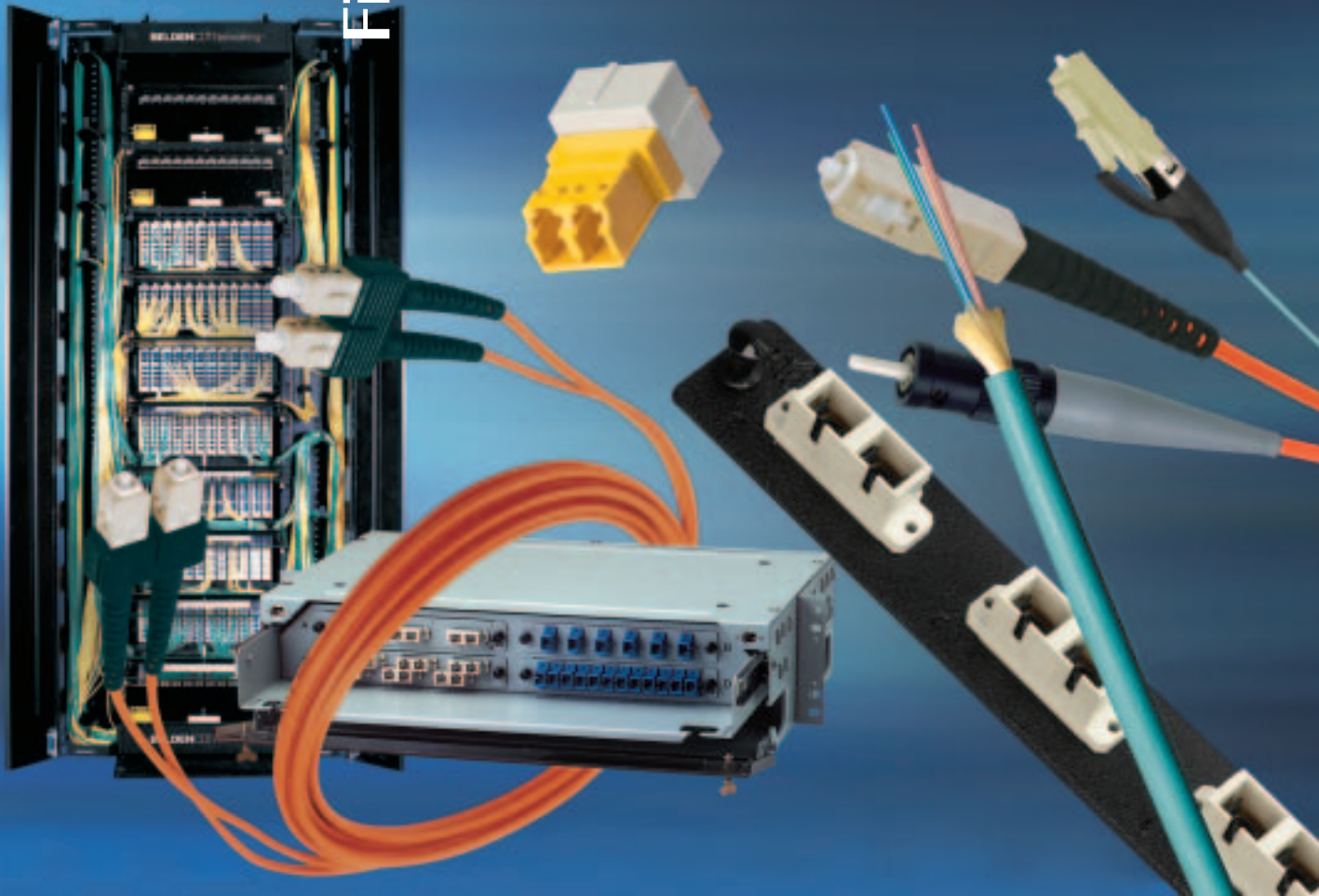**Belden CDT**

Fiber Solutions Catalog

BELDEN IBDN™ FIBER*EXPRESS*®

SYSTEMS, CABLE AND

CONNECTIVITY PRODUCTS

BELDENCDT

"The cable plant is the foundation of the entire network... It's like building a house. If you scrimp on the foundation, you put the entire house at risk."

The GARTNER GROUP
Independent Industry Analysts and Consultants

Preparing for the Future with Belden IBDN Fiber*Express* Solutions

Belden CDT Networking has been involved in the development of optical fiber components since 1972 — evolving to its present status as an international supplier of high quality, cost-effective optical fiber cabling systems.

The Belden IBDN Fiber*Express* Solution is the culmination of Belden CDT Networking's experience in the optical fiber arena, offering users a complete, high-performance, end-to-end cabling system that supports both centralized and fiber-to-the desk (FTTD) topologies, as well as in-building or campus backbone cabling configurations.

The Belden IBDN Fiber*Express* Solution is, however, much more than an assemblage of top-performing products. It represents a whole new approach to the methodology of fiber optic cabling, i.e., Fiber*Express* systems are unique in their ability to offer both superior performance and a more cost effective, speedier and less complex installation process than traditional fiber optic cabling systems.

Belden CDT Networking developed the Fiber*Express* Solution to assure the smooth operation of your network and to provide for efficient network management — while continually reducing your total cost of ownership and preparing your system for the future.
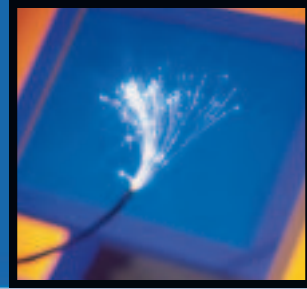
Offering Three Outstanding, Cost-effective Solutions

FiberExpress Solutions consist of a full range of multimode and singlemode cables, connectivity hardware, patch cords, cable assemblies, field connectors and a number of work area outlets. These solutions are characterized as fiber-to-the-desk systems, pre-terminated systems and in-building or campus backbone systems.

FiberExpress Fiber-to-the-Desk (FTTD) Systems

Whether for horizontal distribution or centralized cabling, FiberExpress solutions include a wide range of products such as work area outlets and large capacity fiber management products that make the FTTD application a reality.

FiberExpress Pre-terminated Systems

The ultimate in quick, easy and reliable optical networking is the FiberExpress Pre-terminated System. All components are factory connectorized and fully tested to ensure fast deployment and tremendous reliability. This flexible solution can be deployed for traditional LAN systems, as well as in specialized applications such as Data Centers and Storage Area Networks.

The FiberExpress Pre-terminated System is also well-suited for temporary situations, such as disaster recovery installations or convention center services.

Belden IBDN FiberExpress SYSTEM MATRIX	FIBER CHANNEL TOPOLOGY			
	FIBER-TO-THE-DESK (FTTD) & CENTRALIZED FIBER	FiberExpress PRE-TERMINATED SOLUTIONS*	FIBER BACKBONE (Campus)	FIBER BACKBONE (In-Building)
FiberExpress CABLES				
Breakout & Distribution Cable Series: MM & SM	●			●
Interconnect Cable Series: MM & SM	●			
Loose Tube (Campus) Cable Series: MM & SM			●	●
MPO Cable Assemblies: MM & SM	●	●	●	●
CROSS-CONNECT HARDWARE IN THE TELECOM ROOM				
FiberExpress Manager With FiberExpress Manager Connector Modules: MM & SM	●	●	●	●
FiberExpress Rack Mount Patch Panel with Universal Adapter Strips: MM & SM	●		●	●
FiberExpress Wall Mount Patch Panel with Universal Adapter Strips: MM & SM	●		●	●
FiberExpress Bar: MM & SM	●	●	●	●
PATCH CORDS IN THE TELECOM ROOM AND AT THE WORK AREA				
FiberExpress Patch Cords: MM & SM	●	●	●	●
OUTLETS AT THE WORK AREA				
MDVO® Multimedia Outlets with MDVO Multimedia Modules	●			
MediaFlex® Outlets with MediaFlex Multimedia Inserts	●			
FiberExpress Bar: MM & SM (as MUTOA)	●	●		
FIBER CONNECTIVITY				
Optimax® Connectors: MM & SM	●		●	●
Epoxy Field Mountable Connectors: MM & SM	●		●	●
Fiber Pigtails: MM & SM	●		●	●

MM = Multimode • SM = Singlemode

*FiberExpress Pre-terminated Solutions provide simple-to-install, high-performance fiber channels through custom length, high precision factory terminated cables and matching optical connectivity components.

Offering Three Outstanding, Cost-effective Solutions *(cont.)*

Fiber*Express* Backbone Systems

An inadequate or improperly installed network backbone can severely limit overall network performance and, therefore, your business' productivity and efficiency.

In today's environment, cabling network backbones are typically designed using a combination of both multimode and singlemode fiber cables. Configuring the right fiber backbone for your unique premise or campus application is a complex process. Fortunately, selecting the right fiber backbone cabling solution is comparatively easy when you specify Belden IBDN Fiber*Express* Systems.

Many factors will influence the design of your specific optical fiber backbone infrastructure and the appropriate mix of singlemode and multimode fiber products and technologies. Key design criteria will include:

> Capacity and Topology Planning

Deployed Belden IBDN Horizontal UTP Systems

The role of the network backbone is, of course, to support the deployed and/or planned horizontal Belden IBDN cabling system. Higher bandwidth horizontal systems, such as the Belden IBDN 10GX System or 4800LX System, may indicate the use of singlemode fiber in the backbone for superior overall network performance.

Horizontal to Backbone Data Rate Ratio

Traditional design guidelines use a 1:10 data rate ratio; indicating, for example, that when 1Gb/s applications such as 1000BASE-T Ethernet are operating across the horizontal, the backbone should be capable of supporting throughputs of 10Gb/s or more.

Distances and Topologies

The effective capacities of singlemode and multimode fiber channels have distance limitations. Generally speaking, singlemode fiber channels can operate at greater speeds over greater distances than multimode fiber channels. Distance considerations will be important criteria in campus or MAN backbone design, and must also be considered for in-building backbones and "centralized fiber network" topologies.

> Return on Investment

Legacy Networks and Active Equipment

We seldom have the luxury of designing and deploying networks with a "clean slate" and accommodating existing cabling infrastructures and active equipment must be factored into backbone design considerations and may affect the singlemode/multimode mix.

Cost of Ownership

At first glance, fiber channels are typically more expensive than UTP channels; while singlemode fiber channels are typically more expensive than multimode channels. But, cost must always be considered in the context of performance, features and benefits — and ultimately in terms of "value."

Future-proofing

Cabling infrastructure design must consider not just current requirements, but also future growth, capacity and new applications. The same is true with fiber backbone planning and design. A marginal increase in investment today can extend the operational lifespan of your backbone, thereby increasing the return on your backbone networking investment.

The table (right) is a much simplified guide of what mix of singlemode and multimode fiber to plan for once the horizontal structured cabling system has been identified. Singlemode and multimode cables each have their own price/performance/capacity characteristics and your network designer or consultant will configure the correct balance of multimode and singlemode cables for your specific backbone needs.

Typical Fiber*Express* Backbone Singlemode and Multimode Channel Mix

SM Enhanced   MM FX2000
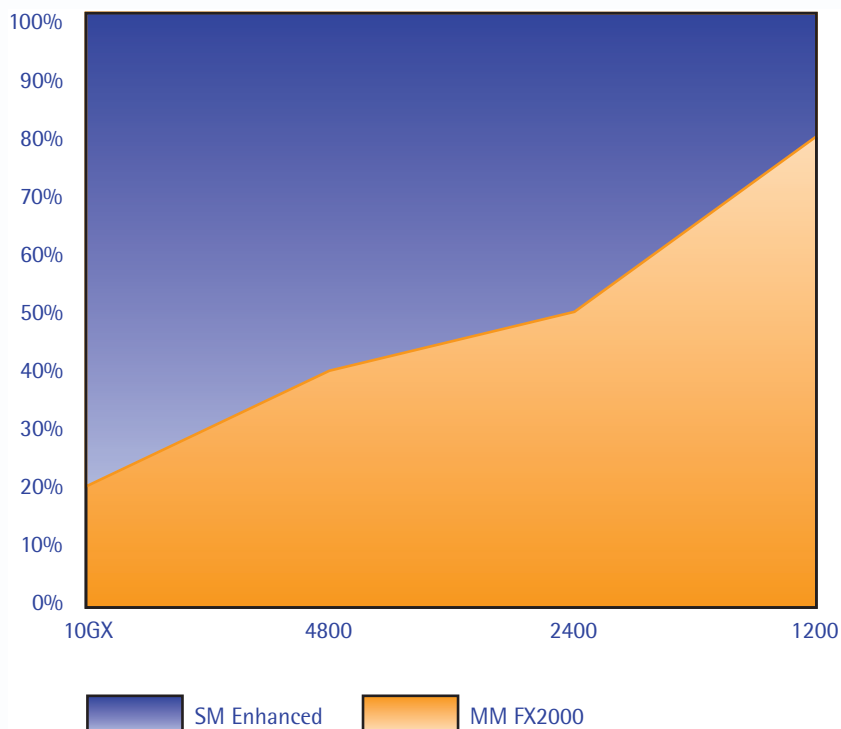
Top-Quality, Field-proven Products Make the Difference

Belden IBDN Fiber*Express* components have over 20 years of field-proven telecommunications experience behind them. These products are designed with the same focus on quality and detail found in our complete Belden IBDN product line.
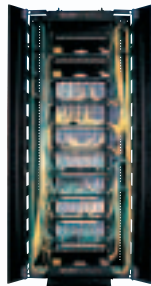
Belden IBDN Fiber*Express* Manager

The Fiber*Express* Manager is a modular ensemble that facilitates management of large numbers of high-density, in-building terminations. The Fiber*Express* Manager allows up to 1920 singlemode or multimode fiber terminations in a single rack.

The Fiber*Express* Manager's connector module supports LC, SC, SC duplex, ST-compatible, FC and MT-RJ connectors. Its innovative release mechanism allows it to slide from the shelf like a PC card, greatly facilitating management of the patch cords.

Belden IBDN Fiber*Express* Rack-mount and Wall-mount Patch Panels with Adapter Strips

Belden IBDN Fiber*Express* Patch Panels can be used with tight-buffered or loose-tube optical fiber cables. Since these panels are extremely versatile, they can be tailored to suit your individual needs in terms of density or management.

Universal Adapter Strips are pre-loaded with six (single density) or 12 (double density) adapter sleeves. The sleeves are offered in two different materials: Phosphor Bronze and Zirconia Ceramic and accommodate LC, SC, SC duplex, ST-compatible, FC and MT-RJ connectors.

Belden IBDN Fiber*Express* Field-installable Connectors

The Optimax Connector is a revolutionary field-installable optical fiber connector that requires no epoxy and no polishing. The unique design of the patented mechanical splice body incorporates a factory-mounted fiber stub and a pre-polished ceramic ferrule. This technology provides a fast, secure and reliable LC, SC or ST-compatible optical fiber termination for either multimode or singlemode cable.
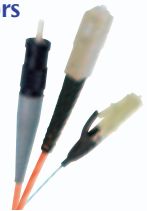
Belden CDT's Fiber Cables

A variety of multimode and singlemode optical fiber cables are available for in-building and inter-building applications, including the following types: distribution, breakout, interconnect, loose tube and industrial armored.

Belden IBDN Fiber*Express* Cable Assemblies

Fiber*Express* MPO Cable Assemblies have multi-fiber cables using single MPO connectors (6, 8 and 12-fiber) that are used to interconnect pre-terminated devices such as Fiber*Express* Manager Pre-terminated Modules and Fiber*Express* Bars.
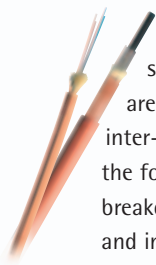
Multi-fiber Cable Assemblies are factory-terminated fiber cables of various constructions (distribution, breakout, loose tube or ribbon) using simplex, duplex or multi-fiber connectors. The range of fan-out constructions, lengths and geometry suit virtually any application.

The Fiber*Express* Bar is an extremely compact, versatile and resilient linking panel. Resembling a power bar, it offers 6 or 12 fibers, pre-terminated with LC, SC, SC duplex, ST-compatible, FC or MTRJ connectors and a cord terminated with a multi-fiber MPO connector. These factory-tested mini patch panels can adapt to all kinds of properties or developments, and can serve as a consolidation or linking point.

Belden IBDN Fiber*Express* Patch Cords

Fiber*Express* Duplex Patch Cord assemblies are of the highest quality available. They are assembled and 100% optically tested in the factory prior to shipment.

Need an Even More Secure Infrastructure?
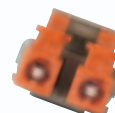
The Fiber*Express* Secure/Keyed LC System is designed to bring a whole new level of security into your network infrastructure design by enabling the physical segregation of any network segments that you designate. Based on the superior performance of the LC connector format, the Fiber*Express* Secure/Keyed LC System offers these outstanding features and benefits:

> The system's connectors and adapters are available with six color-coded keying options for design flexibility and facility in network administration

> Tamper-resistant key design — front and back — prevents intruder access

> High-quality ceramic ferrule provides low insertion loss and excellent durability

> Available in multimode 62.5µm, 50µm and laser optimized 50µm, so the system is ready for a variety of high-performance networks

> Easy compatibility with all Belden CDT mounting hardware

Start designing your own Fiber*Express* Solution by selecting from the products featured in the following pages >>>>

Optimax Field Installable Connectors

AX101982 Optimax LC Connector

Optimax Field Installable Connector

The Optimax Connectors are reliable field installable optical fiber connectors that are easy to install. They do not require epoxy, curing or polishing. Their unique design incorporates a factory polished fiber stub in a splice mechanism which provides a fast, secure, and reliable termination on optical fiber cables. All critical steps are performed in the factory, ensuring a superior-quality connection every time. Only simple tools are required for installation, making Optimax a cost effective field termination.

Optimax Connectors are high-quality LC, SC and ST Compatible connectors that use a ceramic ferrule with a physical contact (PC) polish for Multimode and super physical contact (SPC) polish for Singlemode that ensures the best possible mating of optical fibers. Connectors are available for 62.5 or 50/125 μm Multimode fiber and Singlemode fiber installations.

AX100029 with AX101794 Optimax SC Connector

A0408835 with AX101793 Optimax ST Compatible Connector

DESCRIPTION	ORDERING NUMBER
OPTIMAX FIELD INSTALLABLE CONNECTOR	
LC 62.5 μm, Multimode, for 900 μm buffered fiber only	AX101981
LC 50 μm, Multimode, for 900 μm buffered fiber only	AX101982
LC, Singlemode, for 900 μm buffered fiber only	AX101983
SC 62.5 μm, Multimode, for 900 μm buffered fiber only	AX100029
SC 50 μm, Multimode, for 900 μm buffered fiber only	AX101077
SC, Singlemode, for 900 μm buffered fiber only	AX101792
ST Compatible 62.5 μm, Multimode, for 900 μm buffered fiber only	A0408835
ST Compatible 50 μm, Multimode, for 900 μm buffered fiber only	AX101075
ST Compatible, Singlemode, for 900 μm buffered fiber only	AX101791
LC Accessory Kit for jacketed fiber, contains a 2 mm boot and a crimp sleeve	AX101984
SC Accessory Kit for jacketed fiber, contains 3 mm boot, crimp sleeves and a cord adapter	AX101794
ST Accessory Kit for jacketed fiber, contains 3 mm boot, crimp sleeves	AX101793

Optimax Tool Kit

The Optimax Tool Kit is packaged in a small convenient carrying case and includes an LC, SC and ST compatible installation and training video (CD), installation instructions and all the tools required to terminate 900 µm buffered optical fiber and jacketed optical fiber.
The Optimax installation kit has all the tools and supplies required to install the Optimax LC, SC or ST Compatible Multimode and Singlemode connectors. Certain tool kit items can be purchased separately to accommodate installers already possessing basic optical fiber installation tools.

AX100947 Optimax Tool Kit

DESCRIPTION	ORDERING NUMBER
OPTIMAX TOOL KIT	
LC/SC/ST Compatible (includes installation tools, fiber cleaver, crimping tool, instruction manual, microscope, tweezers, alcohol wipes, marker, scissors, waste bottle, fiber stripper, cable stripper and Training Video)	AX100947
Optimax Tool Kit, Basic (excludes fiber stripper & cleaver)	AX100949
Optimax LC Tool Kit Upgrade (includes LC installation tool, instructions manual, foam for the case)	AX102061
OPTIMAX INDIVIDUAL COMPONENTS	
Fiber Cleaver	A0408829
Installation Tool LC (does not include tool-clamp)	AX102062
Installation Tools ST Compatible and SC (includes tool-clamp)	A0403634
Microscope	AX100910
Refurbishing Materials (includes 80 alcohol wipes and a black felt tip marker)	AX100951
Installation Instruction Manual, LC	AX102063
Installation Instruction Manual, SC	PX101318
Installation Instruction Manual, ST Compatible	PX101317
Installation & Training Video, CD (see literature ordering form on the web)	NOT0580
Crimp Tool complete with die	A0403641

Epoxy Field Installable Connector

Epoxy Field Installable Connectors are available as Multimode and Singlemode ST Compatible and SC field installable connectors. They require heat-cured epoxy and polishing.
Both types have a ceramic ferrule. Each connector comes complete with all the parts necessary for termination of tight buffered fibers as well as jacketed fibers. Parts include crimp sleeves, boots, cord adapter and dust cap.

A0390851 Optical Fiber Field Installable Epoxy Connector, ST Compatible

DESCRIPTION	ORDERING NUMBER
Epoxy Field Installable Connector, Multimode, ST Compatible	A0390851
Epoxy Field Installable Connector, Multimode, SC Simplex	AX100919
Epoxy Field Installable Connector, Multimode, SC Duplex	AX100929
Epoxy Field Installable Connector, Singlemode, ST Compatible	AX101412
Epoxy Field Installable Connector, Singlemode, SC Simplex	AX101411

FiberExpress Connectors
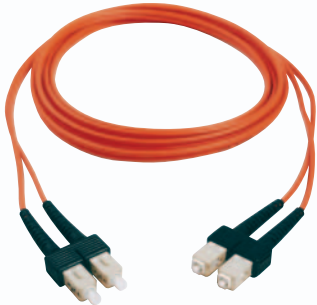
Fiber Patch Cords

Fiber Patch Cords

FiberExpress Duplex Patch Cord Assemblies are of the highest quality available. They are assembled and 100% optically tested in our factory prior to shipment. All patch cords are built with high-quality connectors and cables which guarantees superior performance and excellent reliability.

