

DFB-1310H-PM



DEVICE

DFB Laser, 1310 nm, up to 150 mW, PM Output DM Capable

OVERVIEW

The Optilab DFB-1310H-PM is a single frequency laser coupled with Polarization Maintaining fiber. Built with Distributed Feed-Back Grating (DFB) as cavity reflector, it provides pure, single longitudinal mode, hopping free and extremely stable wavelength source. This laser diode is fabricated with Multiple Quantum Well (MQW) for excellent reliability and stability. It can be used either in CW operation for seeding the external modulation and coherence interferometry, or directly modulated for signal transmission. This MQW DFB laser features 150 mW of output optical power, high Side Mode Suppression Ratio (SMSR). The standard 14-pin butterfly integrates TEC, thermistor, monitor PD and an output isolator. Mode hop free version available upon request. Contact Optilab for more information.

FEATURES

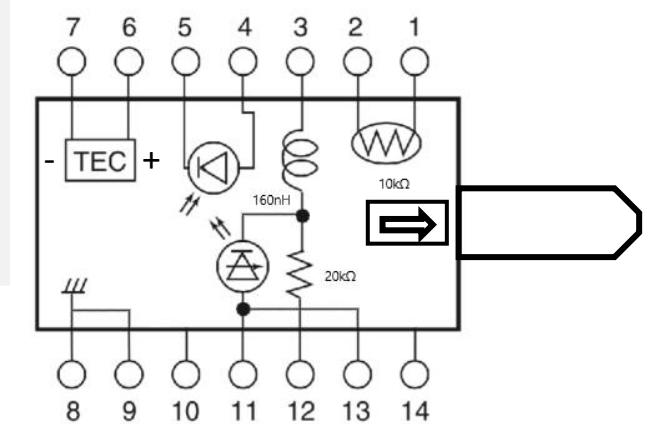
- Up to 150 mW output power
- Built-in Isolator
- Polarization maintained Fiber Output
- Mode hop free version available
- Built-in TEC, Thermistor & Monitor PD
- Side Mode Suppression Ratio 50 dB
- Zero Chromatic Dispersion

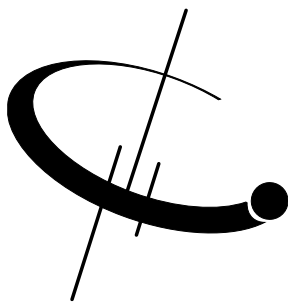
USE IN

- PM pulse laser source
- Light Source for Interferometer
- External modulation optical link
- Stabilized Single Frequency Source

FUNCTIONAL DIAGRAM

Pin#	Desc	Pin#	Desc
1	Thermistor	8	Case Ground
2	Thermistor	9	Case Ground
3	LD- (Bias)	10	NC
4	PD+	11	LD+
5	PD-	12	LD RF -
6	TEC+	13	LD+
7	TEC-	14	NC





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ABSOLUTE MAXIMUM RATING

LD Forward Current	650 mA
LD Forward Voltage	2.9 V
LD Reverse Voltage	2 V
PD Forward Current	5 mA
PD Reversed Voltage	10 V
TEC Voltage	3.5 V
TEC Current	1.5 A
Lead Soldering Time	10 s @ < 260 °C

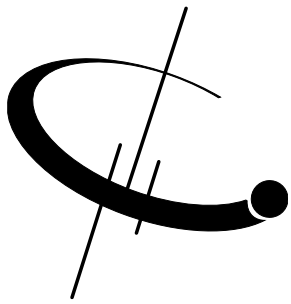
E/O SPECIFICATIONS

Center Wavelength Range	1310 +/- 3 nm
Optical Output Power	Up to 150 mW
Threshold Current	15 mA typ.
LD Operation Current	500 mA typ., 600 mA max
Forward Voltage	2.5 V typ.
Side Mode Suppression Ratio	50 dB Min., 55 dB typ.
Wavelength Temperature Coefficient	80 pm/°C typ.
Laser Linewidth	10 MHz Max.
3 dB S21 Bandwidth	2 GHz Min.
Relative Intensity Noise	-145 dB/Hz
Thermistor Resistance	10 +/- 0.5 kOhm @ 25°C, NTC
Thermistor B Constant	3950 +/- 100 K
Polarization Extinction Ratio	20 dB Min.
Optical Isolation	30 dB typ.

