



UFP988D3X-XX  
UFP988D2X-XX

UFP588D3X-XX  
UFP588D2X-XX

UFP488D3X-XX  
UFP488D2X-XX

UFP388D3X-XX  
UFP388D2X-XX

UFP288D3X-XX  
UFP288D2X-XX

LINK AMERICAN STANDARD

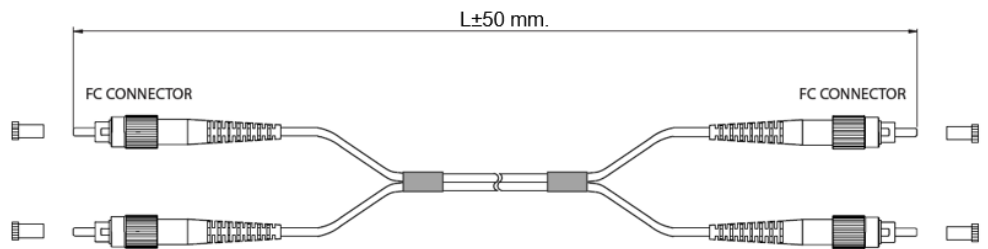


### Scope of Application

This specification covers the general requirements for fiber optic patch cord, The cables are high grade duplex and simplex 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 25/40/50/100/200/400Gbps Ethernet, IEEE802.3ae 10G Ethernet, IEEE802.3z Gigabit Ethernet, IEEE802.3u Fast Ethernet, 52/155/622Mbps, 1.2Gbps ATM, FDDI, Fiber channel, FTTx, CATV, CCTV and others.

### Drawing



### Technical Standard

- ANSI/TIA-568.3-D
- ANSI/TIA/EIA-568-C.3
- ANSI/ICEA 596
- FOTP EIA/TIA-455
- ITU-T G.652D, G.657A1 (Singlemode)
- ITU-T G.651 (Multimode)
- GR 326 CORE (Singlemode)
- UL, FR-LSZH, OFNR
- ISO/IEC 11801:2017
- ISO/IEC 11801:2011 (Ed.2.2)
- IEC 60793, IEC 60794, IEC60332-1-2
- IEC 61300-2, IEC 61300-3
- IEC 61034-2, IEC 60754-2
- TIA/EIA-604, FOCIS 4
- RoHS Compliant, EN 50173-1



## OPTICAL FIBER

Items		Specifications
Fiber Type		9/125 $\mu\text{m}$ (OS2)
Max. / Typ. Attenuation	1310 nm	$\leq 0.35/0.33$ dB/km
	1383 nm	$\leq 0.35/0.31$ dB/km
	1550 nm	$\leq 0.21/0.19$ dB/km
	1625 nm	$\leq 0.23/0.20$ 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		$\leq 12$ $\mu\text{m}$
Attenuation (Homogeneity)		Max 0.1 dB/km
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	$\lambda$ ; 1285~1340 nm	$\leq 3.5$ 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		$\geq 4\text{M}$
Numerical Aperture		0.130 $\pm$ 0.010
Group refractive index	1310 nm	1.4676
	1550 nm	1.4682

**Table 1** The Optical, Geometrical Performance of the Singlemode Fiber (The specification conforms to the requirement of ISO/IEC11801, ANSI/TIA-568.3-D, IEC 60793-2B1.3, ITU-T G.652D)



