

# Optical Fiber Specifications

## Single Mode

Single Mode Fiber Types	Reduced Water		TeraFlex® Bend Resistant			NZDS
	Peak	G.657.A1	G.657.A2	G.657.B3		
	9-Digit Part Number Designator	K	J	L	8	
16-Digit Part Number Designator	10	13	14	15	19	

Cable Performance	Parameter	Test Method/Standard	Units	Wavelength	Cable Type										
	Maximum Attenuation	ANSI/TIA-455-78-B-2002	dB/km		1310 nm	Tight Buffer	0.70	0.70	0.70	0.70	-				
Loose Tube						0.35	0.35	0.35	0.35	-					
1383 nm						Tight Buffer	0.70	0.70	0.70	0.70	-				
						Loose Tube	0.35	0.35	0.35	0.35	-				
1490 nm						Tight Buffer	0.70	0.70	0.70	0.70	0.70				
						Loose Tube	0.25	0.25	0.25	0.25	0.30				
1550 nm						Tight Buffer	0.70	0.70	0.70	0.70	0.70				
						Loose Tube	0.25	0.25	0.25	0.25	0.30				
1625 nm						Tight Buffer	0.70	0.70	0.70	0.70	0.70				
						Loose Tube	0.25	0.25	0.25	0.25	0.25				
Typical Attenuation						ANSI/TIA-455-78-B-2002	dB/km		1310 nm	Tight Buffer	0.41	0.41	0.41	0.41	-
										Loose Tube	0.34	0.34	0.34	0.34	-
	1383 nm	Tight Buffer	0.41	0.41	0.41				0.41	-					
		Loose Tube	0.33	0.31	0.31				0.31	-					
	1550 nm	Tight Buffer	0.41	0.41	0.41				0.41	0.41					
		Loose Tube	0.19	0.19	0.19				0.19	0.25					

Fiber Performance	Parameter	Test Method/Standard	Units	Conditions					
	Nominal Group Refractive Index	-	-	-	1310 nm	1.467	1.467	1.467	1.467
1550 nm					1.468	1.468	1.468	1.468	1.468
Maximum Individual Fiber Polarization Mode Dispersion	ANSI/TIA/EIA-455-113-96	ps/√km	-	-	0.2	0.2	0.2	0.2	0.2
Cable Cutoff Wavelength	ANSI/TIA-455-80-C-2003	nm	-	-	1260	1260	1260	1260	1260
Zero Chromatic Dispersion Wavelength	ANSI/TIA-455-175-B-2003	nm	-	-	1300-1324	1300-1324	1304-1324	1304-1324	N/A
Typical Chromatic Dispersion Slope	ANSI/TIA-455-175-B-2003	ps/nm2-km	-	-	0.087	0.087	0.087	0.087	0.047
Proof Strength	ANSI/TIA/EIA-455-31-C-2005	kpsi	-	On-line	100	100	100	100	100
				GPa	0.69	0.69	0.69	0.69	0.69
Mode Field Diameter	ANSI/TIA-455-191-B-2003	μm	-	1310 nm	8.8-9.6	8.8-9.6	8.2-9.2	8.2-9.2	N/A
				1550 nm	9.9-10.9	9.9-10.9	9.1-10.1	9.1-10.1	7.8-10.0
Maximum Macrobend Attenuation Increase	ANSI/TIA-455-62-B-2003	dB	-	1310 nm	0.05	0.01	0.01	0.01	0.05
				100 turns on 50 mm mandrel	-	-	0.03	0.01	-
				1550 nm	-	-	-	-	-
				1 turn on 15 mm mandrel	-	-	0.20	0.03	-
Cladding Diameter	ANSI/TIA-455-176-A-2003	μm	-	-	125.0 ± 0.9	125.0 ± 0.7	125.0 ± 0.7	125.0 ± 0.7	125.0 ± 0.7
				Coating Diameter	ANSI/TIA-455-176-A-2003	micron	-	250 ± 10	250 ± 10
Maximum Core/Clad Concentricity Error	ANSI/TIA-455-176-A-2003	μm	-	-	0.5	0.5	0.5	0.5	0.5
Max. Cladding Non-Circularity	ANSI/TIA-455-176-A-2003	%	-	-	1	1	0.7	0.7	0.7
Maximum Coating/Cladding Concentricity Error	ANSI/TIA-455-176-A-2003	μm	-	-	12	12	12	12	12

Guaranteed Supportable Ethernet Distances	Data Rate	Protocol	Units	Wavelength	Maximum Transmission Distances				
	10 Gbps		10GBASE-LR	km	1310 nm	25	25	25	25
10GBASE-ER			km	1550 nm	40	40	40	40	40
10GBASE-ZR			km	1550 nm	80	80	80	80	80
40 Gbps		40GBASE-LR4	km	1550 nm	10	10	10	10	10
		100 Gbps		100GBASE-LR4	km	1550 nm	10	10	10
	100GBASE-ER4	km		1550 nm	40	40	40	40	40

Fiber Channel Link Distances	Throughput Per Direction	Speed Name	Units	Wavelength	Maximum Link Distance				
	1600 MBps	16GFC	meters	1310 nm	10,000	10,000	10,000	10,000	10,000
3200 MBps	32GFC	meters	1310 nm	10,000	10,000	10,000	10,000	10,000	
12,800 MBps	128GFC	meters	1310 nm	2,000	2,000	2,000	2,000	2,000	

