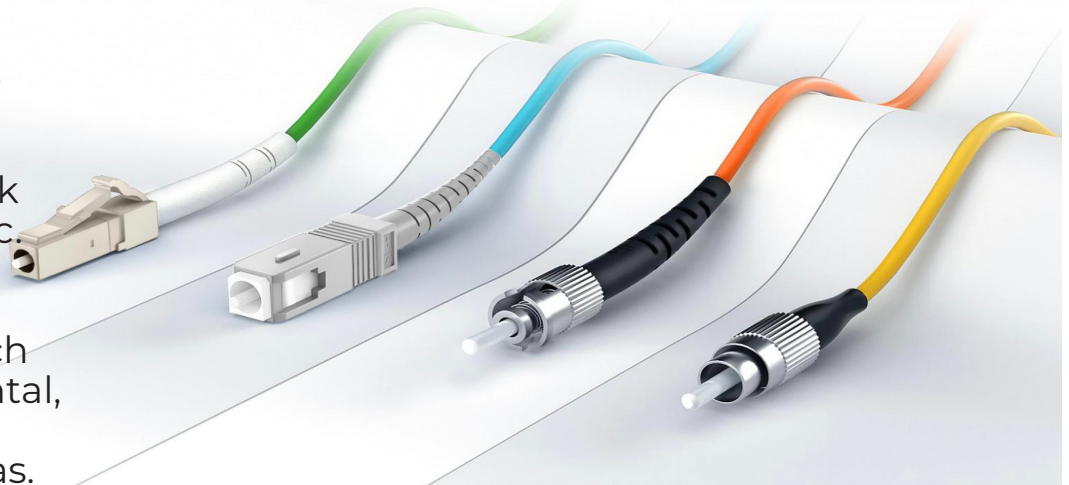


FIBER PATCH CABLES DATASHEET

MAKE HIGH-SPEED ETHERNET NETWORK EQUIPMENT CONNECTIONS

Designed for data center, enterprise, FTTx, LAN and WAN, CATV network, telecom network applications, etc. requiring quick infrastructure deployment such as main, horizontal, and zone distribution areas.



Standard Fiber Patch Cables

Fiber optic patch cables are ideal for supporting high speed telecommunication network fiber applications. They are manufactured and tested in compliance with TIA 604 (FOCIS), IEC 61754 and YD/T industry standards. OM1, OM2, OM3, OM4, OM5 or OS2 fiber types are available to meet the demand of Gigabit Ethernet, 10 Gigabit Ethernet and high speed Fiber Channel. Every termination is through rigorous parameter test to ensure the highest network performance.

Standards Compliance

- RoHS, ISO 9001 Compliant • TIA 604 (FOCIS)
- TIA/EIA 492AAAE
- IEC 61754
- IEC 60793-2-10
- IEC 61300-3-35
- YD/T1272.1-2003

Features

- High quality zirconia ferrules.
- Good repeatability and interchangeability.
- LC, SC, ST, FC, LSH, MTRJ, MU connectors are available.
- Flame-retardant, rugged and durable jacket.
- Printing helps clarify and recognize different cables.
- OS2, OM4, OM3, OM2, OM1, OM5 are available.
- Factory terminated and tested for insertion loss, return loss and end face.

