

PATCHCORD AND PIGTAIL



DESCRIPTION

High performance and high quality connectors cable assembly are required for next generation optical networks to assure long term reliability for demanding applications such as FTTx, DWDM, 100G, CATV and etc.

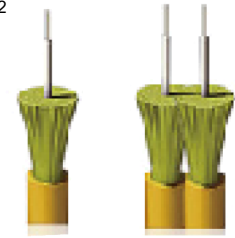
The connector assemblies are IEC, Telcordia and RoHS compliant. The termination passed end-faced inspection and 100% test for Insertion Loss (IL) and Optical Return Loss (ORL).

FEATURES

- Available in FC, SC, ST, LC, SMA, E2000, MU and MT-RJ
- Available in Simplex, Duplex and Hybrid versions
- High precision zirconia ceramic ferrule (except MT-RJ with thermoplastic) protected by dust cap
- Low insertion loss, high repeatability and stability
- Free from index matching gel
- Premium connector with ORL ≥ 55 dB for UPC and 65dB for APC^{*1}
- Operating temperature in compliance with IEC 61753-1 Table A.1
- Latching mechanism in accordance to IEC61754^{*2}

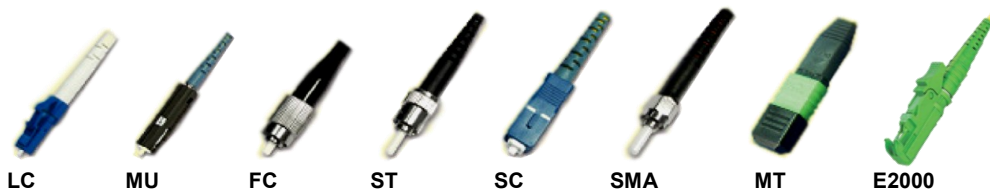
APPLICATIONS

- Optical Fiber Communication Systems
- Optical Access Network
- Fiber Optic Data Transmission
- Data Centers
- Optical Fiber CATV
- Local Area Network
- Test Equipment



Simplex

Duplex



SPECIFICATIONS

Connector Type	FC, SC, ST, LC, MU, SMA, E2000 ^{*3}			MT-RJ		
Fiber Type	SM			MM	SM	MM
Polishing	UPC ^{*1}	APC ^{*1}	PC	PC		
Insertion Loss (dB) ^{*4}	≤ 0.2	≤ 0.3	≤ 0.3	Typ. 0.3, Max 0.5		
Return Loss (dB) ^{*5}	≥ 55	≥ 65	-	≥ 35	-	
Standard Return Loss	≥ 50	≥ 60	-	≥ 35	-	
Cable Diameter (mm)	$\Phi 3, \Phi 2, \Phi 0.9$			$\Phi 2, \Phi 3$	$\Phi 2, \Phi 3$	
Exchangeability (dB)	≤ 0.2 (Randomly connected)					
Vibration (dB)	≤ 0.2 (5~50Hz, 1.5mm amplitude)					
Temp. Range (dB)	≤ 0.2 (-40°C ~ 80°C, 21 Cycles)					
Lifetimes (times)	> 500 mating (in accordance to IEC 61300-2)					

MATERIAL

Connector Type	FC, ST, SMA	MU, E2000 ^{*3} , SC, LC, MT
Connector Housing	Corrosion Resistant Nickel Plated Brass	Polymeric plastic tested in accordance to IEC60068-2-10
Sub-assemblies	Corrosion Resistant Nickel Plated Brass	Polymeric material tested under UL94 (V-0 Rating)
Bend Limiting Strain Relief Boot	Polymeric material tested under UL94 (V-0 Rating)	Polymeric material tested under UL94 (V-0 Rating)
Fiber Jacket	LSZH (UL2024 rated) or PVC	

Note:

*1 Differentiated by color: dark blue for UPC; green for APC

*2 Latching mechanism with adapter in accordance with IEC61754-2 for ST connectors; -4 for SC connectors; -6 for MU connectors; -7 for MPO/MTP connectors; -13 for FC connectors; -15 for E2000 connectors; -20 for LC connectors

*3 Comes with automated spring-loaded shutter; E2000 connectors are from R&M

*4 Tested against reference jumper in accordance with IEC61300-3-4 Method B

*5 Tested in accordance with IEC61300-3-6

ZIRCONIA FERRULE GEOMETRY SPECIFICATIONS *1

End-face Polishing		UPC	PC	APC
Radius of Curvature (mm)	SC	7~25	5~30	5~12
	LC	7~25	5~30	5~12
Apex Offset (μm)		≤50	≤70	≤50
Fiber Undercut		-90nm (Undercut), <+50nm (Protrusion)		-90nm (Undercut), <+100nm (Protrusion)
Angle Deviation (°)		—		8 ± 0.5
Diameter Tolerance (μm)		SC/E2000/FC/ST: 2.5±0.5; LC/MU: 1.25±0.5		

