



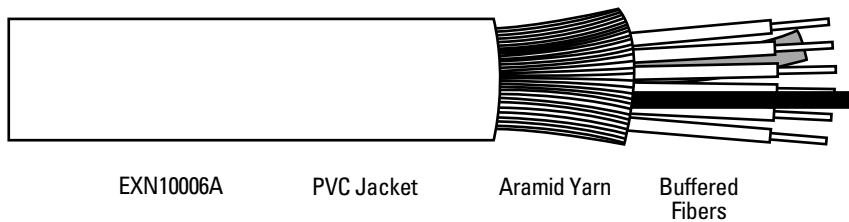
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NETWORK SERVICES

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10-GIGABIT MULTIMODE, 50-MICRON FIBER OPTIC CABLE



EXN10006A

PVC Jacket

Aramid Yarn

Buffered
Fibers

**Here it is:
tight-buffered
50-micron multimode
cable that's laser
optimized for
10-Gigabit Ethernet.**

Key Features

- ▶ **All feature tight-buffered fiber with an acrylate fiber coating and aramid yard strength members.**
- ▶ **Use with either LED or laser light sources.**
- ▶ **With a laser light source, bandwidth increases to 2000 MHz/km.**
- ▶ **Use the cable in 10-Gigabit Ethernet runs up to 300 meters, making it ideal for backbone and campus connections.**

Thinking of upgrading to 10-Gigabit Ethernet? Here's the laser-optimized 50-micron cable you want.

Since 10-Gigabit Ethernet (10-GBE) was ratified in June 2002, the move is on to upgrade Ethernet networks. 10-GBE is a logical extension of previous Ethernet versions and was designed to make the transition from LANs to Wide Area Networks (WANs) and Metropolitan Area Networks (MANs). 10-GBE offers a cost-effective migration for high-performance and long-haul transmissions at up to 40 kilometers. Its most common application now is as a backbone for high-speed LANs, server farms, and campuses. It also enables you to connect geographically separated LANs to new MANs and WANs via dark

fiber, dark wavelengths, or SONET/SDH networks.

10-GBE supports existing Ethernet technologies. It uses the same layers (MAC, PHY, and PMD), and the same frame sizes and formats. But the IEEE 802.3ae spec defines two sets of physical interfaces: LAN (LAN PHY) and WAN (WAN PHY).

The most notable difference between 10-GBE and previous Ethernets is that 10-GBE operates in full-duplex only and specifies fiber optic media. The chart on page 2 notes the differences between Gigabit and 10-Gigabit Ethernet.

Migrate to 10-GBE with this cable.

Choose from three styles:

- Zipcord patch cable with a PVC jacket.
- Bulk distribution-style cable with a PVC or plenum jacket.

- Bulk zipcord cable with a PVC or plenum jacket.

You can use these cables with LED or laser light sources. Since the cable is optimized for a laser light source, bandwidth increases to 2000 MHz/km with one.

This cable is ideal for use in 10-Gigabit Ethernet runs up to 300 meters, making it ideal for backbone and campus connections.

Specifications for Zipcord Patch Cables

Attenuation:

3.0 dB/km @ 850 nm;
1.0 dB/km @ 1310 nm

Bandwidth:

LED: 1500/500 MHz/km OFL @
850/1310 nm;
Laser: 2000/500 MHz/km RML
@ 850/1310 nm

Diameters: Core: 50 µm;
Cladding: 125 µm;
Buffer: 900 µm

Fiber Type: Laser-optimized
multimode

Jacket: PVC

Operating Temperature:
-40 to +185°F (-40 to +85°C)

10-GBE	Distance	Wavelength	Cable
10GBASE-SR	300 m	850 nm	Multimode
10GBASE-SW	300 m	850 nm	Multimode
10GBASE-LR	10 km	1310 nm	Single-Mode
10GBASE-LW	10 km	1310 nm	Single-Mode
10GBASE-LX4	Multimode 300 m/ Single-Mode 10 km	1310 nm WWDM	Multimode or Single-Mode
10GBASE-ER	40 km	1550 nm	Single-Mode
10GBASE-EW	40 km	1550 nm	Single-Mode
10GBASE-CX4*	15 m	—	4 x Twinax
10GBASE-T*	25–100 m	—	Twisted Pair

* Proposed for copper.

