

## CISCO 10GBASE X2 MODULES

**Figure 1.** Cisco 10GBASE X2 and Xenpak Module



### PRODUCT OVERVIEW

The Cisco® 10GBASE X2 modules (Figure 1) offers customers a wide variety of 10 Gigabit Ethernet connectivity options for data center, enterprise wiring closet, and service provider transport applications.

Main features of Cisco 10GBASE X2 module include:

- Supports 10GBASE Ethernet
- Hot-swappable input/output device plugs into an Ethernet X2 port of a Cisco switch or router to link the port with the network
- Provides flexibility of interface choice
- Supports “pay-as-you-populate” model
- Supports the Cisco quality identification (ID) feature that enables a Cisco switch or router to identify whether the module is a Cisco certified and tested X2
- Optical interoperability with respective 10GBASE Xenpak modules on the same link

### Cisco X2-10GB-LR

The Cisco 10GBASE-LR module supports a link length of 10 kilometers on standard single-mode fiber (SMF, G.652).

### TECHNICAL SPECIFICATIONS

#### Platform Support

Cisco X2 modules are supported on Cisco switches and routers. For more details, refer to the document [Cisco Xenpak/X2 Compatibility Matrix](#).

#### Connectors and Cabling

Connectors:

Dual SC connector

Table 1 provides cabling specifications for the Cisco X2 module.

**Table 1.** Table 1 X2 Port Cabling Specifications

Cisco X2	Wavelength (nm)	Cable Type	Core Size (micron)	Modal Bandwidth (MHz/km)	Cable Distance*
Cisco X2-10GB-LR	1310	SMF	G.652 fiber	–	10 km

\* Minimum cabling distance for optical X2 module (-LR) is two meters, according to the IEEE 802.3ae standard.

### Standards

IEEE 802.3ae (-LR)

Table 2 shows the main optical characteristics for the Cisco X2 module.

**Table 2.** Table 2 Optical Transmit and Receive Specifications

Product	Type	Transmit Power (dBm)		Receive Power (dBm)		Transmit and Receive Wavelength (nm)
		Maximum	Minimum	Maximum	Minimum	
Cisco X2-10GB-LR	10GBASE-LR 1310 nm SMF	0.5	-8.2	0.5	-14.4	1260 to 1355

### Dimensions

Dimensions (D x W x H): 91mm x 36mm x 13.46mm

### Environmental Conditions and Power Requirements

The operating temperature range is between 0 and 40°C (32 to 104°F); storage temperature range is -40 to 75°C (-40 to 167°F).

The maximum power consumption per Cisco X2 module is 4W.

### Warranty

- Standard warranty: 90 days
- Extended warranty (optional): Cisco X2 modules can be covered in a Cisco SMARTnet® support contract for the Cisco switch or router chassis

### Ordering Information

Table 3 provides the Ordering Information for Cisco X2 module and related cables.

**Table 3.** Ordering Cisco X2 and Respective Cables

Description	Product Number
<b>X2 Modules</b>	
Cisco 10GBASE-LR X2 Module for SMF	X2-10GB-LR

### Regulatory and Standards Compliance

#### Safety

- Laser Class 1 21CFR-1040 LN#50 7/2001
- Laser Class 1 IEC60825-1

## Additional Information

For more information about Cisco 10GBASE-X2 modules, contact:

- United States and Canada: 800 553-6387
- Europe: 32 2 778 4242
- Australia: 61 2 9935 4107
- Other: 408 526-7209
- <http://www.cisco.com>



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