

Multimode Ethernet Applications	Fiber Type	62.5/125 μm		50/125 μm		850 nm laser-optimized 50/125 μm			
	Fiber Standard	TIA 492AAAA (OM1)		TIA 492AAAB (OM2)		TIA 492AAAC (OM3)		TIA 492AAAD (OM4)	
	Nominal wavelength (nm)	850	1300	850	1300	850	1300	850	1300
Application	Parameter								
Ethernet 10/100BASE-SX	Channel attenuation (dB)	4.0	-	4.0	-	4.0	-	4.0	-
	Supportable distance m (ft)	300 (984)	-	300 (984)	-	300 (984)	-	300 (984)	-
Ethernet 100BASE-FX	Channel attenuation (dB)	-	11.0	-	6.0	-	6.0	-	6.0
	Supportable distance m (ft)	-	2000 (6560)	-	2000 (6560)	-	2000 (6560)	-	2000 (6560)
Ethernet 1000BASE-SX	Channel attenuation (dB)	2.6	-	3.6	-	-	-	-	-
	Supportable distance m (ft)	275 (900)	-	550 (1804)	-	Note 1	-	Note 1	-
Ethernet 1000BASE-LX	Channel attenuation (dB)	-	2.3	-	2.3	-	2.3	-	2.3
	Supportable distance m (ft)	-	550 (1804)	-	550 (1804)	-	550 (1804)	-	550 (1804)
Ethernet 10GBASE-S	Channel attenuation (dB)	2.4	-	2.3	-	2.6	-	2.9	-
	Supportable distance m (ft)	33 (108)	-	82 (269)	-	300 (984)	-	400 (1312)	-
Ethernet 10GBASE-LX4	Channel attenuation (dB)	-	2.5	-	2.0	-	2.0	-	2.0
	Supportable distance m (ft)	-	300 (984)	-	300 (984)	-	300 (984)	-	300 (984)
Ethernet 10GBASE-LRM	Channel attenuation (dB)	-	1.9	-	1.9	-	1.9	-	1.9
	Supportable distance m (ft)	-	220 (720)	-	220 (720)	-	220 (720)	-	220 (720)
Ethernet 40GBASE-SR4	Channel attenuation (dB)	-	-	-	-	1.9	-	1.5 ₂	-
	Supportable distance m (ft)	-	-	-	-	100 (328)	-	150 (492)	-
Ethernet 100GBASE-SR4	Channel attenuation (dB)	-	-	-	-	1.9	-	1.9	-
	Supportable distance m (ft)	-	-	-	-	70 (230)	-	100 (328)	-
Ethernet 100GBASE-SR10	Channel attenuation (dB)	-	-	-	-	1.9	-	1.5 ₂	-
	Supportable distance m (ft)	-	-	-	-	100 (328)	-	150 (492)	-

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	Nominal wavelength (nm)	850	1300	850	1300	850	1300	850	1300
Application	Parameter								
1G Fibre Channel 100-MX-SN-I	Channel attenuation (dB)	3.0	-	3.9	-	4.6	-	4.6	-
	Supportable distance m (ft)	300 (984)	-	500 (1,640)	-	860 (2,822)	-	860 (2,822)	-
2G Fibre Channel 200-MX-SN-I	Channel attenuation (dB)	2.1	-	2.6	-	3.3	-	3.3	-
	Supportable distance m (ft)	150 (492)	-	300 (984)	-	500 (1,640)	-	500 (1,640)	-
4G Fibre Channel 400-MX-SN	Channel attenuation (dB)	1.8	-	2.1	-	2.9	-	3.0	-
	Supportable distance m (ft)	70 (230)	-	150 (492)	-	380 (1,247)	-	400 (1312)	-
8G Fibre Channel 800-MX-SN	Channel attenuation (dB)	1.6	-	1.7	-	2.0	-	2.2	-
	Supportable distance m (ft)	21 (69)	-	50 (164)	-	150 (492)	-	190 (624)	-
8G Fibre Channel 800-MX-SA	Channel attenuation (dB)	1.6	-	1.9	-	2.6	-	2.2	-
	Supportable distance m (ft)	40 (131)	-	100 (328)	-	300 (984)	-	300 (984)	-
10G Fibre Channel 1200-MX-SN-I	Channel attenuation (dB)	2.4	-	2.2	-	2.6	-	2.9	-
	Supportable distance m (ft)	33 (108)	-	82 (269)	-	300 (984)	-	400 (1,312)	-
16G Fibre Channel 1600-MX-SN	Channel attenuation (dB)	-	-	1.6	-	1.9	-	2.0	-
	Supportable distance m (ft)	-	-	35 (115)	-	100 (328)	-	125 (410)	-
16G Fibre Channel 3200-MX-SN-S 3200-MX-SN-I	Channel attenuation (dB)	-	-	2.0	-	1.9	-	1.9	-
	Supportable distance m (ft)	-	-	20 (66)	-	70 (230)	-	100 (328)	-
FDDI PMD ANSI X3.166	Channel attenuation (dB)	-	11.0	-	6.0	-	6.0	-	6.0
	Supportable distance m (ft)	-	2,000 (6,560)	-	2,000 (6,560)	-	2,000 (6,560)	-	2,000 (6,560)
NOTES 1 - At the time 1000BASE-SX was developed, OM3 and OM4 had not been standardized. See entries for 1G Fibre Channel 100-MX-SN-I for guidance. 2 -1.0 dB total connection and splice loss allowance per IEEE 802.3.									