ENVIRONMENTAL TESTS *2

Type of Test	Test Conditions	
Thermal Age Test	1. Temp: 85°C 2. Humidity: Uncontrolled	3. Duration: 168hrs (7 days)
Thermal Cycle Test	1. Temp: Cycle (-40 °C~75 °C) 2. Humidity: Uncontrolled	3. Duration: 21 cycles, 168hrs (7 days)
Humidity Aging Test	1. Temp: 75 °C 2. Humidity: 95%	3. Duration: 168hrs (7 days)
Humidity Condensation Cycling Test	1. Temp: Cycle (-10 °C ~65 °C) 2. Humidity: 90%~100% at points indicated	3. Duration: 14 cycles, 168hrs (7 days)
Post-Condensation Thermal Cycle Test report	1. Temp: Cycle (-40 °C ~75 °C) 2. Humidity: Uncontrolled	3. Duration: 21 cycles, 168hrs (7 days)
Vibration test	1. Axis: 3 principal axis 2. Amplitude: 1.5mm (peak-to-peak)	3. Frequency: 10~55Hz (speed: 45 Hz/min) 4. Duration: 2 hrs for each axes
Flex Test	1. Loading: 0.9kgf for normal connectors 0.6kgf for SFF connectors 2. Angle Cycle: 0°→90°→0°→-90°→0°	3. Duration: 100 cycles
Twist Test	1. Loading:0.75kgf 2. Rotate capstan: 1.5 revolutions	3. Reverse direction and rotate secondly: 3 revolutions 4. Reverse direction again and rotate thirdly: 3 revolutions, Duration: 2~4 · 9 Times
Proof Test	Straight pull: 1. Apply 4.5kgf (0°) : 5 sec 2. Remove load, measure loss and reflectance after 10s 3. Apply 6.8kgf (0°) : 5 sec 4. Remove load, measure loss and reflectance after 10s	90° side pull: 1. Apply 2.3kgf for normal connector and 1.5kgf for SFF connector : 5 sec 2. Remove load, measure loss and reflectance after 20s. 3. Apply 3.4kgf for normal connector and 2.3kgf for SFF connector, 5s. 4. Remove load, measure loss and reflectance after 20s
Transmission with applied tensile load test	Tensile load: as in Table 4-9 of GR-326	
Impact Test	1. Use the ferrule-only cap to protect the ferrule end surface 2. Test height: 1.5m	3. Frequency: 8 times
Durability Test	1. Mount the test connectors with an equal number at the height of 1.8m, 1.4m, and 0.9m 2. Disconnect and reconnect 1 connector at the height sequence of 1.8m to 1.4m to 0.9m to 0.9m to 1.4m to 1.8m, until 15 connectors has been tested	3. Repeat step 2, 200 times

Note:

*1 Ferrule end-ferrule geometry is in accordance with Telcordia GR-326-CORE Issue 4

*2 The test parameters are in accordance with Telcordia GR-326-CORE

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ENVIRONMENTAL TESTS *1

Type of Test	Test Parameters	Test Methods
Cold Test	-40°C ± 2°C 96 hr duration	IEC 61300-2-17
Dry Heat High Temperature Endurance	+85°C ± 2°C 96 hr duration	IEC 61300-2-18
Change of Temperature	-40°C ± 2°C to +85°C ± 2°C 1 hr duration extremes 1°C/min rate of change 12 cycles	IEC 61300-2-22
Composite Temperature Humidity Cyclic	Z/AD profile with expose to cold -10°C ± 2°C to 65°C ± 2°C 93% RH ± 3% RH at the maximum temperature 3 hr dwells at the temperature extremes 4 cycles	IEC 61300-2-21

MECHANICAL TESTS *1

Type of Test	Test Parameters	Test Methods
Impact Test (Method A)	5 drops, 1m drop height	IEC 61300-2-12
Fiber/Cable Retention	100±2N @ 5N/s for reinforced cables with dia. > 2mm 70±2N @ 5N/s for reinforced cables with dia. ≤ 2mm 5.0±0.5N @ 0.5N/s for secondary coated fibers 2.0±0.2N @ 0.5N/s for primary coated fiber 120s duration @ 70N or 100N 60s duration @ 2N or 5N	IEC 61300-2-4
Tensile Strength of Coupling Mechanism	40N @ 2N/s 120s duration	IEC 61300-2-6
Torsion/Twist Test	15N @ 1N/s for reinforced cables 2.0N @ 0.1N/s for primary and secondary coated fibers 25 cycles ± 180°	IEC 61300-2-5
Fiber Cable Flexing	5N for reinforced cable Cycle: ±90° Number of cycle: 100	IEC 61300-2-44
Sinusoidal Vibration Test	10-55Hz 15 sweeps (10-55-10Hz) 1 octave/min 3 axes 0.75mm amplitude	IEC 61300-2-1
Mating Durability	500 cycles at not less than 3s between engagements	IEC61300-2-2