The alphabetical coding for 10-GBE is as follows:

S = 850 nm X = 8B/10B signal encoding
L = 1310 nm R = 66B encoding
E = 1550 nm W = WIS interface (for use with SONET)

Specifications for Distribution-Style and Zipcord Bulk Cable

Attenuation (Maximum):

3.5/1.0 dB/km @ 850/1300 nm

Bandwidth (Minimum):

1500/500 MHz-km @ 850/1300 nm

Bend Radius:

Distribution-Style PVC:
2-Fiber: 3.7" (9.4 cm)
installation, 2.8" (7.1 cm)
operating;
4-Fiber: 4.4" (11.2 cm)
installation, 3.3" (8.4 cm)
operating;
6-Fiber: 4.7" (11.9 cm)
installation, 3.5" (8.9 cm)
operating;
8-Fiber: 4.9" (12.4 cm)
installation, 3.7" (9.4 cm)
operating;
12-Fiber: 5.5" (14 cm)
installation, 4.1" (10.4 cm)
operating;
24-Fiber: 10.3" (26.2 cm)
installation, 7.7" (19.6 cm)
operating;
36-Fiber: 12.5" (31.8 cm)
installation, 9.3" (23.6 cm)
operating;
Distribution-Style Plenum:
2-Fiber: 3.4" (8.6 cm)
installation, 2.5" (6.4 cm)
operating;
4-Fiber: 3.4" (8.6 cm)
installation, 2.6" (6.6 cm)
operating;
6-Fiber: 3.8" (9.7 cm)
installation, 2.8" (7.1 cm)
operating;

8-Fiber: 4" (10.2 cm)
installation, 2.9" (7.4 cm)
operating;
12-Fiber: 4.6" (11.7 cm)
installation, 3.5" (8.9 cm)
operating;
24-Fiber: 8" (20.3 cm)
installation, 6" (15.2 cm)
operating;
36-Fiber: 10" (25.4 cm)
installation, 7.5" (19.1 cm)
operating;
Zipcord PVC: 2-Fiber: 2" (5.1 cm)
installation, 1" (2.5 cm)
operating;
Zipcord Plenum: 2" (5.1 cm)
installation, 1" (2.5 cm)
operating

Buffer Diameter: 900 µm

Cable Size:

Distribution-Style PVC: 2-Fiber:
0.187" (4.75 mm),
4-Fiber: 0.22" (5.59 mm),
6-Fiber: 0.235" (5.97 mm),
8-Fiber: 0.245" (6.22 mm),
12-Fiber: 0.275" (6.99 mm),
24-Fiber: 0.516" (13.11 mm),
36-Fiber: 0.623" (15.82 mm);
Distribution-Style Plenum:
2-Fiber: 0.165" (4.19 mm),
4-Fiber: 0.17" (4.32 mm),
6-Fiber: 0.185" (4.70 mm),
8-Fiber: 0.195" (4.95 mm),
12-Fiber: 0.230" (5.84 mm),
24-Fiber: 0.4" (10.16 mm),
36-Fiber: 0.502" (12.75 mm);
Zipcord PVC and Plenum:
0.113" x 0.241" (2.87 x 6.1 cm)

Diameters — Core: 50 µm;
Cladding: 125 µm;
Buffer: 900 µm

Fiber Type — Laser-optimized
multimode

Jacket — PVC or low-smoke
plenum

Pulling Strength:

Distribution-Style: 2-Fiber:
800 Newtons/180 lb.;
4- and 6-Fiber: 1000 Newtons/
225 lb.;
8-Fiber: 1400 Newtons/315 lb.;
12-Fiber: 1800 Newtons/
405 lb.;
24-Fiber: 2700 Newtons/
600 lb.;
36-Fiber: 4000 Newtons/
900 lb.;
Zipcord: 1000 Newtons/225 lb.