AX200057 Patch Cord Multimode SC Duplex (568SC)

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
DUPLEX PATCH CORD	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE SPC
ST-ST, 2 m (6 ft.)	70102419	AX200341	AX200799	AX200090
ST-ST, 3 m (10 ft.)	70102420	AX200459	AX200795	AX200091
ST-ST, 5 m (16 ft.)	70102447	AX200413	AX200800	AX200092
568SC-568SC, 2 m (6 ft.)	AX200056	AX200084	AX200603	AX200094
568SC-568SC, 3 m (10 ft.)	AX200057	AX200082	AX200589	AX200095
568SC-568SC, 5 m (16 ft.)	AX200058	AX200280	AX200624	AX200096
LC duplex-LC duplex, 2 m (6 ft.)	AX200517	AX200527	AX200664	AX200507
LC duplex-LC duplex, 3 m (10 ft.)	AX200518	AX200528	AX200665	AX200508
LC duplex-LC duplex, 5 m (16 ft.)	AX200519	AX200529	AX200666	AX200509
MTRJ-MTRJ, 2 m (6 ft.)	AX101122	AX101139	AX200801	AX101157
MTRJ-MTRJ, 3 m (10 ft.)	AX101123	AX101138	AX200802	AX101156
MTRJ-MTRJ, 5 m (16 ft.)	AX101125	AX101137	AX200803	AX101155
HYBRID PATCH CORD	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE SPC
568SC-ST, 3 m (10 ft.)	AX200060	AX200196	AX200900	AX200421
LC duplex-ST, 3 m (10 ft.)	AX200699	AX200695	AX200809	AX200698
LC duplex-568SC, 3 m (10 ft.)	AX200580	AX200581	AX200668	AX200667
MTRJ-ST, 3 m (10 ft.)	AX101133	AX101151	AX200810	AX101166
MTRJ-568SC, 3 m (10 ft.)	AX101128	AX101143	AX200797	AX101161
SINGLE-ENDED (PIGTAILS)	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE SPC
ST-open, 2 m (6 ft.)	70100390	AX200458	AX200811	AX200097
SC-open, 2 m (6 ft.)	70101714	AX200192	AX200653	AX200098
LC-open, 2 m (6 ft.)	AX200657	AX200658	AX200660	AX200659
MTRJ(m)-open, 3 m (10 ft.)	AX101366	AX101367	AX200812	AX101368

Also available as Simplex Patch Cords or custom assemblies, please contact Customer Service for more details.

MPO Cable Assembly

MPO Cable Assemblies are multi-fiber cables using single MPO connectors 6, 8 and 12-fiber that are used to interconnect pre-terminated devices such as FiberExpress Pre-terminated Modules and FiberExpress Bars. Depending on the application, MPO Cable Assemblies can use Ribbon Cables, or Loose Tube cables. MPO cables are available in lengths of up to 500 meters with a pulling-eye for ease of deployment.

AX250105 MPO Cable Assembly

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
MPO CABLE ASSEMBLY, FOMC, MPO(F)-MPO(F), 1 PULLING EYE, OFNP	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE
12 fibers, 10 m (33 ft.)	AX250021	AX250345	AX250457	AX250224
12 fibers, 20 m (66 ft.)	AX250105	AX250376	AX250412	AX250106
12 fibers, 50 m (164 ft.)	AX250349	AX250065	AX250387	AX250071
12 fibers, 75 m (246 ft.)	AX250060	AX250066	AX250413	AX250072
12 fibers, 100 m (328 ft.)	AX250061	AX250067	AX250458	AX250073

Also available in 6 or 8-fiber MPO Cable Assemblies, please contact Customer Service for more details.

Multi–fiber Cable Assembly

Multi-fiber Cable Assemblies are factory-terminated fiber cables of various constructions (distribution, breakout or ribbon) using simplex, duplex or multi-fiber connectors. They are available in configurations from 2-fiber up to 144-fiber with various kinds of fan-out constructions, lengths and geometry to suit virtually any application.
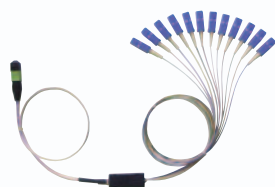
900 µm Fan-out Assembly

Multi-fiber Cable Assembly

DESCRIPTION	PRODUCT CODE	PRODUCT CODE
MULTI-FIBER CABLE ASSEMBLY	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm
MPO(m)-ST, 12 fibers	NXC-RPML-PGPNNN-STPFBN-N-01.5	NXC-RPNL-PGPNNN-STPFBN-N-01.5
MPO(m)-SC, 12 fibers	NXC-RPML-PGPNNN-SCPFBN-N-01.5	NXC-RPNL-PGPNNN-SCPFBN-N-01.5
MPO(m)-LC, 12 fibers	NXC-RPML-PGPNNN-LCPFBN-N-01.5	NXC-RPNL-PGPNNN-LCPFBN-N-01.5
MPO(m)-MTRJ (m), 12 fibers	NXC-RPML-PGPNNN-JBPFBN-N-01.5	NXC-RPNL-PGPNNN-JBPFBN-N-01.5
	MULTIMODE, FX2000, 50 µm	SINGLEMODE
MPO(m)-ST, 12 fibers	NXC-RPFL-PGPNNN-STPFBN-N-01.5	NXC-RPSL-PGPNNN-STPFBN-N-01.5
MPO(m)-SC, 12 fibers	NXC-RPFL-PGPNNN-SCPFBN-N-01.5	NXC-RPSL-PGPNNN-SCPFBN-N-01.5
MPO(m)-LC, 12 fibers	NXC-RPFL-PGPNNN-LCPFBN-N-01.5	NXC-RPSL-PGPNNN-LCPFBN-N-01.5
MPO(m)-MTRJ (m), 12 fibers	NXC-RPFL-PGPNNN-JBPFBN-N-01.5	NXC-RPSL-PGPNNN-JBPFBN-N-01.5

FiberExpress Pre-Connectorized Assemblies

Fiber Media
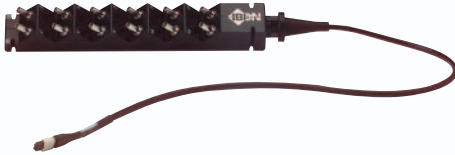
FiberExpress Bar

AX250001 FiberExpress Bar 12ST

FiberExpress Bar

The FiberExpress Bar consists of a custom length fiber cable with, at one end, a factory pre-terminated rugged mini patch panel and, at the other end, a factory installed multi-fiber MPO connector. The very compact fiber patch panel contains 6 or 12 factory-terminated and tested connectors in a variety of styles. The ruggedness of the FiberExpress Bar makes it an ideal candidate for disaster recovery, industrial applications and other fiber deployment in harsh environment.

FiberExpress Bar Accessories

The MPO Adapter is the sleeve that provides primary alignment and locking when connecting the 2 MPO connectors (male to female). It has a flange and a metal clip for panel mounting and it is included with each FiberExpress Bar (1 m with male connector).

The 19 in. Rack Mount Housing is a 1U metal panel that holds 1 FiberExpress Bar. It has a live hinge on the left-hand side and swings out give access to the MPO connection and facilitate cable management and slack storage when used with the Slack Storage Tray.

The Front Cover is a smoked Plexiglas cover that protects the fiber cords connected to the FiberExpress Bar. It has 2 push rivets for positive locking and easy handling.

The Slack Storage Tray attaches to the back of the 19 in. Rack Mount Housing to facilitate cable management and slack storage. It has a storage capacity of 5 meters of 12-fiber ribbon cable.

The Wall Mount Enclosure can contain one FiberExpress Bar. It is made of heavy gauge steel and has a locking cover.

MX100154 FiberExpress MPO Adapter

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
FIBEREXPRESS BAR	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE
12 ST type, MPO (m), 1 m	AX250001	AX250052	AX250459	AX250009
6 SC duplex (12 fibers), MPO (m), 1 m	AX250005	AX250054	AX250460	AX250011
6 MT-RJ (12 fibers), MPO (m), 1 m	AX250178	AX250179	AX250461	AX250180
12 LC, MPO (m), 1 m	AX250539	AX250540	AX250541	AX250542
FIBEREXPRESS BAR ACCESSORIES				
MPO Adapter (6 or 12 fibers) included with each FiberExpress Bar (1 m - Male)				MX100154
19 in. Rack Mount Housing for FiberExpress Bar, Gray				AX100331
19 in. Rack Mount Housing for FiberExpress Bar, Black				AX100330
Front Cover for FiberExpress rack mount housing				AX100332
Slack Storage Tray for FiberExpress Bar, (capacity: 5 meters) including top cover, Gray				AX100329
Slack Storage Tray for FiberExpress Bar, (capacity: 5 meters) including top cover, Black				AX100328
Wall Mount Enclosure, can contain one bar, Black				AC200004

Also available for 6-fibers, please contact Customer Service for more details.

Secure/Keyed LC System

The FiberExpress Secure/Keyed LC System allows for physical segregation of network segments in secure fiber cabling infrastructures. All Secure/Keyed LC products are available with 6 different keying options, each carrying a different color to facilitate network administration. The keying detail inside the connector is totally tamper-resistant and cannot be re-produced inside a standard LC connector to violate the network security. All products comply with the FOCIS 10 standard and optical performance exceeds all industry standards for SFF connectors.

The Optimax Secure/Keyed LC field installable connectors are available in Multimode 50 µm laser-optimized and 62.5 µm fiber versions. They are high-quality connectors that use a ceramic ferrule with a physical contact (PC) polish for Multimode connectors.

The Secure/Keyed LC Patch Cords and pigtails are offered in Multimode 62.5 µm (FX300), 50/125 µm (FX600) and laser-optimized 50/125 µm (FX2000) for the most demanding network performance.

The Secure/Keyed LC Adapter Modules and Adapter Strips can be used in all mounting hardware for workstation area, Consolidation Point or Telecom Room applications.

The Secure/Keyed LC FiberExpress Manager Modules can be used in 19 and 23 inch FiberExpress Manager Shelves to provide a high-density management system of up to 1920 terminated fibers per rack.

AX102197 Secure/Keyed LC Optimax
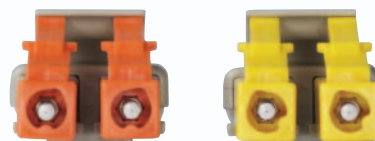
Secure/Keyed LC System

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER
SECURE/KEYED LC OPTIMAX FOR 900 µm BUFFERED FIBER ONLY	MULTIMODE 62.5 µm	MULTIMODE 50 µm
K1, Red	AX102203	AX102197
K2, Green	AX102204	AX102198
K3, Yellow	AX102205	AX102199
K4, Black	AX102206	AX102200
K5, Orange	AX102207	AX102201
K6, Blue	AX102208	AX102202

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
SECURE/KEYED LC DUPLEX PATCH CORD KEYX-KEYX	MULTIMODE FX300 62.5 µm	MULTIMODE FX600 50 µm	MULTIMODE FX2000 50 µm
K1, Red, 2 m (6 ft.)	AX201365	AX201383	AX201401
K1, Red, 3 m (10 ft.)	AX201371	AX201389	AX201407
K1, Red, 5 m (16 ft.)	AX201377	AX201395	AX201413
K2, Green, 2 m (6 ft.)	AX201366	AX201384	AX201402
K2, Green, 3 m (10 ft.)	AX201372	AX201390	AX201408
K2, Green, 5 m (16 ft.)	AX201378	AX201396	AX201414
K3, Yellow, 2 m (6 ft.)	AX201367	AX201385	AX201403
K3, Yellow, 3 m (10 ft.)	AX201373	AX201391	AX201409
K3, Yellow, 5 m (16 ft.)	AX201379	AX201397	AX201415
K4, Black, 2 m (6 ft.)	AX201368	AX201386	AX201404
K4, Black, 3 m (10 ft.)	AX201374	AX201392	AX201410
K4, Black, 5 m (16 ft.)	AX201380	AX201398	AX201416
K5, Orange, 2 m (6 ft.)	AX201369	AX201387	AX201405
K5, Orange, 3 m (10 ft.)	AX201375	AX201393	AX201411
K5, Orange, 5 m (16 ft.)	AX201381	AX201399	AX201417
K6, Blue, 2 m (6 ft.)	AX201370	AX201388	AX201406
K6, Blue, 3 m (10 ft.)	AX201376	AX201394	AX201412
K6, Blue, 5 m (16 ft.)	AX201382	AX201400	AX201418

FiberExpress Secure/Keyed LC System

Fiber Media

FiberExpress Secure/Keyed LC System

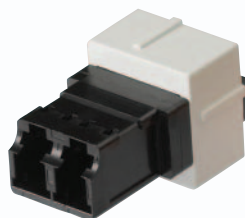| DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
SECURE/KEYED LC DUPLEX PATCH CORD, HYBRID, KEYX-LCD	MULTIMODE FX300 62.5 µm	MULTIMODE FX600 50 µm	MULTIMODE FX2000 50 µm
K1, Red, 2 m (6 ft.)	AX201419	AX201437	AX201455
K1, Red, 3 m (10 ft.)	AX201425	AX201443	AX201461
K1, Red, 5 m (16 ft.)	AX201431	AX201449	AX201467
K2, Green, 2 m (6 ft.)	AX201420	AX201438	AX201456
K2, Green, 3 m (10 ft.)	AX201426	AX201444	AX201462
K2, Green, 5 m (16 ft.)	AX201432	AX201450	AX201468
K3, Yellow, 2 m (6 ft.)	AX201421	AX201439	AX201457
K3, Yellow, 3 m (10 ft.)	AX201427	AX201445	AX201463
K3, Yellow, 5 m (16 ft.)	AX201433	AX201451	AX201469
K4, Black, 2 m (6 ft.)	AX201422	AX201440	AX201458
K4, Black, 3 m (10 ft.)	AX201428	AX201446	AX201464
K4, Black, 5 m (16 ft.)	AX201434	AX201452	AX201470
K5, Orange, 2 m (6 ft.)	AX201423	AX201441	AX201459
K5, Orange, 3 m (10 ft.)	AX201429	AX201447	AX201465
K5, Orange, 5 m (16 ft.)	AX201435	AX201453	AX201471
K6, Blue, 2 m (6 ft.)	AX201424	AX201442	AX201460
K6, Blue, 3 m (10 ft.)	AX201430	AX201448	AX201466
K6, Blue, 5 m (16 ft.)	AX201436	AX201454	AX201472
SECURE/KEYED LC DUPLEX PATCH CORD, HYBRID, KEYX-SCD	MULTIMODE FX300 62.5 µm	MULTIMODE FX600 50 µm	MULTIMODE FX2000 50 µm
K1, Red, 2 m (6 ft.)	AX201473	AX201491	AX201509
K1, Red, 3 m (10 ft.)	AX201479	AX201497	AX201515
K1, Red, 5 m (16 ft.)	AX201485	AX201503	AX201521
K2, Green, 2 m (6 ft.)	AX201474	AX201492	AX201510
K2, Green, 3 m (10 ft.)	AX201480	AX201498	AX201516
K2, Green, 5 m (16 ft.)	AX201486	AX201504	AX201522
K3, Yellow, 2 m (6 ft.)	AX201475	AX201493	AX201511
K3, Yellow, 3 m (10 ft.)	AX201481	AX201499	AX201517
K3, Yellow, 5 m (16 ft.)	AX201487	AX201505	AX201523
K4, Black, 2 m (6 ft.)	AX201476	AX201494	AX201512
K4, Black, 3 m (10 ft.)	AX201482	AX201500	AX201518
K4, Black, 5 m (16 ft.)	AX201488	AX201506	AX201524
K5, Orange, 2 m (6 ft.)	AX201477	AX201495	AX201513
K5, Orange, 3 m (10 ft.)	AX201483	AX201501	AX201519
K5, Orange, 5 m (16 ft.)	AX201489	AX201507	AX201525
K6, Blue, 2 m (6 ft.)	AX201478	AX201496	AX201514
K6, Blue, 3 m (10 ft.)	AX201484	AX201502	AX201520
K6, Blue, 5 m (16 ft.)	AX201490	AX201508	AX201526
SECURE/KEYED LC DUPLEX PIGTAIL, KEYX-OPEN	MULTIMODE FX300 62.5 µm	MULTIMODE FX600 50 µm	MULTIMODE FX2000 50 µm
K1, Red, 2 m (6 ft.)	AX201527	AX201533	AX201539
K2, Green, 2 m (6 ft.)	AX201528	AX201534	AX201540
K3, Yellow, 2 m (6 ft.)	AX201529	AX201535	AX201541
K4, Black, 2 m (6 ft.)	AX201530	AX201536	AX201542
K5, Orange, 2 m (6 ft.)	AX201531	AX201537	AX201543
K6, Blue, 2 m (6 ft.)	AX201532	AX201538	AX201544
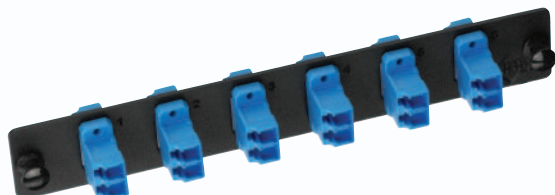
AX102124 Secure/Keyed LC Adapter Strip

AX102098 Secure/Keyed LC Adapter Module

AX102114 Secure/Keyed LC
FiberExpress Manager Module

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
SECURE/KEYED LC ADAPTER MODULE	GRAY HOLDER	ALMOND HOLDER	WHITE HOLDER	BLACK HOLDER
K1, Red	AX102089	AX102095	AX102101	AX102107
K2, Green	AX102090	AX102096	AX102102	AX102108
K3, Yellow	AX102091	AX102097	AX102103	AX102109
K4, Black	AX102092	AX102098	AX102104	AX102110
K5, Orange	AX102093	AX102099	AX102105	AX102111
K6, Blue	AX102094	AX102100	AX102106	AX102112

DESCRIPTION	ORDERING NUMBER
SECURE/KEYED LC FIBEREXPRESS ADAPTER STRIP	
K1, Red, 12 fibers	AX102119
K2, Green, 12 fibers	AX102120
K3, Yellow, 12 fibers	AX102121
K4, Black, 12 fibers	AX102122
K5, Orange, 12 fibers	AX102123
K6, Blue, 12 fibers	AX102124
K1, Red, 24 fibers	AX102125
K2, Green, 24 fibers	AX102126
K3, Yellow, 24 fibers	AX102127
K4, Black, 24 fibers	AX102128
K5, Orange, 24 fibers	AX102129
K6, Blue, 24 fibers	AX102130

DESCRIPTION	ORDERING NUMBER	
SECURE/KEYED LC FIBEREXPRESS MANAGER MODULE	12 FIBERS	24 FIBERS
K1, Red, 12 fibers	AX102113	AX102310
K2, Green, 12 fibers	AX102114	AX102311
K3, Yellow, 12 fibers	AX102115	AX102312
K4, Black, 12 fibers	AX102116	AX102313
K5, Orange, 12 fibers	AX102117	AX102314
K6, Blue, 12 fibers	AX102118	AX102315

Other Patch Cord lengths and configurations may be available, please contact Customer Service for more details.

FiberExpress Secure/Keyed LC System

Rack Components

AX100934 FiberExpress Manager Shelf

FiberExpress Manager Shelf

FiberExpress modules are rack-mounted using **FiberExpress Manager Shelves**. The shelves provide the total system with extra high connection density while facilitating cable routing and patch cord management.

- For 19 in. or 23 in. rack
- 19 in. shelf holds up to 12 modules
- 23 in. shelf holds up to 16 modules

AX101943 FiberExpress Manager 1U Rack Mount Patch Panel

FiberExpress Manager 1U

The FiberExpress Manager 1U Rack Mount Patch Panel is a low-cost, compact assembly designed for interconnection or splicing of optical fiber cables, using up to three FiberExpress Manager Modules. The low-profile design minimizes rack space to only 45 mm (1.75 in.).
An optional FiberExpress Manager 1U Cable Management Accessory is also available.
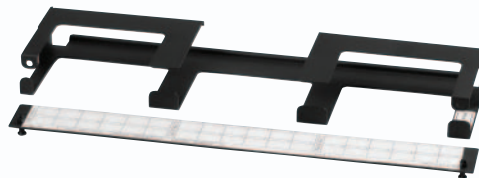
AX102032 FiberExpress Manager 1U Cable Management Accessory

DESCRIPTION	ORDERING NUMBER
FIBEREXPRESS MANAGER SHELF	
Gray, 23 in., 10.9 Kg (24 lb)	AX100934
Black, 23 in., 10.9 Kg (24 lb)	AX100935
Gray, 19 in., 8.2 Kg (18 lb)	AX101084
Black, 19 in., 8.2 Kg (18 lb)	AX101085
FIBEREXPRESS MANAGER 1U, RACK MOUNT PATCH PANEL	
Black, 19 in., 5 Kg (11 lb)	AX101943
Gray, 19 in., 5 Kg (11 lb)	AX101944
FIBER EXPRESS MANAGER 1U CABLE MANAGEMENT ACCESSORY	
Black, 19 in., 1 Kg (2 lb)	AX102032
Gray, 19 in., 1 Kg (2 lb)	AX102033

FiberExpress Manager

Racks

Racks are available in a freestanding floor mount version and as a Fiber Rack kit. Vertical and horizontal cable management channels provide cable and patch cord routing space and protection.

Universal Horizontal
Cable Management Channels

Floor Mount Rack

Vertical Cable
Management Channels

DESCRIPTION	ORDERING NUMBER
FIBER RACK KIT	
Knock-Down Rack Assembly, 44U, (one rack with one vertical & two universal horizontal channels), Gray, 23 x 84 in. (7 ft.), 52 Kg (113 lb)	AX101177
Knock-Down Rack Assembly, 44U, (one rack with one vertical & two universal horizontal channels), Black, 19 x 84 in. (7 ft.), 49 Kg (106 lb)	AX101176
FLOOR MOUNT RACK	
Welded Rack Assembly, 44U, (with two universal horizontal channels), Black, 19 x 84 in. (7 ft.), 30 kg (65 lb)	AX101179
Knock-Down Rack Assembly, 44U, (with two universal horizontal channels), Gray, 19 x 84 in. (7 ft.), 30 kg (65 lb)	AX101254
Knock-Down Rack Assembly, 44U, (with two universal horizontal channels), Black, 19 x 84 in. (7 ft.), 30 kg (65 lb)	AX101178
Knock-Down Rack Assembly, 44U, (with two universal horizontal channels), Gray, 23 x 84 in. (7 ft.), 32 kg (70 lb)	AX100930
Knock-Down Rack Assembly, 44U, (with two universal horizontal channels), Black, 23 x 84 in. (7 ft.), 32 kg (70 lb)	AX100931
FIBER VERTICAL CABLE MANAGEMENT CHANNEL	
Gray, 5 x 84 in., 16 Kg (35 lb)	AX100932
Black, 5 x 84 in., 16 Kg (35 lb)	AX100933
UNIVERSAL HORIZONTAL CABLE MANAGEMENT CHANNEL	
Gray, 19 in., 3 kg (6 lb)	AX101182
Black, 19 in., 3 kg (6 lb)	AX101181
Gray, 23 in., 4 kg (8 lb)	AX101183
Black, 23 in., 4 Kg (8 lb)	AX101184

FiberExpress Manager

FiberExpress Manager Modules
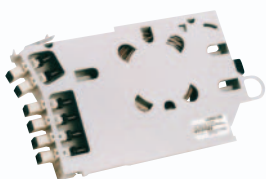
FiberExpress Manager Connector Module

The Connector Module is the basic building block of the FiberExpress Manager. It is designed with a unique release mechanism that allows it slide from the shelf like a PC card, easing management of patch cords.

