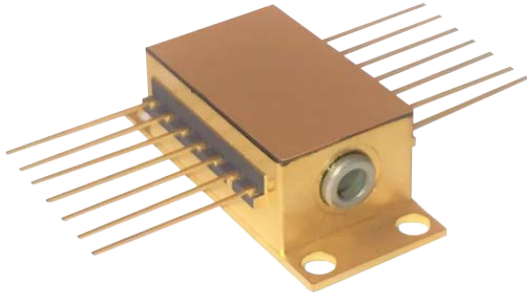


# Multimode Open Beam Butterfly Package



Our proprietary multimode wavelength stabilized laser diode features high output power with ultra-narrow spectral bandwidth and a collimated output beam. Designed to replace expensive DFB, DBR, fiber, and external cavity lasers, the multi-mode Spectrum Stabilized Laser offers superior wavelength stability over time, temperature, and vibration, and is manufactured to meet the most demanding wavelength requirements. The laser's stabilized peak wavelength remains "locked" regardless of case temp. (15 to 45°C). Devices can be spectrally tailored to suit application needs and offer side mode suppression ratios (SMSRs) better than 40 dB, thereby providing extremely high signal-to-noise ratio.

## Standard Wavelengths

638nm	785nm	860nm
660nm	808nm	976nm
680nm	830nm	1064 nm

All specified wavelengths are measured "in-vacuum"

## Applications

This laser package is designed for OEM Integration and is ideal for:

- Hand-held Raman Spectroscopy
- Solid State Laser Pumping
- Laser Speckle Contrast Imaging
- Laser Illumination

## Key Features

- High Power Open Beam Multimode Output Power
- Ultra-Narrow Spectral Bandwidth (< 0.1 nm FWHM, 0.07 nm typical).
- Stabilized Output Spectrum (< 0.007 nm/°C)
- Low Power consumption
- 40 dB SMSR Typical
- 70 dB SMSR available upon request with additional filter
- "Ultratrack" Linear Tracking Photodiode

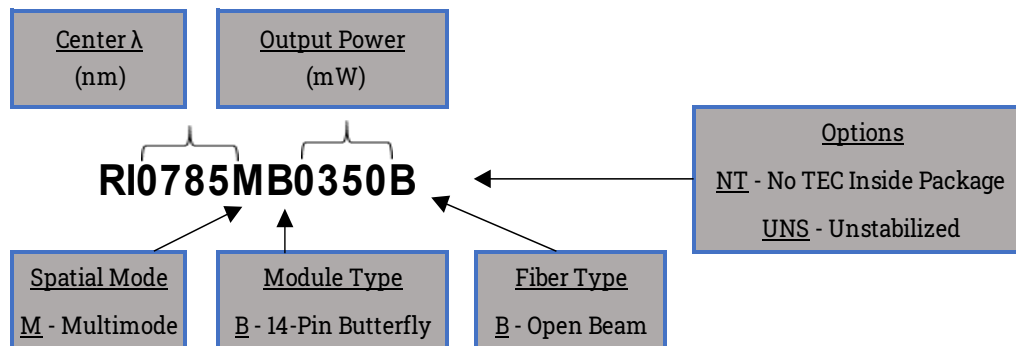
# Specifications

Wavelength Tolerance	+/- 0.5 nm
Spectral Linewidth	<0.1nm (0.08nm typical)
Wavelength Stability Range	15 - 45 °C
SMSR	35 - 45 dB
Power Stability	1% typical
Polarization Extinction (PER)	>17dB, 20dB Typical
Spatial Profile	TEM00
Beam Exit Angle	< 3 degrees
Beam Ellipticity	10:1
Horizontal Beam Divergence	10 mrad Typ., 20 mrad Max
Vertical Beam Divergence	2 mrad Typ., 5 mrad Max

$\lambda$ (nm)	Output Power (mW)	Base Part Number	Max Current Voltage
638	400*	RI0638MB0400B	1000 mA, 3.3V
660	250	RI0660MB0250B	1000 mA, 3.3V
680	300	RI0680MB0300B	1000 mA, 3.3V
785	350	RI0785MB0350B	1000 mA, 2.3V
	600	RI0785MB0600B	1350 mA, 2.3V
	800	RI0785MB0800B	1500 mA, 2.3V
808	350	RI0808MB0350B	1000 mA, 3.3V
	600	RI0808MB0600B	1350 mA, 2.3V
	800	RI0808MB0800B	1500 mA, 2.3V
830	350	RI0830MB0350B	1000 mA, 2.3V
	600	RI0830MB0600B	1350 mA, 2.3V
	800	RI0830MB0800B	1500 mA, 2.3V
860	350	RI0860MB0350B	1000 mA, 2.3V
	500	RI0860MB0500B	1350 mA, 2.3V
976	800	RI0976MB0800B	1500 mA, 2.3V
1064	600	RI1064MB0600B	1350 mA, 2.3V
	800	RI1064MB0800B	1500 mA, 2.3V