STANDART FIBER OPTIC PATCH CORDS - TECHNICAL SPECIFICATION

Physical Characteristics	Description	
Connector Types	C/SC/ST/FC/LSH/MTRJ/MU with Standard Boots	
Polish Type	SMF: UPC-UPC; UPC-APC; APC-APC; MMF: UPC-UPC	
Connector Ferrule	Zirconia Ceramic	
Cable Outside Diameter	Duplex: 1.6/2.0/3.0mm, Simplex: 0.9/2.0/3.0mm	
Interchangeability	≤0.2dB - Max. ≤0.3dB	
Vibration	≤0.2dB - Max. ≤0.3dB	
Durability	500 matings	
Mechanical Characteristics	Description	
Fiber Type	Standard Boots: OS2/OM5/OM4/OM3/OM2/OM1	
Fiber Count	Duplex /Simplex	
Cable Jacket	PVC (Riser/OFNR)/LSZH/Plenum (OFNP)	
Jacket Color	OM1/OM2: Orange; OM3/OM4: Aqua; OM5: Lime Green; OS2: Yellow	
Fiber Grade	SMF: G.657.A1/G.657.A2; OM5/OM4/OM3/OM2: Bend Insensitive; OM1: G.651	
SMF: OD 0.9/1.8/ 2.0/3.0mm	G.657.A1: 10mm G.657.A2: 7.5mm	
MMF: OD 0.9/1.8/ 2.0/3.0mm	OM1: 15mm Others: 7.5mm	
Optical Characteristics	Description	
Connector Insertion Loss	LC/SC/ST/FC/LSH/MU/MTRJ≤0.3dB	
Connector Return Loss	SMF: UPC≥50, APC≥60 (LC/SC/ST/FC/MU/MTRJ), UPC≥55, APC≥75 (LSH) MMF: UPC≥30 (LC/SC/ST/FC/LSH/MU), UPC≥35 (MTRJ)	
Attenuation at 1310nm	G.657.A1: 0.36dB/km G.657.A2: 0.4dB/km	
Attenuation at 1550nm	G.657.A1: 0.22dB/km G.657.A2: 0.25dB/km	
Attenuation at 850nm	3.0dB/km	
Attenuation at 1300nm	1.0dB/km	
Characteristics	Description	
Operating Temperature	-20~70°C	
Storage Temperature	-40~80°C	
Tensile Strength (Long Term/ Short Term)	Duplex	Simplex
3.0mm OD	320N	280 N
2.0mm OD	300N	220 N
1.8 mm OD	90/150N	-

ULTRA LOW LOSS FIBER OPTIC PATCH CORDS - TECHNICAL SPECIFICATION

Physical Characteristics	Description	
Connector Types	LC/SC/ST/FC/LSH/MTRJ/MU with Standard Boots	
Polish Type	SMF: UPC-UPC; UPC-APC; APC-APC; MMF: UPC-UPC	
Connector Ferrule	Zirconia Ceramic	
Cable Outside Diameter	Duplex: 1.6/2.0/3.0mm, Simplex: 0.9/2.0/3.0mm	
Interchangeability	≤0.12dB Max. ≤0.2dB	
Vibration	≤0.12dB Max. ≤0.2dB	
Durability	500 matings	
Mechanical Characteristics	Description	
Fiber Type	Standard Boots: OS2/OM5/OM4/OM3/OM2/OM1	
Fiber Count	Duplex /Simplex	
Cable Jacket	PVC (Riser/OFNR)/LSZH/Plenum (OFNP)	
Jacket Color	OM1/OM2: Orange; OM3/OM4: Aqua; OM5: Lime Green; OS2: Yellow	
Fiber Grade	CORNING SMF: G.657.A1/G.657.A2; OM5/OM4/OM3/OM2: Bend Insensitive; OM1: G.651	
SMF: OD 0.9/1.8/ 2.0/3.0mm	G.657.A1: 10mm G.657.A2: 7.5mm	
MMF: OD 0.9/1.8/ 2.0/3.0mm	OM1: 15mm Others: 7.5mm	
Optical Characteristics	Description	
Connector Insertion Loss	LC/SC/ST/FC/LSH/MU/MTRJ≤0.3dB	
Connector Return Loss	SMF: UPC≥50, APC≥60 (LC/SC/ST/FC/MU/MTRJ), UPC≥55, APC≥75 (LSH) MMF: UPC≥30 (LC/SC/ST/FC/LSH/MU), UPC≥35 (MTRJ)	
Attenuation at 1310nm	G.657.A1: 0.36dB/km G.657.A2: 0.4dB/km	
Attenuation at 1550nm	G.657.A1: 0.22dB/km G.657.A2: 0.25dB/km	
Attenuation at 850nm	3.0dB/km	
Attenuation at 1300nm	1.0dB/km	
Characteristics	Description	
Operating Temperature	-20~70°C	
Storage Temperature	-40~80°C	
Tensile Strength (Long Term/ Short Term)	Duplex	Simplex
3.0mm OD	320N	280 N
2.0mm OD	300N	220 N
1.8 mm OD	90/150N	90 N

