

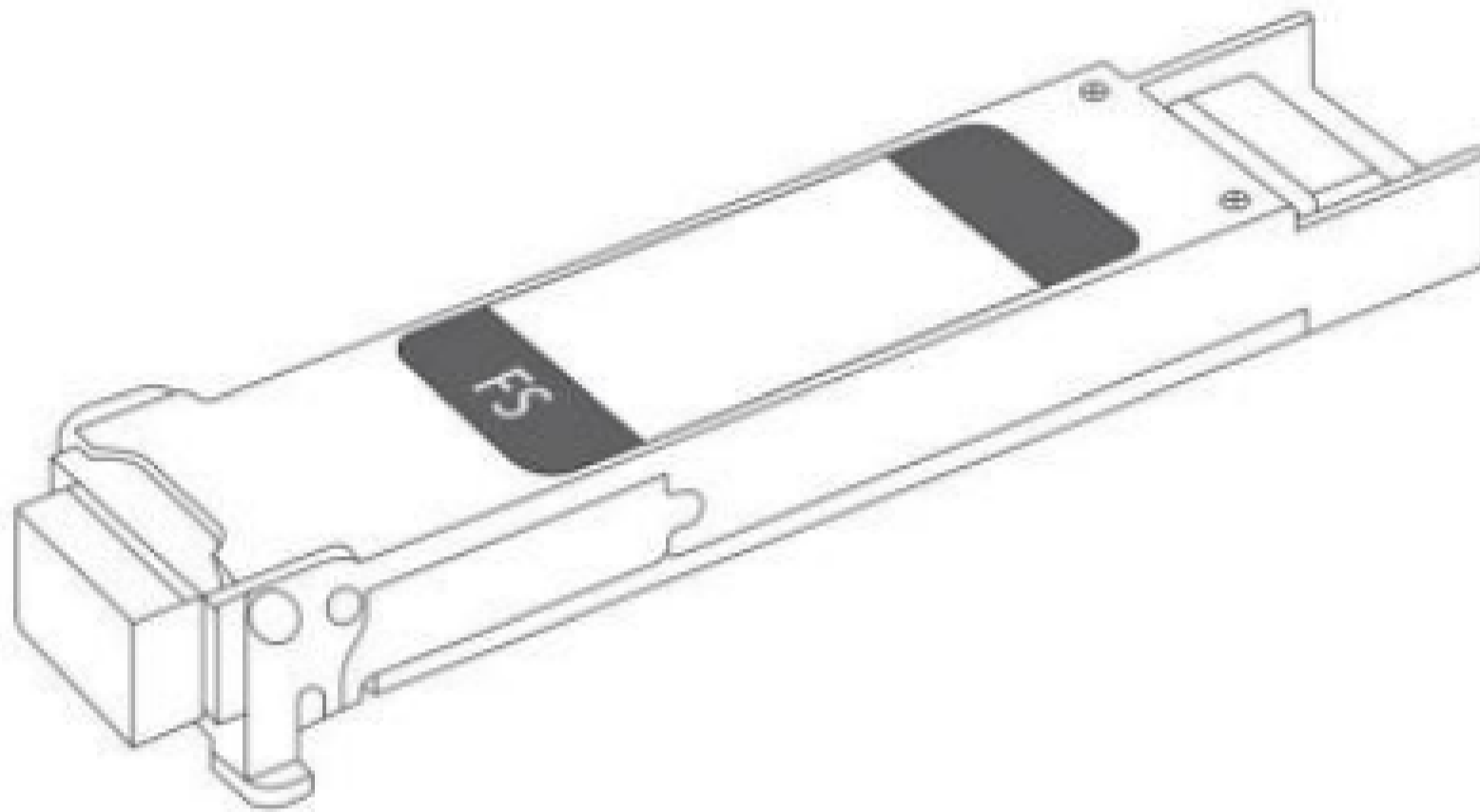


# 10G XFP&X2&XENPAK Transceiver Modules Data Sheet

## Product overview

The FS XFP/X2/XENPAK Module (Figure 1) offers customers a variety of 10 Gigabit Ethernet and Packet-over-SONET/SDH (POS) connectivity options for data center, enterprise wiring closet, and service provider transport

applications. (See Figure 1).