Standards: PVC: UL® 1666, CSA FT4;
Plenum: UL 910, CSA FT6;
All: IEEE 802.3 for 1000BASE-SX/
LX, 100BASE-F, 10BASE-F,
ATM 155, ATM 622, ATM
1.2/2.4 Gbps, TOA 492AAAC
1-Gigabit Ethernet, Fibre
Channel FC-PH, IEEE 802.5,
FDDI, ICEA 83-596, EIA/
TIA-568-B

Tension (Operating):

Distribution-Style: 2-Fiber:
250 Newtons/56 lb.;
4- and 6-Fiber: 400 Newtons/
91 lb.;
8-Fiber: 463 Newtons/104 lb.;
12-Fiber: 600 Newtons/135 lb.;
24-Fiber: 1110 Newtons/
250 lb.;
36-Fiber: 2000 Newtons/
450 lb.;
Zipcord: 500 Newtons/112 lb.

Vertical Rise: Distribution-Style

PVC: 2-Fiber: 2987 ft. (910.4 m),
4-Fiber: 3832 ft. (1168 m),
6-Fiber: 3467 ft. (1056.7 m),
8-Fiber: 3617 ft. (1102.5 m),
12-Fiber: 3600 ft. (1097.3 m),
24-Fiber: 2227 ft. (678.8 m),
36-Fiber: 2515 ft. (766.6 m);
Distribution-Style Plenum:
2-Fiber: 4978 ft. (1517.3 m),
4-Fiber: 5200 ft. (1585 m),
6-Fiber: 4853 ft. (1479.2 m),
8-Fiber: 4622 ft. (1408.8 m),
12-Fiber: 4909 ft. (1496.3 m),
24-Fiber: 3006 ft. (916.2 m),
36-Fiber: 3133 ft. (954.9 m);
Zipcord PVC and Plenum:
11,200 ft. (3413.8 m)

Temperature: Operating: -4 to
+176°F (-20 to +80°C);
Storage: -40 to +176°F (-40 to
+80°C);
Installation: 32 to 122°F (0 to 50°C)

Ordering Information

ITEM	CODE
10-Gigabit Multimode, 50-Micron Distribution-Style Fiber Optic Bulk Cables	
PVC (OFNR)	
2-Fiber 500-ft. (152.4-m)	EXN10002A-0500
1000-ft. (304.8-m)	EXN10002A-1000
Custom Lengths	EXN10002A
4-Fiber 500-ft. (152.4-m)	EXN10004A-0500
1000-ft. (304.8-m)	EXN10004A-1000
Custom Lengths	EXN10004A
6-Fiber 500-ft. (152.4-m)	EXN10006A-0500
1000-ft. (304.8-m)	EXN10006A-1000
Custom Lengths	EXN10006A
8-Fiber 500-ft. (152.4-m)	EXN10008A-0500
1000-ft. (304.8-m)	EXN10008A-1000
Custom Lengths	EXN10008A
12-Fiber 500-ft. (152.4-m)	EXN10012A-0500
1000-ft. (304.8-m)	EXN10012A-1000
Custom Lengths	EXN10012A
24-Fiber 500-ft. (152.4-m)	EXN10024A-0500
1000-ft. (304.8-m)	EXN10024A-1000
Custom Lengths	EXN10024A
36-Fiber 500-ft. (152.4-m)	EXN10036A-0500
1000-ft. (304.8-m)	EXN10036A-1000
Custom Lengths	EXN10036A
Plenum (OFNP)	
2-Fiber 500-ft. (152.4-m)	EXP10002A-0500
1000-ft. (304.8-m)	EXP10002A-1000
Custom Lengths	EXP10002A
4-Fiber 500-ft. (152.4-m)	EXP10004A-0500
1000-ft. (304.8-m)	EXP10004A-1000
Custom Lengths	EXP10004A
6-Fiber 500-ft. (152.4-m)	EXP10006A-0500
1000-ft. (304.8-m)	EXP10006A-1000
Custom Lengths	EXP10006A
8-Fiber 500-ft. (152.4-m)	EXP10008A-0500
1000-ft. (304.8-m)	EXP10008A-1000
Custom Lengths	EXP10008A
12-Fiber 500-ft. (152.4-m)	EXP10012A-0500
1000-ft. (304.8-m)	EXP10012A-1000
Custom Lengths	EXP10012A
24-Fiber 500-ft. (152.4-m)	EXP10024A-0500
1000-ft. (304.8-m)	EXP10024A-1000
Custom Lengths	EXP10024A
36-Fiber 500-ft. (152.4-m)	EXP10036A-0500
1000-ft. (304.8-m)	EXP10036A-1000
Custom Lengths	EXP10036A

