



ST to ST FIBER OPTIC PATCH CORD

### 1. APPLICATION

This specification covers the general requirements for fiber optic patch cord, The cables are high grade duplex cable available FR-LSZH. The patch cords are low insertion loss and high return loss. Good in repeatability and exchangeability. The patch cord shall be factory assembled with high quality control and 100% test Provide label for easily to identify. The patch cord shall be available length in 3, 5, and 10 meters or other.

LINK fiber optic patch cord support application such as 40/100Gbps Ethernet, IEEE802.3ae,10G Ethernet, IEEE802.3z,Gigabit Ethernet, Fast Ethernet, Ethernet,100BASE-F, 52/155/622Mbps and 1.2Gbps ATM, FDDI, Fiber channel and others.

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|------------------------------|-----------------------------|
| ANSI/TIA-568-C.3             | ISO/IEC 11801:2002          |
| ANSI/TIA/EIA-568-B.3         | ISO/IEC 11801:2011 (Ed.2.2) |
| ANSI/ICEA 696, ANSI/ICEA 596 | IEC 60793, IEC 60794        |
| FOTP EIA/TIA-455             | IEC 61300-2, IEC 61300-3    |
| ITU-T G.652D (Singlemode)    | TIA/EIA-604, FOCIS 2        |
| ITU-T G.651 (Multimode)      | RoHS Compliant, EN 50173-1  |
| GR 326 CORE (Singlemode)     | UL, FR-LSZH, OFNR           |

### 2. ORDER INFORMATION

#### ST to ST FIBER OPTIC PATCH CORD, DUPLEX, SIMPLEX, FR-LSZH AND OFNR

Descriptions	Part Number				
	9/125 μm (OS2)	62.5/125 μm (OM1)	50/125 μm (OM2)	50/125 μm (OM3)	50/125 μm (OM4)
ST to ST Patch Cord, Duplex, 3.0mm.	UFP944D31-XX	UFP644D31-XX	UFP544D31-XX	UFP444D31-XX	UFP344D31-XX
ST to ST Patch Cord, Simplex, 3.0mm.	UFP944S31-XX	UFP644S31-XX	UFP544S31-XX	UFP444S31-XX	UFP344S31-XX
ST to ST Patch Cord, Duplex, 2.0mm.	UFP944D21-XX	UFP644D21-XX	UFP544D21-XX	UFP444D21-XX	UFP344D21-XX
ST to ST Patch Cord, Simplex, 2.0mm.	UFP944S21-XX	UFP644S31-XX	UFP544S31-XX	UFP444S31-XX	UFP344S31-XX

Y = Polish Contact, 0 : PC-PC, 1 : UPC-UPC, 2 : APC-APC, 6 : UPC-APC, 8 : APC-UPC  
 XX = Length, 03 : 3 meters, 05 : 5 meters, or available on request.

## 3. OPTICAL FIBER

Items		Specifications
Fiber Type		9/125 $\mu\text{m}$ (OS2)
Max. / Typ. Attenuation	1310 nm	$\leq 0.35 / \leq 0.33$ dB/km
	1383 nm	$\leq 0.35 / \leq 0.31$ dB/km
	1550 nm	$\leq 0.21 / \leq 0.19$ dB/km
	1625 nm	$\leq 0.23 / \leq 0.20$ dB/km
Core	Mode Field Diameter	9.2 $\pm$ 0.4 $\mu\text{m}$ @ 1310 nm 10.4 $\pm$ 0.5 $\mu\text{m}$ @ 1550 nm
Cladding Diameter		125 $\pm$ 0.7 $\mu\text{m}$
Coating Diameter, Primary		242 $\pm$ 5 $\mu\text{m}$
Coating Diameter, Secondary		250 $\pm$ 5 $\mu\text{m}$
Cladding Non-circularity		$\leq 0.7$ %
Core/Cladding Concentricity error		$\leq 0.5$ $\mu\text{m}$
Coating/Cladding Concentricity error		$\leq 12$ $\mu\text{m}$
Zero Dispersion Wavelength		1300 ~ 1324 nm
Zero Dispersion Slope		$\leq 0.092$ ps/(nm <sup>2</sup> .km)
Cut-off Wavelength	$\lambda_0$ (Fiber)	1150 ~ 1330 nm
	$\lambda_\infty$ (Cable)	$\leq 1260$ nm
Proof Test Stress		100 Kpsi
Chromatic Dispersion	$\lambda$ ; 1285~1340nm	$\leq 3.5$ ps/nm.km
	$\lambda = 1550$ nm	$\leq 18$ ps/nm.km
	$\lambda = 1625$ nm	$\leq 22$ ps/nm.km
Polarization mode dispersion (PMD)		$\leq 0.20$ ps/ $\sqrt{\text{km}}$
Fiber Curl		$\geq 4$ M
Numerical Aperture		0.130 $\pm$ 0.010
Group refractive index	1310nm	1.4676
	1550nm	1.4682