AX101525 Connector Module Pre-terminated MPO-MT-RJ

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER
FIBEREXPRESS MANAGER CONNECTOR MODULE	METAL SLEEVE, MULTIMODE	ZIRCONIA CERAMIC, SINGLEMODE
ST type, 6 fibers	AX101089	AX100936
ST type, 12 fibers	AX101187	AX101186
SC Simplex, 6 fibers		AX100943
SC Duplex, 6 fibers	AX101092	AX100944
SC Duplex (ST in), 12 fibers	AX101120	AX101119
SC Duplex, 12 UPC pigtails		AX101715
SC Duplex, 12 fibers	AX101714	AX101713
LC, 12 fibers	AX101528	AX101527
LC, 24 fibers, NEW	AX102306	AX102305
FC, Singlemode/Multimode, 6 fibers		AX100937

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
	MULTIMODE 62.5 µm	MULTIMODE 50 µm	SINGLEMODE
MPO(m)-ST type, 12 pre-terminated	AX101189	AX101190	AX101188
MPO(m)-SC Duplex, 12 pre-terminated	AX101091	AX101114	AX101090
MPO(m)-MT-RJ(m), 12 pre-terminated	AX101525	AX101526	AX101524
MPO(m)-LC, 12 pre-terminated	AX101530	AX101531	AX101529
MPO(m)-LC, 24 pre-terminated, NEW	AX102309	AX102308	AX102307
	BEIGE, MULTIMODE	BLUE, SINGLEMODE	
MT-RJ, 12 fibers	AX101096	AX101581	

Accessories

Flex Kit

The Flex Kit contains tubes and manifolds designed to split cables into individual fiber strands, and is suitable for 6 fibers up to 12 fibers. It is necessary for use with loose tube cables or when the fiber cable count does not match the number of connections in the FiberExpress Manager Connector Module. The Flex Kit tubes help to maintain proper fiber bend radius. One kit is required per 12 modules (one 19 in. shelf).
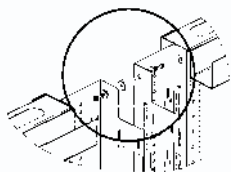
AX100945 Flex Kit

AX101098 Splice Holder Kit

Splice Holder Kit

A Splice Holder Kit can be used to hold fusion or mechanical splices. Each splice holder can handle up to 6 splices.

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER
FLEX KIT		
Flex Kit		AX100945
Splice Holder Kit		AX101098

Multi-Rack Attachment Kit

Multi-Rack Attachment Kit

Allows the attachment of multiple racks in a side by side configuration when using the Belden Vertical Cable management channels (Fiber or Copper).

Multi-Rack attachment for double Vertical Cable Management Channel configuration
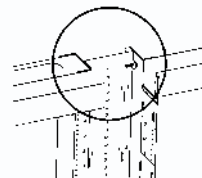
Multi-Rack attachment for single Vertical Cable Management Channel configuration
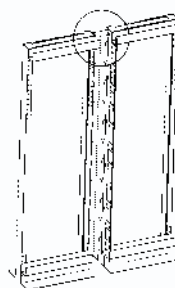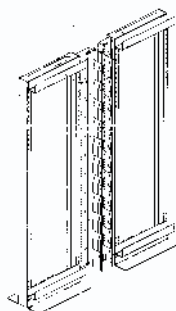
DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER
MULTI-RACK ATTACHMENT KIT		
		AX101371

FiberExpress Manager

Fiber Media

Rack Mount Patch Panels (1U & 2U)

AX100041 FiberExpress, 12/24 Port (1U) Rack Mount Patch Panel

AX100069 FiberExpress, 24/48 Port (2U) Rack Mount Patch Panel

FiberExpress Rack Mount Patch Panel 1U and 2U

The FiberExpress 1U and 2U Rack Mount Patch Panels are equipped with a special hinge that allows easy access to the rear of the patch panel without disturbing the optical fiber cable. A specially designed front panel allows connector protection and easy routing of optical fiber patch cords. The FiberExpress Rack Mount Patch Panels are also compatible with our 203 mm (8 in.) Splice Organizer Trays. This allows the optical fiber cable to be either terminated with fiber single-ended patch cords or field-installable connectors. The patch panels can be used with ST Compatible, SC, 568SC, FC, LC or MT-RJ adapter strips (ordered separately).

The FiberExpress 1U Rack Mount Patch Panel is a low-cost, compact assembly designed for interconnection or splicing of optical fiber cables, from 12 up to 48 fibers if MT-RJ or LC double density adapter strips are used. The low-profile design minimizes rack space to only 45 mm (1.75 in.). An optional smoked Plexiglas front cover is also available.

The FiberExpress 2U Rack Mount Patch Panel offers a high fiber capacity, 96 fibers if using double density MT-RJ or LC adapter strips. The FiberExpress 2U comes equipped with a smoked Plexiglas front cover that protects fiber connections while allowing for quick visual inspection.

DESCRIPTION	ORDERING NUMBER
FiberExpress Rack Mount Patch Panel 1U, Gray	AX100042
FiberExpress Rack Mount Patch Panel 1U, Black	AX100041
FiberExpress Rack Mount Patch Panel 2U, Gray	AX100069
FiberExpress Rack Mount Patch Panel 2U, Black	AX100068

Rack Mount Patch Panels (3U)

AX100078 FiberExpress (3U) Rack Mount Patch Panel

FiberExpress Rack Mount Patch Panel 3U

The FiberExpress 3U Rack Mount Patch Panel can accommodate up to 96 optical fiber connections using MT-RJ or LC connectors. The connector panel is mounted on a sliding drawer for easy access to the back side (cable side) of the panel.

The FiberExpress 3U Rack Mount Patch Panel can be used with either optical fiber single-ended patch cords or field-installable connectors. If optical single-ended patch cords are to be used, organizer trays are easily accessible via the removable front access pull-out drawer. (Trays must be ordered separately.)

The FiberExpress 3U Rack Mount Patch Panel is a compact cross-connect assembly for the termination of optical fiber cables. The low-profile design minimizes required rack space 127 mm (5 in.). It is compatible with ST Compatible, SC, 568SC, MT-RJ, LC and FC adapter strips (ordered separately).

DESCRIPTION	ORDERING NUMBER
FiberExpress Rack Mount Patch Panel 3U, Gray	AX100078
FiberExpress Rack Mount Patch Panel 3U, Black	AX100077

FiberExpress Rack Mount Patch Panel 4U

The FiberExpress 4U Rack Mount Patch Panel is an economical solution for the protection of optcal fiber terminations and splices, up to 192 optical fibers if using MT-RJ or LC connectors. The connector panel, accepting the Universal Adapter Strips, is located inside the enclosure and swings out (left or right) to give easy access to the cable and splices.

The FiberExpress 4U Rack Mount Patch Panel is a compact Cross-Connect enclosure for the cross-connection, interconnection or splicing of optical fiber cables. The low-profile design minimizes required rack space 178 mm (7 in.). It can be used with with ST Compatible, SC, 568SC, MT-RJ, LC and FC adapter strips (ordered separately).

AX100115 FiberExpress, 48/96 Port (4U) Rack Mount Patch Panel

DESCRIPTION	ORDERING NUMBER
FiberExpress Rack Mount Patch Panel 4U, Gray	AX100115
FiberExpress Rack Mount Patch Panel 4U, Black	AX100116

FiberExpress Wall Mount Patch Panel

The FiberExpress Wall Mount Patch Panel Series is an economical solution for the protection of optical fiber terminations and splices in hostile environments.

Using the FiberExpress Universal Adapter Strips (ordered separately), the Wall Mount Patch Panels allow for flexible and customized patch panel design. They are compatible with most industry standard connections: ST Compatible, SC, 568SC, MT-RJ, LC and FC.

Available in gray and black, the FiberExpress Wall Mount Patch Panels have an ergonomic design, rugged construction and compact assemblies to effectively protect your optical fiber terminations and splices.

AX100495 Small Wall Mount

AX100541 Medium Wall Mount

AX100543 Large Wall Mount

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
FIBEREXPRESS WALL MOUNT PATCH PANEL	SMALL	MEDIUM	LARGE
Gray	AX100496	AX100541	AX100543
Black	AX100495	AX100540	AX100542

FiberExpress Patch Panels

Universal Optical Fiber Adapter Strips

Optical Fiber Adapter Strips

Universal Optical Fiber Adapter Strips are pre-loaded with six (single density) or 12 (double density) adapter sleeves. Two types of adapter sleeves are available; Phosphor Bronze and Zirconia Ceramic. Adapter sleeves are used as the connecting interface between two optical fiber connectors.
A Blank adapter strip is also available and can be used with any FiberExpress Patch Panel to fill in unused adapter strip openings.

AX101729 Adapters loaded with 6 LC Duplex

AX100094 Adapters loaded with 3 SC Duplex

AX100066 Blank Strip

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER
OPTICAL FIBER ADAPTER STRIPS, BLACK	PHOSPHOR BRONZE, MULTIMODE	ZIRCONIA CERAMIC, SINGLEMODE
Single density, loaded with 6 ST Compatible Adapters	AX100088	AX100534
Double density, loaded with 12 ST Compatible Adapters	AX100080	AX100528
Single density, loaded with 3 SC Duplex Adapters	AX100094	AX101407
Single density, loaded with 6 SC Simplex Adapters	AX100092	AX100538
Double density, loaded with 6 SC Duplex Adapters	AX100098	AX101409
Double density, loaded with 12 SC Simplex Adapters	AX100084	AX100532
Single density, loaded with 6 FC Adapters	AX100090	AX100536
Double density, loaded with 12 FC Adapters	AX100082	AX100530
Single Density, loaded with 6 LC Duplex Adapters	AX101729	AX101731
Double density, loaded with 12 LC Duplex Adapters	AX101741	AX101743

DESCRIPTION	ORDERING NUMBER
MT-RJ, Single density, loaded with 6 MT-RJ, Black, Multimode/Singlemode	AX101115
MT-RJ, Double density, loaded with 12 MT-RJ, Black, Multimode/Singlemode	AX101117
Blank Strip, Black	AX100066

FiberExpress Rack Mount Patch Panels 1U & 2U Accessories

The accessories provide additional panel mounting flexibility for racks, cabinets and cable entry.
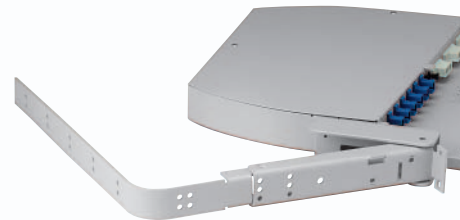

AX100045 Front Cover for 1U
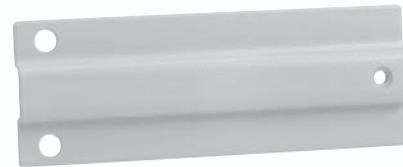
AX101802 23 in. Rack Universal Extension Bracket for 1U and 2U

AX101800 127 mm (5 in.) Universal Offset Bracket Kit, for 19 in. and 23 in. Racks 1U


AX100047 Right Side Cable Entry Bracket for 1U

DESCRIPTION	ORDERING NUMBER
FIBEREXPRESS RACK MOUNT PATCH PANELS 1U AND 2U ACCESSORIES	
127 mm (5 in.) Universal Offset Bracket Kit, for 19 in. and 23 in. racks (1U), Black	AX101799
127 mm (5 in.) Universal Offset Bracket Kit, for 19 in. and 23 in. racks (1U), Gray	AX101800
127 mm (5 in.) Universal Offset Bracket Kit, for 19 in. and 23 in. racks (2U), Black	AX101797
127 mm (5 in.) Universal Offset Bracket Kit, for 19 in. and 23 in. racks (2U), Gray	AX101798
23 in. Universal extension bracket, Black	AX101801
23 in. Universal extension bracket, Gray	AX101802
Right side cable entry bracket (1U), Black	AX100046
Right side cable entry bracket (1U), Gray	AX100047
Right side cable entry bracket (2U), Black	AX100073
Right side cable entry bracket (2U), Gray	AX100074
Front Cover (1U), Smoked Plexiglass	AX100045

FiberExpress Patch Panels

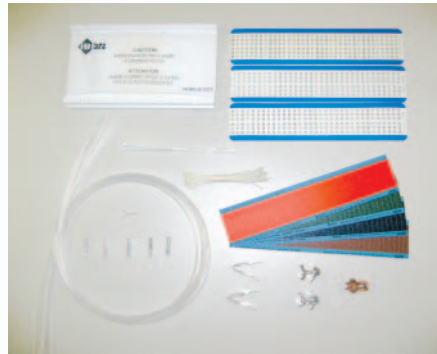## Optical Fiber Splice Trays and Field Breakout Kits
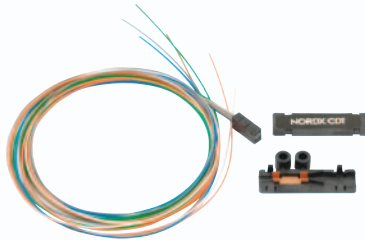
AX101100 Field Breakout Kit

Optical Fiber Field Breakout Kit

The Field Breakout Kit is designed to attach to one tube of a loose-tube cable. Each kit has either six or twelve 900 μm tubes that hold each of the coated fibers. For each end of the cable, one kit is needed for every tube. For example, a 12-fiber 62.5 μm cable contains two 6-fiber tubes. This cable would require four kits, two for each end.

Optical Fiber Splice Organizer Kits

Optical Fiber Splice Organizer Kits provide the accessories necessary for installing the FiberExpress Fiber Patch Panels, as well as other fiber terminals that accommodate the standard Optical Fiber Organizer Tray.

A0649869 Optical Fiber Splice
Organizer Kits and Trays

DESCRIPTION	ORDERING NUMBER
Optical Fiber Field Breakout Kit, 6 fibers, 1/pack	AX101100
Optical Fiber Field Breakout Kit, 12 fibers, 1/pack	AX101101
Optical Fiber Splice Organizer Kit, Splice kit, tray, 203 mm (8 in.)	A0649869
Optical Fiber Splice Organizer Kit, Splice kit, tray, 305 mm (12 in.)	A0318904
Optical Fiber Splice Tray, Fusion, 203 mm (8 in.)	A0335015
Optical Fiber Splice Tray, Fusion, 305 mm (12 in.)	A0316446
Optical Fiber Splice Tray, Universal (mechanical or fusion), 203 mm (8 in.)	AX100079
Optical Fiber Splice Tray, Universal (mechanical or fusion), 305 mm (12 in.)	A0394328
Optical Fiber Splice Tray, Tray cover, 203 mm (8 in.)	A0394331
Optical Fiber Splice Tray, Tray cover, 305 mm (12 in.)	A0394330

MediaFlex Plate

MediaFlex Plates are one part of the comprehensive line of plates and inserts that snap together to create a full line of modular workstation outlets.

MediaFlex Plates can be mounted over standard NEMA type outlet boxes and rings to provide support for a variety of MediaFlex Adapters and Inserts. The fully modular construction combined with the front access design provides extensive configuration flexibility for current and future network needs. MediaFlex Plates are available in Single gang and Double gang configurations.

The Double gang faceplate comes with a stand-off ring included in the package. This ring allows for easy mounting with virtually any industry electrical box or mud/adapter rings, therefore providing added installation flexibility.

Each plate has the capacity of up to 6 ports per Single gang and 12 ports per Double gang.

AX101748 MediaFlex Plate, Single Gang

AX101869 MediaFlex Plate, Double Gang

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER
MEDIAFLEX PLATE	SINGLE GANG	DOUBLE GANG
Gray	AX101745	AX101869
Almond	AX101746	AX101870
Elec. White	AX101747	AX101871
Black	AX101748	AX101872

MediaFlex Adapter Boxes
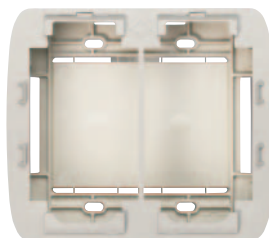
MediaFlex Surface Adapter Box

MediaFlex Surface Adapter Boxes are one part of the comprehensive line of plates and inserts that snap together to create a full line of modular workstation outlets.

MediaFlex Surface Adapter Boxes can be mounted over standard NEMA type outlet boxes and rings to provide support for the MediaFlex plates. The MediaFlex Surface Adapter Boxes are available as a Double gang configuration. The double gang box allows more room for cable management and bend radius control.
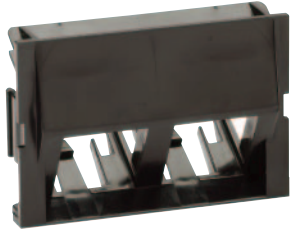
AX101874 MediaFlex Adapter Box, Double Gang

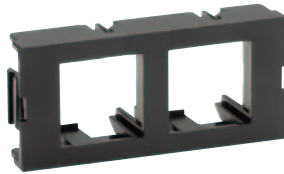| DESCRIPTION	ORDERING NUMBER
MediaFlex Adapter Box, Double-Gang, Gray	AX101873
MediaFlex Adapter Box, Double-Gang, Almond	AX101874
MediaFlex Adapter Box, Double-Gang, Elec. White	AX101875
MediaFlex Adapter Box, Double-Gang, Black	AX101876

Workstation Outlets

MediaFlex Inserts

AX101756 MediaFlex MDVO (style) Insert,
2-port, Angled

MediaFlex Insert

MediaFlex MDVO-style Inserts are available in a 2-port configuration in both Flush and Angled versions. They are compatible with all GigaFlex and MDVO Modules (EZ-MDVO and Multimedia). The inserts are two units high for the flush version and three units high for the angled version. Therefore three flush inserts or two angled inserts are required to fully populate a Single gang MediaFlex Plate.

AX101752 MediaFlex MDVO (style) Insert,
2-port, Flush

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER
MEDIAFLEX MDVO (STYLE) INSERT	FLUSH	ANGLED
2-port, Gray, bag of 10 units	AX101749	AX101753
2-port, Almond, bag of 10 units	AX101750	AX101754
2-port, Elec. White, bag of 10 units	AX101751	AX101755
2-port, Black, bag of 10 units	AX101752	AX101756

AX101937 MediaFlex Duplex SC Insert,
Angled

MediaFlex Multimedia Insert

MediaFlex Multimedia Inserts provide optimum flexibility in configuring multimedia workstation outlets that respond to any present or future network needs. MediaFlex Multimedia Inserts along with other MediaFlex Inserts allow for easy configuration of outlets. All inserts are front loaded and easily snapped in and out of the MediaFlex Plates for easy installation and maintenance.

MediaFlex Multimedia Inserts are available in Angled versions only in order to allow for proper management of cable bend radius. The inserts are three units high, therefore two inserts are required to fully populate a Single gang faceplate and four inserts will fully populate a Double gang faceplate.

DESCRIPTION	ORDERING NUMBER
Duplex SC Singlemode, Gray	AX101935
Duplex SC Singlemode, Almond	AX101936
Duplex SC Singlemode, White	AX101937
Duplex SC Singlemode, Black	AX101938
Duplex SC Multimode, Gray	AX101939
Duplex SC Multimode, Almond	AX101940
Duplex SC Multimode, White	AX101941
Duplex SC Multimode, Black	AX101942

MDVO Multimedia Outlet Box

The MDVO Multimedia Outlet Box brings unique versatility for multimedia work area installations. The box design provides cable management and helps maintain cable bend radius. The outlet box's low profile design and side-entry offers better protection for patch cords. The outlet box can accept up to six EZ-MDVO, GigaFlex or MDVO Multimedia Modules or three SC Duplex adapters.

The MDVO Multimedia Outlet Box can be mounted directly on the wall or attached to standard electrical boxes. Included with the MDVO Multimedia box are three SC Duplex Mounting bezels and three MDVO Adapters.
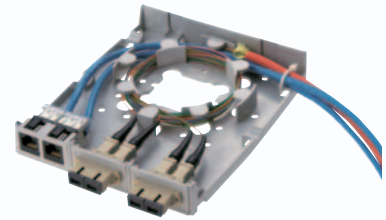
A0643205 MDVO Multimedia Outlet Box, shown here as terminated

DESCRIPTION	ORDERING NUMBER
MDVO Multimedia Outlet Box, 6-port, Gray	A0643205
MDVO Multimedia Outlet Box, 6-port, Almond	A0643206
MDVO Multimedia Outlet Box, 6-port, White	A0643207
MDVO Multimedia Outlet Box, 6-port, Black	A0643208

Fiber Media

Workstation Outlets

■ **MDVO Multimedia Modules**

MDVO Multimedia Module

MDVO Multimedia Modules address audio/video and fiber applications. Fiber modules are available for LC Duplex, SC Simplex, ST Compatible multimode and MT-RJ multimode & singlemode connections. The SC Duplex Adapter is a fiber adapter sleeve with flanges that mounts into the SC Duplex mounting bezel (included in the MDVO Multimedia Outlet box). Audio/video modules are available for SVHS, RCA, BNC and Video F connections.
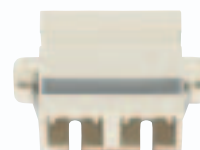

A0407005 MDVO SC Fiber Module

AX101467 MDVO MT-RJ Fiber Module

A0407010 MDVO ST Compatible Fiber Module

A0649254 SC Duplex Adapter

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
MDVO MULTIMEDIA MODULE	GRAY	ALMOND	WHITE	BLACK
LC Duplex Multimode	AX102209	AX102210	AX102211	AX102212
LC Duplex Singlemode	AX102213	AX102214	AX102215	AX102216
SC simplex, Multimode	A0407003	A0407004	A0407005	A0407006
SC Duplex Adapter, Multimode		A0649254		
ST Compatible, Multimode	A0407007	A0407008	A0407009	A0407010
MT-RJ, Multimode, Almond				AX101467
MT-RJ, Singlemode, Blue				AX101466

Custom multimedia connectors are also available, please contact Customer Service for more details.

