AFL

DATA CENTER SOLUTIONS

Fiber Management | Optical Connectivity

Fiber Optic Cable | Fusion Splicers | Test & Inspection

Founded in 1984, AFL is an international manufacturer
providing end-to-end solutions to the energy, service provider,
enterprise and industrial markets as well as several emerging markets.

AFL's products are in use in over 130 countries
and include fiber optic cable and hardware, transmission and
substation accessories, outside plant equipment, connectivity,
test and inspection equipment, fusion splicers and training.

AFL also offers a wide variety of services supporting
data center, enterprise, wireless and outside plant applications.

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

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Fiber Optic Training

AFL Data Center Solutions

AFL delivers the right combination of fiber optic products, services and technology for data centers. The data center is the heart of your operation. Whether it occupies one room, one or more floors, or an entire building, AFL can supply any or all of the components for an end-to-end Tier 1 to Tier 4 operation.

With decades of experience in fiber optic cabling solutions, Internet Protocol (IP) applications, enterprise service and support, AFL has the expertise to maximize the performance and scalability of your data center applications. As the technology leader in fiber optic cabling, accessories and components, AFL can help deliver modularity, flexibility in design, density and scalability from optical fiber and cable to the hardware and connectivity in your data center.

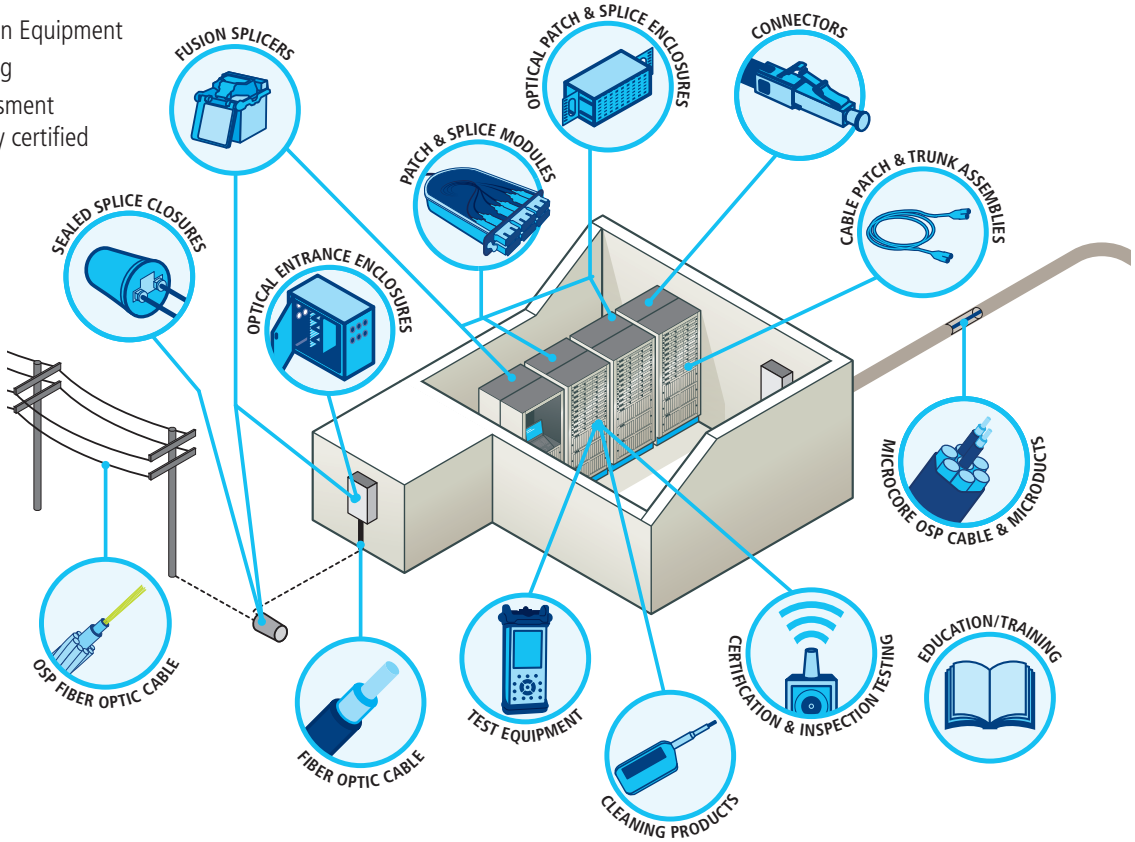
With vertically integrated operations, AFL and its qualified, capable engineers and technicians can supply every piece of the puzzle, delivering control over quality, reliability and performance:

- Fiber Management
- Optical Connectivity (connectors, cable assemblies, modules)
- Fiber Optic Components, Splice Closures and Enclosures
- Fiber Optic Cabling
- Fusion Splicers
- Test and Inspection Equipment
- Fiber Optic Training
- Design, site assessment and installation by certified professionals

AFL's new ASCEND™ High-Density Platform

As the lines continue to blur between phone, cable and Internet, and companies seek to improve capacity, density and bandwidth, data centers will continue to invest in a fiber-based infrastructure.

AFL is uniquely positioned to assist customers with cost-effective solutions to help them meet their productivity goals. No other company manufactures every part of the passive optical cable infrastructure, with an eye on future-proofing product development and innovation.



ASCEND Fiber Housings in Rack

ASCEND™ Fiber Housings

ASCEND fiber housings are available in 1RU, 2RU and 4RU sizes with densities of up to 144, 288, and 576 fibers, respectively. Designed to support incremental growth or a full-scale deployment, ASCEND housings provide the ultimate in ease-of-use and fiber management features.

ASCEND housings are 19/23" rack-mountable and constructed using galvannealed steel for an extended service life. The front and rear doors are both hinged on the bottom, while the rear section of the housing cover is removable for unobstructed access to all connector interfaces. Integrated routing rings at the front of the trays enable secure and organized routing of patch cords which facilitates efficient Moves, Adds and Changes (MACs).

ASCEND housings are compatible with a wide variety of ASCEND optical cassettes which can be mixed and matched within the same enclosure to offer plug-and-play versatility. Cassettes can be independently installed from the front or rear of the housing onto a sliding tray system.

The rear of the housing incorporates a trunk cable management area which features multiple cable mounting positions that are designed to securely manage slack while allowing the trays to slide in/out for installation and service.

Features

- High Density: 1RU/144F, 2RU/288F and 4RU/576F
- Designed for 19" rack. Optional 23" rack mount kit available.
- Galvannealed steel construction
- Hinged front and rear doors and removable back cover
- BASE-8, BASE-12 and BASE-24 compatibility
- Interchangeable cassette options for multiple applications
- Cassettes install independently from front or rear of housing
- Trunk cable management area accommodates ASCEND Trunk Cable Assemblies equipped with integrated cable mounting clip
- Compatible with all ASCEND Cassettes

Applications

- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks
- Wavelength Division Multiplexing (WDM)

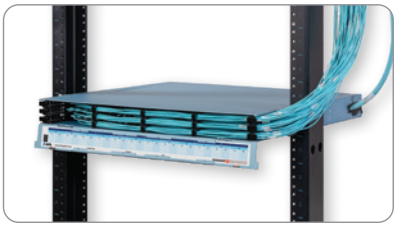
Ordering Information

		RACK UNITS		TRAYS
ASCEND	–	1RU	–	12
		1RU 2RU 4RU		8 = BASE-8 12 = BASE-12 24 = BASE-24 W = WDM

PANEL TYPE	DESCRIPTION	AFL NO.
BASE-8	ASCEND HOUSING, 1RU, BASE-8 TRAYS	ASCEND-1RU-8
	ASCEND HOUSING, 2RU, BASE-8 TRAYS	ASCEND-2RU-8
	ASCEND HOUSING, 4RU, BASE-8 TRAYS	ASCEND-4RU-8
BASE-12	ASCEND HOUSING, 1RU, BASE-12 TRAYS	ASCEND-1RU-12
	ASCEND HOUSING, 2RU, BASE-12 TRAYS	ASCEND-2RU-12
	ASCEND HOUSING, 4RU, BASE-12 TRAYS	ASCEND-4RU-12
BASE-24	ASCEND HOUSING, 1RU, BASE-24 TRAYS	ASCEND-1RU-24
	ASCEND HOUSING, 2RU, BASE-24 TRAYS	ASCEND-2RU-24
	ASCEND HOUSING, 4RU, BASE-24 TRAYS	ASCEND-4RU-24
WDM	ASCEND HOUSING, 1RU, WDM TRAYS	ASCEND-1RU-W
	ASCEND HOUSING, 2RU, WDM TRAYS	ASCEND-2RU-W
	ASCEND HOUSING, 4RU, WDM TRAYS	ASCEND-4RU-W

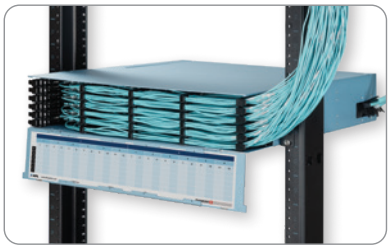
ASCEND™ Fiber Housings

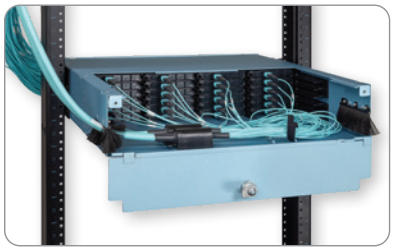

ASCEND 1RU


ASCEND 1RU front


ASCEND 1RU rear

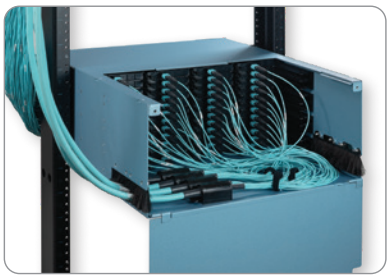

ASCEND 2RU


ASCEND 2RU front


ASCEND 2RU rear


ASCEND 4RU


ASCEND 4RU front


ASCEND 4RU rear

Specifications

PARAMETER	MODEL		
	ASCEND 1RU	**ASCEND 2RU**	**ASCEND 4RU**
Rack Space	1 RU	2 RU	4 RU
Fiber Density Number of Trays	144F 3	288F 6	576F 12
Cassette Capacity	18 x BASE-8 Cassettes (6 per tray) 12 x BASE-12 Cassettes (4 per tray) 6 x BASE-24 Cassettes (2 per tray)	36 x BASE-8 Cassettes (6 per tray) 24 x BASE-12 Cassettes (4 per tray) 12 x BASE-24 Cassettes (2 per tray)	72 x BASE-8 Cassettes (6 per tray) 48 x BASE-12 Cassettes (4 per tray) 24 x BASE-24 Cassettes (2 per tray)
Dimensions* (HxWxD)	44.5 x 444.5 x 500 mm 1.75 x 17.50 x 19.7 in.	87.6 x 444.5 x 500 mm 3.5 x 17.50 x 19.7 in.	176.5 x 444.5 x 500 mm 7.0 x 17.50 x 19.7 in.
Weight	5.8 kg 12.8 lb.	10 kg 22 lb.	15.5 kg 34.2 lb.
Color	Blue	Blue	Blue
Material	Metal Components: 16 GA Steel per ASTM A366 Plastic Components: UL 94 V-2 minimum	Metal Components: 16 GA Steel per ASTM A366 Plastic Components: UL 94 V-2 minimum	Metal Components: 16 GA Steel per ASTM A366 Plastic Components: UL 94 V-2 minimum

ASCEND™ Optical Cassettes

ASCEND™ optical cassettes are the building blocks of the high density platform and are available in a wide range of configurations for multiple applications in BASE-8, BASE-12, and BASE-24 configurations.

Available in single-mode and multimode fiber types, ASCEND optical cassettes feature low loss MPO connectors and VFL-compatible shuttered LC adapters.

ASCEND cassettes are compatible with all ASCEND housings and can be independently installed from the front or rear of the housing onto a sliding tray system. This allows access to individual connections while minimizing disruption to other fiber connections.

Applications

- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks

Features

- Wide variety of cassettes for multiple applications
  - Fanout
  - Patch
  - Splice
  - WDM
- BASE-8, BASE-12 and BASE-24 configurations
- SM, MM (OM3) and MM (OM4)
- Low loss MPO connectors
- VFL-compatible shuttered LC adapters
- Install independently from front or rear of housing
- Compatible with all ASCEND housings

ASCEND™ Fanout Cassettes

ASCEND™ Fanout Cassettes are pre-terminated plug-and-play breakout modules designed to transition a trunk cable into individual connector ports. Available in single-mode and multimode fiber types, Fanout Cassettes feature low-loss MPO connectors and VFL-compatible shuttered LC adapters. All cassettes are offered in BASE-8, BASE-12 and BASE-24 configurations.

Fanout Cassettes are compatible with all standard ASCEND housings and can be independently installed from the front or rear onto a sliding tray system. This allows access to individual connections while minimizing disruption to other fiber connections.

Applications

- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks

Features

- Plug and Play
- BASE-8, BASE-12 or BASE-24 configurations
- SM, MM (OM3), MM (OM4) and MM (OM5)
- VFL-compatible shuttered Quad LC adapters
- Low loss MPO connectors
- Compatible with all ASCEND housings
- Install independently from front or rear of housing

Optical Performance Data

PARAMETER	Single-mode Fiber (OS2)	Single-mode Fiber (OS2)	Multimode Fiber (OM3/4)
	LC/UPC - MPO	LC/APC - MPO	LC/PC - MPO
Max IL (dB)	0.55	0.55	0.45
Typical IL (dB)	0.35	0.35	0.30
Reflectance (dB)	-55	-55	-30
Dimensions (L x W) (mm)	132.5 x 94	132.5 x 94	132.5 x 94
Color	Blue - Black	Green - Black	Aqua - Black

Ordering Information (BASE-8 and BASE-12)

CASSETTE SIZE		FANOUT CASSETTE		REAR ADAPTER		FRONT ADAPTERS
A8	–	FC	–	M1	–	LU
A8 = ASCEND BASE-8 A12 = ASCEND BASE-12				M1 = MPO (pinned)		LU = LC/UPC (SM) LA = LC/APC (SM) L3 = LC/PC (OM3) L4 = LC/PC (OM4)

CATEGORY	DESCRIPTION	AFL NO.
BASE-8 FANOUT CASSETTES	ASCEND-8 FANOUT CASSETTE,BASE-8,PINNED MPO-LC/UPC,SM	A8-FC-M1-LU
	ASCEND-8 FANOUT CASSETTE,BASE-8,PINNED MPO-LC/APC,SM	A8-FC-M1-LA
	ASCEND-8 FANOUT CASSETTE,BASE-8,PINNED MPO-LC/PC,OM3	A8-FC-M1-L3
	ASCEND-8 FANOUT CASSETTE,BASE-8,PINNED MPO-LC/PC,OM4	A8-FC-M1-L4
BASE-12 FANOUT CASSETTES	ASCEND-12 FANOUT CASSETTE,BASE-12,PINNED MPO-LC/UPC,SM	A12-FC-M1-LU
	ASCEND-12 FANOUT CASSETTE,BASE-12,PINNED MPO-LC/APC,SM	A12-FC-M1-LA
	ASCEND-12 FANOUT CASSETTE,BASE-12,PINNED MPO-LC/PC,OM3	A12-FC-M1-L3
	ASCEND-12 FANOUT CASSETTE,BASE-12,PINNED MPO-LC/PC,OM4	A12-FC-M1-L4

Continued >

ASCEND™ Fanout Cassettes

Ordering Information (BASE-24)

CASSETTE SIZE		FANOUT CASSETTE		REAR ADAPTER		FRONT ADAPTERS
A24	–	FC	–	M1	–	LU
A24 = ASCEND BASE-24				M1 = 24F MPO (pinned) x 1 M2 = 12F MPO (pinned) x 2 M3 = 8F MPO (pinned) x 3		LU = LC/UPC (SM) LA = LC/APC (SM) L3 = LC/PC (OM3) L4 = LC/PC (OM4)

CATEGORY	DESCRIPTION	AFL NO.
BASE-24 FANOUT CASSETTES	ASCEND-24 FANOUT CASSETTE,BASE-24,PINNED 24F MPO-LC/UPC,SM	A24-FC-M1-LU
	ASCEND-24 FANOUT CASSETTE,BASE-24,PINNED 24F MPO-LC/APC,SM	A24-FC-M1-LA
	ASCEND-24 FANOUT CASSETTE,BASE-24,PINNED 24F MPO-LC/PC,OM3	A24-FC-M1-L3
	ASCEND-24 FANOUT CASSETTE,BASE-24,PINNED 24F MPO-LC/PC,OM4	A24-FC-M1-L4
	ASCEND-24 FANOUT CASSETTE,BASE-24,PINNED 12F MPO-LC/UPC,SM	A24-FC-M2-LU
	ASCEND-24 FANOUT CASSETTE,BASE-24,PINNED 12F MPO-LC/APC,SM	A24-FC-M2-LA
	ASCEND-24 FANOUT CASSETTE,BASE-24,PINNED 12F MPO-LC/PC,OM3	A24-FC-M2-L3
	ASCEND-24 FANOUT CASSETTE,BASE-24,PINNED 12F MPO-LC/PC,OM4	A24-FC-M2-L4
	ASCEND-24 FANOUT CASSETTE,BASE-24,PINNED 8F MPO-LC/UPC,SM	A24-FC-M3-LU
	ASCEND-24 FANOUT CASSETTE,BASE-24,PINNED 8F MPO-LC/APC,SM	A24-FC-M3-LA
	ASCEND-24 FANOUT CASSETTE,BASE-24,PINNED 8F MPO-LC/PC,OM3	A24-FC-M3-L3
	ASCEND-24 FANOUT CASSETTE,BASE-24,PINNED 8F MPO-LC/PC,OM4	A24-FC-M3-L4

ASCEND™ Patch Cassettes

ASCEND™ Patch Cassettes are pre-loaded with MPO adapters or VFL-compatible shuttered LC adapters.

Available in BASE-8 and BASE-12 configurations, Patch Cassettes install easily from the front or rear of any standard ASCEND housing. Each cassette independently mounts onto a sliding tray which allows access to individual connections while minimizing disruption to other fiber connections.

Applications

- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks

Features

- Plug and Play
- BASE-8 and BASE-12 configurations
- Install independently from front or rear of housing
- Compatible with all ASCEND housings
- Standard Duplex MPO or VFL-compatible shuttered Quad LC adapters

Ordering Information

CASSETTE SIZE		PATCH CASSETTE		ADAPTERS
A8	–	PC	–	LU
A8 = ASCEND BASE-8 A12 = ASCEND BASE-12				LU = LC/UPC (SM) LA = LC/APC (SM) L3 = LC/PC (OM3) L4 = LC/PC (OM4) M1 = MPO

CATEGORY	DESCRIPTION	ADAPTERS/FIBER COUNT	AFL NO.
BASE-8 PATCH CASSETTES	ASCEND-8 PATCH CASSETTE,BASE-8,LC/UPC,SM	8 LC/UPC (8 Fibers)	A8-PC-LU
	ASCEND-8 PATCH CASSETTE,BASE-8,LC/APC,SM	8 LC/APC (8 Fibers)	A8-PC-LA
	ASCEND-8 PATCH CASSETTE,BASE-8,LC/PC,OM3	8 LC/PC (8 Fibers)	A8-PC-L3
	ASCEND-8 PATCH CASSETTE,BASE-8,LC/PC,OM4	8 LC/PC (8 Fibers)	A8-PC-L4
	ASCEND-8 PATCH CASSETTE,BASE-8,MPO	4 MPO (48 Fibers)	A8-PC-M1
BASE-12 PATCH CASSETTES	ASCEND-12 PATCH CASSETTE,BASE-12,LC/UPC,SM	12 LC/UPC (12 Fibers)	A12-PC-LU
	ASCEND-12 PATCH CASSETTE,BASE-12,LC/APC,SM	12 LC/APC (12 Fibers)	A12-PC-LA
	ASCEND-12 PATCH CASSETTE,BASE-12,LC/PC,OM3	12 LC/PC (12 Fibers)	A12-PC-L3
	ASCEND-12 PATCH CASSETTE,BASE-12,LC/PC,OM4	12 LC/PC (12 Fibers)	A12-PC-L4
	ASCEND-12 PATCH CASSETTE,BASE-12,MPO	6 MPO (72 Fibers)	A12-PC-M1

ASCEND™ Splice Cassettes

ASCEND™ Splice Cassettes include 250 micron preterminated single fiber pigtails, or one SpiderWeb Ribbon® (SWR®) pigtail, that are loaded within the cassette and can be spliced directly to loose (or ribbon) fiber cable.

All Splice Cassettes feature VFL-compatible shuttered LC adapters with up to 12-fiber capacity. Available in single-mode and multimode fiber types, cassettes leverage a snap-in splice sleeve cradle to securely manage both single and ribbon fiber arrangements. A clear, removable cover allows for easy fiber viewing and access.

Splice Cassettes are compatible with all BASE-12 ASCEND housings and can be independently installed easily from the front or rear onto a sliding tray system. This allows access to individual connections while minimizing disruption to other fiber connections.

Applications

- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks

Features

- Up to 12-fiber interconnection capacity
- SM, MM (OM3), MM (OM4) and MM (OM5)
- 250 µm color-coded single fibers or SWR options
- VFL-compatible shuttered Quad LC adapters
- Clear, removable cover for viewing and access
- Inventive splice sleeve cradle
- Organized fiber routing
- Compatible with all ASCEND BASE-12 housings/trays
- Install independently from front or rear of housing

Ordering Information

CASSETTE SIZE		SPLICE CASSETTE		ADAPTER		FIBER ARRANGEMENT
A12	–	SPC	–	LU	–	S
A12 = ASCEND BASE-12				LU = LC/UPC (SM) LA = LC/APC (SM) L3 = LC/PC (OM3) L4 = LC/PC (OM4) L5 = LC/PC (OM5)		S = Stranded Pigtail R = SWR Pigtail

STRANDED FIBER		
CATEGORY	**DESCRIPTION**	**AFL NO.**
Single-mode	ASCEND-12 SPLICE CASSETTE, LC/UPC, SM, STRANDED PIGTAIL	A12-SPC-LU-S
	ASCEND-12 SPLICE CASSETTE, LC/APC, SM, STRANDED PIGTAIL	A12-SPC-LA-S
Multimode	ASCEND-12 SPLICE CASSETTE, LC/PC, OM3, STRANDED PIGTAIL	A12-SPC-L3-S
	ASCEND-12 SPLICE CASSETTE, LC/PC, OM4, STRANDED PIGTAIL	A12-SPC-L4-S
	ASCEND-12 SPLICE CASSETTE, LC/PC, OM5, STRANDED PIGTAIL	A12-SPC-L5-S

RIBBON FIBER		
CATEGORY	**DESCRIPTION**	**AFL NO.**
Single-mode	ASCEND-12 SPLICE CASSETTE, LC/UPC, SM, SWR RIBBON PIGTAIL	A12-SPC-LU-R
	ASCEND-12 SPLICE CASSETTE, LC/APC, SM, SWR RIBBON PIGTAIL	A12-SPC-LA-R
Multimode	ASCEND-12 SPLICE CASSETTE, LC/PC, OM3, SWR RIBBON PIGTAIL	A12-SPC-L3-R
	ASCEND-12 SPLICE CASSETTE, LC/PC, OM4, SWR RIBBON PIGTAIL	A12-SPC-L4-R
	ASCEND-12 SPLICE CASSETTE, LC/PC, OM5, SWR RIBBON PIGTAIL	A12-SPC-L5-R

ASCEND™ Patch Cord Assemblies

ASCEND™ patch cord assemblies are constructed with AFL's Micro Dual-Link cable and terminated with a field-reversible LC Uniboot connector.

This round cable design, coupled with the Uniboot LC connector, minimizes the front-side cabling footprint and reduces the impact on airflow up and down the rack, and between racks.

In addition to being field-reversible, the Uniboot LC connector also features an extended push-pull latching mechanism to improve finger access in high density applications.

Applications

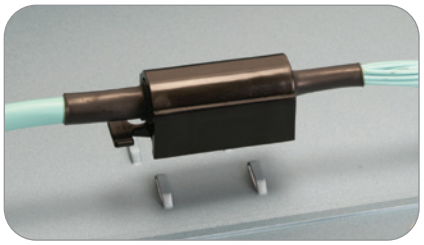
- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks

Features

- Uniboot LC connector comes pre-terminated with A to B polarity and is field-reversible
- No tools required
- Extended push-pull latching mechanism
- Round 2.0 mm plenum-rated jacket
- SM, MM (OM3), MM (OM4) and MM (OM5)
- Bend insensitive fiber (G.657.A1)

Ordering Information

CONNECTOR END A		CONNECTOR END B		CABLE TYPE		FIBER COUNT		FIBER TYPE		CABLE LENGTH (METERS)
ULS	—	ULS	—	P20D	—	002	—	Q	—	0000
ULS = Single-mode LC Uniboot, Push/ Pull Tab PLS = Multimode LC Uniboot, Push/ Pull Tab		ULS = Single-mode LC Uniboot, Push/ Pull Tab PLS = Multimode LC Uniboot, Push/ Pull Tab		P20D = 2.0 mm Dual Link Plenum		002 = 2		Q = Single-mode G.657.A1 L = Multimode OM3 C = Multimode OM4 W = Multimode OM5		XXXX = Meters XXXXFT = Feet



Integrated mounting clip

ASCEND™ Trunk Cable Assemblies

ASCEND™ trunk cable assemblies provide a high performance plug-and-play solution for premise installations where space is a premium.

The small-diameter MicroCore® cable construction provides industry leading fiber density and offers the installer many advantages over traditional cable options – higher tolerance to bends during and after installation; requires less space in cable trays, raceways, ducts and conduits; and enables more efficient airflow in congested, high density cabling applications.

ASCEND trunk cable assemblies feature the MTP® PRO* connector which allows for field-reversible polarity and gender with no housing removal, exposed fibers, or loose pins. All Trunk cable assemblies have a predefined breakout length which eliminates guesswork and guarantees a clean and well-organized installation.

ASCEND trunk cable assemblies also include an integrated cable mounting clip which mates directly with the trunk cable management area in the rear of all ASCEND housings. This clip eliminates the need for additional cable clamps and securely positions the incoming cable while eliminating unwanted stress during installation.

Applications

- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks

Features

- 12-288 fibers in BASE-8 and BASE-12 configurations
- SM, MM (OM3), MM (OM4) and MM (OM5)
- Bend-insensitive fiber (G.657.A1)
- Reduced-diameter MicroCore® cable with 2.0 mm subunits (up to 144)
- Plenum or LSZH options available
- Low loss MTP® PRO* connectors with field-reversible polarity and gender
- Single-mode terminations provided with Elite performance
- Integrated cable mounting clip eliminates the requirement for external clamps for all ASCEND housings
- Pulling eye option available

* MTP® PRO connectors are a trademark of US Conec (For MM connectors only)

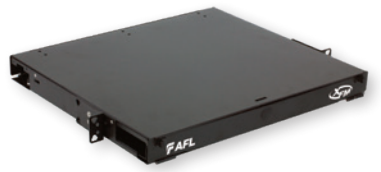
ASCEND™ Trunk Cable Assemblies

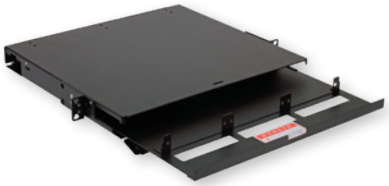
Specifications

CONNECTOR	Connector Ordering Code	Connector Housing Color	Fiber Type	Cable Jacket Color	IL (Typical dB)	RL (Typical dB)
8F MTP Elite (unpinned)	EEF	Green	Single-mode G.657.A1 (BIF)	Yellow	0.1	-60
8F MTP Elite (pinned)	EEM	Green	Single-mode G.657.A1 (BIF)	Yellow	0.1	-60
8F MTP Pro (unpinned)	PFEF	Aqua	50 µm OM3, OM4	Aqua	0.1	-20
8F MTP Pro (pinned)	PFEM	Aqua	50 µm OM3, OM4	Aqua	0.1	-20
12F MTP Elite (unpinned)	ETF	Green	Single-mode G.657.A1 (BIF)	Yellow	0.1	-60
12F MTP Elite (pinned)	ETM	Green	Single-mode G.657.A1 (BIF)	Yellow	0.1	-60
12F MTP Pro (unpinned)	PFTF	Aqua	50 µm OM3, OM4	Aqua	0.1	-20
12F MTP Pro (pinned)	PFTM	Aqua	50 µm OM3, OM4	Aqua	0.1	-20

Ordering Information

CONNECTOR END A	CONNECTOR END B	CABLE TYPE	FIBER COUNT	FIBER TYPE	CABLE LENGTH	PULLING EYE	POLARITY	BASE SELECTION	PLATFORM
FTF	FTF	PL	012	Q	0001	PE	MF	12	ASCEND
EEF = MPO-SM Elite, 8 fiber, Female EEM = MPO-SM Elite, 8 fiber, Male PFEF = MTP PRO-MM, 8 fiber, Female PFEM = MTP PRO-MM, 8 fiber, Male ETF = MPO-SM Elite, 12 fiber, Female ETM = MPO-SM Elite, 12 fiber, Male PFTF = MTP PRO-MM, 12 fiber, Female PFTM = MTP PRO-MM, 12 fiber, Male XXX = No Connector (Pigtail) *For connector End B only		Options for Trunk & Pigtail Assemblies: PL = Plenum MicroCore (250 µm) GE = LSZH MicroCore (250 µm) Options for Pigtail Assemblies Only: GQS = 2.0 mm Plenum MicroCore (SWR) GES = 2.0 mm LSZH MicroCore (SWR)	008 = 8 012 = 12 024 = 24 048 = 48 072 = 72 096 = 96 144 = 144 288 = 288	Q = Single-mode G.657A BIF L = Multimode OM3 C = Multimode OM4 W = Multimode OM5	XXXX = Meters XXXXFT = Feet	Blank = No Pulling Eye PE = Pulling Eye (One End Only)	MF = Method F MA = Method A	08 = BASE-8 12 = BASE-12	ASCEND





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

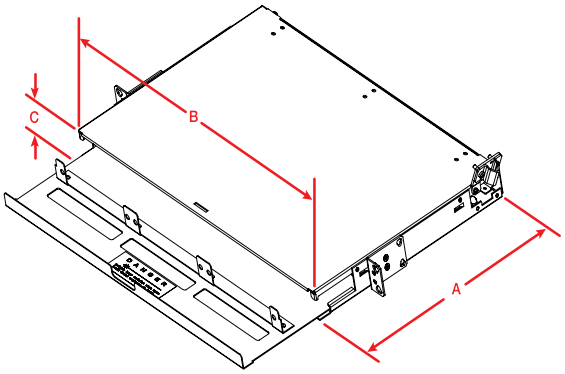
DEPTH (A) (inches)	WIDTH (B) (inches)	HEIGHT (C) (inches)	RACK UNITS	CAPACITY	UNLOADED WEIGHT
15.5	17	1.7	1	(3) LGX 118	13 lbs.

Ordering Information

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



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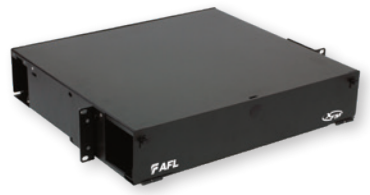


Xpress Fiber Management® (XFM) 2RU Patch Panel

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

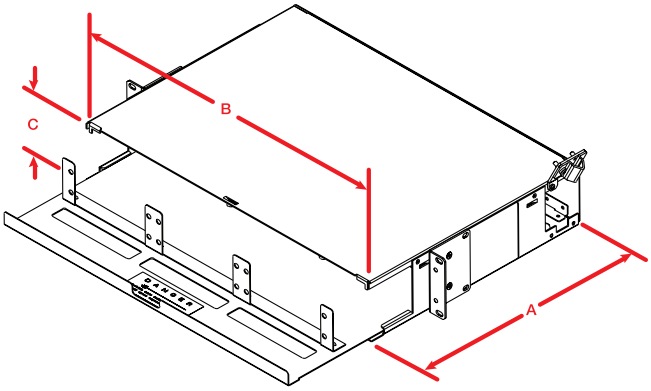
DEPTH (A) IN INCHES	WIDTH (B) IN INCHES	HEIGHT (C) IN INCHES	RACK UNITS	CAPACITY	UNLOADED WEIGHT
15.5	17	3.5	2	(6) LGX 118	15 lbs.

Ordering Information

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



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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

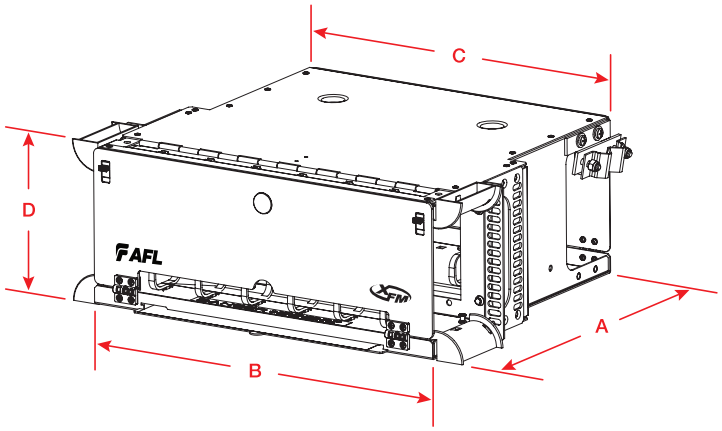
- Data Centers
- Enterprise Networks
- Telecommunications Closets
- Central Offices / Headends

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

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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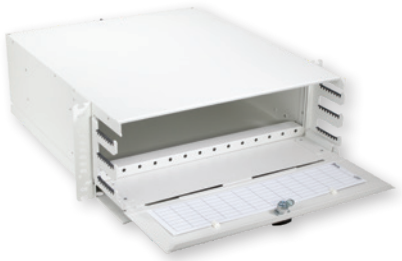


Front View—Door Open

Side Ports and Lower Pass-thru

XFM®-28 Dual Access Module Panel

AFL's XFM-28 Dual Access Module Panel is designed to maximize module capacity via both front and rear access in just four rack units.

In applications where additional rack space is unavailable, the XFM-28 doubles the capacity of traditional 14 slot, front-access only 4RU panels, offering a total of 28 slots to accommodate modules (14 front / 14 rear). The panel is lightweight yet robust, with efficient cable management features for routing flexibility.

Features

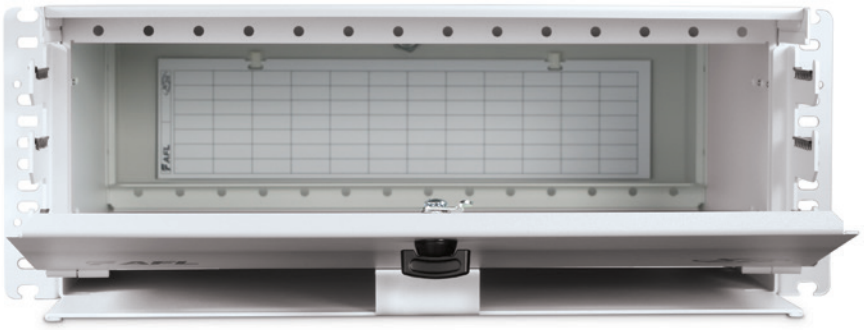
- Dual access via front and rear panel doors
- Aluminum construction
- Universal WECO/TIA 19"/23" rack compatibility
- (28) LGX® 118 module mounting positions (14 front / 14 rear)
- Cable management features include side cable ports and full pass-thru underneath the main bulkhead compartment to allow cable routing from front to back within the panel without eliminating any module positions

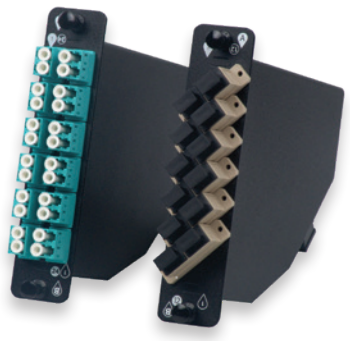
Specifications

DEPTH	WIDTH	HEIGHT	RACK UNITS	CAPACITY	UNLOADED WEIGHT
21 in.	17 in.	7 in.	4	(28) LGX 118	10 lbs.

Ordering Information

DESCRIPTION	MODEL NO.	AFL NO.
XFM-28, Enclosure, 4RU, 19/23"	XFM-28	FM004268





Xpress Fiber Management® (XFM) MPO Optical Cassettes

AFL's Xpress Fiber Management Optical Cassette product line is a family of preterminated fanout modules that streamline the deployment of optical network infrastructure. The primary function of these products is to break out multi-fiber ribbon connectors to simplex or duplex style connectors for connection to adjacent network elements.

The Xpress Fiber Management Optical Cassette solution features low-loss MPO style trunk cable assemblies. These cassettes are available in the industry standard LGX® footprint as well as a selection of Corning Cable Systems™ footprints to support embedded base installations. All modules feature a durable powder coat finish, and are compatible with all 1U-4U LANSystem platforms. All modules are clearly labeled with a silk-screened "A" and "B" positioning reference to ensure proper polarity is maintained in the network, referenced to the polarity convention being deployed.

Applications

- Data centers
- LAN, WAN and SAN
- Interoffice cross-connects
- Campus environments

Features

- 12- and 24- port configurations
- ANSI/TIA/EIA-568-B.3 compliant
- Single-slot LGX packages
- Compatible with LANSystem and WME hardware
- Available in black with rear MPO connection(s)
- SMF, 62.5 µm MMF and 50 µm MMF supported
- SC- and LC-MPO standard configurations
- ST- and FC-MPO configurations available on special order

Optical Performance Data

PARAMETER	Single-mode Fiber (OS1)					Multimode Fiber (OM1, OM2 and 50 µm Laser Optimized)		
	LC - MPO	LCAPC - MPO	SC - MPO	SCAPC - MPO	ST - MPO	LC - MPO	SC - MPO	ST - MPO
Max IL (dB)	1.15	1.15	1.3	1.3	1.3	1.15	1.3	1.3
Typical IL (dB)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Reflectance (dB)	-55	-65	-55	-65	-55	-30	-30	-30

Notes:
1. Single-mode IL test wavelengths 1310 nm and 155 0nm
2. Multimode IL test wavelengths 850 nm and 1300 nm
3. Single-mode RL test wavelengths 1310 nm and 1550 nm
4. Multimode RL test wavelengths 850 nm and 1300 nm

Technical Specifications:
1. ANSI/TIA/EIA-568-B.3
2. Telcordia® GR-326-CORE compliant single fiber connectors
3. Telcordia GR-1435-CORE compliant multi-fiber connectors

Ordering Information

FIBER COUNT, CONNECTOR OPTION	SINGLE-MODE		MULTIMODE	
	UPC - MPO (MALE, APC)	APC - MPO (Male, APC)	62.5 µm OM1 PC - MPO (Male, PC)	50 µm LOMMF OM4 PC - MPO (Male, PC)
12F, LC	FM000090-B	FM001477-B	FM000092-B	FM000273-B
24F, LC	FM000691-B	FM001653-B	FM000663-B	FM000692-B
12F, SC	FM000087-B	FM001465-B	FM000089-B	FM000272-B
12F, ST	FM000093-B	N/A	FM000095-B	FM000274-B

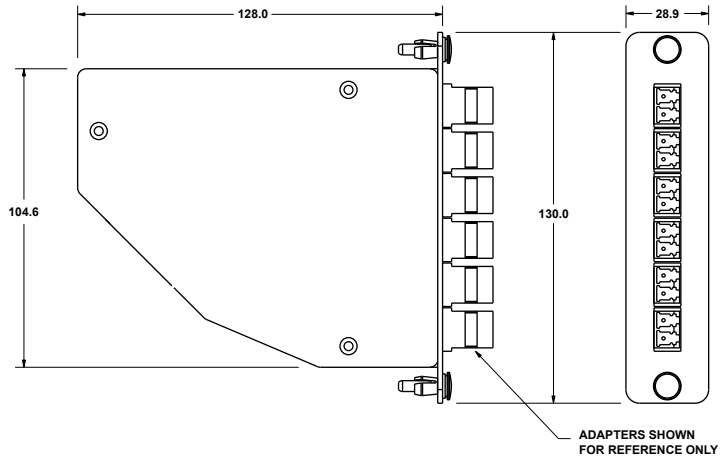
Xpress Fiber Management® (XFM) MPO Optical Cassettes

Ordering Information – Accessories

DESCRIPTION	AFL NO.
145 mm Adapter Bracket	FM001636

NOTE: Allows standard LGX modules, such as AFL's Poli-Mod Interconnect Module and the XFM Optical Cassette, to be mounted into existing Corning Cable Systems™ CCH series and PCH series racks and wall mount products.

