC = Angle FC USC = Ultra SC UFC = Ultra FC UST = Ultra ST ULC = Ultra LC **Multimode** PSC = SC MM PFC = FC MM PLC = LC MM PST = ST MM	**Single-mode** ASC = Angle SC AFC = Angle FC USC = Ultra SC UFC = Ultra FC UST = Ultra ST ULC = Ultra LC XXX = No connector **Multimode** PSC = SC MM PFC = FC MM PLC = LC MM PST = ST MM XXX = No connector	RC = Riser (CPC) PC = Plenum (CPC)	006 = 6 012 = 12 024 = 24 036 = 36 048 = 48 072 = 72 096 = 96 144 = 144	Q = Single-mode ITU-T G.652D X = Single-mode ITU-T G.657A BIF 2 = Multimode 62.5/125 µm OM1 R = Multimode 50/125 µm OM2 L = Multimode 50/125 µm OM3/10G	XXXX (specify length) 0010 = 10 meters	**Leg Diameter** N = 900 µm End A / XXX End B NN = 900 µm End A and B F = Furcated End A / XXX End B FF = Furcated Ends A and B FN = Furcated Ends A / 900 µm End B NF = 900 µm End A / Furcated Ends B

NOTES: 1. Refer to Connector Specifications page.
2. Duplex SC and LC available

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Sub-Unitized MicroCore® Trunk Cable Assemblies

Sub-unitized MicroCore trunk cable assemblies provide high performance for premise installations where space is a premium. The small diameter, sub-unitized design offers twelve 250 µm colored fibers per tube, with aramid strength members enclosed by a PVC jacket, enabling high density architecture. The cable allows quick and efficient termination of MTP connectors, as well as, breakout capability to single fiber connectors.

Features

- Sub-unitized design, with (12) 250 µm colored fibers per tube
- 12, 24, and 72 fiber counts (SM or 50 µm LOMMF) with active part numbers
- Small diameter provides superior bend performance
- Standard 2.0 mm zipcord furcation for single fiber connectors
- One meter standard breakout
- Cable jackets & connector housings color-coded for easy identification
- Sub-unit legs identified for ease of channel routing/traceability
- Cable tested to meet or exceed EIA/TIA 568-A/GR-409-CORE
- Telcordia® GR-326 compliant connectors

Applications

- Data center systems wiring
- MTP-MTP or MTP-Fanouts, and Single Fiber Connector Terminations
- Head-end termination to a fiber "backbone"
- Termination of fiber rack systems
- Multi-floor deployment where select fibers are used at each floor
- Intrabuilding "backbones"

Specifications

	SINGLE-MODE ASSEMBLIES					MULTIMODE ASSEMBLIES		
	LC		SC		MTP	LC	SC	MTP (LOW LOSS)
PARAMETER	ULTRA	ANGLED	ULTRA	ANGLED	ANGLED			
Insertion Loss (Typical dB)***	0.15	0.15	0.15	0.15	0.35	0.15	0.15	0.15
Insertion Loss (Maximum dB)	0.3	0.3	0.3	0.3	0.75	0.5	0.5	0.2
Return Loss (Typical dB)***	-60	-70	-60	-70	-65	-35	-35	-30
Return Loss (Minimum dB)	-55	-65	-55	-65	-55	-30	-30	-20
Temperature Range (°C)	-40 to +85	-40 to +85	-40 to +85	-40 to +85	-40 to +75	-40 to +85	-40 to +85	-40 to +75
Durability Cycles	500	500	500	500	200	500	500	200

*** *Typical values based on equal quality connectors.*

Ordering Information – MTP-MTP Assemblies

(Female MTPs on both ends – no pins)

(Polarity: Key Up/Key Up, Straight Through)

FIBER COUNT	FIBER	PULLING EYE	AFL NO.
12	Single-mode	No	CS009980-XXXX
12	Single-mode	Yes	CS009981-XXXX
24	Single-mode	No	CS009984-XXXX
24	Single-mode	Yes	CS009985-XXXX
72	Single-mode	No	CS009996-XXXX
72	Single-mode	Yes	CS009997-XXXX
12	50 µm 10gig 300 (OM3)	No	CS010649-XXXX
12	50 µm 10gig 300 (OM3)	Yes	CS010650-XXXX
24	50 µm 10gig 300 (OM3)	No	CS003700-XXXX
24	50 µm 10gig 300 (OM3)	Yes	CS009912-XXXX
72	50 µm 10gig 300 (OM3)	No	CS003720-XXXX
72	50 µm 10gig 300 (OM3)	Yes	CS010016-XXXX
12	50 µm 10gig 550 (OM4)	No	CS008420-XXXX
12	50 µm 10gig 550 (OM4)	Yes	CS010165-XXXX
24	50 µm 10gig 550 (OM4)	No	CS010100-XXXX
24	50 µm 10gig 550 (OM4)	Yes	CS010066-XXXX
72	50 µm 10gig 550 (OM4)	No	CS010101-XXXX
72	50 µm 10gig 550 (OM4)	Yes	CS010067-XXXX

NOTE: XXXX is length in meters.

Contact AFL Customer Service for additional polarity schemes available.

continued on next page

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Sub-Unitized MicroCore® Trunk Cable Assemblies

Ordering Information – MTP Fanout Assemblies

(Male MTPs — Duplex Connectors)

FIBER COUNT	FIBER	PULLING EYE	AFL NO. MALE MTP-LC DUPLEX	AFL NO. MALE MTP-SC DUPLEX
12	Single-mode	No	CS009521-XXXX	CS010020-XXXX
12	Single-mode	Yes	CS0010017-XXXX	CS010021-XXXX
24	Single-mode	No	CS003796-XXXX	CS010022-XXXX
24	Single-mode	Yes	CS010018-XXXX	CS010023-XXXX
72	Single-mode	No	CS003811-XXXX	CS010024-XXXX
72	Single-mode	Yes	CS010019-XXXX	CS010025-XXXX
12	50 µm 10gig 300 (OM3)	No	CS011510-XXXX	CS010030-XXXX
12	50 µm 10gig 300 (OM3)	Yes	CS010027-XXXX	CS010031-XXXX
24	50 µm 10gig 300 (OM3)	No	CS003795-XXXX	CS010032-XXXX
24	50 µm 10gig 300 (OM3)	Yes	CS010028-XXXX	CS010033-XXXX
72	50 µm 10gig 300 (OM3)	No	CS003810-XXXX	CS010034-XXXX
72	50 µm 10gig 300 (OM3)	Yes	CS010029-XXXX	CS010035-XXXX
12	50 µm 10gig 550 (OM4)	No	CS009519-XXXX	CS010073-XXXX
12	50 µm 10gig 550 (OM4)	Yes	CS010068-XXXX	CS010074-XXXX
24	50 µm 10gig 550 (OM4)	No	CS010069-XXXX	CS010075-XXXX
24	50 µm 10gig 550 (OM4)	Yes	CS010070-XXXX	CS010076-XXXX
72	50 µm 10gig 550 (OM4)	No	CS010071-XXXX	CS010077-XXXX
72	50 µm 10gig 550 (OM4)	Yes	CS010072-XXXX	CS010078-XXXX

Ordering Information – LC and SC Trunk Assemblies

(Duplex LC and SC Connectors)

FIBER COUNT	FIBER	PULLING EYE	AFL NO. LC DUPLEX-LC DUPLEX	AFL NO. LC DUPLEX-SC DUPLEX	AFL NO. SC DUPLEX-SC DUPLEX
12	Single-mode	No	CS010036-XXXX	CS010038-XXXX	CS010042-XXXX
12	Single-mode	Yes	CS010037-XXXX	CS010039-XXXX	CS010043-XXXX
24	Single-mode	No	CS004602-XXXX	CS007203-XXXX	CS007201-XXXX
24	Single-mode	Yes	CS004603-XXXX	CS007204-XXXX	CS007202-XXXX
72	Single-mode	No	CS004618-XXXX	CS010040-XXXX	CS010044-XXXX
72	Single-mode	Yes	CS004619-XXXX	CS010041-XXXX	CS010045-XXXX
12	50 µm 10gig 300 (OM3)	No	CS010046-XXXX	CS010048-XXXX	CS010052-XXXX
12	50 µm 10gig 300 (OM3)	Yes	CS010047-XXXX	CS010049-XXXX	CS010053-XXXX
24	50 µm 10gig 300 (OM3)	No	CS004608-XXXX	CS007221-XXXX	CS007219-XXXX
24	50 µm 10gig 300 (OM3)	Yes	CS004609-XXXX	CS007222-XXXX	CS007220-XXXX
72	50 µm 10gig 300 (OM3)	No	CS004624-XXXX	CS010050-XXXX	CS010054-XXXX
72	50 µm 10gig 300 (OM3)	Yes	CS004625-XXXX	CS010051-XXXX	CS010055-XXXX
12	50 µm 10gig 550 (OM4)	No	CS010079-XXXX	CS010085-XXXX	CS010091-XXXX
12	50 µm 10gig 550 (OM4)	Yes	CS010080-XXXX	CS010086-XXXX	CS010092-XXXX
24	50 µm 10gig 550 (OM4)	No	CS010081-XXXX	CS010087-XXXX	CS010093-XXXX
24	50 µm 10gig 550 (OM4)	Yes	CS010082-XXXX	CS010088-XXXX	CS010094-XXXX
72	50 µm 10gig 550 (OM4)	No	CS010083-XXXX	CS010089-XXXX	CS010095-XXXX
72	50 µm 10gig 550 (OM4)	Yes	CS010084-XXXX	CS010090-XXXX	CS010096-XXXX

NOTE: XXXX is length in meters.

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Xpress Fiber Management® (XFM) 1RU Patch Panel

The Xpress Fiber Management (XFM) 1U patch panel is a rack mountable interconnect point specifically designed to manage dense fiber applications. Based on the LGX® intermateability platform, the panel is fully compatible with AFL's XFM Optical Cassette, Passive Optical Coupler Modules, and Poli-MOD® solutions. This panel offers enhanced management of densities up to 72 fibers using MTP-LC XFM Optical Cassettes (24 fibers).

Features

- Steel construction
- Textured black powder coat finish
- Universal WECO/TIA 19"/23" rack compatibility
- (3) LGX 118 adapter plate / module mounting positions
- Slide-out tray with relief cut-outs for simplified connector access
- Optional front door key lock for heightened protection of internal components

Applications

- Data Centers
- Enterprise Networks
- Telecommunications Closets
- Central Offices / Headends

Specifications

DEPTH (A) (inches)	WIDTH (B) (inches)	HEIGHT (C) (inches)	RACK UNITS	CAPACITY	UNLOADED WEIGHT
15.5	17	1.7	1	(3) LGX 118	13 lbs.

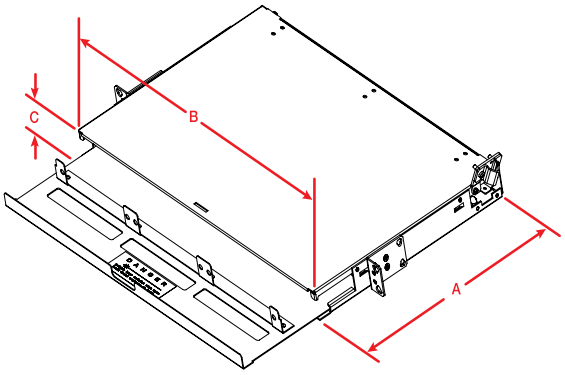
Ordering Information

All cable clamps offered separately so that customers may choose the correct clamp for their application.

DESCRIPTION	MODEL NUMBER	AFL NO.
Xpress Fiber Management 1U Patch Panel, Black, Empty	XFM-1-U-B-0	FM002711-BE

Accessories

DESCRIPTION	AFL NO.
Kit, Lock, for CON/CNS Panels	FM001318



Made in USA

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Xpress Fiber Management® (XFM) 2RU Patch Panel

The Xpress Fiber Management (XFM) 2U patch panel is a rack mountable interconnect point specifically designed to manage dense fiber applications. Based on the LGX® intermateability platform, the panel is fully compatible with AFL's XFM Optical Cassette, Passive Optical Coupler Modules, and Poli-MOD® solutions. This panel offers enhanced management of densities up to 144 fibers using MTP-LC XFM Optical Cassettes (24 fibers).

Features

- Steel construction
- Textured black powder coat finish
- Universal WECO/TIA 19"/23" rack compatibility
- (6) LGX 118 adapter plate / module mounting positions
- Slide-out tray with relief cut-outs for simplified connector access
- Optional front door key lock for heightened protection of internal components

Applications

- Data Centers
- Enterprise Networks
- Telecommunications Closets
- Central Offices / Headends

Specifications

DEPTH (A) IN INCHES	WIDTH (B) IN INCHES	HEIGHT (C) IN INCHES	RACK UNITS	CAPACITY	UNLOADED WEIGHT
15.5	17	3.5	2	(6) LGX 118	15 lbs.

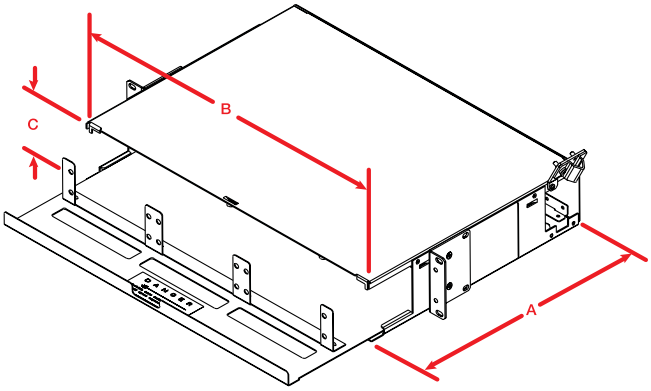
Ordering Information

All cable clamps offered separately so that customers may choose the correct clamp for their application.

DESCRIPTION	MODEL NUMBER	AFL NO.
Xpress Fiber Management 2U Patch Panel, Black, Empty	XFM-2-U-B-0	FM002712-BE

Accessories

DESCRIPTION	AFL NO.
Kit, Lock, for CON/CNS Panels	FM001318



Made in USA

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Xpress Fiber Management® (XFM®) 4RU Patch Panel

The Xpress Fiber Management (XFM) 4RU patch panel is a rack mountable interconnect point specifically designed to manage dense fiber applications. Based on the LGX® intermateability platform, the panel is fully compatible with AFL's XFM Optical Cassette, Poli-MOD® and WDM solutions, offering enhanced management of densities up to 288F using MTP/MPO, single fiber, or patch and splice methodologies. Routing rings on the top and bottom of the front panel provide enhanced cable routing allowing cable assemblies to exit comfortably. This panel can be provisioned with a key lock at the time of order for secure environments.

Features

- Aluminum construction
- Textured black powder coat finish
- Universal WECO/TIA 19"/23" rack compatibility
- (12) LGX 118 adapter plate / module mounting positions
- Mounting depth adjustable from flush to 8" in 1" increments

Applications

- Data Centers
- Enterprise Networks
- Telecommunications Closets
- Central Offices / Headends

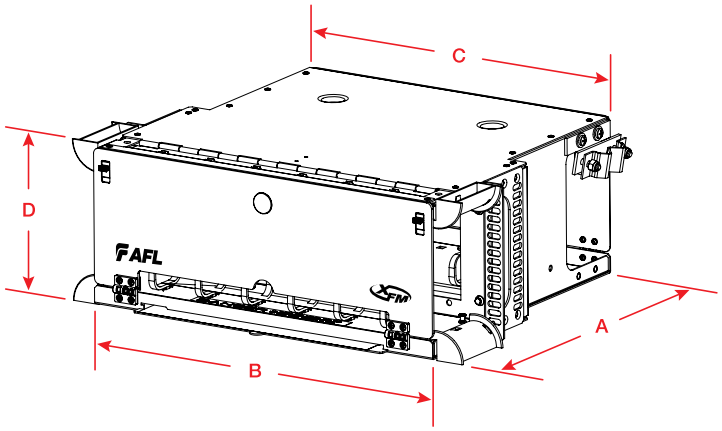
Specifications

DEPTH (A) IN INCHES	FRONT WIDTH (B) IN INCHES	REAR WIDTH (C) IN INCHES	HEIGHT (D) IN INCHES	RACK UNITS	CAPACITY	UNLOADED WEIGHT
15.5	17	15	7	4	(12) LGX 118	9 lbs.

