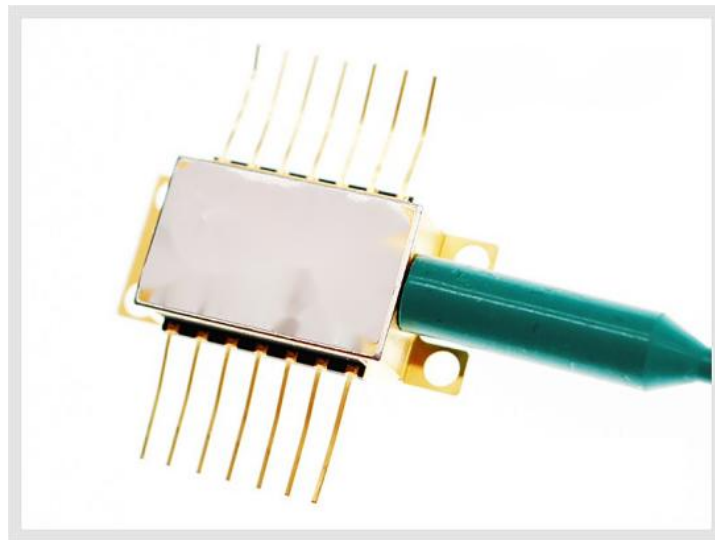


1692nm 30mW DFB Laser Diode



● Product Description

The 1692nm DFB laser diode module is a cost-effective, high-coherence laser source. The DFB laser chip is encapsulated in an industry-standard hermetic 14-pin butterfly package, with integrated internal TEC (Thermoelectric Cooler) and PD (Photodetector).

● Product features

Narrow linewidth (< 2 MHz); industry-standard 14-pin butterfly package; excellent wavelength control and stability; mode-hop-free tuning; outstanding reliability; custom wavelength available on request

● Part Number

MP-DFB-1692-30-A81-14BF-SA

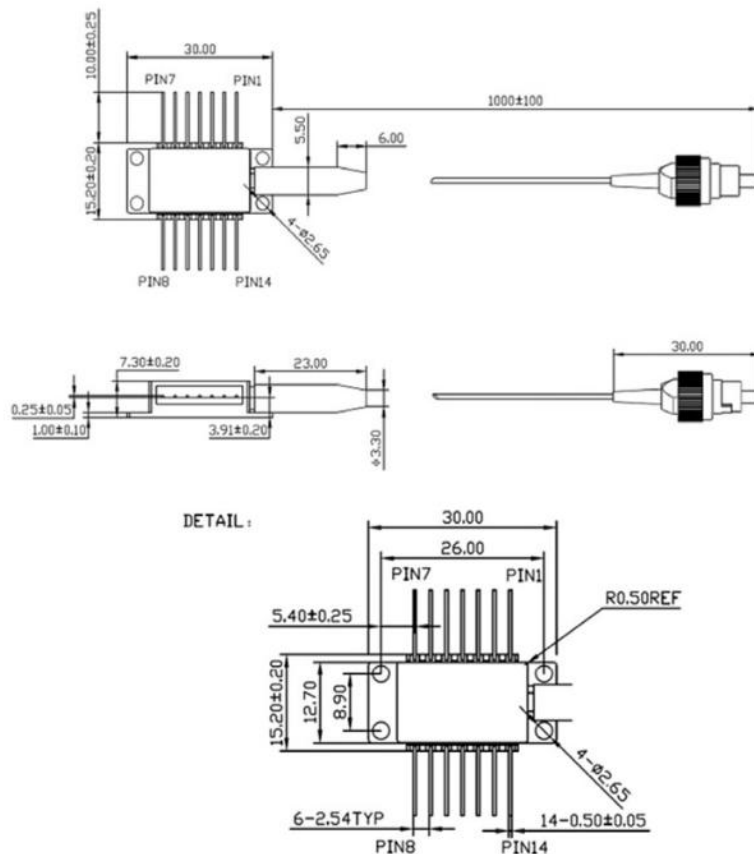
● Application area

Tunable Diode Laser Absorption Spectroscopy (TDLAS) | Gas Monitoring

● Core parameters

| Central Wavelength | Output Power |
|--------------------|--------------|
| 1690nm | 30mW |