Single-mode Ethernet Applications	Fiber Type	Dispersion unshifted single mode and low- water-peak	
	Fiber Standard	TIA 492CAAA (OS1) and TIA 492CAAB (OS2)	
	Nominal wavelength (nm)	1310	1550
Application	Parameter		
Ethernet 1000BASE-LX	Channel attenuation (dB)	4.5	-
	Supportable distance m (ft)	5,000 (16,405)	-
Ethernet 10GBASE-LX4	Channel attenuation (dB)	6.3	-
	Supportable distance m (ft)	10,000 (32,810)	-
Ethernet 10GBASE-E	Channel attenuation (dB)	-	11.0
	Supportable distance m (ft)	-	40,000 (131,230)
Ethernet 10GBASE-L	Channel attenuation (dB)	6.2	-
	Supportable distance m (ft)	10,000 (32,810)	-
Ethernet 40GBASE-LR4	Channel attenuation (dB)	6.7	-
	Supportable distance m (ft)	10,000 (32,810)	-
Ethernet 40GBASE-FR	Channel attenuation (dB)	4.0	-
	Supportable distance m (ft)	2,000 (6,562)	-
Ethernet 100GBASE-LR4	Channel attenuation (dB)	6.3	-
	Supportable distance m (ft)	10,000 (32,810)	-
1G Fiber Channel 100-SM-LC-L	Channel attenuation (dB)	7.8	-
	Supportable distance m (ft)	10,000 (32,810)	-
2G Fiber Channel 200-SM-LC-L	Channel attenuation (dB)	7.8	-
	Supportable distance m (ft)	10,000 (32,810)	-

Single-mode Fibre Channel Applications	Fiber Type	Dispersion unshifted single mode and low- water-peak	
	Fiber Standard	TIA 492CAAA (OS1) and TIA 492CAAB (OS2)	
	Nominal wavelength (nm)	1310	1550
Application	Parameter		
4G Fiber Channel 400-SM-LC-M	Channel attenuation (dB)	4.8	-
	Supportable distance m (ft)	4,000 (13,124)	-
4G Fiber Channel 400-SM-LC-L	Channel attenuation (dB)	7.8	-
	Supportable distance m (ft)	10,000 (32,810)	-
8G Fiber Channel 800-SM-LC-I	Channel attenuation (dB)	2.6	-
	Supportable distance m (ft)	1,400 (4,593)	-
8G Fiber Channel 800-SM-LC-L	Channel attenuation (dB)	6.4	-
	Supportable distance m (ft)	10,000 (32,810)	-
10G Fiber Channel 1200-SM-LL-L	Channel attenuation (dB)	6.0	-
	Supportable distance m (ft)	10,000 (32,810)	-
16G Fiber Channel 1600-SM-LC-L	Channel attenuation (dB)	6.4	-
	Supportable distance m (ft)	10,000 (32,810)	-
32G Fiber Channel 3200-SM-LC-L	Channel attenuation (dB)	6.3	-
	Supportable distance m (ft)	10,000 (32,810)	-
FDDI SMF-PMD ANSI X3.184	Channel attenuation (dB)	10.0	-
	Supportable distance m (ft)	10,000 (32,810)	-