NOTE: Patch cables with MT-RJ connectors are also available. For details, call our FREE Tech Support.

Ordering Information

ITEM	CODE
10-Gigabit Multimode, 50-Micron Fiber Optic Patch Cables, Zipcord, PVC	
ST [®] -ST	1-m (3.2-ft.)EFN010-001M-STST
	2-m (6.5-ft.)EFN010-002M-STST
	3-m (9.8-ft.)EFN010-003M-STST
	5-m (16.4-ft.)EFN010-005M-STST
	10-m (32.8-ft.)EFN010-010M-STST
	Custom LengthsEFN010
ST-SC	1-m (3.2-ft.)EFN010-001M-STSC
	2-m (6.5-ft.)EFN010-002M-STSC
	3-m (9.8-ft.)EFN010-003M-STSC
	5-m (16.4-ft.)EFN010-005M-STSC
	10-m (32.8-ft.)EFN010-010M-STSC
	Custom LengthsEFN010
SC-SC	1-m (3.2-ft.)EFN010-001M-SCSC
	2-m (6.5-ft.)EFN010-002M-SCSC
	3-m (9.8-ft.)EFN010-003M-SCSC
	5-m (16.4-ft.)EFN010-005M-SCSC
	10-m (32.8-ft.)EFN010-010M-SCSC
	Custom LengthsEFN010
LC-LC	1-m (3.2-ft.)EFN010-001M-LCLC
	2-m (6.5-ft.)EFN010-002M-LCLC
	3-m (9.8-ft.)EFN010-003M-LCLC
	5-m (16.4-ft.)EFN010-005M-LCLC
	10-m (32.8-ft.)EFN010-010M-LCLC
	Custom LengthsEFN010
LC-ST	1-m (3.2-ft.)EFN010-001M-STLC
	2-m (6.5-ft.)EFN010-002M-STLC
	3-m (9.8-ft.)EFN010-003M-STLC
	5-m (16.4-ft.)EFN010-005M-STLC
	10-m (32.8-ft.)EFN010-010M-STLC
	Custom LengthsEFN010
LC-SC	1-m (3.2-ft.)EFN010-001M-SCLC
	2-m (6.5-ft.)EFN010-002M-SCLC
	3-m (9.8-ft.)EFN010-003M-SCLC
	5-m (16.4-ft.)EFN010-005M-SCLC
	10-m (32.8-ft.)EFN010-010M-SCLC
	Custom LengthsEFN010
10-Gigabit 50-Micron Fiber Optic Bulk Cable, Zipcord	
PVC (OFNR)	
2-Fiber 500-ft. (152.4-m)	EXN10000A-0500
1000-ft. (304.8-m)	EXN10000A-1000
Custom Lengths	EXN10000A
Plenum (OFNP)	
2-Fiber 500-ft. (152.4-m)	EXP10000A-0500
1000-ft. (304.8-m)	EXP10000A-1000
Custom Lengths	EXP10000

NOTE: Minimum order for custom bulk cable is 1000 feet (304.8 m).