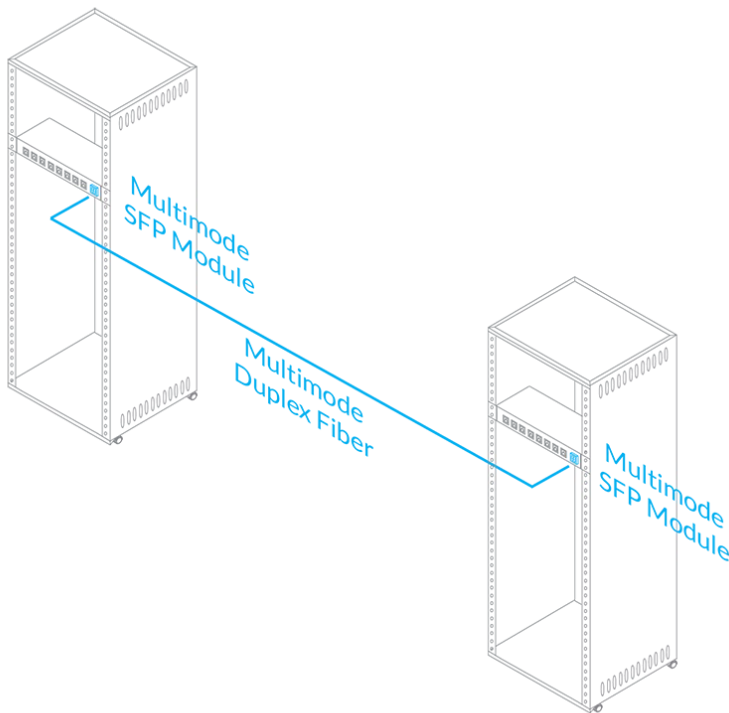Fiber optic cabling is increasingly used to connect network switches and other datacom equipment, especially in long-distance and mission-critical applications. Fiber provides:

1. Reliable signal transmission due to immunity from RF interference, electrical interference, static electricity, power surges and lightning strikes;
2. Signal transmission distances over 100m / 330ft;
3. Extremely Fast data speeds thanks to the simultaneous transmission and receipt of signals; and
4. Increased internet signal bandwidth.

Most modern fiber-enabled network switches require an SFP transceiver module featuring a duplex (two strand) multimode OM3 or duplex single mode OS2 connection with LC connectors. Direct attach cables with pre-terminated SFP connections may also be used.

Application Design Notes

- SFP transceiver modules are specific to the type of fiber being connected (either single mode or multimode). *Choose an SFP module based on the fiber optic cabling that will be connected to the network switches.*

- SFP transceiver modules almost always require two fiber optic cable strands. *Always integrate duplex (two strand) fiber optic cabling or higher strand counts.*

- Most modern SFP transceiver modules feature duplex LC connections. *Terminate your fiber optic cabling with two LC-style connectors or purchase a pre-terminated fiber optic cable with two LC-style connectors.*

- When connecting terminated duplex fiber optic cable between two network switches, ensure the connections are reversed between the SFP transceiver ports (connection A to B and B to A). SFP transceiver modules rely on the transmission of separate send and receive signals.

- Select an SFP module that matches the bandwidth of your network switch. 1G modules are technically classified as SFP transceivers, 10G modules are classified as SFP+ transceivers, and QSFP transceivers support even higher bandwidths.

Commonly Integrated Products

Direct Attach Cables
Direct attached cables, or DACs, are short length patch cables with pre-terminated 10G SFP modules on each end. They provide a simple, low-cost solution for connecting network equipment.

SFP Transceiver Modules
SFP modules provide the fiber optic connection for network switchers with fiber optic (SFP) ports. The modules are swappable and are specific to either duplex multimode fiber or duplex single mode fiber.

Fiber Patch Cords
Premade fiber optic cables arrive pre-terminated with connectors and are available in stock and custom configurations.

Bulk Fiber Cable
Bulk fiber cable requires termination in the field and is available in stock and custom configurations. Both riser and plenum formats are commonly used to connect networking equipment.

Fiber Optic Connectors
Fiber optic connectors terminate on bulk fiber cable.

Direct Attach Cables

Pre-terminated direct attach cables feature industry-standard firmware and are compatible with most major brands of networking hardware.

Part Number	Product Type	Bandwidth	Transmission Distance	Connectors
TL-10GDAC-01	Pre-terminated SFP+ Cable	10G	1m / 3ft.	SFP+
TL-10GDAC-03	Pre-terminated SFP+ Cable	10G	3m / 10ft.	SFP+
TL-10GDAC-07	Pre-terminated SFP+ Cable	10G	7m / 23ft.	SFP+

SFP Transceiver Modules

SFP modules feature industry-standard firmware and are compatible with most major brands of networking hardware.

Part Number	Product Type	Fiber Type	Bandwidth	Transmission Distance	Connectors
TL-1GSFP-MM550	SFP Fiber Module	Multimode	1G	550m / 1,805ft.	Duplex LC
TL-1GSFP-SM20K	SFP Fiber Module	Single Mode	1G	20km / 12.4 miles	Duplex LC
TL-10GSFPP-MM300	SFP+ Fiber Module	Multimode	10G	300m / 1,000ft.	Duplex LC
TL-10GSFPP-SM10K	SFP+ Fiber Module	Single Mode	10G	10km / 6.2 miles	Duplex LC

Fiber Optic Patch Cords & Pre-Terminated Cable

Pre-terminated cables feature a flexible riser-rated jacket and internal aramid yarn for strength.

