	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) and TIA-492AAE (OM5)	
	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 25GBASE-SR	Channel attenuation (dB)	-	-	-	-	1.8	-	1.9	-
	Supportable distance m (ft)	-	-	-	-	70 (230)	-	100 (328)	-
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)	-	-	-	-	1.8	-	1.9	-
	Supportable distance m (ft)	-	-	-	-	70 (230)	-	100 (328)	-
Ethernet 100GBASE-SR10	Channel attenuation (dB)	-	-	-	-	1.9	-	1.5 [2]	-

	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) and TIA-492AAE (OM5)	
	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 (1640)	-	860 (2822)	-	860 (2822)	-
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 (1640)	-	500 (1640)	-
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 (1247)	-	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 (1312)	-
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)	-
32G 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)	-	2000 (6560)	-	2000 (6560)	-	2000 (6560)	-	2000 (6560)

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.

	Fiber Type	Dispersion unshifted single mode and low-water-peak	
	Fiber Standard	TIA 492CAAA (OS1) and TIA 492CAAB (OS2)[1]	
	Nominal wavelength (nm)	1310	1550
Application	**Parameter**		
Ethernet 1000BASE-LX	Channel attenuation (dB)	4.5	-
	Supportable distance m (ft)	5000 (16405)	-
Ethernet 10GBASE-LX4	Channel attenuation (dB)	6.3	-
	Supportable distance m (ft)	10000 (32810)	-
Ethernet 10GBASE-E	Channel attenuation (dB)	-	11.0
	Supportable distance m (ft)	-	40000 (131230)
Ethernet 10GBASE-L	Channel attenuation (dB)	6.2	-
	Supportable distance m (ft)	10000 (32810)	-
Ethernet 40GBASE-LR4	Channel attenuation (dB)	6.7	-
	Supportable distance m (ft)	10000 (32810)	-
Ethernet 40GBASE-FR	Channel attenuation (dB)	4.0	-
	Supportable distance m (ft)	2000 (6562)	-
Ethernet 100GBASE-LR4	Channel attenuation (dB)	6.3	-
	Supportable distance m (ft)	10000 (32810)	-
1G Fibre Channel 100-SM-LC-L	Channel attenuation (dB)	7.8	-
	Supportable distance m (ft)	10000 (32810)	-
2G Fibre Channel	Channel attenuation (dB)	7.8	-

Data Center Applications

Speed	Duplex Applications	Parallel Applications	Maximum Reach (m)			Number of Fiber Pairs
			OM3	OM4	OM5	
10 Gb/s	10GBASE-SR		300	400	400	1
16 Gb/s	16GFC-SW		100	125	125	1
25 Gb/s	25GBASE-SR		70	100	100	1
32 Gb/s	32GFC-SW		70	100	100	1
40 Gb/s	40G-SWDM4[15]		240	350	440	1
		40GBASE-SR4	100	150	150	4
50 Gb/s	50GBASE-SR		70	100	100	1
64 Gb/s	64GFC-SW		70	100	100	1
100 Gb/s	100G-BiDi[26]		70	100	150	1
	100G-SWDM4[15]		75	100	150	1
		100GBASE-SR2	70	100	100	2
		100GBASE-SR4	70	100	100	4
		100GBASE-SR10	100	150	150	10
128 Gb/s		128GFC-SW	70	100	100	4
200 Gb/s		200GBASE-SR4	70	100	100	4
400 Gb/s		400GBASE-SR4.2[3]	70[4]	100[4]	150[4]	4
		400GBASE-SR8[3]	70[4]	100[4]	100[4]	8
		400GBASE-SR16	70	100	100	16

1 2 commercially available option utilizing four-wavelength multiplexing per fibre 2 commercially available option utilizing two-wavelength multiplexing per fibre
3 Under development in IEEE project 802.3cm
4consistent with draft specifications in IEEE 802.3cm 5
not presently under consideration for standardization
6 not presently under consideration for standardization, but should be a subset of 400GBASE-SR4.2 for breakout applications