Dimensions



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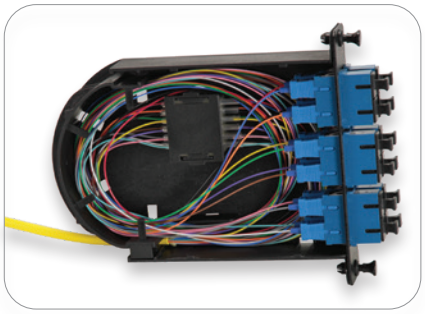
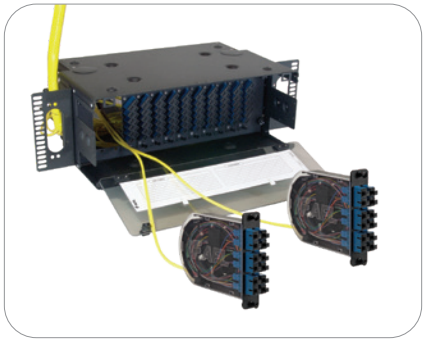


12-Fiber SC/UPC Configuration

24-Fiber LC/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
- Shuttered LC connectors for increased dust protection
- 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		**Fiber/Connector Count**		**Connector Type**[3]		**Fiber Type**		**Fiber Arrangement**		**Packaging**
		E = Empty (Splicing Only) H = Half Loaded (Adapter Plate only) L = Loaded (Adapter Plate & Pigtails) D = DAS Poli-MOD[1]		06 = 6 Fibers/Connectors 12 = 12 Fibers/Connectors 24 = 24 Fibers/Connectors[2] XX = Empty		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		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		S = Single/Standard R = Ribbon 3 = 3 mm, 3 meter DAS X = No Fiber (Half Loaded or Empty)		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.

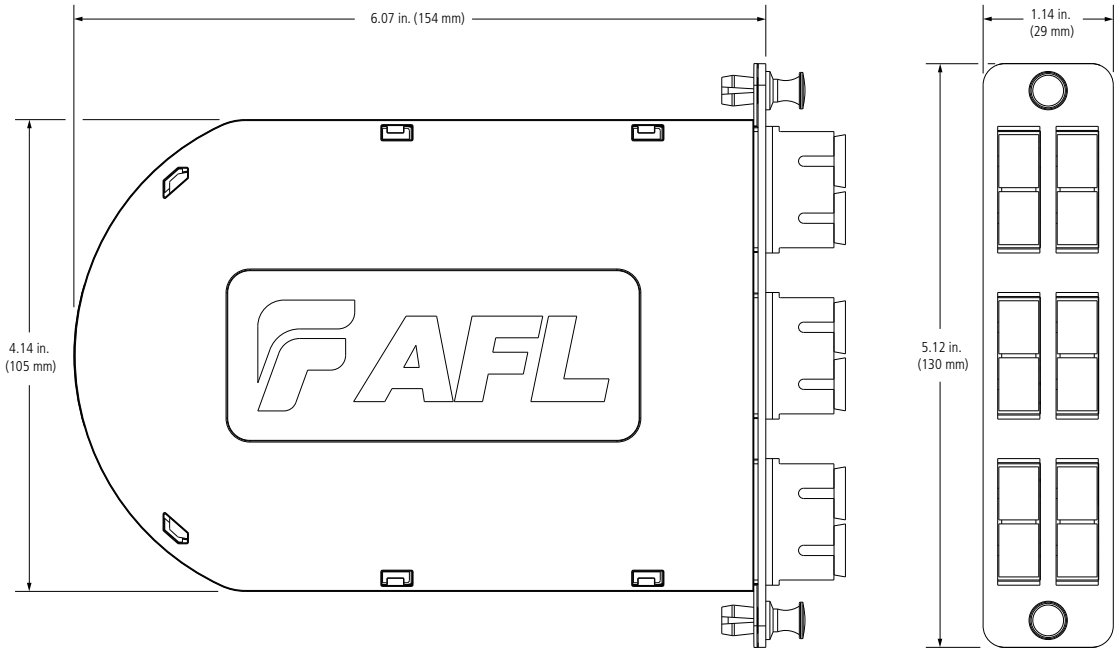
Connector Color Codes

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
Poli-MOD Splice Chip Kit with 24 Splice Sleeves	FM003711
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



WME01

Wall Mount Interconnect Enclosure (WME) with One LGX® Mounting Position

AFL's wall mount interconnect enclosure (WME01) provides a convenient convergence point for interconnecting and/or splicing in wall mount applications. Provisioned for one LGX-compatible adapter plate or optical module, the enclosure features a well-engineered solution for fiber and cable management on both the top and bottom openings of the enclosure. Robust steel construction ensures the highest level of protection for sensitive components while integrated roll-formed hinges eliminate possible fiber pinch points. The WME01 features a front access door which is lockable with a common pad-lock or tube-style keyed lock.

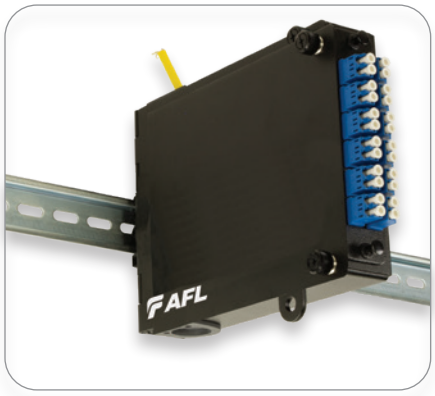
WME01 rear mounting clip for DIN rail

Features

- Fits comfortably into new and existing interconnect, cross-connect and co-location environments
- U-shaped cable entry eliminates the need to feed preconnectorized cables through an inconvenient access port
- Modular design fully compatible with Poli-MOD® products and XFM® optical cassettes
- Locking option for flexibility and security
- Available empty, with adapters, or with adapters, splice chip and pigtails pre-installed
- LGX 118 compatible
- Optional DIN rail mounting kit (sold separately)
- All major connector types are supported

Applications

- Co-Location sites
- Customer premise
- Hub/OTN sites
- Telecommunication closets
- Campus/enterprise environments



WME01 with DIN rail mounting kit

Specifications

- Solid steel construction
- Powder coat black textured finish
- Top or bottom cable entry with dust resistant grommets
- Single-hasp locking/security system
- 12 to 24 fiber patch and splice density
- One LGX mounting position
- Physical dimensions: 5.6"H x 7"W x 1.5"D
- Empty version weight: 2.0 lbs.

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Wall Mount Interconnect Enclosure (WME) with One LGX® Mounting Position

Ordering Information

EMPTY	
DESCRIPTION	**AFL NO.**
WME01 Empty	WME01E

HALF LOADED: WME WITH ADAPTER PLATES AND ADAPTERS ONLY							
CONN. TYPE	**FIBER CT.**	**AFL NO.**					
		UPC SM (BLUE)	**APC SM (GREEN)**	**PC MM 62.5 (BEIGE)**	**PC MM 50 (BLACK)**	**PC MM OM3 (AQUA)**	**PC MM OM4 (AQUA)**
SC	6	WME01AS-USCSM-006000	WME01AS-ASCSM-006000	WME01AS-PSCM6-006000	WME01AS-PSCM5-006000	WME01AS-PSCML-006000	WME01AS-PSCMC-006000
	12	WME01AS-USCSM-012000	WME01AS-ASCSM-012000	WME01AS-PSCM6-012000	WME01AS-PSCM5-012000	WME01AS-PSCML-012000	WME01AS-PSCMC-012000
LC	6	WME01AS-UDLSM-006000	WME01AS-ADLSM-006000	WME01AS-PDLM6-006000	WME01AS-PDLM5-006000	WME01AS-PDLML-006000	WME01AS-PDLMC-006000
	12	WME01AS-UDLSM-012000	WME01AS-ADLSM-012000	WME01AS-PDLM6-012000	WME01AS-PDLM5-012000	WME01AS-PDLML-012000	WME01AS-PDLMC-012000
	24	WME01AH-UDLSM-024000	WME01AH-ADLSM-024000	WME01AH-PDLM6-024000	WME01AH-PDLM5-024000	WME01AH-PDLML-024000	WME01AH-PDLMC-024000
ST	6	WME01AS-USTSM-006000	—	WME01AS-PSTM6-006000	WME01AS-PSTM5-006000	WME01AS-PSTML-006000	WME01AS-PSTMC-006000
	12	WME01AS-USTSM-012000	—	WME01AS-PSTM6-012000	WME01AS-PSTM5-012000	WME01AS-PSTML-012000	WME01AS-PSTMC-012000
FC	6	WME01AS-UFCSM-006000	WME01AS-AFCSM-006000	WME01AS-PFCM6-006000	WME01AS-PFCM5-006000	WME01AS-PFCML-006000	WME01AS-PFCMC-006000
	12	WME01AS-UFCSM-012000	WME01AS-AFCSM-012000	WME01AS-PFCM6-012000	WME01AS-PFCM5-012000	WME01AS-PFCML-012000	WME01AS-PFCMC-012000

LOADED: WME WITH ADAPTER PLATES/ADAPTERS/SPLICE CHIP/PIGTAIL (900 µm TIGHT BUFFERED FIBERS 3 METERS IN LENGTH)							
CONN. TYPE	**FIBER CT.**	**AFL NO.**					
		UPC SM (BLUE)	**APC SM (GREEN)**	**PC MM 62.5 (BEIGE)**	**PC MM 50 (BLACK)**	**PC MM OM3 (AQUA)**	**PC MM OM4 (AQUA)**
SC	6	WME01FS-USCSM-0061C0	WME01FS-ASCSM-0061C0	WME01FS-PSCM6-0061C0	WME01FS-PSCM5-0061C0	WME01FS-PSCML-0061C0	WME01FS-PSCMC-0061C0
	12	WME01FS-USCSM-0121C0	WME01FS-ASCSM-0121C0	WME01FS-PSCM6-0121C0	WME01FS-PSCM5-0121C0	WME01FS-PSCML-0121C0	WME01FS-PSCMC-0121C0
LC	6	WME01FS-UDLSM-0061C0	WME01FS-ADLSM-0061C0	WME01FS-PDLM6-0061C0	WME01FS-PDLM5-0061C0	WME01FS-PDLML-0061C0	WME01FS-PDLMC-0061C0
	12	WME01FS-UDLSM-0121C0	WME01FS-ADLSM-0121C0	WME01FS-PDLM6-0121C0	WME01FS-PDLM5-0121C0	WME01FS-PDLML-0121C0	WME01FS-PDLMC-0121C0
	24	WME01FH-UDLSM-0241C0	WME01FH-ADLSM-0241C0	WME01FH-PDLM6-0241C0	WME01FH-PDLM5-0241C0	WME01FH-PDLML-0241C0	WME01FH-PDLMC-0241C0
ST	6	WME01FS-USTSM-0061C0	—	WME01FS-PSTM6-0061C0	WME01FS-PSTM5-0061C0	WME01FS-PSTML-0061C0	WME01FS-PSTMC-0061C0
	12	WME01FS-USTSM-0121C0	—	WME01FS-PSTM6-0121C0	WME01FS-PSTM5-0121C0	WME01FS-PSTML-0121C0	WME01FS-PSTMC-0121C0
FC	6	WME01FS-UFCSM-0061C0	WME01FS-AFCSM-0061C0	WME01FS-PFCM6-0061C0	WME01FS-PFCM5-0061C0	WME01FS-PFCML-0061C0	WME01FS-PFCMC-0061C0
	12	WME01FS-UFCSM-0121C0	WME01FS-AFCSM-0121C0	WME01FS-PFCM6-0121C0	WME01FS-PFCM5-0121C0	WME01FS-PFCML-0121C0	WME01FS-PFCMC-0121C0

ACCESSORIES	
DESCRIPTION	**AFL NO.**
DIN Mount Kit, LGX® 118 (Nylon DIN Clips and Screws)	FM003388

Connector/Adapter Key

TYPE	DESCRIPTION
ASC	Angle Polish SC (ZR) sleeve-SM
ASF	Angle Polish SC Duplex (ZR) sleeve-SM
PSC	Physical Polish SC (PB) sleeve-MM
PSF	Physical Polish SC Duplex (PB) sleeve-MM
USC	Ultra Polish SC with (ZR) sleeve-SM
USF	Ultra Polish SC Duplex (ZR) sleeve-SM

TYPE	DESCRIPTION
PST	Physical Polish ST (PB) sleeve-MM
UST	Ultra Polish ST (ZR) sleeve-SM
AFC	Angle Polish FC (ZR) sleeve-SM
PFC	Physical Polish FC (PB) sleeve-MM
UFC	Ultra Polish FC (ZR) sleeve-SM

TYPE	DESCRIPTION
ADL	Angle Polish LC Duplex (ZR) sleeve-SM
PDL	Physical Polish LC Duplex (PB) sleeve-MM
PLC	Physical Polish LC (PB) sleeve-MM
UDL	Ultra Polish LC Duplex (ZR) sleeve-SM
ULC	Ultra Polish LC (ZR) sleeve-SM

WME-02

WME-02 shown empty

WME-02 shown fully loaded

Wall Mount Interconnect Enclosure (WME) with Two LGX® Mounting Positions

AFL's wall mount interconnect enclosure (WME02) provides a convenient convergence point for interconnecting and/or splicing in wall mount applications. Provisioned for up to two LGX compatible adapter plates or optical modules, the enclosure features a well-engineered solution for fiber and cable management on both the ingress and egress openings of the enclosure. Robust steel construction ensures the highest level of protection for sensitive components while integrated roll-formed hinges eliminate possible fiber pinch points while deploying or servicing components within. The WME02 features discrete access doors for provider and customer access which are independently lockable with a common pad-lock or tube-style keyed lock.

Features

- Fits comfortably into new and existing interconnect, cross-connect and co-location environments
- U-shaped cable entry eliminates the need to feed preconnectorized cables through an inconvenient access port
- Modular design fully compatible with Poli-MOD® products and XFM optical cassettes
- Dual doors with separate locking options for flexibility and security
- Available empty, with adapters, or with adapters, splice trays and pigtails pre-installed
- LGX 118 compatible
- Optional splice tray and holder (ordered separately)
- All major connector types are supported

Applications

- Co-Location sites
- Customer premise
- Hub/OTN sites
- Telecommunication closets
- Campus/enterprise environments

Specifications

- Solid steel construction
- Powder coat black textured finish
- Top or bottom cable entry with dust resistant grommets
- Dual-hasp locking/security system
- 12 to 24 fiber patch and splice density
- Two LGX mounting positions
- Physical dimensions: 12.0"H x 14.0"W x 2.5"D
- Empty version weight: 10.65 lbs.

LGX is a registered trademark of Furukawa Electric North America, Inc.

Wall Mount Interconnect Enclosure (WME) with Two LGX® Mounting Positions

Ordering Information

EMPTY	
DESCRIPTION	**AFL NO.**
WME02 Empty	WME02E

HALF LOADED: WME WITH ADAPTER PLATES AND ADAPTERS ONLY				
CONNECTOR TYPE	**FIBER COUNT**	**AFL NO.**		
		UPC SM (BLUE)	**APC SM (GREEN)**	**PC MM (BEIGE)**
SC	6	WME02AS-USCSM-006000	WME02AS-ASCSM-006000	WME02AS-PSCM6-006000
	12	WME02AS-USCSM-012000	WME02AS-ASCSM-012000	WME02AS-PSCM6-012000
	24	WME02AH-USFSM-024000	WME02AH-ASFSM-024000	WME02AH-PSFM6-024000
LC	6	WME02AS-UDLSM-006000	WME02AS-ADLSM-006000	WME02AS-PDLM6-006000
	12	WME02AS-UDLSM-012000	WME02AS-ADLSM-012000	WME02AS-PDLM6-012000
	24	WME02AH-UDLSM-024000	WME02AH-ADLSM-024000	WME02AH-PDLM6-024000
ST	6	WME02AS-USTSM-006000	—	WME02AS-PSTM6-006000
	12	WME02AS-USTSM-012000	—	WME02AS-PSTM6-012000
	24	WME02AH-USTSM-024000	—	WME02AH-PSTM6-024000
FC	6	WME02AS-UFCSM-006000	WME02AS-AFCSM-006000	WME02AS-PFCM5-006000
	12	WME02AS-UFCSM-012000	WME02AS-AFCSM-012000	WME02AS-PFCM5-012000
	24	WME02AH-UFCSM-024000	WME02AH-AFCSM-024000	WME02AH-PFCM5-024000

Connector/Adapter Key

TYPE	DESCRIPTION
ASC	Angle Polish SC (ZR) sleeve-SM
ASF	Angle Polish SC Duplex (ZR) sleeve-SM
PSC	Physical Polish SC (PB) sleeve-MM
PSF	Physical Polish SC Duplex (PB) sleeve-MM
USC	Ultra Polish SC with (ZR) sleeve-SM
USF	Ultra Polish SC Duplex (ZR) sleeve-SM
PST	Physical Polish ST (PB) sleeve-MM
UST	Ultra Polish ST (ZR) sleeve-SM
AFC	Angle Polish FC (ZR) sleeve-SM
PFC	Physical Polish FC (PB) sleeve-MM
UFC	Ultra Polish FC (ZR) sleeve-SM
ADL	Angle Polish LC Duplex (ZR) sleeve-SM
PDL	Physical Polish LC Duplex (PB) sleeve-MM
PLC	Physical Polish LC (PB) sleeve-MM
UDL	Ultra Polish LC Duplex (ZR) sleeve-SM
ULC	Ultra Polish LC (ZR) sleeve-SM

LOADED: WME WITH ADAPTER PLATES/ADAPTERS/SPLICE TRAYS/PIGTAIL (900 µm TIGHT BUFFERED FIBERS 3 METERS IN LENGTH)					
CONNECTOR TYPE	**FIBER COUNT**	**AFL NO.**			
		UPC SM (BLUE)	**APC SM (GREEN)**	**PC MM 62.5 µm (BEIGE)**	**PC MM 50 µm (BLACK)**
SC	6	WME02FS-USCSM-006110	WME02FS-ASCSM-006110	WME02FS-PSCM6-006110	WME02FS-PSCM5-006110
	12	WME02FS-USCSM-012110	WME02FS-ASCSM-012110	WME02FS-PSCM6-012110	WME02FS-PSCM5-012110
	24	WME02FH-USFSM-024120	WME02FH-ASFSM-024120	WME02FH-PSFM6-024120	WME02FH-PSFM5-024120
LC	6	WME02FS-UDLSM-006110	WME02FS-ADLSM-006110	WME02FS-PDLM6-006110	WME02FS-PDLM5-006110
	12	WME02FS-UDLSM-012110	WME02FS-ADLSM-012110	WME02FS-PDLM6-012110	WME02FS-PDLM5-012110
	24	WME02FH-UDLSM-024120	WME02FH-ADLSM-024120	WME02FH-PDLM6-024120	WME02FH-PDLM5-024120
ST	6	WME02FS-USTSM-006110	—	WME02FS-PSTM6-006110	WME02FS-PSTM5-006110
	12	WME02FS-USTSM-012110	—	WME02FS-PSTM6-012110	WME02FS-PSTM5-012110
	24	WME02FH-USTSM-024120	—	WME02FH-PSTM6-024120	WME02FH-PSTM5-024120
FC	6	WME02FS-UFCSM-006110	WME02FS-AFCSM-006110	WME02FS-PFCM6-006110	WME02FS-PFCM5-006110
	12	WME02FS-UFCSM-012110	WME02FS-AFCSM-012110	WME02FS-PFCM6-012110	WME02FS-PFCM5-012110
	24	WME02FH-UFCSM-024120	WME02FH-AFCSM-024120	WME02FH-PFCM6-024120	WME02FH-PFCM5-024120

ACCESSORIES	
DESCRIPTION	**AFL NO.**
Splice Tray Kit: Single Fusion 12F, 2RU, WME02, WME04, 1 Splice Tray	FM002827-1
Splice Tray Kit: Single Fusion 12F, 2RU, WME02, WME04, 2 Splice Trays	FM002827-2

LGX is a registered trademark of Furukawa Electric North America, Inc.

WME-04

WME-04 shown empty

WME-04 shown fully loaded

Wall Mount Interconnect Enclosure (WME) with Four LGX® Mounting Positions

AFL's wall mount interconnect enclosure (WME04) provides a convenient convergence point for interconnecting and/or splicing in wall mount applications. Provisioned for up to four LGX compatible adapter plates or optical modules, the enclosure features a well-engineered solution for fiber and cable management on both the ingress and egress openings of the enclosure. Robust steel construction ensures the highest level of protection for sensitive components while integrated roll-formed hinges eliminate possible fiber pinch points while deploying or servicing components within. The WME04 features discrete access doors for provider and customer access which are independently lockable with a common pad-lock or tube-style keyed lock.

Features

- Fits comfortably into new and existing interconnect, cross-connect and co-location environments
- U-shaped cable entry eliminates the need to feed preconnectorized cables through an inconvenient access port
- Modular design fully compatible with Poli-MOD® products and XFM optical cassettes
- Dual doors with separate locking options for flexibility and security
- Available empty, with adapters, or with adapters, splice trays and pigtails pre-installed
- LGX 118 compatible
- Optional splice tray and holder (ordered separately)
- All major connector types are supported

Applications

- Co-Location sites
- Customer premise
- Hub/OTN sites
- Telecommunication closets
- Campus/enterprise environments

Specifications

- Solid steel construction
- Powder coat black textured finish
- Top or bottom cable entry with dust resistant grommets
- Dual-hasp locking/security system
- 24 to 48 fiber patch and splice density
- Four LGX mounting positions
- Physical dimensions: 12.0"H x 16.0"W x 3.63"D

LGX is a registered trademark of Furukawa Electric North America, Inc.

Wall Mount Interconnect Enclosure (WME) with Four LGX® Mounting Positions

Ordering Information

EMPTY	
DESCRIPTION	**AFL NO.**
WME04 Empty	WME04E

HALF LOADED: WME WITH ADAPTER PLATES AND ADAPTERS ONLY				
CONNECTOR TYPE	**FIBER COUNT**	**AFL NO.**		
		UPC SM (BLUE)	**APC SM (GREEN)**	**PC MM (BEIGE)**
SC	24	WME04AS-USCSM-024000	WME04AS-ASCSM-024000	WME04AS-PSCM6-024000
	48	WME04AH-USFSM-048000	WME04AH-ASFSM-048000	WME04AH-PSFM6-048000
LC	24	WME04AS-UDLSM-024000	WME04AS-ADLSM-024000	WME04AS-PDLM6-024000
	48	WME04AH-UDLSM-048000	WME04AH-ADLSM-048000	WME04AH-PDLM6-048000
ST	24	WME04AS-USTSM-024000	—	WME04AS-PSTM6-024000
	48	WME04AH-USTSM-048000	—	WME04AH-PSTM6-048000
FC	24	WME04AS-UFCSM-024000	WME04AS-AFCSM-024000	WME04AS-PFCM5-024000
	48	WME04AH-UFCSM-048000	WME04AH-AFCSM-048000	WME04AH-PFCM5-048000

Connector/Adapter Key

TYPE	DESCRIPTION
ASC	Angle Polish SC (ZR) sleeve-SM
ASF	Angle Polish SC Duplex (ZR) sleeve-SM
PSC	Physical Polish SC (PB) sleeve-MM
PSF	Physical Polish SC Duplex (PB) sleeve-MM
USC	Ultra Polish SC with (ZR) sleeve-SM
USF	Ultra Polish SC Duplex (ZR) sleeve-SM
PST	Physical Polish ST (PB) sleeve-MM
UST	Ultra Polish ST (ZR) sleeve-SM
AFC	Angle Polish FC (ZR) sleeve-SM
PFC	Physical Polish FC (PB) sleeve-MM
UFC	Ultra Polish FC (ZR) sleeve-SM
ADL	Angle Polish LC Duplex (ZR) sleeve-SM
PDL	Physical Polish LC Duplex (PB) sleeve-MM
PLC	Physical Polish LC (PB) sleeve-MM
UDL	Ultra Polish LC Duplex (ZR) sleeve-SM
ULC	Ultra Polish LC (ZR) sleeve-SM

LOADED: WME WITH ADAPTER PLATES/ADAPTERS/SPLICE TRAYS/PIGTAIL (900 µm TIGHT BUFFERED FIBERS 3 METERS IN LENGTH)					
CONNECTOR TYPE	**FIBER COUNT**	**AFL NO.**			
		UPC SM (BLUE)	**APC SM (GREEN)**	**PC MM 62.5 µm (BEIGE)**	**PC MM 50 µm (BLACK)**
SC	24	WME04FS-USCSM-024120	WME04FS-ASCSM-024120	WME04FS-PSCM6-024120	WME04FS-PSCM5-024120
	48	WME04FH-USFSM-048140	WME04FH-ASFSM-048140	WME04FH-PSFM6-048140	WME04FH-PSFM5-048140
LC	24	WME04FS-UDLSM-024120	WME04FS-ADLSM-024120	WME04FS-PDLM6-024120	WME04FS-PDLM5-024120
	48	WME04FH-UDLSM-048140	WME04FH-ADLSM-048140	WME04FH-PDLM6-048140	WME04FH-PDLM5-048140
ST	24	WME04FS-USTSM-024120	—	WME04FS-PSTM6-024120	WME04FS-PSTM5-024120
	48	WME04FH-USTSM-048140	—	WME04FH-PSTM6-048140	WME04FH-PSTM5-048140
FC	24	WME04FS-UFCSM-024120	WME04FS-AFCSM-024120	WME04FS-PFCM6-024120	WME04FS-PFCM5-024120
	48	WME04FH-UFCSM-048140	WME04FH-AFCSM-048140	WME04FH-PFCM6-048140	WME04FH-PFCM5-048140

ACCESSORIES	
DESCRIPTION	**AFL NO.**
Splice Tray Kit: Single Fusion 12F, 2RU, WME02, WME04, 3 Splice Trays	FM002827-3
Splice Tray Kit: Single Fusion 12F, 2RU, WME02, WME04, 4 Splice Trays	FM002827-4

LGX is a registered trademark of Furukawa Electric North America, Inc.

Wall Mount Interconnect Enclosure (WME) with 12 LGX® Mounting Positions

AFL's wall mount interconnect enclosure (WME12) provides a convenient convergence point for interconnecting and/or splicing in wall mount applications. Provisioned for up to 12 LGX-compatible optical modules, the enclosure features a well-engineered solution for fiber and cable management on both the ingress and egress openings of the enclosure. Robust steel construction ensures the highest level of protection for sensitive components while integrated roll-formed hinges eliminate possible fiber pinch points while deploying or servicing components within. The WME12 features discrete access doors for provider and customer access which are lockable by key.

Features

- Fits comfortably into new and existing interconnect, cross-connect and co-location environments
- U-shaped cable entry
- Modular design fully compatible with Poli-MOD® products and Xpress® Fiber Management (XFM®) optical cassettes
- Dual doors with separate locking options for flexibility and security
- LGX 118 compatible

Applications

- Co-Location sites
- Customer premise
- Hub/OTN sites
- Telecommunication closets
- Campus/enterprise environments

Specifications

- Solid steel construction
- Powder coat black textured finish
- Top or bottom cable entry with dust resistant grommets
- Keyed locking/security system
- Up to 288 fiber density
- 12 LGX mounting positions
- Physical dimensions: 16.75"H x 20.0"W x 6.82"D

Ordering Information

DESCRIPTION	AFL NO.
WME12 Empty	WME12E

LGX is a registered trademark of Furukawa Electric North America, Inc.

24 Port ST Loaded Mini DIN Enclosure

12 Port SC Loaded Mini DIN Enclosure

Mini DIN Rail Mounted Enclosure

The Mini DIN Rail Mounted Enclosure's compact design gives it the ideal form factor for installation into densely populated industrial cabinets.

Features and Benefits

- Small size making it very versatile
- Accommodates up to 12 or 24 x SC, ST or LC duplex adapters
- Ideal for housing pre-terminated loose tube and tight buffered cables
- Allows for fusion splicing of up to 24 fibers, when two enclosures are fitted together
- Top and bottom cable entry to suit installation environment

Applications

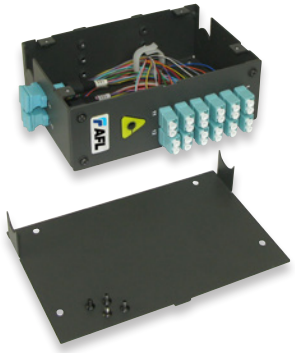
- Process automation and control
- Intelligent transport system
- Rail signalling and control networks
- Power systems and control
- MTP pre-terminated cabling solutions

Mini DIN Rail Mounted Enclosure

Technical Specifications

DESCRIPTION	12 PORT MINI DIN RAIL ENCLOSURE	24 PORT MINI DIN RAIL ENCLOSURE
Dimensions W x H x D (mm)	54.5 x 155 x 113	109 x 155 x 113
Weight (lbs)	1.5	3.0
Maximum Number of Splices	12	24
Maximum Fiber Count (Front Panel)	12 SC, ST and LC 24	SC, ST and LC
Incoming Cable Ports	1 top and bottom	2 top and bottom (includes internal routing hole for single cable 24 fiber installation)
Material and Color	Powder coated Mercury Grey	
Standard Accessories	Cable gland, central strain relief post, DIN rail mounting clip, laser badge, fiber clips and through adapters	

FDE-24LC1-P
24F LC Mini DIN enclosure for patching



FDE-24LC4-M
24F LC/MTP Mini DIN enclosure

FDE-06ST6-S[1]
6F ST Mini DIN enclosure for splicing

Ordering Information

FDE	–	12	SC	1	–	S
Fiber DIN Enclosure		**Fiber Count** 6[2] 12 24[3]	**Adapter Type** SC SCA (SM only) LC ST	**Fiber Type** 1 – 9/125 µm SM OS1 3 – 50/125 µm MM OM3 4 – 50/125 µm MM OM4		**Enclosure Function** S[4] – Splicing M[5] – MTP pre-terminated enclosure P – Patching pre-terminated or direct terminated cables only XX* – Pre-terminated fiber tails with IPP connectivity

1. Requires optioned ST faceplate
2. Uses 12 port plates, empty ports are filled with blanking plugs
3. FDE-24SC/SCA/ST enclosures only
4. Splicing enclosure includes cassette(s), protectors and pigtails
5. LCD OM3, OM4 and OS1/2 only

* Contact AFL for specific part number

Pre-terminated enclosure with harsh environment connector

Full range of additional accessories available including:

- Pigtails
- Splicing consumables
- Termination consumables
- Pre-tailed fiber optic cable assemblies available

CGM PLUS


CGM PLUS Open


CGM PLUS Interior

CGM® *PLUS*

The CGM Plus is a high-density rack-mount panel designed for Wavelength Division Multiplexing (WDM) applications. The CGM Plus can hold LGX and CGM® devices interchangeably.

The panel features a hinged tray system that extends from the front of the panel and conveniently folds out of the way for unobstructed access to installed modules.

Routing rings on the front of the tray provide enhanced fiber management, allowing cable assemblies to enter and exit comfortably.

Features

- Galvannealed Steel construction
- Textured white powder coat finish
- 4RU panel height
- Universal 19"/23" rack compatibility
- Hinged tray system for increased access to modules
- Compatible with CGM (Card Guide Module) and LGX products
- Adjustable mounting depth

Applications

- Wavelength Division Multiplexing (WDM)
- Headends/Central Offices
- Service Provider
- Telecommunications
- Data Centers

Ordering Information

DESCRIPTION	CAPACITY (LGX)*	CAPACITY (CGM)*	AFL NO.
CGM PLUS, 4RU, Empty, White, Front Access	12	24	FM004158

* Based on single-wide product

Specifications

DEPTH	WIDTH	HEIGHT	WEIGHT
12.5"	17.375"	6.875"	23 Lbs.

Card Guide Module (CGM®)

Card Guide Modules (CGM) are panel-mount WDM devices for high-density applications. These modules are pre-terminated plug and play products in a space efficient design.

Using proven thin-film filter technology, Card Guide Modules feature low insertion loss, high isolation, and superior environmental stability.

Available with up to 40 DWDM channels, Card Guide Modules can also be configured with optional Express, Upgrade, or Test ports.

Features

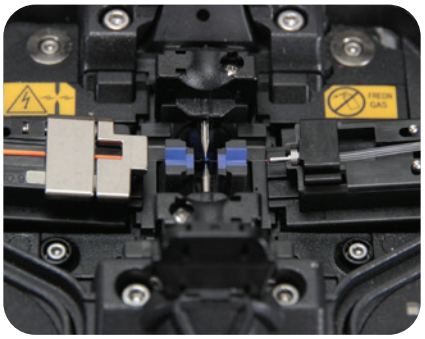
- Space efficient design
- Mux/demux options
- LC/UPC or LC/APC adapters
- Up to 40 DWDM channels
- 50/100/200 GHz ITU channel spacing
- Optional Express, Upgrade or Test ports

Specifications

PARAMETER	UNIT	VALUE		
Channels	ea	8	20	40
CGM Size	Width	Single	Dual	Quad
Center Wavelength	nm	Per ITU-T G.694.1 Grid		
Channel Spacing	GHz	100		
Passband	nm	± 0.11		
Passband @ 0.5 dB	nm	> 14		
Passband Ripple	dB	< 0.5		
Insertion Loss (IL) (Typ.) **	dB	2.6	5.3	6.0
Insertion Loss (IL) (Max.) **	dB	3.2	5.8	6.5
Isolation (Adjacent Channel)	dB	≥ 25		
Isolation (Non-Adjacent Channel)	dB	≥ 40		
Return Loss (RL)	dB	≥ 45		
Directivity	dB	≥ 50		
Polarization Mode Dispersion (PMD)	ps	≤ 0.15		
Polarization Dependent Loss (PDL)	dB	≤ 0.25		
Wavelength Thermal Stability	nm/°C	< 0.001		
Insertion Loss Thermal Stability	dB/°C	< 0.007	< 0.007	< 0.008
Optical Power (Max.)	mW	300		
Operating Temperature Range	°C	-40 to +85		
Storage Temperature Range	°C	-40 to +85		
Options	Port	Express, Upgrade, Tap, Mux/Demux		

* Optical specifications do not include optional ports
** Includes Connectors

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

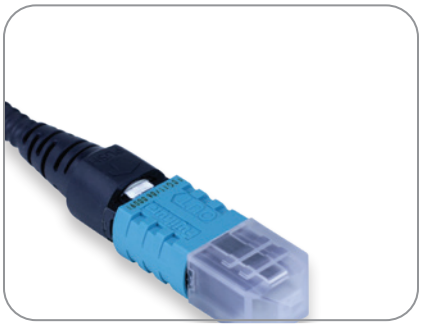
Specifications

PARAMETER	VALUE
Connector Type	SC, LC, FC, ST
Cable Type	900 µm, 2 mm, 3 mm, 4.8 mm (SC only)
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

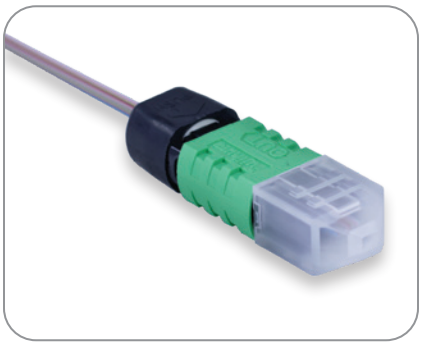
Ordering Information

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
	4.8 mm	FUSE-SC48SMU-6	FUSE-SC48SMA-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*



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 (OM3/4)	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 (OM3/4)	> 65 dB > 30 dB > 30 dB > 30 dB
Operating Temperature		-40°C to +75°C

continued on next page

FUSEConnect® MPO Fusion-Spliced, Field-Terminated Connectors

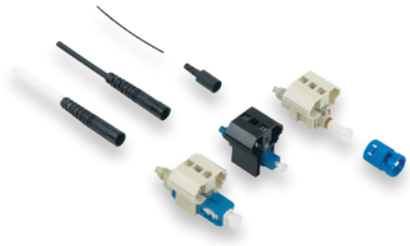
Ordering Information

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 (OM3/4)	PC	3.0 mm	250 µm	Aqua
FUSEMPO-MM5L-3-F-6	MPO, Female (no guide pins)	Multimode 50 µm 10Gig (OM3/4)	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



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 4.8 mm (SC only) 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
- 4.8 mm (SC only) 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 Multimode	Average: -50 dB, Maximum: -45 dB Average: -55 dB, Maximum: -50 dB Average: -25 dB, Maximum: -20 dB
Operating Temperature		-40°C to +75°C

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	Green		FAST-SC-SMAU-6	FAST-SC-SMAU-100
Single-mode, APC	Green	4.8 mm	FAST-SC48-SMAU-6	FAST-SC48-SMAU-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

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

FASTConnect® Field-Installable Connectors

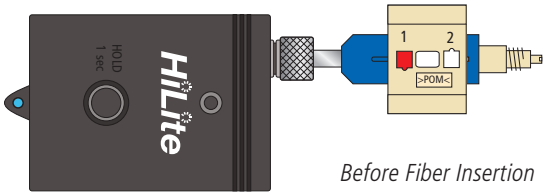
Accessories

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

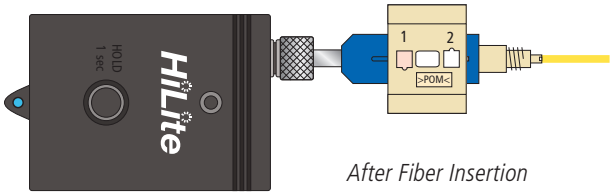
TOOL KITS	AFL NO.
FASTConnect High Precision Tool Kit with CT50 Cleaver	CS001201
FASTConnect High Precision Tool Kit with CT08 Cleaver	S017004

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

Tool Kit Contents

FASTConnect® Universal Tool Kit

Now available with the CT50 Cleaver!

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 CT50 or CT08 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 FASTConnects for on-site convenience.

Applications

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

Kit Features

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

CT08 Cleaver

Ordering Information

DESCRIPTION	AFL NO.
FASTConnect High Precision Tool Kit with CT50 Cleaver	CS001201
FASTConnect High Precision Tool Kit without cleaver	CS001201-NC
FASTConnect High Precision Tool Kit with CT08 Cleaver	CS010975

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 Preparation Fluid, Lint-free Cloth Wipes, Marker Pen, Installation Instructions, Strip Length Template and a Carrying Case.

CT50 Cleaver

CT50 Cleaver Features

- Motorized blade rotation
- Bluetooth communication
- Shock resistant
- Simple one-step operation
- 60,000 cleave blade life
- Field serviceable

FUSEConnect Tool Kit Contents

FUSEConnect® Tool Kit and Accessories

The FUSEConnect tool kit provides all the necessary installation tools required for fiber preparation of 900 µm fiber, 2 mm or 3 mm cordage for AFL's FUSEConnect Fusion Spliced Field Installable Connectors except for a fusion splicer and precision cleaver. Included in the kit are standard fiber preparation tools and cleaning supplies as well as a FUSEConnect accessory kit and cord splitter tool, which can be bought separately from the tool kit. The cord splitter tool is uniquely designed to open the cordage of 2 mm and 3 mm cable allowing the termination of the ST and FC type connectors on simplex cordage.