Part Number	Construction	Length	Fiber Type	Strand Count	Side A	Side B	Jacket Rating	Color
M4D-ECO-LCLC-01	Standard	1m / 3ft.	Multimode OM4	Duplex	LC	LC	Riser	Aqua
M4D-ECO-LCLC-02	Standard	2m / 6.5ft.	Multimode OM4	Duplex	LC	LC	Riser	Aqua
M4D-ECO-LCLC-03	Standard	3m / 10ft.	Multimode OM4	Duplex	LC	LC	Riser	Aqua
M4D-ECO-LCLC-05	Standard	5m / 16.5ft.	Multimode OM4	Duplex	LC	LC	Riser	Aqua
M4D-ECO-LCLC-07	Standard	7m / 23ft.	Multimode OM4	Duplex	LC	LC	Riser	Aqua
M4D-ECO-LCLC-10	Standard	10m / 33ft.	Multimode OM4	Duplex	LC	LC	Riser	Aqua
S2D-ECO-LCLC-01	Standard	1m / 3ft.	Single Mode OS2	Duplex	LC	LC	Riser	Yellow
S2D-ECO-LCLC-02	Standard	2m / 6.5ft.	Single Mode OS2	Duplex	LC	LC	Riser	Yellow
S2D-ECO-LCLC-03	Standard	3m / 10ft.	Single Mode OS2	Duplex	LC	LC	Riser	Yellow
S2D-ECO-LCLC-05	Standard	5m / 16.5ft.	Single Mode OS2	Duplex	LC	LC	Riser	Yellow
S2D-ECO-LCLC-07	Standard	7m / 23ft.	Single Mode OS2	Duplex	LC	LC	Riser	Yellow
S2D-ECO-LCLC-10	Standard	10m / 33ft.	Single Mode OS2	Duplex	LC	LC	Riser	Yellow
M4D-ARM-LCLC-15	Micro Armor	15m / 50ft.	Multimode OM4	Duplex	LC	LC	Riser	Aqua
M4D-ARM-LCLC-20	Micro Armor	20m / 66ft.	Multimode OM4	Duplex	LC	LC	Riser	Aqua
M4D-ARM-LCLC-30	Micro Armor	30m / 100ft.	Multimode OM4	Duplex	LC	LC	Riser	Aqua
M4D-ARM-LCLC-40	Micro Armor	40m / 130ft.	Multimode OM4	Duplex	LC	LC	Riser	Aqua
M4D-ARM-LCLC-50	Micro Armor	50m / 165ft.	Multimode OM4	Duplex	LC	LC	Riser	Aqua

ECO Series™ Bulk Cable with Corning SMF-28 Ultra® & ClearCurve® Fiber

ECO Series bulk fiber delivers an ultra-bendable, laser-optimized cable that performs even through tight bends and challenging cable routes.

Part Number	Fiber Type	Strand Count	Jacket Rating	Color	Spool Length	Diameter	Bend Radius
S2I-2M-P-BK-1000	Single Mode OS2	Duplex (2)	Indoor/Outdoor Plenum	Black	300m / 1000ft.	4.4mm	7.5mm
S2I-6M-P-BK-1000	Single Mode OS2	6	Indoor/Outdoor Plenum	Black	300m / 1000ft.	4.8mm	7.5mm
S2I-12M-P-BK-1000	Single Mode OS2	12	Indoor/Outdoor Plenum	Black	300m / 1000ft.	5.8mm	7.5mm
M3I-2Z-R-AQ-1000	Multimode OM3	Duplex (2)	Indoor Riser	Aqua	300m / 1000ft.	3mm	7.5mm
M3I-2M-R-BK-1000	Multimode OM3	Duplex (2)	Indoor Riser	Black	300m / 1000ft.	4.4mm	7.5mm
M3I-2M-P-BK-1000	Multimode OM3	Duplex (2)	Indoor/Outdoor Plenum	Black	300m / 1000ft.	4.4mm	7.5mm
M3I-6M-R-BK-1000	Multimode OM3	6	Indoor Riser	Black	300m / 1000ft.	4.8mm	7.5mm
M3I-6M-P-BK-1000	Multimode OM3	6	Indoor/Outdoor Plenum	Black	300m / 1000ft.	4.8mm	7.5mm
M3I-12M-P-BK-1000	Multimode OM3	12	Indoor/Outdoor Plenum	Black	300m / 1000ft.	5.8mm	7.5mm

Fiber Optic Connectors

Mechanical connectors eliminate the need to hand polish, epoxy or crimp in the field. They are reliable to install, terminate in as little as one minute, and allow re-termination up to 12 times before calculable loss. Plus, no proprietary and expensive tools are required for termination.

Part Number	Connector Type	Fiber Type	Qnty per Pack
M3-50125-LC10	LC	Multimode	10
S2-9125-LC10	LC	Single Mode	10

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