MECHANICAL & ENVIRONMENT SPECIFICATIONS

Operating Case Temperature	-20 °C to +65 °C
Storage Temperature	-40 °C to +85 °C
Optical Connectors	FC/APC, slow axis aligned
Optical Fiber Type	Fujikura SMI3-PS-U40D, Panda
Fiber Tubing	900 µm Loose Tube

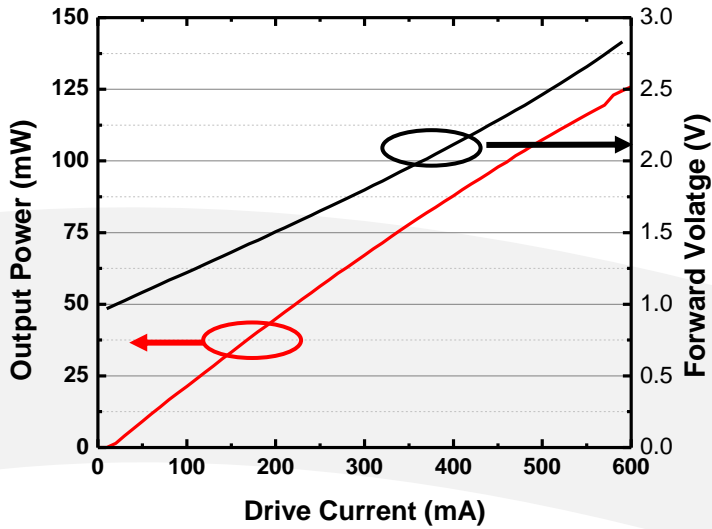




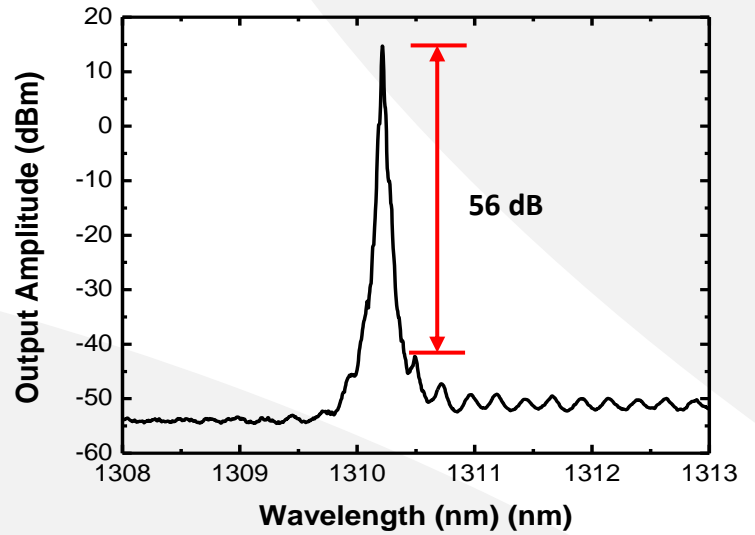
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SAMPLE TEST DATA