FUSEConnect Accessory Kit

Cord Splitter Tool

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

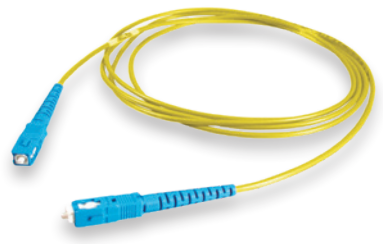
Ordering Information

DESCRIPTION	AFL NO.
FUSEConnect Tool Kit (includes items below)	**FUSE-TL-KT**
Tool Case	CS001202
Fiber Stripper	CS001205
Kevlar Scissors	C095257
Lint-Free Wipes	FM000413
Fiber Preparation Fluid	FPF1-00-0900
Permanent Marker	C015830
Cord Splitter Tool	FUSE-ST-TL
FUSEConnect Accessory Kit	FUSE-AC-KT

FUSEConnect Accessory Kit (includes items below)	**FUSE-AC-KT**
Utility Storage Box	CS012351
Clamp for holding 3 mm Simplex Cordage	S014704
Clamp for holding 2 mm Simplex Cordage	S014705
250 µm / 900 µm Fiber Clamp	CS004442
3 mm FUSEConnect Fiber Holder	S014695
2 mm FUSEConnect Fiber Holder	S014696
900 µm FUSEConnect Fiber Holder	S014697
CLAMP-S70D Sheath Clamp	S015862
CLAMP-S31S Sheath Clamp	S017101

Cord Splitter Tool	**FUSE-ST-TL**

Legacy Splicer Accessories (Required for Fanout Splicing)	
CLAMP-S21B Sheath Clamp	S016853
CLAMP-S60D Sheath Clamp	S014750



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.

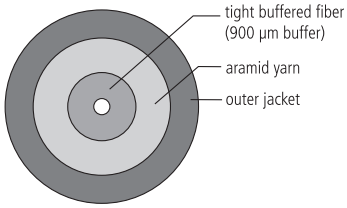
Features

- 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)

Connector End A

Single-mode
ASC = Angle SC
AFC = Angle FC
ALC = Angle LC
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

Connector End B

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

Multimode
PSC = SC MM
PFC = FC MM
PLC = LC MM
PST = ST MM
XXX = No connector

Cable Type

RS = 3.0 mm Riser
PS = 3.0 mm Plenum
KR = 3.0 mm I/O Riser
RT = 2.0 mm Riser
PT = 2.0 mm Plenum
RM = 1.6 mm Riser
PM = 1.6 mm Plenum
JH = 900 µm

Fiber Count

001 = 1

Fiber Type

Q = Single-mode*
2 = Multimode 62.5/125 OM1
R = Multimode 50/125 OM2
L = Multimode 50/125 OM3
C = Multimode 50/125 OM4

Cable Length (meters)

0010 = 10 meters
(specify length)

NOTES: * All Single-mode cable assemblies use Corning® SMF-28 Ultra® optical fiber which is ITU G.652.D compliant and exceeds the ITU G.657.A1 standard.

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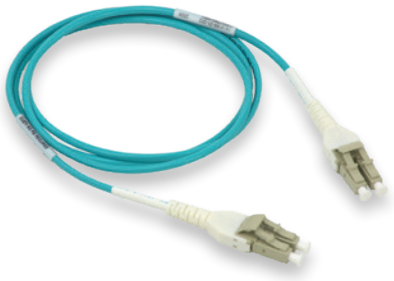


Duplex Cable Assemblies

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

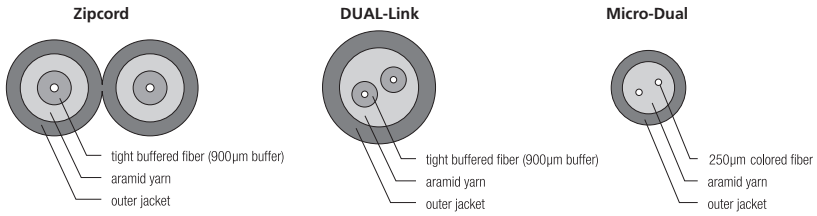
Features

- 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
- LC Uniboot cable assemblies for high-density applications

Applications

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

Cable Components



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
P20D = 2.0 mm Plenum DUAL-Link
P24D = 2.4 mm Plenum DUAL-Link

Fiber Count
002 = 2

Fiber Type
Q = Single-mode**
2 = Multimode 62.5/125 OM1
R = Multimode 50/125 OM2
L = Multimode 50/125 OM3
C = Multimode 50/125 OM4

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.

** All Single-mode cable assemblies use Corning® SMF-28 Ultra® optical fiber which is ITU G.652.D compliant and exceeds the ITU G.657.A1 standard.

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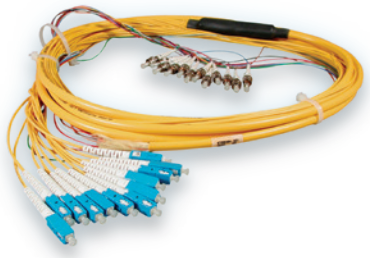

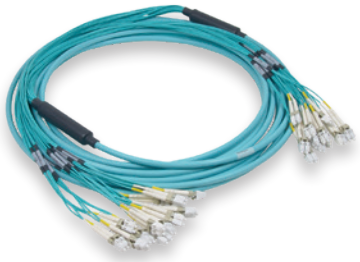

Multi-Fiber Cable Assemblies

Multi-fiber cable 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

- 4-144 fibers with aramid yarn reinforcement for rugged protection
- Available with 900 µm tight buffered fibers or sub-unitized design with 12 250 µm fibers per tube
- Highly flexible for ease of routing
- RoHS compliant—Riser, Plenum and LSZH rated cables available
- Pre-installed pulling eye kits available on certain products
- Cable tested to meet or exceed EIA/TIA 568-A/GR-409-CORE
- Telcordia GR-326 compliant connectors

Applications

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

Specifications

PARAMETER	SINGLE-MODE ASSEMBLIES				MULTIMODE ASSEMBLIES	
	LC		SC		LC	SC
	ULTRA	ANGLED	ULTRA	ANGLED		
Insertion Loss (Typical dB)***	0.15	0.15	0.15	0.15	0.15	0.15
Insertion Loss (Maximum dB)	0.3	0.3	0.3	0.3	0.5	0.5
Return Loss (Typical dB)***	-60	-70	-60	-70	-35	-35
Return Loss (Minimum dB)	-55	-65	-55	-65	-30	-30
Temperature Range (°C)	-40 to +85					

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

Ordering Information

ASC	ASC	RC	012	Q	0010	NN
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
UDL = Ultra LC Duplex

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

Multimode
PSC = SC MM
PFC = FC MM
PLC = LC MM
PST = ST MM
XXX = No connector

Cable Type
RC = Riser (CPC)
PC = Plenum (CPC)
PL = Plenum MicroCore®

Fiber Count
004 = 4
006 = 6
012 = 12
024 = 24
036 = 36
048 = 48
072 = 72
096 = 96
144 = 144

Fiber Type
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
C = Multimode 50/125 µm OM4

Cable Length (meters)
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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MPO Cable Assemblies

MPO cable assemblies provide a high performance plug-and-play solution for premise installations where space is a premium. Used to interconnect panels or cassettes, the small diameter MicroCore® cable construction reduces the required pathway space and provides a flexible outer jacket in both single-mode and multimode configurations. Multiple breakout options are also available including LC, SC, ST, or FC single fiber connectors.

Features

- High density plug and play fiber optic interconnects
- Pre-terminated cable assemblies eliminate field termination time and guarantee optical performance
- Available with a wide variety of cable and connector options
- Standard and low loss connectors
- Single-mode and laser-optimized multimode fiber available
- Pulling eye option available upon request
- Cable tested to meet or exceed EIA/TIA 568-A/GR-409-CORE
- Telcordia® GR-326/GR-1435 compliant connectors

Applications

- Data center systems wiring
- MPO-MPO or MPO-Fanouts
- Head-end termination to a fiber "backbone"
- Termination of fiber rack systems
- Multi-floor deployment
- Intrabuilding "backbones"

Specifications

	SINGLE-MODE ASSEMBLIES					MULTIMODE ASSEMBLIES		
	LC		SC		MPO	LC	SC	MPO (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—MPO-MPO Assemblies

(Female MPOs 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.

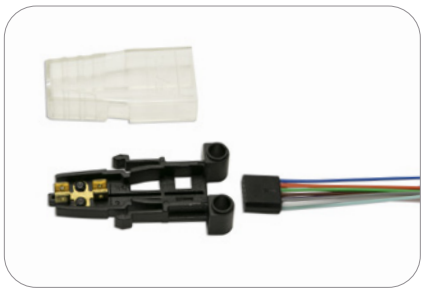
continued on next page

MPO Fanout Cable Assemblies

Ordering Information—MPO Fanout Assemblies

(Male MPOs — Duplex Connectors)

FIBER COUNT	FIBER	PULLING EYE	AFL NO.	
			MALE MPO-LC DUPLEX	MALE MPO-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



Fanout Kits

Fanout kits route 250 µm fibers into 900 µm buffer tubes ready for termination. Easily installed in minutes, these kits require no special tools, and accommodate input cables from 2.0-3.8 mm in diameter.

Fanout kits feature a clear, removable cover which is VFL-compatible and does not require epoxy. Color-coded 900 µm buffer tubes allow for easy identification of individual fiber channels.

Features

- Accepts 2.0-3.8 mm input cable
- Epoxy-free installation
- Clear, removable cover works with Visual Fault Locators (VFL)
- Protects sensitive 250 µm fibers
- Compatible with FUSEConnect® and FASTConnect® field-installable connectors

Specifications

PARAMETER	VALUE
Fiber Count	12
Environment	Indoor
Operating Temperature Range	0-70 °C
Input Cable Size	2.0 - 3.8 mm
Length	1 m

Ordering Information

AFL NO.	DESCRIPTION
FAN1-9-012-A-01	Fanout kit, 1 position base, 900 µm, 12 tubes, A, 1M

OEE-288/576 Optical Entrance Enclosures

OEE-720/1440 Optical Entrance Enclosures

LightLink Optical Entrance Enclosures

The Optical Entrance Enclosures (OEE) are designed to provide a convenient splicing and interconnection location for outside plant cabling entering a Central Office (CO), Controlled Environmental Vault (CEV) or customer location. Each unit is designed to allow the entrance and management of up to 60 cables for splicing and interconnecting. Cables from termination locations and the outside plant are easily installed and managed. Access to individual fiber splices and fiber bundles are made easy by splice tray and fiber management designs.

Features

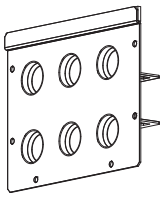
- Manages multiple cable enter and exit facilities
- Each splice tray handles up to 48 single fusion or 144 mass fusion splices
- Enclosures for indoor or outdoor NEMA 3 applications
- Internal ground bar and pass through ground lugs
- Rated NEMA Type 3

Specifications

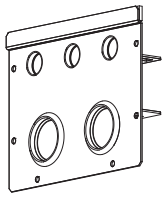
PARAMETER	VALUE
Material	Aluminum or steel
Coatings	Electrostatically applied, powder coat
Color	Granite
Dimensions	See Detail Drawings

*** Fiber splice trays sold separately**

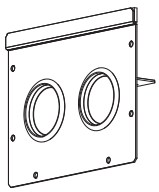
Accessories - Shingle Kits



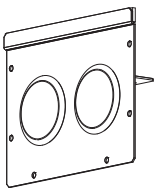
Standard Footprint 6 Ports



Standard Footprint 5 Ports



Standard Footprint 2 Ports – XL



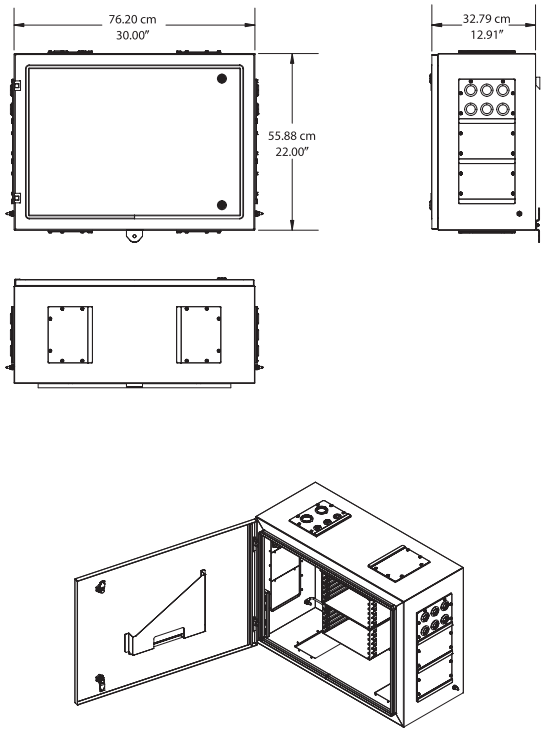
Standard Footprint 2 Ports – XXL

LightLink Optical Entrance Enclosures

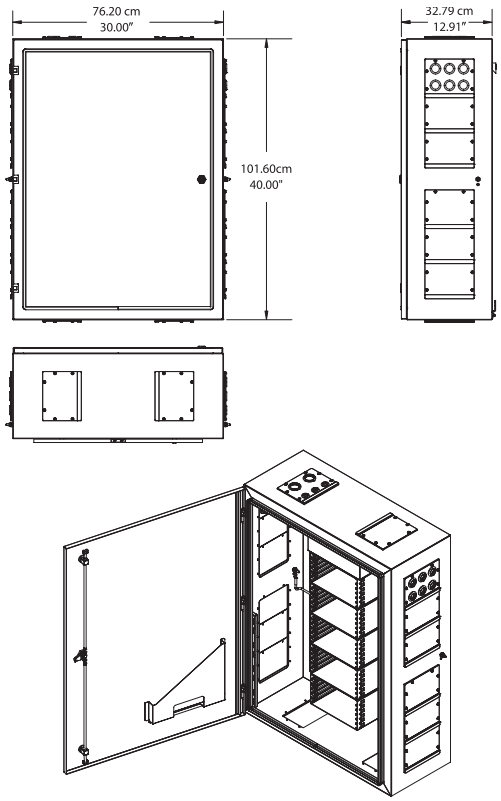
Ordering Information

DESCRIPTION	MODEL NO.	AFL NO.
OPTICAL ENTRANCE ENCLOSURE 576 Single Fusion or 1728 Mass Fused Splice Capacity, up to 60 Cable Entry Ports Includes: (2) 6-Port Standard Shingles (Each port Accepts a 0.472-0.7089" Cable) (1) 5-Port Shingles (2 Port Accepts a 0.708-0.988" Cable, and 3 small Ports Accepting a Cable 0.236-0.473") (4) Medium Sealing and Retention Kits (each supporting a 0.472-0.708" Cable) (1) Large Sealing and Retention Kit (Each Supporting a 0.708-0.988" Cable) (3) Metallic Cable Bonding Kits (1) Wall-Mount Hardware (1) OEE Locking Key	OEE-288/576	911309-00-05
OPTICAL ENTRANCE ENCLOSURE 720 Single Fusion or 4320 Mass Fused Splice Capacity, up to 60 Cable Entry Ports Includes: (2) 6-Port Standard Shingles (Each port Accepts a 0.472-0.7089" Cable) (1) 5-Port Shingles (2 Port Accepts a 0.708-0.988" Cable, and 3 small Ports Accepting a Cable 0.236-0.473") (4) Medium Sealing and Retention Kits (each supporting a 0.472-0.708" Cable) (1) Large Sealing and Retention Kit (Each Supporting a 0.708-0.988" Cable) (3) Metallic Cable Bonding Kits (1) Wall-Mount Hardware (1) OEE Locking Key	OEE-720/1440	911275-00-05

OEE 288/576



OEE 720/1440



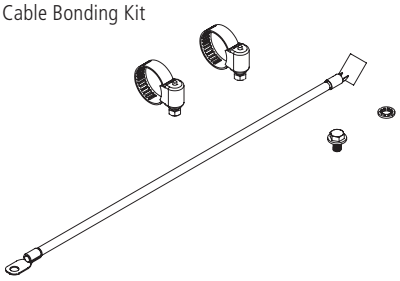
HIGH-DENSITY ENCLOSURES

LightLink Optical Entrance Enclosures

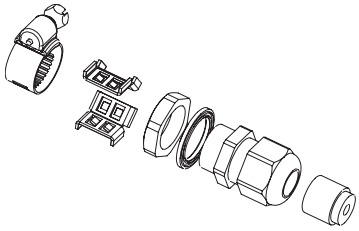
Accessories

DESCRIPTION	MODEL NO.	AFL NO.
OEE Fiber Splice Tray	STF-48	911442-00-00
Metallic Cable Bonding Kit	MBK-1	911260-00-01
Work Shelf	OEE-WS	911262-00
Cable Retention and Sealing Kit – Small (Accepts 0.236-0.473" O.D. Cable)	CRSK236-473	911310-00-00
Cable Retention and Sealing Kit – Medium (Accepts 0.472-0.708" O.D. Cable, four included with OEE)	CRSK472-708	911310-01-00
Cable Retention and Sealing Kit – Large (Accepts 0.708-0.988" O.D. Cable, one included with OEE)	CRSK708-988	911310-02-00
Cable Retention and Sealing Kit – XLarge (Accepts 0.866-1.25" O.D. Cable)	CRSK866-1250	911310-03-00
Cable Retention and Sealing Kit – XXLarge (Accepts 1.25-1.49" O.D. Cable)	CRSK1250-1490	911310-04-00
Shingle Kit – Standard, 6-Ports (Accepts Six Cables From 0.472-0.708" O.D., two included with OEE)	SK-STD	911261-00-00
Shingle Kit – Standard, 5-Ports (2) Large (0.708-0.988" O.D. Cable Ports) (3) Small (0.236-0.472" O.D. Cable Ports) (One Included with OEE)	SK-LS	911261-01-00
Shingle Kit, Two X-Large, (2) Cable Ports (0.866-1.25" O.D.)	SK-XL	911261-02-00
Shingle Kit, Two XX-Large, (2) Cable Ports (1.25-1.49" O.D.)	SK-XXL	911261-03-00

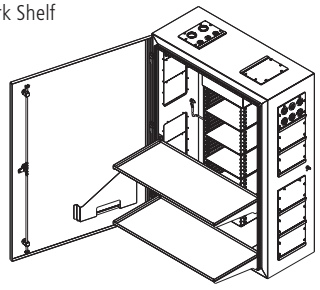
Cable Bonding Kit

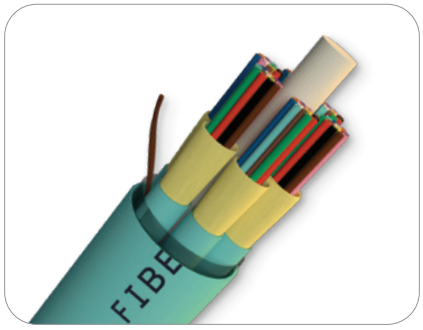


Cable Retention and Sealing Kit



Work Shelf





16-216F Sub-unitized Premise MicroCore® 2.0

AFL Sub-unitized MicroCore 2.0 cables continue to push evolution of high performance premise cabling. Now available in Base-8 cable configurations up to 144 fibers, and Base-12 configurations up to 216 fibers. MicroCore 2.0 can support all of your high-density network needs, offering the highest density 2.0 mm fiber cables available. Constructed of the highest quality materials to exacting industry standards, these small-diameter cables provide the solution sought out by today's structured cabling professionals. Each sub-cable is independently qualified and is suitable for individual routing paths within the rack/panel architecture. This enables a flexibility of design and deployment not available in comparable high-density designs. Designed for direct termination and supportive of both single-fiber and multifiber architectures, this cable family should serves as the backbone to any deployed system. Cables are constructed with AFL MicroCore technology consistent with a long line of market leading designs.

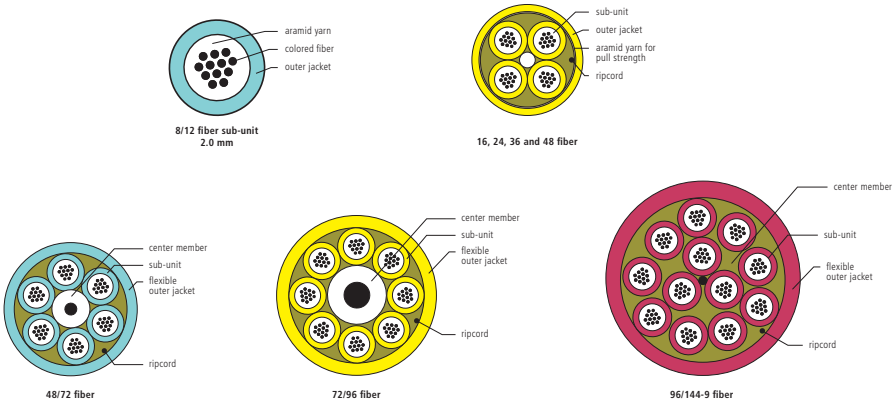
Applications

- Headend termination to a fiber "backbone"
- Termination of fiber rack systems
- Multifloor deployment where select fibers are used at each floor
- Intra-building "backbones"
- MTP/MPO or MTP to break-out terminations

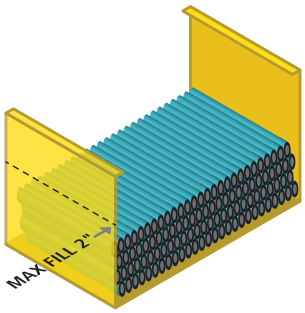
Features

- NFPA 262 (ONFP)
- Tested to meet or exceed EIA/TIA 568/ GR-409-CORE
- All aramid tensile strength members within sub-units
- Compliant to Directive 2002/95/EC (RoHS) Direct

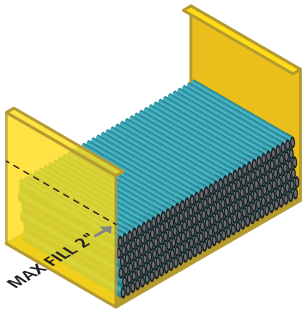
Cable Components



27% Reduction in 72ct Cable Diameter Yields Over 100% Increase in Pathway Capacity



Current 3.0 Sub-unitized Cable in Tray
120 x 72ct cables in standard 4"X 12" tray



Next Generation Sub-unitized MicroCore 2.0 Cable in Tray
250 x 72ct cables in standard 4"X 12" tray

16F-216F Sub-unitized Premise MicroCore® *2.0*

Mechanical Data

TYPE	AFL NO. PLENUM	FIBER COUNT	NO.OF SUBS	NO.OF FILLERS	NOMINAL DIAMETER INCHES (MM)	WEIGHT LBS/1000 FT (KG/KM)	TENSION LBS (N)		BENDING RADIUS INCHES (CM)	
							INSTALLATION	LONG TERM	INSTALLATION	LONG TERM
8-FIBER SUBUNITS	GQ016✶201##B:848	16	4	2	0.27 (7.0)	32 (47)	150 (660)	45 (198)	4.1 (10.5)	2.7 (7.0)
	GQ032✶201##B:848	32	4	0	0.27 (7.0)	33 (49)	150 (660)	45 (198)	4.1 (10.5)	2.7 (7.0)
	GQ048 ✶201##B:868	48	6	0	0.32 (8.2)	42 (63)	150 (660)	45 (198)	4.8 (12.3)	3.2 (8.2)
	GQ064✶201##B:888	64	8	0	0.33 (8.5)	35 (52)	150 (660)	45 (198)	5.0 (12.8)	3.3 (8.5)
	GQ072✶201##B:898	72	9	0	0.40 (10.3)	81 (120)	150 (660)	45 (198)	6.0 (15.5)	4.0 (10.3)
	GQ096✶201##B:8C8	96	12	0	0.40 (10.3)	65 (97)	150 (660)	45 (198)	6.0 (15.5)	4.0 (10.3)
	GQ144✶201##B:8I8	144	18	0	0.50 (12.9)	104 (155)	150 (660)	45 (198)	7.5 (19.4)	5.0 (12.9)
12-FIBER SUBUNITS	GQ024✶201##B:C4C	24	4	2	0.27 (7.0)	33 (49)	150 (660)	45 (198)	4.1 (10.5)	2.7 (7.0)
	GQ036✶201##B:C4C	36	4	1	0.27 (7.0)	33 (49)	150 (660)	45 (198)	4.1 (10.5)	2.7 (7.0)
	GQ048✶201##B:C4C	48	4	0	0.27 (7.0)	33 (49)	150 (660)	45 (198)	4.1 (10.5)	2.7 (7.0)
	GQ072✶201##B:C6C	72	6	0	0.32 (8.2)	44 (66)	150 (660)	45 (198)	4.8 (12.3)	3.2 (8.2)
	GQ096✶201##B:C8C	96	8	0	0.41 (10.5)	84 (125)	150 (660)	45 (198)	6.2 (15.8)	4.1 (10.5)
	GQ144✶201##B:CCC	144	12	0	0.40 (10.3)	67 (100)	150 (660)	45 (198)	6.0 (15.5)	4.0 (10.3)
	GQ168✶201##B:CIC	168	18	4	0.50 (12.9)	108 (160)	150 (660)	45 (198)	7.5 (19.4)	5.0 (12.9)
	GQ192✶201##B:CIC	192	18	2	0.50 (12.9)	108 (160)	150 (660)	45 (198)	7.5 (19.4)	5.0 (12.9)
	GQ216✶201##B:CIC	216	18	0	0.50 (12.9)	108 (160)	150 (660)	45 (198)	7.5 (19.4)	5.0 (12.9)

✶ Fiber Types – Replace asterisk (✶) in AFL number with number in the Fiber Specifications table below.
Outer Jacket Color – Replace hashtag (#) in AFL number with number in the Cable Jacket Color table below.

Fiber Specifications

CORE SIZE/FIBER TYPE	ISO/ IEC	MAXIMUM ATTENUATION (DB/KM)			OVERFILL LAUNCH MIN. BANDWIDTH (MHZ•KM)		EMB_C (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
(6) 62.5 Giga-Link™ 300	OM1	3.5	1.2	N/A	200	600	N/A	300	550	32	—
(5) 50 Giga-Link™ 600	OM2	3.5	1.5	N/A	500	500	N/A	600	600	82	—
(L) 50 Laser-Link 300	OM3	3.0	1.2	N/A	1,500	500	2,000	1,000	550	300	—
(C) 50 Laser-Link 550	OM4	3.0	1.2	N/A	3,500	500	4,700	1,040	550	550	—
(W) AFL Wideband Multimode	OM5	3.0	1.2	N/A	3,500	500	4,700	1,040	550	550	—
(9) Single-mode (ITU G.652.D/G.657.A1)	OS2	N/A	0.5	0.5	N/A	N/A	N/A	N/A	5,000	N/A	10,000

Cable Jacket Color Options

1 - Blue	8 - Black
2 - Orange	9 - Yellow
3 - Green	A - Violet
4 - Brown	B - Rose
5 - Slate	C - Aqua
6 - White	K - Erika Violet (RAL 4003)
7 - Red	

Temperature Specifications

TEMPERATURE RANGE	
INSTALLATION	0°C to +60°C (32°F to +140°F)
OPERATION	0°C to +70°C (32°F to +158°F)
STORAGE	-40°C to +70°C (-40°F to +158°F)

Sub-unitized Premise MicroCore® 3.0 with Standard Loose Tube

The third generation of AFL's Sub-Unitized Premise MicroCore Cable is another astounding evolution of high performance premise cabling. Enabling even greater pathway density than our 2.0 version, the 3.0 revolutionizes cable deployment and allows the end user to realize savings in space, routing infrastructures and fiber management. Combining the highest quality materials with rigorous testing to industry standards, this generation builds on the same quality of construction as the previous versions of our Sub-Unitized Premise MicroCore cables. Also similar to the previous version is the employment of stand-alone sub cables. Each sub-cable is independently qualified and is suitable for individual routing paths within the rack/panel architecture. This flexibility of design and deployment is not available in comparable high density designs. Designed for direct termination, and supportive of both single-fiber and multi-fiber architectures, this cable family is capable of serving as the backbone in any deployed system.

Applications

- In-building cable runs where space is a premium
- Trunk applications where flexibility and small bend radii are required to route cable
- High-density cable areas like data centers and central offices
- Lower cost cable runs where easy handling of tight buffered fibers not needed because cable will be spliced to factory terminated pigtails

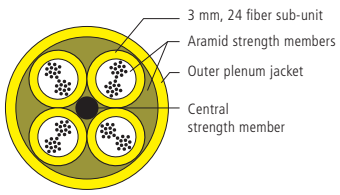
Benefits

- High fiber density—more channels in less space
- No preferential bend direction typically found in stacked ribbon designs
- Small diameter/superior bend performance
- Each sub-unit can stand alone as a rated cable
- All aramid tensile strength members around core cable for ease of attaching pulling-eye; aramid within core for use with MT termination

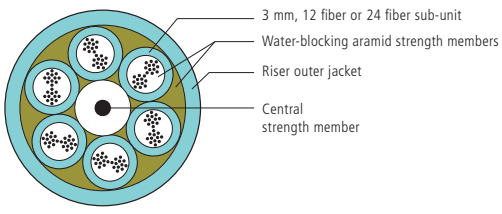
Standards Compliance

- Jacket options:
  - NFPA 262 (ONFP) / FT6
  - LSZH/ONFR-LS (IEC 60332, 60745, 61034) / CE CPR B2ca
- Tested to meet or exceed EIA/TIA 568/ GR-409-CORE
- Compliant to REACH & RoHS Directives

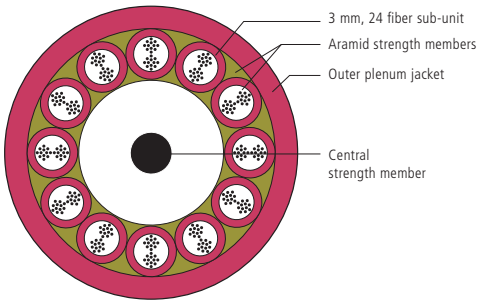
Cable Components



24, 48, 72 and 96 Fiber



120 and 144 Fiber



168, 192, 216, 240, 264 and 288 Fiber

Sub-unitized Premise MicroCore® 3.0 with Standard Loose Tube

Mechanical Data

TYPE	AFL NO. WITH STANDARD LOOSE FIBER		FIBER COUNT	NO. OF SUBS	NO. OF FILLERS	NOMINAL DIAMETER INCHES (MM)	WEIGHT LBS/1000 FT (KG/KM)	TENSION LBS (N)		BENDING RADIUS INCHES (CM)	
	PLENUM	LSZH						INSTALL	LONG TERM	INSTALL	LONG TERM
8-FIBER BUNDLES	GQ016♦301##B:G48	GE016♦301##B:G48	16	1	3	0.40 (10.2)	60 (90)	150 (670)	45 (200)	6.0 (15.3)	4.0 (10.2)
	GQ032♦301##B:G48	GE032♦301##B:G48	32	2	2	0.40 (10.2)	60 (90)	150 (670)	45 (200)	6.0 (15.3)	4.0 (10.2)
	GQ048♦301##B:G48	GE048♦301##B:G48	72	3	1	0.40 (10.2)	60 (90)	150 (670)	45 (200)	6.0 (15.3)	4.0 (10.2)
	GQ064♦301##B:G48	GE064♦301##B:G48	64	4	0	0.40 (10.2)	60 (90)	150 (670)	45 (200)	6.0 (15.3)	4.0 (10.2)
	GQ080♦301##B:G68	GE080♦301##B:G68	80	5	1	0.50 (12.7)	107 (160)	150 (670)	45 (200)	7.5 (19.1)	5.0 (12.7)
	GQ096♦301##B:G68	GE096♦301##B:G68	96	6	0	0.50 (12.7)	107 (160)	150 (670)	45 (200)	7.5 (19.1)	5.0 (12.7)
	GQ112♦301##B:G98	GE112♦301##B:G98	112	7	2	0.61 (15.5)	171 (255)	150 (670)	45 (200)	9.2 (23.5)	6.1 (15.5)
	GQ128♦301##B:G98	GE128♦301##B:G98	128	8	1	0.61 (15.5)	171 (255)	150 (670)	45 (200)	9.2 (23.5)	6.1 (15.5)
	GQ144♦301##B:G98	GE144♦301##B:G98	144	9	0	0.61 (15.5)	171 (255)	150 (670)	45 (200)	9.2 (23.5)	6.1 (15.5)
12-FIBER BUNDLES	GQ024♦301##B:O4C	GE024♦301##B:O4C	24	1	3	0.40 (10.2)	60 (90)	150 (670)	45 (200)	6.0 (15.3)	4.0 (10.2)
	GQ048♦301##B:O4C	GE048♦301##B:O4C	48	2	2	0.40 (10.2)	60 (90)	150 (670)	45 (200)	6.0 (15.3)	4.0 (10.2)
	GQ072♦301##B:O4C	GE072♦301##B:O4C	72	3	1	0.40 (10.2)	60 (90)	150 (670)	45 (200)	6.0 (15.3)	4.0 (10.2)
	GQ096♦301##B:O4C	GE096♦301##B:O4C	96	4	0	0.40 (10.2)	60 (90)	150 (670)	45 (200)	6.0 (15.3)	4.0 (10.2)
	GQ120♦301##B:O6C	GE120♦301##B:O6C	120	5	1	0.50 (12.7)	107 (160)	150 (670)	45 (200)	7.5 (19.1)	5.0 (12.7)
	GQ144♦301##B:O6C	GE144♦301##B:O6C	144	6	0	0.50 (12.7)	107 (160)	150 (670)	45 (200)	7.5 (19.1)	5.0 (12.7)
	GQ168♦301##B:O9C	GE168♦301##B:O9C	168	7	2	0.61 (15.5)	171 (255)	150 (670)	45 (200)	9.2 (23.5)	6.1 (15.5)
	GQ192♦301##B:O9C	GE192♦301##B:O9C	192	8	1	0.61 (15.5)	171 (255)	150 (670)	45 (200)	9.2 (23.5)	6.1 (15.5)
	GQ216♦301##B:O9C	GE216♦301##B:O9C	216	9	0	0.61 (15.5)	171 (255)	150 (670)	45 (200)	9.2 (23.5)	6.1 (15.5)
	GQ240♦301##B:OCC	GE240♦301##B:OCC	240	10	2	0.72 (18.4)	218 (325)	150 (670)	45 (200)	11.0 (27.6)	7.2 (18.4)
	GQ264♦301##B:OCC	GE264♦301##B:OCC	264	11	1	0.72 (18.4)	218 (325)	150 (670)	45 (200)	11.0 (27.6)	7.2 (18.4)
	GQ288♦301##B:OCC	GE288♦301##B:OCC	288	12	0	0.72 (18.4)	218 (325)	150 (670)	45 (200)	11.0 (27.6)	7.2 (18.4)

♦ Fiber Types—Replace diamond (♦) in AFL No. with number in the Fiber Specifications table below.
Outer Jacket Color – Replace hashtag (#) in AFL No. with number in the Cable Jacket Color table below.
16 unique colors available for fibers in 16 fiber sub-unit: Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose, Aqua, Olive, Tan, Lime, Magenta

Cable Jacket Color Options

1 - Blue	8 - Black
2 - Orange (OM1 and OM2)	9 - Yellow (SM)
3 - Green	A- Violet
4 - Brown	B - Rose
5 - Slate	C - Aqua (OM3 and OM4)
6 - White	K - Erika Violet (OM4)
7 - Red	L - Lime (Pending for OM5)

Temperature Specifications

TEMPERATURE RANGE	
INSTALLATION	0°C to +60°C (32°F to +140°F)
OPERATION	0°C to +70°C (32°F to +158°F)
STORAGE	-40°C to +70°C (-40°F to +158°F)

Loose Fiber Specifications

CORE SIZE/FIBER TYPE	ISO/IEC	MAXIMUM ATTENUATION (DB/KM)			OVERFILL LAUNCH MIN. BANDWIDTH (MHZ•KM)		EMB_C (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
(6) 62.5 Giga-Link™ 300	OM1	3.5	1.2	N/A	200	600	N/A	300	550	32	—
(5) 50 Giga-Link™ 600	OM2	3.5	1.5	N/A	500	500	N/A	600	600	82	—
(L) 50 Laser-Link 300	OM3	3.0	1.2	N/A	1,500	500	2,000	1,000	550	300	—
(C) 50 Laser-Link 550	OM4	3.0	1.2	N/A	3,500	500	4,700	1,040	550	550	—
(W) AFL Wideband Multimode	OM5	3.0	1.2	N/A	3,500	500	4,700	1,040	550	550	—
(9) Single-mode (ITU G.652.D/G657.A1)	OS2	N/A	0.5	0.5	N/A	N/A	N/A	N/A	5,000	N/A	10,000

*Other grades of single-mode fiber available.

SpiderWeb Ribbon Technology

Sub-unitized Premise MicroCore® 3.0 with SpiderWeb Ribbon® (SWR®) Technology

The third generation of AFL's Sub-Unitized Premise MicroCore Cable with SWR Technology is another astounding evolution of high performance premise cabling. Enabling even greater pathway density than our 2.0 version, the 3.0 revolutionizes cable deployment and allows the end user to realize savings in space, routing infrastructures and fiber management. Combining the highest quality materials with rigorous testing to industry standards, this generation builds on the same quality of construction as the previous versions of our Sub-Unitized Premise MicroCore cables.

Additionally, this version features stand-alone sub cables. Each sub cable is independently qualified and is suitable for individual routing paths within the rack/panel architecture. This flexibility of design and deployment is not available in comparable high-density designs. Designed for direct termination and supportive of both single-fiber and multi-fiber architectures, this cable family is capable of serving as the backbone in any deployed system.

SpiderWeb Ribbon is a bonded fiber design allowing for either a highly efficient ribbonizing application or for individual fiber break-outs. This flexibility allows for the application of a single cable design to cover a diverse set of applications. High density round designs allow for the most efficient use of space and materials, resulting in a cost-effective solution.

