

MPO&MTP® Trunk Cables Datasheet

MTP®/MPO Trunk Cables Applications

MTP®/MPO high-fiber-count trunk cables are designed for ultra-high-density backbone connectivity in hyperscale data centers, AI/HPC clusters, and enterprise core networks. They are widely used in backbone, horizontal, and zone cabling. These trunk cable assemblies utilize precision-terminated MTP®/MPO connectors and bend-resistant G.657.A1 single-mode or OM4 multimode fiber, delivering exceptional optical performance with a typical insertion loss as low as 0.35 dB.

Multi-fiber trunk cables are available with LSZH, OFNR, or OFNP jackets and in a variety of fiber count configurations, significantly reducing cable bulk while maximizing rack space utilization. These plug-and-play solutions are pre-terminated and 100% tested according to IEC and TIA standards, ensuring rapid deployment, minimal installation time, and consistent end-to-end link quality.

Features

- OS2, OM4 fiber modes
- High-precision end face grinding, 0.35 dB low insertion loss connection
- Available in Plenum (OFNP), Riser (OFNR), and LSZH Cable Jacket
- Connector polish type support UPC or APC (8° angle)
- All connector ends are available in Male(Pinned) or Female(Pinless)
- Available in 12, 24, 36, 48, 72, 96, 144, 192, 216, 288, 432, and 576 Fiber Counts

Standards Compliance

- IEC 61754-7 / IEC 61754-7-1
- TIA/EIA-568.3-D(ANSI/TIA-568.3-D)
- ISO/IEC 11801-1/-5
- RoHS / REACH
- GR-326 / GR-1435

Optical Properties

Type	Single-mode (APC polish)	Single-mode (UPC polish)	Multi-mode (APC polish)	Multi-mode (UPC polish)
Fiber type	G.652.D/G.657.A1	G.652.D/G.657.A1	50/125 μm	50/125 μm
Maximum Insertion Loss	MTP: ≤0.35 dB(standard); ≤0.2 dB(Low Loss) MPO:≤0.35 dB(Low Loss)			
Return Loss	≥60 dB	≥50 dB	≥35 dB	≥20 dB
Durability	≥500-1000 times			
Test Wavelength	1310nm / 1550nm		850nm / 1300nm	
Attenuation	≤0.35dB/km; ≤0.21dB/km		≤2.3dB/km; ≤1.0dB/km	
Tensile Strength (Long Term/Short Term)	150/80N			
Cable Diameter	3.0mm			
Breakout Length	0.8m±100mm			

3D Geometry Performance

Type			Grade A		Grade B	
Item			Min	Max	Min	Max
Radius of Curvature(mm)	X		-10000 < or >2000		-10000 < or >2000	
	Y		-500 < or >50		-500 < or >50	
Angle[°]	X		-0.15	0.15	-0.2	0.2
	Y	APC	7.85	8.15	7.8	8.2
		UPC	-0.15	0.15	-0.2	0.2
Minus Coplanarity(nm)			0	300	0	300
Fiber Height(nm)			1200	3000	1000	3500
Max All Diff(nm)			0	300	0	500
Max Adj Diff(nm)			0	150	0	300
Core Dip(nm)						
Only MM			-100	100	-100	100

Environmental Performance

No.	Item	Testing Conditions	Requirements	
			Before test	After test
1	Thermal Age Test	85°C 168hrs	IL ≤ 0.80dB, RL ≥ 60dB(APC)/30dB(UPC)	IL ≤ 0.80dB, ΔIL ≤ 0.3dB RL ≥ 60dB(APC)/30dB(UPC)
2	Thermal Cycle Test	-40°C~75°C 21cycles 168hrs	IL ≤ 0.80dB, RL ≥ 60dB(APC)/30dB(UPC)	IL ≤ 0.80dB, ΔIL ≤ 0.3dB RL ≥ 60dB(APC)/30dB(UPC)
3	Humidity Age Test	75°C / 95%RH 168hrs	IL ≤ 0.80dB, RL ≥ 60dB(APC)/30dB(UPC)	IL ≤ 0.80dB, ΔIL ≤ 0.3dB RL ≥ 60dB(APC)/30dB(UPC)
4	Humidity / Condensation Cycling Test	-10°C~65°C, 90-100%RH 21cycles 168hrs	IL ≤ 0.80dB, RL ≥ 60dB(APC)/30dB(UPC)	IL ≤ 0.80dB, ΔIL ≤ 0.3dB RL ≥ 60dB(APC)/30dB(UPC)

