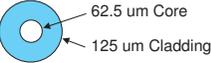


What To Ask When Selling Fiber

What kind of fiber cable?	
<input type="checkbox"/> Multimode	(Usually orange color) The most common fiber cable used in data comm applications. Usually a duplex cable allowing both Transmit and Receive.
<input type="checkbox"/> Singlemode	(Usually yellow color) Used in long distance communications such as Telco or CATV applications.

What size fiber?	
Multimode (Core size / Sheath size) 50/125 Micrometers (um) 62.5/125 Micrometers (um) 100/140 Micrometers (um)	Singlemode (Core size / Sheath size) 9/125 Micrometers (um)
	62.5 um Core - Signal carrying portion 125 um Cladding - Sheath or Jacket portion

What kind of connector ferule?	
<input type="checkbox"/> Ceramic	These connectors are made with a ferule made from Zirconia Ceramic material which offer best operating temperature range.
<input type="checkbox"/> Polymer	These connectors are made with a space age polymer ferule which has the best price performance characteristics.
<input type="checkbox"/> Stainless	These connectors are made with a stainless steel ferule and offer excellent performance at a good price.

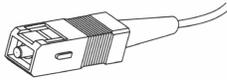
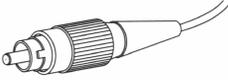
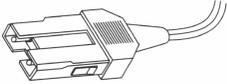
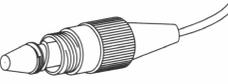
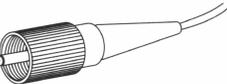
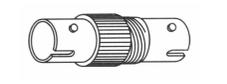
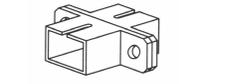
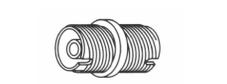
What kind of jacket?	
Patch Cables and Jumpers For Patch Cords in non-plenum areas.	
<input type="checkbox"/> PVC/Riser - or - <input type="checkbox"/> Plenum	Fire resistant outer jacket used in plenum areas such as in false ceilings or walls.
<input type="checkbox"/> Zipcord - or - <input type="checkbox"/> Round	Most common "zipcord" design. Round single cable outer jacket design.
Riser Cable Commonly used for non-burial/indoors.	
<input type="checkbox"/> Indoor - or - <input type="checkbox"/> Outdoor	Direct burial or aerial use. May be armored and gel filled. Also called "loose tube cable", or "distribution cable".
<input type="checkbox"/> Breakout - or - <input type="checkbox"/> Tight Buffer	Allows quick termination elimination need for breakout or splicing kits. Reduced size and cost. Requires a breakout or splicing kit. Can be connectorized either onto the 900um fiber, or built up to 3mm with Furcation tubing.

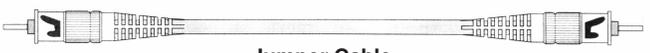
What finish do you want?		
Fiber Style	Finish Type	Return Loss
<input type="checkbox"/> Multimode	No finish issues common to this style.	
<input type="checkbox"/> Singlemode	PC Finish	-35dB
	Super PC Finish	-40dB
	Ultra PC Finish	-55dB
	Angled PC Finish	-65dB
PC Finish is sufficient for most singlemode applications.		

What length do you need?	
Fiber cables are generally measured in meters. To convert between English & Metric, use the following:	
1 Meter = 3.28 Feet	
Meters to Feet Meters times 3.28	Feet to Meters Feet divided by 3.28

If the customer experiences problems with cables	
<input type="checkbox"/> Signal Loss	- The most common reason signal loss occurs in a cable that once tested OK is contamination on the polished surface. Simply clean the ends with an alcohol wipe. DO NOT TOUCH THE POLISHED SURFACE. - The cable may have been mated with a cable that has poorly polished ends which either introduced contamination, or damaged the good cable. The ends may have to be re-polished. - Vinyl caps covering the ferule are supplied with all Gruber Industries fiber cables to prevent contamination.
<input type="checkbox"/> High Signal Loss	- Repolishing may not resolve the problem if the fiber core is split, cracked, or damaged. Re-connectorizing may be the only solution. Fiber Microscopes at 400x or better will show up these problems.
<input type="checkbox"/> No Signal	- Fiber is fragile. Generally a loss of signal in a cable indicates a break occurred after the production process. Bending fiber beyond a 1/2" radius may be the culprit. High intensity laser sources will illuminate the exact area of the breakage allowing salvaging especially long cables by reconnectorizing at the break. - Make sure the vinyl end cap has been removed before inserting the cable connectors.

Glossary of Terms	
Multimode	Most commonly used in data comm. The construction is dual "zip cord" style with a transmit and receive leg. Most common size = 62.5/125 Micrometers HINT - Usually orange in color - 4 conn's
Singlemode	Most commonly used in voice applications. The construction is dual "zip cord" or single style. Most common size = 9/125 Micrometers HINT - Usually yellow color
Duplex	Refers to dual "zip cord" style construction cable with a transmit and receive leg.
Simplex	Refers to single cable construction.
Core	The signal carrying portion of a glass strand.
Cladding	The sheath or jacket which protects and reflects light back into the core.
Kevlar	This bundle of "yellow hair" inside the fiber jacket is the strength membrane protecting the fiber cable from lateral stress.
Ferrule	The protruding portion of a fiber connector. Material = Ceramic, Stainless Steel, Poly.
Polishing	A step in the connectorization that creates a flat even surface on the fiber strand allowing two cables to be mated to transfer a signal.
Furcation Tubing	A protective tubing used on exposed fiber multi-conductor strands.
Fanout	A multi-conductor cable constructed in a tight buffered fiber design.
Decibel (dB)	Unit for measuring the relative strength of light signals.
Backreflection	An undesirable characteristic in singlemode fiber termination.
Meter	One meter equals 3.28 feet.
Micrometer (um)	One micrometer = 1 millionth of a meter. Used to express geometric dimensions of fibers, e.g. 62.5 um.
Nanometer (nm)	One nanometer equals 1 billionth of a meter. Used to express the wavelength of light.
Return Loss (Reflectance)	Stated as a negative value, measured in dB. The better the polish & connector, the lower the return loss value.

Fiber Connector Styles			
			
ST Connector A slotted bayonet type connector. This connector is one of the most popular styles.	SC Connector A push/pull type connector. This connector is emerging as one of the most popular styles.	FC Connector A slotted screw-on type connector. This connector is popular in singlemode applications.	SMA Connector A screw-on type connector. This connector is waning in popularity.
			
FDDI Connector A push/pull type dual connector. This connector is one of the more popular styles.	Mini-BNC Connector A bayonet style connector using the traditional BNC connection method.	Biconic Connector A screw-on style connector. This connector is almost obsolete.	D4 Connector A screw-on style connector. This connector is almost obsolete.
			
ST Feedthru A slotted bayonet type feedthru. ST connectors are one of the most popular styles.	SC Feedthru A push/pull type feedthru. SC connectors are one of the most popular styles.	FDDI Feedthru A push/pull type feedthru. FDDI connectors are popular in both singlemode and multimode applications.	FC Feedthru A slotted screw-on type feedthru. FC connectors are popular in singlemode applications.

Cable Assembly Types	
	Pigtail Cable
	Jumper Cable
	Conversion Cable