

Fiber Optic

Fiber Specification and Selection

We provide a wide range of optical-fiber options so that our customers have the flexibility to choose a cable plant to best fit their needs. Only optical fiber that meets or exceeds industry standards is used to ensure quality products with best-in-class performance.

Fiber options continue to expand as technology demands require improved performance. The information below summarizes the performance of NextGen™ Brand fiber types. Detailed fiber selection tables are also listed on the following page.

62.5/125 Multimode

62.5/125 multimode has been the TIA/EIA 568B.3 standard in North America and in many parts of the world for years. Proven reliability and strong optical performance has kept this as the fiber of choice for data backbones and recently, Fiber-To-The-Desk (FTTD).

Super/FDDI - This fiber meets the bandwidth requirement and exceeds the attenuation specification for TIA/EIA 568B.3.

G300 - The G300 fiber has an optimized core profile that allows it to efficiently transmit a Gigabit Ethernet (per IEEE 802.3z) laser signal 300 meters at 850nm and 550 meters at 1300nm. In addition, this fiber maintains backward compatibility with TIA/EIA 568B.3 and ISO 11801. It is perfect for any network backbone that reaches to 300 meters and for centralized cabling topographies.

G500 - The G500 is a premium 62.5/125 multimode fiber optimized for performance in laser-based systems such as Gigabit Ethernet. G500 can transmit a Gigabit Ethernet (per IEEE 802.3z) laser signal a distance of 500 meters at 850nm and 1000 meters at 1300nm. This fiber provides a great solution as backbone distances increase and the bandwidth potential of 1 Gb/s systems is utilized. This fiber also meets the requirement of TIA/EIA 568B.3 and ISO 11801.

50/125 Multimode

50/125 multimode has been a standard in ISO 11801 and is used primarily in Europe and Asia. The popularity of 50/125 around the world and its superior bandwidth performance in the 850nm window are driving its inclusion into TIA/EIA 568B.3 and acceptance in North America. 50/125 multimode is fully compatible with 62.5/125 fiber and components. Compared to 62.5/125 fiber, 50/125 provides higher bandwidth at a lower cost.

G600 - G600 was designed to meet or exceed all requirements of TIA/EIA 568B.3 and ISO 11801. Additionally, G600 can extend the signal transmission distance of a Gigabit Ethernet (per IEEE 802.3Z) laser signal to 600 meters at both 850nm and 1300nm.

G10X - G10X optical fiber is engineered for laser-based protocols IEEE 802.3ae such as Gigabit Ethernet and 10 Gigabit Ethernet while maintaining compatibility with Ethernet, Fast Ethernet and ATM protocols.

Singlemode

Singlemode fiber's tremendous bandwidth and low attenuation has made it the fiber of choice for service carriers. As opto-electronics come down in price, singlemode is becoming more common in data communication networks. We offer non-dispersion shifted singlemode fiber, TIA/EIA 492AAAA Class IVa, as a standard offering. Our singlemode fiber complies with the ITU G-652 standard.

Premium - The premium grade of fiber has a maximum fiber attenuation of 0.4/0.3 dB/km at 1310/1550nm for each fiber in a loose tube cable. This is most common for outside plant applications where transmission distances and loss budgets are critical.

Super - This grade is most effective with premises and indoor/outdoor cables where the transmission distances are short (< 5km). The super grade of singlemode fiber has an attenuation of 1.0/1.0 dB/km at 1310/1550nm for tight buffer cables.

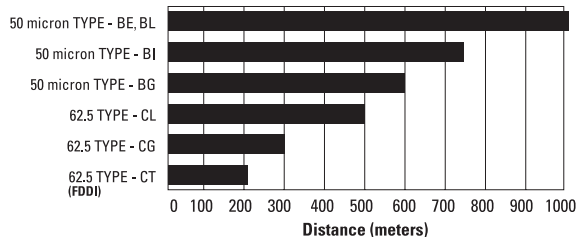
Other grades of 62.5/125, 50/125, Non-Zero Dispersion Shifted (NZDS) singlemode fibers and enhanced singlemode fibers are available to suit design preferences and industry standards. These fibers are described in the tables on page 2.

Fiber Specification and Selection

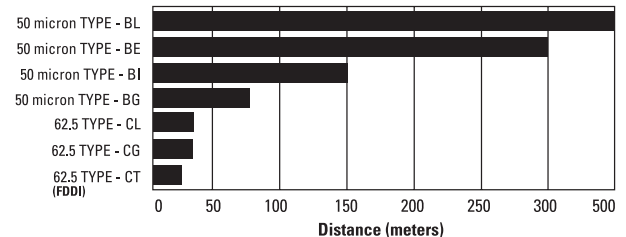
MULTIMODE FIBER SELECTION GUIDE

Optical Characteristics:		50/125 PRODUCT FAMILY				62.5/125 PRODUCT FAMILY			UNITS
		Type-BG	Type-BI	Type-BE	Type-BL	Type-CT	Type-CG	Type-CL	
Maximum Finished Cable Attenuation Coefficient	@850nm	3.0	3.0	3.0	3.0	3.5	3.5	3.5	dB/km
	@1300nm	1.0	1.0	1.0	1.0	1.0	1.0	1.0	dB/km
Overfill Launch Bandwidth	@850nm	500	700	1500	3000	200	200	200	MHz.km
	@1300nm	500	500	500	500	500	500	500	MHz.km
Laser Bandwidth	@850nm	510	850	2000	4000	n/a	220	385	MHz.km
Gigabit Ethernet Link Length (1 Gbps)	1000BASE-SX	600	750	1000	1000	220	300	500	meters
	1000BASE-LX	600	600	600	600	550	550	1000	meters
Ten Gigabit Ethernet Length (10 Gbps)	10GBASE-SR	82	150	300	500	26	33	33	meters

