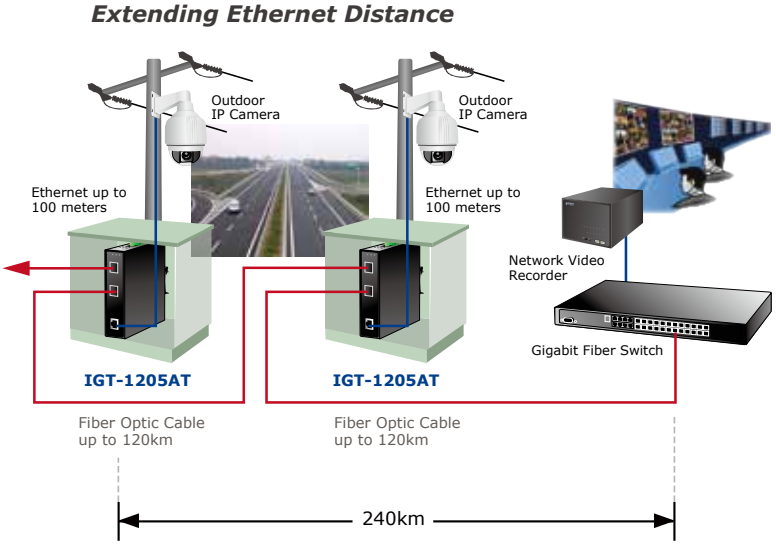
# Industrial 10/100/1000T to 2 100/1000X SFP Media Converter

*Flexible, Reliable and Industrial-grade Network Distance Extension Solution*

PLANET IGT-1205AT is an Industrial Gigabit Media Converter providing non-blocking wire-speed performance and great flexibility for Gigabit Ethernet extension in harsh industrial environment. It is equipped with one 10/100/1000Base-T RJ-45 copper and two 100/1000Base-X SFP fiber optic interfaces delivered in an IP30 rugged strong case with redundant power system. The IGT-1205AT is well suited for applications in deploying surveillance system, and securing control and wireless service in climatically demanding environments with wide temperature range from -40 to 75 degrees C.

*Fiber-Optical Link Capability Enables Extension of Network Deployment*

The two SFP slots are compatible with 100Base-FX or 1000Base-SX / LX / WDM through SFP (Small Form Factor Pluggable) fiber-optic transceivers. The fiber optical uplink capability guarantees the throughput to all nodes hooked into the network and the Gigabit Ethernet distance can be extended from 550 meters (Multi-Mode fiber cable) up to 10/20/30/40/50/70/120 kilometers (Single-Mode fiber cable), also the Fast Ethernet distance can be extended from 2km (Multi-Mode fiber cable) up to 20/40/60 kilometers (Single-Mode fiber cable). They are well suited for applications within the factory data centers and distributions.




## Physical Port

- 1-port 10/100/1000Base-T RJ-45 with auto MDI / MDI-X function
- 2-port SFP slot interface, SFP supports 1000Base-X and 100Base-FX transceiver via DIP switch configured

## Fiber Port Redundancy

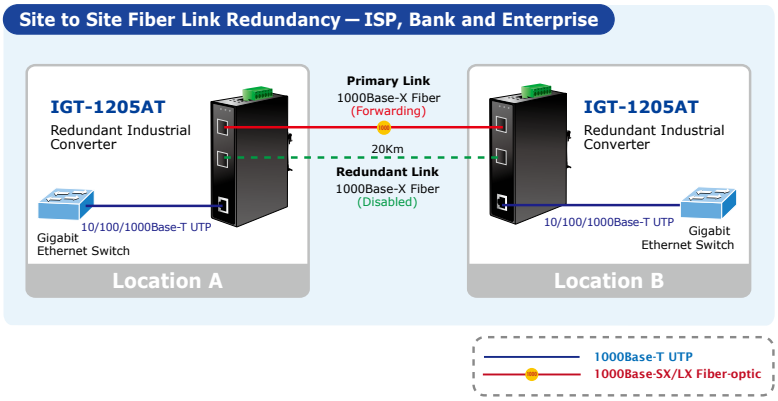
- Supports Auto-negotiation and 10/100Mbps half / full duplex and 1000Mbps full duplex mode
- High performance Store and Forward architecture, runt/ CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Prevents packet loss with back pressure (Half-Duplex) and IEEE 802.3x PAUSE frame flow control (Full-Duplex)
- 9K Jumbo Frame Size support
- Integrated address look-up engine, support 1K absolute MAC addresses
- Automatic address learning and address aging