• XFP-10GLR-31 • XFP-10GSR-85 • X2-10GSR-85 • XPK-10GSR-85

Figure 1.

XFP-10G Optical modules

## Features and benefits

- Hot-swappable input/output device plugs into a XFP/X2/XENPAK port
- Interoperable with respective 10GBASE XENPAK and X2, and SFP+ modules on the same link
- Certified and tested on Cisco, Arista, Juniper, Brocade 10G XFP/X2/XENPAK ports for superior performance, quality, and reliability. For more details, refer to the [FS Assured Program for Transceivers](#)
- High-speed electrical interface compliant to IEEE 802.3bm

Table 1 describes the 10G XFP/X2/XENPAK portfolio.

Table 1. XFP/X2/XENPAK 10G portfolio

Product	Description	Connector type
XFP-10GLR-31	10GBASE LR XFP Transceiver, LC, 10km over SMF	LC
XFP-10GSR-85	10GBASE SR XFP Transceiver, LC, 300m over SMF	LC
X2-10GSR-85	10GBASE SR X2 Transceiver, SC, 300m over MMF	SC
X2-10GLR-31	10GBASE LR X2 Transceiver, SC, 10km over SMF	SC
XPK-10GSR-85	10GBASE SR XENPAK Transceiver, SC, 300m over MMF	SC
XPK-10GLR-31	10GBASE LR XENPAK Transceiver, SC, 10km over SMF	SC

XFP-10GER-55	10GBASE OC192IR XFP Transceiver, LC, 40km over SMF	LC
XFP-10G-BX40D	10GBASE BX40D XFP Transceiver, LC, 40km over SMF	LC
XFP-10G-BX40U	10GBASE BX40U XFP Transceiver, LC, 40km over SMF	LC
XFP-10GZR-55	10GBASE OC192LR XFP Transceiver, LC, 80km over SMF	LC
XFP-10G-SM-LRM	10GBASE LRM XFP Transceiver, LC, 2km over SMF	LC
XFP-10G-BX20D	10GBASE BX20D XFP Transceiver, LC, 20km over SMF	LC
XFP-10G-BX20U	10GBASE BX20U XFP Transceiver, LC, 20km over SMF	LC
XFP-10G-BXD	10GBASE BXD XFP Transceiver, LC, 10km over SMF	LC
XFP-10G-BXU	10GBASE BXU XFP Transceiver, LC, 10km over SMF	LC
X2-10GER-55	10GBASE ER X2 Transceiver, SC, 40km over SMF	SC
DWDM-XFP10G-80	10GBASE DWDM C30 XFP Transceiver, LC, 80km over SMF	LC
DWDM-XFP10G-40	10GBASE DWDM C37 XFP Transceiver, LC, 40km over SMF	LC
CWDM-XFP10G-20S	10GBASE CWDM 20S XFP Transceiver, LC, 20km over SMF	LC
X2-10GSR-31	10GBASE LRM X2 Transceiver, SC, 220m over MMF	SC
CWDM-XFP10G-40M	10GBASE CWDM XFP Transceiver, LC, 40km over SMF	LC
X2-10GZR-55	10GBASE ZR X2 Transceiver, SC, 80km over SMF	SC
XFP-10G-MM-LRM	10GBASE LRM XFP Transceiver, LC, 220m over MMF	LC
XFP-10G-BX80U	10GBASE BX80U XFP Transceiver, LC, 80km over SMF	LC
XFP-10G-BX80D	10GBASE BX80D XFP Transceiver, LC, 80km over SMF	LC
XFP-10GZR100-55	10GBASE ZRC XFP Transceiver, LC, 100km over SMF	LC
CWDM-XFP10G-80L	10GBASE CWDM 80L XFP Transceiver, LC, 80km over SMF	LC
XPK-10GER-55	10GBASE ER XENPAK Transceiver, SC, 40km over SMF	SC
XFP-10G-BX60D	10GBASE BX60D XFP Transceiver, LC, 60km over SMF	LC
XPK-10GZR-55	10GBASE ZR XENPAK Transceiver, SC, 80km over SMF	SC
XFP-10G-BX60U	10GBASE BX60U XFP Transceiver, LC, 60km over SMF	LC