1 Gbps Link Lengths @ 850nm



10 Gbps Link Lengths @ 850nm



SINGLE-MODE FIBER SELECTION GUIDE

FIBER DESCRIPTION	FIBER TYPE	MAXIMUM ATTENUATION (dB/km)		GIGABIT ETHERNET DISTANCE (METERS)	10 GIGABIT ETHERNET DISTANCE (METERS)	
		1310nm	1550nm	1310nm	1310nm	1550nm
Singlemode - Loose Tube						
Super	AP	0.5	0.4	10,000	5,000	30,000
Premium	AQ	0.4	0.3	10,000	5,000	30,000
High Performance	AT	0.35	0.25	10,000	5,000	30,000
Singlemode - Tight Buffer						
Super	AP	1.0	1.0	10,000	5,000	30,000

*Typical attenuation: .8/6 @ 1310nm & 1550nm

SPECIALTY FIBERS - SINGLEMODE

FIBER DESCRIPTION	FIBER TYPE	TYPICAL ATTENUATION (dB/km)					TYPICAL APPLICATION
		1310nm	1383nm	1550nm	1605nm	1625nm	
Singlemode (NZDS)							
High Data Rate	AM	-	-	0.3	0.3	-	WDM - 2.5 & 10 Gb/s
Large Effective Area	AL	-	-	0.3	-	0.3	DWDM
Singlemode 5 (band)							
Extended Band	AE	0.35	0.31	0.25	-	0.3	CWDM

Use the code in the "Fiber Type" column to replace the XX notation in the catalog shown on the catalog page. This identifies the fiber that will be provided with the cable choice.

The fibers in all completed cables are tested 100% at the factory for attenuation and each fiber must meet the minimum requirements specified by the customer.

Fiber Optic Ordering Information

We strive to have a variety of cables in stock for immediate delivery to our customers. Should the cable not be in stock, it will be manufactured to your specifications.

To choose a fiber optic cable you need to know the following:

1) What type and grade of fiber is required?

The system designer will have identified the fiber that is required for the network. Find the fiber type that is needed from the Fiber Specification and Selection Guide. Use the two-digit NextGen™ Fiber Type code to identify the fiber. This code becomes the first two digits of the catalog part number, replacing the XX notation.

2) How many fibers are required?

The system designer will also have identified the number of fibers that will be in each cable. Fibers are usually cabled in groups of 6 or 12.

3) What cable construction is needed?

The cable construction that is needed is based on a variety of factors. We have a full range of products for premises, outside plant and indoor/outdoor to solve nearly every application need. Using the catalog as a guide, identify the cable type and construction that is needed.

With the cable construction decided, move down the table on the catalog page to find the number of fibers required. The first column of that row is the catalog part number. Simply replace the XX at the beginning of the catalog number shown with the Fiber Type code found in number one and the part number is complete.

1 2 3 4 5 6 7 8 9

Fiber Optic Part Number System

Jacket Type: A) Polyethylene; B) PVC (General Purpose); C) Polyurethane; D) PVDF-Plenum; E) CPE; F) Single Armor/PE; G) Single Armor/PVC; H) PE/Nylon; J) Double Armor (Alum./Steel); L) Single Armor, Zero-Halogen; M) Loose Tube Riser; N) Single Armor Fig 8; P) PVDF/Armor; Q) Alum. Armor; R) Riser Grade PVC; S) Double Armor (Steel); T) FEP Teflon/Tefzel; U) Soft Plenum; V) Loose Tube Riser Armored; X) Special - Specify; Y) Non-Armored Fig 8; Z) Zero-Halogen.

Central Strength Member: 1) Dielectric; 2) Steel; 3) Aramid Yarn (Up-Jacketed); N) None; X) Special - Specify.

Cable Construction: A) Dry Water Block - Premise; B) Breakout; C) Component; D) Deploying; G) Tight Buffer Heavy Duty (Indoor/Outdoor); H) Heavy Duty (Outdoor); K) Buffered Fiber; M) Medium Service (Duct); P) Premise; S) Simplex; U) Single Tube Outdoor (Aerial/Burial); W) Ready Access; Z) Zipcord; X) Special - Specify.

Buffer Construction: 1) Tight Buffer; 2) Quick Strip; 3) Single Fiber Loose Tube (Gel-Filled); 4) Multi-Fiber Loose Tube (Gel-Filled); 5) Loose Buffer; 6) Bare/Ribbon.

Number of Fibers: 001) 1; 002) 2; 004) 4; 006) 6; 008) 8; 010) 10; 012) 12 (up to 288 fiber in some cable constructions).

Fiber Grade: See Fiber Specification and Selection.

Fiber Size: A) SM; B) 50µm; C) 62.5µm; E) 100µm; F) 200µm; G) 200/230µm; J) 200/230µm HCS; XX) Special - Specify.

Example: A 6 Fiber 50/125µm G600 grade Riser/Breakout cable would have a part number BG0061B3R.

Hybrid Cables (SM/MM)

Example: A 12 Fiber Tight Buffer Distribution Plenum cable with 6SM and 6MM Fibers would have the part number AP006/CG0061PNU.

NOTE: For Interlock Armored Premise Plenum Cables, add “-ILP” to the end of the part number. For Interlock Armored Premise Riser cables, add “-ILR” to the end of the part number. For Dry Water Blocked Aerial/Burial/Duct cables, add “-DWB” to the end of the part number. For cables with Dry Loose Tubes, add “-DT” to the end of the part number.