■ **Multi–User Outlet Boxes**
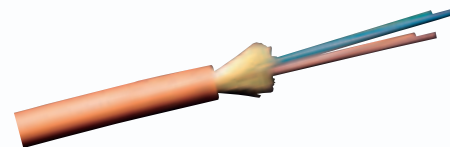
Multi–User Outlet Box

AX100222 Multi-User Outlet Box. shown here with modules

The Multi-User Outlet Box is a versatile box that can be used in many different applications. The outlet box can accommodate up to 24 connections of any type, UTP, fiber or coax. The outlet box is ideal for use as a multi-user telecommunications assembly, or simply as a high-density multimedia telecommunications outlet. The Multi-User Outlet Box can also be used as a wall mounted patch panel in confined areas, such as shallow rooms and cabinets.
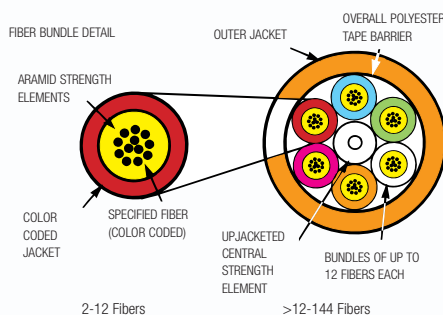
DESCRIPTION	ORDERING NUMBER
Multi-User Outlet Box, 24-port, Gray	AX100219
Multi-User Outlet Box, 24-port, Almond	AX100220
Multi-User Outlet Box, 24-port, White	AX100221
Multi-User Outlet Box, 24-port, Black	AX100222

Workstation Outlets

Distribution Series

FiberExpress Optical Fiber Distribution Cables are designed for low to high fiber count in-building installations. They offer a high degree of flexibility for backbone and horizontal applications. These cables are made with 900 μm tight buffered fiber and are available in Multimode 62.5 μm and 50 μm, Singlemode Enhanced or a combination of two types of fiber (composite) if required. All Distribution Cables are riser OFNR/FT4, plenum OFNP/FT6 or LSZH rated.

M9B043 Distribution (plenum)

FIBER BUNDLE DETAIL

OUTER JACKET

OVERALL POLYESTER
TAPE BARRIER

ARAMID STRENGTH
ELEMENTS

COLOR
CODED
JACKET

SPECIFIED FIBER
(COLOR CODED)

UPJACKETED
CENTRAL
STRENGTH
ELEMENT

BUNDLES OF UP TO
12 FIBERS EACH

2-12 Fibers

>12-144 Fibers

Features & Benefits

- Available in sizes from 2 to 144 fibers
- 900 μm tight-buffered fiber allows for use of field-installable connectors
- Riser (OFNR/FT4) or plenum (OFNP/FT6) listed
- Flexible thermoplastic jacket provides excellent handling characteristics
- Fibers & cable sub-units are color coded for easy identification
- Length markings in meters for easy determination of cable length
- Full dielectric construction, no grounding required
- For riser offering, MSHA approved cables are available.

Applications

- Low to high fiber count requirements
- In-building backbone
- Fiber-to-the-desk applications
- Computer room.

Cable Color Code

The Belden CDT Distribution Series jacket color codes standard is orange for Multimode FX300 and FX600 cables and aqua for FX2000 cables. The Distribution LSZH Series outer jacket color codes standard is green for Multimode FX300 cables, orange for FX600 cables and aqua for FX2000 cables. All Singlemode Enhanced cables have a yellow jacket. Fiber sub-units are color coded as per ANSI/TIA/EIA-568-B specifications. The standard color code allows for easy identification of fibers as follows: Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose or Aqua.

Product Specifications

Crush Resistance (EIA-455-41)	2000 N/cm
Impact Resistance (EIA-455-25)	2000 Impacts
	w/1.6 N-m
Flexure (EIA-455-104)	2000 cycles min.
Minimum Bend Radius	
Installation (Short Term) - Load	15x cable diameter
Long Term - No Load	10x cable diameter
Riser	UL/cUL rated Type OFNR / OFN FT4
	Flame Resistance UL 1666
Plenum	UL/cUL rated Type OFNP / OFN FT6
	Flame Resistance NFPA 262
LSZH	UL/cUL rated Type OFNR / OFN FT4
	Flame Resistance UL 1666
Buffer Diameter	900 μm
Strength Member	Aramid Yarn
Central Strength Member	Upjacketed
Jacket Material	
Riser	PVC
Plenum (non-unitized)	PVC
Plenum (unitized)	PVDF
Low Smoke Zero Halogen	LSZH
Buffer Material	
Riser	PVC
Plenum	PVC
Low Smoke Zero Halogen	LSZH
Color coding (Jacket and Fibers)	TIA/EIA 568-B.3, TIA/EIA 598-B
Temperature Range	
Storage	-40 to +80°C
Operating	-20 to +70°C

FiberExpress Cables

Fiber Media

Distribution Series (continued)

Optical Specification - Riser, Plenum and LSZH Series

FIBER TYPE	ATTENUATION (MAX.) dB/km			OFL BANDWIDTH (MIN.) MHz-km		RML BANDWIDTH (MIN.) MHz-km
	850 nm	1300 nm	1550 nm	850 nm	1300 nm	850 nm
FiberExpress 300 (62.5 µm)	3.5	1.25	-------	200	500	220
FiberExpress 600 (50 µm)	3.5	1.25	-------	500	500	510
FiberExpress 2000 (50 µm)	3.5	1.25	-------	1500	500	2000**
Singlemode Enhanced	-------	0.8*	0.5	-------	-------	-------

OFL: Overfill launch
* Wavelength: 1310 nm
RML: Restricted mode launch
** EMB: Effective Modal Bandwidth

FIBER TYPE	GIGABIT ETHERNET REACH (METERS) IEEE 802.3Z		10 GIGABIT ETHERNET REACH (METERS) 10GBASE-S	10 GIGABIT ETHERNET REACH (METERS) 10GBASE-L
	1000BASE SX	1000BASE LX		
FiberExpress 300 (62.5 µm)	300	550	33	-------
FiberExpress 600 (50 µm)	600	600	82	-------
FiberExpress 2000 (50 µm)	2000	600	300	-------
Singlemode Enhanced	-------	5000	-------	10000

Note1: Mode launch conditioning patch cord is not required
Note2: For proper design, please refer to the Belden IBDN Optical Fiber Design Guide
Note3: Singlemode Enhanced is a low Water Peak Singlemode for CWDM applications and complies with ITU G.562.c/d

Mechanical Characteristics

Distribution Riser Series

FIBER COUNT	NUMBER OF SUB-UNITS	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS INSTALLATION	LONG TERM	MAXIMUM LOAD INSTALLATION
2	0	4.67 mm (0.184 in.)	19 kg/km (13 lb/kft)	7.0 cm (2.8 in.)	4.7 cm (1.8 in.)	801 Newton (180 lb)
4	0	5.08 mm (0.200 in.)	24 kg/km (16 lb/kft)	7.6 cm (3.0 in.)	5.1 cm (2.0 in.)	801 Newton (180 lb)
6	0	5.59 mm (0.220 in.)	28 kg/km (19 lb/kft)	8.4 cm (3.3 in.)	5.6 cm (2.2 in.)	1201 Newton (270 lb)
8	0	5.97 mm (0.235 in.)	33 kg/km (22 lb/kft)	8.9 cm (3.5 in.)	6.1 cm (2.4 in.)	1201 Newton (270 lb)
12	0	6.48 mm (0.255 in.)	40 kg/km (27 lb/kft)	9.6 cm (3.8 in.)	6.6 cm (2.6 in.)	1334 Newton (300 lb)
24	4	12.60 mm (0.496 in.)	124 kg/km (83 lb/kft)	18.8 cm (7.4 in.)	12.7 cm (5.0 in.)	4270 Newton (960 lb)
36	6	16.36 mm (0.644 in.)	204 kg/km (137 lb/kft)	24.6 cm (9.7 in.)	16.5 cm (6.4 in.)	6405 Newton (1440 lb)
48	4	15.93 mm (0.627 in.)	195 kg/km (131 lb/kft)	23.9 cm (9.4 in.)	16.0 cm (6.3 in.)	4203 Newton (945 lb)
72	6	19.10 mm (0.750 in.)	290 kg/km (195 lb/kft)	28.6 cm (11.3 in.)	19.1 cm (7.5 in.)	6005 Newton (1350 lb)
96	8	22.73 mm (0.895 in.)	432 kg/km (290 lb/kft)	34.0 cm (13.4 in.)	22.9 cm (9.0 in.)	8820 Newton (1983 lb)
144	12	24.49 mm (0.964 in.)	467 kg/km (314 lb/kft)	36.8 cm (14.5 in.)	24.4 cm (9.6 in.)	12210 Newton (2745 lb)

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
DISTRIBUTION RISER SERIES UL/cUL OFNR FT4	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
2 fibers	M9B037	M9A037	M9C037	M9W037
4 fibers	M9B038	M9A038	M9C038	M9W038
6 fibers	M9B039	M9A039	M9C039	M9W039
8 fibers	M9B040	M9A040	M9C040	M9W040
12 fibers	M9B042	M9A042	M9C042	M9W042
24 fibers	M9B602	M9A602	M9C602	M9W602
36 fibers	M9B604	M9A604	M9C604	M9W604
48 fibers	M9B606	M9A606	M9C606	M9W606
72 fibers	M9B609	M9A609	M9C609	M9W609
96 fibers	M9B622	M9A622	M9C622	M9W622
144 fibers	M9B619	M9A619	M9C619	M9W619
DISTRIBUTION COMPOSITE CABLES, RISER SERIES UL/cUL OFNR FT4				
6xSM/12x62.5 FX300				M96992
12xSM/12x62.5 FX300				M96963
6xSM/12x50 FX600				M96909
12xSM/12x50 FX600				M96908

All fiber optic products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.

FiberExpress Cables

Fiber Media

FiberExpress Cables

Distribution Series (continued)

Mechanical Characteristics

Distribution Plenum Series

FIBER COUNT	NUMBER OF SUB-UNITS	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS INSTALLATION	LONG TERM	MAXIMUM LOAD INSTALLATION
2	0	4.67 mm (0.184 in.)	19 kg/km (13 lb/kft)	7.0 cm (2.8 in.)	4.7 cm (1.8 in.)	800 Newton (180 lb)
4	0	4.42 mm (0.174 in.)	19 kg/km (13 lb/kft)	7.0 cm (2.8 in.)	4.7 cm (1.8 in.)	867 Newton (195 lb)
6	0	4.83 mm (0.190 in.)	22 kg/km (15 lb/kft)	7.6 cm (3.0 in.)	5.1 cm (2.0 in.)	1201 Newton (270 lb)
8	0	5.64 mm (0.222 in.)	28 kg/km (19 lb/kft)	8.5 cm (3.3 in.)	5.6 cm (2.2 in.)	1201 Newton (270 lb)
12	0	5.72 mm (0.225 in.)	33 kg/km (22 lb/kft)	8.6 cm (3.4 in.)	5.8 cm (2.3 in.)	1334 Newton (300 lb)
24	4	12.52 mm (0.493 in.)	132 kg/km (89 lb/kft)	19.0 cm (7.5 in.)	12.6 cm (5.0 in.)	5618 Newton (1263 lb)
36	6	15.34 mm (0.604 in.)	202 kg/km (136 lb/kft)	23.4 cm (9.2 in.)	15.6 cm (6.1 in.)	8509 Newton (1913 lb)
48	4	15.62 mm (0.615 in.)	199 kg/km (134 lb/kft)	23.4 cm (9.2 in.)	15.7 cm (6.2 in.)	5538 Newton (1245 lb)
72	6	19.91 mm (0.784 in.)	323 kg/km (217 lb/kft)	30.0 cm (11.8 in.)	19.8 cm (7.8 in.)	9310 Newton (2093 lb)
96	8	24.40 mm (0.961 in.)	460 kg/km (309 lb/kft)	36.6 cm (14.4 in.)	24.4 cm (9.6 in.)	14612 Newton (3285 lb)
144	12	26.34 mm (1.037 in.)	543 kg/km (365 lb/kft)	39.6 cm (15.6 in.)	26.4 cm (10.4 in.)	16213 Newton (3645 lb)

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
DISTRIBUTION PLENUM SERIES UL/cUL OFNP FT6	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
2 fibers	M9B043	M9A043	M9C043	M9W043
4 fibers	M9B044	M9A044	M9C044	M9W044
6 fibers	M9B045	M9A045	M9C045	M9W045
8 fibers	M9B046	M9A046	M9C046	M9W046
12 fibers	M9B048	M9A048	M9C048	M9W048
24 fibers	M9B612	M9A612	M9C612	M9W612
36 fibers	M9B614	M9A614	M9C614	M9W614
48 fibers	M9B616	M9A616	M9C616	M9W616
72 fibers	M9B620	M9A620	M9C620	M9W620
96 fibers	M9B623	M9A623	M9C623	M9W623
144 fibers	M9B621	M9A621	M9C621	M9W621
DISTRIBUTION COMPOSITE CABLES, PLENUM SERIES UL/cUL OFNP FT6				
6xSM/6x62.5 FX300				M97174
6xSM/12x62.5 FX300				M97041
12xSM/12x62.5 FX300				M97219
6xSM/6x50 FX600				M97412
6xSM/12x50 FX600				M97411
12xSM/12x50 FX600				M96780

All fiber optic products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.

FiberExpress Cables

Mechanical Characteristics

Distribution LSZH Series

FIBER COUNT	NUMBER OF SUBUNITS	MIN. THICKNESS OF JACKET	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS INSTALLATION	LONG TERM	MAXIMUM LOAD (INSTALLATION)
2	0	0.8 mm (0.032 in.)	4.9 mm (0.193 in.)	24 kg/km (16 lb/kft)	7.4 cm (2.9 in.)	4.9 cm (1.9 in.)	800 Newton (180 lb)
4	0	0.8 mm (0.032 in.)	5.3 mm (0.209 in.)	28 kg/km (19 lb/kft)	8.0 cm (3.1 in.)	5.3 cm (2.1 in.)	800 Newton (180 lb)
6	0	0.8 mm (0.032 in.)	5.8 mm (0.228 in.)	33 kg/km (22 lb/kft)	8.7 cm (3.4 in.)	5.8 cm (2.2 in.)	1200 Newton (270 lb)
8	0	0.8 mm (0.032 in.)	6.4 mm (0.252 in.)	38 kg/km (26 lb/kft)	9.6 cm (3.8 in.)	6.4 cm (2.5 in.)	1200 Newton (270 lb)
12	0	0.8 mm (0.032 in.)	6.9 mm (0.272 in.)	44 kg/km (30 lb/kft	10.4 cm (4.1 in.)	6.9 cm (2.7 in.)	1200 Newton (270 lb)
16	0	0.9 mm (0.035 in.)	8.8 mm (0.347 in.)	63 kg/km (43 lb/kft)	13.2 cm (5.2 in.)	8.8 cm (3.5 in.)	1400 Newton (315 lb)
24	0	0.9 mm (0.035 in.)	9.8 mm (0.386 in.)	79 kg/km (54 lb/kft)	14.7 cm (5.8 in.)	9.8 cm (3.9 in.)	2000 Newton (450 lb)
36	6	1.2 mm (0.047 in.)	20.0 mm (0.798 in.)	313 kg/km (214 lb/kft)	30.0 cm (11.8 in.)	20.0 cm (8.0 in.)	7200 Newton (1619 lb)
48	6	1.2 mm (0.047 in.)	21.2 mm (0.835 in.)	347 kg/km (237 lb/kft)	31.8 cm (12.5 in.)	21.2 cm (8.4 in.)	7200 Newton (1619 lb)
72	6	1.2 mm (0.047 in.)	22.4 mm (0.883 in.)	395 kg/km (270 lb/kft)	33.6 cm (13.2 in.)	22.4 cm (8.8 in.)	7200 Newton (1619 lb)
96	8	1.2 mm (0.047 in.)	24.7 mm (0.973 in.)	532 kg/km (364 lb/kft)	37.1 cm (14.6 in.)	24.7 cm (9.7 in.)	7200 Newton (1619 lb)
144	12	1.2 mm (0.047 in.)	27.6 mm (1.087 in.)	561 kg/km (384 lb/kft)	41.4 cm (16.3 in.)	27.6 cm (10.9 in.)	7200 Newton (1619 lb)

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
DISTRIBUTION LSZH SERIES	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
2 fibers	M9B100	M9A100	M9C100	M9W100
4 fibers	M9B101	M9A101	M9C101	M9W101
6 fibers	M9B102	M9A102	M9C102	M9W102
8 fibers	M9B103	M9A103	M9C103	M9W103
12 fibers	M9B104	M9A104	M9C104	M9W104
16 fibers	M9B105	M9A105	M9C105	M9W105
24 fibers	M9B107	M9A107	M9C107	M9W107
36 fibers	M9B111	M9A111	M9C111	M9W111
48 fibers	M9B112	M9A112	M9C112	M9W112
72 fibers	M9B114	M9A114	M9C114	M9W114
96 fibers	M9B116	M9A116	M9C116	M9W116
144 fibers	M9B120	M9A120	M9C120	M9W120

Construction for LSZH cables differs from the drawing. Alternative fiber counts are available.

All fiber optic products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.
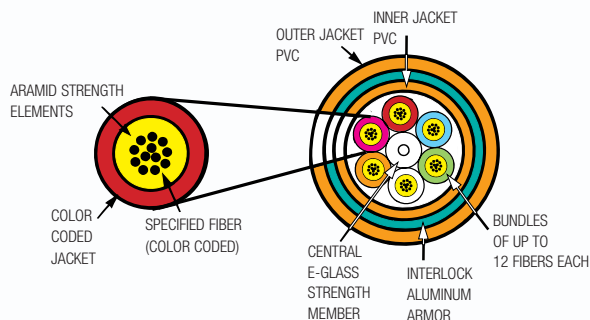
Industrial Armored (Interlock)

FiberExpress Interlock Armor Optical Fiber Cables have a rugged construction that affords superior protection in adverse environments yet can also be installed in general purpose, riser and plenum environments. The armoring is available in aluminum or steel in Riser (OFCR) or plenum (OFCP) listings. Belden CDT Interlock Armor Optical Fiber Cables offer protection from crushing, cutting and rodents. Interlock Armor Cables are also a lower cost alternative to traditional installations utilizing plenum innerduct for protection. The cables can be installed in environments such as Industrial, Mining Operations, Backbone Installations, Inter and Intra Building Installations. Belden CDT offers these cables in 62.5 and 50 µm Multimode fiber, Singlemode Enhanced fiber and hybrid compositions in loose tube or tight buffer constructions.

Fiber Bundle Detail

OUTER JACKET PVC
INNER JACKET PVC
ARAMID STRENGTH ELEMENTS
COLOR CODED JACKET
SPECIFIED FIBER (COLOR CODED)
CENTRAL E-GLASS STRENGTH MEMBER
INTERLOCK ALUMINUM ARMOR
BUNDLES OF UP TO 12 FIBERS EACH

M9B231 Industrial Armored

Features & Benefits
- Excellent mechanical protection
- Heavy duty construction
- Eliminates need for innerduct
- Also available for outside plant
- Interlock Steel Armor.

Applications
- Industrial environments
- Rugged installations
- Manufacturing plants
- Mining Shafts
- Telecommunications and data trunk.

Cable Color Code
Jacket
- Singlemode: Yellow
- 62.5/125 µm: Orange
- 50/125 µm 1 Gbe: Orange
- 50/125 µm 10 Gbe: Orange

Product Specifications

Crush Resistance (EIA-455-41)	2000 N/cm
Impact Resistance (EIA-455-25)	2000 Impacts
	w/3 N-m
Minimum Bend Radius	
Installation (Short Term) - Load	20x cable diameter
Long Term - No Load	15x cable diameter
Riser	UL/cUL rated Type OFCR / OFC FT4
	Flame Resistance UL 1666
Plenum	UL/cUL rated Type OFCP / OFC FT6
	Flame Resistance NFPA 262
Buffer Diameter	900 µm
Strength Member	Aramid Yarn
Central Strength Member	E-Glass
Jacket Material	
Riser	PVC
Plenum (non-unitized)	PVC
Plenum (unitized)	PVDF
Buffer Material	
Riser	PVC
Plenum	PVC
Color coding (Jacket and Fibers)	TIA/EIA 568-B.3, TIA/EIA 598-B
Temperature Range	
Storage	-40 to +70°C
Operating	-20 to +70°C

Industrial Armored (continued) ◼

Optical Specifications

FIBER TYPE	ATTENUATION (MAX.) dB/km			OFL BANDWIDTH (MIN.) MHz-km		RML BANDWIDTH (MIN.) MHz-km	
	850 nm	1300 nm	1550 nm	850 nm	1300 nm	850 nm	1300 nm
FiberExpress 300 (62.5 µm)	3.50	1.25	-------	200	500	220	500
FiberExpress 600 (50 µm)	3.50	1.25	-------	500	500	510	500
FiberExpress 2000 (50 µm)	3.50	1.25	-------	1500	500	2000**	500
Singlemode Enhanced	-------	0.80*	0.50	-------	------	-------	-------

OFL: Overfill launch RML: Restricted mode launch
*Wavelength: 1310 nm ** EMB: Effective Modal Bandwidth

FIBER TYPE	GIGABIT ETHERNET REACH (METERS) IEEE 802.3Z		10 GIGABIT ETHERNET REACH (METERS)	10 GIGABIT ETHERNET REACH (METERS)
	1000BASE SX	1000BASE LX	10GBASE-S	10GBASE-L
FiberExpress 300 (62.5 µm)	300	550	33	300
FiberExpress 600 (50 µm)	600	600	82	300
FiberExpress 2000 (50 µm)	2000	600	300	300
Singlemode Enhanced	-------	5000	-------	10000

Note: Mode launch conditioning patch cord is not required. For proper design, please refer to the Belden IBDN Optical Fiber Design Guide. Singlemode Enhanced is a low Water Peak Singlemode for CWDM applications and complies with ITU G.652.c/d. Links longer than 550 m (as per standard) for the same link power budget are considered engineered links. To achieve a distance of 2000 m, please contact Belden IBDN Technical Support.