### XFP-10GLR-31

The XFP-10GLR-31 Module Small Form Factor 10Gb/s (XFP) transceivers are compliant with the current XFP Multi-Source Agreement (MSA) Specification. They comply with 10-Gigabit Ethernet 10GBASE-LR/LW per IEEE 802.3ae and 10G Fibre Channel 1200-SM-LL-L. Digital diagnostics functions are available via a 2-wire serial interface, as specified in the XFP MSA.

### XFP-10GSR-85

The XFP-10GSR-85 Module Small Form Factor 10Gb/s (XFP) transceivers are compliant with the current XFP Multi-Source Agreement (MSA) Specification. The high performance uncooled 850nm Vcsel transmitter and high sensitivity PIN receiver provide superior performance for 10G Fibre Channel and Ethernet applications up to 300m optical links.

### X2-10GSR-85

The X2 SR Module is a highly integrated, Serial optical transponder module for high-speed, 10Gbit/s data transmission applications. 4×3.125Gbps Ethernet Signal Input by XAUI Interface. An integrated Coder / Decoder and multiplexer / demultiplexer (SERDES: Serializer /

Deserializers). Designing for 300m Transmission with a vertical cavity surface emitting laser (VCSEL). Digital diagnostics functions are available via a 2-wire serial interface, as specified in the XENPAK MSA 3.0.

### **X2-10GLR-31**

The X2 LR Module is a highly integrated, Serial optical transponder module for high-speed, 10Gbit/s data transmission applications. 4×3.125Gbps Ethernet Signal Input by XAUI Interface. An integrated Coder / Decoder and multiplexer / demultiplexer (SERDES:Serializer / Deserializer). Designing for 300m Transmission with a vertical cavity surface emitting laser (VCSEL). Digital diagnostics functions are available via a 2-wire serial interface, as specified in the XENPAK MSA 3.0.

### **XPK-10GSR-85**

The XPK-10GSR-85 Module Supports a link length of 26m on standard FDDI grade MMF. Up to 300m link lengths are possible when using 2000 MHz/km MMF (OM3). Up to 400m link lengths are possible when using 4700 MHz/km MMF (OM4).

### **XPK-10GLR-31**

The XPK-10GLR-31 Module offer customers a wide variety of 10 Gigabit Ethernet connectivity options for data center, enterprise wiring closet, and service provider transport applications.

### **XFP-10GER-55**

The XFP-10GER-55 Module is compliant with the current XFP Multi-Source Agreement (MSA) Specification. The high performance cooled 1550nm EML transmitter and high sensitivity PIN receiver provide superior performance for SONET/SDH and Ethernet applications up to 40km optical links.

### **XFP-10G-BX40**

The XFP-10G-BX40 Module is compliant with the current XFP Multi-Source Agreement (MSA) Specification.

They comply with 10-Gigabit Ethernet 10GBASE-ER/EW per IEEE 802.3ae, SONET OC-192 /SDH STM-64 and 10G Fibre Channel 1200-SM-LL-L. Digital diagnostics functions are available via a 2-wire serial interface, as specified in the XFP MSA.

### **XFP-10GZR-55**

The XFP-10GZR-55 Module supports up to 80km link lengths over SMF via an LC duplex connector. The transceiver is compliant with CPRI, eCPRI. Digital diagnostics functions are available via a 2-wire serial interface, as specified in the XFPMSA. With these features, this 10G SFP+ transceiver is ideal for data centers, 10G fibre channel, legacy FDDI multi mode links, etc.