Ordering Information

All cable clamps offered separately so that customers may choose the correct clamp for their application.

DESCRIPTION	MODEL NO.	AFL NO.
Xpress Fiber Management 4U Patch Panel, Black, Empty	XFM-4U-B-0	FM001090-B
Xpress Fiber Management 4U Patch Panel, Black, Empty, Key Lock	XFM-4U-B-K	FM001218-B



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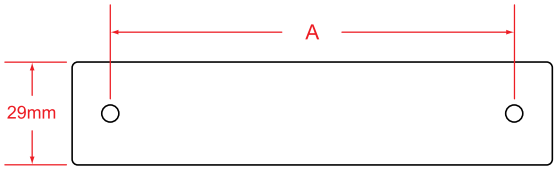
LightLink Adapter Plates

LightLink Adapter Plates add versatility to AFL's panel product line. Adapter plates are compatible with industry standard platforms allowing for easy upgrades to existing panels. Adapter Plates come preloaded with adapters and are available in 6, 8, 12 and 24 pack versions for single-fiber adapters. Higher fiber counts are achievable with multi-fiber adapters. Blank plates are also available for unused space in panels.

Features

- Metal Plate with Nylatches
- Polyurethane powder coated (white or black)
- LGX® compatible

Specifications



DIMENSION A
118 mm LGX®
170 mm LGX®

Ordering Information

AFL NO.	ADAPTER TYPE	SIMPLEX/DUPLEX/ QUAD	ADAPTER COLOR	FIBER COUNT	PLATE HEIGHT	PLATE COLOR
BLANK						
FM003072	BLANK	BLANK	NA	0	LGX (118)	BLACK
FM003462	BLANK	BLANK	NA	0	LGX (118)	WHITE
FM003434	BLANK	BLANK	NA	0	LGX (170)	BLACK
FM003433	BLANK	BLANK	NA	0	LGX (170)	WHITE
FM000343	BLANK	BLANK	NA	0	LGX (118)	SMOOTH BLACK
SC						
FM003295	SC	DUPLEX	AQUA	12F	LGX (118)	BLACK
FM002272	SC	DUPLEX	AQUA	12F	LGX (118)	WHITE
FM003287	SC	DUPLEX	AQUA	6F	LGX (118)	BLACK
FM003293	SC	DUPLEX	BEIGE	12F	LGX (118)	BLACK
FM002273	SC	DUPLEX	BEIGE	12F	LGX (118)	WHITE
FM000149	SC	DUPLEX	BEIGE	12F	LGX (170)	WHITE
FM000148	SC	DUPLEX	BEIGE	12F	LGX (170)	BLACK
FM003285	SC	DUPLEX	BEIGE	6F	LGX (118)	BLACK
FM003398	SC	DUPLEX	BEIGE	6F	LGX (118)	WHITE
FM003301	SC	DUPLEX	BLACK	12F	LGX (118)	BLACK
FM003299	SC	DUPLEX	BLACK	6F	LGX (118)	BLACK
FM003297	SC	DUPLEX	BLUE	12F	LGX (118)	BLACK
FM002271	SC	DUPLEX	BLUE	12F	LGX (118)	WHITE
FM000144	SC	DUPLEX	BLUE	12F	LGX (170)	BLACK
FM000145	SC	DUPLEX	BLUE	12F	LGX (170)	WHITE
FM003289	SC	DUPLEX	BLUE	6F	LGX (118)	BLACK
FM003458	SC	DUPLEX	BLUE	6F	LGX (118)	WHITE
FM002633	SC	DUPLEX	GREEN	12F	LGX (118)	BLACK
FM002634	SC	DUPLEX	GREEN	12F	LGX (118)	WHITE
FM000152	SC	DUPLEX	GREEN	12F	LGX (170)	BLACK
FM000153	SC	DUPLEX	GREEN	12F	LGX (170)	WHITE
FM003283	SC	DUPLEX	GREEN	6F	LGX (118)	BLACK
FM000115	SC	DUPLEX	GREEN	6F	LGX (118)	WHITE

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LightLink Adapter Plates

Ordering Information (cont.)

AFL NO.	ADAPTER TYPE	SIMPLEX/DUPLEX/ QUAD	ADAPTER COLOR	FIBER COUNT	PLATE HEIGHT	PLATE COLOR
SC						
FM003120	SC	SIMPLEX	AQUA	12F	LGX (118)	BLACK
FM003098	SC	SIMPLEX	AQUA	6F	LGX (118)	BLACK
FM003118	SC	SIMPLEX	BEIGE	12F	LGX (118)	BLACK
FM003411	SC	SIMPLEX	BEIGE	12F	LGX (170)	WHITE
FM003096	SC	SIMPLEX	BEIGE	6F	LGX (118)	BLACK
FM003403	SC	SIMPLEX	BEIGE	6F	LGX (118)	WHITE
FM003242	SC	SIMPLEX	BLACK	12F	LGX (118)	BLACK
FM003238	SC	SIMPLEX	BLACK	6F	LGX (118)	BLACK
FM003122	SC	SIMPLEX	BLUE	12F	LGX (118)	BLACK
FM002842-TW	SC	SIMPLEX	BLUE	12F	LGX (118)	WHITE
FM003409	SC	SIMPLEX	BLUE	12F	LGX (170)	BLACK
FM003407	SC	SIMPLEX	BLUE	12F	LGX (170)	WHITE
FM003100	SC	SIMPLEX	BLUE	6F	LGX (118)	BLACK
FM003467	SC	SIMPLEX	BLUE	6F	LGX (118)	WHITE
FM000156	SC	SIMPLEX	BLUE	8F	LGX (118)	BLACK
FM003435	SC	SIMPLEX	BLUE	8F	LGX (118)	WHITE
FM003116	SC	SIMPLEX	GREEN	12F	LGX (118)	BLACK
FM000800-TW	SC	SIMPLEX	GREEN	12F	LGX (118)	WHITE
FM003414	SC	SIMPLEX	GREEN	12F	LGX (170)	BLACK
FM003455	SC	SIMPLEX	GREEN	12F	LGX (170)	WHITE
FM003094	SC	SIMPLEX	GREEN	6F	LGX (118)	BLACK
FM000480	SC	SIMPLEX	GREEN	6F	LGX (118)	WHITE
FM002841	SC	SIMPLEX	GREEN	8F	LGX (118)	BLACK
FM000158	SC	SIMPLEX	GREEN	8F	LGX (118)	WHITE
LC						
FM000129	LC	DUPLEX	BLUE	24F	LGX (170)	WHITE
FM000130	LC	DUPLEX	BLUE	24F	LGX (170)	BLACK
FM000289	LC	DUPLEX	BLUE	6F	LGX (118)	WHITE
FM000293	LC	DUPLEX	GREEN	6F	LGX (118)	WHITE
FM000294	LC	DUPLEX	GREEN	6F	LGX (118)	BLACK
FM000297	LC	DUPLEX	BLUE	12F	LGX (170)	WHITE
FM000298	LC	DUPLEX	BLUE	12F	LGX (170)	BLACK
FM000301	LC	DUPLEX	GREEN	12F	LGX (170)	WHITE
FM000302	LC	DUPLEX	GREEN	12F	LGX (170)	BLACK
FM000338	LC	DUPLEX	GREEN	24F	LGX (170)	WHITE
FM000339	LC	DUPLEX	GREEN	24F	LGX (170)	BLACK
FM000348	LC	DUPLEX	BEIGE	24F	LGX (170)	WHITE
FM000349	LC	DUPLEX	BEIGE	24F	LGX (170)	BLACK
FM000838	LC	DUPLEX	BLUE	24F	LGX (118)	WHITE
FM000851	LC	DUPLEX	BEIGE	24F	LGX (118)	WHITE
FM000853	LC	DUPLEX	AQUA	24F	LGX (118)	WHITE
FM001004	LC	DUPLEX	GREEN	12F	LGX (118)	WHITE
FM001184	LC	QUAD	AQUA	24F	LGX (118)	BLACK
FM001185	LC	QUAD	AQUA	12F	LGX (118)	BLACK
FM001303	LC	DUPLEX	AQUA	12F	LGX (118)	WHITE
FM003069	LC	DUPLEX	GREEN	24F	LGX (118)	WHITE
FM003092	LC	DUPLEX	BLUE	6F	LGX (118)	BLACK
FM003108	LC	DUPLEX	GREEN	12F	LGX (118)	BLACK
FM003110	LC	DUPLEX	BEIGE	12F	LGX (118)	BLACK
FM003112	LC	DUPLEX	AQUA	12F	LGX (118)	BLACK

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LightLink Adapter Plates

Ordering Information (cont.)

AFL NO.	ADAPTER TYPE	SIMPLEX/DUPLEX/ QUAD	ADAPTER COLOR	FIBER COUNT	PLATE HEIGHT	PLATE COLOR
LC						
FM003202	LC	DUPLEX	GREEN	24F	LGX (118)	BLACK
FM003204	LC	DUPLEX	BEIGE	24F	LGX (118)	BLACK
FM003206	LC	DUPLEX	AQUA	24F	LGX (118)	BLACK
FM003208	LC	DUPLEX	BLUE	24F	LGX (118)	BLACK
FM003240	LC	DUPLEX	BLACK	12F	LGX (118)	BLACK
FM003244	LC	DUPLEX	BLACK	24F	LGX (118)	BLACK
FM003425	LC	DUPLEX	BLUE	12F	LGX (118)	WHITE
FM003429	LC	DUPLEX	BEIGE	6F	LGX (118)	WHITE
FM003465	LC	DUPLEX	BLUE	12F	LGX (118)	BLACK
ST						
FM003124	ST	SIMPLEX	METAL MM	12F	LGX (118)	BLACK
FM003438	ST	SIMPLEX	METAL MM	12F	LGX (118)	WHITE
FM000124	ST	SIMPLEX	METAL MM	12F	LGX (170)	BLACK
FM000123	ST	SIMPLEX	METAL MM	12F	LGX (170)	WHITE
FM003457	ST	SIMPLEX	METAL MM	6F	LGX (118)	WHITE
FM003461	ST	SIMPLEX	METAL MM	8F	LGX (118)	BLACK
FM003440	ST	SIMPLEX	METAL MM	8F	LGX (118)	WHITE
FM003126	ST	SIMPLEX	METAL SM	12F	LGX (118)	BLACK
FM003456	ST	SIMPLEX	METAL SM	12F	LGX (118)	WHITE
FM000286	ST	SIMPLEX	METAL SM	12F	LGX (170)	BLACK
FM000285	ST	SIMPLEX	METAL SM	12F	LGX (170)	WHITE
FM003104	ST	SIMPLEX	METAL SM	6F	LGX (118)	BLACK
FM003422	ST	SIMPLEX	METAL SM	6F	LGX (118)	WHITE
FM003441	ST	SIMPLEX	METAL SM	8F	LGX (118)	BLACK
FM003439	ST	SIMPLEX	METAL SM	8F	LGX (118)	WHITE
FM003102	ST	SIMPLEX	METAL SM	6F	LGX (118)	BLACK
FC						
FM000284	FC	SIMPLEX	METAL	12F	LGX (118)	BLACK
FM000283	FC	SIMPLEX	METAL	12F	LGX (118)	WHITE
FM003447	FC	SIMPLEX	METAL	12F	LGX (170)	BLACK
FM003446	FC	SIMPLEX	METAL	12F	LGX (170)	WHITE
FM003420	FC	SIMPLEX	METAL, GREEN DUST CAP	6F	LGX (118)	BLACK
FM003419	FC	SIMPLEX	METAL, GREEN DUST CAP	6F	LGX (118)	WHITE
FM003443	FC	SIMPLEX	METAL	8F	LGX (118)	BLACK
FM003442	FC	SIMPLEX	METAL	8F	LGX (118)	WHITE
MISC						
FM001606	MTP	SIMPLEX	BLACK	72F	LGX (118)	BLACK
FM003005	MTP	SIMPLEX	BLACK	96F	LGX (118)	BLACK
FM003430	MTP	SIMPLEX	BLACK	36F	LGX (118)	BLACK
FM003437	SC-ST HYBRID	SIMPLEX	BLUE-METAL	6F	LGX (118)	WHITE
FM003210	HEYCO	SIMPLEX	BLACK	12	LGX (118)	BLACK
FM003212	HEYCO	SIMPLEX	BLACK	6	LGX (118)	BLACK

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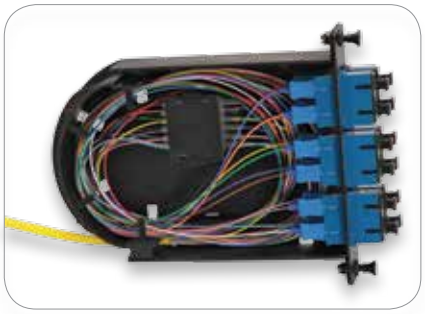

12-Fiber SC/UPC Configuration

DAS Poli-MOD

Poli-MOD® Patch and Splice Module

AFL's new Poli-MOD is an innovative patch and splice module, which offers an inventive and effective means to accommodate up to 24 fiber interconnections in an industry-standard, single-slot LGX®118 footprint. The new Poli-MOD offers a unique and robust way to secure cable without the need for time-wasting, tie-wrap alternatives. Additionally, the module leverages a creative snap-in splice sleeve cradle to securely manage both single and ribbon fiber arrangements. These features provide the capacity to outfit a standard 4RU rack-mount panel with up to 288-fiber interconnections.

The Poli-MOD is also offered in an arrangement that supports the low loss budget requirements of Distributed Antenna System (DAS) networks. This is accomplished through the elimination of an interconnection point while providing a robust splicing environment for rack and wall-mount panel applications.

Features

- 24-fiber interconnection capacity
- LGX 118 compatibility (single-slot module)
- Effective and time-saving cable mounting mechanism (no tie-wraps necessary)
- Inventive splice sleeve cradle
- Available in SC, LC, ST and FC connector arrangements
- Organized fiber routing
- Fixed solution, no moving parts
- Multi-directional cable entry access
- DIN rail mountable (with DIN Mount Kit)

Applications

- Telecommunications Closets
- Data Centers
- Customer Premise
- Local Area Networks
- Wide Area Networks
- Central Offices
- Hub Sites
- Cabinets
- Remote Terminals
- Distributed Antenna Systems (DAS)

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Poli-MOD® Patch and Splice Module

Ordering Information

Example: PM-L-12-ASC-0-S-01

PM – L – 12 – ASC – 0 – S – 01

Configuration
E = Empty (Splicing Only)
H = Half Loaded (Adapter Plate only)
L = Loaded (Adapter Plate & Pigtails)
D = DAS Poli-MOD[1]

Fiber/Connector Count
06 = 6 Fibers/Connectors
12 = 12 Fibers/Connectors
24 = 24 Fibers/Connectors[2]
XX = Empty

Connector Type[3]
ASC = Angle-Polished SC
USC = Ultra-Polished SC
PSC = Multimode SC
ALC = Angle-Polished LC
ULC = Ultra-Polished LC
PLC = Multimode LC
UST = Ultra-Polished ST
PST = Multimode ST
AFC = Angle-Polished FC
UFC = Ultra-Polished FC
PFC = Multimode FC
XXX = Empty

Fiber Type
0 = Single-mode (G.657.A1 BIF)
1 = 62.5 µm (OM1)
2 = 50 µm (OM2)
3 = 50 µm (OM3)
4 = 50 µm (OM4)
X = Empty

Fiber Arrangement
S = Single/Standard
R = Ribbon
3 = 3 mm, 3 meter DAS
X = No Fiber (Half Loaded or Empty)

Packaging
01 = 1 Poli-MOD per box*
06 = 6 Poli-MODs per box
12 = 12 Poli-MODs per box

1. DAS Poli-MOD requires specialty packaging and is packaged as "1 Poli-MOD per box" ONLY.
2. 24 Fibers/Connectors are only available in a LC Duplex configuration.
3. Angle and Ultra-Polished connector types are only available with single-mode fiber configurations.