Passive Optical Network (PON) Applications	Fiber Type	Dispersion unshifted single-mode and low-water-peak			
	Fiber Standard	TIA 492CAAA (OS1) and TIA 492CAAB (OS2)			
	Parameter (1)	Nominal wavelength (nm), wavelength range (nm) and direction			
		1270	1310	1490	1577
		1260..1280	1260..1360	1480..1500	1575..1580
		Upstream		Downstream	
1000BASE-PX10 EPON (IEEE 802.3)	Min channel attenuation, dB		5	5	
	Max channel attenuation, dB		20	19.5	
	Max supportable distance, m (ft)	10,000 (32,810)			
10GBASE-PRX10 10G-EPON (IEEE 802.3av)	Min channel attenuation, dB		5		5
	Max channel attenuation, dB		20		20
	Max supportable distance, m (ft)	10,000 (32,810)			
10GBASE-PR10 10G-EPON (IEEE 802.3av)	Min channel attenuation, dB	5			5
	Max channel attenuation, dB	20			20
	Max supportable distance, m (ft)	10,000 (32,810)			
1000BASE-PX20 EPON (IEEE 802.3)	Min channel attenuation, dB		10	10	
	Max channel attenuation, dB		24	24	
	Max supportable distance, m (ft)	20,000 (65,620)			
GPON Class B (ITU-T G.984)	Min channel attenuation, dB		10	10	
	Max channel attenuation, dB		25	25	
	Max supportable distance, m (ft)	20,000 (65,620)			
10GBASE-PRX20 10G-EPON (IEEE 802.3av)	Min channel attenuation, dB		10		10
	Max channel attenuation, dB		24		24
	Max supportable distance, m (ft)	20,000 (65,620)			

10GBASE-PR20 10G-EPON (IEEE 802.3av)	Min channel attenuation, dB	10			10
	Max channel attenuation, dB	24			24
	Max supportable distance, m (ft)	20,000 (65,620)			
10GBASE-PRX30 10G-EPON (IEEE 802.3av)	Min channel attenuation, dB		15		15
	Max channel attenuation, dB		29		29
	Max supportable distance, m (ft)	20,000 (65,620)			
10GBASE-PR30 10G-EPON (IEEE 802.3av)	Min channel attenuation, dB	15			15
	Max channel attenuation, dB	29			29
	Max supportable distance, m (ft)	20,000 (65,620)			
GPON Class C (ITU-T G.984)	Min channel attenuation, dB		15	15	
	Max channel attenuation, dB		30	30	
	Max supportable distance, m (ft)	20,000 (65,620)			
GPON Class B+ (ITU-T G.984)	Min channel attenuation, dB		13	13	
	Max channel attenuation, dB		28	28	
	Max supportable distance, m (ft)	20,000 (65,620)			
GPON Class C+ (ITU-T G.984)	Min channel attenuation, dB		17	17	
	Max channel attenuation, dB		32	32	
	Max supportable distance, m (ft)	60,000 (196,850) ²			
Class N1 XG-PON (ITU-T G.987)	Min channel attenuation, dB	14			14
	Max channel attenuation, dB	29			29
	Max supportable distance, m (ft)	40,000 (131,230) ³			
Class N2 XG-PON (ITU-T G.987)	Min channel attenuation, dB	16			16
	Max channel attenuation, dB	31			31
	Max supportable distance, m (ft)	40,000 (131,230) ³			

NOTES

- 1 - The channel attenuation is the sum of all link attenuations and attenuation values for all passive components including splitters, couplers and jumpers.
- 2 - Subject to 20km differential fiber distance limit for conventional ITU-T G.984 GPON systems, and subject to 40 km differential fiber distance limit for the ITU-T G.984.7-compliant systems.
- 3 - Supportable fiber distance can be increased up to 60 km, subject to 40km differential distance limit.