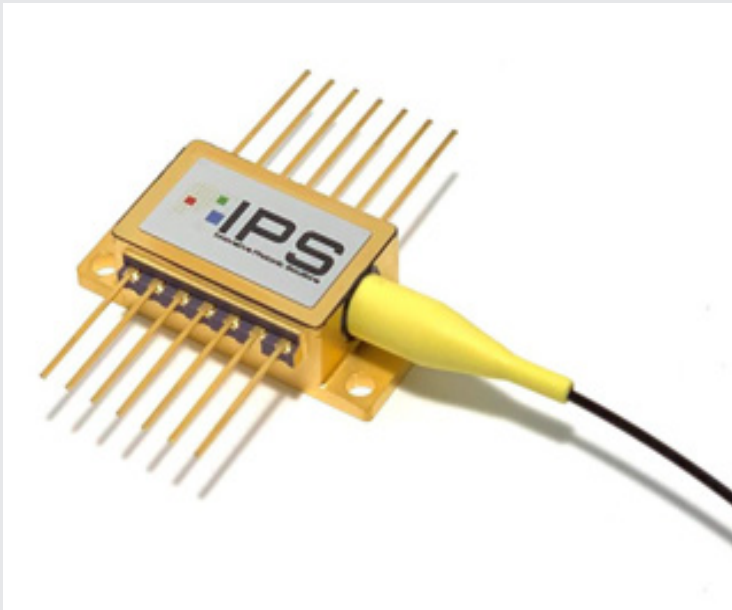


Multi-Mode Fiber Coupled Butterfly



Innovative Photonic Solutions' proprietary multi-mode wavelength stabilized laser features high output power with ultra-narrow spectral bandwidth and a uniform intensity 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

Applications

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

- High Resolution Raman Spectroscopy
 - Portable Raman
 - Process Raman
- Direct-diode Frequency Doubling
- Fiber Laser Pumping
- Metrology & Interferometry
- Remote Sensing

Key Features

- Ultra-Narrow Spectral Bandwidth (< 0.1 nm FWHM, 0.08 nm typical)
- Stabilized Output Spectrum (< 0.007 nm/°C)
- "Ultra-Track" Linear Tracking Photodiode
- Low Power consumption
- 40 dB SMSR Typical
- Multi-mode laser diodes come standard with <0.1 nm (0.08 nm typical) spectral linewidth.
- Available with 105 micron core or 62.5 micron core fiber (105 micron core is standard)

Standard Wavelengths

638nm
680nm
785nm

808nm
830nm

976nm
1064 nm

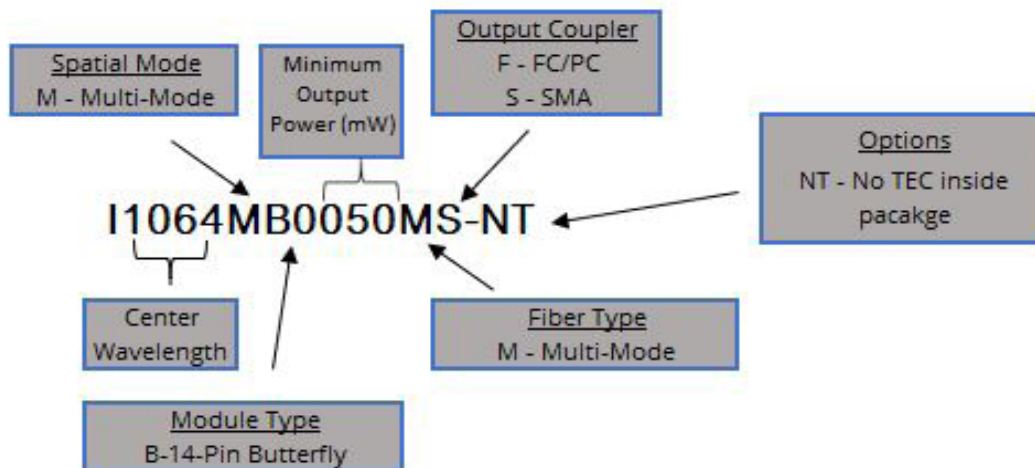
Specifications



Wavelength Tolerance	+/- 0.5 nm
Spectral Linewidth ($\Delta\lambda$)	<0.1 nm (0.08nm typical)
Wavelength Stability Range	15 - 45 °C
SMSR	35 - 45 dB
Fiber	105 micron core multi-mode(MM) fiber
Output Power Stability	1% typical