● Dimension Drawing





● General Parameters

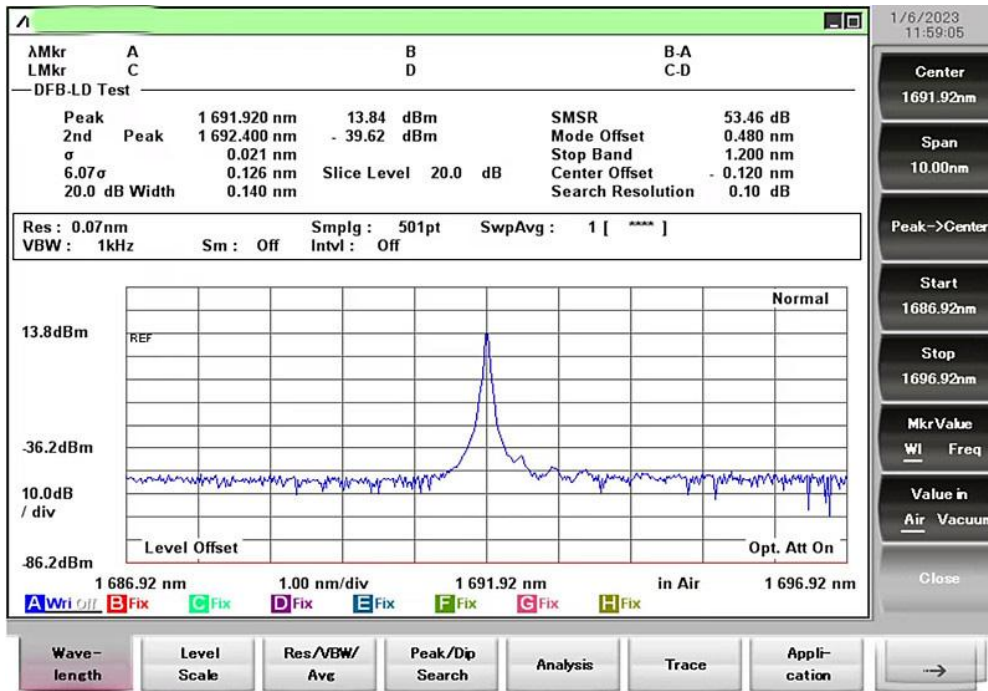
Detailed Parameters

Technical Specifications

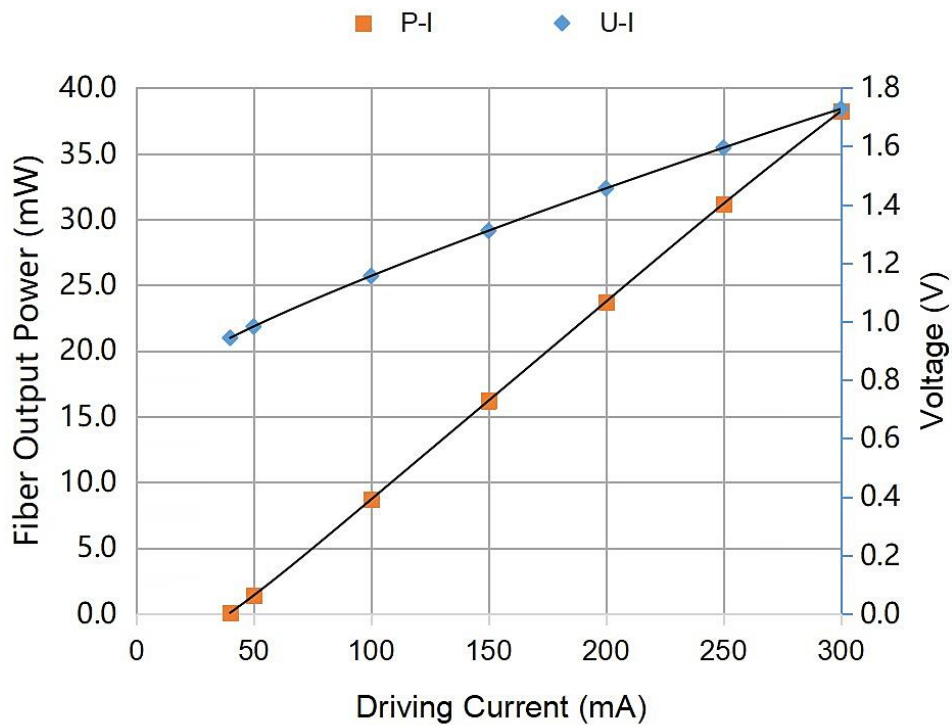
| Parameter | Symbol | Min. | Typical | Max. | Unit |
|------------------------------------|--------------------------|------|---------|------|-----------------|
| Central Wavelength | λ | 1691 | 1692 | 1693 | nm |
| Side Mode Suppression Ratio (SMSR) | SMSR | 30 | 40 | - | dB |
| Threshold Current | I_{th} | - | 20 | 30 | mA |
| Operating Current | I_{op} | - | 240 | 300 | mA |
| Chip Output Power | Pf | 10 | 30 | 40 | mW |
| Quantum Efficiency | η | 0.08 | 0.12 | - | mW/mA |
| Current Tuning Coefficient | $\Delta\lambda/\Delta I$ | - | 0.015 | - | nm/mA |
| Temperature Tuning Coefficient | $\Delta\lambda/\Delta T$ | - | 0.12 | - | nm/K |
| Forward Voltage | V_f | - | 1.3 | 2 | V |
| Thermistor Resistance | RT | 9.5 | 10 | 10.5 | k Ω |
| Thermistor Temperature Coefficient | - | - | -4.4 | - | %/ $^{\circ}$ C |
| Fiber Connector | FC/APC | | | | |



