

MPO/MTP CABLE ASSEMBLIES



Lightem offers a full range of MPO/MTP multifiber products, ranging from patchcords, fanout hybrid cable, truck cable, pigtails and cassette. The MPO/MTP, with the push-on/pull-off insertion release mechanism, provides consistent and repeatable interconnections up to 48 fibers for today's 40G and 100G network. MPO/MTP hybrid cable are custom-built with various type of connectors and special configuration. All connectors are factory polished and terminated with full testing before delivery.

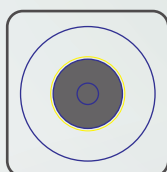
Features

- Up to 24 fibers MTP/MPO per connector
- Halogen free (LSZH) and low smoke to IEC 61034 and EN 50286
- Flame retardant to IEC 60332-3C and EN 50266-2-4
- Non corrosive to IEC 60754-2 (FRNC) and EN 50267
- A pre-terminated, easy-to-install, high fiber density cabling solution
- Pre-installed grip option supports up to 450N loads.
- Singlemode, OM3, OM4 and OM5 fibers
- MTP / MPO connector complying ANSI HIPPI-6400 and IEC 61754-7 and TIA/EIA-604

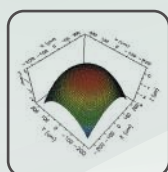
Applications

- Equipment Interconnections
- Telecommunications networks
- Broadband/CATV networks
- Data communications networks, including high-bandwidth equipment
- Interconnections for parallel optical transmitters and receivers

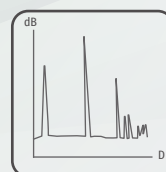
100% Lightem Assurance



Connector Surface Inspection



Geometric Inspection



Optical Inspection

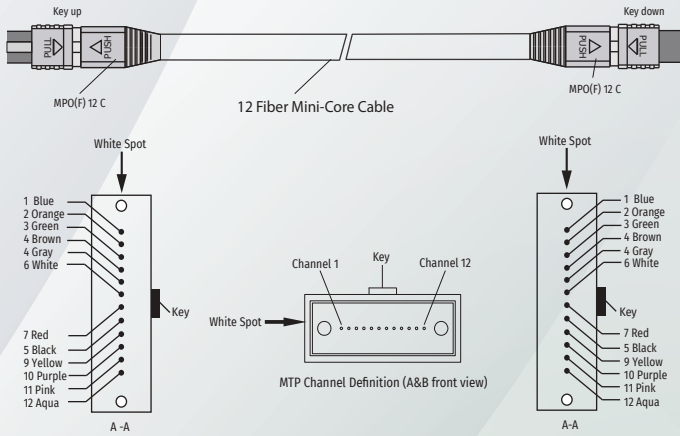
MPO/MTP Termination Specifications

Parameter	Values					
	Standard			Premium		
	SM		MM	SM		MM
UPC	APC	UPC		APC		
Insertion loss (each channel)	≤0.75 dB	≤0.75 dB	≤0.5 dB	≤0.35dB	≤0.35dB	≤0.35 dB
Return loss (each channel)	≤-40 dB	≤-55 dB	/	≤-40dB	≤-55dB	/
Test Wavelength	1310nm			850nm		
Ferrule	Composite					
Connector housing	Composite					
Durability	≤0.2 dB at 200 cycles					
Operating Temperature	-20° C ~ +70° C					
Storage Temperature	-20° C ~ +70° C					