FiberExpress Cables

Fiber Media

Industrial Armored (continued)

Mechanical Characteristics

FIBER COUNT	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS SHORT TERM	LONG TERM	MAXIMUM LOAD INSTALLATION
RISER					
6	14.48 mm (0.570 in.)	189 kg/km (127 lb/kft)	30.8 cm (11.4 in.)	21.7 cm (8.6 in.)	1201 Newton (270 lb)
12	15.74 mm (0.620 in.)	221 kg/km (149 lb/kft)	31.5 cm (12.4 in.)	23.6 cm (9.3 in.)	1334 Newton (300 lb)
24	17,02 mm (0.670 in.)	299 kg/km (201 lb/kft)	34.0 cm (13.4 in.)	25.5 cm (10.0 in.)	1733 Newton (390 lb)
24 (unitized)	21.46 mm (0.845 in.)	391 kg/km (263 lb/kft)	42.9 cm (16.9 in.)	32.2 cm (12.7 in.)	2700 Newton (600 lb)
36	24.64 mm (0.970 in.)	548 kg/km (368 lb/kft)	49.3 cm (19.4 in.)	37.0 cm (14.6 in.)	2700 Newton (600 lb)
48	24.64 mm (0.970 in.)	548 kg/km (368 lb/kft)	49.3 cm (19.4 in.)	37.0 cm (14.6 in.)	2700 Newton (600 lb)
72	27.82 mm (1.095 in.)	716 kg/km (481 lb/kft)	55.6 cm (21.9 in.)	41.7 cm (16.4 in.)	2700 Newton (600 lb)
96	31.62 mm (1.245 in.)	930 kg/km (625 lb/kft)	63.2 cm (24.9 in.)	47.4 cm (18.7 in.)	2700 Newton (600 lb)
144	33.55 mm (1.320 in.)	1005 kg/km (675 lb/kft)	67.1 cm (26.4 in.)	50.3 cm (19.8 in.)	2700 Newton (600 lb)
PLENUM					
6	11.96 mm (0.471 in.)	129 kg/km (87 lb/kft)	23.9 cm (9.4 in.)	17.9 cm (7.1 in.)	1201 Newton (270 lb)
12	12.85 mm (0.506 in.)	153 kg/km (103 lb/kft)	25.7 cm (10.1 in.)	19.3 cm (7.6 in.)	1334 Newton (300 lb)
24	16.03 mm (0.631 in.)	226 kg/km (152 lb/kft)	32.1 cm (12.6 in.)	24.1 cm (9.5 in.)	1735 Newton (390 lb)
24 (unitized)	19.84 mm (0.781 in.)	430 kg/km (289 lb/kft)	39.7 cm (15.6 in.)	29.8 cm (11.7 in.)	2700 Newton (600 lb)
36	22.38 mm (0.881 in.)	460 kg/km (309 lb/kft)	44.8 cm (17.6 in.)	33.6 cm (13.2 in.)	2700 Newton (600 lb)
48	23.01 mm (0.906 in.)	476 kg/km (320 lb/kft)	46.0 cm (18.1 in.)	34.5 cm (13.6 in.)	2700 Newton (600 lb)
72	26.82 mm (1.056 in.)	671 kg/km (451 lb/kft)	53.6 cm (21.1 in.)	40.2 cm (15.8 in.)	2700 Newton (600 lb)
96	31.90 mm (1.256 in.)	905 kg/km (608 lb/kft)	63.8 cm (25.1 in.)	47.8 cm (18.8 in.)	2700 Newton (600 lb)
144	33.81 mm (1.331 in.)	1022 kg/km (687 lb/kft)	67.6 cm (26.6 in.)	50.7 cm (20.0 in.)	2700 Newton (600 lb)

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
INDUSTRIAL ARMORED (ALUMINUM INTERLOCK), OFCR	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
6 fibers	M9B230	M9A230	M9C230	M9W230
12 fibers	M9B231	M9A231	M9C231	M9W231
24 fibers	M9B232	M9A232	M9C232	M9W232
24 fibers (unitized)	M9B233	M9A233	M9C233	M9W233
36 fibers	M9B234	M9A234	M9C234	M9W234
48 fibers	M9B235	M9A235	M9C235	M9W235
72 fibers	M9B236	M9A236	M9C236	M9W236
96 fibers	M9B237	M9A237	M9C237	M9W237
144 fibers	M9B238	M9A238	M9C238	M9W238
INDUSTRIAL ARMORED (ALUMINUM INTERLOCK), OFCP	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
6 fibers	M9B240	M9A240	M9C240	M9W240
12 fibers	M9B241	M9A241	M9C241	M9W241
24 fibers	M9B242	M9A242	M9C242	M9W242
24 fibers (unitized)	M9B243	M9A243	M9C243	M9W243
36 fibers	M9B244	M9A244	M9C244	M9W244
48 fibers	M9B245	M9A245	M9C245	M9W245
72 fibers	M9B246	M9A246	M9C246	M9W246
96 fibers	M9B247	M9A247	M9C247	M9W247
144 fibers	M9B248	M9A248	M9C248	M9W248

Belden CDT listed offering is not limited to the above part numbers.

All fiber optic products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.

Breakout Series

FiberExpress Optical Fiber Breakout Cables are designed for low to medium fiber count in-building, harsh-environment installations. Breakout or fanout cables offer a high degree of flexibility for backbone and horizontal applications. They are made with 900 µm tight-buffered fiber, each with a Riser, Plenum or LSZH rated jacket. Breakout cables are available in 62.5 µm and 50 µm Multimode fiber and Singlemode Enhanced fiber configurations.

M9B011 Breakout (riser)

OUTER JACKET
ARAMID STRENGTH ELEMENTS
COLOR CODED THERMO-PLASTIC JACKET
900 MICRON TIGHT BUFFERED FIBER
CENTRAL MEMBER
2.0 mm SUB-UNITS
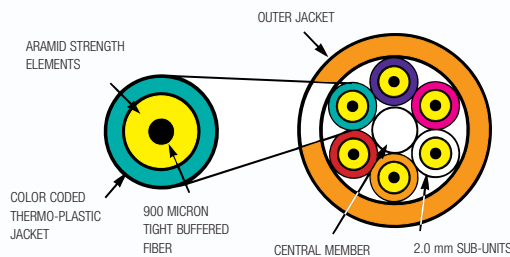
Features & Benefits
- Available in sizes from 2 to 36 fibers
- 900 µm tight-buffered fiber allows for use of field installable connectors
- Riser (OFNR/FT4) or plenum (OFNP/FT6) listed
- Full dielectric construction, no grounding required
- Fiber subunits are color coded for easy identification
- Length markings in meters for easy determination of cable length
- For riser offering, MSHA approved cables are available.

Applications
- Low to medium fiber count requirements
- In-building backbone or horizontal deployment
- Office wiring
- Factory Floor Automation.

Cable Color Code
The Belden CDT Breakout Series jacket color codes standard is orange for Multimode FX300 and FX600 cables and aqua for FX2000 cables. The Breakout LSZH Series outer jacket color codes standard is green for Multimode FX300 cables, orange for FX600 cables and aqua for FX2000 cables. All Singlemode Enhanced cables have a yellow jacket. Fiber sub-units are color coded as per ANSI/TIA/EIA-568-B specifications. The standard color code allows for easy identification of fibers as follows: Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose or Aqua.

Product Specifications

Crush Resistance (EIA-455-41)	2000 N/cm
Impact Resistance (EIA-455-25)	2000 Impacts
	w/1.6 N-m
Flexure (EIA-455-104)	2000 cycles min.
Minimum Bend Radius	
Installation (Short Term) - Load	15x cable diameter
Long Term - No Load	10x cable diameter
Riser	UL/cUL rated Type OFNR / OFN FT4
	Flame Resistance UL 1666
Plenum	UL/cUL rated Type OFNP / OFN FT6
	Flame Resistance NFPA 262
LSZH	UL/cUL rated Type OFNR / OFN FT4
	Flame Resistance UL 1666
Buffer Diameter	900 µm
Strength Member	Aramid Yarn
Central Strength Member	
Jacket Material	
Riser	PVC
Plenum	PVC or PVDF
Low Smoke Zero Halogen	LSZH
Sub-unit Jacket Material	
Riser	PVC
Plenum	PVC
Low Smoke Zero Halogen	LSZH
Buffer Material	
Riser	PVC
Plenum	PVC
Low Smoke Zero Halogen	LSZH
Color coding (Jacket and Fibers)	TIA/EIA 568-B.3, TIA/EIA 598-B
Temperature Range	
Storage	-40 to +80°C
Operating	-20 to +70°C

Breakout Series (continued)

Optical Specification - Riser, Plenum and LSZH Series

FIBER TYPE	ATTENUATION (MAX.) dB/km			OFL BANDWIDTH (MIN.) MHz-km		RML BANDWIDTH (MIN.) MHz-km
	850 nm	1300 nm	1550 nm	850 nm	1300 nm	850 nm
FiberExpress 300 (62.5 µm)	3.5	1.25	-------	200	500	220
FiberExpress 600 (50 µm)	3.5	1.25	-------	500	500	510
FiberExpress 2000 (50 µm)	3.5	1.25	-------	1500	500	2000**
Singlemode Enhanced	-------	0.8*	0.5	-------	-------	-------

OFL: Overfill launch
*Wavelength: 1310 nm
RML: Restricted mode launch
** EMB: Effective Modal Bandwidth

FIBER TYPE	GIGABIT ETHERNET REACH (METERS) IEEE 802.3Z		10 GIGABIT ETHERNET REACH (METERS)	10 GIGABIT ETHERNET REACH (METERS)
	1000BASE SX	1000BASE LX	10GBASE-S	10GBASE-L
FiberExpress 300 (62.5 µm)	300	550	33	-------
FiberExpress 600 (50 µm)	600	600	82	-------
FiberExpress 2000 (50 µm)	2000	600	300	-------
Singlemode Enhanced	-------	5000	-------	10000

Note1: Mode launch conditioning patch cord is not required
Note2: For proper design, please refer to the Belden IBDN Optical Fiber Design Guide
Note3: Singlemode Enhanced is a low Water Peak Singlemode for CWDM applications and complies with ITU G.562.c/d

Mechanical Characteristics, sub-unit diameter: 2 mm

Breakout Riser Series

FIBER COUNT	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS INSTALLATION	LONG TERM	MAXIMUM LOAD INSTALLATION
2	6.60 mm (0.260 in.)	36 kg/km (24 lb/kft)	9.9 cm (3.9 in.)	6.6 cm (2.6 in.)	801 Newton (180 lb)
4	8.15 mm (0.321 in.)	52 kg/km (35 lb/kft)	12.2 cm (4.8 in.)	8.1 cm (3.2 in.)	1535 Newton (345 lb)
6	9.09 mm (0.358 in.)	80 kg/km (54 lb/kft)	13.6 cm (5.4 in.)	9.1 cm (3.6 in.)	2415 Newton (543 lb)
8	10.29 mm (0.405 in.)	103 kg/km (69 lb/kft)	15.4 cm (6.1 in.)	10.3 cm (4.1 in.)	2700 Newton (600 lb)
10	11.56 mm (0.455 in.)	128 kg/km (86 lb/kft)	17.3 cm (6.8 in.)	11.5 cm (4.5 in.)	2700 Newton (600 lb)
12	13.06 mm (0.514 in.)	164 kg/km (110 lb/kft)	19.6 cm (7.7 in.)	13.1 cm (5.1 in.)	2700 Newton (600 lb)
18	13.21 mm (0.520 in.)	155 kg/km (104 lb/kft)	19.8 cm (7.8 in.)	13.2 cm (5.2 in.)	2700 Newton (600 lb)
24	14.99 mm (0.590 in.)	201 kg/km (135 lb/kft)	22.6 cm (8.9 in.)	15.0 cm (5.9 in.)	2700 Newton (600 lb)
36	17.27 mm (0.680 in.)	250 kg/km (168 lb/kft)	25.9 cm (10.2 in.)	17.3 cm (6.8 in.)	2700 Newton (600 lb)

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
BREAKOUT RISER SERIES UL/cUL OFNR FT4	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
2 fibers	M9B005	M9A005	M9C005	M9W005
4 fibers	M9B006	M9A006	M9C006	M9W006
6 fibers	M9B007	M9A007	M9C007	M9W007
8 fibers	M9B008	M9A008	M9C008	M9W008
10 fibers	M9B009	M9A009	M9C009	M9W009
12 fibers	M9B010	M9A010	M9C010	M9W010
18 fibers	M9B011	M9A011	M9C011	M9W011
24 fibers	M9B012	M9A012	M9C012	M9W012
36 fibers	M9B083	M9A083	M9C083	M9W083

2.5 mm Breakout cables are also available.

All fiber optic products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.
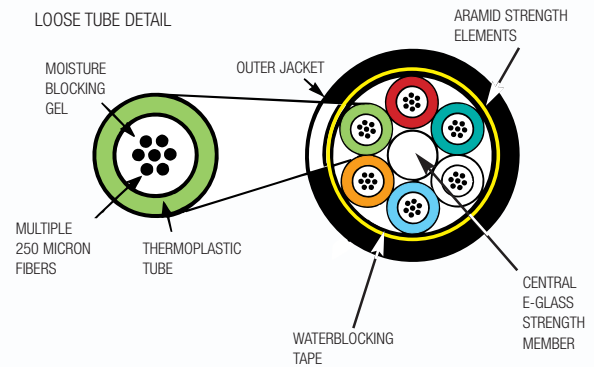
Fiber Media

FiberExpress Cables

Mechanical Characteristics, *sub-unit diameter: 2 mm*

Breakout Plenum Series

FIBER COUNT	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS INSTALLATION	LONG TERM	MAXIMUM LOAD INSTALLATION
2	5.84 mm (0.230 in.)	31 kg/km (21 lb/kft)	8.9 cm (3.5 in.)	5.8 cm (2.3 in.)	801 Newton (180 lb)
4	6.68 mm (0.263 in.)	45 kg/km (30 lb/kft)	9.9 cm (3.9 in.)	6.6 cm (2.6 in.)	1535 Newton (345 lb)
6	7.11 mm (0.280 in.)	55 kg/km (37 lb/kft)	10.7 cm (4.2 in.)	7.1 cm (2.8 in.)	2415 Newton (543 lb)
8	8.53 mm (0.336 in.)	82 kg/km (55 lb/kft)	13.0 cm (5.1 in.)	8.7 cm (3.4 in.)	2700 Newton (600 lb)
10	9.78 mm (0.385 in.)	109 kg/km (73 lb/kft)	14.7 cm (5.8 in.)	9.8 cm (3.9 in.)	2700 Newton (600 lb)
12	11.18 mm (0.440 in.)	143 kg/km (96 lb/kft)	16.8 cm (6.6 in.)	11.2 cm (4.4 in.)	2700 Newton (600 lb)
18	11.43 mm (0.450 in.)	132 kg/km (89 lb/kft)	17.3 cm (6.8 in.)	11.4 cm (4.5 in.)	2700 Newton (600 lb)
24	13.67 mm (0.558 in.)	189 kg/km (127 lb/kft)	20.6 cm (8.1 in.)	13.7 cm (5.4 in.)	2700 Newton (600 lb)
36	15.32 mm (0.620 in.)	243 kg/km (163 lb/kft)	23.6 cm (9.3 in.)	15.7 cm (6.2 in.)	2700 Newton (600 lb)

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
BREAKOUT PLENUM SERIES UL/cUL OFNP FT6	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
2 fibers	M9B013	M9A013	M9C013	M9W013
4 fibers	M9B014	M9A014	M9C014	M9W014
6 fibers	M9B015	M9A015	M9C015	M9W015
8 fibers	M9B016	M9A016	M9C016	M9W016
10 fibers	M9B017	M9A017	M9C017	M9W017
12 fibers	M9B018	M9A018	M9C018	M9W018
18 fibers	M9B019	M9A019	M9C019	M9W019
24 fibers	M9B020	M9A020	M9C020	M9W020
36 fibers	M9B082	M9A082	M9C082	M9W082

2.5 mm Breakout cables are also available.

All fiber optic products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.

Fiber Media

FiberExpress Cables

■ **Breakout Series (continued)**

Mechanical Characteristics

Breakout LSZH Series

FIBER COUNT	MIN. THICKNESS OF JACKET	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS INSTALLATION	LONG TERM	MAXIMUM LOAD (INSTALLATION)
2*	0.9 mm (0.035 in.)	7.8 mm (0.307 in.)	57 kg/km (39 lb/kft)	11.7 cm (4.606 in.)	7.8 cm (3.071 in.)	1200 Newton (270 lb)
4	0.9 mm (0.035 in.)	7.8 mm (0.307 in.)	55 kg/km (38 lb/kft)	11.7 cm (4.606 in.)	7.8 cm (3.071 in.)	1300 Newton (292 lb)
6	0.9 mm (0.035 in.)	9.3 mm (0.366 in.)	76 kg/km (52 lb/kft)	14.0 cm (5.512 in.)	9.3 cm (3.661 in.)	2000 Newton (450 lb)
8	0.9 mm (0.035 in.)	10.1 mm (0.398 in.)	98 kg/km (67 lb/kft)	15.2 cm (5.984 in.)	10.1 cm (3.976 in.)	2600 Newton (585 lb)
10*	0.9 mm (0.035 in.)	12.8 mm (0.504 in.)	162 kg/km (110 lb/kft)	19.2 cm (7.559 in.)	12.8 cm (5.039 in.)	2600 Newton (585 lb)
12	0.9 mm (0.035 in.)	12.8 mm (0.504 in.)	161 kg/km (110 lb/kft)	19.2 cm (7.559 in.)	12.8 cm (5.039 in.)	2700 Newton (600 lb)
18	0.9 mm (0.035 in.)	13.3 mm (0.524 in.)	151 kg/km (103 lb/kft)	20.0 cm (7.874 in.)	13.3 cm (5.236 in.)	2700 Newton (600 lb)
24	0.9 mm (0.035 in.)	15.3 mm (0.602 in.)	202 kg/km (138 lb/kft)	23.0 cm (9.055 in.)	15.3 cm (6.234 in.)	2700 Newton (600 lb)
36	1.0 mm (0.039 in.)	18.0 mm (0.709 in.)	250 kg/km (171 lb/kft)	27.0 cm (10.630 in.)	18.0 cm (7.087 in.)	2700 Newton (600 lb)
48	1.0 mm (0.039 in.)	21.0 mm (0.827 in.)	350 kg/km (239 lb/kft)	31.5 cm (12.402 in.)	21.0 cm (8.268 in.)	2700 Newton (600 lb)

* - simplex cables + 2 fillers

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
BREAKOUT LSZH SERIES	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
2 fibers	M9B130	M9A130	M9C130	M9W130
4 fibers	M9B131	M9A131	M9C131	M9W131
6 fibers	M9B132	M9A132	M9C132	M9W132
8 fibers	M9B133	M9A133	M9C133	M9W133
10 fibers	M9B134	M9A134	M9C134	M9W134
12 fibers	M9B135	M9A135	M9C135	M9W135
18 fibers	M9B136	M9A136	M9C136	M9W136
24 fibers	M9B137	M9A137	M9C137	M9W137
36 fibers	M9B138	M9A138	M9C138	M9W138
48 fibers	M9B139	M9A139	M9C139	M9W139

2.5 mm Breakout cables are also available.

All fiber optic products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.

FiberExpress Cables

Loose Tube (Campus) Outdoor Series

FiberExpress Loose Tube (Campus) Optical Fiber Cables are loose-tube buffered cables suited for outdoor applications such as lashed aerial or underground conduit. These all-dielectric cables are available in indoor/outdoor riser and plenum rated constructions. Loose tube Cables are available in 62.5 and 50 µm Multimode fiber and Singlemode Enhanced fiber configurations.

M9B510 Loose Tube (outdoor)

Fiber Bundle Detail - Outdoor Series

LOOSE TUBE DETAIL

MOISTURE BLOCKING GEL

MULTIPLE 250 MICRON FIBERS

THERMOPLASTIC TUBE

ARAMID STRENGTH ELEMENTS

OUTER JACKET

WATERBLOCKING TAPE

CENTRAL E-GLASS STRENGTH MEMBER

Features & Benefits
- Available in sizes up to 216 fibers
- Gel-filled buffer tube prevents water migration
- All-dielectric strength member
- Available as riser rated OFN and OFNR/FT4 cable, thereby eliminating the need for service entrance splicing to in-building cable
- Full dielectric construction, no grounding required
- Fiber tubes are color coded for easy identification
- Length markings in meters for easy determination of cable length.

Applications
- Medium to high fiber count requirements
- Inter-building duct installations
- Lashed aerial
- Indoor/outdoor
- Industrial outside plant.

Cable Color Code
The Belden CDT Loose Tube (Campus) Series jacket is black in color. The buffer tubes are color coded as per ANSI/TIA/EIA-568-B specifications. The standard color code allows for easy identification of fibers and is as follows: Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose or Aqua.