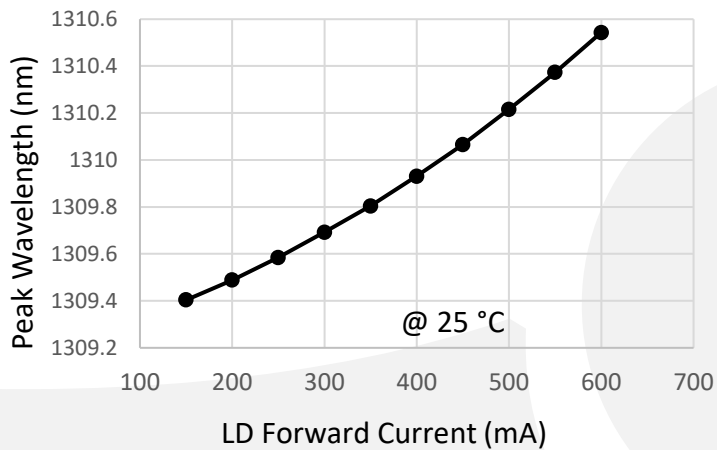
L-I-V Curve



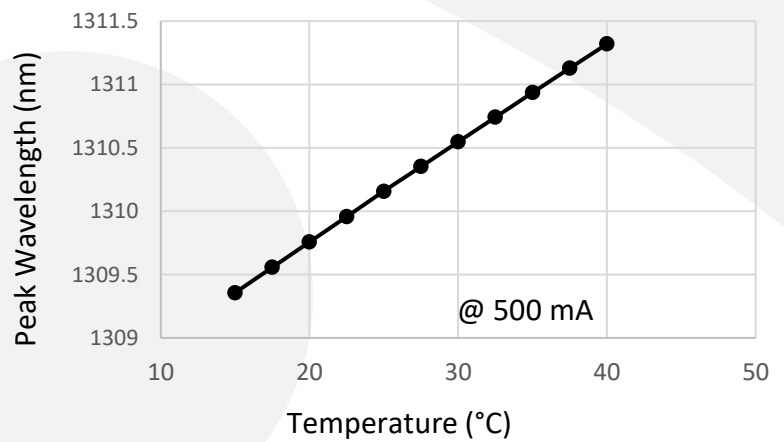
Typical Output Spectrum

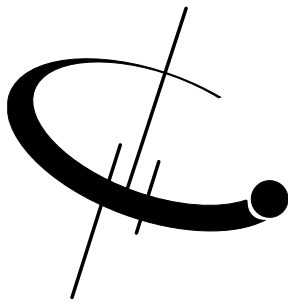


Drive Current Tuned Wavelength



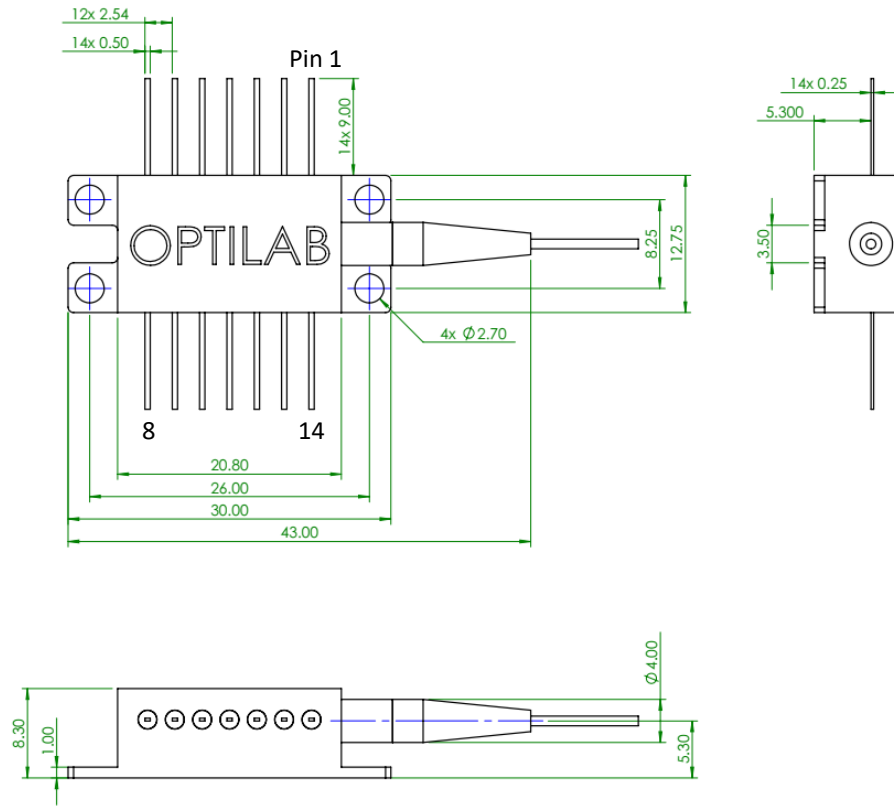
Temperature Tuned Wavelength





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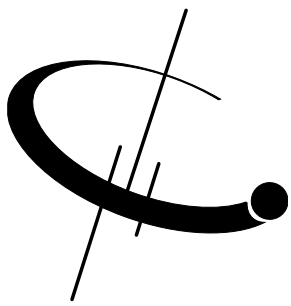
MECHANICAL DRAWING



ORDERING OPTION

DFB-XXXX-DM-PM-YYY	
XXXX: Wavelength in nanometer	1270, 1290, 1310, 1330 nm
YYY: Optical power in mW	Up to 150 mW





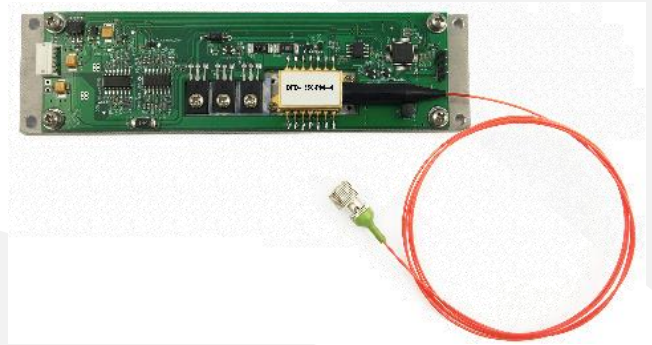
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AVAILABLE ACCESSORIES

UNIVERSAL LASER DIODE CONTROLLER (ULDC)



ULDC is a fully integrated laser diode controller with precise current and temperature setting. With a Zero Insertion Force (ZIF) adaptor, ULDC can be used with all 14 pin laser diodes. It also features ~2MHz direct modulation with external board



DFB-1550-PM can be ordered as DFB- PM-M, which allows DFB laser's operating temperature and output power precisely controlled to ensure constant wavelength and power stability. It can be used for module level integration system.