## OPTICAL FIBER

Items		Specifications			
		50/125 $\mu$ m	50/125 $\mu$ m	50/125 $\mu$ m	50/125 $\mu$ m
Fiber Type		(OM2)	(OM3)	(OM4)	(OM5)
Max./ Typ. Attenuation (dB/km)	850 nm	$\leq 2.7 / \leq 2.5$	$\leq 2.7 / \leq 2.3$	$\leq 2.7 / \leq 2.3$	$\leq 2.7 / \leq 2.3$
	1300 nm	$\leq 0.8 / \leq 0.7$	$\leq 0.8 / \leq 0.6$	$\leq 0.8 / \leq 0.6$	$\leq 0.8 / \leq 0.6$
	953 nm	N.A	N.A	N.A	$\leq 2.3 / \leq 2.0$
Bandwidth (MHz/km)	850 nm	$\geq 500$	$\geq 1500$	$\geq 3500$	$\geq 3500$
	1300 nm	$\geq 500$	$\geq 500$	$\geq 500$	$\geq 500$
	953 nm	N.A	N.A	N.A	$\geq 1850$
850nm Laser Bandwidth (MHz/km)		N.A	$\geq 2000$	$\geq 4700$	$\geq 4700$
953nm Laser Bandwidth (MHz/km)		N.A	N.A	N.A	$\geq 2470$
Core Diameter ( $\mu$ m)		$50.0 \pm 2.5$	$50.0 \pm 2.5$	$50.0 \pm 2.5$	$50.0 \pm 2.5$
Cladding Diameter ( $\mu$ 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 ( $\mu$ m)		$\leq 1.5$	$\leq 1.5$	$\leq 1.5$	$\leq 1.5$
Coating Diameter, Primary ( $\mu$ m)		$242 \pm 5$	$242 \pm 5$	$242 \pm 5$	$242 \pm 5$
Coating Diameter, Secondary ( $\mu$ 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 ( $\mu$ m)		$\leq 12$	$\leq 12$	$\leq 12$	$\leq 12$
Attenuation (Homogeneity)		Max 0.1 dB/km	Max 0.1 dB/km	Max 0.1 dB/km	Max 0.1 dB/km
Proof Test Stress (kpsi)		100	100	100	100
Bending Loss @ 850 & 1300 nm (100 turns,		$\leq 0.5$ dB	$\leq 0.5$ dB	$\leq 0.5$ dB	$\leq 0.5$ dB
Zero-Dispersion Wavelength		1295~1315nm	1295~1315nm	1295~1315nm	1295~1315nm
Zero-Dispersion Slope (ps/(nm <sup>2</sup> .km))		$\leq 0.101$	$\leq 0.101$	$\leq 0.101$	$\leq 0.101$
Numerical Aperture		$0.200 \pm 0.015$	$0.200 \pm 0.015$	$0.200 \pm 0.015$	$0.200 \pm 0.015$
Group refractive index	850 nm	1.482	1.482	1.482	1.482
	1300 nm	1.477	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-568.3-D, IEC 60793-2A1a, IEC 60793-2A1b, ITU -T G.651)



## PATCH CORD CONSTRUCTIONS AND MECHANICAL

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

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

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

## PERFORMANCE

Items	SINGLEMODE (OS2)		MULTIMODE (OM2, OM3, OM4, OM5)	
	Typ.	Max.	Typ.	Max.
Insertion Loss	≤ 0.15 dB	≤ 0.30 dB	≤ 0.15 dB	≤ 0.30 dB
	≥ 50 dB	≥ 60 dB	≥ 26 dB	-
Return Loss	≥ 50 dB	≥ 60 dB	≥ 26 dB	-
	≥ 500 Cycle	≥ 500 Cycle	≥ 500 Cycle	≥ 500 Cycle

## TEMPERATURE RANGE

For the cables covered by this specification, the following temperature ranges apply.

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

## ORDER INFORMATION

FC to FC FIBER OPTIC PATCH CORD, DUPLEX, FR-LSZH AND OFNR

Descriptions	Part Number				
	9/125 μm (OS2)	50/125 μm (OM2)	50/125 μm (OM3)	50/125 μm (OM4)	50/125 μm (OM5)
FC to FC Patch Cord, Duplex, 3.0mm	UFP988D3X-XX	UFP588D3X-XX	UFP488D3X-XX	UFP388D3X-XX	UFP288D3X-XX
FC to FC Patch Cord, Duplex, 2.0mm	UFP988D2X-XX	UFP588D2X-XX	UFP488D2X-XX	UFP388D2X-XX	UFP288D2X-XX

X = 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.

Specifications subject to change without notice.

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