## Layer 2 Features

- Supports Auto-negotiation and 10/100Mbps half / full duplex and 1000Mbps full duplex mode
- High performance Store and Forward architecture, runt/ CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Prevents packet loss with back pressure (Half-Duplex) and IEEE 802.3x PAUSE frame flow control (Full-Duplex)
- 9K Jumbo Frame Size support
- Integrated address look-up engine, support 1K absolute MAC addresses
- Automatic address learning and address aging

### *Adjustable 3-Port Switch Mode or 2 Fiber Redundant Mode*

Via the built-in DIP switch, the two SFP fiber interfaces of IGT-1205AT can be configured as Ethernet switch mode or Fiber Redundant mode. With the Ethernet switch mode, it can operate in Store-and-Forward mechanism with high performance; with the 2-port Fiber redundant mode, it provides rapid fiber redundancy of link for highly critical Ethernet applications. The redundant mode supports auto-recovering function. If the destination port of a packet is link-down, it will forward the packet to the other port of the backup pair.




### *Environmentally Hardened Design*

The IGT-1205AT is equipped with the slim-type IP30 metal case for easy deployment in heavy Industrial demanding environments. With IP30 industrial case protection, the IGT-1205AT provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curb side traffic control cabinets. Being able to operate under the temperature range from -40 to 75 degrees C, the IGT-1205AT can be placed in almost any difficult environment. The IGT-1205AT also allows either DIN rail or wall mounting for efficient use of cabinet space.

### *Convenient and Reliable Power System*

To enhance the operation reliability and flexibility, the IGT-1205AT is equipped with two DC power input connectors for redundant power supply installation. It also possesses an integrated power supply source with wide-ranging voltages (12 to 48V DC or 24V AC) for worldwide high availability applications requiring dual or backup power inputs.