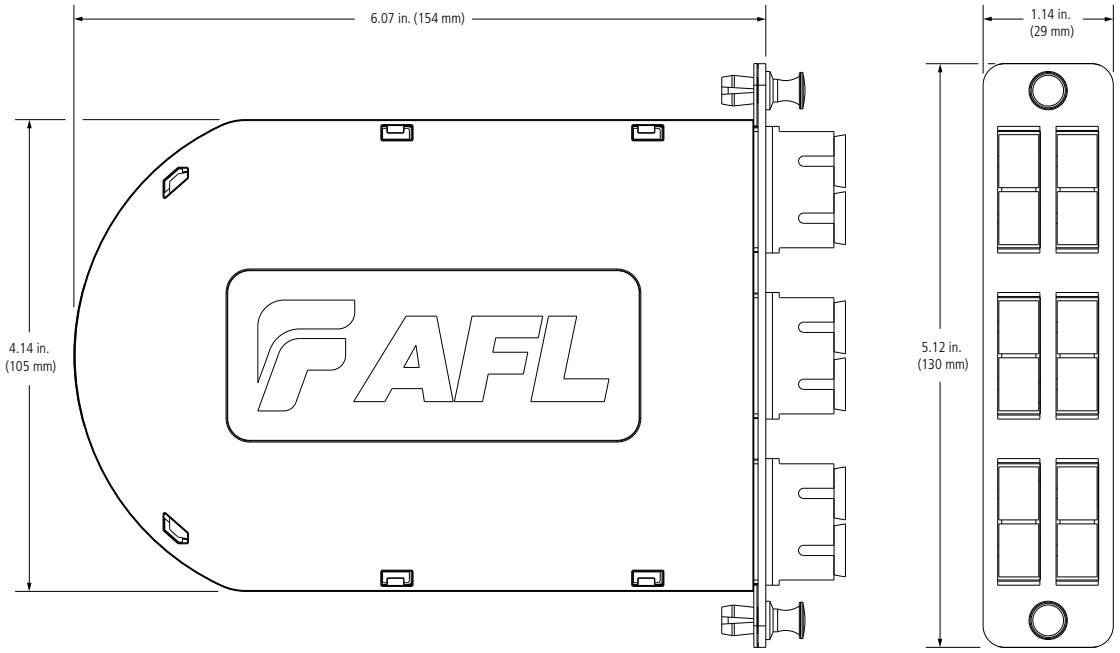
Connector Color Codes

CONNECTOR	COLOR
APC (Angled Polish Connector)	Green
UPC (Ultra Polish Connector)	Blue
PC-OM1	Beige
PC-OM2	Black
PC-OM3 / PC-OM4	Aqua

Poli-MOD Kits/Accessories

DESCRIPTION	AFL NO.
Poli-MOD Cable Mounting Clip Kit	FM003053
Poli-MOD Spiral Wrap Kit	FM003280
Fusion Splice Sleeve, FP-03, 40 mm	S000206
Adapter Bracket for Mounting Single Poli-MOD, angled	FM000948-B
Adapter Bracket for Mounting Single Poli-MOD, flat	FM003589-B
Corning CCH and PCH 145 mm Adapter Bracket	FM001636
DIN Mount Kit, LGX® 118	FM003394

Dimensions



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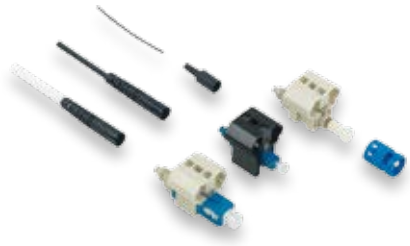

FASTConnect® Field-Installable Connectors

FASTConnect are factory pre-polished, field-installable connectors that completely eliminate the need for hand polishing in the field. Proven mechanical splice technology ensuring precision fiber alignment, a factory pre-cleaved fiber stub and a proprietary index-matching gel combine to offer an immediate low loss termination to either single-mode or multimode optical fibers. FAST Connectors are compatible with 250 µm and 900 µm optical fibers, as well as 900 µm, 2 mm and 3 mm cordage. All primary fiber types are supported, and each connector is color coded per industry standard requirements to aide in identification during and after installation. A factory-installed wedge clip (included with each connector) is removed and discarded upon completion of the termination. Incorporated into this device is an innovative, translucent wedge enabling the use of a common VFI to provide a "pass/fail" signal once physical contact is achieved.

Features

- No Epoxy, No Polish
- Low Insertion Loss
- Fiber Can Be Reinserted up to Three Times
- 3.0 mm, 2.0 mm and 900 µm Cordage Compatibility
- VFI Accessory to Confirm Proper Installation

Applications

- Premise/Enterprise Networks
- LAN/WAN Connections
- Patch Panels
- Equipment Termination
- FTTx Applications
- Field Repair/Replacement
- Equipment Test Leads

Specifications

PARAMETER		VALUE
Insertion Loss:	Single-mode - UPC Single-mode - APC Multimode - PC	Average: 0.2 dB, Maximum: 0.5 dB Average: 0.3 dB, Maximum: 0.6 dB Average: 0.1 dB, Maximum: 0.5 dB
Return Loss at Room Temperature:	Single-mode - UPC Single-mode - APC-AU* Single-mode - APC-AA** Multimode	Average: -55 dB, Maximum: -45 dB Average: -55 dB, Maximum: -50 dB Average: -65 dB, Maximum: -60 dB Average: -25 dB, Maximum: -20 dB
Operating Temperature		-40°C to +75°C

*Angle/Flat Cleaves
**Angle/Angle Cleaves

TIA/EIA-568-C.3 Compliant
TIA/EIA-604 (FOCIS) Compliant

Ordering Information

FIBER TYPE	HOUSING COLOR	CABLE SIZE	AFL NO.	
			PACKAGE OF 6	PACKAGE OF 100
FASTCONNECT SC				
Multimode 62.5/125 µm, OM1	Beige	900 µm	FAST-SC-MM62.5-6	FAST-SC-MM62.5-100
Multimode 50/125 µm, OM2	Black		FAST-SC-MM50-6	FAST-SC-MM50-100
Multimode 50/125 µm, OM3/OM4 compatible	Aqua		FAST-SC-MM50L-6	FAST-SC-MM50L-100
Single-mode, UPC	Blue		FAST-SC-SM-6	FAST-SC-SM-100
Single-mode, APC-AU	Green		FAST-SC-SMAU-6	FAST-SC-SMAU-100
Single-mode, APC-AA	Green		FAST-SC-SMAA-6	FAST-SC-SMAA-100*
FASTCONNECT ST				
Multimode 62.5/125 µm, OM1	Beige	900 µm	FAST-ST-MM62.5-6	FAST-ST-MM62.5-100
Multimode 50/125 µm, OM2	Black		FAST-ST-MM50-6	FAST-ST-MM50-100
Multimode 50/125 µm, OM3/OM4 compatible	Aqua		FAST-ST-MM50L-6	FAST-ST-MM50L-100
Single-mode, UPC	Blue		FAST-ST-SM-6	FAST-ST-SM-100
FASTCONNECT LC				
Multimode 62.5/125 µm, OM1	Beige	900 µm	FAST-LC-MM62.5-6	FAST-LC-MM62.5-100
Multimode 50/125 µm, OM2	Black		FAST-LC-MM50-6	FAST-LC-MM50-100
Multimode 50/125 µm, OM3/OM4 compatible	Aqua		FAST-LC-MM50L-6	FAST-LC-MM50L-100
Single-mode, UPC	Blue		FAST-LC-SM-6	FAST-LC-SM-100

** Requires FAST APC Tool Kit for installation*

U.S. Patents: 5,963,699 / 5,984,532 / 6,179,482 / 7,003,208 / 7,258,496

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FASTConnect® Field-Installable Connectors

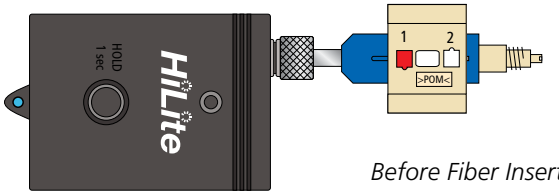
Accessories

DESCRIPTION			AFL NO.	AFL NO.
BOOT KITS FOR 2 MM AND 3 MM CORDAGE	**COLOR**	**CABLE SIZE**	**PACK OF 6**	**PACK OF 100**
2 mm Boot Kit, SC/LC/ST	Black	2 mm	FAST-BOOT-2MM-6	FAST-BOOT-2MM-100
3 mm Boot Kit, SC/LC/ST	Black	3 mm	FAST-BOOT-3MM-6	FAST-BOOT-3MM-100
DUPLEX CLIPS				
LC Duplex Clip (LC only)	Transparent		CS010437-06	CS010437-100

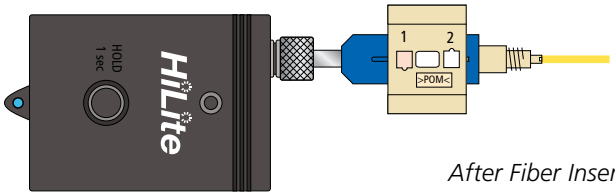
TOOL KITS		AFL NO.
FAST UPC Tool Kit	For all UPC style connectors and SC/ APC-AU (CT-30A Cleaver)	CS001201
FAST UPC Tool Kit	For all UPC style connectors and SC/APC-AU (CT-06A Cleaver)	CS010975
FAST APC Tool Kit	For SC/APC-AA connectors (OX-FAC-08 Cleaver)	CS012290

VISUAL FAULT IDENTIFIERS	AFL NO.
AFL NOYES® VFI 2	VFI2-00-0900
AFL NOYES HiLite	VFI3-00-0900
1.25 mm Universal Adapter (LC Connectors)	2900-50-0010MR

Testing



Before Fiber Insertion



After Fiber Insertion

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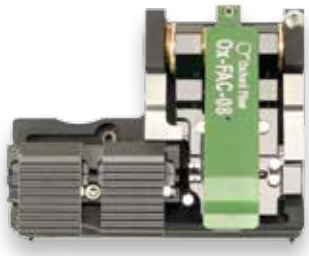
Tool Kit Contents

CT-30A Cleaver

CT-06A Cleaver



OX-FAC-08 Cleaver

FASTConnect® Universal Tool Kit

The FASTConnect Universal Tool Kits provide all the necessary installation tools required for fiber preparation of 250 µm or 900 µm fibers, or 900 µm, 2 mm or 3 mm cordage for AFL's pre-polished FASTConnect. Featuring either the CT-30A, CT-06A or OX-FAC-08 fiber cleaver, the FASTConnect Universal Tool Kit contains all the industry standard termination tools required for fiber preparation. Additionally, the carrying case has adequate storage for extra FASTConnect for on-site convenience.

Applications

- Premise environments
- LAN Fiber to the Desk environments
- Patch panel/wiring closets
- FTTx applications
- Quick repair/replacement areas

Features

- Industry standard fiber preparation tools
- Compact design, flexible yet rugged case
- Complete instructions provided

Ordering Information

DESCRIPTION	AFL NO.
FASTConnect High Precision UPC/PC Tool Kit with CT-30A Cleaver	CS001201
FASTConnect High Precision UPC/PC Tool Kit with CT-06A Cleaver	CS010975
FASTConnect APC (Angle/Angle Connector) Tool Kit with OX-FAC-08	CS012290

Tool Kits include: Cleaver, FAST SC Assembly Tool, FAST LC Assembly Tool, 3 mm Cable Clamp, 2 mm Cable Clamp, 0.25/0.9 mm Cable Clamp, Fiber Stripper, Kevlar Scissors, Fiber Preperation Fluid, Lint-free Cloth Wipes, Marker Pen, Installation Instructions, Strip Length Template and a Carrying Case.

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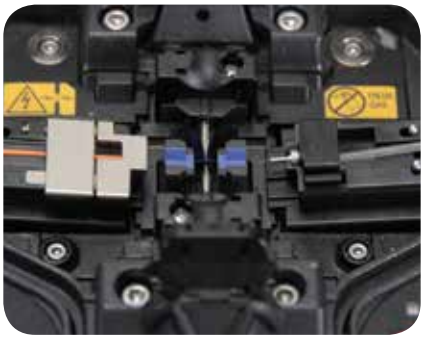
FUSEConnect Connectors (SC, FC, LC, ST)



FUSEConnect in Fusion Splicer

FUSEConnect Kits—ST (blue), SC (green), LC (blue)

FUSEConnect® Fusion-Spliced, Field-Installable Connectors

AFL's FUSEConnect fusion-spliced, field installable connectors are uniquely designed and feature only four to five components. The factory pre-polished ferrule eliminates the need for polishing, adhesives, and crimping in the field, which minimizes the potential for operator error and expensive connector scrap.

FUSEConnect utilizes a fusion splicer to terminate the connector in the field, addressing return loss concerns present in analog optical networks. This advanced process yields true APC performance for SC/APC and LC/APC configurations, and is compliant to GR-326-CORE. FUSEConnect is compatible with Fujikura fusion splicers and most other fiber holder-based fusion splicing platforms.

Features

- Field installable
- No adhesives, crimping or polishing
- True APC performance
- MM compliant to TIA/EIA568C.3
- Compatible with most fusion splicers

Applications

- Connectorization in:
  - RF-overlay FTTP networks
  - Cable TV backbone networks
  - Outside plant
  - FTTD
  - MDU FTTP Cabling
- Central office connector replacement
- Data center installation

Specifications

PARAMETER	VALUE
Connector Type	SC, LC, FC, ST
Cable Type	900 µm, 2 mm, 3 mm
Polish	APC, UPC, PC
Insertion Loss	SM: 0.15 dB (average), 0.3 dB (maximum) / MM: 0.10 dB (average), 0.3 dB (maximum)
Return Loss	SM: ≤ -65 dB (APC), ≤ -55 dB (UPC) / MM: ≤ -35 dB (PC)
Operating Temperature	-40°C to +75°C

Ordering Information

CONN. TYPE	BOOT TYPE	AFL NO.*				
		UPC SM (Blue)	APC SM (Green)	PC 62.5 µm MM (Beige)	PC 50 µm MM (Black)	PC 50 µm LOMMF (AQUA) **
SC	900 µm	FUSE-SC9SMU-6	FUSE-SC9SMA-6	FUSE-SC9M62-6	FUSE-SC9M50-6	FUSE-SC9M50L-6
	3 mm	FUSE-SC3SMU-6	FUSE-SC3SMA-6	FUSE-SC3M62-6	FUSE-SC3M50-6	FUSE-SC3M50L-6
LC	900 µm	FUSE-LC9SMU-6	FUSE-LC9SMA-6	FUSE-LC9M62-6	FUSE-LC9M50-6	FUSE-LC9M50L-6
	2 mm	FUSE-LC2SMU-6	FUSE-LC2SMA-6	FUSE-LC2M62-6	FUSE-LC2M50-6	FUSE-LC2M50L-6
FC	900 µm	FUSE-FC9SMU-6	—	FUSE-FC9M62-6	FUSE-FC9M50-6	FUSE-FC9M50L-6
	2 mm	FUSE-FC2SMU-6	—	FUSE-FC2M62-6	FUSE-FC2M50-6	FUSE-FC2M50L-6
	3 mm	FUSE-FC3SMU-6	—	FUSE-FC3M62-6	FUSE-FC3M50-6	FUSE-FC3M50L-6
ST	900 µm	FUSE-ST9SMU-6	—	FUSE-ST9M62-6	FUSE-ST9M50-6	FUSE-ST9M50L-6
	2 mm	FUSE-ST2SMU-6	—	FUSE-ST2M62-6	FUSE-ST2M50-6	FUSE-ST2M50L-6
	3 mm	FUSE-ST3SMU-6	—	FUSE-ST3M62-6	FUSE-ST3M50-6	FUSE-ST3M50L-6

* *AFL NO. is for one pack of 6 pieces* ** *Laser Optimized MM Fiber (LOMMF) compatible with OM3 and OM4 fibers*

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FUSEConnect MPO Connectors, Cable

FUSEConnect MPO Connectors, Ribbon

FUSEConnect® MPO Fusion-Spliced, Field-Terminated Connectors

AFL's FUSEConnect MPO fusion-spliced, field-terminated connectors are uniquely designed and feature just six components. With a factory pre-polished ferrule, its innovative field-termination process eliminates polishing, adhesives and crimping in the field minimizing the potential for operator error and expensive connector scrap.