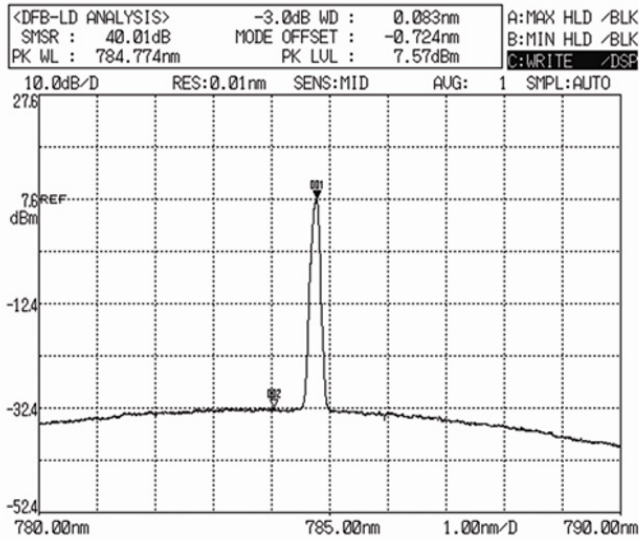
\*Reduced wavelength stability range

# Part Schema

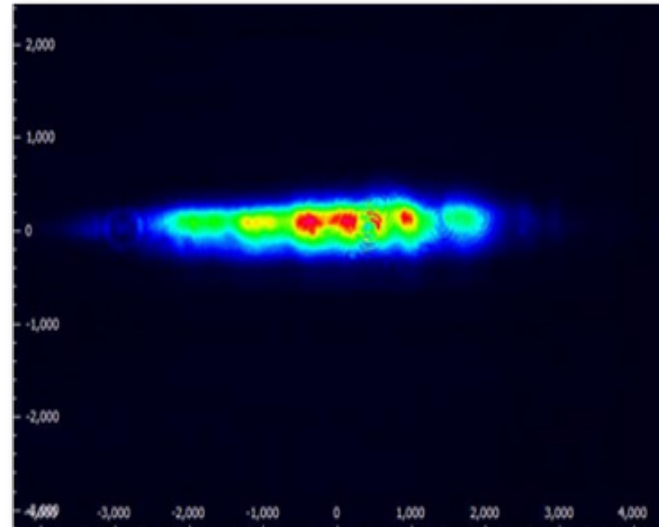


# Selected Data

TEC Current Limit	3.2 A
TEC Voltage Limit	5.8 V
Photodiode Current	30 $\mu$ A
Integral Thermistor	Betatherm 10K3CG3



Typical 785nm SS Laser Spectrum



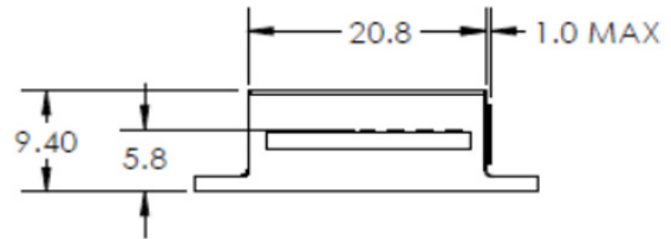
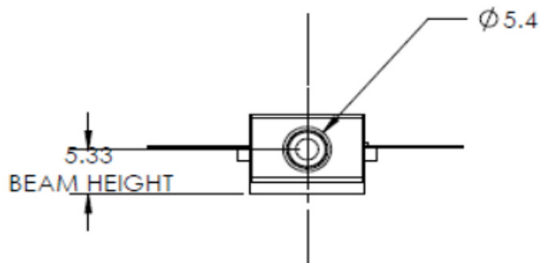
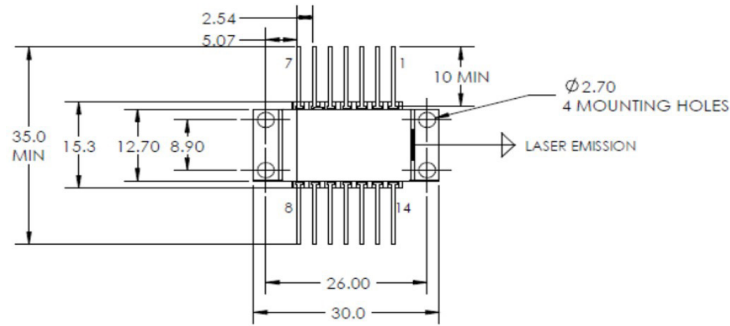
Typical 785nm Beam Quality

## Custom Capability

- Custom wavelengths available upon request.
- External TEC (e.g. No TEC inside of package optional)

## Electrical Specs

<b>Pin 1</b>	TEC+
<b>Pin 2</b>	Thermistor (10kOhm @25°C)
<b>Pin 3</b>	PD Anode
<b>Pin 4</b>	PD Cathode
<b>Pin 5</b>	Thermistor
<b>Pin 6-8</b>	NC
<b>Pin 9</b>	Laser Cathode (-)
<b>Pin 10</b>	Laser Anode (+)
<b>Pin 11</b>	Laser Cathode (-)
<b>Pin 12</b>	NC
<b>Pin 13</b>	Case Ground
<b>Pin 14</b>	TEC -



OEM Laser Product: This laser module is designed for use as a component (or replacement) part and is thereby exempt from 21 CFR1040.10 and 1040.11 provisions.

## Operational Notes

- 14-pin BF should be mounted on a heat sink with a thermal compound (thermal grease).
- Take care not to over-tighten screws when mounting. This can bend the BF package causing damage and hindering performance and is not covered under warranty.
- Laser and TEC driver circuitry should be configured in a manner to prevent power /current / voltage surges and spikes.
- We recommend not grounding anode and cathode as this can cause ground loops.
- Laser and TEC driver circuitry should be configured in a manner to prevent power /current / voltage surges and spikes.
- MM Open beam diodes will give beam ellipticity ~10:1 with hot spots and cool spots. If a more homogenous circularized beam is required, We recommend using a MM fiber coupled diode with a collimator.