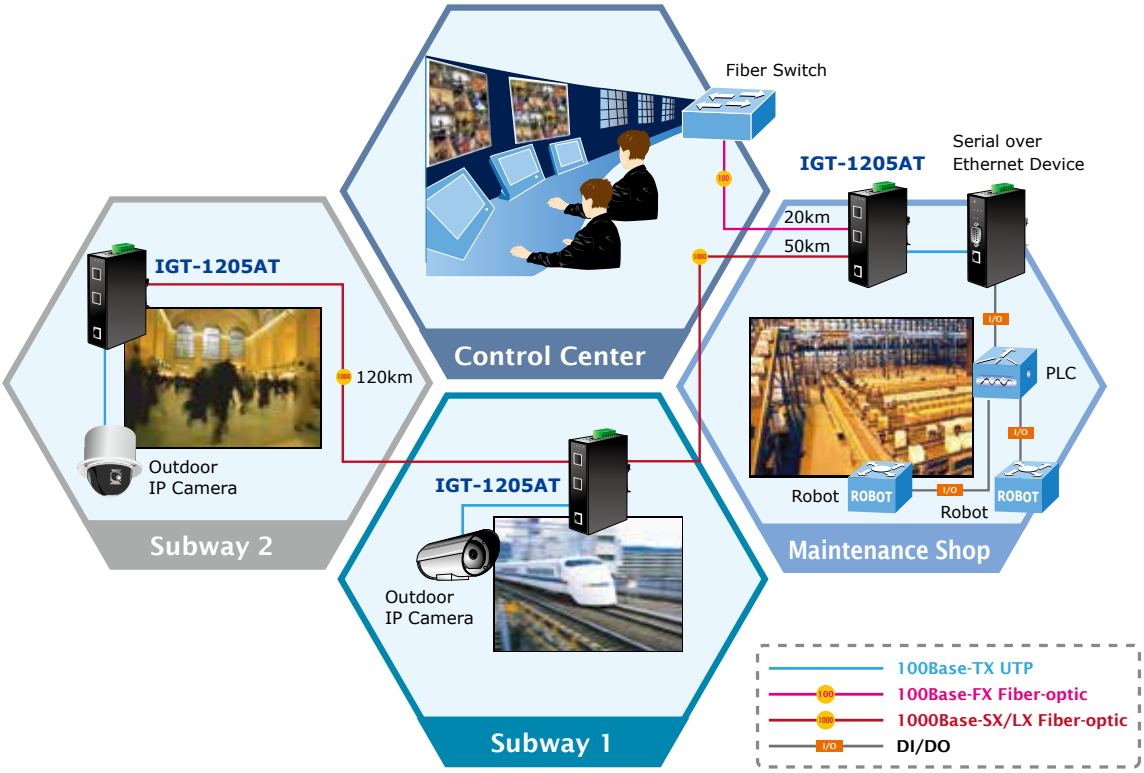
## Industrial Case / Installation

- Slim IP30 metal case protection
- DIN Rail and Wall Mount Design
- Redundant Power Design
- 12 to 48V DC, redundant power with polarity reverse protect function
- AC 24V power adapter acceptable
- Supports EFT protection 6000 VDC for power line
- Supports 6000 VDC Ethernet ESD protection
- -40 to 75 degrees C operating temperature

# Application

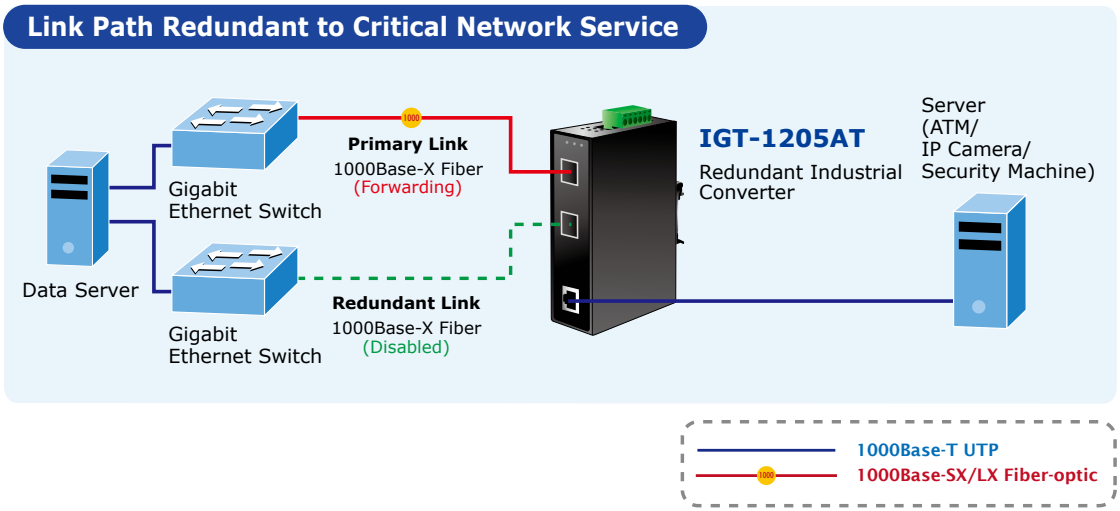
*Hardened Environment Application*

The IGT-1205AT industrial Gigabit Media Converter offers full port Gigabit speed. It provides very high reliability and security features to make sure the continuous operation in harsh environments such as control cabinet of transportation, factory, outdoors and places where extreme low or high temperatures can be experienced. Moreover, the IGT-1205AT is also compatible with 100Mbps and 1000Mbps SFP transceivers to provide a strong, stable and long-distance connection and flexible industrial networking deployment.