Simplex Single Mode Patch Cord



Connector Specifications

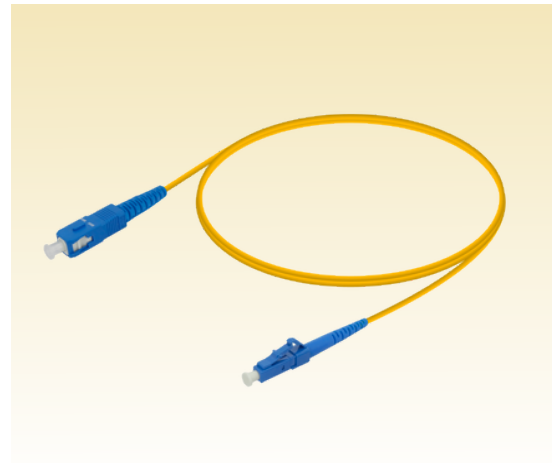
LC Connector Compliance	IEC 61754-20, TIA 604-10-A, RoHS
SC Connector Compliance	IEC 61754-4, TIA 604-3, RoHS
FC Connector Compliance	IEC 61754-13, TIA 604-4-A, RoHS
ST Connector Compliance	IEC 61754-2, TIA 604-2, RoHS
LSH Connector Compliance	IEC 61754 - 15, TIA 604 - 16, RoHS
Alignment Technology	Full ceramic ferrule (Zirconia ZrO2)
Operating Temperature	-20°C to +70°C
Flammability	< 0.1dB typical change for >
Durability	500 matings

Optical Performance

Insertion Loss IEC 61300-3-4 Method B	Single Mode Max. $\leq 0.3\text{dB}$
Return Loss IEC 61300-3-6 Method B	IEC 61754-4, TIA 604-3, RoHS

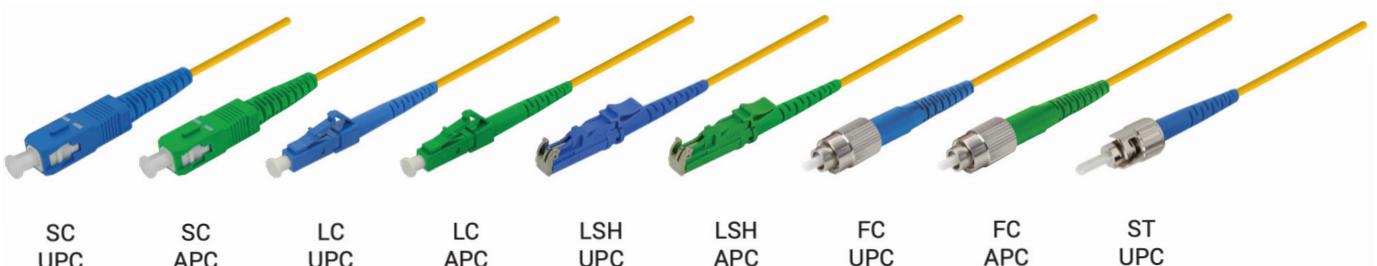
Endface Control Parameters

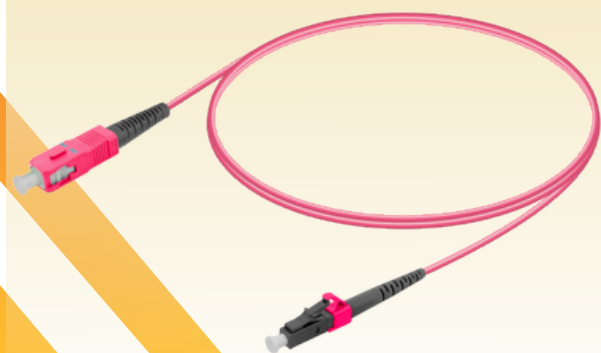
Geometry Inspection	UPC : IEC 61755-3-1 APC : IEC 61755-3-2
Visual Inspection	IEC 61300-3-35



Cable Specifications

- 1 core simplex fiber optic cable
- 1.8 mm - 2.0 mm - 3.0 mm diameter options
- Length tolerance is ± 50 mm
- Max. Tensile Strength:
 - For 1.8 mm is 90 N
 - For 2.0 mm is 220 N
 - For 3.0 mm is 280 N
- Min. Bending Radius 7.5 mm
- Cable Color is Yellow