Product Specifications

Crush Resistance (EIA-455-41)	2000 N/cm
Impact Resistance (EIA-455-25)	2000 Impacts
	w/1.6 N-m
Minimum Bend Radius	
Installation (Short Term) - Load	20x cable diameter
Long Term - No Load	15x cable diameter
Riser	UL/cUL rated Type OFNR / OFN FT4
	Flame Resistance UL 1666
Buffer Tube	Gel filled Thermoplastic
Strength Member	Aramid Yarn
Central Strength Member	E-Glass
Jacket Material	
Outdoor	PE
Riser	PVC
Buffer Material	
Outdoor	PBT
Riser	PVC
Color coding (Jacket and Fibers)	TIA/EIA 568-B.3, TIA/EIA 598-B
Temperature Range Outdoor	
Storage	-50 to +80°C
Operating	-40 to +70°C
Temperature Range Riser	
Storage	-40 to +80°C
Operating	-40 to +70°C

FiberExpress Cables

Loose Tube (Campus) Series (continued)

Optical Specification

FIBER TYPE	ATTENUATION (MAX.) dB/km			OFL BANDWIDTH (MIN.) MHz-km		RML BANDWIDTH (MIN.) MHz-km
	850 nm	1300 nm	1550 nm	850 nm	1300 nm	850 nm
FiberExpress 300 (62.5 µm)	3.5	1.25	-------	200	500	220
FiberExpress 600 (50 µm)	3.5	1.25	-------	500	500	510
FiberExpress 2000 (50 µm)	3.5	1.25	-------	1500	500	2000**
Singlemode Enhanced	-------	0.40*	0.30	-------	-------	-------

OFL: Overfill launch RML: Restricted mode launch
*Wavelength: 1310 nm ** EMB: Effective Modal Bandwidth

FIBER TYPE	GIGABIT ETHERNET REACH (METERS) IEEE 802.3Z		10 GIGABIT ETHERNET REACH (METERS)	10 GIGABIT ETHERNET REACH (METERS)
	1000BASE SX	1000BASE LX	10GBASE-S	10GBASE-L
FiberExpress 300 (62.5 µm)	300	550	33	-------
FiberExpress 600 (50 µm)	600	600	82	-------
FiberExpress 2000 (50 µm)	2000	600	300	-------
Singlemode Enhanced	-------	5000	-------	10000

Note1: Mode launch conditioning patch cord is not required
Note2: For proper design, please refer to the Belden IBDN Optical Fiber Design Guide
Note3: Singlemode Enhanced is a low Water Peak Singlemode for CWDM applications and complies with ITU G.562.c/d

Mechanical Characteristics

Loose Tube (Campus) Outdoor Series

FIBER COUNT	FIBERS PER TUBE	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS INSTALLATION	LONG TERM	MAXIMUM LOAD INSTALLATION
6	6	9.65 mm (0.38 in.)	67 kg/km (45 lb/kft)	19.3 cm (7.6 in.)	14.5 cm (5.6 in.)	2700 Newton (600 lb)
12	6	9.65 mm (0.38 in.)	68 kg/km (46 lb/kft)	19.3 cm (7.6 in.)	14.5 cm (5.6 in.)	2700 Newton (600 lb)
24	6	9.65 mm (0.38 in.)	68 kg/km (46 lb/kft)	19.3 cm (7.6 in.)	14.5 cm (5.6 in.)	2700 Newton (600 lb)
36	6	9.65 mm (0.38 in.)	71 kg/km (48 lb/kft)	19.3 cm (7.6 in.)	14.5 cm (5.6 in.)	2700 Newton (600 lb)
48	12	12.2 mm (0.48 in.)	106 kg/km (71 lb/kft)	24.4 cm (9.6 in.)	18.3 cm (7.1 in.)	2700 Newton (600 lb)
72	12	12.2 mm (0.48 in.)	107 kg/km (72 lb/kft)	24.4 cm (9.6 in.)	18.3 cm (7.1 in.)	2700 Newton (600 lb)
96	12	13.89 mm (0.547 in.)	143 kg/km (96 lb/kft)	27.7 cm (10.9 in.)	20.8 cm (8.1 in.)	2700 Newton (600 lb)
144	12	17.78 mm (0.7 in.)	225 kg/km (151 lb/kft)	35.6 cm (14 in.)	26.7 cm (10.4 in.)	2700 Newton (600 lb)
216	12	18.16 mm (0.715 in.)	223 kg/km (150 lb/kft)	36.3 cm (14.3 in.)	27.2 cm (10.7 in.)	2700 Newton (600 lb)

Loose Tube (Campus) Indoor/Outdoor Riser Series

FIBER COUNT	FIBERS PER TUBE	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS INSTALLATION	LONG TERM	MAXIMUM LOAD INSTALLATION
6	6	9.65 mm (0.38 in.)	95 kg/km (64 lb/kft)	19.3 cm (7.6 in.)	14.5 cm (5.6 in.)	2700 Newton (600 lb)
12	6	9.65 mm (0.38 in.)	95 kg/km (64 lb/kft)	19.3 cm (7.6 in.)	14.5 cm (5.6 in.)	2700 Newton (600 lb)
24	6	9.65 mm (0.38 in.)	95 kg/km (64 lb/kft)	19.3 cm (7.6 in.)	14.5 cm (5.6 in.)	2700 Newton (600 lb)
36	6	9.65 mm (0.38 in.)	97 kg/km (65 lb/kft)	19.3 cm (7.6 in.)	14.5 cm (5.6 in.)	2700 Newton (600 lb)
48	12	12.2 mm (0.48 in.)	131 kg/km (88 lb/kft)	24.4 cm (9.6 in.)	18.3 cm (7.1 in.)	2700 Newton (600 lb)
72	12	12.2 mm (0.48 in.)	131 kg/km (88 lb/kft)	24.4 cm (9.6 in.)	18.3 cm (7.1 in.)	2700 Newton (600 lb)
96	12	13.89 mm (0.547 in.)	168 kg/km (113 lb/kft)	27.7 cm (10.9 in.)	20.8 cm (8.1 in.)	2700 Newton (600 lb)
144	12	17.78 mm (0.7 in.)	275 kg/km (185 lb/kft)	35.6 cm (14 in.)	26.7 cm (10.4 in.)	2700 Newton (600 lb)

Loose Tube (Campus) Series (continued)

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
LOOSE TUBE (CAMPUS) OUTDOOR SERIES, UV RATED, ALL DIELECTRIC, PE JACKET	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
6 fibers	M9B510T	M9A510T	M9C510T	M9W510T
12 fibers	M9B511T	M9A511T	M9C511T	M9W511T
24 fibers	M9B500T	M9A500T	M9C500T	M9W500T
36 fibers	M9B502T	M9A502T	M9C502T	M9W502T
48 fibers	M9B505T	M9A505T	M9C505T	M9W505T
72 fibers	M9B507T	M9A507T	M9C507T	M9W507T
96 fibers	M9B513T	M9A513T	M9C513T	M9W513T
144 fibers	M9B509T	M9A509T	M9C509T	M9W509T
216 fibers	M9B520T	M9A520T	M9C520T	M9W520T
LOOSE TUBE (CAMPUS), INDOOR/OUTDOOR RISER SERIES UV RATED, ALL DIELECTRIC, UL/cUL OFNR FT4				
6 fibers	M9B810	M9A810	M9C810	M9W810
12 fibers	M9B811	M9A811	M9C811	M9W811
24 fibers	M9B812	M9A812	M9C812	M9W812
36 fibers	M9B813	M9A813	M9C813	M9W813
48 fibers	M9B814	M9A814	M9C814	M9W814
72 fibers	M9B815	M9A815	M9C815	M9W815
96 fibers	M9B816	M9A816	M9C816	M9W816
144 fibers	M9B817	M9A817	M9C817	M9W817

Alternative fiber counts are available.

All fiber optic products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.

FiberExpress Cables

FiberExpress Cables

Loose Tube (Campus) Plenum Series
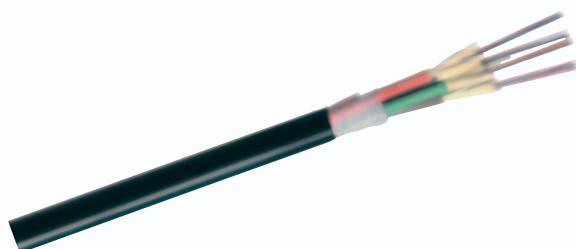
M9B202 Loose Tube (Plenum)
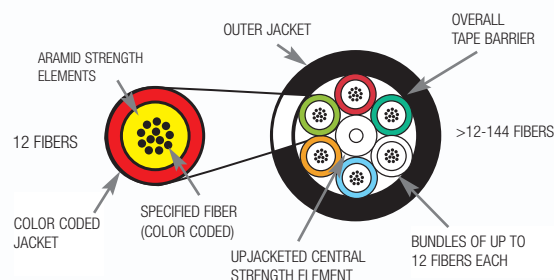
Fiber Bundle Detail

Features & Benefits

- Available in sizes up to 144 fibers
- Dry waterblocking technology within the tubes and under the cables' jacket.
- Available as Plenum rated OFNP/FT6 thereby eliminating the need for service entrance splicing to in-building cable
- Full dielectric construction, no grounding required
- Fiber and subunits are color coded for easy identification
- Length markings in meters for easy determination of cable length
- Small diameter and bend radius facilitate installation in tight spaces
- Fibers grouped into sets of 12 for maximum density
- Available in Multimode 50 µm, 62.5 µm, Singlemode, and hybrid constructions

Applications

- Medium to high fiber count requirements
- Interbuilding installations
- Lashed aerial
- Indoor/outdoor
- Campus Backbones
- Data Centers
- High Density Cable Trays.

Cable Color Code

The Indoor/Outdoor Plenum jacket is black in color. The buffer tubes are color coded as per ANSI/TIA/EIA-568-B specifications. The standard color code allows for easy identification of fibers and is as follows: Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose and Aqua.

Product Specifications

Crush Resistance (EIA-455-41)	2000 N/cm
Impact Resistance (EIA-455-25)	2000 Impacts
	w/1.6 N-m
Flexure (EIA-455-104)	2000 cycles min.
Minimum Bend Radius	
Installation (Short Term) - Load	20x cable diameter
Long Term - No Load	15x cable diameter
Plenum	UL/cUL rated Type OFNP / OFN FT6
	Flame Resistance NFPA 262
Buffer Tube	Aramid reinforced Thermoplastic
Strength Member	E-Glass and Aramid Yarn
Central Strength Member	Upjacketed
Jacket Material	
Plenum (non-unitized)	PVC
Plenum (unitized)	PVDF
Buffer Material	
Plenum	PVC
Color coding (Jacket and Fibers)	TIA/EIA 568-B.3, TIA/EIA 598-B
Temperature Range Plenum	
Storage	-40 to +80°C
Operating	-40 to +70°C

Fiber Media

Loose Tube (Campus) Series (continued)

Optical Specification

FIBER TYPE	ATTENUATION (MAX.) dB/km			OFL BANDWIDTH (MIN.) MHz-km		RML BANDWIDTH (MIN.) MHz-km	
	850 nm	1300 nm	1550 nm	850 nm	1300 nm	850 nm	1300 nm
FiberExpress 300 (62.5 μm)	3.50	1.25	-------	200	500	220	500
FiberExpress 600 (50 μm)	3.50	1.25	-------	500	500	510	500
FiberExpress 2000 (50 μm)	3.50	1.25	-------	1500	500	2000**	500
Singlemode Enhanced	-------	0.80*	0.50	-------	-------	-------	-------

OFL: Overfill launch
*Wavelength: 1310 nm
RML: Restricted mode launch
** EMB: Effective Modal Bandwidth

FIBER TYPE	GIGABIT ETHERNET REACH (METERS) IEEE 802.3Z		10 GIGABIT ETHERNET REACH (METERS)	10 GIGABIT ETHERNET REACH (METERS)
	1000BASE SX	1000BASE LX	10GBASE-S	10GBASE-L
FiberExpress 300 (62.5 μm)	300	550	33	300
FiberExpress 600 (50 μm)	600	600	82	300
FiberExpress 2000 (50 μm)	2000	600	300	300
Singlemode Enhanced	-------	5000	-------	10000

Note: Mode launch conditioning patch cord is not required. For proper design, please refer to the Belden IBDN Optical Fiber Design Guide. Singlemode Enhanced is a low Water Peak Singlemode for CWDM applications and complies with ITU G.652.c/d. Links longer than 550 m (as per standard) for the same link power budget are considered engineered links. To achieve a distance of 2000 m, please contact Belden IBDN Technical Support.

Mechanical characteristics

FIBER COUNT	FIBERS PER TUBE	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS INSTALLATION	LONG TERM	MAXIMUM LOAD INSTALLATION
6	6	6.7 mm (0.265 in.)	49 kg/km (33 lb/kft)	13.5 cm (5.3 in.)	10.2 cm (4.0 in.)	1423 Newton (320 lb)
12	12	6.7 mm (0.265 in.)	49 kg/km (33 lb/kft)	13.5 cm (5.3 in.)	10.2 cm (4.0 in.)	1423 Newton (320 lb)
24	12	9.12 mm (0.359 in.)	70 kg/km (47 lb/kft)	18.3 cm (7.2 in.)	13.7 cm (5.4 in.)	1801 Newton (405 lb)
36	12	9.12 mm (0.359 in.)	70 kg/km (47 lb/kft)	18.3 cm (7.2 in.)	13.7 cm (5.4 in.)	1801 Newton (405 lb)
48	12	9.12 mm (0.359 in.)	71 kg/km (48 lb/kft)	18.3 cm (7.2 in.)	13.7 cm (5.4 in.)	1801 Newton (405 lb)
72	12	10.9 mm (0.429 in.)	106 kg/km (71 lb/kft)	21.8 cm (8.6 in.)	16.3 cm (6.4 in.)	2602 Newton (585 lb)
96	12	12.73 mm (0.501 in.)	156 kg/km (105 lb/kft)	25.4 cm (10.0 in.)	19.1 cm (7.5 in.)	4017 Newton (903 lb)
144	12	16.89 mm (0.665 in.)	281 kg/km (189 lb/kft)	33.8 cm (13.3 in.)	25.4 cm (10.0 in.)	5618 Newton (1263 lb)

| DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
LOOSE TUBE (CAMPUS), INDOOR/ OUTDOOR PLENUM SERIES UV RATED, ALL DIELECTRIC, UL/cUL OFNP FT6	MULTIMODE, FX300, 62.5 μm	MULTIMODE, FX600, 50 μm	MULTIMODE, FX2000, 50 μm	SINGLEMODE ENHANCED
6 fibers	M9B202	M9A202	M9C202	M9W202
12 fibers	M9B204	M9A204	M9C204	M9W204
24 fibers	M9B205	M9A205	M9C205	M9W205
36 fibers	M9B206	M9A206	M9C206	M9W206
48 fibers	M9B207	M9A207	M9C207	M9W207
72 fibers	M9B209	M9A209	M9C209	M9W209
96 fibers	M9B211	M9A211	M9C211	M9W211
144 fibers	M9B215	M9A215	M9C215	M9W215

Alternative fiber counts are available.

All fiber optic products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.
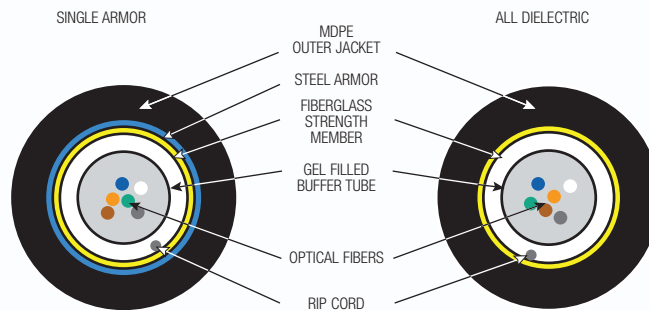
FiberExpress Cables

Fiber Media

Loose Tube (Campus) Direct Burial Armored Series

Loose Tube (Campus) Outdoor Armored Series

FiberExpress Loose Tube (Campus) Armor Optical Fiber Cable Series is made up of rugged fiber cables for applications in hostile environments. This series of cables has corrugated steel armor which provides added protection for direct burial applications. It is available as a riser rated OFCR/FT4 cable suited for in-building and outdoor applications.

WATERBLOCKING TAPE
INNER JACKET
OUTER JACKET
MOISTURE BLOCKING GEL
THERMOPLASTIC TUBE
MULTIPLE 250 MICRON FIBERS
CENTRAL E-GLASS STRENGTH MEMBER
ARAMID STRENGTH ELEMENTS
CORRUGATED STEEL ARMOR
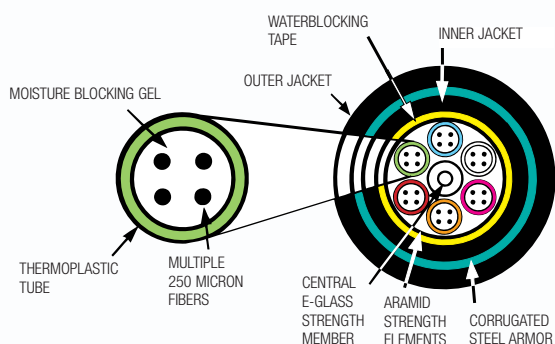
Fiber Bundle Detail - Outdoor Armored Series

M9B382 Loose Tube (armored)

Features & Benefits

- Available in sizes up to 216 fibers
- Gel-filled buffer tube prevents water migration
- Available as riser rated OFCR/FT4 cable, thereby eliminating the need for service entrance splicing to in-building cable
- Fiber sub-units are color coded for easy identification
- Length markings in meters for easy determination of cable length
- Rodent Resistant.

Applications

- Direct burial
- Low to high fiber count requirements
- Inter-building duct installations
- Indoor/outdoor
- Industrial outside plant.

Cable Color Code

The Belden CDT Loose Tube (Campus) Armored series has a black jacket. Buffer units are color coded as per ANSI/TIA/EIA-568-B specifications. The standard color code allows for easy identification of fibers and is as follows: Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose or Aqua.

Product Specifications

Crush Resistance (EIA-455-41)	2000 N/cm
Impact Resistance (EIA-455-25)	2000 Impacts
	w/1.6 N-m
Minimum Bend Radius	
Installation (Short Term) - Load	20x cable diameter
Long Term - No Load	15x cable diameter
Riser	UL/cUL rated Type OFCR / OFC FT4
	Flame Resistance UL 1666
Buffer Tube	Gel filled Thermoplastic
Strength Member	Aramid Yarn
Central Strength Member	E-Glass
Jacket Material	
Outdoor	PE
Riser	PVC
Buffer Material	
Outdoor	PBT
Riser	PVC
Color coding (Jacket and Fibers)	TIA/EIA 568-B.3, TIA/EIA 598-B
Temperature Range Outdoor	
Storage	-50 to +80°C
Operating	-40 to +70°C
Temperature Range Riser	
Storage	-40 to +80°C
Operating	-40 to +70°C

Loose Tube (Campus) Direct Burial Armored Series (continued)

Optical Specification

FIBER TYPE	ATTENUATION (MAX.) dB/km			OFL BANDWIDTH (MIN.) MHz-km		RML BANDWIDTH (MIN.) MHz-km
	850 nm	1300 nm	1550 nm	850 nm	1300 nm	850 nm
FiberExpress 300 (62.5 microns)	3.25	1.0	-------	200	500	220
FiberExpress 600 (50 microns)	3.0	1.0	-------	500	500	510
FiberExpress 2000 (50 microns)	3.0	1.0	-------	1500	500	2000**
Singlemode Enhanced	-------	0.40*	0.30	-------	-------	-------

OFL: Overfill launch
RML: Restricted mode launch
*Wavelength: 1310 nm
** EMB: Effective Modal Bandwidth

FIBER TYPE	GIGABIT ETHERNET REACH (METERS) IEEE 802.3Z		10 GIGABIT ETHERNET REACH (METERS)	10 GIGABIT ETHERNET REACH (METERS)
	1000BASE SX	1000BASE LX	10GBASE-S	10GBASE-L
FiberExpress 300 (62.5 µm)	300	550	33	-------
FiberExpress 600 (50 µm)	600	600	82	-------
FiberExpress 2000 (50 µm)	2000	600	300	-------
Singlemode Enhanced	-------	5000	-------	10000

Note1: Mode launch conditioning patch cord is not required
Note2: For proper design, please refer to the Belden IBDN Optical Fiber Design Guide
Note3: Singlemode Enhanced is a low Water Peak Singlemode for CWDM applications and complies with ITU G.562.c/d

Mechanical Characteristics

Loose Tube (Campus) Outdoor

FIBER COUNT	FIBERS PER TUBE	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS INSTALLATION	LONG TERM	MAXIMUM LOAD INSTALLATION
6	6	13.46 mm (0.530 in.)	153 kg/km (103 lb/kft)	26.9 cm (10.6 in.)	20.2 cm (8.0 in.)	2700 Newton (600 lb)
12	6	13.46 mm (0.530 in.)	153 kg/km (103 lb/kft)	26.9 cm (10.6 in.)	20.2 cm (8.0 in.)	2700 Newton (600 lb)
24	6	13.46 mm (0.530 in.)	155 kg/km (104 lb/kft)	26.9 cm (10.6 in.)	20.2 cm (8.0 in.)	2700 Newton (600 lb)
36	6	13.46 mm (0.530 in.)	156 kg/km (105 lb/kft)	26.9 cm (10.6 in.)	20.2 cm (8.0 in.)	2700 Newton (600 lb)
48	12	15.49 mm (0.610 in.)	204 kg/km (137 lb/kft)	31.0 cm (12.2 in.)	23.2 cm (9.2 in.)	2700 Newton (600 lb)
72	12	15.49 mm (0.610 in.)	205 kg/km (138 lb/kft)	31.0 cm (12.2 in.)	23.2 cm (9.2 in.)	2700 Newton (600 lb)
96	12	17.53 mm (0.690 in.)	253 kg/km (170 lb/kft)	35.1 cm (13.8 in.)	26.4 cm (10.4 in.)	2700 Newton (600 lb)
144	12	22.10 mm (0.870 in.)	365 kg/km (245 lb/kft)	44.2 cm (17.4 in.)	33.3 cm (13.1 in.)	2700 Newton (600 lb)
216	12	22.10 mm (0.870 in.)	362 kg/km (243 lb/kft)	44.2 cm (17.4 in.)	33.3 cm (13.1 in.)	2700 Newton (600 lb)

Indoor / Outdoor Direct Burial / Armored

FIBER COUNT	FIBERS PER TUBE	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS SHORT TERM	LONG TERM	MAXIMUM LOAD INSTALLATION
6	6	13.72 mm (0.54 in.)	210 kg/km (141 lb/kft)	27.4 cm (10.8 in.)	20.6 cm (8.1 in.)	2700 Newton (600 lb)
12	6	13.72 mm (0.54 in.)	210 kg/km (141 lb/kft)	27.4 cm (10.8 in.)	20.6 cm (8.1 in.)	2700 Newton (600 lb)
24	6	13.72 mm (0.54 in.)	210 kg/km (141 lb/kft)	27.4 cm (10.8 in.)	20.6 cm (8.1 in.)	2700 Newton (600 lb)
36	6	13.72 mm (0.54 in.)	210 kg/km (141 lb/kft)	27.4 cm (10.8 in.)	20.6 cm (8.1 in.)	2700 Newton (600 lb)
48	12	16.76 mm (0.66 in.)	259 kg/km (174 lb/kft)	33.5 cm (13.2 in.)	25.1 cm (9.9 in.)	2700 Newton (600 lb)
72	12	16.76 mm (0.66 in.)	259 kg/km (174 lb/kft)	33.5 cm (13.2 in.)	25.1 cm (9.9 in.)	2700 Newton (600 lb)
96	12	17.78 mm (0.70 in.)	307 kg/km (206 lb/kft)	35.6 cm (14 in.)	26.7 cm (10.5 in.)	2700 Newton (600 lb)
144	12	22.35 mm (0.88 in.)	449 kg/km (302 lb/kft)	44.7 cm (17.6 in.)	33.5 cm (13.2 in.)	2700 Newton (600 lb)

FiberExpress Cables

Loose Tube (Campus) Direct Burial Armored Series (continued)

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
LOOSE TUBE (CAMPUS) OUTDOOR SERIES UV RATED, ARMORED, PE JACKET	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
6 fibers	M9B381T	M9A381T	M9C381T	M9W381T
12 fibers	M9B382T	M9A382T	M9C382T	M9W382T
24 fibers	M9B384T	M9A384T	M9C384T	M9W384T
36 fibers	M9B386T	M9A386T	M9C386T	M9W386T
48 fibers	M9B389T	M9A389T	M9C389T	M9W389T
72 fibers	M9B391T	M9A391T	M9C391T	M9W391T
96 fibers	M9B398T	M9A398T	M9C398T	M9W398T
144 fibers	M9B393T	M9A393T	M9C393T	M9W393T
216 fibers	M9B400T	M9A400T	M9C400T	M9W400T
LOOSE TUBE (CAMPUS) INDOOR/OUTDOOR RISER SERIES, UV RATED, ARMORED, UL/cUL OFCR FT4				
6 fibers	M9B890	M9A890	M9C890	M9W890
12 fibers	M9B891	M9A891	M9C891	M9W891
24 fibers	M9B892	M9A892	M9C892	M9W892
36 fibers	M9B893	M9A893	M9C893	M9W893
48 fibers	M9B894	M9A894	M9C894	M9W894
72 fibers	M9B895	M9A895	M9C895	M9W895
96 fibers	M9B896	M9A896	M9C896	M9W896
144 fibers	M9B897	M9A897	M9C897	M9W897

All fiber optic products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.