Applications

- In-building cable runs where space is a premium
- Trunk applications where flexibility and small bend radii are required to route cable
- High-density cable areas like data centers and central offices
- Lower cost cable runs where easy handling of tight buffered fibers not needed because cable will be spliced to factory terminated pigtails

Benefits

- High fiber density—more channels in less space
- No preferential bend direction typically found in stacked ribbon designs
- Small diameter/superior bend performance
- Each sub-unit can stand alone as a rated cable
- All aramid tensile strength members around core cable for ease of attaching pulling-eye; aramid within core for use with MT termination

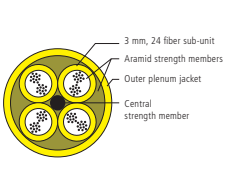
Standards Compliance

- Jacket options:
  - NFPA 262 (ONFP) / FT6
  - LSZH/ONFR-LS (IEC 60332, 60745, 61034) / CE CPR B2ca
- Tested to meet or exceed EIA/TIA 568/ GR-409-CORE
- Compliant to REACH & RoHS Directives

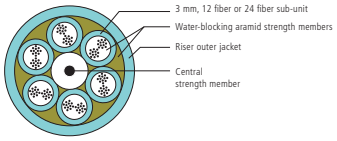
Temperature Specifications

TEMPERATURE RANGE	
INSTALLATION	0°C to +60°C
OPERATION	0°C to +70°C
STORAGE	-40°C to +70°C

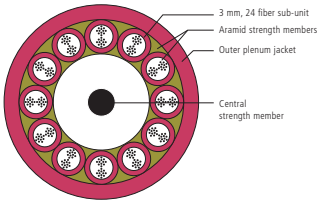
Cable Components



48, 72 and 96 Fiber



120 and 144 Fiber



240, 264 and 288 Fiber

Sub-unitized Premise MicroCore® *3.0* with SWR® Technology

Mechanical Data

NO. OF SUBS	NO. OF FILLERS	NOMINAL DIAMETER INCHES (MM)	WEIGHT LBS/1000 FT (KG/KM)	TENSION LBS (N)		BENDING RADIUS INCHES (CM)	
				INSTALLATION	LONG TERM	INSTALLATION	LONG TERM
1	3	0.40 (10.2)	60 (90)	150 (670)	45 (200)	6.0 (15.3)	4.0 (10.2)
2	2	0.40 (10.2)	60 (90)	150 (670)	45 (200)	6.0 (15.3)	4.0 (10.2)
3	1	0.40 (10.2)	60 (90)	150 (670)	45 (200)	6.0 (15.3)	4.0 (10.2)
4	0	0.40 (10.2)	60 (90)	150 (670)	45 (200)	6.0 (15.3)	4.0 (10.2)
5	1	0.50 (12.7)	107 (160)	150 (670)	45 (200)	7.5 (19.1)	5.0 (12.7)
6	0	0.50 (12.7)	107 (160)	150 (670)	45 (200)	7.5 (19.1)	5.0 (12.7)
7	2	0.61 (15.5)	171 (255)	150 (670)	45 (200)	9.2 (23.5)	6.1 (15.5)
8	1	0.61 (15.5)	171 (255)	150 (670)	45 (200)	9.2 (23.5)	6.1 (15.5)
9	0	0.61 (15.5)	171 (255)	150 (670)	45 (200)	9.2 (23.5)	6.1 (15.5)
10	2	0.72 (18.4)	218 (325)	150 (670)	45 (200)	11.0 (27.6)	7.2 (18.4)
11	1	0.72 (18.4)	218 (325)	150 (670)	45 (200)	11.0 (27.6)	7.2 (18.4)
12	0	0.72 (18.4)	218 (325)	150 (670)	45 (200)	11.0 (27.6)	7.2 (18.4)

SWR Fiber Specifications

CORE SIZE/FIBER TYPE	ISO/ IEC	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
(L) AFL Bend-Insensitive OM3 50 µm	OM3	3	1.2	N/A	1,500	500	2,000	1,000	550	300	—
(C) AFL Bend-Insensitive OM4 50 µm	OM4	3	1.2	N/A	3,500	500	4,700	1,040	550	550	—
(P) AFL Bend-Insensitive Single-mode (ITU G.652.D/G.657.A1)	OS2	N/A	0.5	0.5	N/A	N/A	N/A	N/A	5,000	N/A	10,000

Cable Jacket Color Options

1 - Blue	8 - Black
2 - Orange	9 - Yellow (SM)
3 - Green	A- Violet
4 - Brown	B - Rose
5 - Slate	C - Aqua (OM3 and OM4)
6 - White	K - Erika Violet (OM4)
7 - Red	L - Lime

continued

Sub-unitized Premise MicroCore® *3.0* with SWR® Technology

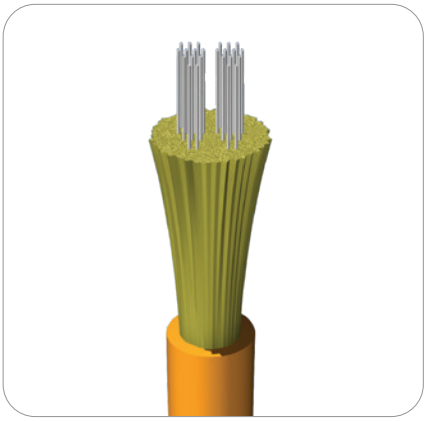
Ordering Information

CABLE TYPE	FIBER COUNT	NO. OF SUBS	NO. OF FILLERS	AFL NO.					
				SINGLE-MODE		OM3		OM4	
				PLENUM	LSZH	PLENUM	LSZH	PLENUM	LSZH
12 Fiber Subunit	12	1	3	GQ012P301##R:C4C	GE012P301##R:C4C	GQ012L301##S:C4C	GE012L301##S:C4C	GQ012C301##S:C4C	GE012C301##S:C4C
	24	2	2	GQ024P301##R:C4C	GE024P301##R:C4C	GQ024L301##S:C4C	GE024L301##S:C4C	GQ024C301##S:C4C	GE024C301##S:C4C
	36	3	1	GQ036P301##R:C4C	GE036P301##R:C4C	GQ036L301##S:C4C	GE036L301##S:C4C	GQ036C301##S:C4C	GE036C301##S:C4C
	48	4	0	GQ048P301##R:C4C	GE048P301##R:C4C	GQ048L301##S:C4C	GE048L301##S:C4C	GQ048C301##S:C4C	GE048C301##S:C4C
	60	5	1	GQ060P301##R:C6C	GE060P301##R:C6C	GQ060L301##S:C6C	GE060L301##S:C6C	GQ060C301##S:C6C	GE060C301##S:C6C
	72	6	0	GQ072P301##R:C6C	GE072P301##R:C6C	GQ072L301##S:C6C	GE072L301##S:C6C	GQ072C301##S:C6C	GE072C301##S:C6C
	84	7	1	GQ084P301##R:C8C	GE084P301##R:C8C	GQ084L301##S:C8C	GE084L301##S:C8C	GQ084C301##S:C8C	GE084C301##S:C8C
	96	8	0	GQ096P301##R:C8C	GE096P301##R:C8C	GQ096L301##S:C8C	GE096L301##S:C8C	GQ096C301##S:C8C	GE096C301##S:C8C
	120	10	2	GQ120P301##R:CCC	GE120P301##R:CCC	GQ120L301##S:CCC	GE120L301##S:CCC	GQ120C301##S:CCC	GE120C301##S:CCC
	132	11	1	GQ132P301##R:CCC	GE132P301##R:CCC	GQ132L301##S:CCC	GE132L301##S:CCC	GQ132C301##S:CCC	GE132C301##S:CCC
	144	12	0	GQ144P301##R:CCC	GE144P301##R:CCC	GQ144L301##S:CCC	GE144L301##S:CCC	GQ144C301##S:CCC	GE144C301##S:CCC
24 Fiber Subunit	24	1	3	GQ024P301##R:O4C	GE024P301##R:O4C	GQ024L301##S:O4C	GE024L301##S:O4C	GQ024C301##S:O4C	GE024C301##S:O4C
	48	2	2	GQ048P301##R:O4C	GE048P301##R:O4C	GQ048L301##S:O4C	GE048L301##S:O4C	GQ048C301##S:O4C	GE048C301##S:O4C
	72	3	1	GQ072P301##R:O4C	GE072P301##R:O4C	GQ072L301##S:O4C	GE072L301##S:O4C	GQ072C301##S:O4C	GE072C301##S:O4C
	96	4	0	GQ096P301##R:O4C	GE096P301##R:O4C	GQ096L301##S:O4C	GE096L301##S:O4C	GQ096C301##S:O4C	GE096C301##S:O4C
	120	5	1	GQ120P301##R:O6C	GE120P301##R:O6C	GQ120L301##S:O6C	GE120L301##S:O6C	GQ120C301##S:O6C	GE120C301##S:O6C
	144	6	0	GQ144P301##R:O6C	GE144P301##R:O6C	GQ144L301##S:O6C	GE144L301##S:O6C	GQ144C301##S:O6C	GE144C301##S:O6C
	168	7	2	GQ168P301##R:O9C	GE168P301##R:O9C	GQ168L301##S:O9C	GE168L301##S:O9C	GQ168C301##S:O9C	GE168C301##S:O9C
	192	8	1	GQ192P301##R:O9C	GE192P301##R:O9C	GQ192L301##S:O9C	GE192L301##S:O9C	GQ192C301##S:O9C	GE192C301##S:O9C
	216	9	0	GQ216P301##R:O9C	GE216P301##R:O9C	GQ216L301##S:O9C	GE216L301##S:O9C	GQ216C301##S:O9C	GE216C301##S:O9C
	240	10	2	GQ240P301##R:OCC	GE240P301##R:OCC	GQ240L301##S:OCC	GE240L301##S:OCC	GQ240C301##S:OCC	GE240C301##S:OCC
	264	11	1	GQ264P301##R:OCC	GE264P301##R:OCC	GQ264L301##S:OCC	GE264L301##S:OCC	GQ264C301##S:OCC	GE264C301##S:OCC
	288	12	0	GQ288P301##R:OCC	GE288P301##R:OCC	GQ288L301##S:OCC	GE288L301##S:OCC	GQ288C301##S:OCC	GE288C301##S:OCC

Notes:

- Replace first **#** with number corresponding to desired jacket color from Cable Jacket Color Options table on previous page.
- Replace second **#** with number corresponding to desired subunit color from Cable Jacket Color Options table on previous page.

NEW
eABF SWR



eABF® SWR® Enterprise Air-Jetted Fiber Cable

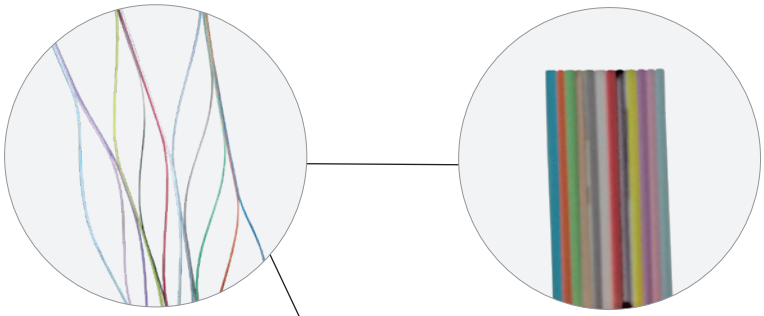
The AFL eABF SWR (SpiderWeb Ribbon®) is a new innovation that combines the best of ribbon fiber mass-fusion functionality and single fiber-bundle packing density to enterprise fiber optic structured cabling materials. The SWR fiber bundle used in this version of the eABF air-jetted fiber optic cable 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.

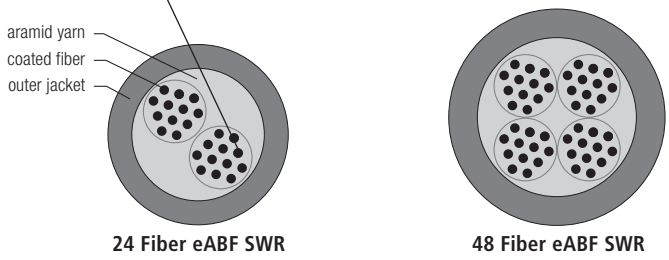
Features

- 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
- SpiderWeb 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

eABF® SWR® Enterprise Air-Jetted Fiber Cable

Temperature Specifications

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

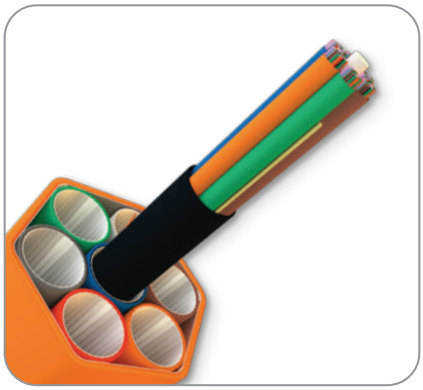
Mechanical Data

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
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)
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)		EMB_C (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



OSP MicroCore® LM-Series

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.

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
- Tonable option includes a low-resistance copper wire that allows cable/pathway to be located using standard electromagnetic detector devices

Fiber Specifications

FIBER TYPE	MAXIMUM ATTENUATION (DB/KM)				OVERFILL LAUNCH MIN. BANDWIDTH (MHZ•KM)		GIGABIT ETHERNET MIN. LINK DISTANCE (METERS)	
	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

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.

OSP MicroCore® LM-Series

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✶C6101#S	12	12/1 (5 fillers)	0.299	7.6	0.394	10	31	46	300 (136)	90 (41)	5 (13)	4 (10)
LM024✶C6101#S	24	12/2 (4 fillers)	0.299	7.6	0.394	10	31	46	300 (136)	90 (41)	5 (13)	4 (10)
LM048✶C6101#S	48	12/4 (2 fillers)	0.299	7.6	0.394	10	31	47	300 (136)	90 (41)	5 (13)	4 (10)
LM072✶C6101#S	72	12/6 (no fillers)	0.299	7.6	0.394	10	34	51	300 (136)	90 (41)	5 (13)	4 (10)
LM096✶O6101#S	96	24/4 (2 fillers)	0.311	7.9	0.394	10	34	51	300 (136)	90 (41)	7 (16)	5 (13)
LM144✶O6101#S	144	24/6 (no fillers)	0.311	7.9	0.394	10	36	53	300 (136)	90 (41)	7 (16)	5 (13)
LM288✶R6101#S	288	48/6 (no fillers)	0.409	10.4	0.512	13	63	93	350 (150)	100 (45)	9 (21)	7 (17)
LM432✶OI301#S	432	24/18 (no fillers)	0.496	12.6	0.630	16	87	130	300 (136)	90 (41)	10 (26)	8 (21)

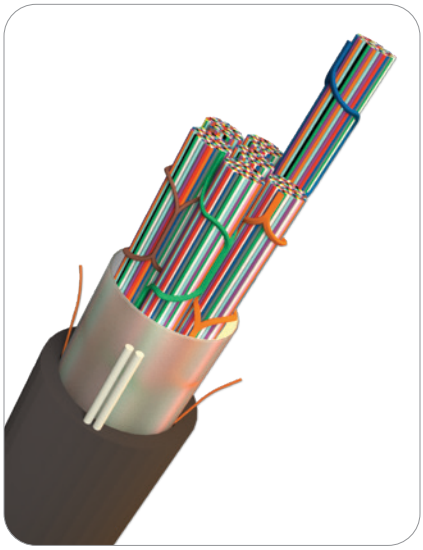
* Replace "✶" in AFL number with number in the Fiber Specifications table on previous page.
Replace # with "N" for all-dielectric cable or "T" for tonable option.

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.



Wrapping Tube Cable (WTC) with SpiderWeb Ribbon® (SWR®)

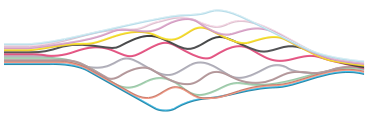
Wrapping Tube Cable (WTC), with SpiderWeb Ribbon® (SWR®), is an ultra-high density outside plant cable designed specifically for fiber-to-the-home (FTTH) or access markets. It is compliant with the latest issue of the outside plant cable standard, Telcordia GR-20. With an ultra-high density and a new ribbon technology called SpiderWeb Ribbon®, WTC provides the smallest cable diameter and lowest weight, high-fiber count ribbon cable in the industry. WTC with SWR® cables are available in fiber counts from 144 to 3,456.

SWR® is a bonded fiber ribbon design allowing for either a highly efficient ribbon splicing or an individual fiber breakout splicing process. This flexibility allows for a single cable design to cover a diverse set of applications from access networks to high-fiber count mass fusion splicing. With the ability to roll and conform, the SWR® provides for ultra-high density packaging in the WTC.

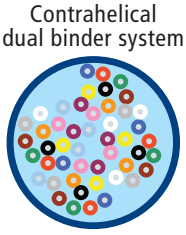
Features

- **Access Ready Construction (ARC)**
  Completely gel-free construction with easy-to-access and identify optical fiber circuits.
- **SpiderWeb Ribbon® (SWR®) optical fiber technology**
  Easily ribbonized for mass fusion splicing. SWR® is compacted and routed like individual fibers. Ideal for organizing slack loops in splice enclosures as there is no preferential bending of ribbon.
- **Significantly higher fiber density compared to traditional ribbon cables**
  Offers ability to expand capacity of existing pathways and allows use of smaller, lower cost duct systems.
- **Smaller cable diameters and cable weights**
  Means longer reel lengths that allow for lower scrap rates, easier handling of reels at the site and reduced transportation costs.
- **Completely dry water-blocking technology**
  Reduces time required to prep cable-end and mid-span access resulting in labor savings.
- **Compact ribbon bundles**
  Reduces enclosure/splice tray size requirements allowing for smaller telecommunications space allocation.
- **Armored and non-armored packages**
  Supports all the standard cable deployment options typically found in the OSP environment including, duct, direct buried and aerial.
- **Fully qualified to Telcordia GR-20**
  Provides assurance that the cable will support optical fiber network transport functions now and into the future.

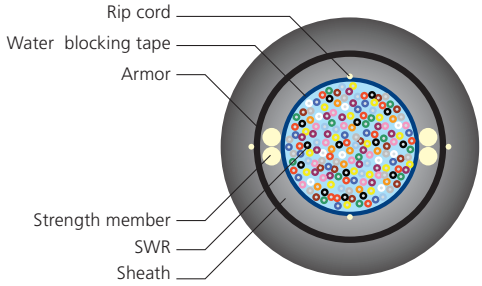
ARC SWR® Technology



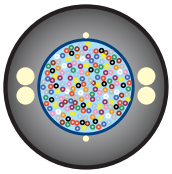
12F SWR®



Multiple 12F SWR® Bundle



Armored
(144F - 1,728F)



Non-armored
(144F - 3,456F)

Wrapping Tube Cable (WTC) with SpiderWeb Ribbon® (SWR®)

Temperature Range

Operating	-40°C to +70°C
Storage	-40°C to +70°C
Installation	-30°C to +60°C

Stripe Ring Fiber Identification

R NO.	STRIPE RING MARKING	R NO.	STRIPE RING MARKING
1		7	
2		8	
3		9	
4		10	
5		11	
6		12	

FIBER COUNT	BINDER UNIT (BU)												RING MARKINGS
144F	No Binder Unit												1-12 Ring Marking
288F	4 Binder Units	1	2	3	4								1-6 Ring Marking
432F	6 Binder Units	1	2	3	4	5	6						
576F	8 Binder Units	1	2	3	4	5	6	7	8				
864F	12 Binder Units	1	2	3	4	5	6	7	8	9	10	11	12
1152F	8 Binder Units	1	2	3	4	5	6	7	8				1-12 Ring Marking
1728F	12 Binder Units	1	2	3	4	5	6	7	8	9	10	11	12	1-12 Ring Marking
3456F	24 Binder Units	1	2	3	4	5	6	7	8	9	10	11	12	1-12 Ring Marking
		13	14	15	16	17	18	19	20	21	22	23	24	1-12 Ring Marking

*For binder units 13-24, the second binder unit is clear

For specifications and ordering information, contact AFL.

FIBER OPTIC CABLE

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 13-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. In an industry first, the 70S+ is also equipped with Bluetooth® technology. This allows the splicer to actively communicate with Bluetooth enabled fiber preparation accessories making maintenance of fiber preparation tools easier than ever! The 70S+ will also be available without Bluetooth functionality.

Features

- Bluetooth wireless communication
- Automated and programmable wind protector
- 13-second automated tube heater
- Fully ruggedized for shock, dust and moisture
- Sheath clamp or fiber holder operation
- Li-ion battery with 200 splices/shrinks per charge
- 5 mm cleave length for splice on connector or small package needs
- On-board training and support videos
- 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 CT50 cleaver) **Includes:** CT50 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 CT50 cleaver, battery and cord) **Includes:** BTR-09 Battery, DCC-18 Battery Charge Cord, CT50 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
70S+ Fusion Splicer Kit (with CT08 cleaver) **Includes:** CT08 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	
70S+ Fusion Splicer Without Bluetooth (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	S017000
70S+ Fusion Splicer Kit Without Bluetooth (with CT08 cleaver) **Includes:** CT08 Cleaver, 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	S017452
One Year Extended Warranty	S012996
Two Year Extended Warranty	S013000

Fujikura 70S+ Fusion Splicer

Recommended Accessories for the 70S+

DESCRIPTION	AFL NO.
Cleavers	
CT08 Cleaver	S017004
CT50 Cleaver	S017030
Fiber Holders	
FH-70-250 (250 µm coated single fiber)	S017111
FH-70-900 (900 µm jacketed single fiber)	S017113
FH-70-160 Fiber Holder (pair)	S017095
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 and DCC-18 Charge Cord	S016780
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
Splicer V-Groove Cleaning Kit	S014397

Specifications

PARAMETER	VALUE
Model	70S+ Fusion Splicer
Applicable Fibers	Single-mode (G.652 & G.657), Multimode (G.651.1), DS (G.653), CS (G.654), NZDS (G.655 & G.656) and Erbium-doped fiber
Cladding Diameter	80 - 150 µm
Coating Diameter	100 µm to 3,000 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	ULTRA FAST mode — 6 seconds; 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 13 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	5,000 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

62S+

Fujikura 62S+ Fusion Splicer

The Fujikura 62S+ provides active core alignment splice loss performance while utilizing a conventional wind protector and tube heater design. An alternative to the fully automated core-alignment model 70S+, the 62S+ includes an auto-start feature for both the splicing and tube heating process that minimizes the steps necessary to process splices. With a shrink time of 23 seconds with standard splice sleeves, the 62S+ ensures a high level of productivity. Incorporating the proven ruggedized features pioneered by Fujikura, durability is greatly enhanced by a mirrorless optical system and "severe-impact resistant" monitor. Battery capacity is 200 splices/shrinks. The transit case doubles as a built-in or mobile workstation and makes splicing easier than ever. In an industry first, the 62S+ is also equipped with **Bluetooth®** technology. This allows the splicer to actively communicate with Bluetooth enabled fiber preparation accessories making maintenance of fiber preparation tools easier than ever!

On case

Features

- Bluetooth wireless communication
- 5,000 splices electrode life
- 23 second tube heating time with standard sleeves
- 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
- Internet software upgrades
- Multi-function transit case with integrated workstation

Ordering Information

DESCRIPTION	AFL NO.
62S+ Fusion Splicer (machine only) **Includes:** ADC-18 AC Adapter, ACC-14 AC Cord, ELCT2-20A Spare Electrodes (pair), S21A Sheath Clamp, Sleeve Loader, JP-08 J-PLATE, USB Cable, Alcohol Pot, Screwdriver, Splicer Carrying Strap, Quick Reference Guide, Video Instruction Manual and CC-24 Transit Case with Carrying Strap	S016279
62S+ Fusion Splicer Kit (with CT08 cleaver) **Includes:** CT08 Cleaver, ADC-18 AC Adapter, ACC-14 AC Cord, ELCT2-20A Spare Electrodes (pair), S21A Sheath Clamp, Sleeve Loader, JP-08 J-PLATE, USB Cable, Alcohol Pot, Screwdriver, Splicer Carrying Strap, Quick Reference Guide, Video Instruction Manual and CC-24 Transit Case with Carrying Strap	S016282
62S+ Fusion Splicer Kit (with CT08 cleaver, battery and cord) **Includes:** BTR-09 Battery, DCC-18 Battery Charge Cord, CT08 Cleaver, ADC-18 AC Adapter, ACC-14 AC Cord, ELCT2-20A Spare Electrodes (pair), S21A Sheath Clamp, Sleeve Loader, JP-08 J-PLATE, USB Cable, Alcohol Pot, Screwdriver, Splicer Carrying Strap, Quick Reference Guide, Video Instruction Manual and CC-24 Transit Case with Carrying Strap	S016283
62S+ Fusion Splicer Kit (with CT50 cleaver) **Includes:** CT50 Cleaver, ADC-18 AC Adapter, ACC-14 AC Cord, ELCT2-20A Spare Electrodes (pair), S21A Sheath Clamp, Sleeve Loader, JP-08 J-PLATE, USB Cable, Alcohol Dispenser, Screwdriver, Splicer Carrying Strap, Quick Reference Guide, Video Instruction Manual and CC-24 Transit Case with Carrying Strap	S016280
62S+ Fusion Splicer Kit (with CT50 cleaver, battery and cord) **Includes:** BTR-09 Battery, DCC-18 Battery Charge Cord, CT50 Cleaver, ADC-18 AC Adapter, ACC-14 AC Cord, ELCT2-20A Spare Electrodes (pair), S21A Sheath Clamp, Sleeve Loader, JP-08 J-PLATE, USB Cable, Alcohol Dispenser, Screwdriver, Splicer Carrying Strap, Quick Reference Guide, Video Instruction Manual and CC-24 Transit Case with Carrying Strap	S016281
One Year Extended Warranty	S012996
Two Year Extended Warranty	S013000

Fujikura 62S+ Fusion Splicer

Recommended Accessories for the 62S+

DESCRIPTION	AFL NO.
Cleavers	
CT08 Cleaver	S017004
CT50 Cleaver	S017030
Fiber Holders	
FH-70-250 (250 µm coated single fiber)	S017111
FH-70-900 (900 µm jacketed single fiber)	S017113
FH-70-160 Fiber Holder (pair)	S017095
FH-60-LT900 Fiber Holder (pair)	S015181
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-S21A Sheath Clamp (Coating diameter from 100 µm - 1000 µm (5-16 mm cleave))	S016852
CLAMP-S21B Sheath Clamp (900 µm diameter loose tube fiber (5-16 mm cleave))	S016853

DESCRIPTION	AFL NO.
Batteries and Power Cords	
ADC-18 AC Adapter	S015585
ACC-14 AC Power Cord	S014536
BTR-09 Battery and DCC-18 Charge Cord	S016780
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-08 J-PLATE	S016284
SL-01 Sleeve Loader	S015674
USB Cable	S014777
CC-24 Transit Case	S014559
Splicer V-Groove Cleaning Kit	S014397

Specifications

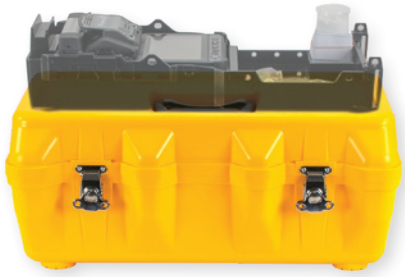
PARAMETER	VALUE
Model	62S+ Fusion Splicer
Applicable Fibers	Single-mode (G.652 & G.657), Multimode (G.651.1), DS (G.653), CS (G.654), NZDS (G.655 & G.656) and Erbium-doped fiber
Cladding Diameter	80 µm to 150 µm
Coating Diameter	100 µm to 1,000 µm
Fiber Cleave Length	5 to 16 mm
Typical Average Splice 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	ULTRA FAST mode — 6 seconds; SM FAST mode — 7 seconds; SM AUTO mode — 10 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 10,000 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 23 seconds with FP-03 sleeve, 17 seconds with FP3 (40), 5-16 seconds with Fujikura micro sleeves, 15 seconds with slim 60 mm and 40 mm sleeves
Protection Sleeve Length	60 mm, 40 mm, micro
Splice/Heat Cycles with Battery	Typical 200 cycles with power save functions activated
Electrode Life	5,000 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

Fujikura 41S Fusion Splicer

The Fujikura 41S is a fully ruggedized, two camera, active cladding alignment fusion splicer. Core sensing loss estimation technology provides the most accurate assessment of splice loss available in any active cladding alignment splicer in the world. Enabled by Warm Splice Imaging (WSI), the 41S can determine the accuracy of core alignment by evaluation of the splice during the heating process. This technology delivers splice loss estimates with a greater level of accuracy as those based on only cladding alignment. State-of-the-art cleaver management via Bluetooth® connection with the CT50 Cleaver tracks usage and enables automated blade rotation as needed. The dual-camera, active V-groove alignment system provides consistent splicing performance in the most challenging conditions. A 6-second splice time and 25-second shrink time offers unmatched speed and productivity, while an easy-to-use touchscreen monitor provides simple and intuitive menu navigation. Interchangeable sheath clamps or fiber holders provide versatility for user preference, and compatibility with fusion installable connectors. The extended-life battery is rated for up to 200 splice and heat cycles. Long-life electrodes, lasting 5,000 splices, help minimize downtime for replacement and stabilization. The large 5" monitor provides a crystal clear image, even in the brightest sunlight. Software updates are accomplished via the internet allowing users to quickly update their software as new splice programs become available.

Backed by the best service team in the industry, the Fujikura 41S is the ideal splicer to use when portability, ruggedness, and reliability are needed for your splicing application.

Workstation in Transit Case



Workstation on Transit Case

Features

- Warm Splice Imaging (WSI) loss estimation technology
- Bluetooth enabled cleaver management
- Two camera, active cladding alignment
- 5" touchscreen monitor
- Interchangeable sheath clamps and fiber holders
- Fully ruggedized for shock, moisture and dust resistance
- Extended-life electrodes, 5,000 splices, exchangeable without tools
- Long-life battery (200 splices/shrinks per charge)

Ordering Information

DESCRIPTION	AFL NO.
Fujikura 41S Fusion Splicer **Includes:** Fujikura 41S Fusion Splicer, S31A Sheath clamps (installed), FH-70-250 Fiber Holders (pair), FH-70-900 Fiber Holders (pair), SP-31 Set Plates, ADC-19A AC Adapter, BTR-11A Battery Pack (installed), ACC-09 Power Cord, ELCT2-16B Spare Electrodes (pair), Operation Manual on CD, Quick Reference Guide, SS-03 Single Fiber Stripper and CC-36 Transit Case	S017090
Fujikura 41S Fusion Splicer Kit with CT50 Cleaver **Includes:** Fujikura 41S Fusion Splicer, CT50 Cleaver, S31A Sheath clamps (installed), FH-70-250 Fiber Holders (pair), FH-70-900 Fiber Holders (pair), SP-31 Set Plates, ADC-19A AC Adapter, BTR-11A Battery Pack (installed), ACC-09 Power Cord, ELCT2-16B Spare Electrodes (pair), Operation Manual on CD, Quick Reference Guide, SS-03 Single Fiber Stripper and CC-36 Transit Case	S017091
One Year Extended Warranty	S012996
Two Year Extended Warranty	S013000

Fujikura 41S Fusion Splicer

Recommended Accessories

DESCRIPTION	AFL NO.
Cleavers	
CT50 Cleaver	S017030
CT08 Cleaver	S017004
Fiber Holders	
FH-70-250 Fiber Holder (pair)	S017111
FH-70-900 Fiber Holder (pair)	S017113
FH-60-LT900 Fiber Holder (pair)	S015181
Batteries	
BTR-11A Battery Pack	S017354
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.
Miscellaneous	
CLAMP-S31A Sheath Clamps	S017100
CLAMP-S31B Sheath Clamps for loose buffer 900 µm	S017101
SP-31 Set Plate (pair)	S017106
ELCT2-16B Electrodes	S017103
ADC-19A AC Adapter	S017104
ACC-09 Power Cord	S014390
CC-36 Transit Case	S017105
USB Cable	S014777
Splicer V-Groove Cleaning Kit	S014397
SS03 Single Fiber Stripper (3 hole)	S017098
SS01 Single Fiber Stripper (1 hole)	S017099

Specifications

PARAMETER	VALUE
Model	41S
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 up to 3 mm
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 6 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	Determined with cladding or core alignment based on method selected by the user
Storage of Splice Result	10,000 splice results
Fiber Display	5 inch TFT color LCD with X or Y view or both X and Y view simultaneously
Magnification	200X for single-camera view and 132X magnification for dual-camera view
Viewing Method	2 axis CMOS camera
Operating Condition	Altitude: 0 to 5,000 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 25 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-11A
Electrode Life	5,000 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	131 x 201 x 79 (mm)
Weight	1,300 g (2.85 lbs) with battery

Fujikura 31S Fusion Splicer

The Fujikura 31S is a fully ruggedized, active cladding alignment fusion splicer. The two camera, active cladding alignment system provides consistent splicing performance in the most challenging conditions. A 6-second splice time and 25-second shrink time offers unmatched speed and productivity, while an easy-to-use touchscreen monitor provides simple and intuitive menu navigation. Interchangeable sheath clamps or fiber holders provide versatility for user preference, and compatibility with fusion-installable connectors. The extended-life battery is rated for up to 200 splice and heat cycles. Long-life electrodes, lasting 5,000 splices, help minimize downtime for replacement and stabilization. The large 5" monitor provides a crystal clear image, even in the brightest sunlight. Software updates are accomplished via the internet allowing users to quickly update their software as new splice programs become available.

Backed by the best service team in the industry, the Fujikura 31S is the ideal splicer to use when portability, ruggedness, and reliability are needed for your splicing application.

Features

- Two camera, active cladding alignment
- 5" touchscreen monitor
- Interchangeable sheath clamps and fiber holders
- Fully ruggedized for shock, moisture and dust resistance
- Extended-life electrodes, 5,000 splices, exchangeable without tools
- Long-life battery (200 splices/shrinks per charge)

Ordering Information

DESCRIPTION	AFL NO.
Fujikura 31S Fusion Splicer **Includes:** Fujikura 31S Fusion Splicer, S31A Sheath clamps (installed), SP-31 Set Plates, ADC-19A AC Adapter, BTR-11A Battery Pack (installed), FH-70-250 Fiber Holders, FH-70-900 Fiber Holders, ACC-09 Power Cord, ELCT2-16B Spare Electrodes (pair), Operation Manual on CD, Quick Reference Guide, SS-03 Single Fiber Stripper and CC-35 Transit Case	S017081
Fujikura 31S Fusion Splicer Kit with CT08 Cleaver **Includes:** Fujikura 31S Fusion Splicer, CT08 Cleaver S31A Sheath clamps (installed), SP-31 Set Plates, ADC-19A AC Adapter, BTR-11A Battery Pack (installed), FH-70-250 Fiber Holders, FH-70-900 Fiber Holders, ACC-09 Power Cord, ELCT2-16B Spare Electrodes (pair), Operation Manual on CD, Quick Reference Guide, SS-03 Single Fiber Stripper and CC-35 Transit Case	S017109
One Year Extended Warranty	S012996
Two Year Extended Warranty	S013000

Fujikura 31S

Recommended Accessories

DESCRIPTION	AFL NO.
Cleavers	
CT08 Cleaver	S017004
CT50 Cleaver	S017030
Fiber Holders	
FH-70-250 Fiber Holder (pair)	S017111
FH-70-900 Fiber Holder (pair)	S017113
FH-60-LT900 Fiber Holder (pair)	S015181
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
Batteries	
BTR-11A Battery Pack	S017354

DESCRIPTION	AFL NO.
Miscellaneous	
CLAMP-S31A Sheath Clamps	S017100
CLAMP-S31B Sheath Clamps for loose buffer 900 µm	S017101
SP-31 Set Plate (pair)	S017106
ELCT2-16B Electrodes	S017103
ADC-19A AC Adapter	S017104
ACC-09 Power Cord	S014390
CC-35 Transit Case	S017102
USB Cable	S014777
Splicer V-Groove Cleaning Kit	S014397
SS03 Single Fiber Stripper (3 hole)	S017098
SS01 Single Fiber Stripper (1 hole)	S017099

Specifications

PARAMETER	VALUE
Model	31S 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 up to 3 mm
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 6 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 two camera, active cladding alignment data
Storage of Splice Result	10,000 splice results
Fiber Display	5 inch TFT color LCD with X or Y view or both X and Y view simultaneously
Magnification	200X for single-camera view and 132X magnification for dual-camera view
Viewing Method	2 axis CMOS camera
Operating Condition	Altitude: 0 to 5,000 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 25 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-11A
Electrode Life	5,000 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	131 x 201 x 79 (mm)
Weight	1,300 g (2.85 lbs) with battery

Bluetooth®

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. In an industry first, the 19S+ is also equipped with **Bluetooth®** technology. This allows the splicer to actively communicate with Bluetooth enabled fiber preparation accessories making maintenance of fiber preparation tools easier than ever!

Features

- Bluetooth wireless communication
- 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:** CT50 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, CT50 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

Fujikura 19S+ Fusion Splicer

Recommended Accessories for the 19S+

DESCRIPTION	AFL NO.
Cleavers	
CT08 Cleaver	S017004
CT50 Cleaver	S017030
Fiber Holders	
FH-70-250 (250 µm coated single fiber)	S017111
FH-70-900 (900 µm jacketed single fiber)	S017113
FH-60-LT900 Fiber Holder (pair)	S015181
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 and DCC-18 Charge Cord	S016780
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
Splicer V-Groove Cleaning Kit	S014397

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

70R+

Fujikura 70R+ Fusion Splicer

The Fujikura 70R+ ribbon splicer utilizes precision, fixed v-groove technology for splicing ribbon fiber up to 12 fibers, including single fibers. Incorporating the proven ruggedized features pioneered by Fujikura, the 70R+ has 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. These automated features reduce the steps needed to execute a splice resulting in greater splicing efficiencies. An auto-start "clamshell design" tube heater applies heat to both sides of the splice protection sleeve resulting in a 40-second shrink time for 12-fiber ribbon. The result is a total splice process time of approximately 55 seconds! Ruggedness and durability are greatly enhanced by a mirror-less optical system and "severe-impact resistant" monitor. An innovative transit case doubles as a built-in or mobile workstation. In an industry first, the 70R+ is also equipped with Bluetooth® technology. This allows the splicer to actively communicate with Bluetooth enabled fiber preparation accessories making maintenance of fiber preparation tools easier than ever!

In case with lid detached

Features

- Bluetooth wireless communication
- Automated and programmable wind protector
- 40-second automated tube heater
- Fully ruggedized for shock, dust and moisture
- Li-ion battery with 110 splices/shrinks per charge
- On-board training and support videos
- Multi-function transit case with integrated workstation

Ordering Information

DESCRIPTION	AFL NO.
70R+ Fusion Splicer (machine only) **Includes:** ADC-18 AC Adapter, ACC-14 AC Cord, ELCT2-20A Spare Electrodes (pair), FH-70-12 Fiber Holder, USB Cable, Alcohol Dispenser, Screw Driver, Sleeve Loader, Splicer Carrying Strap, Quick Reference Guide, Video Instruction Manual and CC30 Transit Case with Carrying Strap	S015669
70R+ Fusion Splicer Kit (with cleaver) **Includes:** CT50 Cleaver, RS03 Stripper, ADC-18 AC Adapter, ACC-14 AC Cord, ELCT2-20A Spare Electrodes (pair), FH-70-12 Fiber Holder, USB Cable, Alcohol Dispenser, Screw Driver, Sleeve Loader, Splicer Carrying Strap, Quick Reference Guide, Video Instruction Manual and CC30 Transit Case with Carrying Strap	S015670
70R+ Fusion Splicer Kit (with cleaver, battery and cord) **Includes:** BTR-09 Battery, DCC-18 Battery Charge Cord, CT50 Cleaver, RS03 Stripper, ADC-18 AC Adapter, ACC-14 AC Cord, ELCT2-20A Spare Electrodes (pair), FH-70-12 Fiber Holder, USB Cable, Alcohol Dispenser, Screw Driver, Sleeve Loader, Splicer Carrying Strap, Quick Reference Guide, Video Instruction Manual and CC30 Transit Case with Carrying Strap	S015671
70R+ Fusion Splicer Kit without Bluetooth technology (with cleaver, battery and cord) **Includes:** BTR-09 Battery, DCC-18 Battery Charge Cord, CT08 Cleaver, RS01 Stripper, ADC-18 AC Adapter, ACC-14 AC Cord, ELCT2-20A Spare Electrodes (pair), FH-70-12 Fiber Holder, USB Cable, Alcohol Dispenser, Screw Driver, Sleeve Loader, Splicer Carrying Strap, Quick Reference Guide, Video Instruction Manual and CC30 Transit Case with Carrying Strap	S017075
One Year Extended Warranty	S012996
Two Year Extended Warranty	S013000

Fujikura 70R+ Fusion Splicer

Accessories Recommended for the 70R+

DESCRIPTION	AFL NO.
Cleavers and Strippers	
CT50 Cleaver	S017030
RS01 Thermal Stripper	S016815
RS02 Thermal Stripper	S016816
RS03 Thermal Stripper	S016817
Fiber Holders (pairs)	
FH-70-2	S017114
FH-70-4	S017115
FH-70-6	S017116
FH-70-8	S017117
FH-70-10	S017118
FH-70-12	S017119
FH-70-250 (250 µm coated single fiber)	S017111
FH-70-900 (900 µm jacketed single fiber)	S017113
FH-60-LT900 (pair)	S015181
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 and Power Cords	
ADC-18 AC Adapter	S015585
BTR-09 Battery and DCC-18 Charge Cord	S016780
BTR-09 Battery	S015581
DCC-18 Battery Charge Cord	S015582
DCC-12 Power Cord (connects ADC-18 to cigarette lighter socket)	S013552
DCC-13 Power Cord (connects ADC-13 to power source via alligator clips)	S013556
ACC-14 AC Power Cord	S014536
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
FST-12 Fiber Separation Tool	S014012
FAT-04 Fiber Arrangement Tool	S010212
FAA-03A Ribbon Forming Adhesive (4 oz. bottle)	S008720
FAA-03A Ribbon Forming Adhesive (0.5 liter bottle)	S008622
CC-30 Transit Case	S015587
Splicer V-Groove Cleaning Kit	S014397

Specifications

PARAMETER	VALUE
Model	FSM-70R+ Fusion Splicer
Applicable Fibers	Single-mode (G.652 & G.657), Multimode (G.651), DS (G.653), NZDS (G.655)
Fiber Count	Single, 2, 4, 5, 6, 8, 10, 12
Cladding Diameter	125 µm
Coating Diameter	Ribbon: 0.25 mm to 0.4 mm, Single: 250 µm and 900 µm
Fiber Cleave Length	10 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 standards
Splicing Time	Typical 15 seconds with standard single-mode fiber
Arc Calibration Method	Automatic, real-time 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 alignment data
Storage of Splice Result	Last 2000 splice results stored in the internal memory
Fiber Display	X or Y, or both X and Y simultaneously; front or rear monitor display options with automatic image orientation
Magnification	35X to 90X
Viewing Method	Dual cameras with 4.7 inch TFT color LCD monitor with anti-reflective coating
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 2.25 N
Tube Heater	Built-in tube heater with 30 heating modes; auto-start function
Tube Heating Time	Typical 40 seconds with FP-5 sleeve, 17 seconds with FP3 (40), 5-15 seconds with Fujikura micro sleeves
Protection Sleeve Length	60 mm, 40 mm, Micro
Splice/Heat Cycles with Battery	Typical 110 cycles with power save functions activated
Electrode Life	1,500 Arc Discharges
Power Supply	Auto voltage selection from 100 to 240V AC or 10 to 15V DC with ADC-18, 14.8V DC with BTR-09 battery
Terminals	USB 2.0 (USB-B type) for PC communication and Mini-DIN (6-pin) for RS02/RS03
Wind Protection	Maximum wind velocity of 15m/s (34 mph)
Dimensions	146 W x 159 D x 150 H (mm) / 5.7 W x 6.3 D x 5.9 H (inches)
Weight	2.3 kg (5.1 lbs) with AC adapter; 2.5 kg (5.5 lbs) with battery

Shown in CC-37 Carrying Case

CT50 Fiber Cleaver

The CT50 features automated blade rotation, unprecedented durability, and simplistic maintenance unseen with any other cleaver. Paired with a Bluetooth enabled Fujikura splicer, cleaver blade positions can be automatically advanced when needed based on cleave count or cleave quality. If automated rotation is not desired, the blade position can be advanced at the touch of a button, no tools required. The easy to read blade position indicator clearly displays the selected position. The Bluetooth® feature, along with simplified mechanical operation, increases overall productivity and reliability. The fiber clamp opens beyond 90 degrees and readies the blade for cleaving in the same motion. This allows easy viewing of the distance scale used to gauge cleave length. The 16-position blade yields 60,000 single-fiber cleaves, or 5,000 12-fiber ribbon cleaves. The built-in scrap collector conveniently stores fiber shards until they can be safely discarded.