Cable Specifications

- 1 core simplex fiber optic cable
- 1.8 mm - 2.0 mm - 3.0 mm diameter options
- Length tolerance is ± 50 mm
- Max. Tensile Strength:
 - For 1.8 mm is 90 N
 - For 2.0 mm is 220 N
 - For 3.0 mm is 280 N
- Min. Bending Radius 7.5 mm
- Cable Color:
 - Beige for OM1 and OM2
 - Aqua for OM3
 - Violet for OM4

Connector Specifications

LC Connector Compliance	IEC 61754-20, TIA 604-10-A, RoHS
SC Connector Compliance	IEC 61754-4, TIA 604-3, RoHS
FC Connector Compliance	IEC 61754-13, TIA 604-4-A, RoHS
ST Connector Compliance	IEC 61754-2, TIA 604-2, RoHS
LSH Connector Compliance	IEC 61754 - 15, TIA 604 - 16, RoHS
Alignment Technology	Full ceramic ferrule (Zirconia ZrO2)
Operating Temperature	-20°C to +70°C
Flammability	< 0.1dB typical change for >
Durability	500 matings

Optical Performance

Insertion Loss IEC 61300-3-4 Method B	Multi Mode ≤ 0.30 dB
Return Loss IEC 61300-3-6 Method B	Multi Mode ≥ 35 dB

Endface Control Parameters

Geometry Inspection	IEC 61755-3-1
Visual Inspection	IEC 61300-3-35



ST OM4

ST OM3

ST OM1 OM2

FC OM4

FC OM3

FC OM1 OM2

LSH OM4

LSH OM3

LSH OM1 OM2

LC OM4

LC OM3

LC OM1 OM2

SC OM4

SC OM3

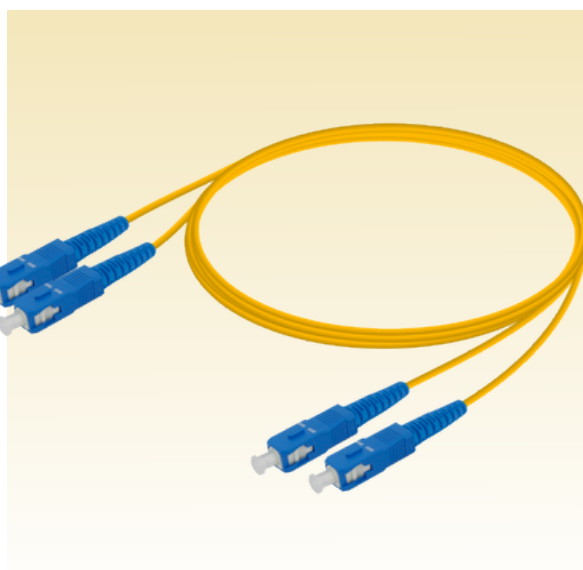
SC OM1 OM2

Duplex Single Mode Patch Cord



Connector Specifications

LC Connector Compliance	IEC 61754-20, TIA 604-10-A, RoHS
SC Connector Compliance	IEC 61754-4, TIA 604-3, RoHS
FC Connector Compliance	IEC 61754-13, TIA 604-4-A, RoHS
ST Connector Compliance	IEC 61754-2, TIA 604-2, RoHS
LSH Connector Compliance	IEC 61754 - 15, TIA 604 - 16, RoHS
Alignment Technology	Full ceramic ferrule (Zirconia ZrO2)
Operating Temperature	-20°C to +70°C
Flammability	< 0.1dB typical change for >
Durability	500 matings



Optical Performance

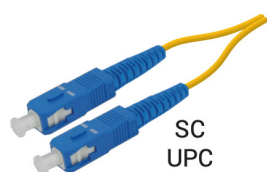
Insertion Loss IEC 61300-3-4 Method B	Single Mode Max. $\leq 0.3\text{dB}$
Return Loss IEC61300-3-6 Method B	Single Mode UPC: $\geq 50\text{dB}$ Single Mode APC: $\geq 60\text{dB}$