### **XFP-10G-SM-LRM**

The XFP-10G-SM-LRM Module is compliant with the current XFP Multi-Source Agreement (MSA) Specification. They comply with 10-Gigabit Ethernet 10GBASE-LR /LW per IEEE 802.3ae and 10G Fibre Channel 1200-SM-LL-L. Digital diagnostics functions are available via a 2-wire serial interface, as specified in the XFP MSA.

### **XFP-10G-BX**

The XFP-10G-BX Module is compliant with the current XFP Multi-Source Agreement (MSA) Specification.

They comply with 10-Gigabit Ethernet 10GBASE-LR/LW per IEEE 802.3ae, SONET OC-192 /SDH STM-64 and 10G Fibre Channel 1200-SM-LL-L. Digital diagnostics functions are available via a 2-wire serial interface, as specified in the XFP MSA.

### **DWDM-XFP10G-80**

The DWDM-XFP10G-80 Module is compliant with the current XFP Multi-Source Agreement (MSA) Specification. The high performance cooled DWDM EML transmitter and high sensitivity APD receiver provide superior performance for SONET/SDH and Ethernet applications up to 80km optical links.

### **DWDM-XFP10G-40**

The DWDM-XFP10G-40 Module is compliant with the current XFP Multi-Source Agreement (MSA) Specification. The high performance cooled

DWDM EML transmitter and high sensitivity APD receiver provide superior performance for SONET/SDH and Ethernet applications up to 40km optical links.

### **CWDM-XFP10G-20S**

The CWDM-XFP10G-20S Module is compliant with the current XFP Multi-Source Agreement (MSA) Specification. The high performance cooled DWDM EML transmitter and high sensitivity APD receiver provide superior performance for SONET/SDH and Ethernet applications up to 20km optical links.

### **X2-10GSR-31**

The X2-10GSR-31 Module is a highly integrated Serial optical transponder module for high-speed, 10Gbit/s data transmission applications. 4×3.125Gbps Ethernet Signal Input by XAUI Interface. An integrated Coder /Decoder and multiplexer / demultiplexer (SERDES: Serializer / Deserializer). Designing for 300m Transmission with a vertical cavity surface emitting laser (VCSEL). Digital diagnostics functions are available via a 2-wire serial interface, as specified in the XENPAK MSA 3.0.

### **CWDM-XFP10G-40M**

The CWDM-XFP10G-40M Small Form Factor 10Gb/s (XFP) Module is compliant with the current XFP Multi-Source Agreement (MSA) Specification. The high performance cooled CWDM DFB transmitter and high sensitivity PIN receiver provide superior performance for SONET/SDH and Ethernet applications up to 40km optical links.

### **X2-10GZR-55**

The X2-10GZR-55 Module offer customers a wide variety of 10 Gigabit Ethernet connectivity options for data center, enterprise wiring closet, and service provider transport applications.

### **X2-10GER-55**

The X2-10GER-55 Module offer customers a wide variety of 10 Gigabit Ethernet connectivity options for data center, enterprise wiring closet, and service provider transport applications.

### **XFP-10G-MM-LRM**

The XFP-10G-MM-LRM Module supports up to 220m link lengths over OM3 MMF via an LC duplex connector. The transceiver is compliant with CPRI, eCPRI. Digital diagnostics functions are available via a 2-wire serial interface, as specified in the XFP MSA. With these features, this 10G SFP+ transceiver is ideal for data centers, 10G fibre channel, legacy FDDI multi mode links, etc.

### **XFP-10G-BX80**

The XFP-10G-BX80 Module is compliant with the current XFP Multi-Source Agreement (MSA) Specification.

They comply with 10-Gigabit Ethernet 10GBASE-ZR/ZW per IEEE 802.3ae, SONET OC-192 /SDH STM-64 and 10G Fibre Channel 1200-SM-LL-L. Digital diagnostics functions are available via a 2-wire serial interface, as specified in the XFP MSA.