*Redundancy Application*

The IGT-1205AT industrial Gigabit Media Converter provides rapid fiber redundancy of link for highly critical Ethernet applications. The redundant-mode supports auto-recover function. If the destination port of a packet is link-down, it forwards the packet to the other port of the backup pair.

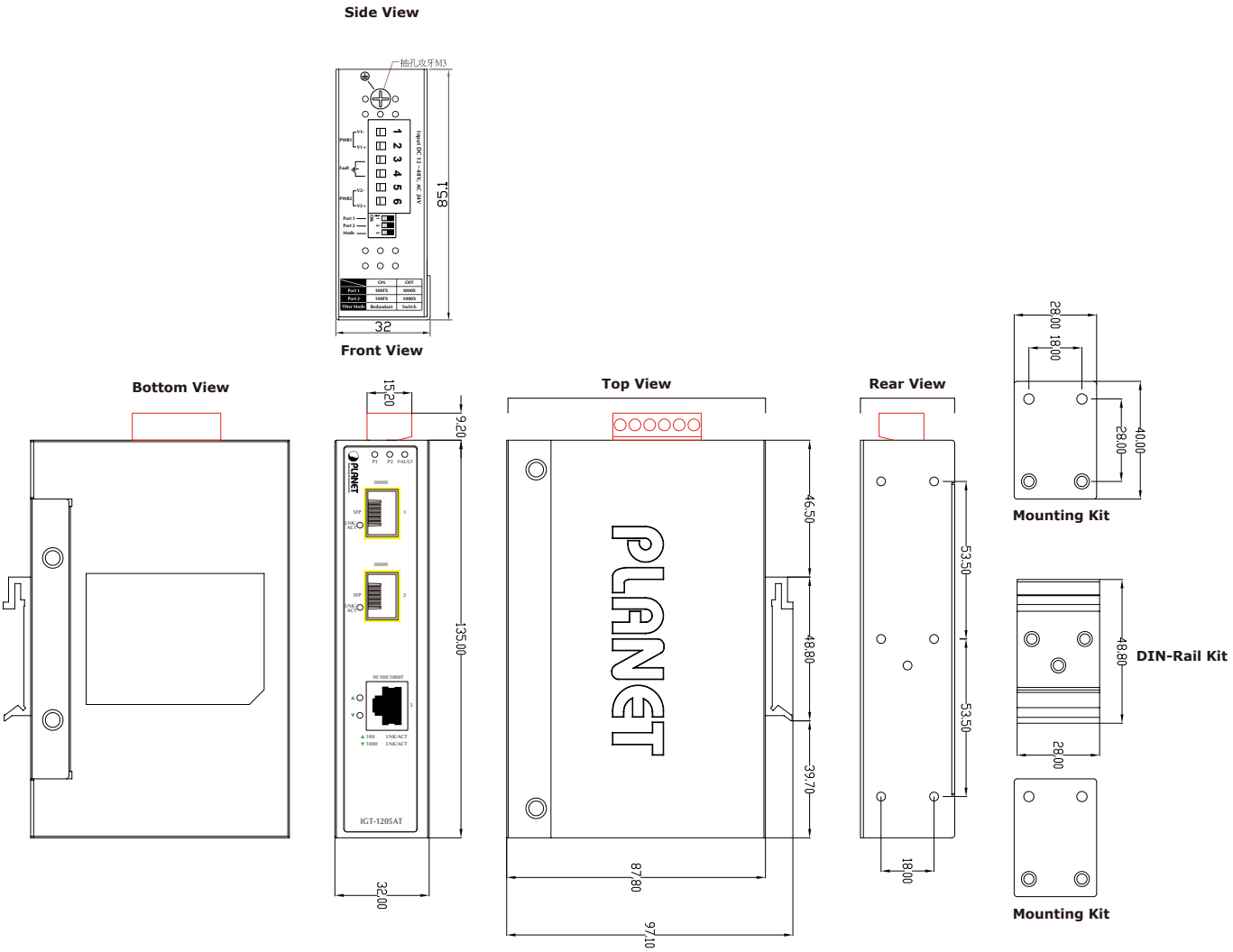


# Product Specifications

| | | |
|---|---|---|
| Model | | IGT-1205AT |
| Hardware Specifications | | |
| Copper Ports | | 1 x 10/100/1000Base-T RJ-45 TP<br>Auto-MDI/MDI-X, Auto-Negotiation |
| SFP / mini-GBIC Slots | | 2 1000Base-SX/LX/BX SFP interfaces (Port-1 and Port-2)<br>Compatible with 100Base-FX SFP |
| DIP Switch | | ▪ DIP-1: SFP Port 1 1000Base-X (default) / 100Base-FX<br>▪ DIP-2: SFP Port 2 1000Base-X (default)/ 100Base-FX<br>▪ DIP-3: Switch mode / Fiber Redundant mode |
| Connector | | Removable 6-pin terminal block<br>Pin 1/2 for Power 1; Pin 3/4 for fault alarm; Pin 5/6 for Power 2 |
| Alarm | | Provides one relay output for power failure<br>Alarm Relay current carry ability: 1A @ DC 24V |
| LED | | 3 x LED for System and Power:<br>▪ Green: DC Power 1<br>▪ Green: DC Power 2<br>▪ Green: Power Fault<br>2 x LED for Per Copper Port:<br>▪ Green:1000 LNK/ACT<br>▪ Orange:100 LNK/ACT<br>1 x LED for Per mini-GBIC interface (Port-1 and Port-2)<br>▪ Green: LNK/ACT |
| ESD Protection | | 6KV DC |
| EFT Protection | | 6KV DC |
| Enclosure | | IP30 type metal case |
| Installation | | DIN rail kit and wall mount ear |