Endface Control Parameters

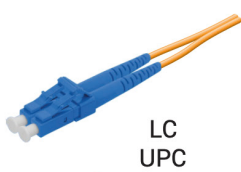
Geometry Inspection	UPC : IEC 61755-3-1 APC : IEC 61755-3-2
Visual Inspection	IEC 61300-3-35

Cable Specifications

- 2 cores duplex fiber optic cable
- 1.8x3.7 mm - 2.0x4.1 mm diameter options
- Length tolerance is ± 50 mm
- Max. Tensile
 - For 1.8 mm is 90 N
 - For 2.0 mm is 300 N
 - For 3.0 mm is 320 N
- Min. Bending Radius is 7.5 mm
- Cable Color is Yellow



SC
UPC



LC
UPC



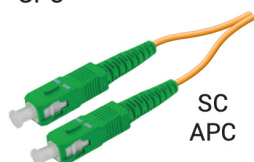
LSH
UPC



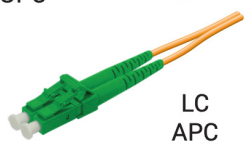
FC
UPC



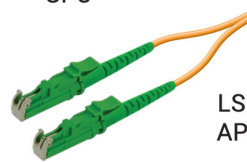
ST
UPC



SC
APC



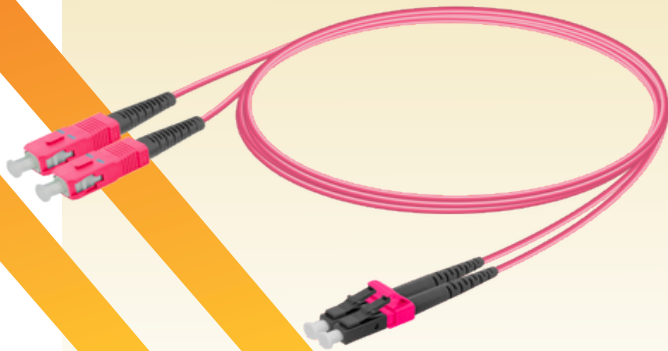
LC
APC



LSH
APC



FC
APC



Cable Specifications

- 2 cores duplex fiber optic cable
- 1.8x3.7 mm - 2.0x4.1 mm diameter options
- Length tolerance is ± 50 mm
- Max. Tensile
 - For 1.8 mm is 90 N
 - For 2.0 mm is 300 N
 - For 3.0 mm is 320 N
- Min. Bending Radius is 7.5 mm
- Cable Color:
 - Beige for OM1 and OM2
 - Aqua for OM3
 - Violet for OM4

Connector Specifications

LC Connector Compliance	IEC 61754-20, TIA 604-10-A, RoHS
SC Connector Compliance	IEC 61754-4, TIA 604-3, RoHS
FC Connector Compliance	IEC 61754-13, TIA 604-4-A, RoHS
ST Connector Compliance	IEC 61754-2, TIA 604-2, RoHS
LSH Connector Compliance	IEC 61754 - 15, TIA 604 - 16, RoHS
Alignment Technology	Full ceramic ferrule (Zirconia ZrO ₂)
Operating Temperature	-20°C to +70°C
Flammability	< 0.1dB typical change for >
Durability	500 matings

Optical Performance

Insertion Loss IEC 61300-3-4 Method B	Multi Mode ≤ 0.30 dB
Return Loss IEC 61300-3-6 Method B	Multi Mode ≥ 35 dB