Interconnect Cable Series

Interconnect Series

Interconnect Cables are designed for low fiber-count premises environments. They are small and very flexible, making them ideal for confined spaces. Their aesthetic appearance makes these cables suitable for use in open office environments.
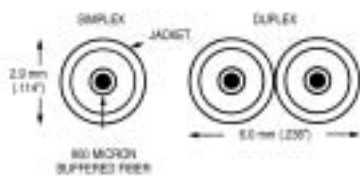
Fiber Bundle Detail

Fiber Duplex

Features & Benefits
- Available in 1 or 2-fibers 62.5 and 50 µm Multimode or Singlemode Enhanced configurations
- Meets OFNR/FT4 riser and OFNP/FT6 rating requirements
- Small and flexible design
- One sub-unit is marked to permit easy identification of transmit and receive fibers
- Length markings to facilitate installation.

Applications
- Patch panels
- Workstation equipment connections
- Horizontal distribution in open office environments.

Cable Color Code
The Belden CDT Interconnect Series jacket color code standard is orange for both riser and plenum Multimode FX300 and FX600 cables and aqua for FX2000 cables. The only exception is the Multimode FX300 plenum cables which are gray. All Singlemode Enhanced cables are yellow.

Product Specifications

Crush Resistance (EIA-455-41)	200 N/cm
Impact Resistance (EIA-455-25)	20 Impacts
	w/1.0 N-m

Minimum Bend Radius

Installation (Short Term) - Load	15x cable diameter
Long Term - No Load	10x cable diameter
Riser	UL/cUL rated Type OFNR / OFN FT4
	Flame Resistance UL 1666
Plenum	UL/cUL rated Type OFNP / OFN FT6
	Flame Resistance UL 910
Buffer Diameter	900 µm
Strength Member	Aramid Yarn

Jacket Material

Riser	PVC
Plenum	PVC

Buffer Material

Riser	PVC
Plenum	PVC
Color coding (Jacket and Fibers)	TIA/EIA 568-B.3, TIA/EIA 598-B

Temperature Range

Storage	-40 to +70°C
Operating	-20 to +70°C

Optical Specification

FIBER TYPE	ATTENUATION (MAX.) dB/km			OFL BANDWIDTH (MIN.) MHz-km		RML BANDWIDTH (MIN.) MHz-km
	850 nm	1300 nm	1550 nm	850 nm	1300 nm	850 nm
FiberExpress 300 (62.5 µm)	3.5	1.25	-------	200	500	220
FiberExpress 600 (50 µm)	3.5	1.25	-------	500	500	510
FiberExpress 2000 (50 µm)	3.5	1.25	-------	1500	500	2000**
Singlemode Enhanced	-------	0.8*	0.5	-------	-------	-------

OFL: Overfill launch
RML: Restricted mode launch
*Wavelength: 1310 nm
** EMB: Effective Modal Bandwidth

FIBER TYPE	GIGABIT ETHERNET REACH (METERS) IEEE 802.3Z		10 GIGABIT ETHERNET REACH (METERS)	10 GIGABIT ETHERNET REACH (METERS)
	1000BASE SX	1000BASE LX	10GBASE-S	10GBASE-L
FiberExpress 300 (62.5 µm)	300	550	33	-------
FiberExpress 600 (50 µm)	600	600	82	-------
FiberExpress 2000 (50 µm)	2000	600	300	-------
Singlemode Enhanced	-------	5000	-------	10000

Note1: Mode launch conditioning patch cord is not required
Note2: For proper design, please refer to the Belden IBDN Optical Fiber Design Guide
Note3: Singlemode Enhanced is a low Water Peak Singlemode for CWDM applications and complies with ITU G.562.c/d

Mechanical Characteristics

FIBER COUNT	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS INSTALLATION	LONG TERM	MAXIMUM LOAD INSTALLATION
1	2.9 mm (0.114 in.)	13 kg/km (9 lb/kft)	4.3 cm (1.7 in.)	2.9 cm (1.1 in.)	350 Newton (77 lb)
2	2.9 x 6.0 mm (0.11 x 0.23 in.)	22 kg/km (15 lb/kft)	4.3 cm (1.7 in.)	2.9 cm (1.1 in.)	700 Newton (154 lb)

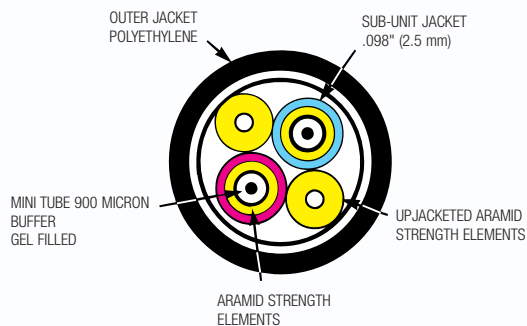| DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
INTERCONNECT RISER SERIES, UL/cUL OFNR FT4	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
1 fiber	M97112	M9A001	M9C001	M9W001
2 fibers	M96915	M9A002	M9C002	M9W002
INTERCONNECT PLENUM SERIES, UL/cUL OFNP FT6				
1 fiber	M98086	M9A003	M9C003	M9W003
2 fibers	M96919	M9A004	M9C004	M9W004

All fiber optic products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.

FiberExpress Cables

Central Tubes (Campus)

Central Tube (Campus) Outdoor and Outdoor Armored
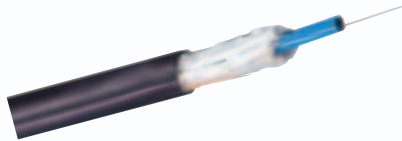
M9B155 Central Tube (Campus) Outdoor

Central Tube (Campus) Optical Fiber Cables are loose-tube buffered cables suited for outdoor applications such as lashed aerial or underground conduit. The Central Tube Armored series of cables has corrugated steel armor which provides added protection for direct burial applications. These central tube construction cables are a cost effective alternative to traditional Outside plant cables in fiber counts of 12 fibers or less, yet offer the same protection against crush, impact, and abrasion. These cables are available in outdoor rated constructions. Belden CDT offers these cables in 62.5 and 50 μm Multimode fiber and Singlemode Enhanced fiber compositions.

SINGLE ARMOR   ALL DIELECTRIC

MDPE
OUTER JACKET

STEEL ARMOR

FIBERGLASS
STRENGTH
MEMBER

GEL FILLED
BUFFER TUBE

OPTICAL FIBERS

RIP CORD

Features & Benefits
- Economical option for low fiber counts
- Quick and easy end preparation
- Fully waterblocked
- No rods – easy handling

Applications
- Campus OSP backbones
- Drop cable
- Telecommunications and data trunk

Product Specifications

Crush Resistance (EIA-455-41)	2000 N/cm
Impact Resistance (EIA-455-25)	2000 Impacts
	w/1.6 N-m
Minimum Bend Radius	
Installation (Short Term) - Load	20x cable diameter
Long Term - No Load	15x cable diameter
Buffer Diameter	900 μm
Strength Member	Fiber Glass
Jacket Material	
Outdoor	PE
Core Wrap	Water Swellable Tape
Buffer Tube Material	
Gel Filled Thermoplastic	PBT
Color coding (Jacket and Fibers)	TIA/EIA 568-B.3, TIA/EIA 598-B
Temperature Range	
Storage	-40 to +70°C
Operating	-40 to +70°C

Mechanical Characteristics

Central Tube outdoor

FIBER COUNT	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS		MAXIMUM LOAD
			INSTALLATION	LONG TERM	INSTALLATION
2	8.26 mm (0.325 in.)	54 kg/km (36 lb/kft)	16.7 cm (6.5 in.)	12.4 cm (4.9 in.)	2700 Newton (600 lb)
4	8.26 mm (0.325 in.)	54 kg/km (36 lb/kft)	16.7 cm (6.5 in.)	12.4 cm (4.9 in.)	2700 Newton (600 lb)
6	8.26 mm (0.325 in.)	54 kg/km (36 lb/kft)	16.7 cm (6.5 in.)	12.4 cm (4.9 in.)	2700 Newton (600 lb)
8	8.26 mm (0.325 in.)	54 kg/km (36 lb/kft)	16.7 cm (6.5 in.)	12.4 cm (4.9 in.)	2700 Newton (600 lb)
10	8.26 mm (0.325 in.)	54 kg/km (36 lb/kft)	16.7 cm (6.5 in.)	12.4 cm (4.9 in.)	2700 Newton (600 lb)
12	8.26 mm (0.325 in.)	54 kg/km (36 lb/kft)	16.7 cm (6.5 in.)	12.4 cm (4.9 in.)	2700 Newton (600 lb)

Central Tube outdoor armored

FIBER COUNT	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS		MAXIMUM LOAD
			INSTALLATION	LONG TERM	INSTALLATION
2	10.41 mm (0.410 in.)	108 kg/km (72 lb/kft)	20.8 cm (8.2 in.)	15.6 cm (6.2 in.)	2700 Newton (600 lb)
4	10.41 mm (0.410 in.)	108 kg/km (72 lb/kft)	20.8 cm (8.2 in.)	15.6 cm (6.2 in.)	2700 Newton (600 lb)
6	10.41 mm (0.410 in.)	108 kg/km (72 lb/kft)	20.8 cm (8.2 in.)	15.6 cm (6.2 in.)	2700 Newton (600 lb)
8	10.41 mm (0.410 in.)	108 kg/km (72 lb/kft)	20.8 cm (8.2 in.)	15.6 cm (6.2 in.)	2700 Newton (600 lb)
10	10.41 mm (0.410 in.)	108 kg/km (72 lb/kft)	20.8 cm (8.2 in.)	15.6 cm (6.2 in.)	2700 Newton (600 lb)
12	10.41 mm (0.410 in.)	108 kg/km (72 lb/kft)	20.8 cm (8.2 in.)	15.6 cm (6.2 in.)	2700 Newton (600 lb)

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
CENTRAL TUBE (CAMPUS) OUTDOOR	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
2 fibers	M9B150	M9A150	M9C150	M9W150
4 fibers	M9B151	M9A151	M9C151	M9W151
6 fibers	M9B152	M9A152	M9C152	M9W152
8 fibers	M9B153	M9A153	M9C153	M9W153
10 fibers	M9B154	M9A154	M9C154	M9W154
12 fibers	M9B155	M9A155	M9C155	M9W155
CENTRAL TUBE (CAMPUS) OUTDOOR ARMORED	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
2 fibers	M9B170	M9A170	M9C170	M9W170
4 fibers	M9B171	M9A171	M9C171	M9W171
6 fibers	M9B172	M9A172	M9C172	M9W172
8 fibers	M9B173	M9A173	M9C173	M9W173
10 fibers	M9B174	M9A174	M9C174	M9W174
12 fibers	M9B175	M9A175	M9C175	M9W175

Please contact the Technical Support Group for proper connectivity integration and installation guidance.

All fiber optic products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.

Fiber Cables

Ribbon Series

OUTER JACKET
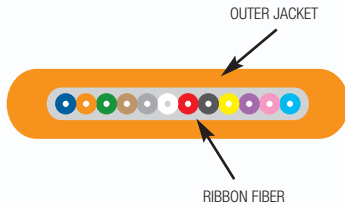
RIBBON FIBER

Ribbon Series

Optical Fiber Ribbon Cables are designed for Inter-equipment connections. Their small size, flexibility and low minimum bend radius is ideal for connection in tight spaces of switching equipment. These cables are suitable in applications with NEBS flammability requirements. The Ribbon cables are available in Multimode 62.5 µm and 50 µm and Singlemode Enhanced fiber. All ribbon cables are either riser OFNR/FT4 or plenum OFNP/FT6 rated.

M97066 Ribbon Series

Features & Benefits
- Color coded fibers
- Suitable for use with standard ribbon connectors
- Half-inch minimum bend radius
- Tight center-to-center tolerances
- Optional identification printing available
- OFNR or OFN Rated

Applications
- Inter-equipment connections
- NEBS applicatioins

Product Specifications

Crush Resistance (EIA-455-41)	2000 N/cm
Impact Resistance (EIA-455-25)	2000 Impacts
	w/1.6 N-m
Flexure (EIA-455-104)	2000 cycles min.
Minimum Bend Radius	
Installation (Short Term) - Load (FOTP-33)	15x cable diameter
Long Term - No Load	10x cable diameter
Riser	UL/cUL rated Type OFNR / OFN FT4
	Flame Resistance UL 1666
Plenum	UL/cUL rated Type OFNP / OFN FT6
	Flame Resistance NFPA 262
Strength Member	Aramid Yarn
Jacket Material	
Riser	PVC
Plenum	PVC
Color coding (Jacket and Fibers)	TIA/EIA 568-B.3, TIA/EIA 598-B
Temperature Range Plenum	
Storage	-40 to +80°C
Operating	-20 to +70°C

For additional specifications, please contact your Belden CDT Representative

Ribbon Series ■

Optical Specification

FIBER TYPE	ATTENUATION (MAX.) dB/km			OFL BANDWIDTH (MIN.) MHz-km		RML BANDWIDTH (MIN.) MHz-km
	850 nm	1300 nm	1550 nm	850 nm	1300 nm	850 nm
FiberExpress 300 (62.5 µm)	3.5	1.25	-------	220	500	220
FiberExpress 600 (50 µm)	3.5	1.25	-------	510	500	510
FiberExpress 2000 (50 µm)	3.5	1.25	-------	1500	500	2000**
Singlemode Enhanced	-------	0.8*	0.5	-------	-------	-------

OFL: Overfill launch
*Wavelength: 1310 nm
RML: Restricted mode launch
** EMB: Effective Modal Bandwidth

FIBER TYPE	GIGABIT ETHERNET REACH (METERS) IEEE 802.3Z		10 GIGABIT ETHERNET REACH (METERS)	10 GIGABIT ETHERNET REACH (METERS)
	1000BASE SX	1000BASE LX	10GBASE-S	10GBASE-L
FiberExpress 300 (62.5 µm)	300	550	33	-------
FiberExpress 600 (50 µm)	600	600	82	-------
FiberExpress 2000 (50 µm)	2000	600	300	-------
Singlemode Enhanced	-------	5000	-------	10000

Note1: Mode launch conditioning patch cord is not required
Note2: For proper design, please refer to the Belden IBDN Optical Fiber Design Guide
Note3: Singlemode Enhanced is a low Water Peak Singlemode for CWDM applications and complies with ITU G.562.c/d

Mechanical Characteristics

FIBER COUNT	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS INSTALLATION	LONG TERM	MAXIMUM LOAD INSTALLATION
2	2.9 mm (0.114 in.)	7 kg/km (5 lb/kft)	4.4 cm (1.7 in.)	2.9 cm (1.1 in.)	444 Newton (100 lb)
4	2.0 x 2.9 mm (0.78 x 0.114 in.)	6 kg/km (4 lb/kft)	4.4 cm (1.7 in.)	2.9 cm (1.1 in.)	444 Newton (100 lb)
6	2.0 x 3.5 mm (0.78 x 0.137 in.)	9 kg/km (6 lb/kft)	5.3 cm (2.1 in.)	3.5 cm (1.4 in.)	444 Newton (100 lb)
8	2.0 x 4.0 mm (0.78 x 0.158 in.)	9 kg/km (6 lb/kft)	6.0 cm (2.4 in.)	4.0 cm (1.6 in.)	444 Newton (100 lb)
12	2.0 x 4.6 mm (0.78 x 0.180 in.)	10 kg/km (7 lb/kft)	6.9 cm (2.7 in.)	4.6 cm (1.8 in.)	444 Newton (100 lb)

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
RIBBON RISER SERIES, UL/cUL OFNR	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
2 fibers	M97271	M97275	M97314	M97279
4 fibers	M97272	M97276	M97315	M97280
6 fibers	M97273	M97277	M97316	M97281
8 fibers	M97274	M97278	M97317	M97282
12 fibers	M97066	M97248	M97318	M97067
RIBBON PLENUM SERIES, UL/cUL OFNP	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
2 fibers	M97196	M97201	M97210	M97224
4 fibers	M97197	M97202	M97211	M97225
6 fibers	M97198	M97203	M97212	M97022
8 fibers	M97199	M97204	M97213	M97189
12 fibers	M97071	M97021	M97214	M96954

Fiber Ribbon Cable is to be sold as bulk cable. Fiber Ribbon Cable has not been qualified for field connectorization.

All fiber optic products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.

Fiber Cables

Micro Loose Tube

OUTER JACKET POLYETHYLENE

SUB-UNIT JACKET .098" (2.5 mm)

MINI TUBE 900 MICRON BUFFER GEL FILLED

UPJACKETED ARAMID STRENGTH ELEMENTS

ARAMID STRENGTH ELEMENTS

Micro Loose Tube

Micro Loose Tube (Campus) Optical Fiber Cables are breakout style cables with the environmental advantages of a loose tube, gel filled cable. These cables are an ideal solution for indoor/outdoor installations. They offer the easy handling and termination of a breakout style cable. In this construction there is a small amount of gel surrounding the fibers making the cable suitable for installation in the most adverse outdoor applications, such as lashed aerial or conduits above or below the frost line. Belden CDT offers these cables in 62.5 and 50 µm Multimode fiber and Singlemode Enhanced fiber compositions.

M9B705 Micro Loose Tube Cable

Features & Benefits
• Loose buffer dimensions compatible with standard connectors (900 µm)
• Waterblock gel for moisture protection
• Breakout kits not required for connectorization

Applications
• Ducts between buildings
• Telecommunications and data trunk

Product Specifications

Crush Resistance (EIA-455-41)	600 N/cm
Impact Resistance (EIA-455-25)	20 Impacts
	w/1.0 N-m
Minimum Bend Radius	
Installation (Short Term) - Load	20x cable diameter
Long Term - No Load	15x cable diameter
Mini Tube Diameter	900 µm
Strength elements	Aramid Yarn
Strength Member(s)	Upjacketed Aramid
Jacket Material	
Outdoor	PE
Riser	PVC
Buffer Tube Material	
Outdoor	PBT
Riser	PVC
Color coding (Jacket and Fibers)	TIA/EIA 568-B.3, TIA/EIA 598-B
Temperature Range Plenum	
Storage	-40 to +70°C
Operating	-20 to +70°C

Micro Loose Tube (continued)

Optical Specification

FIBER TYPE	ATTENUATION (MAX.) dB/km			OFL BANDWIDTH (MIN.) MHz-km		RML BANDWIDTH (MIN.) MHz-km
	850 nm	1300 nm	1550 nm	850 nm	1300 nm	850 nm
FiberExpress 300 (62.5 μm)	3.5	1.25	-------	220	500	220
FiberExpress 600 (50 μm)	3.5	1.25	-------	510	500	510
FiberExpress 2000 (50 μm)	3.5	1.25	-------	1500	500	2000**
Singlemode Enhanced	-------	0.8*	0.5	-------	-------	-------

OFL: Overfill launch
RML: Restricted mode launch
*Wavelength: 1310 nm
** EMB: Effective Modal Bandwidth

FIBER TYPE	GIGABIT ETHERNET REACH (METERS) IEEE 802.3Z		10 GIGABIT ETHERNET REACH (METERS)	10 GIGABIT ETHERNET REACH (METERS)
	1000BASE SX	1000BASE LX	10GBASE-S	10GBASE-L
FiberExpress 300 (62.5 μm)	300	550	33	-------
FiberExpress 600 (50 μm)	600	600	82	-------
FiberExpress 2000 (50 μm)	2000	600	300	-------
Singlemode Enhanced	-------	5000	-------	10000

Note1: Mode launch conditioning patch cord is not required
Note2: For proper design, please refer to the Belden IBDN Optical Fiber Design Guide
Note3: Singlemode Enhanced is a low Water Peak Singlemode for CWDM applications and complies with ITU G.562.c/d

Mechanical Characteristics

Micro Loose Tube Outdoor Series

FIBER COUNT	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS INSTALLATION	LONG TERM	MAXIMUM LOAD INSTALLATION
1	8.64 mm (0.340 in.)	61 kg/km (41 lb/kft)	17.3 cm (6.8 in.)	13.0 cm (5.1 in.)	1468 Newton (330 lb)
2	9.14 mm (0.360 in.)	61 kg/km (41 lb/kft)	18.3 cm (7.2 in.)	13.7 cm (5.4 in.)	1535 Newton (345 lb)
4	9.14 mm (0.360 in.)	58 kg/km (39 lb/kft)	18.3 cm (7.2 in.)	13.7 cm (5.4 in.)	1267 Newton (285 lb)
6	10.62 mm (0.418 in.)	80 kg/km (54 lb/kft)	21.2 cm (8.4 in.)	15.9 cm (6.3 in.)	1801 Newton (405 lb)
8	12.14 mm (0.478 in.)	113 kg/km (76 lb/kft)	24.3 cm (9.6 in.)	18.2 cm (7.2 in.)	2700 Newton (600 lb)
12	15.60 mm (0.614 in.)	192 kg/km (129 lb/kft)	31.2 cm (12.3 in.)	23.4 cm (9.2 in.)	2700 Newton (600 lb)