Mechanical Behavior

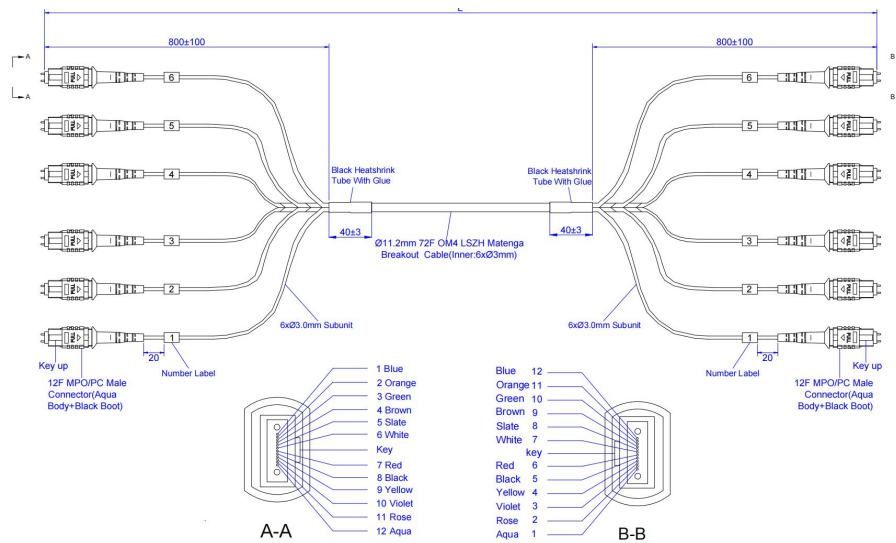
No.	Item	Testing Conditions	Requirements	
			Before test	After test
1	Vibration Test	1.5mm p-p 10~55Hz 2hrs for each axis	IL ≤ 0.80dB, RL ≥ 60dB(APC)/30dB(UPC)	IL ≤ 0.80dB, ΔIL ≤ 0.3dB RL ≥ 60dB(APC)/30dB(UPC)
2	Flex Test	0.9kgf for Type I, 0.9kgf for small form 0°, 90°, 0°, -90°, 0°, and repeat for 100 cycles	IL ≤ 0.80dB, RL ≥ 60dB(APC)/30dB(UPC)	IL ≤ 0.80dB, ΔIL ≤ 0.3dB RL ≥ 60dB(APC)/30dB(UPC)
3	Twist Test	Load 1.33kgf 1 revolution, 9 times	IL ≤ 0.80dB, RL ≥ 60dB(APC)/30dB(UPC)	IL ≤ 0.80dB, ΔIL ≤ 0.3dB RL ≥ 60dB(APC)/30dB(UPC)
4	Proof test – Side Pull	Load 3.37kgf for 5 sec Load 4.5kgf for 5 sec	IL ≤ 0.80dB, RL ≥ 60dB(APC)/30dB(UPC)	IL ≤ 0.80dB, ΔIL ≤ 0.3dB RL ≥ 60dB(APC)/30dB(UPC)
5	Proof test – Straight Pull	Load 4.5kgf for 5 sec Load 6.8kgf for 5 sec	IL ≤ 0.80dB, RL ≥ 60dB(APC)/30dB(UPC)	IL ≤ 0.80dB, ΔIL ≤ 0.3dB RL ≥ 60dB(APC)/30dB(UPC)
6	Transmission with Applied Load Test	Apply load: 4.95lbf @ 0° Apply load: 0.49lbf @ 90°	IL ≤ 0.80dB, RL ≥ 60dB(APC)/30dB(UPC)	IL ≤ 0.80dB, ΔIL ≤ 0.3dB RL ≥ 60dB(APC)/30dB(UPC)
7	Impact Test	1.5m 10 cycles	IL ≤ 0.80dB, RL ≥ 60dB(APC)/30dB(UPC)	IL ≤ 0.80dB, ΔIL ≤ 0.3dB RL ≥ 60dB(APC)/30dB(UPC)

Environmental Characteristics

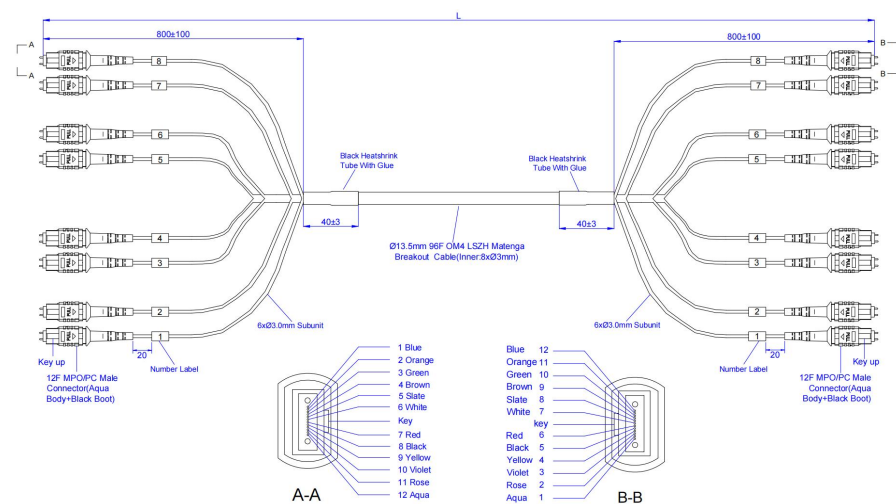
Environmental Characteristics	Description
Operating Temperature	-20°C to 70°C (14 to 158°F)
Storage Temperature	-40°C to 85°C (-40 to 185°F)