| Dimensions (W x D x H) | | 135 x 87 x 32mm |
| Weight | | 505g |
| Power Requirements | | DC 12~48V or AC 24V<br>Redundant power with polarity reverses protection function |
| Power Consumption / Dissipation | | 4.8 watts/16BTU |
| Cable | Twisted-Pair | 10Base-T: 2-Pair UTP CAT. 3, 4, 5, up to 100 meters<br>100Base-TX: 2-Pair UTP CAT. 5, 5e up to 100 meters<br>1000Base-T: 4-Pair UTP CAT. 5e, 6 up to 100 meters |
| | Fiber-Optic Cable | ▪ 1000Base-SX :<br>50/125μm or 62.5/125μm multi-mode fiber optic cable, up to 550m<br>▪ 1000Base-LX :<br>9/125μm single-mode fiber optic cable, up to 10/20/30/40/50/70/120 kilometers (vary on SFP module)<br>▪ 100Base-FX :<br>50/125μm or 62.5/125μm multi-mode fiber optic cable, up to 2 kilometers<br>9/125μm single-mode fiber optic cable, up to 20/40/60 kilometers (vary on SFP module) |
| Switch Specification | | |
| Switch Processing Scheme | | Store-and-Forward |
| Address Table | | 1K entries |
| Flow Control | | Back pressure for half duplex<br>IEEE 802.3x Pause Frame for full duplex |
| Switch fabric | | 6Gbps |
| Throughput (packet per second) | | 4.46Mpps@64bytes |
| Maximum Transmit Unit | | 9216 bytes |
| Speed | | SX/LX: 2000Mbps (full-duplex)<br>FX: 200Mbps (full-duplex)<br>TP: 10/20Mbps, 100/200Mbps, 2000Mbps |
| Standards Conformance | | |
| Standards Compliance | | IEEE 802.3 Ethernet / 10Base-T<br>IEEE 802.3u Fast Ethernet / 100Base-TX<br>IEEE 802.3ab Gigabit Ethernet / 1000Base-T<br>IEEE 802.3z Gigabit Ethernet / 1000Base-SX/LX<br>IEEE 802.3x Full-Duplex Flow Control |