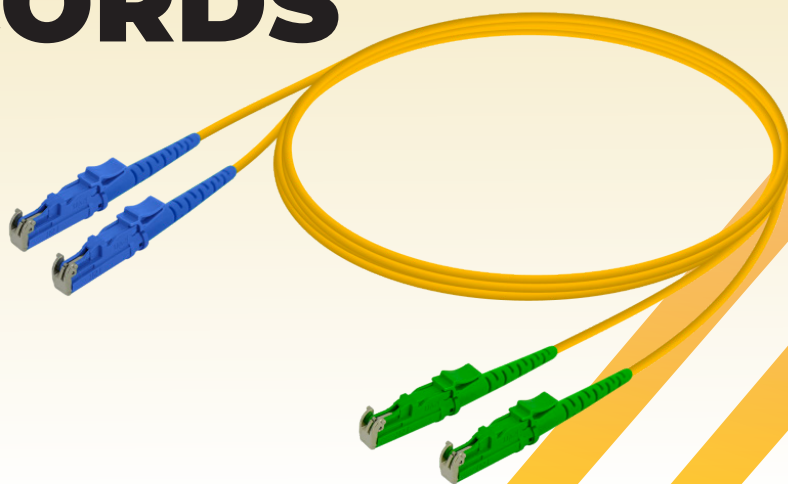
Endface Control Parameters

Geometry Inspection	IEC 61755-3-1
Visual Inspection	IEC 61300-3-35



E2000 FIBER OPTIC PATCH CORDS

Designed for data center, enterprise, FTTx, LAN and WAN, CATV network, telecom network applications etc. requiring quick infrastructure deployment such as main, horizontal, and zone distribution areas.



Standard Fiber Patch Cables



The E2000* connectors used are featured with spring-loaded shutters that open when engaged and close when disengaged protecting ferrules from dust and scratches. The connector's push-pull latching mechanism clicks when fully inserted. In addition to basic testing, some mechanical and environmental tests per IEC or Telcordia are also performed periodically to guarantee the best quality. For standard patch cords, sampling check is performed on ferrule geometry to ensure high percentage of polished connectors meeting GR-326 requirements. For premium grade, ferrule geometry is tested on all patch cords to meet these requirements. Other than standard single mode and multimode fibers, G655, OM2, and OM3 fibers are also available upon request. Flame retardant grade cable sheathing options are offered. Riser rated cable will be provided as standard. LSZH and Plenum can be provided upon request.

Features

- Push-pull latching mechanism
- Protected by spring-loaded shutters
- Low insertion loss and high return loss
- Materials meet RoHS requirements
- Riser, Plenum, or LSZH cables

Applications

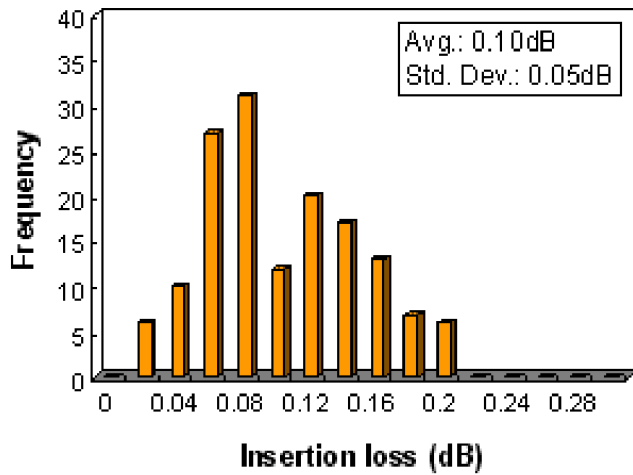
- Telecommunication
- Computer networks
- CATV networks
- Active device termination
- Instrumentation