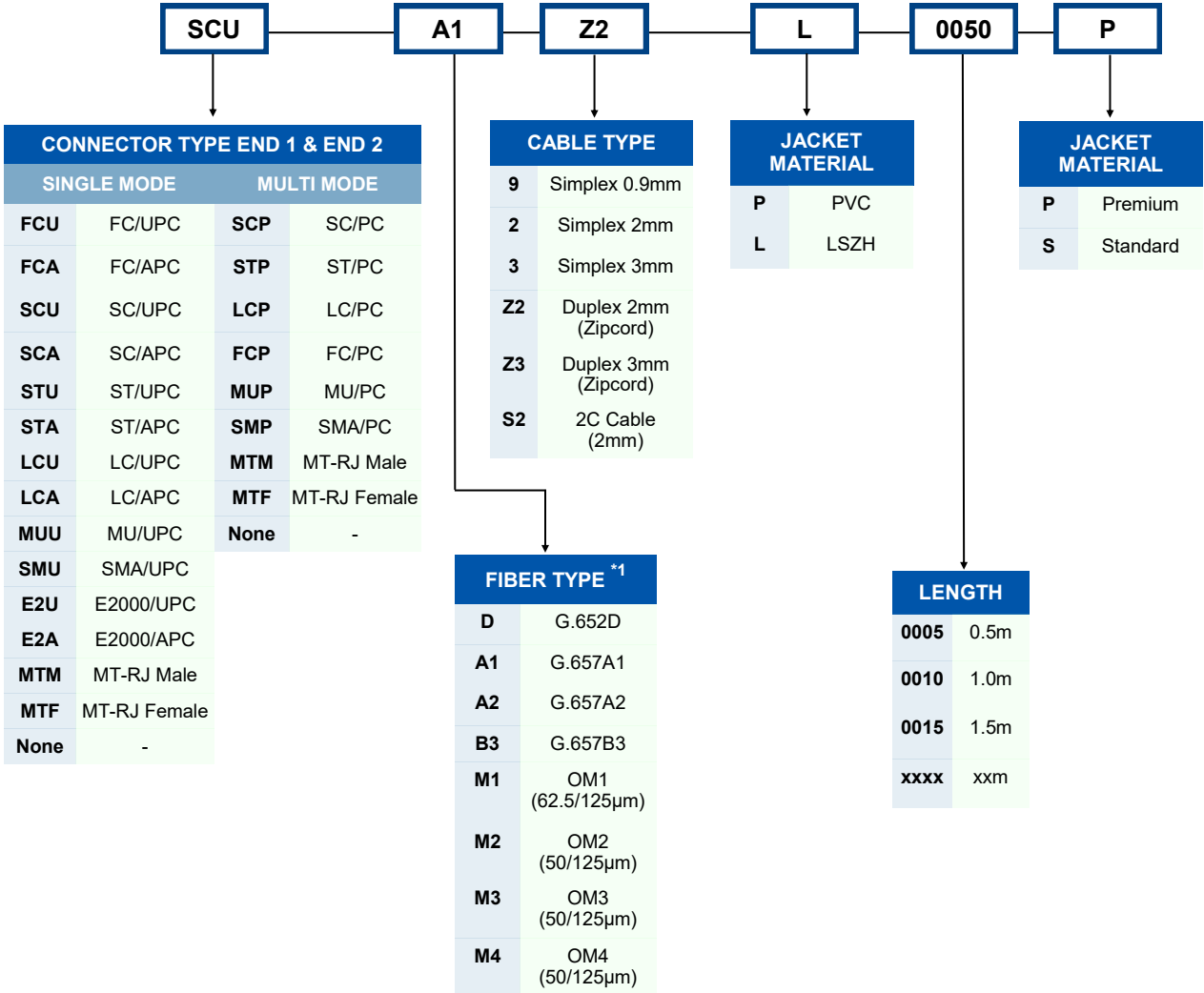
Note:

*1 The test parameters are in accordance with IEC-61753-1 (Table A.5) with incremental value of IL and ORL ≤ 0.2dB and 2dB, respectively.

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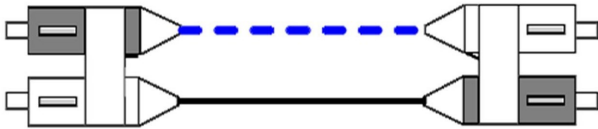
ORDERING INFORMATION

EXAMPLE
Pigtail :SCU-A1S9L0050P *Pigtail comes with one end only
Patch Cord :SCUSCU-A1Z2L0050P

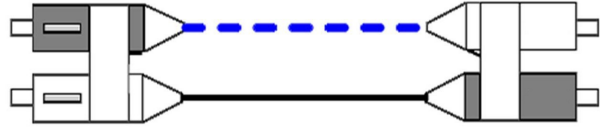


DUPLEX CONFIGURATION

Cross Over



Parallel



Note:

*1 Coming SMF-28 Ultra is used for G652D and G657A1; Coming ClearCurve LBL Optical Fiber is used for G.657A2.

*2 Standard configuration: "Cross-Over" wiring (A-B)

*3 Standard white color 0.9mm tight buffer in contact with 0.25mm fiber coating for stripping to cladding. Other color available upon request.