

## Cisco 100BASE-X SFP for Fast Ethernet SFP Ports

### Product Overview

The Cisco® 100BASE-X Small Form-factor Pluggable (SFP) is a hot-swappable input/output device that plugs into a Fast Ethernet port or slot, linking the port with the network.

Main features include the following:

- Hot-swappable when deployed, the switch or router does not have to reboot.
- Supports the “pay-as-you-populate” model.
- Interchangeable with other 100BASE-X SFPs on the same line card.
- Supports the Cisco quality ID feature that enables the switch or router to identify whether or not the SFP is a Cisco qualified SFP.
- Optically interoperable with respective 100BASE-X Ethernet interfaces on the same link.

**Figure 1.** Cisco 100M Ethernet SFP



### Cisco 100BASE-FX SFP

The Cisco 100BASE-FX SFP (part numbers GLC-FE-100FX and GLC-FE-100FX-RGD) operates on ordinary multimode fiber-optic (MMF) link spans up to 2 kilometers long.

### Cisco 100BASE-LX10 SFP

The Cisco 100BASE-LX10 SFP (part numbers GLC-FE-100LX and GLC-FE-100LX-RGD) operates on ordinary single-mode fiber-optic (SMF) link spans up to 10 kilometers long.

### Cisco 100BASE-BX10 SFP

The Cisco 100BASE-BX10 (part numbers GLC-FE-100BX-D and GLC-FE-100BX-U) SFPs operate on ordinary SMF single-strand link spans up to 10 kilometers long.

### Cisco 100BASE-EX SFP

The Cisco 100BASE-EX SFP (part number GLC-FE-100EX) operates on ordinary single-mode fiber-optic (SMF) link spans up to 40 kilometers long.

### Cisco 100BASE-ZX SFP

The Cisco 100BASE-ZX SFP (part number GLC-FE-100ZX) operates on ordinary single-mode fiber-optic (SMF) link spans up to 80 kilometers long.

## Technical Specifications

### Platform Support

The Cisco SFPs are supported across a variety of Cisco Systems® switches, routers, and optical transport devices. For more details, refer to the document *Cisco 100M Ethernet SFP Compatibility Matrix*.

### Connectors and Cabling

**Connectors:** Dual LC connector (GLC-FE-100FX, GLC-FE-100FX-RGD, GLC-FE-100LX, GLC-FE-100LX-RGD, GLC-FE-100EX and GLC-FE-100ZX) or single LC connector (GLC-FE-100BX-D and GLC-FE-100BX-U)

Table 1 provides cabling specifications for the SFPs for installation in a Fast Ethernet SFP port. Note that all SFP ports have LC-type connectors, and the minimum cable distance for all SFPs listed (MMF and SMF [G.652] is 2 meters [6.5 feet]).

**Table 1.** SFP Port Cabling Specifications

| SFP                            | Wavelength (nm) | Fiber Type | Cable Distance     |
|--------------------------------|-----------------|------------|--------------------|
| GLC-FE-100FX, GLC-FE-100FX-RGD | 1310            | MMF        | 2 km (6562 ft)     |
| GLC-FE-100LX, GLC-FE-100LX-RGD | 1310            | SMF        | 10 km (32,810 ft)  |
| GLC-FE-100BX-U                 | 1310            | SMF        | 10 km (32,810 ft)  |
| GLC-FE-100BX-D                 | 1550            | SMF        | 10 km (32,810 ft)  |
| GLC-FE-100EX                   | 1310            | SMF        | 40 km (131,240 ft) |
| GLC-FE-100ZX                   | 1550            | SMF        | 80 km (262,480 ft) |

### Standards

- Compatible with IEEE 802.3ah Draft 3.0
- Compatible with standard as specified in IEEE 802.3

Table 2 gives information about fiber loss.

**Table 2.** Fiber-Loss Budgets

| SFP                            | Type           | Transmit (dBm) |         | Receive (dBm) |         |
|--------------------------------|----------------|----------------|---------|---------------|---------|
|                                |                | Maximum        | Minimum | Maximum       | Minimum |
| GLC-FE-100FX, GLC-FE-100FX-RGD | 100BASE-FX     | -14            | -20     | -14           | -31     |
| GLC-FE-100LX, GLC-FE-100LX-RGD | 100BASE-LX10   | -8             | -15     | -8            | -28     |
| GLC-FE-100BX-U                 | 100BASE-BX10-U | -8             | -14     | -3            | -28.2   |
| GLC-FE-100BX-D                 | 100BASE-BX10-D | -8             | -14     | -3            | -28.2   |
| GLC-FE-100EX                   | 100BASE-EX     | 0              | -5      | -8            | -28     |
| GLC-FE-100ZX                   | 100BASE-ZX     | 2              | -3      | -8            | -30     |

## Dimensions

**Dimensions (H x W x D):** 8.5 x 13.4 x 56.5 mm

## Environmental Conditions and Power Requirements

- **Operating temperature range:**
  - **Commercial temperature range (COM):** 0 to 70°C (32 to 158°F), applicable to GLC-FE-100FX, GLC-FE-100LX, GLC-FE-100BX-D, GLC-FE-100BX-U, GLC-FE-100EX and GLC-FE-100ZX
  - **Industrial temperature range (IND):** -40 to 85°C (-40 to 185°F), applicable to GLC-FE-100FX-RGD and GLC-FE-100LX-RGD
- **Storage temperature range:** -40 to 85°C (-40 to 185°F)

**Table 3.** Electrical Power Interface

| Parameter      | Symbol             | Minimum | Typical | Maximum | Units |
|----------------|--------------------|---------|---------|---------|-------|
| Supply Current | I <sub>s</sub>     | –       | 200     | 300     | mA    |
| Surge Current  | I <sub>Surge</sub> | –       | –       | 30      | mA    |
| Input Voltage  | V <sub>cc</sub>    | 3.1     | 3.3     | 3.5     | V     |

## Warranty

- **Standard warranty:** 90 days
- **Extended warranty (option):** Available under a Cisco SMARTnet™ support contract for the Cisco switch or router chassis

## Ordering Information

Table 4 gives ordering information for the Cisco SFP.

**Table 4.** Ordering Cisco SFP

| Product Number   | SFP   |
|------------------|---|
| GLC-FE-100FX     | 100BASE-FX SFP for Fast Ethernet SFP ports          |
| GLC-FE-100FX-RGD | 100BASE-FX Rugged SFP for Fast Ethernet SFP ports   |
| GLC-FE-100LX     | 100BASE-LX10 SFP for Fast Ethernet SFP ports        |
| GLC-FE-100LX-RGD | 100BASE-LX10 Rugged SFP for Fast Ethernet SFP ports |
| GLC-FE-100BX-U   | 100BASE-BX10-U SFP for Fast Ethernet SFP ports      |
| GLC-FE-100BX-D   | 100BASE-BX10-D SFP for Fast Ethernet SFP ports      |
| GLC-FE-100EX     | 100BASE-EX for Fast Ethernet SFP Ports              |
| GLC-FE-100ZX     | 100BASE-ZX for Fast Ethernet SFP Ports              |

## Regulatory and Standards Compliance

### Safety

- Laser Class 1 21CFR1040

## Additional Information

For more information about Cisco 100BASE-X SFPs for Fast Ethernet SFP ports, 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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