| | |
|---|---|
| Regulation Compliance | FCC Part 15 Class A, CE |
| Stability Testing | IEC60068-2-32(Free fall)<br>IEC60068-2-27(Shock)<br>IEC60068-2-6(Vibration) |
| Environment | |
| Temperature | Operating: -40~75 degrees C<br>Storage: -40~75 degrees C |
| Humidity | Operating: 5~95% (Non-condensing)<br>Storage: 5~95% (Non-condensing) |

# Dimensions




***Dimensions ( unit = mm )***

# Ordering Information

| | |
|---|---|
| IGT-1205AT | Industrial 10/100/1000T to 2 100/1000X SFP Media Converter |

# Related SFP Transceivers

***Fast Ethernet Transceiver (100Base-X SFP)***

| Model | Speed (Mbps) | Connector Interface | Fiber Mode | Distance | Wavelength (nm) | Operating Temp. |
|---|---|---|---|---|---|---|
| MFB-FX | 100 | LC | Multi Mode | 2km | 1310nm | 0 ~ 60°C |
| MFB-F20 | 100 | LC | Single Mode | 20km | 1310nm | 0 ~ 60°C |
| MFB-F40 | 100 | LC | Single Mode | 40km | 1310nm | 0 ~ 60°C |
| MFB-F60 | 100 | LC | Single Mode | 60km | 1310nm | 0 ~ 60°C |
| MFB-F120 | 100 | LC | Single Mode | 120km | 1550nm | 0 ~ 60°C |
| MFB-TFX | 100 | LC | Multi Mode | 2km | 1310nm | -40 ~ 75°C |
| MFB-TF20 | 100 | LC | Single Mode | 20km | 1550nm | -40 ~ 75°C |

***Fast Ethernet Transceiver (100Base-BX, Single Fiber Bi-Directional SFP)***

| Model | Speed (Mbps) | Connector Interface | Fiber Mode | Distance | Wavelength (TX) | Wavelength (RX) | Operating Temp. |
|---|---|---|---|---|---|---|---|
| MFB-FA20 | 100 | WDM(LC) | Single Mode | 20km | 1310nm | 1550nm | 0 ~ 60°C |
| MFB-FB20 | 100 | WDM(LC) | Single Mode | 20km | 1550nm | 1310nm | 0 ~ 60°C |
| MFB-TFA20 | 100 | WDM(LC) | Single Mode | 20km | 1310nm | 1550nm | -40 ~ 75°C |
| MFB-TFB20 | 100 | WDM(LC) | Single Mode | 20km | 1550nm | 1310nm | -40 ~ 75°C |
| MFB-TFA40 | 100 | WDM(LC) | Single Mode | 40km | 1310nm | 1550nm | -40 ~ 75°C |
| MFB-TFB40 | 100 | WDM(LC) | Single Mode | 40km | 1550nm | 1310nm | -40 ~ 75°C |