The CT50 is an industry first cleaver ruggedized to withstand severe shock, including drops up to 30 inches. If needed, the CT50 is field serviceable with all precision components easily replaced in the field.

Specifications

PARAMETER	VALUE
Applicable Fiber	Conventional silica optical fiber
Fiber Count	Single and up to 12 fiber ribbon
Coating Diameter	160 µm to 900 µm
Cladding Diameter	125 µm
Cleave Length	5-24 mm with AD-10-M24 adapter plate and 10-20 mm when using AD-50 10 mm with fiber holders
Cleave Angle Capability	Average 0.3˚ - 0.9˚ for single fiber Average 0.3˚ - 1.2˚ for ribbon fiber
Blade Lifetime	60,000 fiber cleaves (5,000 12-fiber cleaves)
Dimensions (W x D x H)	120 mm x 95 mm x 58 mm
Weight	300 g (0.66 lbs)
Wireless Connectivity	Bluetooth 4.1 LE

Features

- Motorized blade rotation
- Bluetooth communication
- Shock resistant
- Simple one-step operation
- 60,000 cleave blade life
- Field serviceable

SAFELY DROP FROM 30"

Ordering Information

DESCRIPTION	APPLICATION	FIBER HANDLING SYSTEM	CLEAVE LENGTH	AFL NO.
CT50	Single or Ribbon Fiber	AD-10-M24 adapter plate for single fibers or fiber holders for ribbons	5-24 mm with AD-10-M24 10 mm when using fiber holders	S017030

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CT50 Fiber Cleaver

Accessories

DESCRIPTION	AFL NO.
CB-08 Replacement Blade	S017076
FDB-05 Scrap Collector Box	S017121
AD-50 Adapter Plate	S017010
AD-10-M24 Fiber Plate	S017335
ARM-CT50-01 Replacement Arm Set	S017122
BRW-CT08-01 Blade Rotary Wheel	S017110
SC-CT50-01 Side Cover	S017108
CC-37 Transit Case	S017077
SPA-CT-08-10 Spacer	S017011
FDB-05 Fiber Dust Box	S017121

Splice+ is a smartphone application that works in cooperation with Fujikura's splicers, cleavers and ribbon fiber strippers which have Bluetooth capability.

Get the **Splice+** app at the Apple App store or at Google Play.

Available on the iPhone App Store

ANDROID APP ON Google play

Thermal Strippers

The RS01, RS02, RS03 and RS03-80 Thermal Strippers provide superior stripping performance for both single and multi-fiber stripping. The fast heating time of 3 seconds speeds productivity. The ergonomic design, combined with the low level of force needed for stripping, makes the RS series comfortable and easy to use for high fiber count applications. The strippers are also capable of stripping 200 µm coated fibers and ribbons. An audible beep and illuminated LED signal indicate that the proper heating temperature has been reached. A temperature selection switch permits easy field optimization for different fibers or operating conditions. These strippers accept all Fujikura field and factory style fiber holders.

Bluetooth® capabilities on the RS02 and RS03 models provide a convenient way to program the stripper for user preferences via an Android or iOS smartphone app. The RS03 model includes a powerful Lithium-Ion battery that delivers enough power for 600 stripping cycles. The RS03-80 is offered for stripping 80 µm cladding fiber applications.

For those situations and locations where Bluetooth-enabled devices are not permitted, the RS01 model is available with all of the features of the RS02 model but without the Bluetooth technology.

Features

- 3 Second heating time with beep and LED notification
- Low pulling force needed for stripping
- Stripping capability for 200 µm coated fibers and ribbons
- Ergonomic design
- Bluetooth capable for wireless connection with smartphones (RS02, RS03 and RS03-80)
- High capacity battery provides approximately 600 stripping cycles (RS03 and RS03-80)

Ordering Information

DESCRIPTION	AFL NO.
Strippers	
RS01 Thermal Stripper **Includes:** RS01 Thermal Stripper, DCC-11 and Instruction manual	S016815
RS02 Thermal Stripper **Includes:** RS02 Thermal Stripper, DCC-11, HEX-01 Hex Wrench, BRS-02 Brush and Instruction manual	S016816
RS03 Thermal Stripper **Includes:** RS03 Thermal Stripper, BTR-12 Battery Pack, ADC-09A AC Adapter for RS Series Thermal Strippers, ACC-02 AC Power Cord (for ADC-09A), HEX-01 Hex Wrench, BRS-02 Brush and Instruction manual	S016817
RS03-80 Thermal Stripper **Includes:** RS03-80 Thermal Stripper, BTR-12 Battery Pack, ADC-09A AC Adapter for RS Series Thermal Strippers, ACC-02 AC Power Cord (for ADC-09A), HEX-01 Hex Wrench, BRS-02 Brush and Instruction manual	S016842
POWER SUPPLY	
ADC-09A AC Adapter (RS01/RS02/RS03)	S016820
ACC-09 Power cord	S014390
BTR-12 Battery (RS03)	S016832
Miscellaneous	
SPA-RS02-08 SPACER	S016818

Continued >

Thermal Strippers

Specifications

MODEL	RS01	RS02	RS03	RS03-80
Applicable optical fiber	Glass optical fibers, capillary			
Fiber count	1 to 12			
Cladding diameter	125 µm			80 µm
Coating diameter	200 to 400 µm			150 to 250 µm
Stripping length	Up to 35 mm			
Typical heating time	3 sec. 5 sec. at Eco mode			
Standard heating temperature	100°			
Fiber holder	All FH-40, FH-50, FH-60, FH-70, and FH-100 series fiber holders (except FH-50-250 and FH-50-900)			
Wireless connectivity	N/A	Bluetooth®4.1 LE*1 OS:Android 5.0 or above , iOS 8.0 or above (iPhone6 or above)		
Dimensions	155.5 (W) × 48.7 (D) × 32.5 (H) mm		155.5 (W) × 48.7 (D) × 36.8 (H) mm	
Weight	185 g		265 g (with Battery)	
Power supply	100 to 240V AC with optional AC adapter, ADC-09A DC10~17V with external DC power supply		100 to 240V AC with included AC adapter, ADC-09A DC10~17V with external DC power supply DC7.4V with Battery pack , BTR-12 (Rechargeable Lithium-ion battery)	
Battery capacity	N/A		1620 mAh: Typical 3.5 h , 600 times at Eco mode	
Operating conditions	Temperature: -10 to 50°C, Humidity: 0 to 95% RH (Non-condensing)			
Storage conditions	Temperature: -20 to 60°C, Humidity: 0 to 95% RH (Non-condensing)			
Resistance feature	Shock resistance : 76 cm (30 inch) all surface drop(Telcordia GR -955-CORE) Rain resistance : H=10 mm/hr for 10 min(JIS C 0 034)			

Splicer V-groove Cleaning Kit

Splicer V-groove Cleaning Refill Kit

CS-1 Cotton Swabs

Today's splicing equipment is fast, efficient, and requires minimal maintenance due to advances in splicing technology. However, contamination in the V-groove of the splicer is still a primary source of trouble for the splicing technician. This is especially problematic when splicing with a fixed V-groove fusion splicer. Environmental contamination, such as dust, dirt and fiber coating debris, as well as the silica deposits generated during the fusion process eventually find their way to the surface of the v-groove. This contamination will offset the fibers and degrade performance. To help control this problem, a disciplined cleaning regimen and specific tooling is required to ensure the splice is right the first time.

To solve cleaning needs, AFL offers the Splicer V-groove Cleaning Kit. This product integrates eight components into an affordable and effective inspection and cleaning solution for any fusion splicer. Small and lightweight, it fits easily into the Fujikura splicer transit case or it can be carried separately in its own carrying case.

Kit Includes

- Scrubber Brush with stiff tapered nylon bristles
- Sweeper Brush with soft nylon bristles
- Eye Loupe with 3X to 12X magnification
- LED Pen Light with momentary or constant on switching
- Cleaning Fluid that is nonflammable and environmentally safe
- Lint-free Cotton Swabs
- Instruction Sheet with illustrations
- Canvas Carrying Case

Refill Kit Includes

To replenish the consumables within the kit, AFL provides a refill kit that includes the following components:

- One can of FCC2 Cleaning Fluid
- One Scrubber Brush
- One Sweeper Brush
- Ten packs CS-1 Cotton Swabs (250 swabs)

Ordering Information

DESCRIPTION	AFL NO.
Splicer V-groove Cleaning Kit	S014397
Splicer V-groove Cleaning Refill Kit	S014416
CS-1 Cotton Swabs (pack of 25 swabs)	S003719

Splice Protection Sleeves

AFL offers a wide selection of fiber protection sleeves to meet any application. The FP series is the industry standard for durable and lasting protection of single fiber splices in field installations, while the FP-04(T) and FP-05 provide the same durable protection for 8 and 12 fiber ribbon respectively.

The FPS01 and FPS04 series are specially designed for optical components, where small packaging is a priority. These micro sleeves provide the known reliability of Fujikura sleeves in the smallest possible lengths. This easy and cost effective method is a great alternative to recoating. The FPS01 and FPS04 series offer a wide range of options to accommodate various coating sizes, and are manufactured in a variety of lengths. This gives great flexibility in designing optical modules.

Standard Sleeves: Dimensions & Applicable Fiber

SLEEVES FOR SINGLE FIBERS UP TO 900 MICRONS

DESCRIPTION	SLEEVE LENGTH	FIBER CLEAVE LENGTH	SLEEVE DIAMETER AFTER SHRINK	PACKAGING	AFL NO.
FP-60	60 mm	16 mm	3.1 mm (max.)	1000 Box/100 Pack	S015915
FP-40	40 mm	10 mm	3.1 mm (max.)	1000 Box/100 Pack	S015916

SLEEVES FOR TFOCA CABLE (DUAL 900 µm)

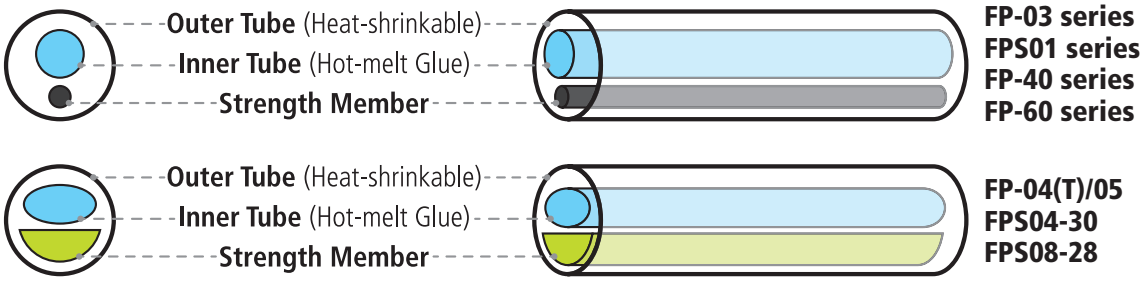
DESCRIPTION	FIBER COUNT	SLEEVE LENGTH	FIBER CLEAVE LENGTH	SLEEVE DIAMETER AFTER SHRINK	PACKAGING	AFL NO.
FP-D900	2	40 mm	10 mm	3.6 mm (max.)	1000 Box & 50 Pack	S014413

SLEEVES FOR RIBBON FIBERS

DESCRIPTION	FIBER COUNT	SLEEVE LENGTH	FIBER CLEAVE LENGTH	SLEEVE DIAMETER AFTER SHRINK	PACKAGING	AFL NO.
FP-04(T)	Up to 8 fibers	40 mm	10 mm	4.1 mm (max.)	250 Box/25 Pack	S002105
FP-05	Up to 12 fibers	40 mm	10 mm	4.5 mm (max.)	250 Box/5 Pack	S003027
FP-05-28	Up to 12 fibers	28 mm	10 mm	4.5 mm (max.)	250 Box/25 Pack	S014720
FPS04-30	Up to 4 fibers	30 mm	10 mm	2.4 mm (max.)	1,000 Box/25 Pack	S010848
FPS08-28	Up to 8 fibers	28 mm	10 mm	3.4 mm (max.)	500 Box/25 Pack	S013560
FPS24-40	Up to 24 fibers	40 mm	10 mm	8 mm (max.)	200 Box/5 Pack	S013004

Specifications

PARAMETER	DESCRIPTION	VALUE
Outer tube	FP-60/40/03 series FP-04(T) / FP-05	Polyethylene
Inner tube		Ethylene-Vinyl Acetate (Polyolefin Copolymer)
Strength member	FP-60/40/03 series FP-04(T) / FP-05	Stainless steel Quartz glass
Operation condition (after shrink)		-40 to 75°C, 0 to 95% RH (Non dew)
Storage condition (before shrink)		-40 to 60°C, Non dew



Splice Protection Sleeves

Micro Sleeves: Dimensions & Applicable Fiber

FPS01-400 SERIES FOR SINGLE FIBERS UP TO 400 MICRON FIBER

DESCRIPTION	SLEEVE LENGTH	FIBER CLEAVE LENGTH	SLEEVE DIAMETER AFTER SHRINK	PACKAGING	AFL NO.
FPS01-400-12	12 mm	4 mm	1.5 mm	50 Pack	S014088
FPS01-400-15	15 mm	4 mm	1.5 mm	50 Pack	S012668
FPS01-400-20	20 mm	8 mm	1.5 mm	50 Pack	S012672
FPS01-400-25	25 mm	10 mm	1.5 mm	50 Pack	S012676
FPS01-400-34	34 mm	15 mm	1.5 mm	50 Pack	S012680
FPS01-400-40	40 mm	16 mm	1.5 mm	1,250 Box	S011914

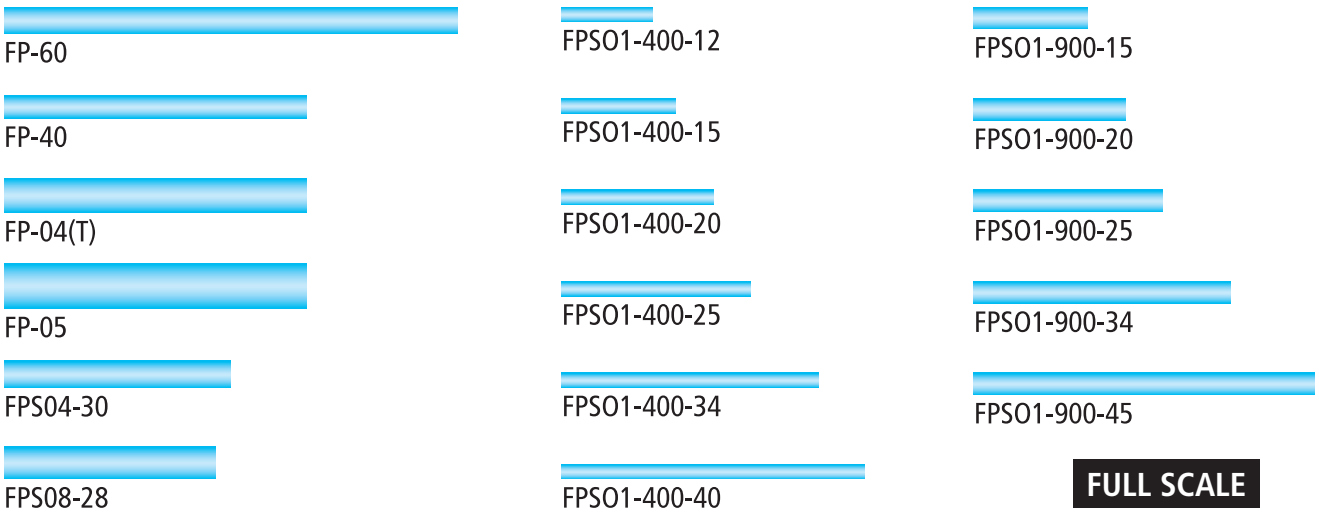
FPS01-900 SERIES FOR SINGLE FIBERS UP TO 900 MICRON FIBER

DESCRIPTION	SLEEVE LENGTH	FIBER CLEAVE LENGTH	SLEEVE DIAMETER AFTER SHRINK	PACKAGING	AFL NO.
FPS01-900-15	15 mm	4 mm	2.3 mm	50 Pack	S012684
FPS01-900-20	20 mm	6 mm	2.3 mm	50 Pack	S012688
FPS01-900-25	25 mm	6 mm	2.3 mm	50 Pack	S011954
FPS01-900-34	34 mm	13 mm	2.3 mm	50 Pack	S012692
FPS01-900-45	45 mm	16 mm	2.3 mm	50 Pack	S012696

Specifications

PARAMETER	MODEL	VALUE
Outer tube	FPS01 series / FPS04-30	Polyethylene
Inner tube		Ethylene-Vinyl Acetate (Polyolefin Copolymer)
Strength member	FPS01 series FPS04-30 / FPS08-28	Stainless steel Quartz glass
Operation condition (after shrink)		-40 to 75°C, 0 to 95% RH (Non dew)
Storage condition (before shrink)		-40 to 60°C, Non dew

Type Variations



FlexScan® FS300 Quad OTDR with SmartAuto® & LinkMap®

Pocket-sized, Performance-packed, User-friendly and *Fast*

Features

- Test MM and SM, point-to-point and PON
- Detects closely spaced events without sacrificing range
- LinkMap icons clearly identify event type & pass/fail status
- Best-in-class 25 m PON dead zone
- Print-to-PDF plus internal & external data storage
- Integrated Source, Power Meter, Visual Fault Locator
- Bluetooth & WiFi communications
- Tether-free connector inspection with FOCIS Flex/Duel
- Rugged, lightweight, hand-held for field use
- 5" 800 x 480 color touchscreen LCD

Applications

- OTDR and Insertion Loss test & reporting
- Fast, accurate pt-to-pt & PON verification & troubleshooting
- Locate faults exceeding industry or user pass/fail thresholds
- Visually pinpoint location of macro-bends or breaks

Performance-packed: With SmartAuto multi-pulse acquisition, 37 dB dynamic range and best-in-class dead zones, FlexScan Quad OTDRs test multimode and single-mode networks – including FTTH PONs and POLANs up to 1:64 split ratio – while still detecting and measuring events <2 meters apart.

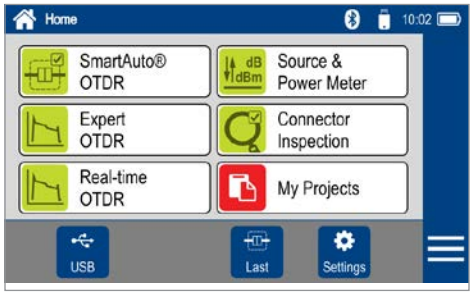
User-friendly: FlexScan OTDRs enable both expert and novice technicians to quickly, reliably and accurately detect, locate, identify and measure optical network components and faults. After applying industry-standard or user-set pass/fail criteria, the network is displayed using FlexScan's intuitive, icon-based LinkMap view. Results may be printed to PDF and stored internally or externally. FlexScan automates test setup, shortens test time and simplifies results interpretation, improving test efficiency and cost.

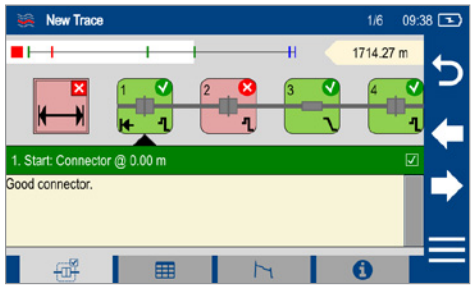
Pocket-sized: FlexScan OTDRs truly fit in your pocket, yet still deliver all-day battery operation plus a large, bright, indoor/outdoor, 5-inch 800x480 touchscreen display. With large touch controls, you'll never need a stylus.

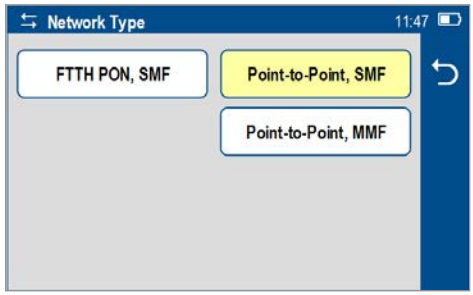
All-in-one test capability: With optional connector inspection, integrated optical light source, power meter and VFL, FlexScan provides an all-in one solution, ensuring technicians have everything they need to locate and resolve optical network issues. Uploaded results may be viewed and professional reports may be generated using the included Windows-compatible TRM 3.0 Test Results Manager software.

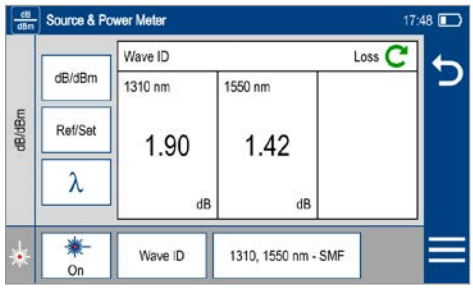
Available in Convenient, Cost-saving Installation and Troubleshooting Kits: Bundle FlexScan with choice of launch cable, FOCIS Flex connector inspection probe and tips, and/or AFL's universal optical fiber identifier (OFI).

FlexScan® FS300 Quad OTDR with SmartAuto® & LinkMap®









SmartAuto Dramatically Reduces Test Time

In SmartAuto mode, FlexScan OTDRs automatically analyze and test the network using a variety of network-optimized settings to precisely locate, characterize and identify network events. Loss and reflectance is measured for connectors, splices, splitters and macro-bends. For even greater ease-of-use, FlexScan checks for live fiber and verifies OTDR launch quality before initiating a test.

LinkMap Simplifies Network Troubleshooting

LinkMap enables even novice users to easily and accurately troubleshoot optical networks. LinkMap presents an icon-based view of the tested network clearly identifying fiber start, end, connectors, splices, PON splitters, and macro-bends.

A LinkMap Summary provides end-to-end link length, loss and ORL. Loss and reflectance of detected events is compared to industry-standard or user-settable pass/fail thresholds and displayed with clear pass/fail indications. Users can instantly toggle between LinkMap and Trace views.

Multimode & Single-mode plus PON Testing in One OTDR

FlexScan Quad OTDRs are the ideal test tool for verifying and/or maintaining both single-mode and multimode networks. Unlike most Quad OTDRs, FS300 OTDRs test both point-to-point networks and FTTH PONs/Passive Optical LANs (POLANs).

Bluetooth and WiFi for Faster Connectivity

Pair FlexScan with AFL's FOCIS Flex or FOCIS Duel connector inspection probe for fast, easy connector end-face inspection. FOCIS Flex and FOCIS Duel provide auto-focus, auto-centering, IEC pass/fail analysis, and Bluetooth transfer of images and pass/fail results to FlexScan for display and/or archiving with OTDR results. Additionally, transfer FlexScan results wirelessly in the field to a mobile smart device for sharing via email or archiving in the cloud.

Complete OTDR, OLTS & VFL Testing with a Single Tool

FlexScan optionally includes a Wave ID optical light source (OLS) and optical power meter (OPM). With Wave ID, the OPM auto-synchronizes to a single or multi-wavelength Wave ID optical signal transmitted by an AFL light source. The OPM reports detected wavelengths and measures power and loss at each wavelength, saving significant test time and eliminating setup errors.

The integrated Visual Fault Locator's eye-safe red laser enables users to visually pinpoint the location of macro-bends and fiber breaks often found in splice closures and fiber cabinets.

FlexScan® FS300 Quad OTDR with SmartAuto® & LinkMap®

Specifications[a]

OTDR	MULTIMODE	SINGLE-MODE
Emitter Type	Laser	
Safety Class[b]	Class I	
Fiber Type	Multimode; compatible with OM1-OM5	Single-mode; compatible with all G.65x
Wavelengths[c]	850/1300 ±20 nm	1310/1550 ±20 nm
Network Type	Point-to-point	Point-to-point & PON up to 1:64
Connector Type	User-specified APC or UPC ferrule with interchangeable UCI adapters	
Dynamic Range[d]	≥29/29 dB @ 850/1300 nm	≥37/36 dB @ 1310/1550 nm
Event Dead Zone[e]	≤0.8 m @ 850/1300 nm typical	≤0.8 m @ 1310/1550 nm typical
Attenuation Dead Zone[f]	≤3.0 m	≤3.5 m
PON Dead Zone[g]	Not applicable	≤25 m
Pulse Widths	3, 5, 10, 20, 30, 50, 100, 200, 300, 500 ns; 1 µs	3, 5, 10, 20, 30, 50, 100, 200, 300, 500 ns; 1, 2, 3, 5, 10, 20 µs
Range Settings	250 m to 30 km	250 m to 240 km
Data Points	Up to 300,000	
Data Spacing	≥5 cm to ≤16 m	
Group Index of Refraction	1.3000 to 1.7000	
Distance Uncertainty	±(1 + 0.0025% x distance + data point spacing) m	
Linearity	±0.03 dB/dB	
Loss Resolution	0.001 dB	
Reflectance Range	850: -20 to -58 dB; 1300: -20 to -63 dB	1310: -20 to -65 dB; 1550: -20 to -65 dB
Reflectance Resolution	0.01 dB	
Reflectance Accuracy	±2 dB	
ORL Range	20 to 60 dB	
ORL Resolution	0.01 dB	
ORL Accuracy	±2 dB over range 30 to 55 dB; ±4 dB over range 20-30 dB and 55-60 dB	
Trace File Format	.SOR, Telcordia SR-4731 Issue 2	
OTDR Results Storage	Internal or external USB memory	
Internal Storage	Minimum 4 GB internal non-volatile memory (App SW + > 1000 traces)	
Internal Launch Fiber	≥30 m internal MM launch fiber	≥50 m internal SM launch fiber
OTDR Modes	Supports SmartAuto, Expert, Real-Time for PON & point-to-point networks	
Real-time Refresh Rate	1 to 4 Hz	
Live Fiber Protection	No OTDR damage when connected to live fiber delivering ≤ +10 dBm at wavelength(s) in range 825 to 1675 nm	
Live Fiber Detection	Reports live fiber with input signal ≥ -35 dBm for wavelength(s) in range 825 to 1675 nm	

Notes:

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

b. FDA 21 CFR 1040.10 & 1040.11, IEC 60825-1: 2014.

c. Measured with laser in CW mode at 23 °C ±3 °C.

d. SNR=1, longest range and pulse width, 3 minute averaging.

e. Maximum distance between two points 1.5 dB down each side of a reflective peak caused by an event with a -45 dB (or smaller) reflectance. Test pulse width is 3 or 5 ns.

f. Maximum distance from the start of a trace spike caused by an event with a -45 dB (or smaller) reflectance, to the point where the trace returns to and stays within ±0.5 dB of backscatter. Test pulse width is 3 or 5 ns.

g. Recovery to within 0.5 dB of backscatter after 1:16 splitter (≤13 dB loss) using 100 ns pulse width.

FlexScan® FS300 Quad OTDR with SmartAuto® & LinkMap®

Specifications[a]

OPM - OPTICAL POWER METER (P1 Option)	
Calibrated Wavelengths	850, 1300, 1310, 1490, 1550, 1625, 1650 nm
Detector Type	InGaAs PIN, 2 mm diameter
Measurement Range	+3 to -70 dBm (+3 to -65 dBm @ 850 nm)
Tone Auto-Detect	270 Hz, 330 Hz, 1 kHz, 2 kHz
Tone Detect Range	+3 to -50 dBm @1300, 1310, 1550 nm; +3 to -40 dBm @850 nm;
Wave ID	Auto-synchronizes & measures 1, 2 or 3 wavelengths
Wave ID Range	+3 to -50 dBm @1300, 1310, 1550 nm; +3 to -40 dBm @850 nm
Multi-Fiber Channel ID	Detects and reports Multi-Fiber channel ID (MFI)
MFI Detect Range	+3 to -35 dBm @1550 nm
Accuracy	±5% @ -10 dBm
Linearity	±0.1 dB (-3 to -40 dBm); ±0.25 dB (-40 to -70 dBm)
Resolution	0.01 dB
Measurement Units	Power in dBm, nW, µW, mW; Loss in dB

OLS - OPTICAL LIGHT SOURCE (P1 Option)	
Wavelengths	850/1300/1310/1550 nm
Emitter Type	Laser
Safety Class[b]	Class I
Launch Condition	Controlled Launch at 850 nm (comparable to encircled flux on OM4 fiber)
Center λ (CW Mode)	±20 nm
Spectral Width	5 nm maximum (FWHM, CW Mode)
Internal Modulation	270 Hz, 330 Hz, 1 kHz, 2 kHz, CW, Wave ID
SM Output Stability	Short-term[c]: ±0.1 dB; Long-term[d]: ±0.05 dB
MM Output Stability	Short-term[e]: ±0.20 dB; Long-term[f]: ±0.15 dB
Output Power	1310/1550 nm: -7 dBm ±1.5 dB (CW, G.652.C/D) 1300 nm: -7 dBm ±1.5 dB (CW, 50 µm MMF) 850 nm: 0 dBm ±1.5 dB (CW, 50 µm MMF)

VFL - VISUAL FAULT LOCATOR	
Emitter Type	Laser, Class IIIa (FDA 21 CFR 1040.10 and 1040.11); Class 3R (IEC 60825-1:2014)
Wavelength	635 nm ±10 nm
Output Power	1.5 mW (~+2 dBm ±0.5 dB) into SMF-28
Modes	CW and 1 Hz flashing

Notes:

a. All specifications valid at 25 °C unless otherwise specified.
b. (FDA 21 CFR 1040.10 and 1040.11, and IEC 60825-1:2014).
c. Typical maximum deviation over 15 minute after 15 minute warm-up.
d. Typical maximum deviation over 8 hours after 1 hour warm-up.
e. 15 minutes after 30 minutes warm-up.
f. 8 hours after 1 hour warm-up.

GENERAL	
Size (in boot)	≤98 x 175 x 52.5 mm
Weight	0.8 kg
Operating Temperature	-10 °C to +50 °C, 0 to 95% RH (non-condensing)
Storage Temperature	-30 °C to +70 °C, 0 to 95% RH (non-condensing, battery removed) -20 °C to +60 °C, 0 to 95% RH (non-condensing, battery installed)
Power	Rechargeable Lithium polymer battery; AC adapter
AC Adapter	100-240 VAC, 50-60 Hz input; 5VDC, 2A output
Battery Life (OTDR)	≥12 hours, Telcordia test conditions, 4 hours recharge
Display	5-inch color LCD, 800 x 480 pixels, backlit
Shock and Vibration	GR-196-CORE, drop test, 0.75 m (30 in.), 6 planes
Dust Protection	GR-196-CORE, rubber dust caps for all ports
OTDR/OLS Ports	MM: UPC; SM: UPC or APC; includes tool-free, interchangeable SC adapters
OPM and VFL Ports	Universal, 2.5 mm adapter (SC, FC, ST); others available
USB Ports	USB host port; micro-USB function port
Bluetooth Interface	W1 option; compatible with Windows PC and Android
WiFi Interface	W1 option; compatible with IEEE 802.11 / WLAN
CE Safety	Compliant with EN61010-1
CE EMI/RFI	EN55011, EN61326-1, GR-196-CORE 4.5.1
RoHS	Compliant with RoHS directive 2011/65/EU

FlexScan Accessorie and Connector Adapters

DESCRIPTION	AFL NO.
FlexScan wrist strap	1400-05-0230PZ
FlexScan neck strap, 36"	1400-05-0231PZ
Soft carry case for FlexScan, Fiber Ring, FOCIS Flex, OFI	1400-01-0167PZ
Vehicle charger, 12 VDC to 5 VDC @ 2 A	4050-00-0033MR
AC adapter 100-240 VAC to 5 VDC	4050-00-0931PR
Replacement Li-Pol Battery Pack; 3.7 VDC, 6.8 AH	3900-06-0001MR
Cable, USB-micro B, 5 pin, 6'	6000-00-0031MR
5V USB charging cable type A to barrel	6000-00-0034PR
Bundle of 5V USB charging cable and 10K mAh external USB battery pack	4050-01-0001PR
TRM 3.0 upgrade from Basic to Advanced software	TRM-00-0920PR
One-Clicks, fluid, wipes, etc. See www.AFLglobal.com	Cleaning Supplies

CONNECTOR ADAPTER	AFL NO.		
	OTDR/OLS PORT	OPM PORT	VFL PORT
FC	2900-50-0002MR	2900-52-0001MR	N/A
SC	2900-50-0003MR	2900-52-0002MR	N/A
ST	2900-50-0004MR	2900-52-0003MR	N/A
LC	2900-50-0006MR	2900-52-0004MR	N/A
SC/APC	2900-50-0011MR	N/A	N/A
2.5 mm Universal	N/A	2900-52-0005MR	2900-50-0007MR
1.25 mm Universal	N/A	2900-52-0006MR	2900-50-0010MR

FlexScan® FS300 Quad OTDR with SmartAuto® & LinkMap®

FlexScan FS300 models are available in four kit configurations: Basic, PLUS, PRO and BI/BIPM. All kits include FS300 with AC charger, battery, carry strap, SC/2.5 mm connector adapters, TRM 3.0, quick reference user guide and carry case. PLUS Kits add 150 m fiber rings and One-Click cleaner. PRO kits additionally include a FOCIS Flex auto-focusing connector inspection probe with IEC pass/fail analysis and two adapter tips. BI/BIPM kits expand on PRO Kits by adding a bend-insensitive fiber identifier with optional power meter.

Ordering Information

FS300-[MOD]-[KIT]-[PW]-[C]-[LNG]-[AC]-[FR1]-[FR2]-[TIP]* where:

[MOD]	FS300 FlexScan OTDR Configuration
325	Quad OTDR (850/1300 nm Multimode + 1310/1550 nm Single-mode)

[KIT]	FS300 FlexScan Kit Configuration
BAS	Basic kit with soft case, TRM 3.0 Basic, USB cable
PLUS	PLUS kit adds 150 m SMF & MMF fiber rings and One-Click cleaner
PRO	PRO kit adds fiber rings, One-Click cleaner, FOCIS Flex with 2 tips
BI	BI Complete Kit adds OFI-BI to PRO Kit
BIPM	BIPM Complete Kit adds OFI-BIPM to PRO Kit

[PW]	Power Meter / Wireless option
P0-W0	No Source or Power Meter; No Bluetooth/WiFi; includes soft case
P0-W1	No Source or Power Meter; includes Bluetooth/WiFi, soft case
P1-W0	Includes Source, Power Meter; No Bluetooth/WiFi; includes soft case
P1-W1	Includes Source, Power Meter, Bluetooth/WiFi, soft case

[C]	OTDR / Source Connector Type
A	APC (recommended)
U	UPC

[LNG]	Language
ENG	English
CHS	Chinese Simp.
CHT	Chinese Trad.
CZE	Czech
DEU	German
DNK	Danish

[LNG]	Language
FIN	Finnish
FRA	French
ITA	Italian
JPN	Japanese
KOR	Korean
NOR	Norwegian

[LNG]	Language
POL	Polish
POR	Portuguese
SPA	Spanish
TUR	Turkish

[AC]	Destination Country	AC Plugs
US	USA	2-pin, US
EU	European Union	2-pin, EU
UK	United Kingdom	2-pin, UK
CN	China, Australia	2-pin, SAA

[FR1]	150 m SMF Fiber Ring
SC/SC	FR1-SM-150-SC-SC
SC/FC	FR1-SM-150-SC-FC
SC/LC	FR1-SM-150-SC-LC
SC/ST	FR1-SM-150-SC-ST
SC/ASC	FR1-SM-150-SC-ASC
SC/AFC	FR1-SM-150-SC-AFC
SC/ALC	FR1-SM-150-SC-ALC
LC/LC	FR1-SM-150-LC-LC
LC/ASC	FR1-SM-150-LC-ASC
LC/ALC	FR1-SM-150-LC-ALC
ASC/FC	FR1-SM-150-ASC-FC
ASC/ST	FR1-SM-150-ASC-ST
ASC/ASC	FR1-SM-150-ASC-ASC
ASC/AFC	FR1-SM-150-ASC-AFC
ASC/ALC	FR1-SM-150-ASC-ALC
ALC/ALC	FR1-SM-150-ALC-ALC
FC/FC	FR1-SM-150-FC-FC
FC/ST	FR1-SM-150-FC-ST
FC/LC	FR1-SM-150-FC-LC
FC/AFC	FR1-SM-150-FC-AFC
AFC/AFC	FR1-SM-150-AFC-AFC
ASC-AE2000	FR1-SM-150-ASC-AE2000
SC-E2000	FR1-SM-150-SC-E2000

[FR1]	150 m SMF Fiber Ring
Blank	N/A in Basic kits

[FR2]	150 m OM1 (62.5 µm)
SC/ST1	FR1-M6-150-SC-ST
SC/SC1	FR1-M6-150-SC-SC
ST/ST1	FR1-M6-150-ST-ST
ST/LC1	FR1-M6-150-ST-LC
SC/LC1	FR1-M6-150-SC-LC

[FR2]	150 m OM2 (50 µm)
Blank	N/A in Basic kits
SC/ST2	FR1-M5-150-SC-ST
SC/SC2	FR1-M5-150-SC-SC
ST/ST2	FR1-M5-150-ST-ST
ST/LC2	FR1-M5-150-ST-LC
SC/LC2	FR1-M5-150-SC-LC

[FR2]	150 m OM3/4/5-compatible
SC/ST3	FR1-OM3-150-SC-ST
SC/SC3	FR1-OM3-150-SC-SC
ST/ST3	FR1-OM3-150-ST-ST
ST/LC3	FR1-OM3-150-ST-LC
SC/LC3	FR1-OM3-150-SC-LC

[TIP]*	FOCIS Flex Tips & Cleaning (PRO only)
Blank	Option not available in Basic and PLUS kits
SC	SC-UPC bulkhead tip, 2.5 mm UPC ferrule tip, 2.5 mm One-Click
FC	FC-UPC bulkhead tip, 2.5 mm UPC ferrule tip, 2.5 mm One-Click
LC	LC-UPC bulkhead tip, 1.25 mm UPC ferrule tip, 1.25 mmOne-Click
ASC	SC-APC bulkhead tip, 2.5 mm APC ferrule tip, 2.5 mm One-Click
AFC	FC-APC bulkhead tip, 2.5 mm APC ferrule tip, 2.5 mm One-Click
ALC	LC-APC bulkhead tip, 1.25 mm APC ferrule tip, 1.25 mm One-Click

*For additional FOCIS Flex adapter tips, see FOCIS Flex data sheet or Buyer's Guide.