Technical Drawing

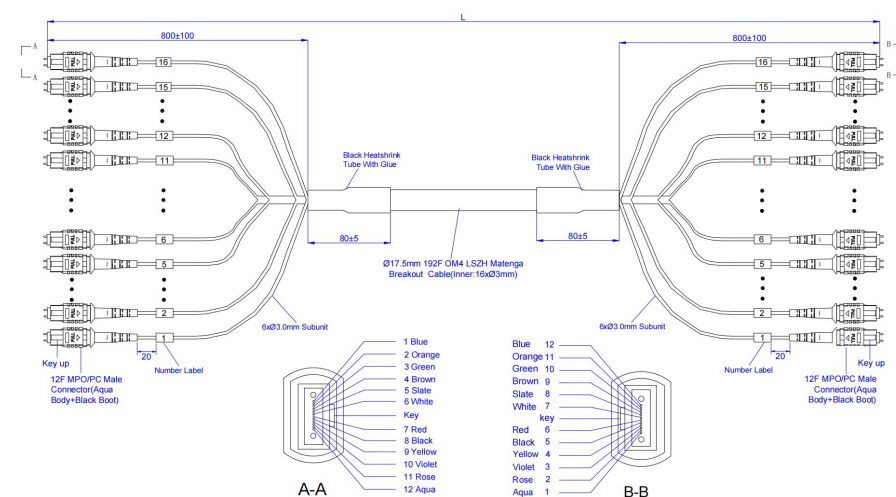
72 (6x12) Fibers



96 (8x12) Fibers



192 (16x12) Fibers



Cable Length Tolerances

Cable Length	Length Tolerance(ΔL)
Total Length	$L \leq 10m$: +100/-0mm $L > 10M$: +1%*L/-0
Breakout Length	0.8m $\pm$ 100mm

Ordering Information

Product number	Description
MF-M48MPOMUB	Pre-terminated MPO trunk cable, 48 Fibers, 4 x MPO-12 UPC(Male) to 6 x MPO-12 UPC (Male) Multimode (OM4) Type B, LSZH (OFNR) , 0.35dB Max, Magenta, breakout 80cm
MF-M72MPOMUB	Pre-terminated MPO trunk cable, 72 Fibers, 6 x MPO-12 UPC(Male) to 6 x MPO-12 UPC (Male) Multimode (OM4) Type B, LSZH (OFNR) , 0.35dB Max, Magenta, breakout 80cm
MF-M96MPOMUB	Pre-terminated MPO trunk cable, 96 Fibers, 8 x MPO-12 UPC(Male) to 8 x MPO-12 UPC (Male) Multimode (OM4) Type B, LSZH (OFNR) , 0.35dB Max, Magenta, breakout 80cm
MF-M192MPOMUB	Pre-terminated MPO trunk cable, 192 Fibers, 16 x MPO-12 UPC(Male) to 16 x MPO-12 UPC (Male) Multimode (OM4) Type B, LSZH (OFNR) , 0.35dB Max, Magenta, breakout 80cm
MF-S48MPOMUB	Pre-terminated MPO trunk cable, 48 Fibers, 4 x MPO-12 UPC(Male) to 6 x MPO-12 UPC (Male) Single Mode (OS2) Type B, LSZH (OFNR) , 0.35dB Max, Yellow, breakout 80cm
MF-S72MPOMUB	Pre-terminated MPO trunk cable, 72 Fibers, 6 x MPO-12 UPC(Male) to 6 x MPO-12 UPC (Male) Single Mode (OS2) Type B, LSZH (OFNR) , 0.35dB Max, Yellow, breakout 80cm
MF-S96MPOMUB	Pre-terminated MPO trunk cable, 96 Fibers, 8 x MPO-12 UPC(Male) to 8 x MPO-12 UPC (Male) Single Mode (OS2) Type B, LSZH (OFNR) , 0.35dB Max, Yellow, breakout 80cm
MF-S192MPOMUB	Pre-terminated MPO trunk cable, 192 Fibers, 16 x MPO-12 UPC(Male) to 16 x MPO-12 UPC (Male) Single Mode (OS2) Type B, LSZH (OFNR) , 0.35dB Max, Yellow, breakout 80cm

Further Information:

Web www.naddod.com

Email For order requirements: sales@naddod.com
For customer service: support@naddod.com
For technical support: tech@naddod.com

For cooperation: agency@naddod.com

For other information: info@naddod.com

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