

Loopback (MTP®/MPO/SC/LC)

Description

Fiber optic loopbacks route transmitted optical signals directly back to the receiver within the same connector interface, enabling verification of transmit and receive functionality on optical transceivers and network ports.

Available in duplex or multi-fiber configurations, they provide a simple and reliable method for validating link integrity, receiver sensitivity, and port operation. Fiber optic loopbacks are widely used for diagnostics, commissioning, and troubleshooting in high-speed optical networks.



Features

- Available with duplex or multi-fiber connectors
- Low insertion loss and high return loss for stable signal reflection
- Precision-polished ferrules (PC/UPC/APC)
- Available in cable assembly or compact housing formats
- Custom cable lengths available for specific testing requirements
- 100% factory terminated and performance tested

Applications

- Transceiver and port loopback verification
- Network link testing and diagnostics
- System commissioning and burn-in testing

Standard Compliance

- TIA-568.3-D
- IEC 61754 Series
- IEC 61753-1
- TIA-604 Series
- Telcordia GR-326-CORE
- Telcordia GR-1435-CORE
- RoHS Compliant

General Specification

Constructions		Descriptions				
Fiber Count		2 fibers for duplex type; 2-48 fibers for multifiber connector				
Fiber Mode		Single-mode: G.652/G.657				
		Multimode: OM1/OM2/OM3/OM4				
Cable Jacket Material		Low Smoke Zero Halogen (LSZH)				
		PVC				
Cable Jacket Ratings		Riser (OFNR)				
		Plenum (OFNP)				
Cable Jacket Color		G.652/G.657: Yellow				
		OM1/OM2: Orange				
		OM3: Aqua; OM4: Aqua/Magenta				
Cable Jacket Color		Customized				
Connector Type		SC, LC, MPO, MTP®				
Connector Color (SC/LC)		SM (APC)	SM (PC)	OM3	OM4	or customized
		Green	Blue	Aqua	Magenta/Aqua	
Connector Color (MTP®/MPO)		SM (APC)	SM (PC)	OM3	OM4	or customized
		Low Loss	Yellow	Yellow	Aqua	
		Standard	Green	Blue	Aqua	Magenta/Aqua
Connector Gender (MTP®/MPO)		Male/Female				
Loopback Housing Color		Black				
Operating Temperature		-10 °C to + 60 °C				
Storage Temperature		-40 °C to + 85 °C				

Technical Specification

Optical Properties		Single-mode	Multimode
Insertion Loss (dB) (SC, LC etc.)		APC \leq 0.60 (Typical: \leq 0.30)	APC \leq 0.60 (Typical: \leq 0.30)
		UPC \leq 0.40 (Typical: \leq 0.20)	PC \leq 0.40 (Typical: \leq 0.20)
Insertion Loss (dB) (MTP®/MPO)		Low Loss \leq 0.70 (Typical: \leq 0.50)	Low Loss \leq 0.70 (Typical: \leq 0.50)
		Standard Loss \leq 1.50 (Typical: \leq 0.80)	Standard Loss \leq 1.20 (Typical: \leq 0.60)
Return Loss (dB)		PC \geq 50; APC \geq 60	PC \geq 20; APC \geq 40
Durability	SC, LC etc.	\leq 0.4 dB Typical change, 500 matings	
	MTP®/MPO	\leq 0.6 dB Typical change, 50 matings	
Wavelength (nm)		Single-mode: 1310/1550, Multimode: 850/1300	