International Sales and Service Contact Information

Available at www.AFLglobal.com/Test/Contacts

FlexScan® OTDR with SmartAuto®, FleXpress® and LinkMap®

Pocket-sized, Performance-packed, User-friendly, *and* Affordable

Features

- Fast, accurate OTDR network characterization or fault location
- FleXpress mode completes OTDR test in <5 seconds
- Integrated MPO Switch control via USB
- Test up to 1:64 PON with 25 m PON dead zone
- Easy to understand LinkMap results with pass/fail indications
- Single, dual or triple wavelength single-mode
- Integrated Source, Power Meter, VFL (visual fault locator)
- Bluetooth and WiFi communications
- Compatible with FOCIS Flex connector inspection system
- Rugged, lightweight, hand-held for field use
- Large, bright touchscreen display easily viewed indoors and out
- Internal / external data storage

Applications

- PON or point-to-point network verification or troubleshooting
- OTDR testing plus Insertion Loss and Power measurements
- Locate faults exceeding industry or user pass/fail thresholds
- Visually pinpoint location of macro-bends or breaks

Performance-packed: With SmartAuto multi-pulse acquisition, up to 37 dB dynamic range and best-in-class 25 m PON dead zone, FlexScan PON OTDRs test FTTH PONs up to 1:64 while still detecting and measuring events only meters apart.

Fast! FleXpress mode completes dual-wavelength tests in <5 seconds – 10 x faster than conventional OTDRs! For multi-fiber testing, FleXpress mode automatically controls 12-fiber MPO Switch to further reduce multi-fiber test time.

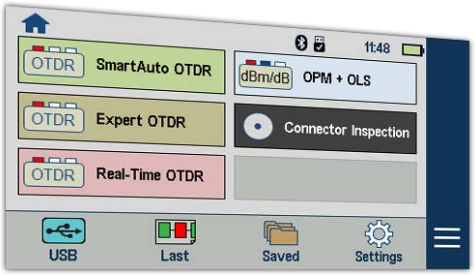
User-friendly: FlexScan OTDRs enable both novice and expert technicians to quickly, reliably and accurately detect, locate, identify and measure optical network components and faults. After applying industry-standard or user-set pass/fail criteria, the network is displayed using FlexScan's intuitive, icon-based LinkMap view. Acquired results may be stored internally or externally. FlexScan automates test setup, shortens test time and simplifies results interpretation, improving efficiency and reducing the cost of test.

Pocket-sized: At 3.5 x 6 x 1.75 in. (86 x 160 x 43 mm) and less than one pound (0.4 kg), FlexScan OTDRs truly fit in your pocket, yet still provide a large, bright indoor/outdoor touchscreen display and all-day operation.

***And* Affordable:** With optional connector inspection, integrated source, power meter and VFL, FlexScan offers an all-in one solution, ensuring technicians have everything they need to locate and resolve optical network issues. Uploaded results may be viewed and reports may be generated using the included Windows-compatible TRM® 2.0 Test Results Manager software.

Available in Convenient, Cost-saving Installation and Troubleshooting Kits - Bundle FlexScan with your choice of launch cable, FOCIS Flex connector inspection probe and tips, and/or AFL's universal optical fiber identifier (OFI).

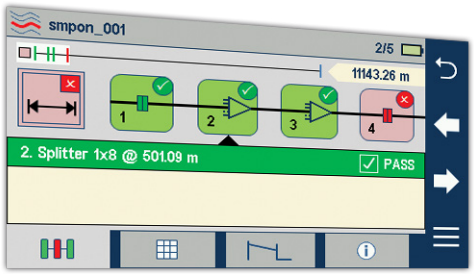
FlexScan® OTDR with SmartAuto®, FleXpress® and LinkMap®



SmartAuto FleXpress Dramatically Cuts Test Time

In SmartAuto mode, a FlexScan OTDR automatically determines the characteristics of the network under test and rapidly completes multiple scans using a variety of network-optimized acquisition settings. It precisely locates and identifies network events, as well as measures loss and reflectance for each detected event. For even greater ease-of-use, FlexScan checks for live fiber and verifies the OTDR launch connection before initiating a test. Dual and triple-wavelength FlexScan OTDRs also provide automatic macro-bend detection.

FlexScan's new FleXpress mode completes dual wavelength tests in seconds, reducing test time by a factor of 10x compared to conventional OTDRs. For multi-fiber testing, FleXpress mode automatically controls AFL's MPO Switch, testing 12 fibers at the touch of a single button.



LinkMap Simplifies Network Troubleshooting

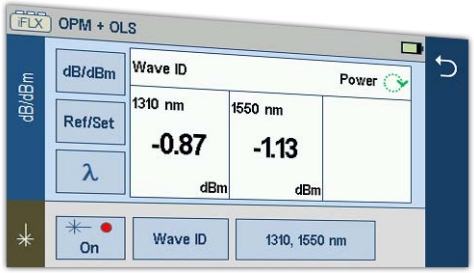
LinkMap with Pass/Fail enables even novice users to easily and accurately troubleshoot optical networks. LinkMap presents an icon-based view of the tested network clearly identifying fiber start, end, connectors, splices, PON splitters, and macro-bends.

A LinkMap Summary provides end-to-end link length, loss, loss per distance and ORL. Loss and reflectance of detected events is compared to industry-standard or user-settable pass/fail thresholds and displayed with clear pass/fail indications. Users can instantly toggle between LinkMap and Trace views.

Bluetooth and WiFi for Faster Connectivity

Pair FlexScan with AFL's FOCIS Flex connector inspection probe for fast, easy connector end-face inspection.

FOCIS Flex provides auto-focus, auto-centering, integrated IEC pass/fail analysis, and automatic Bluetooth transfer of images and pass/fail results to FlexScan for display and archiving.



Complete Testing with a Single Tool

FlexScan integrates a Visual Fault Locator (VFL) plus an optional optical laser source (OLS) and optical power meter (OPM) supporting AFL's unique Wave ID capability. With Wave ID, the power meter automatically synchronizes to a single or multi-wavelength Wave ID optical signal sent by an AFL light source. The power meter automatically identifies received wavelengths and measures power and loss at each wavelength, saving significant test time and eliminating setup errors.

The VFL's eye-safe red laser enables users to visually pinpoint the location of macro-bends and fiber breaks often found in splice closures and fiber cabinets.

FlexScan® OTDR with SmartAuto®, FleXpress® and LinkMap®

FlexScan OTDRs are available with 1310/1550/1650, 1310/1550, and 1550 or 1650 nm only wavelengths. 1310 & 1550 nm versions are available with integrated optical light source (OLS), optical power meter (OPM), visual fault locator (VFL) and Bluetooth/WiFi.

Specifications[a]

MODEL: FS200-#	-50	-60	-100	-300	-304
OTDR					
Emitter Type	Laser				
Safety Class[b]	Class I				
Fiber Type	Single-mode				
Wavelengths (nm)	1550	1650	1310/1550	1310/1550	1310/1550/1650
Center λ Tolerance	±20 nm (CW mode)				
Dynamic Range (dB)[c]	28	37	32/30	37/36	37/36/37
Event Dead Zone[d] (m)	1.0	0.8	0.8	0.8	0.8
Atten. Dead Zone[e] (m)	6.0	3.5	3.6	3.5	3.5
PON Dead Zone[f] (m)	N/A	30	N/A	25/25	25/25/30
Pulse Widths	3, 5, 10, 20, 30, 50, 100, 200, 300, 500 ns; 1, 2, 3, 10 µs; 20 µs (FS200-60/300/304 only)				
Range Settings	250 m to 240 km				
Data Points	Up to 300,000 (Expert mode .SOR file)				
Data Spacing	5 cm to 16 m				
Group Index of Refraction	1.3000 to 1.7000				
Distance Uncertainty (m)	±(1 + 0.003% x distance + data point spacing)				
Linearity (dB/dB)	±0.05				
Trace File Format	Telcordia SR-4731 Issue 2				
Trace File Storage Medium	4 GB internal memory (>1000 traces); External USB memory stick				
Data Transfer to PC	USB cable or Bluetooth® or WiFi (option)				
Standard OTDR Modes	SmartAuto, Expert, Real Time				
Display Modes	LinkMap Summary, LinkMap Events, Trace				
FleXpress Fast Test	No	No	No	Yes	Yes
Real-time Refresh Rate	Up to 4 Hz				
Live Fiber Protection	No OTDR damage with input power ≤+3 dBm for wavelength(s) in range 1260 to 1675 nm				
Live Fiber Detection	Reports live fiber with input signal ≥ -35 dBm for wavelength(s) in range 1260 to 1675 nm				
Live PON Filter Isolation	>50 dB for 1260 nm ≤ wavelength ≤ 1600 nm				
Live PON OTDR Test	1650 nm using filtered detector				
VISUAL FAULT LOCATOR (VFL)					
Emitter Type	Visible red laser, 650 ±20 nm				
Safety Class[b]	Class II				

MODEL: FS200-#	-50	-60	-100	-300	-304
Output Power (nominal)	0.8 mW into single-mode fiber				
Modes	CW, 2 Hz flashing				
OPTICAL LASER SOURCE - OLS (Optional)					
Emitter Type	Laser				
Safety Class[b]	Class I				
Fiber Type	Single-mode				
Wavelengths (nm)	1550	N/A	1310/1550	1310/1550	1310/1550
Center λ Tolerance	±20 nm (CW mode)				
Spectral Width (FWHM)	5 nm (maximum)				
Internal Modulation	270 Hz, 330 Hz, 1 kHz, 2 kHz, CW, Wave ID				
Wave ID	Compatible with AFL OPM/OLS				
Output Power Stability	≤ ±0.1 dB (15 minutes); ≤ ±0.15 dB (8 hours)				
Output Power	-3 dBm ±1.5 dB				
OPTICAL POWER METER -OPM (Optional)					
Calibrated Wavelengths	1310, 1490, 1550, 1625, 1650 nm				
Detector Type	InGaAs, 1 mm diameter				
Measurement Range	+23 to -50 dBm				
Tone Detect Range	+3 to -35 dBm				
Wavelength ID Range	+3 to -35 dBm				
Accuracy[h]	±0.25 dB				
Resolution	0.01 dB				
Measurement Units	dB, dBm or Watts (nW, µW, mW)				
GENERAL					
Size (in boot)	86 x 160 x 43 mm				
Weight	0.4 kg				
Operational Temperature	-10 °C to +50 °C, 0 to 95 % RH (non-condensing)				
Storage Temperature	-40 °C to +70 °C, 0 to 95 % RH (non-condensing)				
Power	Rechargeable Li-Pol or AC adapter				
Battery Life	>12 hours, Telcordia test conditions				
Display	Color touchscreen 4.3 in LCD, 480 x 272, backlit				
USB Ports	1 host; 1 micro-USB function				
Bluetooth (optional)	Compatible with Windows PC, Android				
WiFi (optional)	IEEE 802.11 / WLAN				

Notes:

a. All specifications valid at 25 °C unless otherwise specified.
b. FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03.
c. (RMS, SNR=1) - Measured using maximum range, widest pulse width and 3 minutes averaging.
d. Typical distance between the two points 1.5 dB down each side of a reflective spike caused by a -45 dB event using 5 ns pulse width.
e. Typical distance from the location of a -45 dB reflective event to the point where the trace falls and stays within 0.5 dB of backscatter, using a 5 ns pulse width.
f. Recovery to within 0.5 dB of backscatter after 1:16 splitter (≤ 13 dB loss) using 100 ns pulse width.
g. At calibration wavelengths and power levels of approximately -10 dBm.

FlexScan® OTDR with SmartAuto®, FleXpress® and LinkMap®

FlexScan Kit Configurations

All kits include FlexScan with AC charger, battery, carry strap, SC/2.5 mm connector adapters, TRM® 2.0, quick reference guide, USB cable and carry case. PLUS kits add a 150 m fiber ring, One-Click cleaner, plus upgrade to TRM 2.0 Advanced. PRO kits additionally include a FOCIS Flex auto-focusing connector inspection probe with IEC pass/fail analysis and two adapter tips. Complete kits expand on PRO Kits by adding a bend-insensitive fiber identifier with optional power meter (OFI-BI or OFI-BIPM). MPO Kits bundle FS200-300/304 with MPO switch, MPO launch cable plus USB cable and jumper to connect FlexScan to MPO switch.

Ordering Information

FS200-[MOD]-[KIT]-[PW]-[C]-[LNG]-[AC]-[FR]-[TIP][a] where:

[MOD]	FS200 FlexScan OTDR Configuration
50	1550 nm only Troubleshooting OTDR
60	1650 nm filtered Live PON Troubleshooting OTDR
100	1310/1550 nm Verification & Troubleshooting OTDR
300	1310/1550 Pt-to-Pt & PON Verification & Troubleshooting OTDR
304	1310/1550/1650 Pt-to-Pt & PON Verification & Troubleshooting OTDR

[KIT]	FS200 FlexScan Kit Configuration
BAS	Basic kit with soft case, TRM 2.0 Basic, USB cable
PLUS	Adds 150 m Fiber Ring, One-Click cleaner, TRM 2.0 Advanced
PRO	Adds Fiber Ring, One-Click cleaner, TRM 2.0 Advanced, FOCIS Flex
BI	BI Complete kit adds OFI-BI to PRO kit
BIPM	BIPM Complete kit adds OFI-BIPM to PRO kit
MPO	Multi-fiber kit includes FlexScan plus MPO Switch, MPO launch cable, OTDR-to-Switch patch cord, OTDR-to-Switch USB cable

[PW]	Power Meter / Wireless option
P0-W0	No Source, Power Meter, or Bluetooth/WiFi (FS200-50/60/100 only)
P0-W1	No Source or Power Meter; Includes Bluetooth/WiFi (FS200-300/304 only)
P1-W0	No Bluetooth/WiFi (-304 only); Includes Source, Power Meter
P1-W1	Includes Source, Power Meter, Bluetooth/WiFi (all models except -50)
P1-W1H	Includes Source, Power Meter, Bluetooth/WiFi, hard carry case (all models except -50)

[C]	OTDR / Source Connector Type
A	APC (recommended)
U	UPC

[LNG]	Language
ENG	English
CHS	Chinese Simp.
CHT	Chinese Trad.
CZE	Czech
DEU	German
DNK	Danish
FIN	Finnish
FRA	French
ITA	Italian
JPN	Japanese
KOR	Korean
NOR	Norwegian
POL	Polish
POR	Portuguese
SPA	Spanish
TUR	Turkish

[AC]	Destination Country	AC Plugs
US	USA	2-pin, US
EU	European Union	2-pin, EU
UK	United Kingdom	2-pin, UK
CN	China, Australia	2-pin, SAA

[FR]	150 m SMF Fiber Ring
Blank	N/A in Basic kits
SC/SC	FR1-SM-150-SC-SC
SC/FC	FR1-SM-150-SC-FC
SC/LC	FR1-SM-150-SC-LC
SC/ST	FR1-SM-150-SC-ST
SC/ASC	FR1-SM-150-SC-ASC
SC/AFC	FR1-SM-150-SC-AFC
SC/ALC	FR1-SM-150-SC-ALC
LC/LC	FR1-SM-150-LC-LC
LC/ASC	FR1-SM-150-LC-ASC
LC/ALC	FR1-SM-150-LC-ALC
ASC/FC	FR1-SM-150-ASC-FC
ASC/ST	FR1-SM-150-ASC-ST

[FR]	150 m SMF Fiber Ring
ASC/ASC	FR1-SM-150-ASC-ASC
ASC/AFC	FR1-SM-150-ASC-AFC
ASC/ALC	FR1-SM-150-ASC-ALC
ALC/ALC	FR1-SM-150-ALC-ALC
FC/FC	FR1-SM-150-FC-FC
FC/ST	FR1-SM-150-FC-ST
FC/LC	FR1-SM-150-FC-LC
FC/AFC	FR1-SM-150-FC-AFC
AFC/AFC	FR1-SM-150-AFC-AFC
ASC-AE2000	FR1-SM-150-ASC-AE2000
SC-E2000	FR1-SM-150-SC-E2000

[TIP] *	FOCIS Flex Tips & Cleaning (PRO only)
Blank	Option not available in Basic & PLUS kits
SC	SC-UPC bulkhead tip, 2.5 mm UPC ferrule tip, 2.5 mm cleaning
FC	FC-UPC bulkhead tip, 2.5 mm UPC ferrule tip, 2.5 mm cleaning
LC	LC-UPC bulkhead tip, 1.25 mm UPC ferrule tip, 1.25 mm cleaning
ASC	SC-APC bulkhead tip, 2.5 mm APC ferrule tip, 2.5 mm cleaning
AFC	FC-APC bulkhead tip, 2.5 mm APC ferrule tip, 2.5 mm cleaning
ALC	LC-APC bulkhead tip, 1.25 mm APC ferrule tip, 1.25 mm cleaning

* For additional FOCIS Flex adapter tips, see FOCIS Flex data sheet or Buyer's Guide.

TEST & INSPECTION

International Sales and Service Contact Information

Available at www.AFLglobal.com/Test/Contacts

FR1-M6-150-SC-ST

FR1-SM-1000-SC-ST

FR1-SM-150-SC-SC

OTDR Fiber Rings

Measuring an insertion loss of the near-end and/or far-end connection of a fiber optic link with an OTDR requires a launch and/or receive test cable. A launch cable, which connects the OTDR to the link under test, reveals the insertion loss and reflectance of the near-end connection. A receive cable, which connects to the far-end of the link, reveals the insertion loss and reflectance of the far-end connection. Launch and receive test cables can range from 150 m to 1 km (or longer) in length. Because very long test cables are impractical to transport and use, AFL offers coiled lengths of 50 µm multimode, 62.5 µm multimode, or single-mode fiber packaged in compact rings.

Fiber Rings of 150 m of fiber are ideal for premises fiber network test applications. Fiber Rings of 500 m and 1 km of single-mode fiber are designed for broadband, long haul fiber network test applications.

Fiber Ring Models

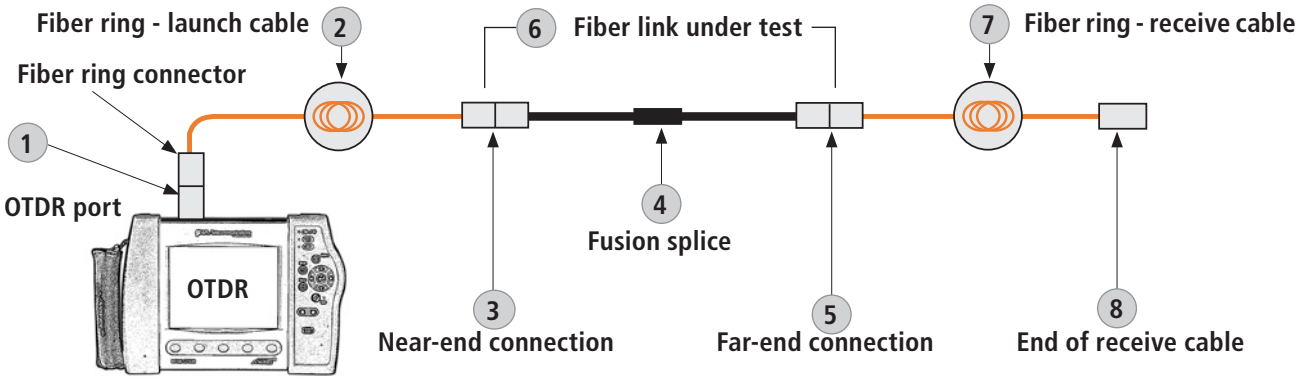
CONFIGURATION	FIBER TYPE	FIBER LENGTH	AFL NO.
Standard, one fiber	Multimode, 50 µm, OM2	150 m (492 ft)	FR1-M5-150- x1- x2
Standard, one fiber, Laser Optimized	Multimode, 50 µm, OM3	150 m (492 ft)	FR1-OM3-150-x1-x2
Standard, one fiber, Laser Optimized	Multimode, 50 µm, OM4	150 m (492 ft)	FR1-OM4-150-x1-x2
Standard, one fiber	Multimode, 62.5 µm	150 m (492 ft)	FR1-M6-150- x1- x2
Standard, one fiber	Single-mode	150 m (492 ft)	FR1-SM-150-y1-y2
Standard, one fiber	Single-mode	500 m (1640 ft)	FR1-SM-500-y1-y2
Standard, one fiber	Single-mode	1000 m (3280 ft)	FR1-SM-1000-y1-y2
Standard, one fiber, Bend Insensitive	Single-mode, G.657. A2 BIF	150 m (492 ft)	FR1-BIF-150-y1-y2
Standard, one fiber, Bend Insensitive	Single-mode, G.657. A2 BIF	500 m (1640 ft)	FR1-BIF-500-y1-y2
Standard, one fiber, Bend Insensitive	Single-mode, G.657. A2 BIF	1000 m (3280 ft)	FR1-BIF-1000-y1-y2

x1, x2 — connectors for multimode cables, specify type [ST, SC, ASC (angled SC), FC, AFC (angled FC), LC]
y1, y2 — connectors for single-mode cables, specify type [ST, SC, ASC (angled SC), FC, AFC (angled FC), LC]
Other connector types, fiber types, and fiber lengths will be quoted upon request.

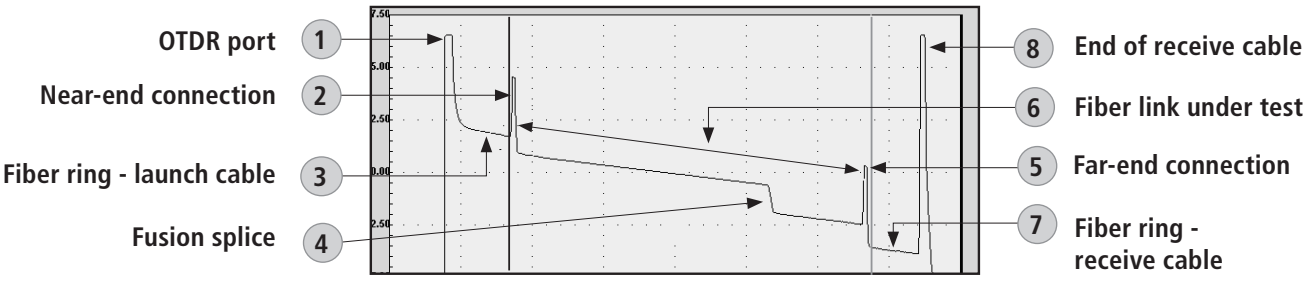
OTDR Fiber Rings

How to Generate a Baseline Trace Using Fiber Rings

- Use the Fiber Ring as a launch cable.
  Connect the Fiber Ring between your OTDR and the fiber link under test. This will allow you to measure the loss of the near-end connection.
- Use the Fiber Ring as a receive cable.
  Connect the Fiber Ring to the far-end connector of your fiber link under test. This will allow you to measure the loss of the far-end connection.
- By using Fiber Rings as both launch and receive cables, as shown in the diagram below, you can measure total insertion loss of the fiber link under test.



Example OTDR Test Configuration with Launch and Receive Cables



OTDR Trace Made using Launch and Receive Cables

International Sales and Service Contact Information

Available at www.AFLglobal.com/Test/Contacts

FOCIS Flex

U.S. Patent 9,217,688

Fiber Optic Connector Inspection System

AFL FOCIS Flex

Google play

Available on the App Store

Features

- Auto-focus and auto-centering for fast, easy inspection
- Untethered operation simplifies access at patch panels
- IEC, IPC and user-defined pass/fail analysis
- Self-contained, compact, hand-held inspection solution
- Use independently, or pair with FlexScan or FlexTester OTDR
- Configure and access results from Android or Apple App
- Save results internally and upload via Bluetooth or USB
- Ergonomic design fits in the palm of your hand
- Generate inspection reports using aeRos or TRM® 2.0

Applications

- Inspect connectors on patch cords or in bulkhead adapters
- Optical network installation, troubleshooting and maintenance
- Inspect MPO/MTP multi-fiber connectors
- Assure critical fiber infrastructure performs properly
- Keep fiber connections working at optimal performance levels
- Verify proper connector cleaning practices are being used

Pass/fail results in seconds: With the press of a single button, FOCIS Flex auto-focuses, captures and centers the end-face image, applies pass/fail rules, displays image and pass/fail results, and wirelessly transfers image and results to a paired FlexScan or FlexTester OTDR. All in a matter of seconds!

Independent, untethered operation: With rechargeable battery supply and integrated display, FOCIS Flex can be used independently – without requiring an external OTDR or display unit.

Pair with FlexScan or FlexTester OTDR: Still prefer to view and save images and pass/fail results on your FlexTester OTDR? No problem! Captured images and pass/fail results are immediately displayed and easily saved on the paired device along with associated OTDR and/or insertion loss test results.

Pair with Android or iOS device: Display images on your Android or iOS device using AFL's FOCIS Flex mobile App. Save results to AFL's aeRos cloud-based workflow management system.

Save results internally or externally: FOCIS Flex internally stores thousands of results using file-naming capabilities similar to FlexScan and FlexTester OTDRs. A micro-USB port supports fast upload of internally stored results to PC, and ensures your FOCIS Flex software can be updated to the latest features and supported languages.

Wide range of adapter tips: Interchangeable adapter tips support connector inspection for a wide range of both single-fiber and multi-fiber patchcords and bulkhead-mounted connectors having either PC or APC polished end-faces.

FOCIS Flex is available in standalone kit configurations including soft carry case / holster and user-selected adapter tips. Available FlexScan and FlexTester PRO and Complete Kits bundle FOCIS Flex with the selected OTDR, fiber ring and cleaning supplies.

FOLS FIBER OPTICS LAN SECTION · Bicsi CORPORATE MEMBER · FTTH COUNCIL

FOCIS Flex

U.S. Patent 9,217,688

Fiber Optic Connector Inspection System

Specifications [a]

OPTICAL PERFORMANCE	
Field of View (viewed on FOCIS Flex)	Live: 710 x 860 µm; Captured, Zoomed Out: 560 x 600 µm; Captured, Partially Zoomed In: 360 x 390 µm; Captured, Fully Zoomed In: 180 x 195 µm
Field of View (Viewed on a PC)	Stored, Zoomed Out: 700 x 525 µm; Stored, Fully Zoomed In: 240 x 180 µm
Manual Detection Capability (minimum)	0.25 µm
Auto Analysis Resolution	<1.0 µm
Captured Image Size (Pixels)	648 x 480 VGA; Images stored internally in three .JPG files, one at each FOV
OPERATING FEATURES	
Focus	Auto-focus and manual focus
Centering	Auto-centering after capture
Pass/Fail Analysis	IEC 61300-3-35 (2015), IPC and user-defined criteria
Image Capture and File Storage Capacity	10,000 files
File Format (Image and Pass/Fail Results)	jpg, gif
Bluetooth Characteristics	SPP to FlexScan and FlexTester OTDRs; IAP to iOS devices
USB Characteristics	USB 1.1 mass storage device
Supported Languages	English, Chinese Simplified, Chinese Traditional, Finnish, French, German, Italian, Japanese, Korean, Polish, Russian, Spanish, Turkish
PHYSICAL AND POWER CHARACTERISTICS	
Display size, type, resolution	2.4", TFT, 240 x 320 with brightness control
Battery Type	NiMH, user replaceable
Battery Operating Time (typical)	8 hours (60 tests in 20 minutes each hour; auto-off enabled)
Recharge Time	<4.5 hours
Power Save Features	Auto-off (disabled, 2, 5, 10 minutes)
AC Charger voltage, frequency, current	100-240 V, 50/60 Hz, 5VDC, 2A
Size	47 x 37 x 183 mm (1.8 x 1.5 x 7.2 in)
Weight	240 g (0.5 lb)
ENVIRONMENTAL CHARACTERISTICS	
Operating Temperature	0 to +50 °C
Storage Temperature	-40 to +70 °C
Relative Humidity	95%, non-condensing
Transit and shock	2G vibration, 30G shock

Notes:

a. All specifications valid at 23°C ±2°C (73.4°F ±3.6°F).

Ordering Information

DESCRIPTION	AFL NO.
FOCIS Flex Kit, soft carry case / holster, USB cable, AC charger, TRM 2.0 reporting software, reference guide, no tips	FOCIS-FLX-P4XN
FOCIS Flex Kit, soft carry case / holster, USB cable, AC charger, TRM 2.0 reporting software, reference guide, 2 user-selected UPC adapter tips (ferrule and bulkhead), user-selected One-Click cleaner	FOCIS-FLX-P4XU
FOCIS Flex Kit, soft carry case / holster, USB cable, AC charger, TRM 2.0 reporting software, reference guide, 2 user-selected APC adapter tips (ferrule and bulkhead), user-selected One-Click cleaner	FOCIS-FLX-P4XA

FOCIS Flex

U.S. Patent 9,217,688

Fiber Optic Connector Inspection System

FlexScan OTDR PRO and Complete Kits with FOCIS Flex

PRO Kits include the following items:

- FlexScan with accessories (AC charger, carry strap, SC/2.5 mm connector adapters, TRM® 2.0 Advanced Test Results Manager, carry case)
- FOCIS Flex Fiber Optic Connector Inspection System with accessories (AC charger, USB cable, soft carry case/holster)
- Two user-selected adapter tips and one user-selected One-Click Cleaner
- 150 m Fiber Ring (launch cable) with user-specified connectors

Complete kits expand on PRO Kits by adding bend insensitive fiber identifier with optional power meter (OFI-BI or OFI-BIPM).

See FlexScan data sheet for FlexScan PRO and Complete Kit ordering information.

FlexTester PRO2 and Complete2 Kits with FOCIS Flex

PRO2 Kits include the following items:

- User-selected FLX380-3xx or OFL280-1xx FlexTester with accessories (AC charger, USB cable, TRM® 2.0 Advanced Test Results Manager)
- FOCIS Flex Fiber Optic Connector Inspection System with accessories (AC charger, USB cable, soft carry case/holster)
- Two user-selected adapter tips and one user-selected One-Click Cleaner
- 150 m Fiber Ring (launch cable) with user-specified connectors
- Rugged, waterproof carry case

Complete2 Kits include everything in the FlexTester PRO2 kit plus choice of OFI optical fiber identifier.

See FLX380 or OFL280 data sheet for FlexTester PRO2 and Complete2 Kit ordering information.

FOCIS Flex Adapter Tips (Contact AFL for adapter tips for other connector types)

DESCRIPTION	AFL NO.
SC-UPC bulkhead adapter tip	FFLX-01-SC
FC-UPC bulkhead adapter tip	FFLX-01-FC
ST-UPC bulkhead adapter tip	FFLX-01-ST
LC-UPC bulkhead adapter tip	FFLX-01-LC
Universal 2.5 mm, UPC ferrule adapter tip	FFLX-01-U25
Universal 1.25 mm, UPC ferrule adapter tip	FFLX-01-U125
SC-APC bulkhead adapter tip	FFLX-01-ASC
FC-APC bulkhead adapter tip	FFLX-01-AFC
LC-APC bulkhead adapter tip	FFLX-01-ALC
Universal 2.5 mm, APC ferrule adapter tip	FFLX-01-A25
Universal 1.25 mm, APC ferrule adapter tip	FFLX-01-A125
FOCIS Flex adapter extension tube, straight, 46 mm	FFLX-01-EXTS46
FOCIS Flex adapter extension tube, straight, 80 mm:	FFLX-01-EXTS80

DESCRIPTION	AFL NO.
E2000 PC/UPC bulkhead adapter tip	DFS1-00-0023MR
E2000 APC bulkhead adapter tip	DFS1-01-0008MR
Tip for SC/APC (OptiTap®) bulkhead adapter	DFS1-01-0007MR
Tip for OptiTip® APC ferrule and bulkhead adapter	DFS1-01-0013MR
Multi-row MTP/PC ferrule & bulkhead adapter extended tip kit (base plus multi-row MTP/PC front end tip)	DFS1-00-0050MR
MTP/PC ferrule & bulkhead adapter extended tip kit (base plus MTP/PC front end tip)	DFS1-00-0037MR
MTP/PC and MTP/APC ferrule & bulkhead adapter extended tip kit (base,MTP/PC, MTP/APC front end tips)	DFS1-00-0042MR
MTP/APC ferrule and bulkhead adapter extended tip kit (base plus MTP/APC front end tip)	DFS1-01-0010MR

TEST & INSPECTION

International Sales and Service Contact Information

Available at www.AFLglobal.com/Test/Contacts

FOCIS Lightning Multi-Fiber Optic Connector Inspection System

Features

- Extremely fast multi-fiber auto-analysis for datacom and telecom inspection applications
- Auto-focus and auto-centering for fast, easy inspection
- USB plus optional Bluetooth/WiFi connectivity
- IEC, IPC, AT&T, and user-defined auto-analysis
- Self-contained, tether-free, compact, hand-held inspection solution
- Keyless UPC & APC adapter tips work with both MPO-12 & MPO-16 connectors
- Available with adapter tips supporting all commonly used multi-fiber connector types
- Snout and adapter tip keys and slots eliminate loosening during normal operation
- Single fiber adapter tips for LC connectors and bulkheads (UPC & APC) also available
- Field replaceable NiMH battery lasts over six hours
- AFL's TRM PC software package enables MPO results reporting for desktop users
- Available in a 'No Wireless' [NW] variant, which removes the Bluetooth and WiFi functionality for use in RF restricted facilities.

Applications

- Inspect multi-fiber connectors on bulkhead adapters and patch cords
- Optimal tool for data center optical network installation, turn-up, troubleshooting
- MPO/MTP multi-fiber multi-row connector inspection
- Critical fiber infrastructure performance assurance
- Maintenance of fiber connections at highest optical performance levels
- Verification that proper connector cleaning practices are being used

FOCIS Lightning is a self-contained multi-fiber connector inspection probe with integrated screen. It is intended specifically for the inspection of multi-fiber connectors and bulkheads such MPO and MTP® including multi-row varieties. The FOCIS Lightning can perform industry standard and user-defined end-face cleanliness analysis at a rate of about 1 second per fiber. Lightning stores connector level and individual fiber images, analysis, overlays, and zones tables locally and provides optional WiFi and Bluetooth wireless links. The AFL FOCIS app (iOS and Android) provides a comprehensive and user-friendly feature set as well as connectivity with AFL's cloud-based aeRos® workflow automation platform.

Pass / fail results in seconds: With the press of a single button, the FOCIS Lightning auto-focuses, captures, centers and analyzes the multi-fiber end-face image to industry standard and user-defined criteria.

Untethered operation: With rechargeable battery and integrated 2.4" TFT color LCD screen, FOCIS Lightning can be used independently.

Multi-fiber front-end adapter tips: Multi-fiber front-end adapter tips support single row and multi-row MT connector inspection for a wide range of patch cords and bulkhead-mounted connectors having either PC/UPC or APC polished end-faces. The probe snout includes a key which in combination with a slot on the adapter tips ensures that adapter tips never loosen during use, under any circumstances.

FOCIS Lightning Multi-Fiber Optic Connector Inspection System

Specifications[a]

OPTICAL PORT PARAMETERS	SPECIFICATION
Field of View (FOV; viewed on FOCIS Lightning)	Multi-fibers Live:1960 x 4670 µm and 980 x 2335 µm Multi-fibers Captured, Overview: 1960 x 4338 µm Multi-fibers Captured, Details: 130 x 130 µm Single fiber Live: 890 x 1075 µm and 445 x 537 µm Single fiber Captured Zoomed Out: 684 x 742 µm Single fiber Captured, Partially Zoomed In: 456 x 492 µm Single fiber Captured, Fully Zoomed In: 228 x 246 µm
Field of View (FOV; viewed on a PC)	Multi-fibers Captured, Overview: 1960 x 4670 µm Multi-fibers Captured, Details: 130 x 130 µm Single fiber Captured, Zoomed Out: 525 x 700 µm Single fiber Captured, Partially Zoomed In: 355 x 475 µm Single fiber Captured, Zoomed In: 175 x 235 µm
Manual Detection Capability (minimum)	0.25 µm
Auto Analysis Resolution	<1.0 µm
Internally Stored Image Size (pixels)	Multi-fibers: 640 x 480 VGA; images stored internally in N+1.JPG files, one in Overview screen and N each in Fiber Details screen Single fiber: 640 x 480 VGA; images stored internally in three .JPG files, one at each FOV
Bluetooth Image and Overlay	2 x QVGA (320 x 240; image + overlay) to AFL test instruments (SPP) 1 x VGA (640 x 480) file to Apple iOS devices (IAP / MFi)
Maximum No Damage Live Fiber Power Level	+20 dBm; image cannot be viewed if fiber is live
Focus Methods and Speeds	Auto-focus (≤3 sec) and manual focus
Centering	Auto-centering (<1 sec)
Zoom in Live Mode	1x and 2x modes
Image Capture with Pass/Fail Analysis	IEC 61300-3-35 (2015), AT&T TP-76461, IPC-8497-1, user-set criteria Capture SF <1 sec, MF <2 sec; Analysis <0.15 sec per fiber
Results Storage (Image and Pass/Fail Results)	Yes
File Format	JPG, GIF
File Storage Capacity	10,000 files
OPERATING FEATURES	
WiFi Characteristics (Wireless Models Only!)	IEEE 802.11bng
Bluetooth Characteristics (Wireless Models Only!)	IAP (iPod accessory protocol), SPP 0 x 1101
USB Characteristics	USB 2.0 mass storage device
Supported Languages	English, Chinese Simplified, Chinese Traditional, Finnish, French, German, Italian, Japanese, Korean, Polish, Russian, Spanish, Turkish
ENVIRONMENT PARAMETERS	
Storage Temperature	-40 °C to +70 °C
Operating Temperature	0 °C to +50 °C
Relative Humidity	0 to 95% RH
Vibration Limits	2G (transportation)
Transit Drop (without soft case)	300 mm (12 inches, all sides, dust cover installed)
Transit Drop (with soft case)	460 mm (18 inches, all sides, dust cover installed)

Notes:

a. All specifications valid at 23°C ±2°C (73.4°F ±3.6°F).
b. Operating conditions: 60 tests in 20 minutes, then auto-off; repeat each hour.
c. Trademarks are the property of their respective owners.