Designed to Fiber Optic Connector Intermateability Standard (FOCIS), Type MPO, FOCIS-5, TIA-604-5-C, AFL's FUSEConnect MPO performs as an equivalent to the standard factory terminated MPO/MTP® assemblies. Designed to utilize either ribbon or loose tube cable, this connector helps to minimize the complexity involved in the termination of a multi-fiber connection, allowing for a reliable and repeatable termination in field applications.

FUSEConnect MPO is part of the FUSEConnect series splice-on connector which includes the SC, LC, ST and FC that require a fusion splicer and accessories for installations. The AFL FUSEConnect MPO Termination Kit specifically provides all the necessary accessories required for field termination of the FUSEConnect MPO.

Features

- Field installable splice-on connector
- Only six components
- No adhesives, crimping or polishing
- TIA-568-C.3, IEC-61754-7, and TIA/EIA-604-5 FOCIS 5 Compliant
- Field MPO polarity customization
- Include 3.0 mm round and optical fiber ribbon flat boots in each pack

Applications

- Connectorization in:
  - RF-overlay FTTP networks
  - Cable TV backbone networks
  - Outside plant
  - MDU FTTP Cabling
- Connector restoration in the field
- Data center installation
- Patch cord customization in the field

Specifications

PARAMETER		VALUE
Insertion Loss	Single-mode (OS1) 62.5/125 (OM1) 50/125 (OM2) 50/125 LO (OM3)	Average: 0.25 dB; Max: 0.75 dB Average: 0.10 dB; Max: 0.35 dB Average: 0.10 dB; Max: 0.35 dB Average: 0.10 dB; Max: 0.35 dB
Return Loss	Single-mode (OS1) 62.5/125 (OM1) 50/125 (OM2) 50/125 LO (OM3)	> 65 dB > 30 dB > 30 dB > 30 dB
Operating Temperature		-40°C to +75°C

continued on next page

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FUSEConnect® MPO Fusion-Spliced, Field-Terminated Connectors

Ordering Information

AFL NO.*	CONNECTOR TYPE	FIBER TYPE	POLISH	CABLE SIZE		HOUSING COLOR
				ROUND	FLAT	
FUSEMPO-SMA-3-M-6	MPO, Male (guide pins)	Single-mode (OS1)	APC	3.0 mm	250 µm	Green
FUSEMPO-SMA-3-F-6	MPO, Female (No Guide Pins)	Single-mode (OS1)	APC	3.0 mm	250 µm	Green
FUSEMPO-MM6-3-M-6	MPO, Male (guide pins)	Multimode 62.5 µm (OM1)	PC	3.0 mm	250 µm	Beige
FUSEMPO-MM6-3-F-6	MPO, Female (no guide pins)	Multimode 62.5 µm (OM1)	PC	3.0 mm	250 µm	Beige
FUSEMPO-MM5-3-M-6	MPO, Male (guide pins)	Multimode 50 µm (OM2)	PC	3.0 mm	250 µm	Black
FUSEMPO-MM5-3-F-6	MPO, Female (no guide pins)	Multimode 50 µm (OM2)	PC	3.0 mm	250 µm	Black
FUSEMPO-MM5L-3-M-6	MPO, Male (guide pins)	Multimode 50 µm 10Gig (OM3)	PC	3.0 mm	250 µm	Aqua
FUSEMPO-MM5L-3-F-6	MPO, Female (no guide pins)	Multimode 50 µm 10Gig (OM3)	PC	3.0 mm	250 µm	Aqua

**Pack of 6 pieces*

Ordering Information – Accessories

DESCRIPTION	AFL NO.
TOOL KIT	
FuseConnect MPO Tool Kit	FUSEMPO-TL-KT
ACCESSORIES	
FuseConnect Ribbonize Tool	FUSE-RB-TL
FuseConnect Stripping Tool (3.0 mm, 2.8 mm, 2.0 mm, and 1.6 mm)	FUSE-ST-TL
FuseConnect MPO Assembly Tool	FUSE-AS-TL

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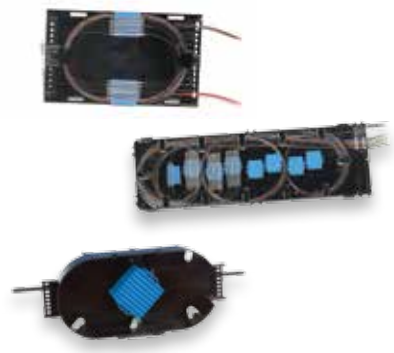

Fiber Outside Plant

AFL's outside plant products are tried and tested like no others. AFL's experience in the field is proven success that you can count on for products you deploy now and in the future.

Sealed Splice Closures

AFL's sealed splice closures are craft-friendly and designed with the installer in mind—closures that are engineered to protect fiber optic splices in underground or aerial environments (butt, in-line, branch and drop applications). Customers can count on AFL's closures to be fully sealed and to exceed their expectations. Installation is achieved using common-handle tools with no need for heat, gels or adhesives. Capacities up to 864 single-fused and 2592 mass-fused fibers are available.

Aerial Weathertight Splice Closures

Unmatched in ease of access, AFL aerial splice closures provide the fastest, most economical methods for splicing fibers in the field. Like AFL's sealed splice closures, aerial closures are used in butt, in-line, branch and drop applications, and are engineered to reduce installation time and labor expense using common hand tools with no heat, gel, adhesives or power tools needed. Capacities up to 288 single-fused and 1152 mass-fused fibers are available.

Splicing and Distribution Enclosures

Splicing and distribution enclosures provide for an efficient method for organizing, splicing and interconnecting fibers, distribution and building entrance applications. Both indoor and outdoor designs are available, with wall-mount or pedestal-mount applications, including interconnect capacities of up to 48-fiber patching. Choose from capacities up to 240 single-fused and 432 mass-fused fiber configurations.

Fiber Demarcation

Used in FTTx applications, a fiber demarcation is the point at which the service provider network ends and is connected to the cabling at the customer location. AFL's fiber demarcation products secure efficient termination of fibers in transitioning from OSP environments.

Fiber Optic Splice Trays

Fiber optic splice trays are used to hold and protect individual fusion and mechanical fiber optic splices in closures. Trays are designed to safely and securely store extra fiber along with the splice sleeve while maintaining minimum bend radius requirements. Additional features include capacities up to 60 single-fused and 2880 mass-fused fibers, pre-formed bend radiuses, in-line or butt splice capability and extended finger routing guides.

Fiber Storage Units

Fiber storage units (FSU) are used to store extra cable length along a cable run or distribution terminal. This method of slack storage provides an orderly and secure method to avoid cable from being damaged. AFL's FSUs are available in traditional powder-coated aluminum or UV-stabilized thermoplastic construction, maintain minimum bend radius requirements, and units can be strand mounted to messenger wire, mounted to ADSS cable or pole-mounted.

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LL-400b shown with optional interconnect module

Hardware kit for external grounding (included)

LightLink 400b
Optical Splicing and Distribution Enclosure

The LightLink (LL) 400b Fiber Optic Splicing and Distribution Enclosure provides for organizing, splicing and interconnecting fibers in FTTx, broadband, distribution and building entrance applications. Each LL-400b enclosure features a scratch resistant powder coated aluminum base and a fully gasketed cover. A unique self-sizing grommet design allows for express and preterminated cable installation. The LL-400b is a butt-style enclosure equipped with 6 independent cable entry/exit grommets, used for outdoor pedestal or indoor building entrance and riser splicing applications. The unit supports a maximum storage and splicing capacity of up to 240 single or 432 mass-fused fibers.

When installed into an LL-400b, the Inteconnect Module supports connectivity when used with LGX-118 adapter plates (purchased seperately). It is used in outdoor pedestals or building mounted LL-400b enclosures where interconnection is required.

Features

- Independent cable strain relief system
- Cable entry/exit grommet seals
- Fiber routing system
- Splice tray support system
- Supports optional interconnect modules
- 240 single fusion splices
- 432 mass fusion splices
- Grounding hardware kit included
- UL® Listed

Applications

- OSP Splicing
- MDU Splicing
- FTTx Distribution

Specifications

PARAMETER	VALUE
Material	Chassis – aluminum
Coatings	Electrostatically applied, powder coat
Color	Antique white
Dimensions (H x W x D) in. (cm)	22.75 x 11.00 x 4.0 (57.79 x 27.94 x 10.16)
Weight lbs (kg)	6.5 (2.95)

Ordering Information

DESCRIPTION	AFL NO.
LL-400b	91894-04
LL-400b In 1212 Pedestal	FM000636
LL-410 Interconnect Module, Supports Up To 2 LGX-118 Adapter Plates	911410-00-04
LL-2448 Universal Splice Tray	911289-00-02
LL-2448-48S Single Fusion Splice Tray	FA000045
LL-2400 Single Fusion Splice Tray	91710-06
LL-400 Security Kit	FM000787
LL-400b Large Dual-port Grommet Kit	911406-00-00
LL-400b Large Multi-port Grommet Kit	FC000352
LG-410/LG-500 Dual-port Grommet Kit	911386-00-01
LG410/LG500 Multi-port Grommet Kit	FC000573

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LL-500 with interconnect kit installed

LL-500 with LL-2450 splice tray installed

LightLink 500 Optical Splicing and Distribution Enclosure

The LightLink (LL) 500 Optic Splicing and Distribution Enclosure provides for organizing, splicing and interconnecting fibers in broadband, distribution and building entrance applications. The enclosure features a scratch and corrosion resistant powder paint coating base and a fully gasketed hinged cover. A unique self-sizing grommet design allows for express and pre-terminated cable installation. The LL-500 supports up to five LL-2450 splice trays for up to 60 single fusion splices or three LL-4850 splice trays (not included in base unit) and an optional 12 fiber, hinged Interconnect Module.

Features

- NEMA 3 rated enclosure
- Independent cable strain relief system
- Cable entry/exit grommet seals
- Fiber routing system
- Splice tray support system
- Hinged cover
- Supports optional Interconnect Modules
- Interconnect Module supports up to 12 SC bulkhead adapters
- Secured with a standard padlock
- 4 cable ports with standard grommets
- 8 cable ports with optional expansion kits

Specifications

PARAMETER	VALUE
Material	Steel
Coatings	Electrostatically applied, powder coat
Color	Antique white
Cable Ports	4-8
Cable Sizes (Max. O.D. – Min. O.D.)	4 @ 0.3-0.77" Up to 8 with Dual Grommet Kits 4 @ 0.3-0.65" 4 @ 0.3-0.5"
Dimensions (H x W x D) in. (cm)	17.5 x 9.0 x 4.0 (44.45 x 22.86 x 10.16)
Weight lbs. (kg)	6.5 (2.95)

Ordering Information

DESCRIPTION	AFL NO.
LL-500-U-0	FM000326
LL-500 Interconnect Kit with SC UPC adapters	FM000385
LL-500 Interconnect Kit with SC APC adapters	FM000407
LL-500 Interconnect Kit without adapters	FM000408
LL-500 with Multi-port Grommets	FM000659
LL-2450 Single Fusion Splice Tray (stores 12 single fusion splices)	91957-00
LL-4850 Mass Fusion Splice Tray (stores 8 mass fusion sleeves - 96 fibers)	91958-00
LL-500 Multi-port Grommet Kit, 6 drop cable entry up to 0.37" OD	FC000573

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Test and Inspection

AFL's test and inspection products consistently meet and exceed customer needs. We deliver exceptional fiber optic test equipment and outstanding service. Our ISO 9001:2008 certification and quality practices ensure you receive excellent products and documentation.

AFL test and inspection products are designed to provide accurate results every time. They are engineered to endure outside plant environments, and feature intuitive user interfaces that provide quick results without complicated training requirements. Product lines include optical time domain reflectometers (OTDRs), loss test kits, inspection and cleaning, fiber identifiers, fault locators and more.

OTDRs

AFL's OTDRs range from simple fault locating to multifunction testing. Exclusive Touch and Test™ brings advanced functionality in an easy-to-use interface. TRM™ certification and reporting software provides a PC analysis tool for viewing, managing, archiving and printing OTDR traces along with comprehensive reports compliant to TIA/ISO guidelines.

Loss Test Kits

AFL provides loss testing capabilities for all budgets. Simple power meters and light sources offer reliable loss measurements. Advanced kits add functionality including in-unit storage of test results and TRM reporting software which enables technicians to organize test data, apply test rules for pass/fail analysis and build custom test reports using industry accepted templates.

Inspection and Cleaning

Connector integrity is crucial to reliable network performance. AFL offers solutions ranging from standalone inspection scopes to probe options for direct connection to our OTDRs or a PC. Successful inspection of fiber connectors is dependant upon cleaning with fiber optic-grade cleaners. See our full line of One-Click Cleaners, Cletop cassette cleaners, and cleaning sticks, available individually or packaged in convenient cleaning kits.

Fiber Identifiers and Fault Locators

Optical Fiber Identifiers (OFI) allow technicians to identify in service fibers without interrupting traffic. Visual Fault Locators (VFL) inject visible red light into an optical fiber to enable technicians to quickly locate sharp bends, breaks, or simply trace a fiber in cluttered fiber areas.

Whether you're installing fiber optic cable or testing a splice with our equipment, the job is done right. And if you need expert advice, our dedicated customer service representatives and support staff are always here to help.

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M310 Enterprise OTDR

Designed for Enterprise Network Testing, Troubleshooting and Documentation

Features

- Industry leading TruEvent® analysis
- LinkMap® for easy results interpretation
- Short dead zones provide precise testing of closely spaced events
- Front Panel and First Connector Check
- Live fiber detection
- Inspection ready with DFS1 Digital FiberScope
- Integrated Source, Power Meter and VFL

Applications

- Enterprise network
- Data Center
- LAN/WAN
- Campus and military fiber networks and more

Rugged, lightweight and easy to hold, the M310 has a Touch and Test user interface that makes it easy for experts and novices to test and document fiber networks accurately and quickly. TruEvent technology enables M310 to provide superior event analysis capability for user to verify and troubleshoot even the most complex fiber network. LinkMap visualizes test results for easy and quick interpretation. With dynamic range up to 38 dB, and 16 hour battery run time, M310 provides complete Tier 1 insertion loss and Tier 2 OTDR testing. Using pre-set Industry ISO/TIA standards or user set Pass/Fail thresholds, technicians are alerted to installation problems and failures in easy-to-interpret event table. Pass/Fail event table and trace are displayed on the same screen for easy correlation.

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Specifications are subject to change without notice.

M310 Enterprise OTDR

Ordering Information

M310 — NN | P — 01 — HC | O

Optical Configuration (NN)
25 = 850/1300 nm MM and 1310/1550 nm SM
20 = 1310/1550 nm SM

Packaging option (P)
U = Unit
K = Kit

Hard Case option (HC)
Select (HC) only if ordering hard case

Additional Option
blank = no additional hardware
1 = DFS1
2 = DFS1 and OLS

Example: M310-20K-01-HC2

This order is for the M310 single-mode OTDR with 1310/1550 nm optical configuration. It's a kit with hard case, DFS1, and OLS. DFS1 and OLS are additional hardware.

Below is the chart for your ordering convenience:

	INTEGRATED OPTION			ADDITIONAL OPTION		CASE OPTION		AFL NO. [a, c]
	VFL	OPM	OLS	DFS1	OLS	HARD	SOFT	
	◆	◆	◆				◆	M310-25U-01
	◆	◆	◆				◆	M310-20U-01
	◆	◆	◆			◆		M310-25U-01-HC
	◆	◆	◆			◆		M310-20U-01-HC
	◆	◆	◆	◆		◆		M310-25K-01-HC1 [b]
	◆	◆	◆	◆		◆		M310-20K-01-HC1 [b]
	◆	◆	◆	◆	OLS4	◆		M310-25K-01-HC2 [b]
	◆	◆	◆	◆	OLS2-Dual	◆		M310-20K-01-HC2 [b]

Notes:

a. Specify Language for OTDR Quick Reference Guide:
English,Chinese Simplified, Chinese Traditional,German, French, Italian, Polish, Portuguese, Spanish, Turkish and Japanese.

b. When ordering, specify DFS1 model. The DFS1 Digital FiberScope kit is available as either PC/UPC inspection kit (DFS1-00-04XU model) or APC inspection kit (DFS1-004XA model).

c. Specify Language for OTDR operating environment: English, Chinese (Simplified and Traditional), and Japanese.

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Specifications are subject to change without notice.