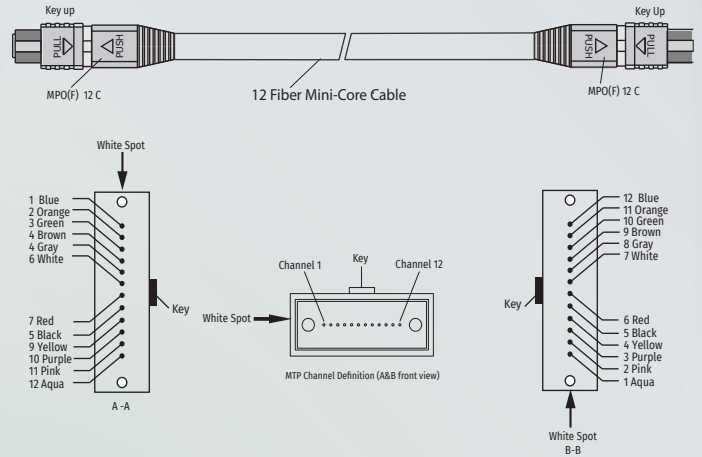
MPO to MPO Configuration

12 Cores

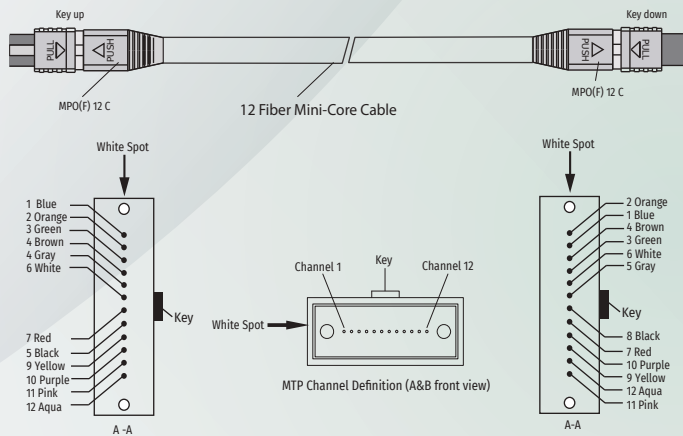
Method A



Method B

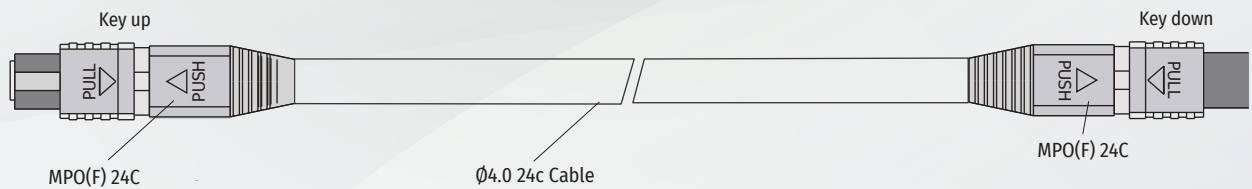


Method C

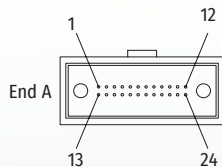


24 Cores

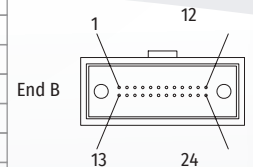
Method A



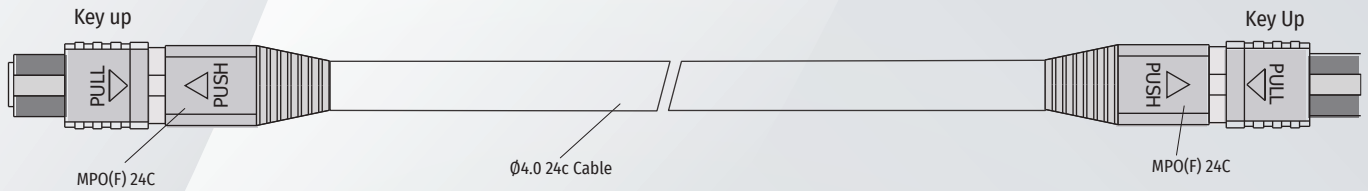
Fiber	Color	Fiber	Color
1	Blue 1	13	Blue 2
2	Orange 1	14	Orange 2
3	Green 1	15	Green 2
4	Brown 1	16	Brown 2
5	Gray 1	17	Gray 2
6	White 1	18	White 2
7	Red 1	19	Red 2
8	Black 1	20	Black 2
9	Yellow 1	21	Yellow 2
10	Purple 1	22	Purple 2
11	Pink 1	23	Pink 2
12	Aqua 1	24	Aqua 2