Continued >>

FOCIS Lightning Multi-Fiber Optic Connector Inspection System

Specifications[a]

PHYSICAL AND POWER CHARACTERISTICS	
Display Size, Type, Resolution	2.4", color TFT, backlit, 240 x 320 with brightness control
Battery Type	NiMH, user replaceable
Operating Time (typical)	6 hours[b]; 3 hours continuous
Power Save Features	Auto-off (disabled, 2, 5, 10 min)
Recharge Time	≤4 hours
Low-Battery Warning	Alerts when ≤15 minutes battery operation remains
AC Charger Voltage, Frequency, Current	100-240VAC, 50/60Hz, 5VDC, 2A
Charger Jack	3.2 mm, center positive
Size	47 x 37 x 190 mm (1.8 x 1.5 x 7.7 in)
Weight	280 g (0.62 lb)
Safety & Compliance Certifications	UL, CE, FCC

Ordering Information

DESCRIPTION	AFL NO.
FOCIS Lightning Kit, soft carry case, AC charger, with no tips or One-Click® cleaner	FOCIS-LTNG-N
FOCIS Lightning Kit, soft carry case, AC charger, (1) UPC ferrule & bulkhead adapter tip, (2) One-Click MPO cleaners	FOCIS-LTNG-U
FOCIS Lightning Kit, soft carry case, AC charger, (1) APC ferrule & bulkhead adapter tip, (2) One-Click MPO cleaners	FOCIS-LTNG-A
FOCIS Lightning Kit, soft carry case, AC charger, (1) UPC and (1) APC ferrule & bulkhead adapter tips, (2) One-Click MPO cleaners	FOCIS-LTNG-UA
FOCIS Lightning No Wireless Kit, soft carry case, AC charger, with no tips or One-Click® cleaner	FOCIS-LTNG-NW-N
FOCIS Lightning No Wireless Kit, soft carry case, AC charger, (1) UPC ferrule & bulkhead adapter tip, (2) One-Click MPO cleaners	FOCIS-LTNG-NW-U
FOCIS Lightning No Wireless Kit, soft carry case, AC charger, (1) APC ferrule & bulkhead adapter tip, (2) One-Click MPO cleaners	FOCIS-LTNG-NW-A
FOCIS Lightning No Wireless Kit, soft carry case, AC charger, (1) UPC and (1) APC ferrule & bulkhead adapter tips, (2) One-Click MPO cleaners	FOCIS-LTNG-NW-UA

FOCIS Lightning Adapter Tips and Accessories

DESCRIPTION	TIP ID	AFL NO.
Adapter tip for MPO-12/24 APC bulkhead (with key)	M12A	FLTNG-01-M12A
Adapter tip for MPO-12/24 UPC bulkhead (with key)	M12U	FLTNG-01-M12U
Adapter tip for MPO-16/32 UPC bulkhead (with key)	M16U	FLTNG-01-M16U
Universal adapter tip for MPO-12/16/24/32 APC bulkhead (partial key)	MPA	FLTNG-01-MPA
Universal adapter tip for MPO-12/16/24/32 UPC bulkhead (partial key)	MPU	FLTNG-01-MPU
Adapter tip for MPO-12/24/16/32 APC bulkhead (no key)	MPOA	FLTNG-01-MPOA
Adapter tip for MPO-12/16/24/32 UPC bulkhead (no key)	MPOU	FLTNG-01-MPOU
Adapter Tip for MPO-12/16/24/32 APC connector (with key)	MAC	FLTNG-01-MAC
Adapter Tip for MPO-12/16/24/32 UPC connector (with key)	MUC	FLTNG-01-MUC
Coupler for most 'FFLX' single fiber connector adapter tips	SFA	FLTNG-01-SFA
Extended adapter tip for LC-APC bulkhead	ALCM	FLTNG-01-ALCM
Extended adapter tip for LC-UPC bulkhead	ULCM	FLTNG-01-ULCM
MPO extender barrel	MPE	FLTNG-01-MPE

Notes:

a. All specifications valid at 23°C ±2°C (73.4°F ±3.6°F).

b. Operating conditions: 60 tests in 20 minutes, then auto-off; repeat each hour.

International Sales and Service Contact Information

Available at www.AFLglobal.com/Test/Contacts

FOCIS Duel™ Fiber Optic Connector Inspection System

Features

- Auto-focus (both ports) and auto-centering (Port 1) for fast, easy inspection
- Self-contained, tether-free, compact, hand-held inspection solution
- IEC 61300-3-35 (2015), IPC 8497-1, AT&T TP-76461 and user-defined auto-inspection (Port 1)
- Available with more than three dozen tips supporting all commonly used connector types, including MPO/MTP multi-fiber connectors and bulkheads
- Rechargeable, field-replaceable NiMH battery lasts more than 8 hours
- Snout and adapter tip slots eliminate loosening during normal operation
- Fast 1X/2X zoom toggle

Applications

- Inspect connectors on bulkhead adapters (Port 1) and patch cords (Port 2) without swapping adapter tips
- Optimal tool for optical network installation, turn-up, troubleshooting and maintenance
- MPO/MTP multi-fiber multi-row connectors inspection
- Critical fiber infrastructure performance assurance
- Maintenance of fiber connections at highest optical performance levels
- Verification that proper connector cleaning practices are being used

FOCIS Duel is a self-contained twin-ported Bluetooth connected fiber optic connector inspection probe with integrated screen. The first port (right hand side Port 1) is fully featured, identical to AFL's FOCIS Flex. The second port (left hand side Port 2) has fast and convenient female "click-in" adapters, auto-focus and 2X zoom capabilities. The FOCIS Duel can perform IEC, IPC, AT&T and user-defined end-face cleanliness analysis and store Port 1 images and reports locally. The AFL FOCIS App (iOS and Android) provides a comprehensive and user-friendly feature set as well as connectivity with AFL's cloud-based aeRos® workflow automation platform.

Pass / fail results in seconds: With the press of a single button, Port 1 of the FOCIS Duel auto-focuses, captures, centers and analyzes the end-face image to industry standard IEC 61300-3-35 (2015), IPC, AT&T and user-defined criteria.

Untethered operation: With rechargeable battery and integrated 2.4" color TFT LCD screen, FOCIS Duel can be used independently.

Wide range of adapter tips: Port 1 – Interchangeable adapter tips support single and multi-fiber connector inspection for a wide range of patch cords and bulkhead-mounted connectors having either PC/UPC or APC polished end-faces. A key on the probe snout combined with a slot on the adapter tips assures that adapter tips never loosen during use, under any circumstances. Quad-slotted APC adapter tips ensure the screen is visible in any use case. Port 2 – A slot on the adapter tips combined with a keyed snout eliminates loosening during normal use. Port 2 adapter tips are available for all common connector types – Universal 1.25 mm and 2.5 mm, SC and LC in both UPC and APC polish types.

Inspection kits include AC charger, carry strap, two user-selected adapter tips (optionally), and soft carry case.

IEC 61300-3-35 | IPC 8497-1 | ATT-TP-76450

FOCIS Duel™ Fiber Optic Connector Inspection System

Specifications [a]

FIRST PORT (Port 1) PARAMETERS	SPECIFICATION
Field of View (FOV; viewed on FOCIS Duel)	Live: 710 x 860 µm; Captured, Zoomed Out: 560 x 600 µm; Captured, Partially Zoomed In: 360 x 390 µm; Captured, Fully Zoomed In: 180 x 195 µm
Field of View (FOV; viewed on a PC)	Captured, Zoomed Out: 525 x 700 µm; Captured, Partially Zoomed In: 355 x 475 µm; Captured, Zoomed In: 175 x 235 µm
Manual Detection Capability (minimum)	0.25 µm
Auto Analysis Resolution	<1.0 µm
Internally Stored Image Size (pixels)	640 x 480 VGA; images stored internally in three .JPG files, one at each FOV
Bluetooth Image and Overlay	2 x QVGA (320 x 240; image + overlay) to AFL test instruments (SPP) 1 x VGA (640 x 480) file to Apple iOS devices (IAP / MFi)
Maximum No Damage Live Fiber Power Level	+20 dBm; Image cannot be viewed if fiber is live
Focus Methods and Speeds	Auto-focus (≤3 sec) and manual focus
Centering	Auto-centering (<1 sec)
Zoom in Live Mode	1x and 2x modes
Image Capture with Pass/Fail Analysis	IEC 61300-3-35 (2015), AT&T TP-76461, IPC-8497-1, user-set criteria
Results Storage (Image and Pass/Fail Results)	Yes
File Format	JPG, GIF, Port 1 only
File Storage Capacity	10,000 files
SECOND PORT (Port 2) PARAMETERS	
Field of View (FOV; Viewed on FOCIS Duel)	Live: 365 x 440 µm and 183 x 220 µm
Manual Detection Capability (minimum)	0.25 µm
Maximum No Damage Live Fiber Power Level	+20 dBm; Image cannot be viewed if fiber is live
Zoom in Live Mode	1x and 2x modes
Focus Methods and Speeds	Auto-focus (≤3 sec) and manual focus
OPERATING FEATURES	
Bluetooth Characteristics	IAP (iPod accessory protocol), SPP 0 x 1101
USB Characteristics	USB 2.0 mass storage device
Supported Languages	English, Chinese Simplified, Chinese Traditional, Finnish, French, German, Italian, Japanese, Korean, Polish, Russian, Spanish, Turkish
ENVIRONMENT PARAMETERS	
Storage Temperature	-40°C to +70°C
Operating Temperature	0°C to +50°C
Relative Humidity	0 to 95% RH
Vibration Limits	2G (transportation)
Transit Drop (without soft case)	300 mm (12 inches, all sides, dust cover installed)
Transit Drop (with soft case)	460 mm (18 inches, all sides, dust cover installed)

Notes:

a. All specifications valid at 23°C ±2°C (73.4°F ±3.6°F).

b. Operating conditions: 60 tests in 20 minutes, then auto-off; repeat each hour.

Continued >>

FOCIS Duel™ Fiber Optic Connector Inspection System

Specifications [a]

PHYSICAL AND POWER CHARACTERISTICS	
Display Size, Type, Resolution	2.4", color TFT, backlit, 240 x 320 with brightness control
Battery Type	NiMH, user replaceable
Operating Time (typical)	8 hours[b]; 3 hours continuous
Power Save Features	Auto-off (disabled, 2, 5, 10 min)
Recharge Time	≤4 hours
Low-Battery Warning	Alerts when ≤15 minutes battery operation remains
AC Charger Voltage, Frequency, Current	100-240VAC, 50/60Hz, 5VDC, 2A
Charger Jack	3.2 mm, center positive
Size	47 x 37 x 175 mm (1.8 x 1.5 x 6.8 in)
Weight	280 g (0.62 lb)
Safety & Compliance Certifications	UL, CE, FCC

Notes:

a. All specifications valid at 23°C ±2°C (73.4°F ±3.6°F).
b. Operating conditions: 60 tests in 20 minutes, then auto-off; repeat each hour.

Ordering Information

DESCRIPTION	AFL NO.
FOCIS Duel Kit, soft carry case, AC charger, with no tips or One-Click® cleaner	FOCIS-DUEL-N
FOCIS Duel Kit, soft carry case, AC charger, user-selected: (2) UPC ferrule & bulkhead adapter tips, and (1) One-Click cleaner	FOCIS-DUEL-U
FOCIS Duel Kit, soft carry case, AC charger, user-selected: (2) APC ferrule & bulkhead adapter tips, and (1) One-Click cleaner	FOCIS-DUEL-A
FOCIS Duel Kit, soft carry case, AC charger, user-selected: (2) UPC and (2) APC ferrule & bulkhead adapter tips, and (1) One-Click cleaner	FOCIS-DUEL-UA

FOCIS Duel Adapter Tips

PORT USAGE	DESCRIPTION	TIP ID	AFL NO.
1	SC-APC bulkhead adapter tip, quad-slotted	XASC	
1	FC-APC bulkhead adapter tip, quad-slotted	XAFC	
1	LC-APC bulkhead adapter tip, quad-slotted	XALC	
2	LC-UPC ferrule adapter tip, single-slotted female "click-in"	SULC	
2	LC-APC ferrule adapter tip, single-slotted female "click-in"	SALC	
2	SC-UPC ferrule adapter tip, single-slotted female "click-in"	SUSC	
2	SC-APC ferrule adapter tip, single-slotted female "click-in"	SASC	
2	Universal 1.25 mm UPC ferrule adapter tip, single-slotted	U1	
2	Universal 1.25 mm APC ferrule adapter tip, single-slotted	A1	
2	Universal 2.5 mm UPC ferrule adapter tip, single-slotted	U2	
2	Universal 2.5 mm APC ferrule adapter tip, single-slotted	A2	

International Sales and Service Contact Information

Available at www.AFLglobal.com/Test/Contacts

DFS1 Digital FiberScope

DFS1 Digital FiberScope with M210 OTDR

DFS1 Digital FiberScope

The DFS1 Digital FiberScope supports magnified video inspection of optical fiber connector end-faces during fiber optic cable and connector installation and maintenance. The ergonomically designed hand-held unit illuminates fiber end-faces and delivers magnified images via USB port to AFL's M-series OTDRs, C-series OTDRs and Certification Testers. FiberScope software displays, labels and stores captured images as part of connector installation and/or maintenance records.

A large adjustment knob permits easy focusing using real-time view. Once focused, a conveniently located trigger button signals the attached display device to capture the image for analysis and archiving. The scope's ergonomic shape and control locations support comfortable, single-handed operation.

The DFS1 is powered through the USB port, eliminating the need for an additional battery or AC power supplies. Electronic video inspection eliminates all danger of eye damage from active (lit) fibers carrying either visible or infrared wavelengths.

An extensive assortment of adapters supports inspection of a wide range of optical jumper cable connector ferrules and bulkhead adapters. Bulkhead adapter tips are available in multiple lengths as well as 60° angle. Connector adapters are available for PC, UPC or APC polished ferrules in 1.25 mm, 2.5 mm and other diameters. The DFS1 is available in three different kits which provide either PC/UPC adapters, APC adapters or no adapters.

AFL SimpleView™ Fiber Inspection Software is an application, which permits the DFS1 Digital FiberScope to be used with Windows® XP or Windows® 7 computers. AFL SimpleView software displays a live, high-resolution video image of the end-face of an optical fiber on the PC's display. SimpleView software is a free download www.AFLglobal.com.

Features

- Ergonomic, hand-held design
- Single-handed operation
- 400x magnification
- Fast, easy focus and display capture
- Video output via USB port to M- and C-series or user PC
- Powered from USB; no batteries required
- Extensive assortment of interchangeable fiber connector and bulkhead adapter tips
- Adapter tips easily changed; no tools required
- Use AFL SimpleView PC software with DFS1 to inspect connectors using a laptop PC

Applications

- Ideal for telco, broadband and enterprise applications
- Optical connector and bulkhead adapter inspection
- Display and analyze fiber end-face quality on C- and M-series
- Visually inspect fiber end-faces for damage or contamination impairing optical transmission
- Generate installation inspection records, associating captured digital photo with fiber ID

DFS1 Digital FiberScope with M700 OTDR

DFS1 Digital FiberScope Kit

DFS1 Digital FiberScope

Specifications [a]

PARAMETERS	VALUE
400X	Magnification
~400 µm x 300 µm	Field of View
0.5 µm detectable	Resolution
0°C to 50°C	Operating Temperature
-20°C to 70°C	Storage Temperature
Manual adjustment, 2 mm max travel	Focus
35 mm diameter x 175 mm length (without tip)	Dimensions
200 g	Weight
Blue LED	Light Source
USB port of M-series OTDRs or C-series OTDRS and Certification Testers	Power Supply

Note:

a. All specifications valid at 23°C ±2°C (73.4°F ±3.6°F) unless otherwise specified.

Ordering Information

The DFS1 is available in three different kits which provide either PC/UPC adapters, APC adapters, or no adapters. All kits include soft carry case, a storage box to hold up to six adapter tips, FiberScope display software update for M-series OTDRs (M200, M700) or C-series OTDRs and Certification Testers (C840, C850, C860, C880), and a quick reference guide.

DESCRIPTION	AFL NO.
DFS1 Digital FiberScope PC/UPC Inspection Kit includes: (1) DFS1-00-04X0MR DFS1 USB Digital FiberScope (1) DFS1-00-0001MR Universal 1.25 mm male PC adapter tip (1) DFS1-00-0002MR Universal 2.5 mm male PC adapter tip (1) DFS1-00-0003MR SC and FC female bulkhead adapter tip (1) DFS1-00-0004MR LC female bulkhead adapter tip (1) DFS1-04-0001MZ soft carry case for scope and adapters (1) 8500-05-0001MZ One-Click Cleaner SC, ST, FC (1) 8500-05-0002MZ One-Click Cleaner LC/MU (1) 1400-01-0093MZ 6-compartment adapter tip storage box (1) DFS1-001-00 DFS1 software update for M200, M210, M700, C840, C850, C860, C880	**DFS1-00-04XU**
DFS1 Digital FiberScope APC Inspection Kit includes: (1) DFS1-00-04X0MR DFS1 USB Digital FiberScope (1) DFS1-01-0002MR Universal 2.5 mm male APC adapter tip (1) DFS1-01-0003MR SC/APC and FC/APC bulkhead adapter tip (1) DFS1-01-0011MR SC/APC bulkhead adapter tip (1) DFS1-04-0001MZ soft carry case for scope and adapters (1) 8500-05-0001MZ One-Click Cleaner SC, ST, FC (1) 1400-01-0093MZ 6-compartment adapter tip storage box (1) DFS1-001-00 DFS1 software update for M200, M210, M700, C840, C850, C860, C880	**DFS1-00-04XA**
DFS1 USB Digital Fiber Inspection Kit without Adapters includes: (1) DFS1-00-004X0MR DFS1 USB Digital FiberScope (1) Soft carry case for scope and adapters (1) 6-compartment adapter tip box (1) DFS1-001-00 DFS1 software update for M200, M210, M700, C840, C850, C860, C880	**DFS1-00-04XN**
DFS1 FiberScope display software update for M200, M210, M700, C840, C850, C860, C880	**DFS1-001-00**

DFS1 Digital FiberScope

DFS1-00-0001MR


DFS1-00-0002MR


DFS1-00-0004MR


DFS1-00-0013MR

Ordering Information (continued)

DFS1 Accessories

DESCRIPTION	AFL NO.
Soft carry case for DFS1 Digital FiberScope and adapters	DFS1-04-0001MZ
6-compartment adapter tip storage box	1400-01-0093MZ
11-compartment adapter tip storage box	1400-01-0094MZ
One-Click Cleaner SC, ST, FC	8500-05-0001MZ
One-Click Cleaner LC/MU	8500-05-0002MZ
AFL SimpleView PC viewer software	Free download from www.AFLglobal.com

DFS1 Adapter Tips

The following table identifies commonly required adapter tips. Other adapter tips available. Please consult the factory for additional adapter tips and prices.

DESCRIPTION	AFL NO.
PC FERRULE CONNECTOR ADAPTER TIPS	
Universal 1.25 mm tip for PC ferrule connector	DFS1-00-0001MR
Universal 2.5 mm tip for PC ferrule connector	DFS1-00-0002MR
Universal 2.0 mm tip for PC ferrule connector	DFS1-00-0005MR
Slim 1.6 mm tip for PC ferrule (termini)	DFS1-00-0006MR
Slim 1.25 mm probe tip for LuxCis and termini	DFS1-00-0038MR
Slim 2.5 mm PC ferrule tip for ELIO and termini	DFS1-00-0039MR
Tip for ELIO 1.25 mm ferrule connector	DFS1-00-0008MR
SC/PC AND FC/PC BULKHEAD ADAPTER TIPS	
Tip for SC/PC and FC/PC bulkhead adapter	DFS1-00-0003MR
Short extended tip for SC/PC and FC/PC bulkhead adapter	DFS1-00-0010MR
Medium extended tip for SC/PC and FC/PC bulkhead adapter	DFS1-00-0011MR
Long extended tip for SC/PC and FC/PC bulkhead adapter	DFS1-00-0012MR
60° angled tip for SC/PC and FC/PC bulkhead adapter	DFS1-00-0013MR
60° angled tip for SC/PC bulkhead adapter	DFS1-00-0040MR
ST/PC BULKHEAD ADAPTER TIPS	
Tip for ST/PC bulkhead adapter	DFS1-00-0014MR
Short extended tip for ST/PC bulkhead adapter	DFS1-00-0015MR
Medium extended tip for ST/PC bulkhead adapter	DFS1-00-0016MR
Long extended tip for ST/PC bulkhead adapter	DFS1-00-0017MR
60° angled tip for ST/PC bulkhead adapter	DFS1-00-0018MR
LC/PC BULKHEAD ADAPTER TIPS	
Tip for LC/PC bulkhead adapter	DFS1-00-0004MR
Short extended tip for LC/PC bulkhead adapter	DFS1-00-0019MR
Medium extended tip for LC/PC bulkhead adapter	DFS1-00-0020MR
Long extended tip for LC/PC bulkhead adapter	DFS1-00-0021MR
60° angled tip for LC/PC bulkhead adapter	DFS1-00-0022MR

DFS1 Digital FiberScope

Ordering Information (continued)

DESCRIPTION	AFL NO.
E2000/PC BULKHEAD ADAPTER TIPS	
Short extended tip for E2000/PC bulkhead adapter	DFS1-00-0023MR
Medium extended tip for E2000/PC bulkhead adapter	DFS1-00-0024MR
Long extended tip for E2000/PC bulkhead adapter	DFS1-00-0025MR
MU/PC BULKHEAD ADAPTER TIPS	
Tip for MU/PC bulkhead adapter	DFS1-00-0026MR
Short extended tip for MU/PC bulkhead adapter	DFS1-00-0027MR
Medium extended tip for MU/PC bulkhead adapter	DFS1-00-0028MR
Long extended tip for MU/PC bulkhead adapter	DFS1-00-0029MR
60° angled tip for MU/PC bulkhead adapter	DFS1-00-0030MR
MTP/PC MULTI-FIBER ADAPTER TIPS (FERRULE & BULKHEAD)	
MTP/PC bulkhead adapter extended tip; includes base plus MTP/PC front end tip. Test ferrules using adapter tip with bulkhead adapter.	DFS1-00-0037MR
Front end tip for MTP/PC ferrule and bulkhead adapter	DFS1-00-0041MR
MTP/PC and MTP/APC bulkhead adapter extended tip kit; includes base plus MTP/PC and MTP/APC front end tips. Test ferrules using adapter tip with bulkhead adapter.	DFS1-00-0042MR
Multi-row MTP/PC bulkhead adapter extended tip; Includes base plus MTP/PC front end tip. Test multi-row MTP/PC ferrules using this adapter tip with multi-row bulkhead adapter	DFS1-00-0050MR
MISCELLANEOUS PC BULKHEAD ADAPTER TIPS	
Tip for LEMO 2.0 mm bulkhead adapter	DFS1-00-0031MR
Tip for LX.5/PC bulkhead adapter	DFS1-00-0032MR
Tip for 2.0 mm termini bulkhead adapter	DFS1-00-0033MR
Tip for 1.6 mm termini bulkhead adapter	DFS1-00-0034MR
Tip for ELIO 1.25 mm bulkhead adapter	DFS1-00-0036MR
APC TIPS	
Universal 1.25 mm tip for APC ferrule connector	DFS1-01-0001MR
Universal 2.5 mm tip for APC ferrule connector	DFS1-01-0002MR
Tip for SC/APC and FC/APC bulkhead adapter	DFS1-01-0003MR
Tip for SC/APC bulkhead adapter	DFS1-01-0011MR
Tip for LC/APC bulkhead adapter	DFS1-01-0004MR
Short extended tip for SC/APC bulkhead adapter	DFS1-01-0005MR
60° angled tip for SC/APC bulkhead adapter	DFS1-01-0006MR
Tip for E2000/APC bulkhead adapter	DFS1-01-0008MR
Tip for LX.5/APC bulkhead adapter	DFS1-01-0009MR
MTP/APC bulkhead adapter extended tip kit; includes base plus MTP/APC front end tip. Test ferrules using adapter tip with bulkhead adapter.	DFS1-01-0010MR
Front end tip for MTP/APC ferrule and bulkhead adapter	DFS1-01-0012MR

International Sales and Service Contact Information

Available at www.AFLglobal.com/Test/Contacts

Building Better Networks with ROGUE® | aeROS® Test Suite

ROGUE OLTS/Certification Modules with TURBO App

Features

- Quad single-mode/multimode, Dual single-mode or Dual multimode
- Hot-swappable into ROGUE cB1 or iB1 units
- Use with aeRos cloud-based workflow management software
- Integrated FOCIS Flex Inspection capability
- Simultaneous, dual-wavelength, bi-directional loss and length testing through Dual Engine technology
- Integrated Source, Power Meter and Visual Fault Locator (VFL)
- Built-in Encircled Flux compliance

Applications

- Tier 1 certification testing of premise/enterprise networks
- Dual-fiber, dual-wavelength, unidirectional or bi-directional OLTS testing
- Multi-fiber testing: loss, length, ORL, certification with one push of a button
- View results and generate reports anywhere, anytime using aeRos
- Integrated multi-wavelength, bi-directional MPO/multi-fiber testing using optional multi-fiber switch

Each ROGUE OLTS test module uses state-of-the-art technology to produce the most accurate results in the shortest amount of time. Modules contain bi-directional test ports as well as an optical power meter port and visual fault locator. All Multimode ports are Encircled Flux compliant as required by ANSI/TIA and ISO/IEC.

By pairing ROGUE modules with smart device apps, AFL's patent pending architecture enables users to control their test hardware directly from any Android smart device. ROGUE users can easily turn the OLTS solution into a full Tier 1 certifier simply by adding our TURBO Certification app.

Test configurations and instructions are pushed from AFL's aeRos cloud solution to the TURBO app to simplify the process for technicians. When the testing is complete, the results automatically and seamlessly synchronize with the cloud for real-time, on-site test data validation. No more waiting for the technician to return with a USB stick and manually transfer the data. With two bi-directional engines, you can even test both fibers in both directions on 2 wavelengths. All with the push of a button on your smart device.

If your network consists of multi-fiber cables and MPO connectors, simply add our Multi-fiber Switch to the ROGUE platform to perform bi-directional, dual-wavelength, multi-fiber testing. AFL's FOCIS Flex wireless inspection probe can also be added for integrated and seamless capture of fiber endface images.

Apps available via Google play store. ANDROID APP ON Google play

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Specifications[a]

OLTS	MULTIMODE	SINGLE-MODE
Emitter Type	LED	Laser
Wavelengths	850 ±30 nm; 1300 ±20 nm	1310, 1550 ±20 nm
Safety Class	Class I FDA 21 CFR 1040.10 and 1040.11, IEC EN60825-1: 2007-03	
Detector Type	InGaAs	InGaAs
Launch Condition	Encircled Flux Compliant[b]	N/A
Length Measurement Range	5 km	200 km (SMF28e)
Power Measurement Range	-3 to +60 dBm	-3 to +60 dBm
Output Power	-24/-23 dBm, 62.5/50 µm	-3 dBm, 9 µm
Stability[c]	±0.1 dB over 1 hour ±0.15 dB over 8 hours	±0.1 dB over 1 hour ±0.15 dB over 8 hours
Wave ID Transmit	Yes	Yes
Tone Generation	330 Hz, 1 kHz, 2 kHz	330 Hz, 1 kHz, 2 kHz
Input Connector	Interchangeable connector adapter (LC standard, SC, ST, FC optional)	

OPTICAL POWER METER (OPM)	
Calibrated Wavelengths	850, 1300, 1310, 1490, 1550, 1625, 1650 nm
Detector Type	InGaAs PIN, 2 mm diameter
Measurement Range	+3 to -70 dBm
Wave ID	Automatically synchronizes and measures 1, 2 or 3 λ Wave ID combinations
Range	+3 to -40 dBm @ 850 nm; +3 to -50 dBm @ 1300, 1310, 1550 nm
Tone Detect	Auto-detects 270, 330 Hz; 1, 2 kHz tones;
Accuracy	±5% @-10 dBm
Linearity	±0.1 dB (-3 to -40 dBm); ±0.25 dB (-40 to -50 dBm)
Measurement Units	Power in dBm, nW, µW, mW; Loss in dB; 0.01 dB resolution

VISUAL FAULT LOCATOR (VFL)	
Emitter Type	Visible red laser, 650 ±20 nm
Safety Class	Class II FDA 21 CFR 1040.10 and 1040.11, IEC EN60825-1: 2007-03
Output Power (nominal)	0.8 mW into single-mode fiber
Modes	CW and 2 Hz flashing

GENERAL	
Size	135 x 122 x 43 mm (5.4 x 4.8 x 1.7 in)
Weight	0.4 kg (0.9 lb)
Operating Temperature	-18°C to +50°C, 0 to 95% RH (non-condensing)
Storage Temperature	-30°C, to +60°C, 0 to 95% RH (non-condensing)
CE Safety & EMI/RFI	EN61010-1; EMI/RFI: EN55011, EN61326-1, GR-196-CORE 4.5.1
RoHS	2011/65/EU

Notes:

a. All specifications valid at 23°C ±2°C (73.4°F ±3.6°F) unless otherwise specified.

b. TIA-526-14-B,ISO/IEC 14763-3 and IEC 61280-4-1.

c. After 15 minutes warm-up.

Building Better Networks with ROGUE® | aeROS® Test Suite

Ordering Information

ROGUE OLTS Modules

ROGUE OLTS modules must be installed in either a ROGUE cB1 or ROGUE iB1 unit. Each module comes with a ROGUE OLTS Basic license allowing the OLTS module to be used in a ROGUE cB1 or iB1 and enabling basic aeRos OLTS functionality. Each module includes SC connector adapter for the OLTS/OLS ports and universal 2.5 mm adapters for the VFL and OPM (if installed) ports.

DESCRIPTION	AFL NO.
Module – Quad MM 850/1300 nm, SM 1310/1550 nm	RG-1100-Q01
Module – MM 850/1300 nm, Dual Engine	RG-1100-M01-D
Module – SM 1310/1550 nm, Dual Engine	RG-1100-S01-D

ROGUE Certification Kits

Each ROGUE Certification kit includes two (2) of each: ROGUE cB1 or iB1 unit, battery, adjustable carry strap, power supply, carry case, kickstand. Each kit also includes kit-specific ROGUE Modules and Turbo Certification license(s) (see table below). All kits include (1) One-Click Cleaner SC/2.5 mm and switchable test port adapters and test accessories (see table below).

ROGUE CERTIFICATION KITS	CONTAINS (e.a.)												AFL NO.
	ROGUE BASE		ROGUE MODULES			LICENSE	REFERENCE TEST CORDS		MATING ADAPTERS	TEST PORT ADAPTERS			
										OLS	OPM		
	cB1	iB1	QUAD SM/MM	DUAL ENGINE			SM	50 µM MM	SC	SC	SC	LC	
				SM	MM								
Quad SM/MM	2		2			2	2	2	2	2	2	2	RGK-CERT01
Dual Engine SM and MM	2			2	2	4	4	4	4	8	4	4	RGK-CERT02
Dual Engine SM	2			2		2	4		2	4	2	2	RGK-CERT03
Dual Engine MM	2				2	2		4	2	2	2	2	RGK-CERT04
Quad SM/MM		2	2			2	2	2	2	2	2	2	RGK-CERT01B1
Dual Engine SM and MM		2		2	2	4	4	4	4	8	4	4	RGK-CERT02B1
Dual Engine SM		2		2		2	4		2	4	2	2	RGK-CERT03B1
Dual Engine MM		2			2	2		4	2	2	2	2	RGK-CERT04B1

ROGUE OLTS Mobile Apps

Mobile Apps to configure, control and access results from your Android device are available for free download from Google Play.

AFL TURBO

ANDROID APP ON Google play

NOYES FIBER SYSTEMS ISO 9001 CERTIFIED

CE

RoHS 2002/95/EC

International Sales and Service Contact Information

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Building Better Networks with ROGUE® | aeROS® Test Suite

NEW

ROGUE iB1 Intelligent Base

The ROGUE iB1 intelligent base is the latest addition to the ROGUE modular family of test equipment. Ruggedly built to withstand testing in the field, the ROGUE iB1 is hand-held, portable, and comes with a unique kickstand design that allows for portrait or landscape viewing.

Like the ROGUE cB1 compact base, the iB1 intelligent base utilizes interchangeable and hot-swappable test modules for maximum flexibility. The WiFi and Bluetooth® enabled ROGUE iB1 also provides integrated inspection capabilities in addition to the ability to utilize AFL's MFS multi-fiber switches for testing MPO/Multi-fiber links.

The iB1 intelligent base utilizes an Android inspired, icon-based user interface and provides superior ease of use through a large, 7" high resolution color touchscreen display making for an ideal solution for applications where smart devices are prohibited or undesired. All ROGUE devices share test modules and application software such as the TURBO OLTS/Cert test app.

ROGUE iB1 Intelligent Base


ROGUE iB1 Base and Module

Features

- Flexible, open, and modular architecture
- Android inspired icon-based user interface
- Large 7" high resolution color screen
- Integrated Inspection and MPO multi-fiber test capable
- USB host and function ports
- Bluetooth and WiFi connectivity
- >8 hours Li-ion battery or AC power

Specifications[a]

GENERAL	
Size (H x W x D)	23.5 x 13.3 x 7.6 cm (9.25 x 5.25 x 3.0 in)
Weight	1.16 kg (2.56 lb)
Operating Temperature	-10 °C to +50 °C, 0 to 90 % RH (non-condensing)
Storage Temperature	-20 °C to +60 °C, 0 to 90 % RH (non-condensing)
Power	Rechargeable Li-Ion or AC power adapter
Battery Life	>8 hours continuous testing

Notes:
a. All specifications valid at 23°C ±2°C (73.4°F ±3.6°F) unless otherwise specified.

Ordering Information

DESCRIPTION	AFL NO.
ROGUE iB1 intelligent base with battery, power supply, and adjustable carry strap	RG-B01

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ROGUE cB1 Base with Module and smart device

ROGUE cB1 Base ROGUE Module

ROGUE cB1 Base Kick-stand

ROGUE cB1 Compact Base

ROGUE is the modular hardware platform that works seamlessly with aeRos and enables customers to pick and choose the functionality they need. Like aeRos, it is an open system built around you, for both CAPEX and OPEX savings. The ROGUE cB1 compact base is ruggedly built to withstand testing in the field. It is lightweight, portable, and comes with options for carrying and/or placing it on a surface, with a convenient carrying strap and a "kick-stand". The ROGUE cB1 works with most Android tablets and phones.

Features

- Flexible, open, and modular architecture
- Integrated with any Android device (iOS coming soon)
- Inspection capable
- USB host and function ports
- Bluetooth and WiFi connectivity
- >8 hours Li-ion battery or AC power
- Compatible with any ROGUE Module
- Hand-held, low profile, lightweight

Specifications[a]

GENERAL	
Size	23 x 11 x 7 cm (8.8 x 4.3 x 2.8 in)
Weight	0.9 kg (2 lb)
Operating Temperature	-10 °C to +50 °C, 0 to 90 % RH (non-condensing)
Storage Temperature	-20 °C to +60 °C, 0 to 90 % RH (non-condensing)
Power	Rechargeable Li-Ion or AC power adapter
Battery Life	>8 hours continuous testing

Notes:
a. All specifications valid at 23°C ±2°C (73.4°F ±3.6°F) unless otherwise specified.

Ordering Information

DESCRIPTION	AFL NO.
ROGUE cB1 compact base with battery, power supply, and adjustable carry strap	RG-C01
ROGUE cB1 compact base kick-stand	RGA-STND-01

International Sales and Service Contact Information

Available at www.AFLglobal.com/Test/Contacts

Building Better Networks with ROGUE® | aeROS® Test Suite

Multi-fiber Switch paired with ROGUE

Multi-fiber Switch

The density demands of today's networks are driving more demand for multi-fiber connectivity. As the adoption of multi-fiber connectors becomes more prevalent in data centers, the ability to test these types of connections accurately and quickly has become even more critical. AFL's Multi-fiber switch enables the testing of 12-fiber cables without the need to use a breakout cable. The switch allows you to utilize a single piece of test equipment to seamlessly cycle through all of the fibers in a connector regardless of polarity without having to disconnect and reconnect your test equipment making the testing of your network more efficient, saving you both time and money.

AFL's Multi-fiber switch is compatible with your existing OTDR, OLTS and Certification equipment.

Features

- Stand-alone operation as well as pairing with other testers including OTDRs
- Converts a single port module into a multi-fiber MPO tester
- Dual wavelength, single-mode or multimode
- SC port for connection to test equipment
- 12F MPO port for connection to MPO cable under test
- LCD screen to indicate fiber under test

Applications

- OLTS, OTDR, and VFL testing
- Efficient testing from 1-12 fiber MPO links
- Bi-directional testing without moving cables
- Measure bi-directional Link loss and length with single button AutoTest
- Verify polarity of MPO cables
- Certify MPO links to latest high speed industry standards including base 8 applications

Building Better Networks with ROGUE® | aeROS® Test Suite

Specifications[a]

OPTICAL		
Wavelength	1310/1550 nm, SM dual-wavelength	850/1300 nm, MM dual-wavelength
Insertion Loss	2.8 dB typ. – 3.3 dB max.	1.8 dB typ. – 2.3 dB max.
Optical Return Loss (ORL)	50 dB min.	—
Fiber Length	4.4 ± 0.5 m	
Optical Length Uniformity	± 0.15 m	
GENERAL		
Power	Li-Ion battery or USB interface	
Battery Life	1000 hours continuous operation	
Weight	0.3 kg (0.66 lb)	
Dimensions	12.9 x 6.9 x 3.1 cm (5.1 x 2.7 x 1.2 in)	
Operating Temperature	-20 °C to +60 °C, 0 to 90 % RH (non-condensing)	
Storage Temperature	-20 °C to +70 °C, 0 to 90 % RH (non-condensing)	

Notes:
a. All specifications valid at 23 °C ±2 °C (73.4 °F ±3.6 °F) unless otherwise specified.

Ordering Information

DESCRIPTION	AFL NO.
Multi-fiber Switch, 12 fibers SM, APC–SC, MPO fiber ring (non-pinned), soft case	MFS-12-SM-ASC-FR
Multi-fiber Switch, 12 fibers SM, APC–SC, soft case	MFS-12-SM-ASC
Multi-fiber Switch, 12 fibers SM, UPC–SC, soft case	MFS-12-SM-USC
Multi-fiber Switch, 12 fibers MM, UPC–SC, soft case	MFS-12-MM-USC

ROGUE MFS Certification Add-on Kits

Each ROGUE MFS (Multi-fiber Switch) Certification Add-on kit include (2) Multi-fiber Switches, (2) 6 in. USB-USB mini cables, (1) One-Click Cleaner MPO, (2) MFS carry holsters, (2) MFS kit carry cases plus test cords and mating adapters (see table below).

ADD-ON KIT	CONTAINS (ea.)				AFL NO.
	12F MFS SWITCH	TEST CORDS		MPO-MPO MATING ADAPTERS	
		SC-SC, 0.3 M.	12F MPO-MPO, 2 M.		
SM, SC/UPC-MPO/APC	(2) SM, SC/UPC-MPO/APC	(2) SM	(2) SM, type A unpinned (1) SM, type A pinned (1) SM, type A unpinned/pinned (1) SM, type B unpinned	(2) key Up / key Down	RGK-MPO-SM-CERT-ADD
MM, SC/UPC-MPO/UPC	(2) MM, SC/UPC-MPO/UPC	(2) MM	(2) OM4, type A unpinned (1) OM4, type A pinned (1) OM4, type A unpinned/pinned (1) OM4, type B unpinned	(2) key Up / key Down	RGK-MPO-MM-CERT-ADD

International Sales and Service Contact Information

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Encircled Flux (EF) Mode Controller

Technology improvements continue to push the envelope on multimode fiber optic networks. Ever increasing bandwidth requires tighter specifications (lower loss connectors, splices, Etc.). Shrinking loss budgets in turn place higher demands on loss test sets for accurate and repeatable measurements.

Encircled Flux (EF) testing requirements attempt to improve loss test set performance by placing defined parameters on optical test signals emitted from multimode loss test sources. AFL Mode Controller Jumpers (MCJs) are simple to use while ensuring the output test signal conforms to EF specifications regardless of the multimode test source used.

Features

- EF Compliant to TIA-526-14-B and IEC 621180-4-1
- Improves multimode measurement repeatability
- Optimized at 850 nm
- Compatible with 50/125 and 62.6/125 µm multimode test sets

Applications

- Ensures test source launch is EF Compliant (remove uncertainty)
- USE AFL MCJs to certify networks per today's EF requirements with legacy loss test sets.

Simple-to-use

Plug MCJ input into an LED multimode test source and you have an EF compliant output meeting TIA-568-14-B and IEC 621180-4-1.

