

Optical Fiber Selection Chart

Single Mode

Cable Performance	Parameter	Test Method/Standard	Units	Wavelength	Fiber Type (Designator)	Cable Type	Conventional	Reduced	Zero	TeraFlex® Bend Resistant			NZDS		
							(9)	Water Peak (3)	Water Peak (2)	G.657.A1 (K)	G.657.A2 (J)	G.657.B3 (L)		(8)	
Maximum Attenuation	ANSI/TIA-455-78-B-2002	dB/km	1310 nm	Tight Buffer	0.70	0.70	0.70	0.70	0.70	0.70	0.70	-			
				Loose Tube	0.40	0.35	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	0.70				
					Loose Tube	0.25	0.25	0.25	0.25	0.25	0.30				
				1550 nm	Tight Buffer	0.70	0.70	0.70	0.70	0.70	0.70				
					Loose Tube	0.30	0.25	0.25	0.25	0.25	0.30				
				1625 nm	Tight Buffer	0.70	0.70	0.70	0.70	0.70	0.70				
					Loose Tube	0.25	0.25	0.25	0.25	0.25	0.25				
				Typical Attenuation	ANSI/TIA-455-78-B-2002	dB/km	1310 nm	Tight Buffer	N/A	0.41	0.41	0.41	0.41	0.41	-
								Loose Tube	0.34	0.34	0.34	0.34	0.34	-	
1383 nm	Tight Buffer	-	0.41					0.41	0.41	0.41	-				
	Loose Tube	N/A	0.33					0.31	0.31	0.31	-				
1550 nm	Tight Buffer	N/A	0.41					0.41	0.41	0.41	0.41				
	Loose Tube	0.19	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	1.467	1.467	1.467	
				1550 nm	1.468	1.468	1.468	1.468	1.468	1.468	1.468	
Maximum Individual Fiber Polarization Mode Dispersion	ANSI/TIA/EIA-455-113-96	ps/v/km	-	-	0.2	0.2	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	1260	1260	
Zero Chromatic Dispersion Wavelength	ANSI/TIA-455-175-B-2003	nm	-	-	1300-1324	1300-1324	1300-1324	1300-1324	1304-1324	1304-1324	N/A	
Typical Chromatic Dispersion Slope	ANSI/TIA-455-175-B-2003	ps/nm ² -km	-	-	0.087	0.087	0.087	0.087	0.087	0.087	0.047	
Proof Strength	ANSI/TIA/EIA-455-31-C-2005	kpsi GPa	-	On-line	100	100	100	100	100	100	100	
				Off-line	0.69	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	8.8-9.6	8.8-9.6	8.2-9.2	8.2-9.2	N/A	
				1550 nm	9.5-11.5	9.9-10.9	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	0.05	0.05	0.01	0.01	0.01	0.05	
				100 turns on 50 mm mandrel	-	-	-	-	0.40	0.40	-	
				1550 nm	-	-	-	-	-	-	-	
				1 turn on 15 mm mandrel	-	-	-	-	0.10	0.10	-	
Cladding Diameter	ANSI/TIA-455-176-A-2003	μm	-	-	125.0 ± 1.2	125.0 ± 0.9	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	250 ± 10	250 ± 10	250 ± 10
Maximum Core/Clad Concentricity Error	ANSI/TIA-455-176-A-2003	μm	-	-	0.6	0.5	0.5	0.5	0.5	0.5	0.5	
Maximum Cladding Non-circularity	ANSI/TIA-455-176-A-2003	%	-	-	1	1	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	12	12	

Guaranteed Supportable Ethernet Distances	Data Rate	Protocol	Units	Wavelength	Maximum Transmission Distances (km)							
1 Gbps	1000BASE-LH, 1000BASE-LH-LX	km	1310 nm	10	10	10	10	10	10	10	10	
				70	70	70	70	70	70	70		
				10GBASE-ZX	km	1550 nm	25	25	25	25	25	25
10 Gbps	10GBASE-ER	km	1550 nm	40	40	40	40	40	40	40	40	
				10GBASE-ZR	km	1550 nm	80	80	80	80	80	80
40 Gbps	40GBASE-LR4	km	1550 nm	10	10	10	10	10	10	10	10	
				100 Gbps	100GBASE-LR4	km	1550 nm	10	10	10	10	10
100 Gbps	100GBASE-ER4	km	1550 nm	40	40	40	40	40	40	40	40	

Standards	ISO/IEC	Tight Buffer Loose Tube	11801: OS1	11801: OS1	11801: OS1	11801: OS1	11801: OS1	11801: OS1	-
			11801: OS1	24702: OS2	24702: OS2	24702: OS2	24702: OS2	24702: OS2	24702: OS2
Telcordia	GR-20-CORE								
	ITU-T	G.652.B	G.652.D	G.652.D	G.652.D G.657.A1	G.652.D G.657.A2	G.652.D G.657.B3	G.655.C, E G.656	
TIA492	CAAA	CAAB	CAAB	CAAB	CAAB	CAAB	CAAB	N/A	
IEC 60793-2-50 Type	B1.1	B1.3	B1.3	B1.3	B1.3	B1.3	B1.3	-	
ANSI/ICEA	Tight Buffer	S-83-596							
	Loose Tube	S-87-640							
RUS	Loose Tube	PE-90							

