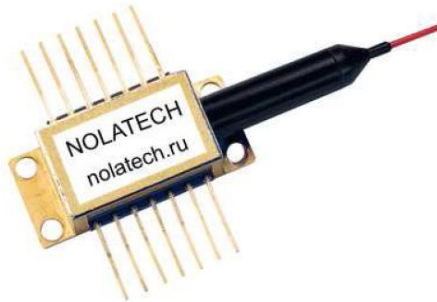


Laser Diode 840nm 20mW



BLD-840-14BF Fiber Bragg Grating laser is single frequency laser diode module designed for optical measurement and communication. The laser is packaged in 14-pin standard butterfly package with monitor photodiode and thermo-electric cooler (TEC).

Key Features

- Optical output: 20mW
 - Narrow linewidth ($\Delta\nu < 0.1\text{MHz}$)
 - Wavelength: 840nm @ 25°C
 - SM or PM Fiber ($\varnothing 0.9\text{mm}$)
- FC-APC connector
 - 14-pin butterfly package
 - Internal monitor PD and TEC
 - Low power consumption

Optical and electrical characteristics: (T = 25°C)

| Item | Symbol | Test condition | Min. | Typ. | Max. | Unit |
|------------------------------------------|--------------------------|--------------------------------------------------|------|-------|------|----------------------|
| Output Power | P_f | | | 20 | | mW |
| Forward Voltage | V_F | $P_f=20\text{mW}$ | | | 2.5 | V |
| Threshold Current | I_{th} | | | 20 | 40 | mA |
| Forward Current | I_F | $P_f=20\text{mW}$ | | 150 | 200 | mA |
| Center Wavelength | λ_c | $P_f=20\text{mW}$ | 800 | | 850 | nm |
| Spectral Width | $\Delta\lambda$ | $P_f=20\text{mW}$ | | 100 | | kHz |
| Side Mode Suppression Ratio | SMSR | $P_f=20\text{mW}$ | 40 | 45 | | dB |
| Monitor Current | I_m | $P_f=20\text{mW}, V_{RD}=5\text{V}$ | 40 | | 200 | μA |
| PD Dark Current | I_d | $V_{RD}=5\text{V}$ | | | 0.1 | μA |
| Cooler Voltage | V_C | $I_F=EOL, TC=70^\circ\text{C}$ | | | 2.7 | V |
| Cooler Current | I_C | $I_F=EOL, TC=70^\circ\text{C}$ | | | 1.4 | A |
| Thermal Resistance | R_o | $T_{LD}=25^\circ\text{C}, B=3900\pm 100\text{K}$ | 9.5 | 10.0 | 10.5 | k Ω |
| Extinction Ratio | X_P | $P_f=20\text{mW}$ | 17 | | | dB |
| Mode Hop Free Range | ΔI | | | 30 | | mA |
| Single-Frequency Continuous Tuning Range | Δf | | 3 | | | GHz |
| Current Tuning | $\Delta\lambda/\Delta I$ | | | 0.001 | | nm/mA |
| Temperature Tuning | $\Delta\lambda/\Delta T$ | | | 0.08 | | nm/ $^\circ\text{C}$ |

Absolute Maximum Ratings

| Item | Symbol | Rating | Unit |
|----------------------------|-----------|------------|------|
| LD Forward Current | I_f | 300 | mA |
| LD Reverse Voltage | V_r | 1.8 | V |
| PD Reverse Voltage | V_{RD} | 10 | V |
| Operation Case Temperature | T_c | -40 to +70 | °C |
| Storage Temperature | T_{stg} | -40 to +85 | °C |
| Cooler Current | I_c | 1.4 | A |

PACKAGING

| No. | FUNCTION | No. | FUNCTION |
|-----|--------------|-----|--------------|
| 1 | Cooler anode | 8 | NC |
| 2 | Thermistor | 9 | NC |
| 3 | PD anode | 10 | LD anode |
| 4 | PD cathode | 11 | LD cathode |
| 5 | Thermistor | 12 | NC |
| 6 | NC | 13 | Case |
| 7 | NC | 14 | Cooler anode |