**Table 1** The Optical, Geometrical Performance of the Singlemode Fiber (The specification conforms to the requirement of ISO/IEC11801, ANSI/TIA-568-C.3, IEC 60793-2B1.3, ITU-T G.652D)

Items		Specifications			
Fiber Type		62.5/125 $\mu\text{m}$ (OM1)	50/125 $\mu\text{m}$ (OM2)	50/125 $\mu\text{m}$ (OM3)	50/125 $\mu\text{m}$ (OM4)
Max./ Typ. Attenuation (dB/km)	850 nm	$\leq 3.0 / \leq 2.7$	$\leq 2.7 / \leq 2.5$	$\leq 2.7 / \leq 2.3$	$\leq 2.7 / \leq 2.3$
	1300 nm	$\leq 0.8 / \leq 0.6$	$\leq 0.8 / \leq 0.7$	$\leq 0.8 / \leq 0.6$	$\leq 0.8 / \leq 0.6$
Bandwidth (MHz/km)	850 nm	$\geq 200$	$\geq 500$	$\geq 1500$	$\geq 3500$
	1300 nm	$\geq 600$	$\geq 500$	$\geq 500$	$\geq 500$
850nm Laser Bandwidth (MHz/km)		N.A	N.A	$\geq 2000$	$\geq 4700$
Core Diameter ( $\mu\text{m}$ )		62.5 $\pm$ 2.5	50.0 $\pm$ 2.5	50.0 $\pm$ 2.5	50.0 $\pm$ 2.5
Cladding Diameter ( $\mu\text{m}$ )		125 $\pm$ 1	125 $\pm$ 1	125 $\pm$ 1	125 $\pm$ 1
Core Non-circularity (%)		$\leq 5$	$\leq 5$	$\leq 5$	$\leq 5$
Cladding Non-circularity (%)		$\leq 1.0$	$\leq 1.0$	$\leq 1.0$	$\leq 1.0$
Core/Cladding Concentricity error ( $\mu\text{m}$ )		$\leq 1.5$	$\leq 1.5$	$\leq 1.5$	$\leq 1.5$
Coating Diameter, Primary ( $\mu\text{m}$ )		242 $\pm$ 5	242 $\pm$ 5	242 $\pm$ 5	242 $\pm$ 5
Coating Diameter, Secondary ( $\mu\text{m}$ )		250 $\pm$ 5	250 $\pm$ 5	250 $\pm$ 5	250 $\pm$ 5
Coating Non-Circularity (%)		$\leq 5$	$\leq 5$	$\leq 5$	$\leq 5$
Coating/Cladding Concentricity error ( $\mu\text{m}$ )		$\leq 12$	$\leq 12$	$\leq 12$	$\leq 12$
Proof Test Stress (kpsi)		100	100	100	100
Bending Loss @ 850 & 1300 nm (100 turns, D=75 mm)		$\leq 0.5$ dB	$\leq 0.5$ dB	$\leq 0.5$ dB	$\leq 0.5$ dB
Zero-Dispersion Wavelength		1332-1354nm	1295~1315nm	1295-1315nm	1295~1315nm
Zero-Dispersion Slope (ps/(nm <sup>2</sup> .km))		$\leq 0.097$	$\leq 0.101$	$\leq 0.101$	$\leq 0.101$
Numerical Aperture		0.275 $\pm$ 0.015	0.200 $\pm$ 0.015	0.200 $\pm$ 0.015	0.200 $\pm$ 0.015
Group refractive index	850nm	1.496	1.482	1.482	1.482
	1300nm	1.491	1.477	1.477	1.477

**Table 2** The optical, Geometrical Performance of the Multimode Fiber (The specification conforms to the requirement of ISO/IEC11801, ANSI/TIA-568-C.3, IEC 60793-2A1a, IEC 60793-2A1b, ITU -T G.651)

#### 4. PATCH CORD CONSTRUCTIONS AND MECHANICAL

The construction of the patch cord shall be in accordance with Table 3 below.

Items	Specifications
Ferrule	Zirconia ceramic, Pre-radiused
Boot	Thermoplastic, UL 94-0
ST Housing	Brass with nickel plated
Jacket	FR-LSZH and OFNR (UL-1666)
Cable Diameter(Approx.)	3.0 mm.
Cable Diameter(Approx.)	2.0 mm.
Pulling Force	200 N
Minimum Bending Radius	30 mm.

**Table 3** Construction and Mechanical of fiber optic patch cord.

#### 5. PERFORMANCE

Items		SINGLEMODE (OS2)	MULTIMODE (OM1, OM2, OM3, OM4)
Insertion Loss	Typ.	≤ 0.15 dB	≤ 0.15 dB
	Max.	≤ 0.30 dB	≤ 0.30 dB
Return Loss	UPC	≥ 50 dB	≥ 20 dB
	APC	≥ 60 dB	-

#### 6. TEMPERATURE RANGE

- Operation Temperature : -40°C to 85°C
- Storage/Shipping Temperature : -40°C to 85°C

- END OF SPECIFICATION -