Specifications

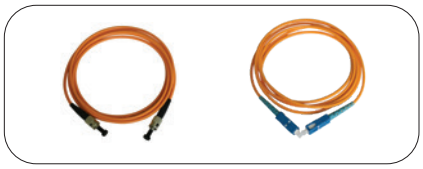
MAXIMUM POWER	10 mW
Insertion Loss @ 850 nm	< 3 dB 50/62.5 µm
Connectors	Reference Grade
Input cable length	0.5 m (19.7 in)
Output cable length	1.0 m (39.4 in)
Weight	50 g (0.11 lb)

Ordering Information

FIBER SIZE	CONNECTORS	AFL NO.
50/125 µm	FC to FC	8700-06-0001MR
62.5/125 µm	FC to FC	8700-06-0002MR
50/125 µm	SC to SC	8700-06-0003MR
62.5/125 µm	SC to SC	8700-06-0004MR
50/125 µm	SC to LC	8700-06-0005MR
62.5/125 µm	SC to LC	8700-06-0006MR

International Sales and Service Contact Information

Available at www.AFLglobal.com/Test/Contacts



Multimode Test Jumpers

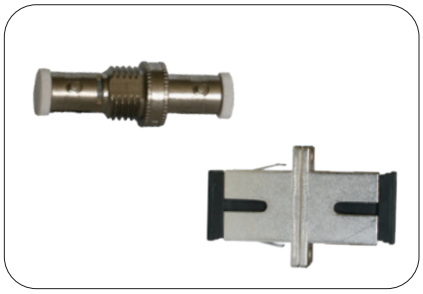
Multimode Test Jumpers (62.5/125 µm - 2 meters)

DESCRIPTION	AFL NO.
SC/SC	8700-00-0053MR
SC/ST	8700-00-0045
ST/ST	8700-00-0003

Single-mode Test Jumpers

Single-mode Test Jumpers (9/125 µm - 2 meters)

DESCRIPTION	AFL NO.
FC/FC	8700-00-0005
FC/ST	8700-00-0016
ST/ST	8700-00-0017
SC/SC	8700-00-0018
FC/SC	8700-00-0021
SC/ST	8700-00-0022
FC-APC/FC-UPC	8700-00-0032
SC-APC/FC-UPC	8700-00-0033
SC-APC/SC-UPC	8700-00-0034
LC/SC	8700-00-0046



Mating Adapters

Mating Adapters ("Bulkheads")

All adapters listed here meet single-mode mechanical tolerance requirements and therefore are recommended for both multimode and single-mode testing.

DESCRIPTION	AFL NO.
FC/FC	8400-00-0004MR
ST/ST	8400-00-0020
SC/FC	8400-00-0029MR
SC/SC	8400-00-0045MR
SC/ST	8400-00-0054

Mandrels

Mandrels for Multimode Link Testing

Mandrels are used to meet the transmit jumper mandrel-wrap requirements of TIA/EIA-568 B.3 (Section 7.1) when testing multimode links using an LED source.

DESCRIPTION	AFL NO.
Mandrel, 62.5 µm fiber, 3 mm jacket	5400-00-0201PZ
Mandrel, 50 µm fiber, 3 mm jacket	5400-00-0202PZ
Kit with two mandrels, 62.5 and 50 µm fiber, 3 mm jacket	5400-00-0900PZ

MFIS Multi-fiber Identification System

Features

- Easy to use
- Powered by common batteries
- One-hand operation
- Hand-held and lightweight
- Three-year calibration interval

Applications

- Multi-fiber network continuity assurance
- Various fan-out connectors for easy application
- Optimized for use on 250 µm, 900 µm and ribbon fiber
- Fiber identification on both Power Meter and MFI
- Multi-fiber network for FTTx deployment

Multi-Fiber network construction is time consuming, complicated, and often built by more than one contractor with mixed sets of documentation. However carefully the build-out is done, mistakes such as mislabeling can happen. How can the network operator have full confidence in their network continuity? AFL's Multi-Fiber Identification System (or MFIS) can provide 100% multi-fiber network continuity assurance and senior management peace-of-mind. The MFIS test system is a simple user-friendly way to verify network construction quickly, correctly, and efficiently.

MFT — Multi-Fiber Tracer

The MFT is a single connector (MTP), twelve-fiber source. It is designed around 12 discrete laser sources (1550 nm single-mode) with an MTP fan-out connector. It is packaged in a light and sturdy case. Single button operation is designed to quickly sending signals down the network for MFI (Multi-Fiber Identifier) and MFP (Multi-Fiber Power Meter) to provide automatic fiber identification.

MFI — Multi-Fiber Identifier

The MFI is designed to detect the presence of digitally coded laser light in optical fiber ribbon as used in FTTx deployments. The unit is activated by inserting the ribbon under test into the clamp and pulling the trigger, located on the underside of the MFI. The LCD displays the fiber identification number.

MFI detects the digitally coded data bursts transmitted by the MFT when the MFI is clamped on the ribbon fiber under test.

MFP — Multi-Fiber Power Meter

The MFP is designed to detect the presence of digitally coded laser light emitted from the MFT while in Fiber ID mode. It is also designed to be used as a regular power meter.

MFIS Multi-fiber Identification System

MFT Multi-Fiber Tracer Specifications[a]

OPTICAL	
Wavelength	1550 ±20 nm
Spectral Width	5 nm (maximum)
Output Power	+1.75 dBm ±1 dB peak into 9/125 µm fiber @ +25 °C
GENERAL	
Power Supply	2 X 1.5 V AA alkaline batteries
Battery Life (Alkaline)	@ +25 °C: 40 hours (minimum); 50 hours (typical)
Connectors	SM: MTP/MPO-APC (unpinned) 12-fiber connector.
Size (without boot) W x L x H	96 x 145 x 35 mm (3.8 x 5.7 x 1.4 in)
Weight	307 g (0.676 lb) without boot; 458 g (1.01 1b) with boot
Operational Temperature	-20 °C to +50 °C 90 % RH (non-condensing)
Storage Temperature	-30 °C to +60 °C 90 % RH (non-condensing)

MFI Multi-Fiber Identifier Specifications[a,b]

FIBER TYPE	PARAMETER	WAVELENGTH, SIGNAL	DETECTABLE SIGNAL RANGE
250 µm ribbon fiber, SMF28e+	Minimum data detect level (peak power, typical)	1550 nm, Data – Fiber ID	-35 dBm (typical)
	Insertion loss (typical/maximum)	1550 nm	2.5 dB/3.0 dB

OPTICAL	
Detector Type	InGaAs
Calibrated Fiber Size and Wavelength	250 µm @1550 nm (SMF-28/28E) ribbon fiber
Working Fiber Size	250 µm ribbon fiber
Data Detection Range	+2 to -35 dBm
GENERAL	
Display Type	Multi 7-segment LCD, 3 LEDs
Power Supply	2 X 1.5 V AAA, alkaline batteries
Battery Life (backlight off)	>10,000 operations[c]
Operation Temperature	-20 °C to +50 °C 90 % RH (non-condensing)
Storage Temperature	-30 °C to +60 °C 90 % RH (non-condensing)
Dimensions (H x W x D)	22 x 3.8 x 2.8 cm (8.5 x 1.5 x 1.1 in)
Weight	168 g (6 oz)

Notes:

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

b. All specs are typical unless otherwise noted. Actual results can vary by several dB depending on fiber type, coating material, jacket color, jacket hardness, active fiber position, and other factors.

c. Operation is defined as turning unit on by taking 1 reading in a 10 second period.

MFIS Multi-fiber Identification System

MFP Multi-Fiber Power Meter Specifications[a]

OPTICAL	
Detector Type	InGaAs
Detector Size	1 mm
OPM Mode	
Calibrated Wavelength	850, 1300, 1310, 1490, 1550, 1625 nm
Measurement Range	+10 to -75 dBm
Accuracy[b]	±0.25 dB
Resolution	0.01 dB
Measurement Units	dB, dBm, µW
Fiber ID Mode[e]	
Wavelength	1550 nm
Measurement Range[c]	+10 to -35 dBm
Accuracy[d]	±0.5 dB
Resolution	0.01 dB
Measurement Units	dB, dBm, µW

GENERAL	
Power	2 x AA batteries, accepts standard mini-USB power adapter
Adapter Caps	Order with one: 1.25 mm Universal, 2.5 mm Universal, FC, SC, ST, LC. Other connector adapters available
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. Accuracy measured at 25 °C and -10 dBm per N.I.S.T. standards.
c. Measured using MFT (Multi-Fiber Tracer) as the light source.
d. Accuracy measured at 25 °C with MFT (Multi-tiber Tracer).
e. Subject to change.

Ordering Information

DESCRIPTION	AFL NO.
Multi-Fiber Identifier, no case	MFI1-00-0900MR
Multi-Fiber Power Meter, no case	MFP1-12-0900MR
Multi-Fiber Tracer & Identifier with soft case	MFTI-12-BAS
Multi-Fiber Tracer & Power Meter with soft case	MFTP1-12-BAS
Multi-Fiber Tracer, Identifier, & power meter with soft case	MFTIP1-12-BAS
ACCESSORIES	
Cable, MPO/APC(M)-SC/APC, 12-fiber, SM, fan-out, 3 meters	8700-00-0198MR
Cable, MPO/APC (M) - SC/UPC, 12-fiber, SM, fan-out, 3 meters	8700-00-0200MR
Cable, MPO/APC (M) - LC/UPC, 12-fiber, SM, fan-out, 3 meters	8700-00-0201MR
One-Click Cleaner MPO (500+ cleans)	8500-05-0030MZ
One-Click Cleaner Mini-100 SC, ST, FC (100+ cleans)	8500-05-0005MZ

International Sales and Service Contact Information

Available at www.AFLglobal.com/Test/Contacts

OFI-BI and OFI-BIPM Series Optical Fiber Identifiers

OFI-BI OFI-BIPM

Features

- World class signal detection sensitivity
- Trigger lock, positive stop for optimum detection
- Integrated optical power meter option (-BIPM model only)
- 2.4" color touchscreen with backlight
- Optional ONU signal detect function - customer ONU wave profile must be provided

Applications

- Maintenance of fiber optic networks
- Troubleshooting network issues
- Identification of live fibers or trace fibers
- Power levels verification (–BIPM model only)

The OFI-BI and –BIPM are easy to use tools that determine if a fiber is live, the transmission direction and the relative core power on standard and bend-insensitive single-mode and multimode fibers. Its positive stop plunger mechanism provides the right pressure to assure proper detection while keeping loss to a minimum. The design assures traffic will not be interrupted and fibers will not be damaged.

The OFI-BI fiber identifier removes the need to access the optical fiber at a connection or splice point, eliminating the possibility of interrupting service to a valued customer. The –BIPM model provides an integrated optical power meter for verification of power levels during installation or troubleshooting activities. The universal head of these OFI's eliminates the need to change adapter heads for jacketed, coated or ribbon fibers, making them extremely easy to use in the field. The touchscreen features provide simple to follow setup and clear to read results.

OFI-BI and OFI-BIPM Optical Fiber Identifiers are warranted against defective material and workmanship for a period of one year from the date of delivery to the end user.

Ordering Information

DESCRIPTION	AFL NO.
BI Optical Fiber Identifier	OFI-BI
BI Optical Fiber Identifier with integrated Optical Power Meter. The kit includes one 2.5 mm Universal Power Meter Port Adapter, BIPM-00-25.	OFI-BIPM
OPTIONAL OFI-BIPM ADAPTERS (ordered separately)	
OFI-BIPM 2.5 mm Universal Power Meter Port Adapter	BIPM-00-25
OFI-BIPM SC Power Meter Port Adapter	BIPM-00-SC
OFI-BIPM FC Power Meter Port Adapter	BIPM-00-FC
OFI-BIPM ST Power Meter Port Adapter	BIPM-00-ST
OFI-BIPM LC Power Meter Port Adapter	BIPM-00-LC

TEST & INSPECTION

OFI-BI Series Optical Fiber Identifier

Specifications[a]

OPTICAL (OFI)	OFI-BI & OFI-BIPM MODELS						
Fiber Type	0.25 mm SM and MM fiber; SM and MM ribbon fiber (up to 12 ribbon fiber) 1.1 mm/1.5 mm/1.7 mm/2.0 mm/3.0 mm SM and jacketed fiber						
Optical Characteristic	Wavelength Range	900 to 1700 nm					
	Detectable Light Signals	CW, Traffic or 270 Hz/1 kHz/2 kHz Modulated light[b]					
	ONU Detector[c]; Operating Range[c]	G(E)-PON upstream signal; -7.5 to +9.0 dBm G(E)-PON downstream signal; -25.5 to -6.2 dBm VCAST downstream signal; -12.0 to +3.3 dBm B-PON upstream signal; -5.5 to +4.0 dBm B-PON downstream signal; -20.6 to -11.7 dBm						
Insertion Loss (IL) & Minimum Detect Level[d] at Normal, Fast or Fine operation mode	Wavelength	1310 nm		1550 nm		1650 nm	
	Fiber Type	IL (dB)	Normal/Fast/Fine (dBm)	IL (dB)	Normal/Fast/Fine (dBm)	IL (dB)	Normal/Fast/Fine (dBm)
	0.25 mm (R=30 mm)	0.2	-58/-53/-64	1.0	-67/-62/-73	2.5	-67/-62/-73
	0.25 mm (R=15 mm), Ribbon	0.1	-44/-39/-50	0.3	-57/-52/-63	1.0	-57/-52/-63
	0.5 mm (R=15 mm)	0.2	-58/-53/-64	1.0	-67/-62/-73	2.5	-67/-62/-73
	1.1 mm/1.5 mm Jacketed	0.3	-43/-37/-53	1.0	-55/-50/-61	2.5	-57/-52/-63
	1.7 mm/2.0 mm Jacketed	0.5	-22/-17/-28	2.0	-27/-22/-33	3.0	-27/-22/-33
	3.0 mm Jacketed	1.0	-20/-15/-25	3.0	-23/-18/-28	3.0	-23/-18/-28

POWER METER (OPM)	OFI-BIPM MODEL (Only)
Wavelength	1310 nm, 1490 nm, 1550 nm
Detectable Light Signal	CW, Traffic or 270 Hz/1 kHz/2 kHz Modulated light
Detector Sensitivity	+10 to -60 dBm at modulated tone; +10 to -40 dBm at CW or Traffic[b]
Accuracy[e]	±0.3 dB @1310/1550 nm; ±0.6 dB @1490 nm

GENERAL	OFI-BI & OFI-BIPM MODELS
Operation Conditions	-10 to +50 °C, 0 to 95 % RH (non-condensing)
Storage Conditions	-20 to +60 °C, 0 to 95 % RH (non-condensing)
Power Supply	2 x AA batteries; 1.2 to 1.5 V DC
Battery Life	8 hours[f]
Dimensions (W x H x D)	5.0 x 11.5 x 21.2 cm (1.9 x 4.5 x 8.3 in)[g]
Weight	230 g (8.1 oz) including battery

Notes:

a. All specifications valid at 25°C unless otherwise specified.
b. Traffic is a light signal modulated by a random data sequence.
c. ONU Signal detection requires waveform optimization. The Operating Range (Core Power) varies due to coating material, color, etc.
d. Typical value. The minimum detect level (core power) an the insertion loss varies due to coating material, color, etc.
e. Under the condition of temperature 25°C with input power at -20 dBm.
f. Using 2 Alkaline AA Batteries.
g. Except protruding part.

International Sales and Service Contact Information

Available at www.AFLglobal.com/Test/Contacts

Building Better Networks with ROGUE® | aeROS® Test Suite

aeRos

ROGUE cB1 Base with Module and smart device

ROGUE iB1 Intelligent Base

Key Features

- Cloud-based, efficient workflow management solution
- Seamless testing using a variety of smart devices
- Automatic sync of test configurations and results
- Real-time, on-site test data validation and progress tracking
- Centralized test management
- Customized reporting

aeRos — Cloud Workflow Management Solution

aeRos, AFL's new cloud solution, combines AFL's ROGUE open hardware platform with a cloud-based workflow management system that enables seamless and efficient communications and data management. aeRos simplifies coordination between the main office and field technicians by providing remote project setup, automatic data collection and reporting, as well as the real-time job monitoring that is independent of technology or location.

With aeRos, data is synchronized from ROGUE field test units automatically, making reporting easier and faster than ever. You'll never again lose data or delay reports, and you can avoid unnecessary truck rolls and costly re-testing by addressing challenges as they arise. That means no more waiting days or repeating tests. Through the aeRos project dashboard, users can quickly receive integrated results from multiple tests (certification, inspection, and OTDR).

With aeRos PRO, projects can be defined remotely with a variety of test activities, configurations, custom or industry pass/fail limits for single fiber or MPO multi-fiber links. Projects can be assigned to a single user or to multiple technicians. Changes to a project can be made remotely while in progress, and updates to all users can be assigned simultaneously through their smart devices.

AFL's cloud solution is available in two options: aeRos and aeRos Pro:

Features	aeRos	aeRos Pro
Multiple Languages	◆	◆
Data Transfer from ROGUE units	◆	◆
Browser based	◆	◆
Support/manage SW updates	◆	◆
View archived projects/data/results	◆	◆
OTDR, Certification, OLTS, Inspection	◆	◆
Basic Reporting	◆	◆
Advanced/Custom Reporting		◆
Remote Project Setup/Management		◆
Real-time Project Status/Monitor		◆
Active User Management		◆
Integrate Competitive Data/Files		◆
Data storage	Limited	Unlimited

aeRos Software Licensing

DESCRIPTION	AFL NO.
aeRos Basic (1) account	aeRos
aeRos PRO (1) account, 1 year subscription	aeRos-PRO-YRL
aeRos PRO (1) account, lifetime subscription	aeRos-PRO-LFT

FOLS FIBER OPTICS LAN SECTION · BICSI CORPORATE MEMBER · FTTH COUNCIL

International Sales and Service Contact Information

Available at www.AFLglobal.com/Test/Contacts

SC/ST/FC MU/LC ODC MT-RJ

One-Click® Cleaner Series

U.S. Patent Numbers 7,212,719 and 8,087,118

Features

- Cleans connectors on jumpers and in adapters
- Effective on a variety of contaminates including dust and oils
- Ergonomic, comfortable design with single action cleaning
- Each clean is performed with fresh cleaning tape
- Compliant with EU/95/2002/EC Directive (RoHS)
- Several models available for a variety of single and multi-fiber connectors
- Low cost per clean

The Original One-Click Cleaner

The One-Click Cleaner is an easy-to-use option for cleaning connectors on jumpers and in adapters. Simply insert the One-Click Cleaner into an adapter and push until an audible "click" is heard. The One-Click Cleaner uses the mechanical push action to advance an optical grade cleaning tape while the cleaning tip is rotated to ensure the fiber end-face is effectively, but gently cleaned. The One-Click Cleaner is a must-have for field technicians. Small enough to fit in a shirt pocket and a great addition to cleaning kits. Save your wrist – no more twist!

Rugged ODC Version

With the increasing demand of Outdoor Connector (ODC) plug and socket styles, the ODC One-Click Cleaner, which cleans the ferrules in ODC plug, socket and 1.25 mm ferrules, is an essential cleaning tool for WiMax Base Station, Fiber-to-the-Antenna, Broadcasting and Surveillance Video technicians.

Compact One-Click Cleaner Mini

Offering the same technology and performance as the original, the One-Click Cleaner is now available in a smaller, more compact size, which allows for cleaning of connectors in tighter places. Its smaller size also makes it a great addition to test kits and cleaning kits. The One-Click Mini that is offered by AFL as a low cost solution with 100+ cleans per unit is now also available with same 500+ cleans per unit as the standard One-Click. The One-Click Mini is an effective, easy-to-use cleaning solution for SC, ST, FC, LC, MU and TFOCA connectors.

One-Click MT-RJ

The One-Click MT-RJ (Mechanical Transfer Registered Jack) is designed to clean both fibers of this small form factor connector. It complies with the EU/98/2002/EC RoHS directive and accommodates both male (pinned) and female (socketed) connectors with PC/UPC ferrules.

Mini-100 SC, ST, FC

Mini-100 MU/LC

Mini-500 SC, ST, FC

Mini-500 MU/LC

FOLS FIBER OPTICS LAN SECTION · BICSI CORPORATE MEMBER · FTTH COUNCIL

D-LC Ultra 2.5

MPO MPO-16

One-Click® Cleaner Series

One-Click Ultra Cleaner 2.5

The One-Click Ultra Cleaner 2.5 has an enlarged cleaning area to clean more of the connector end-face. Cleaning up to a 2 mm diameter area of the connector end-face, the One-Click Ultra Cleaner 2.5 is a superior cleaner for SC, ST, and FC connectors.

One-Click Cleaner D-LC (Duplex LC)

Reduce cleaning time with the new One-Click Cleaner D-LC. Offering the same performance and easy-to-use one-click technology as the original, the One-Click Cleaner D-LC cuts cleaning time in half by effectively cleaning both LC connectors of a duplex LC at one time. 500+ duplex LC cleans per cleaner (1000+ LC connector cleans).

One-Click Cleaner MPO

Designed to clean MPO/MTP® multi-fiber connectors used in Data Centers and other high density optical networks, the One-Click Cleaner MPO is a revolutionary push-type cleaner, which simplifies cleaning of the ferrule end-face of both MPO/MTP exposed connectors and connectors in adapters.

One-Click MPO-16

The One-Click MPO-16 is intended for the cleaning of 16-fiber MPO/MTP connectors, both pinned (male) and socketed (female). MPO-16 is used with IEEE 802.3bs 400G trunk cabling with each fiber carrying 25 Gbps data signals (400GBASE-SR16 for example), among other applications.

Ordering Information

DESCRIPTION	AFL NO.
One-Click Cleaner SC, ST, FC (500+ cleans)	8500-05-0001MZ
One-Click Cleaner MU/LC (500+ cleans)	8500-05-0002MZ
One-Click Cleaner ODC, outdoor connector (500+ cleans)	8500-05-0004MZ
One-Click Cleaner Mini-100 SC, ST, FC (100+ cleans)	8500-05-0005MZ
One-Click Cleaner Mini-100 MU/LC (100+ cleans)	8500-05-0006MZ
One-Click Cleaner Mini-500 SC, ST, FC (500+ cleans)	8500-05-0009MZ
One-Click Cleaner Mini-500 MU/LC (500+ cleans)	8500-05-0010MZ
One-Click Ultra Cleaner 2.5 (enlarged cleaning) SC, ST, FC (500+ cleans)	8500-05-0007MZ
One-Click Cleaner D-LC, Duplex LC (2 x 500+ cleans)	8500-05-0008MZ
One-Click Cleaner MPO (500+ cleans)	8500-05-0030MZ
One-Click Cleaner MPO-16 (500+ cleans)	8500-05-0013MZ
One-Click Cleaner MT-RJ (500+ cleans)	8500-05-0031MZ

International Sales and Service Contact Information

Available at www.AFLglobal.com/Test/Contacts

FCC3 Debris Destroyer® Fiber Cleaning Pen

FCC3 Debris Destroyer is a cleaning pen for fiber optic connectors and bare fiber. Use the Debris Destroyer to moisten cassette cleaners such as CLETOP-S and OPTIPOP-R, or FiberWipe™ and CleanWipe™, as well as One-Click® cleaners for the wet cleaning of tough end-face contamination challenges.

Safety Data Sheet (SDS): AFLglobal.com/FCC3

Features

- Removes dirt, dust, oils, and other debris
- Eliminates electrostatic charge
- Designed for use with One-Click cleaners, FiberWipes, CleanWipes
- Perfect for field use – easy to carry
- Safe with plastic components

Applications

- Cleaning fiber optic connector end-faces and bare fiber
- Wet to dry cleaning with wipes and One-Click cleaners
- Ideal for bare fiber preparation prior to fusion splicing
- General spot cleaning

Ordering Information

DESCRIPTION	AFL NO.
Debris Destroyer Fiber Cleaning Pen, 9 grams/0.32 oz.	FCC3-00-PEN1

The Leader in Fiber Optic Training

Since 1987, the Light Brigade, AFL's training division, has trained more than 45,000 technicians, installers, engineers, and designers from a wide variety of industries: telephony, broadband cable, utilities, media broadcast, industrial, manufacturing, mining, government, aerospace, along
with various branches of the military.

Whether your application is voice, video, and/or data, or you are a service provider, contractor, or end user, The Light Brigade can provide critical training for your personnel to lower operating costs and improve installation efficiency.

Instructors

Our professional instructors and technicians are technically skilled and have a variety of real world practical experience in all aspects of fiber optics. With experience in applications such as communications, signaling, security, and network control, our instructors provide valuable insight into the design, installation, and operation of state-of-the-art fiber optic systems.

Hands-on Training

Extensive hands-on training sessions help our attendees to learn fiber optics by doing rather than watching. Attendees spend class time building, testing, and troubleshooting an actual fiber optic system. In each of our courses, the ratio of students to instructors during the hands-on sessions assures that there is direct personal interaction and attention to each student.

Technology-based

In our training classes, you receive an objective viewpoint, not a sales pitch. We teach fiber techniques that are applicable to any product, and select the best available equipment and supplies from many different manufacturers. You can choose to develop your skills using our state-of-the-art equipment and accessories, or bring your own to learn how to use it more effectively.

Relevant

Our course materials are constantly updated to stay in step with current and emerging technologies. All of our materials and techniques are written and taught based on the latest standards, recommendations, and codes from ANSI, ITU, TIA/EIA, IEEE, IEC, Telcordia, MSHA, NEC, NESC, and others.

Continuing Support

To assure continued long-term support, we offer technical assistance to our class attendees. If you have a question or need help after the class is over, our staff is there to help.

Certification Options

Light Brigade Certificate of Completion

Everyone who completes one of our courses will receive a Light Brigade Certificate of Completion, signed by the course instructor. This certificate specifies the content and total number of instructional hours for both the classroom and hands-on portions and is traceable to the class attended.

Independent Certification

Many of our courses are eligible for independent certifications through third-party industry organizations and groups. These certifications are typically progressive levels and show competency in hands-on skills and technical knowledge. See each individual course for more information.

Third-party Credits

BICSI Continuing Education Credits (CECs), SCTE Recertification Units (RUs), IMSA Technical Advancement Recognition Points (TARPs), InfoComm RUs, and NCTI Master Technician credits are available for many of our courses and Staff Development DVDs.

	Certificate of Completion	ETA FOI	ETA FOT-OSP	ETA FTTA-FOT	FTTH Council CFHP	FTTH Council FTTx OSP Design	MSA Technician I	IMSA Field Technician II	IMSA Design Technician II	IMSA TARPs	UTC Level 1 Technician	UTC Level 2 Designer	UTC Level 3 Adv. Designer	BICSI CECs	SCTE RUs	NCTI Master Technician	InfoComm RUs
Fiber Optics 1-2-3	•	•												•	•	•	
Advanced Skills	•		•											•	•		
Emergency Restoration	•														•		
Certified Fiber to the Home Professional (CFHP)	•				•										•		
FTTx for Installers and Technicians	•		•											•	•		
Fiber OSP Design	•					•											
Fiber Characterization	•														•		
Fiber Optics for Utilities	•										•	•	•				
Fiber to the Antenna	•			•						•							
Fiber Optics for ITS, Traffic, Fire Alarm & Communication Systems	•						•	•	•	•							
Fiber Optics for Pro A/V and Broadcast	•																•
Fiber Optics for Oil/Gas	•	•															
Fiber Optics for Mining Applications	•	•															
Fiber Optics for Enterprise Networks	•													•			
Staff Development DVDs	•	•													•		

Fiber Optics for Enterprise Networks

Course Description

This three-day, instructor-led course provides the practical knowledge and hands-on skills training required to properly design, install, and maintain fiber optic premises and data center networks. Attendees will use the latest fiber optic technology and equipment to splice, connectorize, test, and troubleshoot multimode and single-mode fiber networks in order to increase efficiency and reliability, as well as reduce costs and downtime.

Audience

Installation contractors and end users involved in building and maintaining premises networks and data centers.

Prerequisite

Fiber Foundations recommended, but not required.

Certification

ETA Fiber Optic Technician — Inside Plant

This certification is designed for those working with multimode and single-mode fiber in enterprise and data center applications. ETA certification is valid for four years.

BICSI: 20 ITS CECs

Course Fees*

Three-day course $1500

Discounts

- 10% discount for multiple attendees from the same organization.
- 10% discount for USTelecom members.
- 15% discount for UTC and FBA members.
- 25% discount for previous attendees of our three or four-day courses.

* Receive $150 off list price by registering more than 14 days prior to the start of class. Classes booked 14 days or less will be charged full list price. Book early and save!

Classroom (1.5 days)

Introduction
Applications
Standards and Codes
Fiber Optic Transmission Theory
Multimode Optical Fibers
Single-mode Optical Fibers
Optical Cables
Fiber Management Products
Connectors
Fiber Splicing
Installation
Test Equipment
Testing
System Design
Safety

Hands-On (1.5 days)

Station #1 – Cable Preparation
- Tight Buffered Cable Preparation
- Loose Tube Cable Preparation
- Fanout Kit Installation
- Wire Mesh Pulling Grips
- Pre-terminated Cable Protection

Station #2 – Connectorization
- Field-installable Connectors
- Splice-on Field-installable Connectors
- 900-micron Multimode Jumpers
- Attenuation Measurement

Station #3 – Fusion Splicing
- Cleaning and Fiber Cleaving Process
- Attenuation Measurement

Station #4 – Testing
- Single-mode Insertion Loss Testing
- Multimode Insertion Loss Testing
- Single and Multifiber Connector Testing
- Connector Inspection
- OTDR Testing
- Measure Optical Return Loss
- Compute a Link Loss Budget

For complete schedule or to register for course, visit www.lightbrigade.com

FTTx for Installers and Technicians

Course Description

This four-day instructor-led course is designed to provide useful technical knowledge of iber optics relating to FTTx applications, as well as the skills needed to install and test the physical layer for active Ethernet and passive optical networks (PON).

Audience

Beginner and experienced technicians, or supervisors

Prerequisite

Fiber Foundations recommended, but not required

Certification

ETA Fiber Optic Technician — Outside Plant

ETA certification is valid for four years.

BICSI: 30 ITS CECs

Classroom (2 days)

FTTx Methodology
Optical Fiber and Cable
Termination Options
Splitters
OLTs and ONTs
Panels, Closures, and Cabinets
Installation, Maintenance, & Restoration

Hands-On (2 days)

Cable, Closure, and Panel Preparation
Mid-entry Practices
Inline and Pigtail Splicing
OTDR Testing and Signature Interpretation
Testing Splitters
Testing OLT and ONT Power Levels
Troubleshooting

Course Fees*

Four-day course & e-manual $1700
Optional ETA FOT0OSP exam..... $150
Printed manual available for purchase

Discounts

- 10% discount for multiple attendees from the same organization.
- 10% discount for USTelecom members.
- 15% discount for UTC and FBA members.
- 25% discount for previous attendees of our three or four-day courses.

* Receive $150 off list price by registering more than 14 days prior to the start of class. Classes booked 14 days or less will be charged full list price. Book early and save!

For complete schedule or to register for course, visit www.lightbrigade.com

LIGHT BRIGADE®

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

206.575.0404 • 800.451.7128 • www.lightbrigade.com

AFL

EDUCATION/TRAINING

LIGHT BRIGADE®

Fiber Optics 1-2-3

Course Description

This four-day class has been developed with 16 hours of classroom and 16 hours of hands-on skills labs to provide practical understanding and skills required to properly design, install, and maintain fiber optic networks. Applicable for fiber optic communications systems in Telco, Broadband, and Premises (LAN) applications. Students will use the latest fiber optic technology and equipment to learn how to splice, connectorize, test, and troubleshoot 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

Four days – Classroom lecture and hands-on exercises
Two days – Classroom only. Ideal for designers and planners

Certifications

ETA Fiber Optic Installer

Complete the four day Fiber Optics 1-2-3 course and successfully pass the ETA Fiber Optic Installer (FOI) certification exam. The FOI is designed for those working with both multimode and single-mode fibers.

Course Fees

- Four-day course $1650
- Two-day course $900
- Optional ETA Fiber Optic Installer (FOI) Exam $150

GSA#: GS02F0012R

Classroom (16 Hours)

PHYSICAL PLANT

Introduction to Fiber Optics
- Standards
- Terminology

Fiber Theory/Optical Fibers
- Single-mode
- Multimode
- New Generation Fibers

Cables
- Indoor/Outdoor
- Special Types

Connectors
- Specifications
- Single-mode Connectors
- Multimode Connectors
- SFF Connector Styles
- Connectorization
- Reflection Issues
- Attenuators and Terminators

Splicing
- Fusion
- Mechanical
- Cleaving Tools

Cable Management
- Patch Panels
- Splice Panels
- Distribution Panels
- LAN Panels
- Splice Closures
- Hubs and Pedestals

DISCIPLINES

Installation
- Outside Plant
- Underground / Aerial
- Premises / LAN

Test Equipment and Testing
- Theory
- Operation and Application
- Documentation

Restoration/Maintenance
- Planning
- Outside Plant
- Premises
- Emergency Restoration

Safety

Design
- Sources / Detectors
- Repeaters / Amplifiers
- Optical Amplifiers
- Passive Devices
- WDM / DWDM / CWDM
- System Design
- Loss Budgets
- Integration
- Standards

Systems Overview
- Topologies
- Ethernet
- HDTV / CATV / CCTV
- SONET / ATM
- FTTx/PON

Hands-On (16 Hours)

Safety Meeting

Station #1 – Splicing
- Fusion / Mechanical / Pigtail
- Fiber Handling
- Fiber Cleaving

Station #2 – Connectorization
- Multiple Bonding Methods
- Visual Inspection / Cleaning
- Cable Assembly Testing

Station #3 – Cable Preparation
- Loose Tube Cables
- Distribution / Breakout Cable
- Patch Panel Preparation
- Splice Closure Preparation
- Mid-Entry Practices

Station #4 – OTDR Operation
- Acceptance Testing
- Span Acceptance / Splice Loss
- Reflection Testing
- Emergency Restoration
- Troubleshooting
- Documentation / Records

Station #5 – Optical Loss Testing
- Link Loss Measurement
- Transmit and Receive Power
- Identifiers and Tracers
- Reflection Testing
- Variable and Fixed Attenuators
- Documentation / Records

CERTIFICATION TESTING

LIGHT BRIGADE®

Advanced Hands-on Training

Course Description

This four-day course has been developed with 8 hours of classroom training and 24 hours of hands-on skills exercises focused on specific fiber optic disciplines. Developed as the "next level" of training, this class teaches more advanced knowledge and skills to students that have already had formal introductory classes. Course material is predominantly based on technician fiber installation skills technology and includes content applicable for FTTx and DWDM systems.

Course Level

Intermediate to expert. This series of classes requires basic knowledge of fiber optic theory and terminology, as well as field experience, equivalent formal training such as the Fiber Optics 1-2-3 course, or viewing the Light Brigade Staff Development DVD set.

Course Options

Four days – Classroom lecture and hands-on exercises.

Certification

ETA Fiber Optic Technician—Outside Plant

Complete all four days of the Advanced Hands-on Training course and pass the ETA Fiber Optic Technician—Outside Plant (FOT-OSP) certification exam. The FOT-OSP is designed for those installing outside plant single-mode fiber optic networks.

Course Fees

- Four-day course $1650
- Optional ETA FOT-OSP Exam $150

GSA#: GS02F0012R

Classroom (8 Hours)

Introduction to Fiber Optics
- Introduction
- Terminology
- Fiber Optic Theory
- Attenuation, Dispersion, and Reflectance
- Technician Responsibilities
- Skill Requirements

Fiber Optic Cable Preparation
- Optical Cable Structures
- Optical Cable Types
- Cable Installation
- Splicing and Mid-entries
- Cable Management

Splicing and Terminations
- Connector Types
- Single-mode Termination
- Connector Polishing
- Cleaning and Inspection
- Splicing and Mid-entries
- Splice Protection

Optical Loss Testing
- Transmitters and Receivers
- Fiber Optic Testing
- Troubleshooting Processes
- Loss Budgets

OTDR Theory and Operation
- How the OTDR Works
- Reading OTDR Signatures
- Index of Refraction
- ORL and Reflectance
- Acceptance Testing
- Restorations

Hands-On (24 Hours)

Safety Meeting

Station #1 – Cable Preparation
- Cable Preparation
- Mid-entry Practices
- Closure Preparation

Station #2 – Splicing
- Fusion Splicing
- Ribbon Splicing
- Mechanical Splicing
- Pigtail Splicing
- No-polish Terminations
- FuseConnect Terminations
- Connector Testing
- Connector Inspection

Station #3 – Loss Testing
- Optical Loss Testing
- Building LAN Panels
- Span Testing
- Testing Tx Power Levels
- Testing Rx Power Levels
- Troubleshooting
- Reflection Testing
- ORL Testing

Station #4 – OTDRs
- Setting up the OTDR
- Adjusting the Display
- Fusion Splice Testing
- Mechanical Splice Testing
- Reflection Testing
- Span Restoration

Review and Q&A

CERTIFICATION TESTING

Learn the latest procedures and techniques to deploy current Data Center technology while minimizing recovery and restoration time as well as increasing productivity.

BICSI-Recognized AFL Training Courses

AFL offers three training courses recognized by BICSI for the BICSI Continuing Education Credit (CEC). The courses are perfect for technicians, engineers, consultants and project managers looking for a comprehensive understanding of fiber optic network testing and documentation. Each course offers BICSI continued education credits toward your BICSI credentials.

Tier 1 and Tier 2 Testing, Troubleshooting and Documentation Training (2 BICSI ITS CECs)

The Tier 1 and Tier 2 Testing, Troubleshooting and Documentation presentation covers the why, the what and the how to of Tier 1 and Tier 2 testing. Knowing why we test fiber networks, and what tests to perform on fiber networks, is just as important for you as knowing the nuts and bolts of how to test a network. This fundamental understanding will give you insight into constructive testing and innovative problem resolution. Finally, a thorough understanding of how to document and report test results completes the tech's knowledge of Tier 1 and Tier 2 testing, troubleshooting and documentation.

Data Center Optical Fiber Field Testing Training (1 BICSI ITS CEC)

This course covers the important challenges presented by today's Data Centers. A knowledge of the test standards required along with the proper test equipment to support that requirement will help ensure that today's Data Centers will operate as designed. A review of Tier 1 and Tier 2 testing will help technicians understand the limitations of the optical light source (OLS) and optical power meter (OPM). With fiber lengths in Data Centers running only hundreds of feet in length, it's important to understand the need for a Data Center OTDR to be able to resolve fiber runs that may only be 1-2 meters in length.

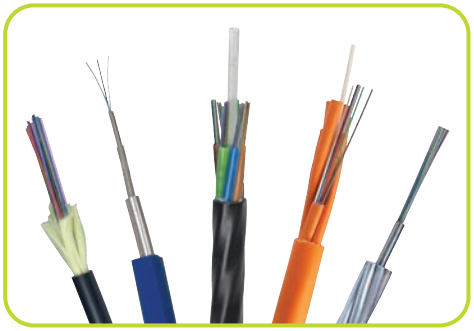
Understanding OTDR Testing (1 BICSI ITS CEC)

Today's field technician needs to have a comprehensive understanding of OTDRs in order to troubleshoot and document fiber optic installations. This presentation provides a thorough understanding of how OTDRs work and how to use them effectively to ensure optimum performance in networks. Starting with the basics of cleaning and visual inspection, it takes the technician through OTDR theory and limitations, how to select launch and receive cables (and why), setting up your OTDR, and how to interpret your results.

* For more information or schedule a training course please contact your AFL Regional Sales Manager.

Please contact your AFL Sales Representative for information about our other products or services.

FIBER OPTIC CABLE (OPGW, ADSS, Loose Tube)



FIBER OUTSIDE PLANT EQUIPMENT

FUSION SPLICING SYSTEMS AND ACCESSORIES

TEST AND INSPECTION EQUIPMENT

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