M310 Enterprise OTDR

Accessories, Upgrades, and Calibration Plans

DESCRIPTION	AFL NO.
Inspection	
DFS1 Digital FiberScope PC/UPC inspection kit	DFS-00-04XU
DFS1 Digital FiberScope APC inspection kit	DFS-00-04XA
DFS1 Digital FiberScope kit without adapters	DFS-00-04XN
Fiber Rings	
50/125 µm multimode, 150 m	FR1-M5-150-x1-x2 [a]
Laser Optimized, 50 µm multimode, 150 m	FR1-L5-150-x1-x2 [a]
62.5/125 mm multimode, 150 m	FR1-M6-150-x1-x2 [a]
Single-mode, 150 m	FR1-SM-150-y1-y2 [a]
Cleaning	
Wet Cleaning kit for SC/FC/ST/LC connectors	8500-20-0900
Dry Cleaning kit	8500-20-0901
Basic Cleaning kit with carry case (includes One-Clicks, FCC2 cleaning fluid, FiberWipes, Cletop SB)	FCP2-00-0900
Basic Cleaning kit with MPO Cleaners and carry case (includes One-Clicks, FCC2 cleaning fluid, FiberWipes, Cletop SB, MPO/MTP Cleaner)	FCP2-00-0901
One-Click Cleaner SC, ST, FC (500+ cleans)	8500-05-0001MZ
One-Click Cleaner LC/MU (500+ cleans)	8500-05-0002MZ
One-Click Mini-100 SC, ST, FC (100+ cleans)	8500-05-0005MZ
One-Click Mini-100 LC/MU (100+ cleans)	8500-05-0006MZ
One-Click Cleaner Ultra 2.5 SC, ST, FC (enlarged cleaning)	8500-05-0007MZ
One-Click Ultra Cleaner D-LC (Duplex LC, 500 cleans x 2)	8500-05-0008MZ
MPO/MTP® Cleaner (MPO-CLK-B)	CS000710

DESCRIPTION	AFL NO.
Reporting software add-on	
TRM 2.0 Basic Software (OTDR Trace/OLTS Viewer, Batch Editor & Reports)	TRM-00-0900PR
TRM 2.0 Advanced Software (Basic TRM plus Advanced Features & Reports)	TRM-00-0910PR
TRM 2.0 upgrade from Basic to Advanced Software	TRM-00-0920PR
Calibration Plan (2 years Calibration plan) [b]	
M310-25K-HC2	CAL2-00-M310-25K-HC2
M310-20K-HC2	CAL2-00-M310-20K-HC2
M310-25U-01, -HC, -HC1	CAL2-00-M310-25
M310-20U-01, -HC, -HC1	CAL2-00-M310-20
Calibration and Warranty plan (2 years Calibration Plus plan) [c]	
M310-25K-HC2	CAL2-01-M310-25K-HC2
M310-20K-HC2	CAL2-01-M310-20K-HC2
M310-25U-01, -HC, -HC1	CAL2-01-M310-25
M310-20U-01, -HC, -HC1	CAL2-01-M310-20

Note:

a. When ordering Fiber Rings, specify connector types (x1, x2, y1, y2).

b. Prepaid Cal plans offer two annual calibrations at a discounted price, calibration expiration email service and express calibration.

c. Cal Plus plans offer the same services as the Cal plans with the addition of a two year extended warranty (three years total coverage).

International Sales and Service Contact Information

Available at www.AFLglobal.com/Test/Contacts

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M210e Hand-held OTDR

Test, Troubleshoot and Document Single-mode and Multimode Fiber Networks

NEW

Features

- Industry leading TruEvent® analysis
- Short dead zones provide precise testing of closely spaced events
- 34 dB dynamic range single-mode
- Crisp bright display for indoor/outdoor viewing
- Integrated Power Meter and VFL (visual fault locator)
- Inspection ready with DFS1 Digital FiberScope
- 16 hours battery life
- Rugged, lightweight (<1 kg)
- Multiple languages supported

Applications

- Enterprise network
- LAN/WAN
- Campus and military fiber networks and more

The M210e is the inspection ready OTDR that combines OTDR, OPM and VFL capability with a proven, easy to operate and understand interface. The M210e offers the intuitive Touch and Test™ user interface in a rugged, lightweight, easy-to-hold package ready for field use. Touch and Test simplifies the M210e user experience, minimizes human errors and reduces training time by providing one-touch access to the all major functions of the OTDR. The M210e allows setting Pass/Fail thresholds to industry standard TIA/ISO or user-values and automatically alerts users of failing fibers, enabling both experts and novice technicians to complete jobs more accurately and in less time.

Available as a single-mode, multimode, or single-mode/multimode model, the M210e comes in either a soft or hard case, also as part of kit for testing, inspection, and certification.

The M210e is ideal for testing, analyzing and troubleshooting enterprise, LAN/WAN campus and military facilities.

Thousands of test results may be stored internally or on the supplied USB drive. Test results are transferable, via USB cable or USB drive, to a computer for viewing, printing, and analyzing with the supplied Windows® compatible TRM® 2.0 Basic Analysis and Documentation Software (Test Results Manager). The supplied TRM 2.0 Basic is licensed for installation on up to 5 PCs.

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M210e Hand-held OTDR

M210e Models and Included Adapters

WAVELENGTHS (nm)				DYNAMIC RANGE (dB)	OTDR PORT ADAPTERS	OPM PORT ADAPTERS	AFL BASE MODEL NO.
850	1300	1310	1550				
		◆	◆	34/33	SC, FC	SC, 2.5 mm Universal	M210e-20
◆	◆			28/28	SC, ST	SC, 2.5 mm Universal	M210e-22
◆	◆	◆	◆	28/28/34/33	SC, FC, ST	SC, 2.5 mm Universal	M210e-25

All M210e OTDRs include a USB flash drive, an AC adapter, UCI switchable adapters for OTDR and OPM ports, trace analysis and documentation software and a quick reference guide.

Ordering Information

DESCRIPTION	AFL NO.
M210e QUAD Certification Kit (Tier 1 and 2): M210e QUAD, OLS4, DFS1* in hard case	M210e-25K-01-HC2
M210e QUAD Test and Inspection Kit (Tier 2): M210e QUAD, DFS1* in hard case	M210e-25K-01-HC1
M210e OTDR, SM (1310/1550), OPM, VFL in hard case	M210e-20U-01-HC
M210e OTDR, MM (850/1300) OPM, VFL in hard case	M210e-22U-01-HC
M210e OTDR, QUAD (850/1300/1310/1550), OPM, VFL in hard case	M210e-25U-01-HC
M210e OTDR, SM (1310/1550) OPM, VFL in soft case	M210e-20U-01
M210e OTDR, MM (850/1300) OPM, VFL in soft case	M210e-22U-01
M210e OTDR, QUAD (850/1300/1310/1550), OPM, VFL in soft case	M210e-25U-01

*** When ordering, specify DFS1 model (See Accessories Table below).**

When ordering, select options as follows: Optical Configuration (NN), (U) for UPC connection and Language (LL). Add (HC) only if ordering the hard case option.

Example: M210e-25U-01-HC -> This model number indicates M210e QUAD with the English/European language pack in the optional hard case.

M210e — NN U — LLL — HC

Optical Configuration (NN)

20 = 1310/1550 nm SM
22 = 850/1300 nm MM
25 = 850/1300 nm MM and 1310/1550 nm SM

OTDR port ferrule (U = UPC)

Hard Case option (HC)
(Select (HC) only if ordering hard case option)

Quick Reference Guide Language (LLL)*

ENG = English
CHS = Chinese, Simplified
CHT = Chinese, Traditional
DEU = German
FRA = French
ITA = Italian
POL = Polish
POR = Portuguese
SPA = Spanish
TUR = Turkish

***Specify Language for OTDR Quick Reference Guide**

Accessories

DESCRIPTION	AFL NO.
DFS1 Digital FiberScope PC/UPC inspection kit	DFS1-00-04XU
DFS1 Digital FiberScope APC inspection kit	DFS1-00-04XA
DFS1 Digital FiberScope kit without adapters	DFS1-00-04XN
Fiber Ring, 50/125 µm multimode, 150 m	FR1-M5-150-x1-x2 [a]
Fiber Ring, Laser Optimized, 50 µm multimode, 150 m	FR1-L5-150-x1-x2 [a]
Fiber Ring, 62.5/125 mm multimode, 150 m	FR1-M6-150-x1-x2 [a]
Fiber Ring, single-mode, 150 m	FR1-SM-150-y1-y2 [a]
Wet Cleaning kit for SC/FC/ST/LC connectors	8500-20-0900
Dry Cleaning kit	8500-20-0901
Basic Cleaning kit with carry case	FCP2-00-0900
Basic Cleaning kit with MPO Cleaners and carry case	FCP2-00-0901
One-Click Cleaner SC, ST, FC (500+ cleans)	8500-05-0001MZ
One-Click Cleaner LC/MU (500+ cleans)	8500-05-0002MZ
One-Click Mini-100 SC, ST, FC (100+ cleans)	8500-05-0005MZ
One-Click Mini-100 LC/MU (100+ cleans)	8500-05-0006MZ
One-Click Cleaner Ultra 2.5 SC, ST, FC (enlarged cleaning)	8500-05-0007MZ
One-Click Ultra Cleaner D-LC (Duplex LC, 500 cleans x 2)	8500-05-0008MZ

Note:

a. When ordering Fiber Rings, specify connector types (x1, x2, y1, y2).

International Sales and Service Contact Information

Available at www.AFLglobal.com/Test/Contacts

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Specifications are subject to change without notice.

Features (SMLP5-5 Test Kit)

- Wave ID reduces test time
- Hand-held, rugged, lightweight
- Cost-effective, easy-to-use
- N.I.S.T traceable
- OLS4 Quad Light Source
- Dual or single Wave ID, CW, Tone
- Industry standard 2 kHz test Tone
- 50 µm and 62.5 µm mandrels
- OPM5-2D Optical Power Meter
- File management system organizes stored test data
- Storage capability >500 fibers
- USB port for download of stored data
- TRM™ PC Reporting Tool (Windows® compatible)
- Apply certification rules to test results
- Create professional test reports
- Archive test results

Applications

- Certify multimode and single-mode links per TIA/EIA standards
- Fiber identification prior to splicing
- Passive Optical Networks (PON) testing
- Save test data for report generation with NOYES TRM Software

SMLP5-5 Test Kit with Wave ID, Set Reference, and Data Storage

The SMLP5-5 test kit combines the OPM5-2D optical power meter and OLS4 integrated LED and laser light source and is ideally suited for testing fiber optic networks with hybrid (single-mode and multimode) cables.

The OLS4 features 850/1300 nm LED output from a multimode output port and 1310/1550 nm laser output from a single-mode output port. Each wavelength may be transmitted individually at CW or with user selectable modulated Tone(SM output). Also, each wavelength may be transmitted with Wave ID. Both output ports are equipped with UCI based removable adapters to allow the output connectors to be inspected and cleaned.

The OPM5-2D is a full-featured, hand-held optical power meter designed for measuring optical power in premise, telco, or broadband networks and for performing insertion loss measurements on multimode or single-mode fiber optic links. The standard Wave ID feature (when used with NOYES OLS series light sources) automatically detects and sets the wavelength(s), preventing setup and measurement errors. It significantly increases efficiency and reduces technician errors—and saves testing time—by eliminating the need to test each wavelength individually. The OPM5-2D stores optical references for each calibrated wavelength and offers multiple test tone detection for fiber identification.

Data Storage of Test Results

The OPM5-2D File Management system allows technicians to organize test results into multiple files and transfer stored results via USB to a PC for analyzing, generating reports, and printing. The supplied powerful PC Analysis and Reporting Tool (TRM® - Test Results Management software) allows users to apply industry standards based rules to test results and create comprehensive certification reports. Users can generate network Pass/Fail results demonstrating compliance to industry standards and illustrate headroom. TRM is a Windows® compatible software. The SMLP5-5 test kit is fully N.I.S.T. traceable.

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Specifications are subject to change without notice.

SMLP5-5 Test Kit with Wave ID, Set Reference, and Data Storage

OLS4 Light Source Specifications [a]

OPTICAL	MM OPTICAL PORT		SM OPTICAL PORT	
Wavelength	850 ±30 nm	1300 -10/+50 nm	1310 ±20 nm	1550 ±20 nm
Emitter Type	LED		Laser	
	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03			
Spectral Width	40 nm (typ)	120 nm (typ)	5 nm (max)	5 nm (max)
Output Power	>-20 dBm, 62.5 µm multimode [b]		0 dBm, 9 µm single-mode	
Output Stability	±0.1 dB over 8 hours (after 5-minute warm-up)		±0.05 dB over 1 hour (after 15-minute warm-up) ±0.1 dB over 8 hours (after 15-minute warm-up)	
GENERAL				
Power	2 AA batteries, optional AC adapter			
Battery Life	Typical 30 hours, minimum 20 hours		Typical 72 hours, minimum 40 hours	
Available Adapters	SC FC, ST, LC			
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)			
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)			
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)			
Weight	0.29 kg (0.65 lb)			

OPM5-2D Specifications [a]

OPTICAL	OPM5-2D
Calibrated Wavelengths	850, 1300, 1310, 1490, 1550 nm
Detector Type	Germanium (Ge)
Measurement Range	+6 to -60 dBm
Tone Detect Range	+6 to -50 dBm +6 to -45 dBm for 850 nm
Wavelength ID Range	+6 to -50 dBm +6 to -45 dBm for 850 nm
Accuracy [c]	±0.25 dB
Resolution	0.01 dB
Measurement Units	dB, dBm, µW
GENERAL	
Power	2 AA batteries, optional AC adapter
Battery Life	300 hours
Operating Temperature	-10°C to 50°C, 90 % RH (non-condensing)
Storage Temperature	-30°C to 60°C, 90 % RH (non-condensing)
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)
Weight	0.26 kg (0.58 lb)

Notes:

a. All specifications valid at 25°C unless otherwise specified.

b. Output power will be approximately 3 dB less if a 50 µm mandrel-wrapped jumper is used instead of a 62.5 µm mandrel-wrapped jumper.

c. Accuracy measured at 25°C and -10 dBm per N.I.S.T. standards.

Ordering Information

Test jumpers and connector adapters are required for operation (purchased separately). Test jumpers with a variety of connector styles and fiber types and adapter caps for most common connectors may be purchased from AFL.

INCLUDES	AFL NO.
OLS4 optical light source, OPM5-2D optical power meter, AA batteries, protective rubber boots, adapter cap, USB cable, PC reporting tool - TRM® (Windows® compatible), 50 and 62.5 µm mandrels, and carry case	SMLP5-5

Calibration Plans

AFL recommends annual calibrations on NOYES Test and Inspection products. Prepaid Cal plans offer two annual calibrations at a discounted price, a convenient calibration expiration email service, express calibration services and access to the NOYES product knowledge base. Cal Plus plans offer the same services as the Cal plans with the addition of a two year extended warranty (three years total coverage).

MODEL	2 YR CAL PLAN	2 YR CAL PLUS PLAN
	AFL NO.	AFL NO.
SMLP5-5	CAL2-00-SMLP5-5	CAL2-01-SMLP5-5

NOYES International Sales and Service Contact Information

Available at www.AFLglobal.com/NOYES/Contacts

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NEW! Now with rugged protective boot!

VFI2 Visual Fault Identifier

VFI2 Visual Fault Identifier

VFI2 and HiLite Visual Fault Identifiers

Visual fault identifiers are visible red lasers designed to inject light energy into a fiber. Sharp bends, breaks, faulty connectors and other faults will "leak" red light generated by a VFI, allowing technicians to visually spot the defects.

The *NOYES*® brand VFI models deliver 1 mW of output power into single-mode fiber to ensure long range and exceptional brightness for locating defects in single-mode or multimode fibers.

A VFI is a useful addition to any fiber optic field tool kit. It can locate faults inside an OTDR's dead zone, perform quick continuity checks, trace fibers, check splices and field installed connectors.

The *NOYES*® brand visual fault identifier (VFI) is offered in two models:

- **HiLite** - miniature key-chain mountable VFI (key chain included)
- **VFI2** - hand-held VFI with rugged protective boot offering longer battery runtime

VFIs are important troubleshooting tools for fiber optic networks. AFL's solutions meet every need. The small HiLite is easy to carry anywhere - always available when you need it. The addition of the protective boot on the VFI2 provides an extremely robust field tool that can handle the rigors of any field test environment.