Specifications

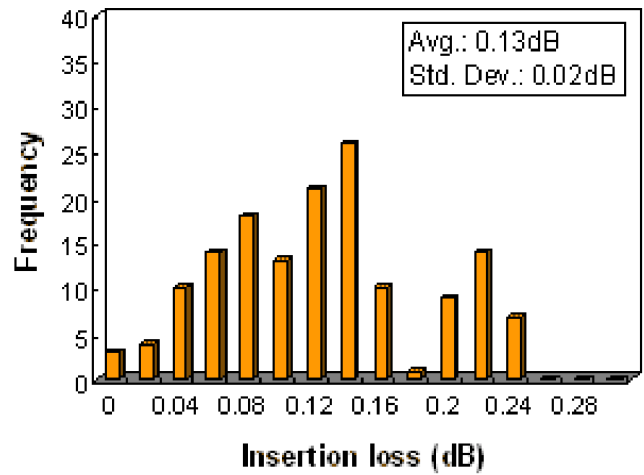
Characteristics	Unit	Value/Performance			Comments		
		SM		MM			
		PC	APC				
Basic							
Insertion Loss(IL)	dB	≤0.3			IEC 61300-3-4		
Return Loss (RL)	dB	SPC≥45 UPC≥45	≥60	≥23	IEC 61300-3-6		
Endurance	dB	ΔIL≤0.2			IEC 61300-2-2, coupling and uncoupling 500 cycles,clean every 25 cycles		
Operantin Temperature	°C	-20 ~+70					
Storage Temperature	°C	-40 ~+70					
Ferrule end-face geometry							
Radius of Curvature (R)	mm	7-25	5-12	NA	Telcordia GR326(4.4.5)		
Apex Offset	um	≤50		NA	Telcordia GR325(4.4.5)		
Fiber Protrusion	nm	≤50	≤100	NA	Telcordia GR326(4.4.5)		
Fiber Under Cut	nm	≤125@ R=7-10	≤100	NA	Telcordia GR326(4.4.5). For PC, Under Cut ≤-0.02R³+1.3R²-31R+325 when R=10-25mm		
MechanicalDrop							
Drop	dB	ΔIL≤0.2			IEC 61300-2-12, 1.5m, 5 drops, no damage		
Vibration	dB	ΔIL≤0.2			IEC 61300-2-1, 10-55Hz, 0.75mm amplitude, 0.5 hrs/axis		
Flex	dB	ΔIL≤0.2			Telcordia GR326(4.4.3.2), 0.9kg ±90°, 100cycles, for 2mm or larger cable		
Twist	dB	ΔIL≤0.2			Telcordia GR326(4.4.3.3), 1.35kg load, ±2.5 turns, 10 cycles, for 2mm or langer cable		
Pull Proof	dB	ΔIL≤0.2			Telcordia GR326(4.4.3.4), 3.4kg at 90°, 6.8kg at 0° for 2mm or larger cable		
Couling strength	dB	ΔIL≤0.2			IEC 61300-2-6, 4.2kg, 2min		
Stactic Bending	dB	ΔIL≤0.2			IEC 61300-1-2, 60mm diameter 10 turns		
Crushing	dB	ΔIL≤0.2			IEC 61300-1-2, 102kg for 2mm or larger cable,10.2kg for 900mm cable		
Environmental							
Clod	dB	ΔIL≤0.2			IEC 61300-2-17, -20°C, 96 hrs		
Dry Heat	dB	ΔIL≤0.2			IEC 61300-2-18, -70°C, 96 hrs		
Damp Heat	dB	ΔIL≤0.2			IEC 61300-2-19, -40°C, 95%RH, 96 hrs		
Transmission							
Characteristics	Unit	G652 SM	G655 SM	Std. 50um	62.5um	OM2	OM3
Max. Attenuation	dB/km (nm)	0.4/0.3 (1310/1550)	0.3 (1550)	2.8 (850)	3.0 (850)	2.8 (850)	2.8 (850)
Min. Bandwidth	MHokm (nm)	-	-	500/500 (850/1300)	200/200 (850/1300)	750 (850)	2000 (850)
Dispersion Coefficient	ps/ nm²okm	≤0.3 (1310nm)	2.6-6.0 (1550nm)	-	-	-	-

Optical Performance Distribution

Insertion Loss, SM 9/125um PC



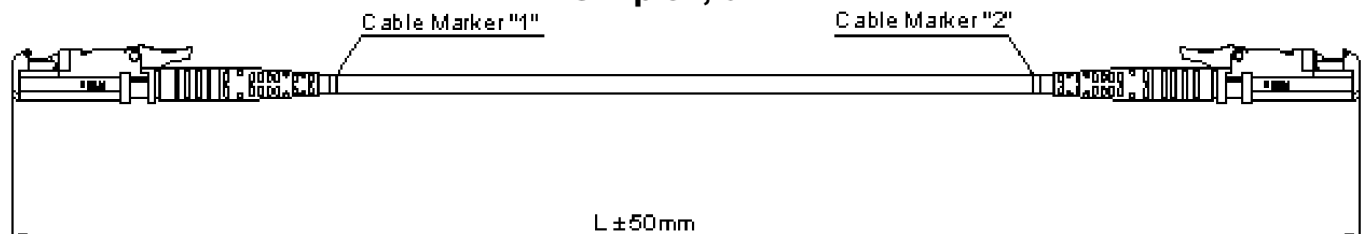
Insertion Loss, SM 9/125um APC



* Typical performance charts and actual data may vary from lot to lot.

Dimensional Drawing

Simplex, 3mm



Duplex, 3mm