### **XFP-10GZR100-55**

The XFP-10GZR100-55 Module is compliant with the current XFP Multi-Source Agreement (MSA) Specification. The high performance cooled EML transmitter and high sensitivity APD receiver provide superior performance for SONET/SDH and Ethernet applications up to 100km optical links.

### **CWDM-XFP10G-80L**

The CWDM-XFP10G-80L Module is compliant with the current XFP Multi-Source Agreement (MSA) Specification. The high performance cooled CWDM EML transmitter and high sensitivity APD receiver provide superior performance for SONET/SDH and Ethernet applications up to 80km optical links.

### **XPK-10GER-55**

The XPK-10GER-55 Module offer customers a wide variety of 10 Gigabit Ethernet connectivity options for data center, enterprise wiring closet, and service provider transport applications.

**XFP-10G-BX60**

The XFP-10G-BX60 Module is compliant with the current XFP Multi-Source Agreement (MSA) Specification.

They comply with 10-Gigabit Ethernet 10GBASE-ER/EW per IEEE 802.3ae, SONET OC-192 /SDH STM-64 and 10G Fibre Channel 1200-SM-LL-L. Digital diagnostics functions are available via a 2-wire serial interface, as specified in the XFP MSA.

**XPK-10GZR-55**

The XPK-10GZR-55 Module offer customers a wide variety of 10 Gigabit Ethernet connectivity options for data center, enterprise wiring closet, and service provider transport applications.

**XFP-10G-BX60**

The XFP-10G-BX60 Module is compliant with the current XFP Multi-Source Agreement (MSA) Specification.

They comply with 10-Gigabit Ethernet 10GBASE-ER/EW per IEEE 802.3ae, SONET OC-192 /SDH STM-64 and 10G Fibre Channel 1200-SM-LL-L. Digital diagnostics functions are available via a 2-wire serial interface, as specified in the XFP MSA.

**Product Specifications**

Table 2 shows the key electrical characteristics for the 10G XFP/X2/XENPAK modules.

**Table 2. Electrical specifications**

Product	Description	Nominal datarate (Gbs)	Digital Optical Monitoring Support	Link meter
XFP-10GLR-31	10GBASE LR XFP Transceiver, LC, 10km over SMF	10Gbps	Yes	10km
XFP-10GSR-85	10GBASE SR XFP Transceiver, LC, 300m over SMF	10Gbps	Yes	300m
X2-10GSR-85	10GBASE SR X2 Transceiver, SC, 300m over MMF	10Gbps	Yes	300m
X2-10GLR-31	10GBASE LR X2 Transceiver, SC, 10km over SMF	10Gbps	Yes	10km
XPK-10GSR-85	10GBASE SR XENPAK Transceiver, SC, 300m over MMF	10Gbps	Yes	300m
XPK-10GLR-31	10GBASE LR XENPAK Transceiver, SC, 10km over SMF	10Gbps	Yes	10km
XFP-10GER-55	10GBASE OC192IR XFP Transceiver, LC, 40km over SMF	10Gbps	Yes	40km
XFP-10G-BX40D	10GBASE BX40D XFP Transceiver, LC, 40km over SMF	10Gbps	Yes	40km
XFP-10G-BX40U	10GBASE BX40U XFP Transceiver, LC, 40km over SMF	10Gbps	Yes	40km
XFP-10GZR-55	10GBASE OC192LR XFP Transceiver, LC, 80km over SMF	10Gbps	Yes	80km
XFP-10G-SM-LRM	10GBASE LRM XFP Transceiver, LC, 2km over SMF	10Gbps	Yes	2km
XFP-10G-BXD	10GBASE BX20D XFP Transceiver, LC, 20km over SMF	10Gbps	Yes	20km