Features

- Visible red laser source, 650 nm
- High power, 1 mW into single-mode fiber
- Universal connector interface for quick connection
- 2.5 mm universal adapter (included) accepts PC and angled FC, SC, ST, etc. connectors
- 1.25 mm universal adapter (available and/or included) accepts LC and MU connectors

Applications

- Identify fiber faults inside OTDR dead-zone
- Identify sharp bends or breaks in fibers
- Identify poorly mated connectors
- Verify AFL FASTConnect® connector installation

Ordering Information

VFI2 Models

DESCRIPTION	AFL NO.
VFI2 visual fault identifier with 2.5 mm adapter	VFI2-00-0900PR
VFI2 visual fault identifier with 2.5 mm and 1.25 mm adapters	VFI2-01-0900PR

HiLite Models

DESCRIPTION	AFL NO.
HiLite visual fault identifier with 2.5 mm adapter	VFI3-00-0900PR
HiLite visual fault identifier with 2.5 mm and 1.25 mm adapters	VFI3-01-0900PR

Adapters

DESCRIPTION	AFL NO.
2.5 mm universal adapter[b] with captivated sleeve	2900-50-0007MR
1.25 mm universal adapter[c] with captivated sleeve	2900-50-0010MR

Notes:

a. All specifications valid at 25°C unless otherwise specified.
b. 2.5 mm universal adapter accepts SC, FC, ST, E2000 ferrules.
c. 1.25 mm universal adapter accepts LC, MU ferrules.

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OFS300 Optical Microscope

Inspect patch cords with AFL's OFS300. Designed for field use, the OFS300 scope delivers a high quality end-face image at 200x magnification. Quickly identify scratches, dirt or other problems normally associated with poor network performance.

Fact: A large percentage of network failures are caused by dirty or damaged end-faces on fiber optic connectors. Inspecting jumper end-faces prior to connection is critical to network performance. The OFS300 scope provides a quality optical inspection tool at an affordable price.

Safety: A built-in laser safety filter provides >40 dB IR protection to reduce risk of injury to the eye if accidentally viewing an active fiber.

The OFS300 features a Universal adapter cap mount that accepts a variety of thread-on style adapter caps (ordered separately) to ease inspection of many connector style. A momentary power switch located on the top panel keeps one hand free for focusing. For stationary work, the tripod mount allows the OFS300 to attach to any standard tripod.

The OFS300 offers 60 hours of continuous battery life from standard 2 x AA batteries and features an LED indicator, which will flash when batteries require replacement.

Features

- Laser safety filter installed
- 200x image size
- 2.5 mm Universal adapter included
- Low battery LED indicator
- Long battery life with 2 x AA alkaline
- Rugged, hand-held, easy-to-use
- Tripod mount

Applications

- Verify jumper ends are clean prior to connecting to network
- Inspect end-faces for scratches or pits
- Eliminate the most common network fault (bad connectors)

Specifications [a]

OPTICAL SPECIFICATIONS	
Nominal Magnification	200X
Adapter Mount	Universal, thread-on
Safety Filter	Schott KG3, >40 dB IR
GENERAL SPECIFICATIONS	
Operating Temperature	0 °C to +50 °C
Storage Temperature	-20 °C to +50 °C
Power	2 x AA batteries
Battery Life	>60 hours
Weight in Use	0.67 kg (1.5 lb)
Size (H x W x D)	13 x 5 x 20 cm (5 x 2 x 8 in)

Note:

a. All specifications valid at 25 °C unless otherwise specified.

Ordering Information

DESCRIPTION	AFL NO.
OFS300 Inspection Kit. Includes OFS300 Inspection Scope, 2 x AA batteries, neck strap, 2.5 mm Universal adapter cap, users guide.	OFS300

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Specifications are subject to change without notice.

Fusion Splicers

AFL proudly supplies and services the premier fusion splicing product line offered in North America–Fujikura's "State of the ARC" fusion splicing solutions. Fujikura's pioneering spirit and keen focus on exceptional quality over the past three decades have established Fujikura as the leader in fusion splicing technology and product value.

Beginning in 1984, Fujikura introduced Profile Alignment Splicing (PAS) technology which quickly emerged as the industry preferred alignment methodology. In 1988, Fujikura introduced the first ribbon splicer and then expanded its product offering by developing the first 24-fiber ribbon splicer. Dual axis camera viewing systems, automatic arc calibration technology and now ruggedized splicers that provide resistance to impact, rain and dust round out the Fujikura line—all of which make Fujikura splicers the world leader in splicing technology.

Field Splicing Solutions

Fujikura's long established and reliable field models include splicing equipment for all common applications and environments such as single fiber, ribbon and FTTx splicing applications. Also included within the product set are specialty splicing applications such as FuseConnect, broadcast connector and military TFOCA cable fusion splicing.

Fujikura's ARCMaster™ series sets a new standard for factory and R&D fusion splicing. The recently introduced FSM-100 series provides enhanced performance and flexibility for any specialty splicing needs in manufacturing, laboratory or R&D environments.

AFL also offers a full line of fusion splicing accessories, including cleaving tools, stripping tools, fiber arrangement tools, splice protection sleeves and batteries.

Service and Support

AFL operates the only authorized repair facility for Fujikura splicing products in the U.S. AFL technicians are fully trained in repair and adjustment procedures in strict accordance with Fujikura specifications. When you choose a Fujikura splicing solution, AFL provides 24/7 technical support as well as complimentary on-site training with every splicer purchased.

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Specifications are subject to change without notice.

70S

In case with lid detached

Fujikura 70S Fusion Splicer

The Fujikura 70S is the world's fastest and most robust core alignment fusion splicer. Incorporating the proven ruggedized features pioneered by Fujikura, the 70S has added automated and enhanced user control features to increase splicing efficiency. A user programmable, automated wind protector expedites the splicing process by automatically closing to initiate the splice process, and opening upon splice completion. Fully programmable "auto open sheath clamps" open one or both sheath clamps, after the tensile test, to prepare the fiber for removal. A new automated "clamshell design" tube heater applies heat to both sides of the splice protection sleeve resulting in a 14-second shrink time. The result is a total splice process time of approximately 21 seconds! Ruggedness and durability are greatly enhanced by a mirror-less optical system and "severe-impact resistant" monitor. Battery capacity is now 200 splices/shrinks. An innovative transit case doubles as a built-in or mobile workstation and makes splicing easier than ever before.

Features

- Automated and programmable wind protector
- 14-second automated tube heater
- Fully ruggedized for shock, dust and moisture
- Li-ion battery with 200 splices/shrinks per charge
- 5 mm cleave length for splice on connector or small package needs
- Sheath clamp or fiber holder operation
- On-board training and support videos
- Internet software upgrades
- Multi-function transit case with integrated workstation

Ordering Information

DESCRIPTION	AFL NO.
70S Fusion Splicer (machine only) **Includes:** ADC-18 AC Adapter, ACC-14 AC Cord, ELCT2-20A Spare Electrodes (pair), S70C Sheath Clamp, USB Cable, Alcohol Pot, Screw Driver, Splicer Carrying Strap, Quick Reference Guide, Video Instruction Manual and CC30 Transit Case with Carrying Strap	S015580
70S Fusion Splicer Kit (with cleaver) **Includes:** CT30A Cleaver, ADC-18 AC Adapter, ACC-14 AC Cord, ELCT2-20A Spare Electrodes (pair), S70C Sheath Clamp, USB Cable, Alcohol Dispenser, Screw Driver, Splicer Carrying Strap, Quick Reference Guide, Video Instruction Manual, and CC30 Transit Case with Carrying Strap	S015590
70S Fusion Splicer Kit (with cleaver, battery and cord) **Includes:** BTR-09 Battery, DCC-18 Battery Charge Cord, CT30A Cleaver, ADC-18 AC Adapter, ACC-14 AC Cord, ELCT2-20A Spare Electrodes (pair), S70C Sheath Clamp, USB Cable, Alcohol Dispenser, Screw Driver, Splicer Carrying Strap, Quick Reference Guide, Video Instruction Manual and CC30 Transit Case with Carrying Strap	S015591
One Year Extended Warranty	S012996
Two Year Extended Warranty	S013000

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Specifications are subject to change without notice.

Fujikura 70S Fusion Splicer

Recommended Accessories for the 70S

DESCRIPTION	AFL NO.
Cleavers	
CT-06A Cleaver	S015276
CT-30A Cleaver	S014080
Fiber Holders	
FH-60-250 Fiber Holder (pair)	S014548
FH-60-900 Fiber Holder (pair)	S014549
FH-60-160 Fiber Holder (pair)	S014690
FH-60-LT900 Fiber Holder (pair)	S015181
FH-60-LT900 Single Side Fiber Holder	S015275
FUSEConnect® Accessories	
FH-FC-20 (900 µm within 2.0 mm sheathing) (each)	S014696
FH-FC-30 (900 µm within 3.0 mm sheathing) (pair)	S014695
FH-FC-900 (900 µm cable) (each)	S014697
CLAMP-FC-2000 (pair)	S014705
CLAMP-FC-3000 (pair)	S014704
Sheath Clamps	
CLAMP-S70C Sheath Clamp (Coating diameter from 100 µm - 1000 µm (5-16 mm cleave))	S015586
CLAMP-S70D Sheath Clamp (900 µm diameter loose tube fiber (5-16 mm cleave))	S015862

DESCRIPTION	AFL NO.
Batteries and Power Cords	
ADC-18 AC Adapter	S015585
ACC-14 AC Power Cord	S014536
BTR-09 Battery	S015581
DCC-18 Battery Charge Cord	S015582
DCC-12 Power Cord (connects AC Adapter to cigarette lighter socket)	S013552
DCC-13 Power Cord (connects AC Adapter to power source via alligator clips)	S013556
Miscellaneous	
ELCT2-20A Electrodes	S013532
Portable Tripod Workstation (see product profile for more detail)	S014773
ASW-02 Splicing Workstation (see product profile for more detail)	S010532
JP-06 J-PLATE (70/19 Series)	S016100
SL-01 Sleeve Loader	S015674
Worktable Upper	S015779
Worktable Lower	S015780
Inner Box Set	S015979
USB Cable	S014777
CC-30 Transit Case	S015587

Specifications

PARAMETER	VALUE
Model	70S Fusion Splicer
Applicable Fibers	Single-mode (G.652 & G.657), Multimode (G.651), DS (G.653), NZDS (G.655)
Cladding Diameter	80 - 150 µm
Coating Diameter	100 µm to 1,000 µm
Fiber Cleave Length	5 to 16 mm
Typical Average Splice Loss	0.02 dB with SM, 0.01 dB with MM, 0.04 dB with DS, 0.04 dB with NZDS, measured by cut-back method relevant to ITU-T standards
Splicing Time	SM FAST mode — 7 seconds; SM AUTO mode — 10 seconds; AUTO mode — 15 seconds with SM fiber
Arc Calibration Method	Automatic, real-time and by using results of previous splice when in AUTO mode, manual arc calibration function available
Splicing Modes	100 preset and user programmable modes
Splice Loss Estimate	Based upon dual camera core axis alignment data
Storage of Splice Result	Last 2,000 results stored in the internal memory
Fiber Display	X or Y, or both X and Y simultaneously. Front or rear monitor display options with automated image orientation
Magnification	320X for single X or Y view, or 200X for X and Y view
Viewing Method	Dual cameras with 4.7 inch TFT color LCD monitor
Operating Condition	0 to 5,000 m above sea level, 0 to 95%RH and -10 to 50°C respectively
Mechanical Proof Test	1.96 to 2.25N
Tube Heater	Built-in tube heater with 30 heating modes; auto-start function
Tube Heating Time	Typical 14 seconds with FP-03 sleeve, 17 seconds with FP3 (40), 5-16 seconds with Fujikura micro sleeves
Protection Sleeve Length	60 mm, 40 mm, micro
Splice/Heat Cycles with Battery	Typical 200 cycles with power save functions activated
Electrode Life	3,000 Arc Discharges
Power Supply	Auto voltage selection from 100 to 240 V AC or 10 to 15 V DC with ADC-18, 14.8 V DC with BTR-09 battery
Terminals	USB 1.1 (USB-B type) for PC communication. Mini-DIN (6-pin) for HJS-02/03
Wind Protection	Maximum wind velocity of 15 m/s. (34 mph)
Dimensions	146 W x 159 D x 150 H (mm) / 5.75 W x 6.25 D x 5.9 H (inches)
Weight	2.5 kg (5.5 lbs) with AC adapter ADC-18; 2.7 kg (5.95 lbs) with BTR-09 battery

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Specifications are subject to change without notice.

22S (with Cleaver for scale)

Workstation in Transit Case

Workstation on Transit Case

Fujikura 22S Kit 1

Fujikura 22S Fusion Splicer

The Fujikura 22S active cladding alignment fusion splicer bridges the long standing gap between core alignment and fixed v-groove fusion splicer technology. Moveable v-grooves eliminate splicer errors due to dust and other contaminants. Despite its incredibly small size, this ruggedized, full-featured unit offers unmatched versatility for splicing in the most challenging environments. The innovative transit case and work tray provide multiple options for the best utilization of available work space while the long life battery provides power for up to 200 splice cycles which include application of the splice protection sleeve.

The Fujikura 22S incorporates features typically found only in more expensive models. Removable sheath clamps allow the use of fiber holders if desired. The large 4.7" monitor provides a crystal clear image, even in the brightest sunlight, for evaluating splice quality. The electrode life has been extended to 3,000 splices, minimizing downtime for replacement and stabilization. Software updates are accomplished via the internet allowing users to quickly update their software as new splice programs become available. The fully ruggedized chassis provides for shock, dust and moisture protection while the two camera observation system provides for accurate fiber alignment and loss estimation calculations. The Fujikura 22S is also fully compatible with the FUSEConnect® line of fusion installable connectors.

Backed by the best service team in the industry, the Fujikura 22S is the ideal splicer to use when portability, ruggedness, versatility and reliability are needed for your splicing application.