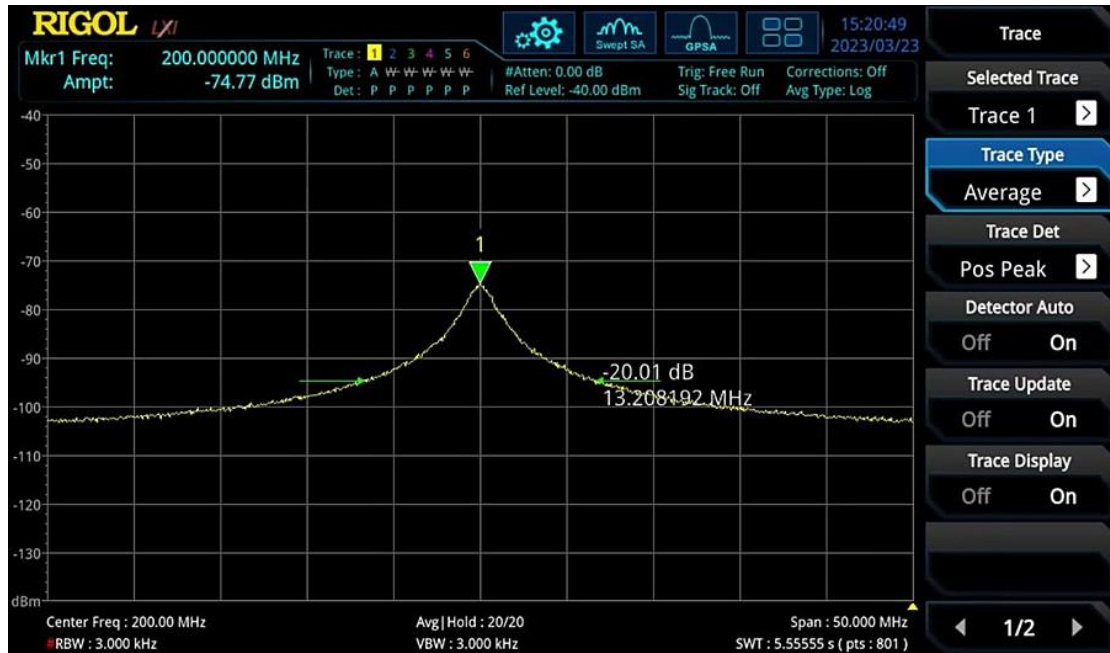
Spectrum



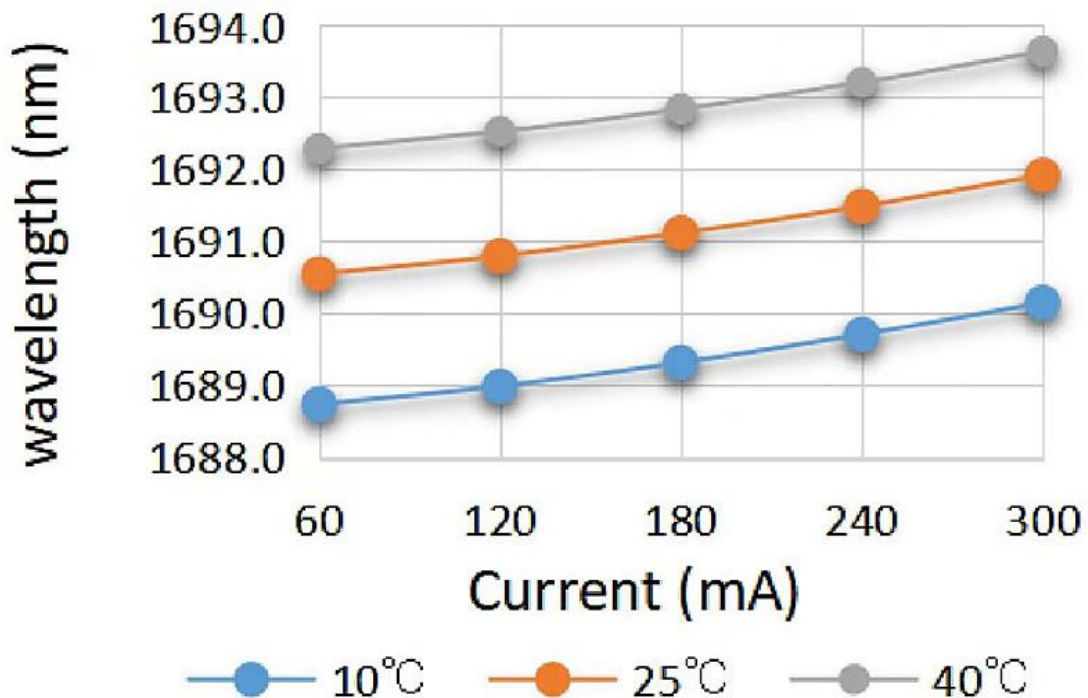
L-I Curve



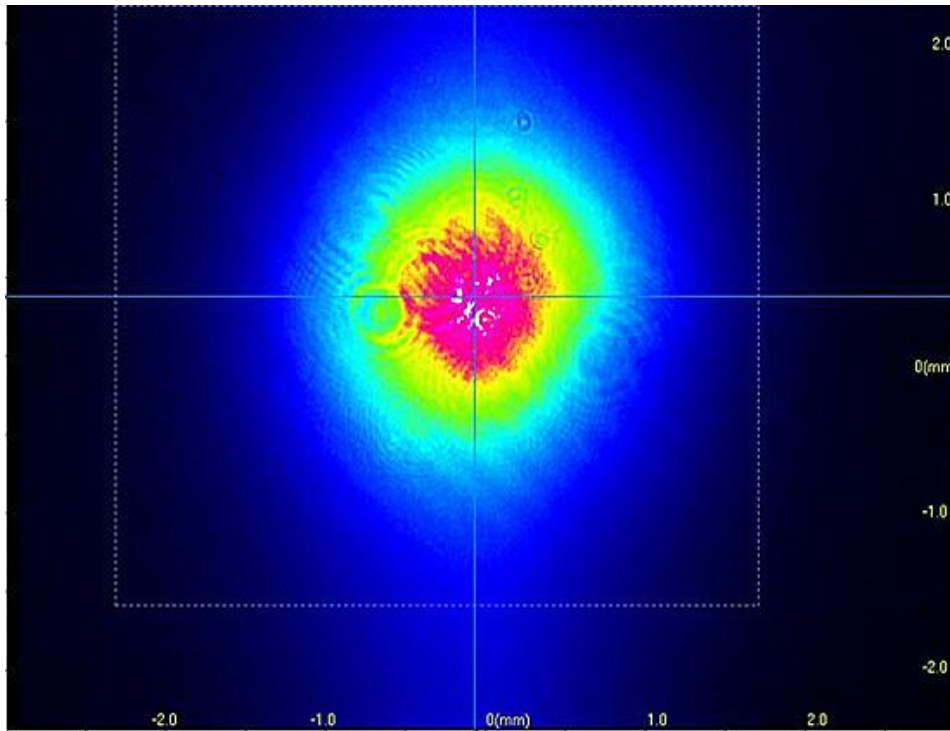
DFB Linewidth Test Results



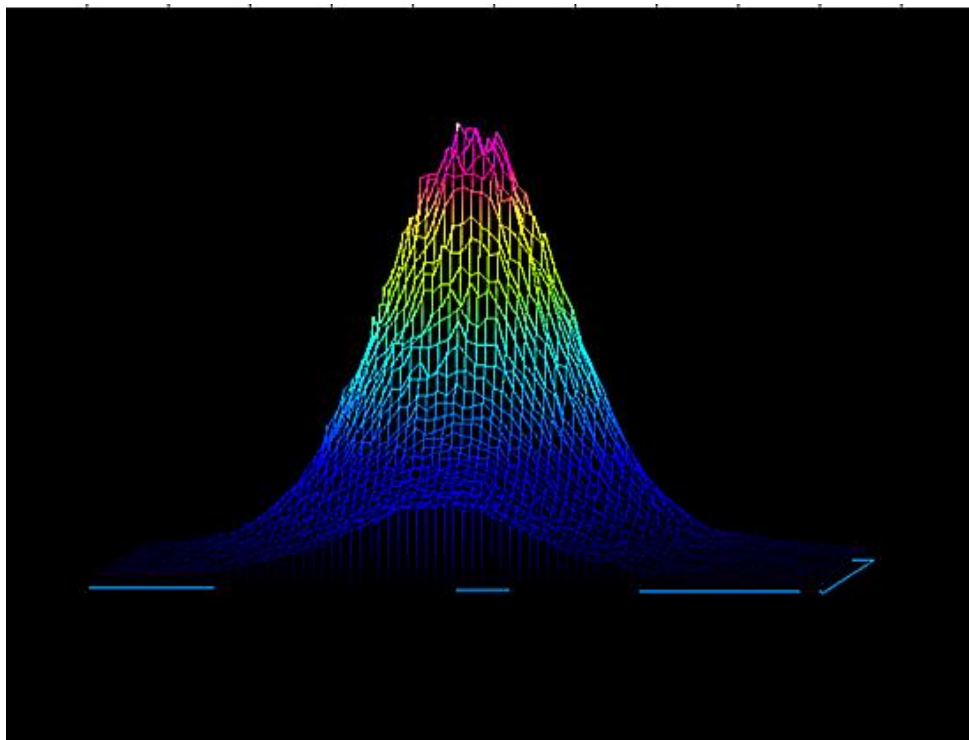
Tuning Characteristics



Wavelength Stability

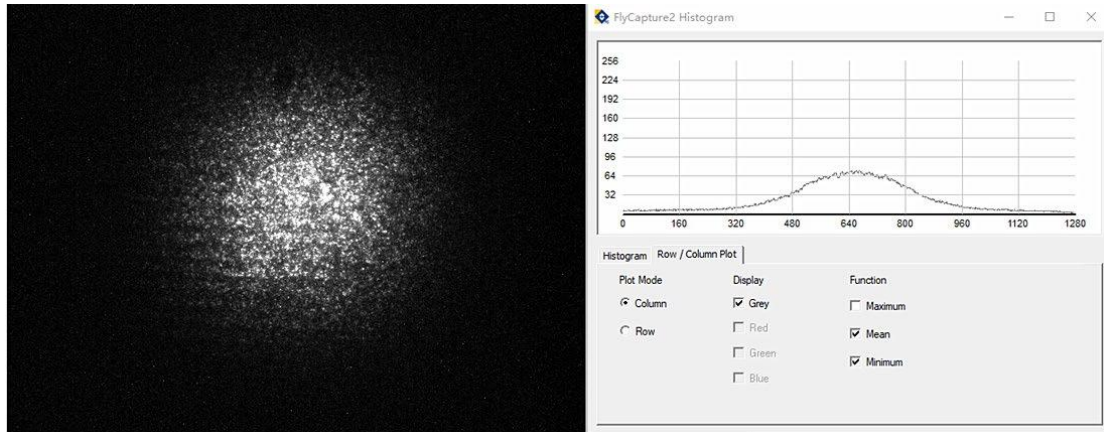


2D



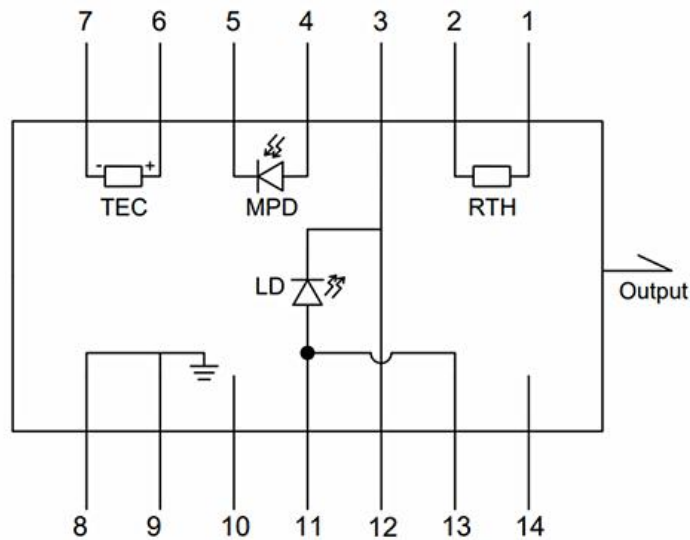
3D

Camera Analysis



Pin Definition

Type A

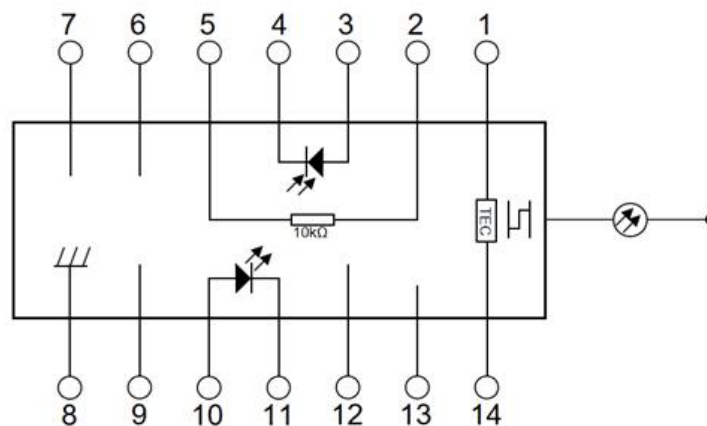


| PIN# | Definition | PIN# | Definition |
|------|------------|------|-------------|