Micro Loose Tube OFN Series

FIBER COUNT	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS INSTALLATION	LONG TERM	MAXIMUM LOAD INSTALLATION
1	8.74 mm (0.344 in.)	74 kg/km (50 lb/kft)	17.5 cm (6.9 in.)	13.2 cm (5.2 in.)	1468 Newton (330 lb)
2	9.25 mm (0.364 in.)	76 kg/km (51 lb/kft)	18.5 cm (7.3 in.)	14.0 cm (5.5 in.)	1535 Newton (345 lb)
4	9.25 mm (0.364 in.)	73 kg/km (49 lb/kft)	18.5 cm (7.3 in.)	14.0 cm (5.5 in.)	1267 Newton (285 lb)
6	10.72 mm (0.424 in.)	101 kg/km (68 lb/kft)	21.2 cm (8.4 in.)	15.9 cm (6.3 in.)	1801 Newton (405 lb)
8	12.24 mm (0.482 in.)	115 kg/km (77 lb/kft)	24.3 cm (9.6 in.)	18.2 cm (7.2 in.)	2700 Newton (600 lb)
12	15.70 mm (0.618 in.)	193 kg/km (130 lb/kft)	31.5 cm (12.4 in.)	23.6 cm (9.3 in.)	2700 Newton (600 lb)

Micro Loose Tube Indoor / Outdoor Series

FIBER COUNT	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS INSTALLATION	LONG TERM	MAXIMUM LOAD INSTALLATION
1	8.94 mm (0.352 in.)	80 kg/km (54 lb/kft)	17.8 cm (7.0 in.)	13.5 cm (5.3 in.)	1468 Newton (330 lb)
2	9.45 mm (0.372 in.)	82 kg/km (55 lb/kft)	18.8 cm (7.4 in.)	14.2 cm (5.6 in.)	1535 Newton (345 lb)
4	9.45 mm (0.372 in.)	76 kg/km (51 lb/kft)	18.8 cm (7.4 in.)	14.2 cm (5.6 in.)	1267 Newton (285 lb)
6	10.97 mm (0.432 in.)	110 kg/km (74 lb/kft)	21.8 cm (8.6 in.)	16.5 cm (6.5 in.)	1801 Newton (405 lb)
8	12.45 mm (0.490 in.)	140 kg/km (94 lb/kft)	24.9 cm (9.8 in.)	18.8 cm (7.4 in.)	2700 Newton (600 lb)
12	15.90 mm (0.626 in.)	229 kg/km (151 lb/kft)	31.8 cm (12.5 in.)	23.9 cm (9.4 in.)	2700 Newton (600 lb)

Fiber Cables

Micro Loose Tube (continued)

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
MICRO LOOSE TUBE OUTDOOR SERIES	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
1 fiber	M9B700	M9A700	M9C700	M9W700
2 fibers	M9B701	M9A701	M9C701	M9W701
4 fibers	M9B702	M9A702	M9C702	M9W702
6 fibers	M9B703	M9A703	M9C703	M9W703
8 fibers	M9B704	M9A704	M9C704	M9W704
12 fibers	M9B705	M9A705	M9C705	M9W705
MICRO LOOSE TUBE OFN SERIES, UL/cUL OFN	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
1 fiber	M9B720	M9A720	M9C720	M9W720
2 fibers	M9B721	M9A721	M9C721	M9W721
4 fibers	M9B722	M9A722	M9C722	M9W722
6 fibers	M9B723	M9A723	M9C723	M9W723
8 fibers	M9B724	M9A724	M9C724	M9W724
12 fibers	M9B725	M9A725	M9C725	M9W725
MICRO LOOSE TUBE INDOOR/OUTDOOR SERIES, UL/cUL OFNR	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
1 fiber	M9B740	M9A740	M9C740	M9W740
2 fibers	M9B741	M9A741	M9C741	M9W741
4 fibers	M9B742	M9A742	M9C742	M9W742
6 fibers	M9B743	M9A743	M9C743	M9W743
8 fibers	M9B744	M9A744	M9C744	M9W744
12 fibers	M9B745	M9A745	M9C745	M9W745

Please contact the Technical Support Group for proper connectivity integration and installation guidance.
All fiber optic products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.

Tactical Cable Outdoor

Tactical Optical Fiber Cables although small and lightweight, are designed to be extremely strong and rugged. They are designed specifically to maintain their performance qualities through repeated deployment and retrieval cycles. This performance is achieved by helically winding the cable core. These cables are an ideal solution for outdoor on-ground applications, military communications and ENG video communications indoor/outdoor installations. Belden CDT offers these cables in 62.5 and 50 µm Multimode fiber and Singlemode Enhanced fiber compositions.

OUTER JACKET

TIGHT BUFFERED FIBER

ARAMID STRENGTH MEMBER
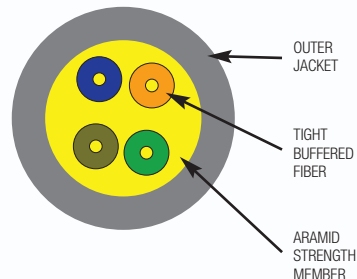
M96575 Tactical Cable Outdoor

Features & Benefits
- Rugged jacket
- Durable design for repeated handling
- Designed to military standards
- Superior level of crush resistance

Applications
- ENG vehicles
- Outdoor events
- Re-deployable communications
- Digital camera transmission

Product Specifications

Crush Resistance (EIA-455-41)	440 N/cm
Impact Resistance (EIA-455-25)	200 Impacts
	w/2.2 N-m
Flexure (EIA-455-104)	2000 cycles min.
Minimum Bend Radius	
Installation (Short Term) - Load	15x cable diameter
Long Term - No Load	8x cable diameter
Buffer Diameter	900 µm
Strength Member	Aramid Yarn
Jacket Material	
Outdoor	UV resistant PU
Buffer Material	
Outdoor	Polyester
Color coding (Jacket and Fibers)	TIA/EIA 568-B.3, TIA/EIA 598-B
Temperature Range Plenum	
Storage	-70 to +85°C
Operating	-55 to +85°C

For additional specifications, please contact your Belden CDT Representative

Fiber Cables

Fiber Media

Fiber Cables

Tactical Cables (continued)

Optical Specification

FIBER TYPE	ATTENUATION (MAX.) dB/km			OFL BANDWIDTH (MIN.) MHz-km		RML BANDWIDTH (MIN.) MHz-km
	850 nm	1300 nm	1550 nm	850 nm	1300 nm	850 nm
FiberExpress 300 (62.5 µm)	3.5	1.25	-------	220	500	220
FiberExpress 600 (50 µm)	3.5	1.25	-------	510	500	510
FiberExpress 2000 (50 µm)	3.5	1.25	-------	1500	500	2000**
Singlemode Enhanced	-------	0.8*	0.5	-------	-------	-------

OFL: Overfill launch
* Wavelength: 1310 nm
RML: Restricted mode launch
** EMB: Effective Modal Bandwidth

FIBER TYPE	GIGABIT ETHERNET REACH (METERS) IEEE 802.3Z		10 GIGABIT ETHERNET REACH (METERS)	10 GIGABIT ETHERNET REACH (METERS)
	1000BASE SX	1000BASE LX	10GBASE-S	10GBASE-L
FiberExpress 300 (62.5 µm)	300	550	33	-------
FiberExpress 600 (50 µm)	600	600	82	-------
FiberExpress 2000 (50 µm)	2000	600	300	-------
Singlemode Enhanced	-------	5000	-------	10000

Note1: Mode launch conditioning patch cord is not required
Note2: For proper design, please refer to the Belden IBDN Optical Fiber Design Guide
Note3: Singlemode Enhanced is a low Water Peak Singlemode for CWDM applications and complies with ITU G.562.c/d

Mechanical Characteristics

FIBER COUNT	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS INSTALLATION	LONG TERM	MAXIMUM LOAD INSTALLATION
2	5.5 mm (0.217 in.)	28 kg/km (19 lb/M)	8.3 cm (3.2 in.)	5.5 cm (2.2 in.)	1468 Newton (330 lb)
4	5.7 mm (0.225 in.)	31 kg/km (21 lb/M)	8.6 cm (3.4 in.)	5.8 cm (2.3 in.)	1468 Newton (330 lb)
6	6.0 mm (0.236 in.)	34 kg/km (23 lb/M)	9.0 cm (3.5 in.)	6.0 cm (2.4 in.)	1468 Newton (330 lb)
8	6.3 mm (0.250 in.)	39 kg/km (26 lb/M)	9.7 cm (3.8 in.)	6.4 cm (2.5 in.)	1468 Newton (330 lb)
10	6.7 mm (0.265 in.)	42 kg/km (28 lb/M)	10.2 cm (4.0 in.)	6.9 cm (2.7 in.)	1468 Newton (330 lb)
12	7.1 mm (0.280 in.)	46 kg/km (31 lb/M)	10.5 cm (4.1 in.)	7.0 cm (2.8 in.)	1468 Newton (330 lb)

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
TACTICAL CABLE OUTDOOR	MULTIMODE, FX300, 62.5 µm	MULTIMODE, FX600, 50 µm	MULTIMODE, FX2000, 50 µm	SINGLEMODE ENHANCED
2 fibers	M96571	TBD	TBD	M96566
4 fibers	M96551	TBD	TBD	M96639
6 fibers	M96572	TBD	TBD	M96567
8 fibers	M96573	TBD	TBD	M96568
10 fibers	M96574	TBD	TBD	M96569
12 fibers	M96575	TBD	TBD	M96570

Please contact the Technical Support Group for proper connectivity integration and installation guidance.

All fiber optic products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.

Tray Cable Indoor/Outdoor

The TrayOptic® Series Cables are designed for indoor/outdoor industrial application and feature a water-blocking agent for even greater protection. The TrayOptic Series passes the IEEE 383-2003 flame test. All TrayOptic Series products utilize Laser Optimized Fiber to handle Gigabit Ethernet light sources and expanded bandwidth requirements. Listed below are the part numbers for Multimode 62.5 um fiber. TrayOptic Cables are also available with 50 um or Singlemode fiber upon request.

TrayOptic cables with PVC outer jackets are well suited for a variety of applications while the CPE outer jacket should be considered when extra chemical or abrasion resistance is required. All TrayOptic cables are suitable for direct burial.
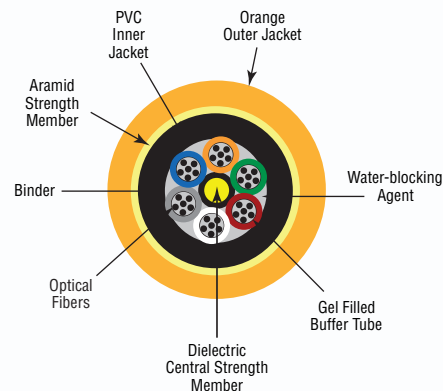
Product Specifications

Crush Resistance (EIA-455-41)	500 lbs./in. min.
Impact Resistance (EIA-455-25)	3.3 ft.-lbs./25 impacts min.
	w/2.2 N-m
Flexure (EIA-455-104)	25 cycles, 12 lbs., 20 x OD radius min.
Minimum Bend Radius	
Installation (Short Term) - Load	20x cable diameter
Long Term - No Load	15x cable diameter
Buffer Diameter	1.9 mm
Strength Members	Aramid Yarn
Jacket Material	
Outdoor	PVC or CPE
Riser	UL/cUL rated Type OFNR / OFN FT4

Temperature Range Plenum

Storage	-40 to +70°C
Operating	-40 to +70°C
Fiber Specifications	62.5μm
Max. Attenuation (dB/km @850/1300nm)	3.25/1.0
Min. Bandwidth (MHz-km @850/1300nm)	200/500
Numerical Aperture	0.275

DESCRIPTION	ORDERING NUMBER	
TRAY CABLE INDOOR/OUTDOOR, MULTIMODE FX300,62.5 μm	PVC	CPE
2 fibers	I100255	I100266
4 fibers	I100455	I100466
6 fibers	I100655	I100666
8 fibers	I400855	I400866
12 fibers	I601255	I601266
18 fibers	I601855	I601866
24 fibers	I602455	I602466
36 fibers	I603655	I603666
48 fibers	I604855	I604866
60 fibers	I606055	I606066
72 fibers	I607255	I607266

All fiber optic products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.

Fiber Cables

Loose Tube Heavy–Duty Outdoor Series

M9B840 Loose Tube Heavy-Duty Outdoor

Loose Tube Heavy–Duty Outdoor Series

Characteristics
Operating temperature:
• -50 to -80°C (Storage)
• -40 to -70°C (Operating)

Color description:
• Fiber and Buffer Tubes: EIA/TIA 598-B
• Jacket: Black

Specifications
• Crush Resistance (EIA-455-41): 2000 N/cm
• Impact Resistance (EIA-455-25): 2000 Impacts @ 1.6 N-m
• Min. Ben Radium, Installation: 20X Cable O.D.
• Min. Ben Radium, Long Term: 15X Cable O.D.
• See Page 42 for Optical Specifications

Mechanical Characteristics

FIBER COUNT	FIBERS PER TUBE	OUTSIDE DIAMETER	WEIGHT	MINIMUM BEND RADIUS INSTALLATION	LONG TERM	MAXIMUM LOAD INSTALLATION
2	2	11.18 mm (0.440 in.)	89 kg/km (60 lb/kft)	22.4 cm (8.8 in.)	16.8 cm (6.6 in.)	2700 Newton (600 lb)
4	4	11.18 mm (0.440 in.)	89 kg/km (60 lb/kft)	22.4 cm (8.8 in.)	16.8 cm (6.6 in.)	2700 Newton (600 lb)
6	6	11.18 mm (0.440 in.)	89 kg/km (60 lb/kft)	22.4 cm (8.8 in.)	16.8 cm (6.6 in.)	2700 Newton (600 lb)
8	4	11.18 mm (0.440 in.)	89 kg/km (60 lb/kft)	22.4 cm (8.8 in.)	16.8 cm (6.6 in.)	2700 Newton (600 lb)
12	6	11.18 mm (0.440 in.)	89 kg/km (60 lb/kft)	22.4 cm (8.8 in.)	16.8 cm (6.6 in.)	2700 Newton (600 lb)
18	6	11.18 mm (0.440 in.)	89 kg/km (60 lb/kft)	22.4 cm (8.8 in.)	16.8 cm (6.6 in.)	2700 Newton (600 lb)
24	6	11.18 mm (0.440 in.)	89 kg/km (60 lb/kft)	22.4 cm (8.8 in.)	16.8 cm (6.6 in.)	2700 Newton (600 lb)
36	6	11.18 mm (0.440 in.)	89 kg/km (60 lb/kft)	22.4 cm (8.8 in.)	16.8 cm (6.6 in.)	2700 Newton (600 lb)
48	12	13.72 mm (0.540 in.)	202 kg/km (136 lb/kft)	27.4 cm (10.8 in.)	20.6 cm (8.1 in.)	2700 Newton (600 lb)
72	12	13.72 mm (0.540 in.)	202 kg/km (136 lb/kft)	27.4 cm (10.8 in.)	20.6 cm (8.1 in.)	2700 Newton (600 lb)
96	12	15.37 mm (0.605 in.)	226 kg/km (152 lb/kft)	30.7 cm (12.1 in.)	23.0 cm (9.1 in.)	2700 Newton (600 lb)
144	12	19.30 mm (0.760 in.)	379 kg/km (255 lb/kft)	38.6 cm (15.2 in.)	28.9 cm (11.4 in.)	2700 Newton (600 lb)
216	12	19.30 mm (0.760 in.)	379 kg/km (255 lb/kft)	38.6 cm (15.2 in.)	28.9 cm (11.4 in.)	2700 Newton (600 lb)

DESCRIPTION	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER	ORDERING NUMBER
LOOSE TUBE HEAVY-DUTY OUTDOOR SERIES	MULTIMODE, FX300, 62.5 μm	MULTIMODE, FX600, 50 μm	MULTIMODE, FX2000, 50 μm	SINGLEMODE ENHANCED
2 fibers	M9B840	M9A840	M9C840	M9W840
4 fibers	M9B841	M9A841	M9C841	M9W841
6 fibers	M9B842	M9A842	M9C842	M9W842
8 fibers	M9B843	M9A843	M9C843	M9W843
12 fibers	M9B844	M9A844	M9C844	M9W844
18 fibers	M9B845	M9A845	M9C845	M9W845
24 fibers	M9B846	M9A846	M9C846	M9W846
36 fibers	M9B847	M9A847	M9C847	M9W847
48 fibers	M9B848	M9A848	M9C848	M9W848
72 fibers	M9B849	M9A849	M9C849	M9W849
96 fibers	M9B820	M9A820	M9C820	M9W820
144 fibers	M9B821	M9A821	M9C821	M9W821
216 fibers	M9B822	M9A822	M9C822	M9W822

All fiber optic products can be supplied in compliance with RoHS regulations. Please contact Customer Service for more details.

Ordering number by page

Fiber Media

Product Index

Product code by page

25-Year Product Warranty

The Belden IBDN components installed in a Belden IBDN "Certified" System will be warranted from the date of installation, and for a period of 25 years, against defects in materials and workmanship. These components also are warranted to meet or exceed the specifications of standards organizations such as ISO/IEC, CENELEC and TIA/EIA for the category of system installed.

If a Belden IBDN component in a Belden IBDN "Certified" System fails during the warranty period, Belden CDT Networking and a Belden IBDN Certified System Vendor will repair or replace the failed component — at no cost to the original, registered owner of the Belden IBDN System, including any labor charges.

Lifetime Application Assurance Program

A Belden IBDN "Certified" System also is guaranteed to be capable of operating the applications which the system was originally designed to support, as well as any new applications introduced for that system category, for as long as the system owner remains in its original place of installation. (New applications are defined as any application introduced in the future by recognized standards organizations or user forums such as TIA/EIA, ISO/IEC, CENELEC and IEEE.)

If a Belden IBDN "Certified" System fails to operate an installed or future application on a system wide basis, or fails to provide the minimum performance parameters detailed in the applicable Performance & Warranties Profile, Belden CDT Networking and a Belden IBDN "Certified" System Vendor will repair or replace the system as required at no cost to the original, registered owner — including any labor charges.

As with all warranties and guarantees, some conditions apply. The Performance & Warranties Profile for each level of the Belden IBDN "Certified" System provides additional details.

For more information about Belden IBDN components, Belden IBDN "Certified" Systems, or our component and system warranties, please call: 1-800-262-9334 (U.S.A. and Canada) or 1-514-822-7593 (International).

Belden CDT

United States

Belden CDT Networking Headquarters
793 Fort Mill Highway
Fort Mill, South Carolina 29715
Toll free: 800-331-0779

Belden CDT Electronics Division
2200 U.S. Highway 27 South
Richmond, Indiana 47374
Tel: 765-983-5200
Fax: 765-983-5294

Canada

Belden CDT Networking (NORDX)
2345 Boulevard des Sources
Pointe-Claire, Quebec
Canada H9R 5Z3
Toll free: 800-681-6131
Fax: 514-822-7968

Mexico, Caribbean and Latin America

Belden CDT Networking
Ave. Insurgentes Sur,
N° 1457, Piso 11
Col Insurgentes Mixcoac,
C.P. 03920
Mexico, D.F. (Mexico City)
Tel: 95-800-514-9928
Tel: 52 55 55 63 1617
Fax: 52 55 55 63 2515
Tel: Jamaica: 800-512-4008
Tel: Brazil: 000 815 8291 9928
Tel: Argentina: 54 11 4311 4972

Belden CDT Electronics Division
Regional Office
6100 Hollywood Boulevard
Suite 110
Hollywood, Florida 33024
Tel: 954-987-5044
Fax: 954-987-8022

Europe, Middle East and Africa

Belden CDT Networking
NORDX House
Unit 4, The Western Centre
Western Road, Bracknell
Berkshire, RG12 1RW
United Kingdom
Tel: 44 1344 661200
Fax: 44 1344 661201

Belden UK Ltd.
Delaunays Road
Blackley, Manchester M9 8FP
United Kingdom
Tel: +44 161 7412 226/359
Fax: +44 161 795 8393

Edisonstraat 9, Postus 9
5928 PG Venlo, 5900 AA
The Netherlands
Tel: 31-773-878-555
Fax: 31-773-878-448

Immeuble le Cesar
20, Place Louis Pradel
69001 Lyon
France
Tel: 33-472-109-990
Fax: 33-478-298-409

Via Paracelso, 26
Centro Direzionale Colleoni
Palazzo Cassiopea Ingr. 3
20041 Agrate Brianza (MI)
Italy
Tel: 39 039 656 0911
Fax: 39 029 656 0929

Dubai Internet City
Building One, Office 216
Dubai
United Arab Emirates
Tel: 97-14-391-0490
Fax: 97-14-391-8775

Australia

Belden Australia Pty. Ltd.
Level 10
369 Royal Parade
Parkville, Victoria 3052
Australia
Tel: (613) 9341 0900
Fax: (613) 9347 8274

Asia Pacific

Belden Wire & Cable Trading (Shanghai) Co. Ltd.
Unit 1015
Office Tower Beijing Capital
Times Square
No. 88 West Changan Ave.
Beijing 100031
People's Republic of China
Tel: 8610-8391-5181
Fax: 8610-8391-5186

Belden International Inc.
Unit 4401, 44F
Cosco Tower
Grand Millennium Plaza
183 Queen's Road Central
Hong Kong
Tel: 852-2955-0128
Fax: 852-2907-6933

Belden Wire & Cable Co.
No. 575 1st Floor
1st A Main
Domlur Layout
Bangalore 560071
India
Tel: 91-984-4246369
Fax: 91-80-5350267

Belden Wire & Cable Trading (Shanghai) Co. Ltd.
Unit 611-612
Haitong Securities Tower
689 Guangdong Road
Shanghai 200001
People's Republic of China
Tel: 8621-5385-3355
Fax: 8621-6249-0879

Belden International Inc.
101 Thompson Road
#21-01 United Square
Singapore 307591
Tel: 65-6251-8211
Fax: 65-6251-5010