XFP-10G-BXU	10GBASE BX20U XFP Transceiver, LC, 20km over SMF	10Gbps	Yes	20km
XFP-10G-BXD	10GBASE BXD XFP Transceiver, LC, 10km over SMF	10Gbps	Yes	10km
XFP-10G-BXU	10GBASE BXU XFP Transceiver, LC, 10km over SMF	10Gbps	Yes	10km

Table 3. Optical specifications

Product	Description	Transmit Power (dBm) per lane		Receive Power (dBm) per lane		Transmit and Receive Wavelength (nm)
		Minimum	Maximum	Minimum	Maximum	
XFP-10GLR-31	10GBASE LR XFP Transceiver, LC, 10km over SMF	-6	0	-12.6	0	1310nm
XFP-10GSR-85	10GBASE SR XFP Transceiver, LC, 300m over SMF	-3.5	5.3	-11.1	0	850nm
X2-10GSR-85	10GBASE SR X2 Transceiver, SC, 300m over MMF	-7.3	1.2	-11.1	0.5	850nm
X2-10GLR-31	10GBASE LR X2 Transceiver, SC, 10km over SMF	-8.2	0.5	-14.4	0.5	1310nm
XPK-10GSR-85	10GBASE SR XENPAK Transceiver, SC, 300m over MMF	-7.3	-1	-	-10	850nm
XPK-10GLR-31	10GBASE LR XENPAK Transceiver, SC, 10km over SMF	-8.2	0.5	-	-15	1310nm
XFP-10GER-55	10GBASE OC192IR XFP Transceiver, LC, 40km over SMF	0	4	-16	-3	1550nm
XFP-10G-BX40D	10GBASE BX40D XFP Transceiver, LC, 40km over SMF	1	5	-15	0	1330nm-TX/1270nm- RX
XFP-10G-BX40U	10GBASE BX40U XFP Transceiver, LC, 40km over SMF	1	5	-15	0	1270nm-TX/1330nm- RX
XFP-10GZR-55	10GBASE OC192LR XFP Transceiver, LC, 80km over SMF	0	4	-24	-8	1550nm
XFP-10G-SM-LRM	10GBASE LRM XFP Transceiver, LC, 2km over SMF	-6.5	0.5	-12.6	0	1310nm
XFP-10G-BX20D	10GBASE BX20D XFP Transceiver, LC, 20km over SMF	1	5	-14	0	1330nm-TX/1270nm- RX
XFP-10G-BX20U	10GBASE BX20U XFP Transceiver, LC, 20km over SMF	-2	3	-14	0	1270nm-TX/1330nm- RX
XFP-10G-BXD	10GBASE BXD XFP Transceiver, LC, 10km over SMF	-5	0	-14	0	1330nm-TX/1270nm- RX