ISO Test Limits by Application

Network application	Max. channel insertion loss (dB)			ISO/IEC 11801 channel supported by cabled optical fibre Category							
	Multimode [a]		Single-mode	OM1		OM2		OM3/OM4		OS1/OS2	
	850 nm	1 300 nm	1 310 nm	850 nm	1 300 nm	850 nm	1 300 nm	850 nm	1 300 nm	1 310 nm	1 550 nm
IEEE 802-3: 10BASE-FLand FB [b]	12,5(6,8)	–	–	OF-2000		OF-2000		OF-2000			
ISO/IEC TR 11802-4: 4 and 16 Mbit/s Token Ring [b]	13,0(8,0)	–	–	OF-2000		OF-2000		OF-2000			
ATM at 52 Mbit/s [c]	NA	10,0(5,3)	10,0		OF-2000		OF-2000		OF-2000	OF-2000	
ATM at 155 Mbit/s [c]	7,2	10,0(5,3)	7,0	OF-500	OF-2000	OF-500	OF-2000	OF-500	OF-2000	OF-2000	
ATM at 622 Mbit/s [b, c, d]	4,0	6,0(2,0)	7,0	OF-300	OF-500	OF-300	OF-500	OF-300	OF-500	OF-2000	
ISO/IEC 14165-111: Fibre Channel (FC-PH) at 1 062 Mbit/s [c, d]	4,0	–	6,0	OF-300		OF-500		OF-500		OF-2000	
IEEE 802-3: 1000BASE-SX [d]	2,6(3,56)	–	–	[e]		OF-500		OF-500			
IEEE 802-3: 1000BASE-LX [c, d]	–	2,35	4,56		OF-500		OF-500		OF-500	OF-2000	
ISO/IEC 9314-3: FDDI PMD [b]	–	11,0(6,0)	–		OF-2000		OF-2000		OF-2000		
ISO/IEC 9314-4: FDDI SMF-PMD [c]	–	–	10,0							OF-2000	
ISO/IEC 8802-3: 100BASE-FX [b]		11,0(6,0)	–		OF-2000		OF-2000		OF-2000		
IEEE 802.3: 10GBASE-LX4		2,00	6,20		OF-300		OF-300		OF-300	OF-2000	
IEEE 802.3: 10GBASE-ER/EW											OF-2000
IEEE 802.3: 10GBASE-SR/SW	1,60 (62,5) 1,80 (OM-2 50) 2,60 (OM-3)	–	–					OF-300			
IEEE 802.3: 10GBASE-LR/LW [c]	–	–	6,20							OF-2000	
IEEE 802.3: 40GBASE-LR4	–	–	f.f.s.							OF-2000	
IEEE 802.3: 100GBASE-LR4	–	–	6,3							OF-2000	
IEEE 802.3: 100GBASE-ER4	–	–	18,0							OF-2000	
1 Gbps FC (1.0625 GBd)	3,85 (OM-2) 2,62 (OM-3)	–	7,8			OF-500		OF-500		OF-2000	
2 Gbps FC (2,125 GBd)	2,1 (OM-1) 2,62 (OM-2) 3,31 (OM-3)	–	7,8			OF-300		OF-300		OF-2000	
4 Gbps FC (4,25 GBd)	1,78 (OM-1) 2,06 (OM-2) 4,48 (OM-3)–	–	4,8					OF-300		OF-2000	

ISO Test Limits by Application

Network application	Max. channel insertion loss (dB)			ISO/IEC 11801 channel supported by cabled optical fibre Category							
	Multimode [a]		Single-mode	OM1		OM2		OM3/OM4		OS1/OS2	
	850 nm	1 300 nm	1 310 nm	850 nm	1 300 nm	850 nm	1 300 nm	850 nm	1 300 nm	1 310 nm	1 550 nm
8 Gbps FC (8,5 GBd)	1,62 (OM-1) 1,77 (OM-2) 2,32 (OM-3)	–	6,4							OF-2000	

[a] The values shown are for both 62,5/125 and 50/125 MMF, where the values differ the 50/125 values are shown in parentheses.

[b] The channel length may be limited on 50 µm optical fibre. See the relevant application standard for details.

[c] The channel length on single-mode optical fibre may be longer but lies outside the scope of this standard. See the relevant application standard for details.

[d] A bandwidth-limited application at the channel lengths shown. The use of lower attenuation components to produce channels exceeding the values shown cannot be recommended.

[e] See Table F.4.