| 1 | Thermistor | 8 | Case Ground |
| 2 | Thermistor | 9 | Case Ground |



| | | | |
|---|-------------------------|----|-----------------------------|
| 3 | Laser Diode Cathode (-) | 10 | N/C |
| 4 | Detector Anode (+) | 11 | Laser Diode Anode (+) |
| 5 | Detector Cathode (-) | 12 | Laser Diode Cathode (-), RF |
| 6 | TEC (+) | 13 | Laser Diode Anode (+) |
| 7 | TEC (-) | 14 | N/C |

Type B



Pin Definition

| PIN# | Definition | PIN# | Definition |
|------|-------------|------|----------------|
| 1 | TEC(+) | 8 | Case Ground |
| 2 | Thermistor | 9 | N/C |
| 3 | Detector(+) | 10 | Laser Anode(+) |



| | | | |
|---|-------------|----|------------------|
| 4 | Detector(-) | 11 | Laser Cathode(-) |
| 5 | Thermistor | 12 | N/C |
| 6 | N/C | 13 | N/C |
| 7 | N/C | 14 | TEC(-) |

Absolute Maximum Ratings

| Item | Unit | Min. | Typical | Max. |
|----------------------|------|------|---------|------|
| Case Temperature | ° C | -5 | 25 | 70 |
| Chip Temperature | ° C | 10 | 25 | 40 |
| Operating Current | mA | 0 | 230 | 300 |
| Forward Voltage | V | 0.8 | 1.2 | 1.8 |
| TEC Current | A | - | - | 1.2 |
| Reverse Voltage (LD) | V | - | - | 2.0 |
| Reverse Voltage (PD) | V | - | - | 20 |



Order information

MP-DFB-□□□□-☆-A8▽-14BF-XX

□□□□: Wavelength

1270: 1270nm

1532: 1532nm

1392: 1392nm

1512: 1512nm

1567: 1567nm

1600.3: 1600.3nm

1653.7: 1653.7nm

1683: 1683nm

☆ : Output Power

A: 10mW

B: 20mW

C: 50mW

▽: Wavelength Tolerance

1: ±1nm

2: ±2nm

XX: Fiber and Connector Type

SA=SMF-28E+ FC/APC

SP=SMF-28E+ FC/PC



PP=PM Fiber+ FC/PC

PA=PM Fiber+ FC/APC