XFP-10G-BXU	10GBASE BXU XFP Transceiver, LC, 10km over SMF	-5	0	-14	0	1270nm- TX/1330nm- RX
X2-10GER-55	10GBASE ER X2 Transceiver, SC, 40km over SMF	-4.7	4	-	-15.8	1550nm
DWDM-XFP10G-80	10GBASE DWDM C30 XFP Transceiver, LC, 80km over SMF	-1	4	-24	-7	1553.33nm
DWDM-XFP10G-40	10GBASE DWDM C37 XFP Transceiver, LC, 40km over SMF	-1	4	-	-15	1547.72nm
CWDM-XFP10G-20S	10GBASE CWDM 20S XFP Transceiver, LC, 20km over SMF	-5	0	-	-15	1370nm
X2-10GSR-31	10GBASE LRM X2 Transceiver, SC, 220m over MMF	-6.5	0.5	-	-14.4	1310nm
CWDM-XFP10G-40M	10GBASE CWDM XFP Transceiver, LC, 40km over SMF	-0.9	4	-15	-1	1430nm
X2-10GZR-55	10GBASE ZR X2 Transceiver, SC, 80km over SMF	0	4	-	-24	1550nm
XFP-10G-MM-LRM	10GBASE LRM XFP Transceiver, LC, 220m over MMF	-6.5	0.5	-11.1	0	1310nm
XFP-10G-BX80U	10GBASE BX80U XFP Transceiver, LC, 80km over SMF	1	5	-22	-7	1270nm- TX/1330nm- RX
XFP-10G-BX80D	10GBASE BX80D XFP Transceiver, LC, 80km over SMF	1	5	-22	-7	1330nm- TX/1270nm- RX
XFP-10GZR100-55	10GBASE ZRC XFP Transceiver, LC, 100km over SMF	0	5	-24.5	-7	1550nm
CWDM-XFP10G-80L	10GBASE CWDM 80L XFP Transceiver, LC, 80km over SMF	0	4	-23	-7	1470nm
XPK-10GER-55	10GBASE ER XENPAK Transceiver, SC, 40km over SMF	-3	2	-	-16	1550nm
XFP-10G-BX60D	10GBASE BX60D XFP Transceiver, LC, 60km over SMF	1	5	-20	-7	1330nm- TX/1270nm- RX
XPK-10GZR-55	10GBASE ZR XENPAK Transceiver, SC, 80km over SMF	0	4	-	-23	1550nm
XFP-10G-BX60U	10GBASE BX60U XFP Transceiver, LC, 60km over SMF	1	5	-20	-7	1270nm- TX/1330nm- RX

Table 4 shows the mechanical characteristics for the 10G XFP/X2/XENPAK modules.

**Table 4. Mechanical specifications**

Parameter	Product	Weight
Module dimension with pull tab	XFP-10GLR-31	(HxWxD)13x22.15x77.7mm
	X2-10GSR-85	(HxWxD)19.4x42x91.1mm
	XPK-10GSR-85	(HxWxD)22.4x51.3x121mm
Module weight (Max)	Optical modules	128g
10G XFP/X2/XENPAK module operation temperature	0 to 70 C	
Storage temperature	-40 to 85 C	

## Warranty

- Standard warranty: 5 years
- For more information for FS Returns & Refunds policy, visit <https://www.fs.com/policies/warranty.html> or [https://www.fs.com/policies/day\\_return\\_policy.html](https://www.fs.com/policies/day_return_policy.html)

## Ordering information

Table 5 provides the ordering information for 10G XFP/X2/XENPAK modules and related cables.

**Table 5. Ordering information**

Part number	Description
10G XFP/X2/XENPAK optics modules	
<a href="#">XFP-10G-BX40U</a>	10GBASE BX40U XFP Transceiver, LC, 40km over SMF
<a href="#">XFP-10GZR-55</a>	10GBASE OC192LR XFP Transceiver, LC, 80km over SMF
<a href="#">XFP-10G-SM-LRM</a>	10GBASE LRM XFP Transceiver, LC, 2km over SMF
<a href="#">XFP-10G-BX20D</a>	10GBASE BX20D XFP Transceiver, LC, 20km over SMF
<a href="#">XFP-10G-BX20U</a>	10GBASE BX20U XFP Transceiver, LC, 20km over SMF
<a href="#">XFP-10G-BXD</a>	10GBASE BXD XFP Transceiver, LC, 10km over SMF
<a href="#">XFP-10G-BXU</a>	10GBASE BXU XFP Transceiver, LC, 10km over SMF
<a href="#">X2-10GER-55</a>	10GBASE ER X2 Transceiver, SC, 40km over SMF
<a href="#">DWDM-XFP10G-80</a>	10GBASE DWDM C30 XFP Transceiver, LC, 80km over SMF
<a href="#">DWDM-XFP10G-40</a>	10GBASE DWDM C37 XFP Transceiver, LC, 40km over SMF
<a href="#">CWDM-XFP10G-20S</a>	10GBASE CWDM 20S XFP Transceiver, LC, 20km over SMF