Optical Fiber Selection Chart

Multimode

Cable Performance	Parameter	Test Method/Standard	Units	Wavelength	Cable Type	Fiber Type (Designator)	TeraGain®		TeraGain Laser Optimized 50/125			TeraFlex® Bend Resistant Laser Optimized 50/125		
							62.5/125 (6)	50/125 (5)	10G/150 (A)	10G/300 (B)	10G/550 (F)	10G/150 (M)	10G/300 (N)	10G/550 (P)
							Maximum Attenuation	TIA/EIA-455-78	dB/km	850 nm	Tight Buffer/Loose Tube	3.5	3.5	3.5
	TIA/EIA-455-78	dB/km	1300 nm	Tight Buffer/Loose Tube	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Typical Attenuation	TIA/EIA-455-78	dB/km	850 nm	Tight Buffer	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
				Loose Tube	2.7	2.2	2.2	2.2	2.2	2.2	2.2	2.2		
	TIA/EIA-455-78	dB/km	1300 nm	Tight Buffer	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
				Loose Tube	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5		

Fiber Performance	Parameter	Test Method/Standard	Units	Conditions	Performance Metrics									
					62.5/125 (6)	50/125 (5)	10G/150 (A)	10G/300 (B)	10G/550 (F)	10G/150 (M)	10G/300 (N)	10G/550 (P)		
	Numerical Aperture	ANSI/TIA-455-177-B-2003	-	-	0.275 ± 0.015	0.200 ± 0.015	0.200 ± 0.015	0.200 ± 0.015	0.200 ± 0.015	0.200 ± 0.015	0.200 ± 0.015	0.200 ± 0.015	0.200 ± 0.015	0.200 ± 0.015
	Nominal Group Refractive Index	OTDR	-	850 nm	1.496	1.483	1.483	1.483	1.483	1.483	1.483	1.483	1.483	
			-	1300 nm	1.491	1.479	1.479	1.479	1.479	1.479	1.479	1.479	1.479	
	Macrobend Attenuation Change	ANSI/TIA-455-62-B-2003	dB	100 turns on 75 mm Mandrel	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
	Proof Strength	TIA/EIA-455-31	kpsi	On-line	100	100	100	100	100	100	100	100	100	
			GPa	On-line	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	
	Cladding Diameter	ANSI/TIA-455-176-A-2003	micron	-	125 ± 2	125 ± 2	125 ± 2	125 ± 2	125 ± 2	125 ± 2	125 ± 2	125 ± 2	125 ± 2	
	Coating Diameter	ANSI/TIA-455-176-A-2003	micron	-	250 ± 10	250 ± 10	250 ± 10	250 ± 10	250 ± 10	250 ± 10	250 ± 10	250 ± 10	250 ± 10	
	Core/Clad Concentricity Error	ANSI/TIA-455-176-A-2003	microns	-	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
	Cladding Non-Circularity	ANSI/TIA-455-176-A-2003	%	-	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	
	Coating/Clad Concentricity Error	ANSI/TIA-455-176-A-2003	microns	-	12 µm	12 µm	12 µm	12 µm	12 µm	12 µm	12 µm	12 µm	12 µm	
	Minimum Bandwidth: Overfilled Launch	TIA/EIA-455-124-2000	MHz-km	850 nm	220	500	700	1,500	3,500	700	1,500	3,500		
				1300 nm	600	500	500	500	500	500	500			
	Minimum Bandwidth: Laser Effective Modal Bandwidth	TIA-455-220-A	MHz-km	850 nm	N/A	N/A	950	2,000	4,700	950	2,000	4,700		
				1300 nm	N/A	N/A	500	500	500	500	500			

Guaranteed Supportable Ethernet Distances	Data Rate	Protocol	Units	Wavelength	Maximum Transmission Distances (meters)								
					62.5/125 (6)	50/125 (5)	10G/150 (A)	10G/300 (B)	10G/550 (F)	10G/150 (M)	10G/300 (N)	10G/550 (P)	
	10 Mbps	10BASE-FL	meters	850 nm	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250
	100 Mbps	100BASE-SX	meters	850 nm	500	750	1,000	1,000	1,000	1,000	1,000	1,000	1,000
		100BASE-FX	meters	1300 nm	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
	1 Gbps	1000BASE-SX	meters	850 nm	300	750	1,000	1,000	1,040	1,000	1,000	1,040	
		1000BASE-LX	meters	1300 nm	600*	600*	600	600	600	600	600	600	
	10 Gbps	10GBASE-SR	meters	850 nm	35	82	150	300	550	150	300	550	
		10GBASE-LRM	meters	1300 nm	300	300	300	300	300	300	300	300	
	40 Gbps	40GBASE-SR4	meters	850 nm	-	-	-	100	125	-	100	125	
	100 Gbps	100GBASE-SR10	meters	850 nm	-	-	-	100	125	-	100	125	

*Mode conditioning patch cord required

Standards	ISO/IEC 11801	OM1	OM2	OM2	OM3	OM4	OM2	OM3	OM4	
	Telcordia	GR-20-CORE								
	ITU-T	N/A								
	TIA492	AAAA-A	AAAB	AAAB	AAAC-A	AAAD	AAAB	AAAC-A	AAAD	
	IEC 60793-2-10 Type	A1b	A1a.1	A1a.1	A1a.2	A1a.3	A1a.1	A1a.2	A1a.3	
	ANSI/ICEA	Tight Buffer	S-83-596							
	Loose Tube	S-87-640								



PREMISES COPPER, PREMISES FIBER, OSP FIBER, OSP COMPOSITE, CENTRAL OFFICE COPPER, RDUP/RUP/OSP COPPER, BELL OSP COPPER, OSP COPPER WIRE, CANADIAN OSP COPPER, TECHNICAL INFO