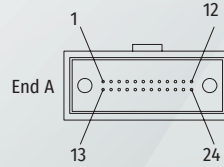
Fiber	Color	Fiber	Color
1	Blue 2	13	Blue 1
2	Orange 2	14	Orange 1
3	Green 2	15	Green 1
4	Brown 2	16	Brown 1
5	Gray 2	17	Gray 1
6	White 2	18	White 1
7	Red 2	19	Red 1
8	Black 2	20	Black 1
9	Yellow 2	21	Yellow 1
10	Purple 2	22	Purple 1
11	Pink 2	23	Pink 1
12	Aqua 2	24	Aqua 1



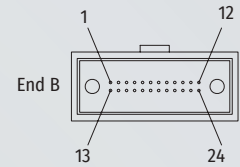
Method B



Fiber	Color	Fiber	Color
1	Blue 1	13	Blue 2
2	Orange 1	14	Orange 2
3	Green 1	15	Green 2
4	Brown 1	16	Brown 2
5	Gray 1	17	Gray 2
6	White 1	18	White 2
7	Red 1	19	Red 2
8	Black 1	20	Black 2
9	Yellow 1	21	Yellow 2
10	Purple 1	22	Purple 2
11	Pink 1	23	Pink 2
12	Aqua 1	24	Aqua 2



Fiber	Color	Fiber	Color
1	Aqua 2	13	Aqua 1
2	Pink 2	14	Pink 1
3	Purple 2	15	Purple 1
4	Yellow 2	16	Yellow 1
5	Black 2	17	Black 1
6	Red 2	18	Red 1
7	White 2	19	White 1
8	Gray 2	20	Gray 1
9	Brown 2	21	Brown 1
10	Green 2	22	Green 1
11	Orange 2	23	Orange 1
12	Blue 2	24	Blue 1



Fiber Specifications (Singlemode)

Characteristics		G652D	G657A1	G657A2
Optical Characteristics				
Attenuation	1310nm	≤ 0.40 dB/km	≤ 0.40 dB/km	≤ 0.40 dB/km
	1383nm*	≤ 0.34 dB/km	≤ 0.35 dB/km	≤ 0.35 dB/km
	1460nm*	-	≤ 0.25 dB/km	≤ 0.25 dB/km
	1490nm*	-	-	≤ 0.23 dB/km
	1550nm	≤ 0.30 dB/km	≤ 0.30 dB/km	≤ 0.30 dB/km
	1625nm*	≤ 0.23 dB/km	≤ 0.23 dB/km	≤ 0.23 dB/km
Attenuation vs. Wavelength	1285-1330nm*	≤ 0.03 dB/km	≤ 0.03 dB/km	≤ 0.03 dB/km
Max. α difference	1525-1575nm*	≤ 0.02 dB/km	≤ 0.02 dB/km	≤ 0.02 dB/km
Dispersion coefficient	1285-1340nm	≥ -3.4 ≤ 3.4 ps/(nm · km)	≥ -3.4 ≤ 3.4 ps/(nm · km)	-
	1550nm	≤ 18 ps/(nm · km)	≤ 18 ps/(nm · km)	-
	1625nm	≤ 22 ps/(nm · km)	≤ 22 ps/(nm · km)	-
Zero dispersion wavelength		1312±12 nm	1300-1324 nm	1300-1324 nm
Zero dispersion slope		≤ 0.091 ps/nm ² · km	≤ 0.092 ps/nm ² · km	≤ 0.092 ps/nm ² · km
Typical value		0.086 ps/nm ² · km	0.086 ps/nm ² · km	0.04 ps/nm ² · km
PMD				
Maximum Individual Fibre		≤ 0.1 ps/√km	≤ 0.1 ps/√km	≤ 0.1 ps/√km
Link Design Value(M=20,Q=0.01%)		≤ 0.06 ps/√km	≤ 0.06 ps/√km	≤ 0.06 ps/√km
Typical value		0.04 ps/√km	0.04 ps/√km	0.04 ps/√km
Cable cutoff wavelength λ _{cc}		≤ 1260 μm	≤ 1260 nm	≤ 1260 nm
Mode field diameter(MFD)	1310nm	8.7-9.5 μm	8.4-9.2 μm	8.4-9.2 μm
	1550nm	9.9-10.9 μm	9.3-10.3 μm	9.3-10.3 μm
Effective group index of refraction(N _{eff})	1310nm	1.466	1.466	1.466
	1550nm	1.467	1.467	1.467
Point discontinuities	1310nm	≤ 0.05 dB	≤ 0.05 dB	≤ 0.05 dB
	1550nm	≤ 0.05 dB	≤ 0.05 dB	≤ 0.05 dB
Geometrical Characteristics				
Cladding diameter		125.0±0.7 μm	125.0±0.7 μm	125.0±0.7 μm
Cladding non-circularity		≤ 1.0 %	≤ 0.7 %	≤ 0.7 %
Coating diameter		245.0±7 μm	245.0±5 μm	245.0±5 μm
Coating-cladding concentricity error		≤ 12.0 μm	≤ 12.0 μm	≤ 12.0 μm
Coating non-circularity		≤ 6.0 %	≤ 6.0 %	≤ 6.0 %
Core-cladding concentricity error		≤ 0.6 μm	≤ 0.5 μm	≤ 0.5 μm
Curly(radius)		≥ 4 m	≥ 4 m	≥ 4 m
Delivery length		2.1 to 50.4 km/reel	2.1 to 50.4 km/reel	2.1 to 50.4 km/keel