<a href="#">X2-10GSR-31</a>	10GBASE LRM X2 Transceiver, SC, 220m over MMF
<a href="#">CWDM-XFP10G-40M</a>	10GBASE CWDM XFP Transceiver, LC, 40km over SMF
<a href="#">X2-10GZR-55</a>	10GBASE ZR X2 Transceiver, SC, 80km over SMF
<a href="#">XFP-10G-MM-LRM</a>	10GBASE LRM XFP Transceiver, LC, 220m over MMF
<a href="#">XFP-10G-BX80U</a>	10GBASE BX80U XFP Transceiver, LC, 80km over SMF
<a href="#">XFP-10G-BX80D</a>	10GBASE BX80D XFP Transceiver, LC, 80km over SMF
<a href="#">XFP-10GZR100-55</a>	10GBASE ZRC XFP Transceiver, LC, 100km over SMF
<a href="#">CWDM-XFP10G-80L</a>	10GBASE CWDM 80L XFP Transceiver, LC, 80km over SMF
<a href="#">XPK-10GER-55</a>	10GBASE ER XENPAK Transceiver, SC, 40km over SMF
<a href="#">XFP-10G-BX60</a>	10GBASE BX60D XFP Transceiver, LC, 60km over SMF
<a href="#">XPK-10GZR-55</a>	10GBASE ZR XENPAK Transceiver, SC, 80km over SMF
<a href="#">XFP-10G-BX60</a>	10GBASE BX60U XFP Transceiver, LC, 60km over SMF

## Regulatory and standards compliance

### Standards

- SFF-8665: XFP/X2/XENPAK 10Gb/s 4X Pluggable Transceiver Solution (XFP/X2/XENPAK)
- SFF-8636: Common Management Interface
- 802.3™-2012 IEEE Standard for Ethernet
- IEEE 802.3ba Amendment of IEEE Std 802.3
- IEEE 802.3bm Amendment of IEEE Std 802.3
- GR-20-CORE: Generic Requirements for Optical Fiber and Optical Fiber Cable
- GR-326-CORE: Generic Requirements for Single-Mode Optical Connectors and Jumper Assemblies
- GR-468-CORE: Generic Requirements for Optoelectronic Devices Used in Telecommunications Equipment
- GR-1435-CORE: Generic Requirements for Multifiber Optical Connectors
- RoHS 6

### Safety

- Modules are compliant with Laser Class 1 as defined in IEC 60825-1, IEC 60825-2 and Comply with 21 CFR 1040.10 and 1040.11

### Table 6. Laser class for the XFP/X2/XENPAK-10G optical modules

Product	Laser class
XFP-10GLR-31	1
XFP-10GSR-85	1
X2-10GSR-85	1
X2-10GLR-31	1
XPK-10GSR-85	1
XPK-10GLR-31	1
XFP-10GER-55	1
XFP-10G-BX40D	1
XFP-10G-BX40U	1
XFP-10GZR-55	1
XFP-10G-SM-LRM	1
XFP-10G-BX20D	1
XFP-10G-BX20U	1
XFP-10G-BXD	1
XFP-10G-BXU	1
X2-10GER-55	1
DWDM-XFP10G-80	1
DWDM-XFP10G-40	1
CWDM-XFP10G-20S	1
X2-10GSR-31	1
CWDM-XFP10G-40M	1
X2-10GZR-55	1
XFP-10G-MM-LRM	1
XFP-10G-BX80U	1
XFP-10G-BX80D	1
XFP-10GZR100-55	1
CWDM-XFP10G-80L	1
XPK-10GER-55	1
XFP-10G-BX60	1
XPK-10GZR-55	1
XFP-10G-BX60	1

## Additional information

For more information about 10G XFP/X2/XENPAK Transceiver modules, contact your account manager or visit <https://www.fs.com/c/10g-xfp-x2-xenpak-114>

## Document history

New or revised topic	Described in	Date
<b>10G XFP/X2/XENPAK Transceiver Modules Data Sheet</b>	Updated all	10/17/2022



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