λ (nm)	Min. Power (mW)	Base Part Number	Standard Connectors Offered
638	300	I0638MB0300MX	Unterminated, FC/PC, or SMA
680	300	I0680MB0300MX	
785	350	I0785MB0350MX	
	600	I0785MB0600MX	
808	350	I0808MB0350MX	
	600	I0808MB0600MX	
830	350	I0830MB0350MX	
	600	I0830MB0600MX	
976	4000	I0976MB4000MX	
	5000	I0976MB5000MX	
1064	350	I1064MB0350MX	
	600	I1064MB0600MX	

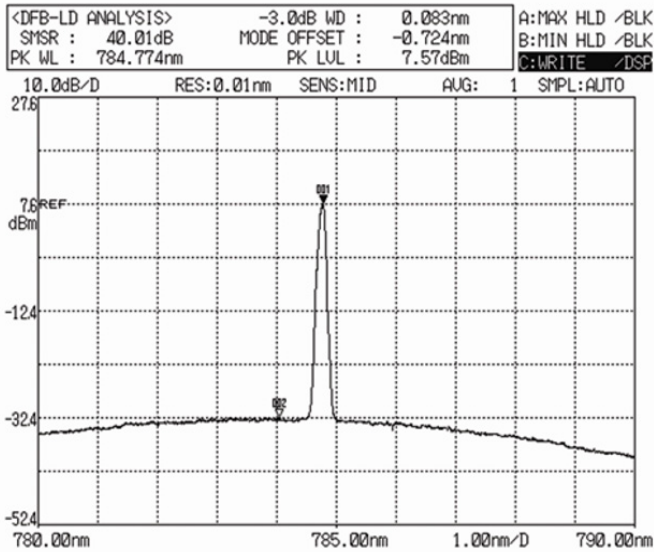
Part Schema



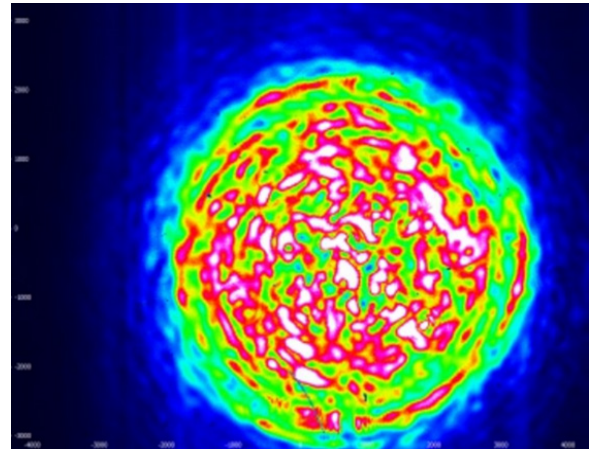
Selected Data



TEC Current Limit	3.2 A
TEC Voltage Limit	5.8 V
Photodiode Current	30uA
Integral Thermistor	Betatherm 10K3CG3



Typical 785nm SS Laser Spectrum



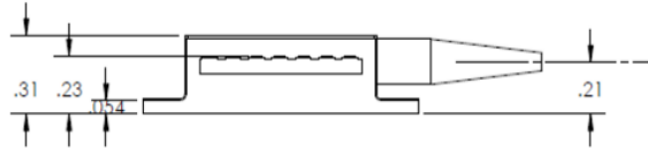
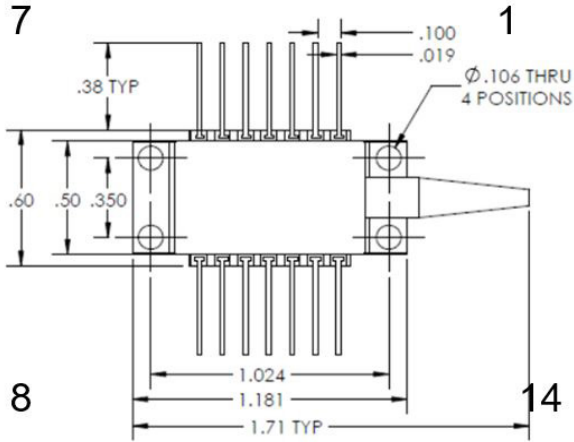
Typical 785nm Beam Quality

Custom Capability

- Custom wavelengths available upon request
- FC/PC, SMA, or unterminated output coupler
- Various output fiber diameters available
- External TEC (e.g. No TEC inside of package optional)

Electrical Specs

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

1. 14-pin BF should be mounted on a heat sink with a thermal compound (thermal grease).
2. 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.
3. Laser and TEC driver circuitry should be configured in a manner to prevent power /current / voltage surges and spikes.
4. IPS recommends not grounding anode and cathode as this can cause ground loops.
5. TECs require optimization of PID controller parameters in customer specific application (e.g. ambient temperature, TEC controller, heat sinking etc.) to prevent overtemperature surges that could damage the laser diode.

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