Features

- Dual camera, active cladding alignment technology
- World's smallest active clad alignment splicer at 4.72"W x 7.44"D x 2.8"H
- Fully ruggedized for shock, moisture and dust resistance
- Transit case converts to easy to use workstation
- Extended life electrodes
- Long life battery (200 splices/shrinks per charge)
- Auto start tube heater

Ordering Information

DESCRIPTION	AFL NO.
Fujikura 22S Fusion Splicer Includes: Fujikura 22S Fusion Splicer, S21A Sheath Clamp, ADC-19 AC Adapter, BTR-11 Battery Pack (installed), ACC-09 Power Cord, ELCT2-12 Spare Electrodes (pair), Operation Manual on CD, Quick Reference Guide, AP-01 Alcohol Container,SD01 Screwdriver and CC-32 Transit Case	S016111
Fujikura 22S Fusion Splicer Kit 1 Includes: Fujikura 22S Fusion Splicer, CT-30A Cleaver, S21A Sheath Clamp, ADC-19 AC Adapter, BTR-11 Battery Pack (installed), ACC-09 Power Cord, ELCT2-12 Spare Electrodes (pair), Operation Manual on CD, Quick Reference Guide, AP-01 Alcohol Container, SD01 Screwdriver and CC-32 Transit Case	S016155
Fujikura 22S Fusion Splicer Kit 2 Includes: Fujikura 22S Fusion Splicer, CT-06A Cleaver, S21A Sheath Clamp, ADC-19 AC Adapter, BTR-11 Battery Pack (installed), ACC-09 Power Cord, ELCT2-12 Spare Electrodes (pair), Operation Manual on CD, Quick Reference Guide, AP-01 Alcohol Container, SD01 Screwdriver and CC-32 Transit Case	S016154
One Year Extended Warranty	S012996
Two Year Extended Warranty	S013000

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Fujikura 22S Fusion Splicer

Recommended Accessories for the 22S

DESCRIPTION	AFL NO.
Cleavers	
CT-06A Cleaver	S015276
CT-30A Cleaver	S014080
Fiber Holders	
FH-60-250 Fiber Holder (250 µm single fiber)	S014548
FH-60-900 Fiber Holders (900 µm single fiber)	S014549
FH-60-LT900 (900 µm loose buffer tube)	S015181
FH-60-LT900 Single Side Fiber Holder	S015275
Sheath Clamps	
CLAMP-S21A Sheath Clamp	S016160
CLAMP-S21B Sheath Clamp	S016161
Batteries	
BTR-11 Battery Pack	S016156

DESCRIPTION	AFL NO.
FUSEConnect® Accessories	
FH-FC-20 (900 µm within 2.0 mm sheathing) (each)	S014696
FH-FC-30 (900 µm within 3.0 mm sheathing) (pair)	S014695
FH-FC-900 (900 µm cable) (each)	S014697
CLAMP-FC-2000 (pair)	S014705
CLAMP-FC-3000 (pair)	S014704
Miscellaneous	
Worktable Set	S016157
TS-01 Tripod Screw	S015895
ELCT2-12 Electrodes	S014028
ADC-19 AC Adapter	S015523
ACC-09 Power Cord	S014390
AP-01 Alcohol Container	S015525
SD-01 Screwdriver	S015526
CC-32 Transit Case	S016158

Specifications

PARAMETER	VALUE
Applicable Fibers	Single-mode (G.652 & G.657), Multimode (G.651), DSF (G.653), NZDS (G.655)
Cladding Diameter	125 µm
Coating Diameter	100 µm to 3000 µm
Fiber Cleave Length	5 mm to 16 mm
Typical Average Splice Loss	0.03 dB (SM), 0.01 dB (MM), 0.05 dB (DS) and 0.05 dB (NZDS)
Splicing Time	Typical 9 sec with SM
Arc Calibration Method	Automatic, real-time and by using results of previous splice when in AUTO mode, manual arc calibration function available
Splicing Modes	Total 100 splice modes
Splice Loss Estimate	Based on dual camera cladding alignment data
Storage of Splice Result	Last 2,000 splices
Fiber Display	4.7 inch TFT color LCD with X or Y view or both X and Y view simultaneously
Magnification	200X magnification for X/Y view
Viewing Method	2 axis CMOS camera
Operating Condition	Altitude: 0 to 3,660 m above sea level, -10° to 50° C, Humidity: 0 to 95% RH, non-dew
Mechanical Proof Test	1.96 N
Tube Heater	30 heating modes
Tube Heating Time	Typical 24 sec with FP-60 (60 mm) sleeve
Protection Sleeve Length	60 mm, 40 mm, micro
Splice/Heat Cycles with Battery	Typical 200 cycles with BTR-11
Electrode Life	3,000 splices
Power Supply	Auto select from 100 V to 240 V with AC adapter, 14.8 V DC with installed battery
Terminals	USB 2.0
Wind Protection	Maximum wind velocity of 15 m/s. (34 mph)
Dimensions	120 x 189 x 71 (mm) / 4.72" x 7.44" x 2.8" (inches)
Weight	1.14 kg (2.51 lbs) with battery

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19S

In case with lid detached

Fujikura 19S Fusion Splicer

The Fujikura 19S is a low cost, fixed v-groove single fiber splicer with similar features found on the Fujikura 70S. Incorporating the proven ruggedized features pioneered by Fujikura, the 19S has added automated and enhanced user control features to increase splicing efficiency. A user programmable, automated wind protector expedites the splicing process by automatically closing to initiate the splice process, and opening upon splice completion. Fully programmable "auto open sheath clamps" open one or both sheath clamps, after the tensile test, to prepare the fiber for removal. A new automated "clamshell design" tube heater applies heat to both sides of the splice protection sleeve resulting in a faster shrink time. Ruggedness and durability are greatly enhance by a mirror-less optical system and "severe-impact resistant" monitor. An innovative transit case doubles as a built-in or mobile workstation and makes splicing easier than ever before.

Features

- Automated and programmable wind protector
- Fully ruggedized for shock, dust and moisture
- Li-ion battery with 180 splice/heat cycles per charge
- 5 mm cleave length for splice on connector or small package needs
- Sheath clamp or fiber holder operation
- On-board training and support videos
- Internet software upgrades
- Multi-function transit case with integrated workstation

Ordering Information

DESCRIPTION	AFL NO.
19S Fusion Splicer (machine only) **Includes:** ADC-18 AC Adapter, ACC-14 AC Cord, ELCT2-20A Spare Electrodes (pair), S70C Sheath Clamp, USB Cable, Alcohol Pot, Screw Driver, Splicer Carrying Strap, Quick Reference Guide, Video Instruction Manual and CC30 Transit Case with Carrying Strap	S015679
19S Fusion Splicer Kit (with cleaver) **Includes:** CT30A Cleaver, ADC-18 AC Adapter, ACC-14 AC Cord, ELCT2-20A Spare Electrodes (pair), S70C Sheath Clamp, USB Cable, Alcohol Dispenser, Screw Driver, Splicer Carrying Strap, Quick Reference Guide, Video Instruction Manual, and CC30 Transit Case with Carrying Strap	S015680
19S Fusion Splicer Kit (with cleaver, battery and cord) **Includes:** BTR-09 Battery, DCC-18 Battery Charge Cord, CT30A Cleaver, ADC-18 AC Adapter, ACC-14 AC Cord, ELCT2-20A Spare Electrodes (pair), S70C Sheath Clamp, USB Cable, Alcohol Dispenser, Screw Driver, Splicer Carrying Strap, Quick Reference Guide, Video Instruction Manual and CC30 Transit Case with Carrying Strap	S015681
One Year Extended Warranty	S012996
Two Year Extended Warranty	S013000

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Fujikura 19S Fusion Splicer

Recommended Accessories for the 19S

DESCRIPTION	AFL NO.
Cleavers	
CT-06A Cleaver	S015276
CT-30A Cleaver	S014080
Fiber Holders	
FH-60-250 Fiber Holder (pair)	S014548
FH-60-900 Fiber Holder (pair)	S014549
FH-60-LT900 Fiber Holder (pair)	S015181
FH-60-LT900 Single Side Fiber Holder	S015275
FUSEConnect™ Accessories	
FH-FC-20 (900 µm within 2.0 mm sheathing) (each)	S014696
FH-FC-30 (900 µm within 3.0 mm sheathing) (pair)	S014695
FH-FC-900 (900 µm cable) (each)	S014697
CLAMP-FC-2000 (pair)	S014705
CLAMP-FC-3000 (pair)	S014704
Sheath Clamps	
CLAMP-S70C Sheath Clamp (Coating diameter from 100 µm - 1000 µm (5-16 mm cleave))	S015586
CLAMP-S70D Sheath Clamp (900 µm diameter loose tube fiber (5-16 mm cleave))	S015862

DESCRIPTION	AFL NO.
Batteries and Power Cords	
ADC-18 AC Adapter	S015585
ACC-14 AC Power Cord	S014536
BTR-09 Battery	S015581
DCC-18 Battery Charge Cord	S015582
DCC-12 Power Cord (connects AC Adapter to cigarette lighter socket)	S013552
DCC-13 Power Cord (connects AC Adapter to power source via alligator clips)	S013556
Miscellaneous	
ELCT2-20A Electrodes	S013532
Portable Tripod Workstation (see product profile for more detail)	S014773
ASW-02 Splicing Workstation (see product profile for more detail)	S010532
JP-06 J-PLATE (70/19 Series)	S016100
SL-01 Sleeve Loader	S015674
Worktable Upper	S015779
Worktable Lower	S015780
Inner Box Set	S015979
CC-30	S015587
USB Cable	S014777

Specifications

PARAMETER	VALUE
Model	19S Fusion Splicer
Applicable Fibers	Single-mode (G.652 & G.657), Multimode (G.651), DS (G.653), NZDS (G.655)
Cladding Diameter	125 µm
Coating Diameter	100 µm to 1,000 µm
Fiber Cleave Length	5 to 16 mm
Typical Average Splice Loss	0.05 dB with SM, 0.02 dB with MM, 0.08 dB with DS, 0.08 dB with NZDS, measured by cut-back method relevant to ITU-T and IEC standards
Splicing Time	SM FAST mode — 9 seconds; SM AUTO mode — 11 seconds; AUTO mode — 11 seconds
Arc Calibration Method	Automatic, real-time and by using results of previous splice when in AUTO mode, manual arc calibration function available
Splicing Modes	100 preset and user programmable modes
Splice Loss Estimate	Based upon dual camera cladding axis offset alignment data
Storage of Splice Result	Last 2,000 results to be stored in the internal memory
Fiber Display	X or Y, or both X and Y simultaneously. Front or rear monitor display options with automated image orientation
Magnification	320X for single X or Y view, or 200X for X and Y view
Viewing Method	Dual cameras with 4.73 inch TFT color LCD monitor
Operating Condition	0 to 3,660 m above sea level, 0 to 95%RH and -10 to 50°C respectively
Mechanical Proof Test	1.96 to 2.25N
Tube Heater	Built-in tube heater with 30 heating modes; auto-start function
Tube Heating Time	17 seconds with FP3 (40), 5-16 seconds with Fujikura micro sleeves
Protection Sleeve Length	60 mm, 40 mm, micro
Splice/Heat Cycles with Battery	Typical 180 cycles with power save functions activated
Electrode Life	3,000 Arc Discharges
Power Supply	Auto voltage selection from 100 to 240 V AC or 10 to 15 V DC with ADC-18, 14.8 V DC with BTR-09 battery
Terminals	USB 1.1 (USB-B type) for PC communication. Mini-DIN (6-pin) for HJS-02/03 and SH-8 tube heater
Wind Protection	Maximum wind velocity of 15 m/s. (34 mph)
Dimensions	146 W x 159 D x 150 H (mm) / 5.75 W x 6.25 D x 5.9 H (inches)
Weight	2.3 kg (5.1 lbs) with AC adapter; 2.5 kg (5.5 lbs) with battery

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12S (with Cleaver for scale)

Workstation in Transit Case

Workstation on Transit Case

Fujikura 12S Kit 1

Fujikura 12S Fusion Splicer

The Fujikura 12S is the world's smallest, lightest and most portable fusion splicer available today. Despite its incredibly small size, this ruggedized, full-featured unit offers unmatched versatility for splicing in the most challenging environments. The innovative transit case and work tray provide multiple options for the best utilization of available work space while the long life battery provides power for up to 100 splice cycles which include application of the splice protection sleeve.

The Fujikura 12S incorporates features typically found only in more expensive models. The large 4.5" monitor provides a crystal clear image, even in the brightest sunlight, for evaluating splice quality. The electrode life has been extended to 3,000 splices, minimizing downtime for replacement and stabilization. Software updates are accomplished via the internet allowing users to quickly update their software as new splice programs become available. The fully ruggedized chassis provides for shock, dust and moisture protection while the two camera observation system provides for accurate fiber alignment and loss estimation calculations. The Fujikura 12S is also fully compatible with the FUSEConnect® line of fusion installable connectors.

Backed by the best service team in the industry, the Fujikura 12S is the ideal splicer to use when portability, ruggedness, versatility and reliability are needed for your splicing application.

Features

- World's smallest splicer at 4.76"W x 6.38"D x 2.24"H
- Fully ruggedized for shock, moisture and dust resistance
- Transit case converts to easy to use workstation
- Dual camera, fixed v-groove alignment technology
- Extended life electrodes
- Long life battery (100 splices/shrinks per charge)

Ordering Information

DESCRIPTION	AFL NO.
Fujikura 12S Fusion Splicer **Includes:** Fujikura 12S Fusion Splicer, ADC-19 AC Adapter, BTR-10 Battery Pack (installed), FH-60-250 Fiber Holders (pair), FH-60-900 Fiber Holder, ACC-09 Power Cord, ELCT2-12 Spare Electrodes (pair), Operation Manual on CD, Quick Reference Guide, AP-01 Alcohol Container, SD01 Screwdriver and CC-29 Transit Case	S015521
Fujikura 12S Fusion Splicer Kit 1 **Includes:** Fujikura 12S Fusion Splicer, CT-30 Cleaver, ADC-19 AC Adapter, BTR-10 Battery Pack (installed), FH-60-250 Fiber Holders (pair), FH-60-900 Fiber Holders (pair), ACC-09 Power Cord, ELCT2-12 Spare Electrodes (pair), Operation Manual on CD, Quick Reference Guide, AP-01 Alcohol Container, SD01 Screwdriver and CC-29 Transit Case	S015522
Fujikura 12S Fusion Splicer Kit 2 **Includes:** Fujikura 12S Fusion Splicer, CT-06 Cleaver, ADC-19 AC Adapter, BTR-10 Battery Pack (installed), FH-60-250 Fiber Holders (pair), FH-60-900 Fiber Holders (pair), ACC-09 Power Cord, ELCT2-12 Spare Electrodes (pair), Operation Manual on CD, Quick Reference Guide, AP-01 Alcohol Container, SD01 Screwdriver and CC-29 Transit Case	S015530
One Year Extended Warranty	S012996
Two Year Extended Warranty	S013000

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Fujikura 12S Fusion Splicer

Recommended Accessories for the 12S

DESCRIPTION	AFL NO.
Cleavers	
CT-06 Cleaver (for single fibers)	S015588
CT-30 Cleaver (for single to 12 ribbon fibers)	S014076
Fiber Holders	
FH-60-250 Fiber Holder (pair)	S014548
FH-60-900 Fiber Holder (pair)	S014549
FH-60-LT900 Fiber Holder (pair)	S015181
FH-60-LT900 Single Side Fiber Holder	S015275
FUSEConnect® Accessories	
FH-FC-20 (900 µm within 2.0 mm sheathing) (each)	S014696
FH-FC-30 (900 µm within 3.0 mm sheathing) (pair)	S014695
FH-FC-900 (900 µm cable) (each)	S014697
CLAMP-FC-2000 (pair)	S014705
CLAMP-FC-3000 (pair)	S014704

DESCRIPTION	AFL NO.
Batteries	
BTR-10 Battery Pack	S015527
Miscellaneous	
Worktable Set	S015817
TS-01 Tripod Screw	S015895
ELCT2-12 Electrodes	S014028
ADC-19 AC Adapter	S015523
ACC-09 Power Cord	S014390
AP-01 Alcohol Container	S015525
SD-01 Screwdriver	S015526
CC-29 Transit Case	S015524
USB Cable	S014777

Specifications

PARAMETER	VALUE
Model	12S Fusion Splicer
Applicable Fibers	Single-mode (G.652 & G.657), Multimode (G.651), DSF (G.653), NZDS (G.655)
Cladding Diameter	125 µm
Coating Diameter	250 µm or 900 µm
Fiber Cleave Length	5 mm to 13 mm
Typical Average Splice Loss	0.05 dB (SM), 0.02 dB (MM), 0.08 dB (DS) and 0.08 dB (NZDS)
Splicing Time	Typical 15 sec with SM
Arc Calibration Method	Automatic, real-time and by using results of previous splice when in AUTO mode, manual arc calibration function available
Splicing Modes	Total 100 splice modes
Splice Loss Estimate	Based on dual camera cladding alignment data
Storage of Splice Result	Last 2,000 splices
Fiber Display	4.5 inch TFT color LCD with X or Y view or both X and Y view simultaneously
Magnification	100X magnification for X/Y view
Viewing Method	2 axis CMOS camera
Operating Condition	Altitude: 0 to 3,660 m above sea level, -10° to 50° C, Humidity: 0 to 95% RH, non-dew
Mechanical Proof Test	1.96 N
Tube Heater	30 heating modes
Tube Heating Time	Typical 30 sec with FP-03 (60 mm) sleeve
Protection Sleeve Length	60 mm, 40 mm, micro
Splice/Heat Cycles with Battery	Typical 100 cycles with BTR-10
Electrode Life	3,000 splices
Power Supply	Auto select from 100 V to 240 V with AC adapter, 14.8 V DC with installed battery
Terminals	USB 2.0
Wind Protection	Maximum wind velocity of 15 m/s. (34 mph)
Dimensions	121 x 162 x 57 (mm) / 4.76 x 6.38 x 2.24 (inches)
Weight	.776 kg (1.71 lbs) with battery

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Premises/LAN Installation and Maintenance

Course Description

This two-day class features 8 hours of classroom and 8 hours of hands-on skills labs to provide practical understanding and skills required to properly design, install and maintain premises-based local area networks (LANs). Students will use the latest fiber optic technology and equipment to learn how to splice, connectorize, test, and troubleshoot premises-based optical fiber networks in order to increase efficiency, reliability and on-the-job safety as well as reduce cost and downtime.