Standards	ISO/IEC	Tight Buffer	11801: OS1a	11801: OS1a	11801: OS1a	11801: OS1a	-
		Loose Tube	24702: OS2	24702: OS2	24702: OS2	24702: OS2	-
	Telcordia		GR-20-CORE				
	ITU-T		G.652.D	G.652.D	G.652.D	G.652.D	G.655.C, E
			G.657.A1	G.657.A2	G.657.B3	G.656	G.656
	TIA-492		CAAB	CAAB	CAAB	CAAB	N/A
	IEC 60793-2-50 Type		B1.3	B1.3/B6_a	B1.3/B6_a	B1.3	-
ANSI/ICEA	Tight Buffer	S-83-596, S-104-696					
	Loose Tube	S-87-640					
RUS		PE-90					

# Optical Fiber Specifications

Multimode

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PREMISES CABLE

OSP CABLE

WIRELESS

TECHNICAL INFO

PART NUMBER INDEX

Multimode Fiber Types	TeraGain® 62.5/125	TeraFlex® Bend Resistant Laser Optimized 50/125		
		OM3	OM4	OM5
		9-Digit Part Number Designator	6	N
16-Digit Part Number Designator	23	30	32	36

Cable Performance	Parameter	Test Method/Standard	Units	Wavelength	Cable Type					
	Maximum Attenuation	TIA/EIA-455-78		dB/km	850 nm	Tight Buffer/Loose Tube	3.0	3.0	3.0	3.0
		TIA/EIA-455-78		dB/km	1300 nm	Tight Buffer/Loose Tube	1.5	1.5	1.5	1.5
	Typical Attenuation	TIA/EIA-455-78		dB/km	850 nm	Tight Buffer	2.5	2.5	2.5	2.5
						Loose Tube	1.8	1.8	1.8	1.8
		TIA/EIA-455-78		dB/km	1300 nm	Tight Buffer	1.0	1.0	1.0	1.0
Loose Tube						0.6	0.5	0.5	0.5	

Fiber Performance	Parameter	Test Method/Standard	Units	Conditions							
	Numerical Aperture	ANSI/TIA-455-177-B-2003	-	-							
	Nominal Group	OTDR		-	850 nm						
					1300 nm						
	Macrobend Attenuation Change	ANSI/TIA-455-62-B-2003	dB	-	100 turns on 75 mm Mandrel	850 nm		≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5
						1300 nm		≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5
					2 turns on 30 mm Mandrel	850 nm		-	≤ 0.1	≤ 0.1	≤ 0.1
						1300 nm		-	≤ 0.3	≤ 0.3	≤ 0.3
					2 turns on 15 mm Mandrel	850 nm		-	≤ 0.2	≤ 0.2	≤ 0.2
						1300 nm		-	≤ 0.5	≤ 0.5	≤ 0.5
	Proof Strength	TIA/EIA-455-31		-	-	On-line	100	100	100	100	
						Off-line	0.69	0.69	0.69	0.69	
	Cladding Diameter	ANSI/TIA-455-176-A-2003		micron	-						
	Coating Diameter	ANSI/TIA-455-176-A-2003		micron	-						
	Core/Clad Concentricity Error	ANSI/TIA-455-176-A-2003		microns	-						
	Cladding Non-Circularity	ANSI/TIA-455-176-A-2003		%	-						
	Coating/Clad Concentricity Error	ANSI/TIA-455-176-A-2003		microns	-						
	Minimum Bandwidth: Overfilled Launch	TIA/EIA-455-124-2000		MHz-km	-	850 nm	220	1,500	3,500	3,500	
						1300 nm	600	500	500	500	
Minimum Bandwidth: Laser Effective Modal Bandwidth	TIA-455-220-A		MHz-km	-	850 nm	N/A	2,000	4,700	4,700		
					953 nm	-	-	-	2,470		
					1300 nm	N/A	500	500	500		

Guaranteed Supportable Ethernet Distances	Data Rate	Protocol	Units	Wavelength	Maximum Transmission Distances			
	1 Gbps	1000BASE-SX	meters	850 nm	300	1,000	1,040	1,040
		1000BASE-LX	meters	1300 nm	600*	600	600	600
	10 Gbps	10GBASE-SR	meters	850 nm	35	300	550	550
		10GBASE-LRM	meters	1300 nm	300	300	300	300
	40 Gbps	40GBASE-SR4	meters	850 nm	-	100	125	125
	100 Gbps	100GBASE-SR10	meters	850 nm	-	100	125	125
		100GBASE-SR4	meters	850 nm	-	100	125	125
	200 Gbps	200GBASE-SR4	meters	850 nm	-	80	100	100
	400 Gbps	400GBASE-SR16	meters	850 nm	-	70	100	100

\*Mode conditioning patch cord required.

Fiber Channel Link Distances	Throughput Per Direction	Speed Name	Units	Wavelength	Maximum Link Distance			
	800 MBps	8GFC	meters	850 nm	21	150	190	190
	1200 MBps	10GFC	meters	850 nm	33	300	300	300
	1600 MBps	16GFC	meters	850 nm	15	100	125	125

Standards	ISO/IEC 11801	OM1	OM3	OM4	OM5
	Telcordia	GR-20-CORE			
	TIA-492	AAAA-A	AAAC-B	AAAD	AAAE
	IEC 60793-2-10 Type	A1b	A1a.2b	A1a.3b	A1a.4b
	ANSI/ICEA	Tight Buffer	S-83-596, S-104-696		
	Loose Tube	S-87-640			