*Attenuation loss of bare fiber

Fiber Specifications (Multimode)

Characteristics		OM3/OM4	OM5
Geometry Characteristics			
Core Diameter		50±2.5 um	50±2.5 um
Core Non-circularity		≤5.0 %	≤5.0 %
Cladding Diameter		125.0±1.0 um	125.050±1.0 um
Cladding Non-circularity		≤0.6 %	≤0.6 %
Coating Diameter		245±7 um	245±7 um
Coating/Cladding Concentricity Error		≤10.0 um	≤10.0 um
Coating Non-circularity		≤6.0 %	≤6.0 %
Core/Cladding Concentricity Error		≤1.0 um	≤1.0 um
Delivery Length		up to 8.8 km/reel	up to 8.8 km/ reel
Optical Characteristics			
Attenuation	850nm	≤3.5 dB/km	≤3.5 dB/km
	953nm*	-	≤1.7 dB/km
	1300nm	≤1.5 dB/km	≤1.5 dB/km
Overfilled Modal Bandwidth	850nm	≥1500/≥3500 MHz · km	≥3500 MHz · km
	953nm	-	≥1850 MHz · km
	1300nm	≥500/≥500 MHz · km	≥500 MHz · km
Effective Modal Bandwidth	850nm	≥2000/≥4700 MHz · km	≥4700 MHz · km
	953nm	-	≥2470 MHz · km
10Gb/sWDM		-100/150 m	150 m
40Gb/sWDM		300/500 m	440 m
40GBASE-SR4 / 100GBASE SR10	850nm	1000/1100 m	200 m
10GBASE-SR	850nm	-	-
1000BASE-SR	850nm	-	-
DMD Specification		-	-
Numerical Aperture		0.200±0.015	0.200±0.015
Group Refractive index		1.482	1.482
		1.477	1.477
		-	-
Zero Dispersion Wavelength, λ ₀		1295-1340 nm	1297-1328 nm
Zero Dispersion Slope, S ₀		-	≤4(-103)/(840λ√840) ⁴ ps/nm ² · km
Zero Dispersion Slope, S ₀	1295nm ≤ λ ₀ ≤ 1310nm	≤0.105 ps/nm ² · km	-
	1310nm ≤ λ ₀ ≤ 1340nm	-	-
	1320nm ≤ λ ₀ ≤ 1348nm	≤0.000375(1590-λ ₀) ps/nm ² · km	-
	1348nm ≤ λ ₀ ≤ 1365nm	-	-

*Attenuation loss of barefiber

Ordering Information