Course Level

Introductory to intermediate. Beginners to experienced fiber technicians find the class and extensive hands-on skills training beneficial.

Course Options

Two days – Classroom lecture and hands-on exercises.

The Light Brigade, AFL's training division, has instructed over 45,000 attendees worldwide in its public and custom classes on fiber optic design, maintenance and testing, including advanced topics such as FTTx, DWDM and PMD/CD. In addition to creating custom courses tailored to any need or skill level, the company produces educational DVDs and CDs that provide focus on specific fiber related topics.

Classroom (8 Hours)

Introduction to Fiber Optics
- Development Timeline
- Advantages of Optical Fiber Media

Fiber Optic Transmission Theory
- Structure of Optical Waveguides
- Types of Optical Fibers
- Basic Fiber Parameters
- Operating Wavelengths

Optical Fiber Manufacturing

Fiber Optic Cable Technology
- Cable Design Objectives
- OSP Cables and Loose Buffer Protection
- ISP Cables and Tight Buffer Protection

Fiber Optic Cable Installation Methods
- Comparison to Metallic Cable
- Basic Installation Parameters
- Underground, Aerial, and Direct Buried Installations

Termination and Splicing of Optical Fiber
- Connector Types
- Installation Methods
- Field Installable vs. Factory Termination
- Splicing Methods

Field Testing and Troubleshooting
- Types of Field Tests
- Visual Continuity and Connector Inspection
- Insertion Loss Test Measurements
- Optical Time Domain Reflectometer Testing

Standards and Codes

System Design Parameters
- Insertion Loss Values
- System Dynamic Range
- Restoration Margin

Hands-On (8 Hours)

Safety Meeting

Station #1 – Fiber Optic Cable Prep
- Loose Tube Cable Preparation
- Tight Buffer Cable Preparation
- Fan-out Kit Installation
- Pulling Grip Setup

Station #2 – Fusion Splicing
- Fiber Cleaning and Preparation
- Fiber Optic Cleaving Process
- Core Alignment Splicers
- V-groove Alignment Splicers
- Splicing 250-µm to 900-µm Fiber
- Equipment Maintenance and Cleaning

Station #3 – Fiber Connectorization
- Fiber Cleaning and Preparation
- Anaerobic (Epoxy) Field Connector Installation
- Cleave and Crimp Field Connector Installation
- 250-µm Fiber Fan Termination
- 900-µm Tight Buffer Termination
- 2-mm and 3-mm Cordage Termination

Station #4 – Field Testing and Troubleshooting
- Cleaning Connectors
- Evaluation of Connector Endface
- Continuity Test with Visual Fault Locator
- Bidirectional Insertion Loss Methods
- Launch Conditions for Multimode Systems
- Bidirectional OTDR Traces
- OTDR Event Analysis
- Compute Link Loss Budget and Test Acceptance
- Testing and Troubleshooting Tips
- Documentation Requirements

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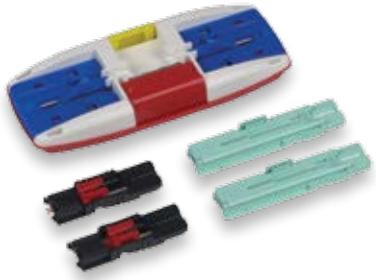


SpliceConnect with Tool Kit

AFL's SpliceConnect is a mechanical splice that provides an inexpensive, quick alternative to mating fibers. Using V-groove technology, this splice maintains physical contact between the fibers. An assembly tool is used to ensure the fibers are mated correctly, resulting in <0.1 dB insertion loss (typical for single-mode). The SpliceConnect secures both fiber and coating independently with the U-shaped sleeve, enhancing the strength against fiber twist.

Features

- Quick splicing time
- Minimal tools
- 250 µm and/or 900 µm fiber capabilities
- Both fiber and coating are secured independently

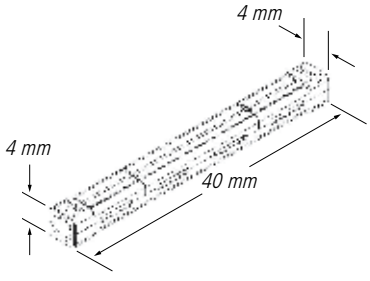
Applications

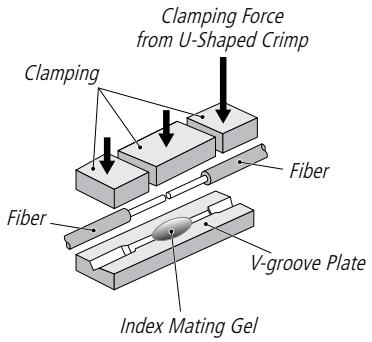
- Restoration
- Premise environments
- Fiber-to-the-Subscriber (FTTx) applications

Ordering Information

DESCRIPTION	AFL NO.
SpliceConnect Mechanical Splices (Bag of 6)	CS004154
SpliceConnect Mechanical Splice Tool Kit	CS004162
Kit Includes:	
SpliceConnect Mechanical Splicing Tool	CS004155
Fiber Holder, 250 µm x2	CS004442
Fiber Holder, 900 µm x2	CS004443
Instruction Manual	CS004159
Carrying Case	CS004161
Template, Strip/Cleave Length	CS004573
SpliceConnect Mechanical Splicing Tool	CS004155
Fiber Holder, 250 µm	CS004442
Fiber Holder, 900 µm	CS004443

Dimensions and Structure





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Fiber Optic Tool Kits

As the leader in fiber optic training, The Light Brigade understands the special tool needs of technicians and what it takes to do the job in a safe, efficient, and effective manner. Our tool kits were developed with the insight and feedback from experts in the industry. We include options for these tool kits that allow technicians to order variations based on personal preferences without driving up the cost of the kits with unnecessary or redundant tools.

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Cable Preparation Tool Kit

A basic tool kit designed for fiber optic cable preparation and closure/enclosure preparation for splicing inside or outside. It is also for loose tube or premise cable applications where the right tool is needed to strip, clean, and prepare fiber optic cable for splicing and termination.

Ordering Information

DESCRIPTION	AFL NO.
Tool Kit including carry case and listed tools	T-KCP

Included Items

PART NO.	DESCRIPTION	BRAND
T-2CCS	Fiber cable sheath stripper	Ideal
T-2CK	Cable knife	Ripley
T-2CS	Cable slitter	Ripley
T-2CW	Multi-socket can wrench	Ripley
T-2CXC	Cable cutters	Ripley
T-2KV	Kevlar™ shears with pouch	Ripley
T-2RT	Ideal buffer cutting tool	Ideal
T-2SC	Splicer's scissors	Ripley
T-3LP	8" lineman pliers	

PART NO.	DESCRIPTION	BRAND
T-3MS	Miller strippers	Ripley
T-3NP	6" needle nose pliers	Husky
T-3SDP	Screwdriver—Phillips	Stanley
T-3SDS	Screwdriver—standard	Stanley
T-3SR	Seam ripper	Clauss
T-3TM	12' tape measure	Stanley
T-5ETB	Electrical tape—black	3M
T-5SPM	Permanent marker—black	Sharpie
T-5STB	Small tool bag 12" x 11" x 9"	LBI

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Specifications are subject to change without notice

Emergency Restoration Tool Kit

A specialized tool kit designed for loose tube outside plant applications where fiber optic cable damage has occurred and a quick repair kit is needed to support emergency restoration. Includes hand tools for fiber cable preparation and closure preparation, mechanical splices, and a basic cleaver.

Ordering Information

DESCRIPTION	AFL NO.
Tool Kit including carry case and listed tools	T-KERM

Included Items

PART NO.	DESCRIPTION	BRAND
S-D2501	Universal Fibrlok assembly tool	3M
S-D2509	Fibrlok II cap lifter tool	3M
S-D2529-6	Universal Fibrlok— Package of 6	3M
T-1VL	Staple cleaver	OFS
T-2CCS	Fiber cable sheath stripper	Ideal
T-2CK	Cable knife	Ripley
T-2CS	Cable slitter	Ripley
T-2CW	Multi-socket can wrench	Ripley
T-2CXC	Cable cutters	Ripley
T-2KV	Kevlar™ shears with pouch	Ripley
T-2RT	Ideal buffer cutting tool	Ideal

PART NO.	DESCRIPTION	BRAND
T-2SC	Splicer's scissors	Ripley
T-3LP	8" lineman pliers	Husky
T-3MS	Miller strippers	Ripley
T-3NP	6" needle nose pliers	Husky
T-3SDP	Screwdriver – Phillips	Stanley
T-3SDS	Screwdriver – standard	Stanley
T-3SR	Seam ripper	Clauss
T-3TM	12' tape measure	Stanley
T-5ETB	Electrical tape – black	3M
T-5SPM	Permanent marker – black	Sharpie
T-5STB	Small tool bag 12" x 11" x 9"	LBI

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Master Splicer Tool Kit

An all-inclusive master tool kit specifically designed for fiber optic cable preparation and closure/enclosure preparation. It is also for loose tube or premise cable applications where the right tool is needed to strip, clean and prepare fiber optic cable for splicing and termination. Includes specialized tools needed to do mid-cable access procedures and prepare special fiber optic cables such as OPGW, ADSS, MicroCable, and armored loose tube for splicing or termination.

Ordering Information

DESCRIPTION	AFL NO.
Tool Kit including carry case and listed tools	T-KMS

Included Items

PART NO.	DESCRIPTION	BRAND
T-2BC	Small bolt cutters—OPGW strands 14"	Workforce
T-2CCS	Fiber cable sheath stripper	Ideal
T-2CKSC	Cable knife and scissors	Ripley
T-2CW	Multi-socket can wrench tool	Ripley
T-2CXC	Cable cutters	Ripley
T-2KV	Kevlar™ shears with pouch	Ripley
T-2OPGW	Mini SST pipe cutter—1/8" to 5/8"	JHL
T-2RT	Ideal buffer cutting tool	Ideal
T-3JP	8" joint pliers	Husky
T-3MS	Miller strippers	Ripley
T-3MSAT	MSAT mid-span access tool	Ripley
T-3NP	6" needle nose pliers	Husky

PART NO.	DESCRIPTION	BRAND
T-3SDP	Screwdriver—Phillips	Stanley
T-3SDS	Screwdriver—standard	Stanley
T-3SR	Seam ripper	Clauss
T-3TM	12' tape measure	Stanley
T-5ETB	Electrical tape—black	3M
T-5ETBL	Electrical tape—blue	3M
T-5ETG	Electrical tape—green	3M
T-5ETR	Electrical tape—red	3M
T-5HSG	Heat shrink gun	Wagner
T-5SPM	Permanent marker—black	Sharpie
T-HS-Assort	Heat tubes 1/8", 1/4", 1/2", 1" (6" segments)	
T-5LTB	Large tool bag—11" x 17" x 10"	LBI

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eABF Solutions

The eABF® (Enterprise air blown fiber) cabling system is engineered to offer a reliable, easy-to-install optical fiber network communications infrastructure that has one of the highest fiber density solutions in the blown fiber market. The eABF solution has several key elements that, when combined, yield a state-of-the-art and highly flexible "living" communications pathway as shown in the eABF solutions map on the right. Applications include campus settings, military, hospitals, industrial and government.

With its many configurations, the eABF solution can be utilized for expanding your network infrastructure, whether new or retrofit. MicroDuct(s) can be left open to accept a fiber optic cable in the future, for a cost effective way to add bandwidth. Crowded easements, both aerial and buried, can benefit from eABF for network expansion while requiring minimal space and disruption. When it comes to expanding your network, minimize expenditures and maximize capacity with the eABF solution from AFL and Dura-Line.

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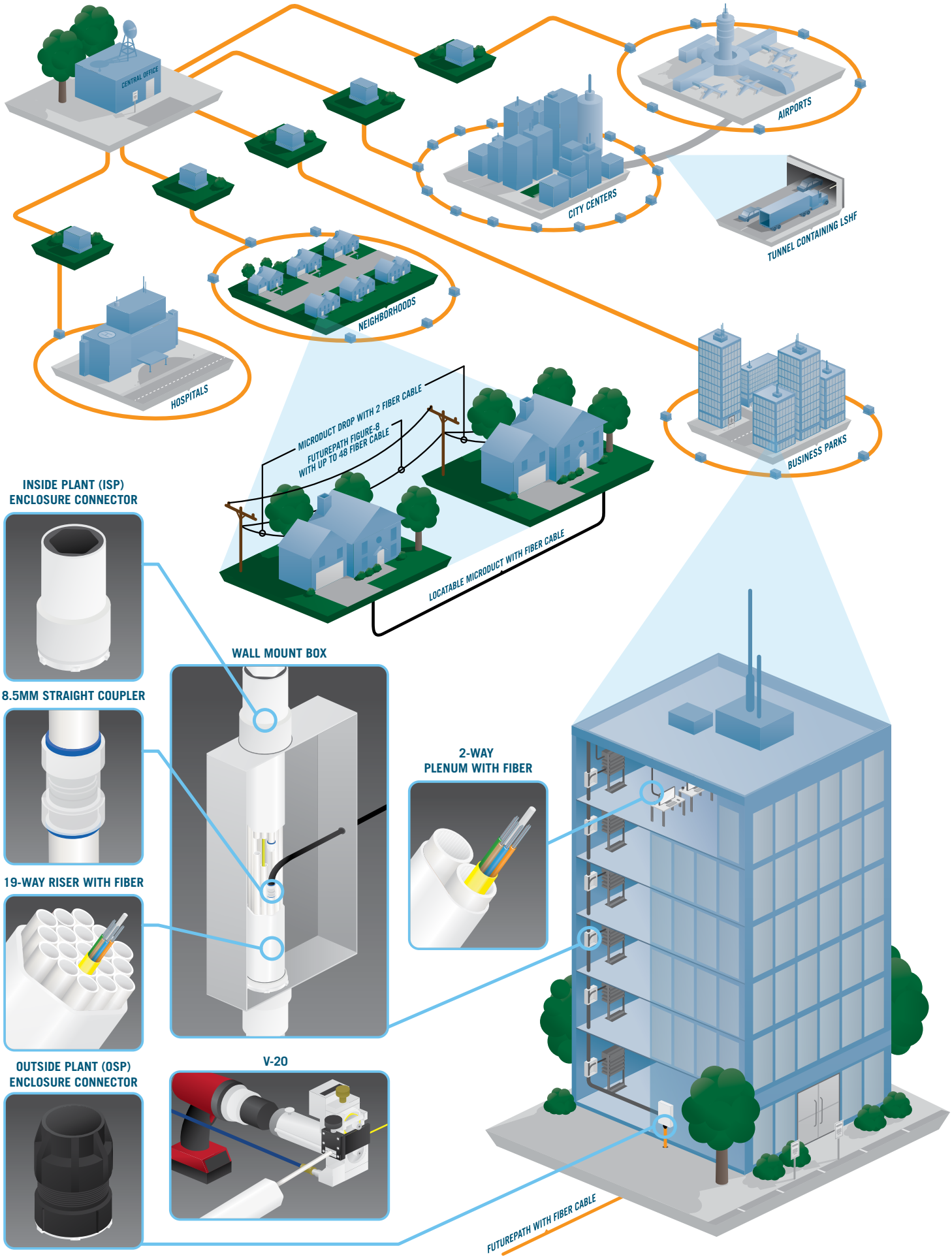
CENTRAL OFFICE
AIRPORTS
CITY CENTERS
TUNNEL CONTAINING LSHF
NEIGHBORHOODS
HOSPITALS
BUSINESS PARKS
MICRODUCT DROP WITH 2 FIBER CABLE
FUTUREPATH FIGURE-8 WITH UP TO 48 FIBER CABLE
LOCATABLE MICRODUCT WITH FIBER CABLE
INSIDE PLANT (ISP) ENCLOSURE CONNECTOR
8.5MM STRAIGHT COUPLER
19-WAY RISER WITH FIBER
OUTSIDE PLANT (OSP) ENCLOSURE CONNECTOR
WALL MOUNT BOX
V-20
2-WAY PLENUM WITH FIBER
FUTUREPATH WITH FIBER CABLE

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CAT-01300 6.16.2016