***Gigabit Ethernet Transceiver (1000Base-X SFP)***

| Model | Speed (Mbps) | Connector Interface | Fiber Mode | Distance | Wavelength (nm) | Wavelength |
|---|---|---|---|---|---|---|
| MGB-GT | 1000 | Copper | -- | 100m | -- | 0 ~ 60°C |
| MGB-SX | 1000 | LC | Multi Mode | 550m | 850nm | 0 ~ 60°C |
| MGB-SX2 | 1000 | LC | Multi Mode | 2km | 1310nm | 0 ~ 60°C |
| MGB-LX | 1000 | LC | Single Mode | 10km | 1310nm | 0 ~ 60°C |
| MGB-L30 | 1000 | LC | Single Mode | 30km | 1310nm | 0 ~ 60°C |
| MGB-L40 | 1000 | LC | Single Mode | 40km | 1550nm | 0 ~ 60°C |
| MGB-L50 | 1000 | LC | Single Mode | 50km | 1550nm | 0 ~ 60°C |
| MGB-L70 | 1000 | LC | Single Mode | 70km | 1550nm | 0 ~ 60°C |
| MGB-L120 | 1000 | LC | Single Mode | 120km | 1550nm | 0 ~ 60°C |
| MGB-TSX | 1000 | LC | Multi Mode | 550m | 850nm | -40 ~ 75°C |
| MGB-TLX | 1000 | LC | Single Mode | 10km | 1310nm | -40 ~ 75°C |
| MGB-TL30 | 1000 | LC | Single Mode | 30km | 1310nm | -40 ~ 75°C |
| MGB-TL50 | 1000 | LC | Single Mode | 50km | 1550nm | -40 ~ 75°C |

***Gigabit Ethernet Transceiver (1000Base-BX, Single Fiber Bi-Directional SFP)***

| Model | Speed (Mbps) | Connector Interface | Fiber Mode | Distance | Wavelength (TX) | Wavelength (RX) | Operating Temp. |
|---|---|---|---|---|---|---|---|
| MGB-LA10 | 1000 | WDM(LC) | Single Mode | 10km | 1310nm | 1550nm | 0 ~ 60°C |
| MGB-LB10 | 1000 | WDM(LC) | Single Mode | 10km | 1550nm | 1310nm | 0 ~ 60°C |
| MGB-LA20 | 1000 | WDM(LC) | Single Mode | 20km | 1310nm | 1550nm | 0 ~ 60°C |
| MGB-LB20 | 1000 | WDM(LC) | Single Mode | 20km | 1550nm | 1310nm | 0 ~ 60°C |
| MGB-LA40 | 1000 | WDM(LC) | Single Mode | 40km | 1310nm | 1550nm | 0 ~ 60°C |
| MGB-LB40 | 1000 | WDM(LC) | Single Mode | 40km | 1550nm | 1310nm | 0 ~ 60°C |
| MGB-LA60 | 1000 | WDM(LC) | Single Mode | 60km | 1310nm | 1550nm | 0 ~ 60°C |
| MGB-LB60 | 1000 | WDM(LC) | Single Mode | 60km | 1550nm | 1310nm | 0 ~ 60°C |
| MGB-TLA10 | 1000 | WDM(LC) | Single Mode | 10km | 1310nm | 1550nm | -40 ~ 75°C |
| MGB-TLB10 | 1000 | WDM(LC) | Single Mode | 10km | 1550nm | 1310nm | -40 ~ 75°C |
| MGB-TLA20 | 1000 | WDM(LC) | Single Mode | 20km | 1310nm | 1550nm | -40 ~ 75°C |
| MGB-TLB20 | 1000 | WDM(LC) | Single Mode | 20km | 1550nm | 1310nm | -40 ~ 75°C |
| MGB-TLA40 | 1000 | WDM(LC) | Single Mode | 40km | 1310nm | 1550nm | -40 ~ 75°C |
| MGB-TLB40 | 1000 | WDM(LC) | Single Mode | 40km | 1550nm | 1310nm | -40 ~ 75°C |
| MGB-TLA60 | 1000 | WDM(LC) | Single Mode | 60km | 1310nm | 1550nm | -40 ~ 75°C |
| MGB-TLB60 | 1000 | WDM(LC) | Single Mode | 60km | 1550nm | 1310nm | -40 ~ 75°C |

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