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SPECIFICATION

Ultra-Narrow Linewidth Laser

DL-BF9C-CLS101B-FP-S1550-LW50

A. PRODUCT DESCRIPTION

The DenseLight DL-BF9C-CLS101B-FP-S1550-LW50 is a narrow linewidth laser designed for applications in optical metrology & instrumentation and optical gas & chemical sensing, requiring narrow spectral linewidth, excellent SMSR, power stability, and a very highly wavelength stable laser output. The DL-BF9C-CLS101B-FP-S1550-LW50 is complete with a DenseLight 14-pin BTF package laser, integrated laser driver & temperature controller.

For responsive prototyping enquiries please email: info@denselight.com

B. FEATURES

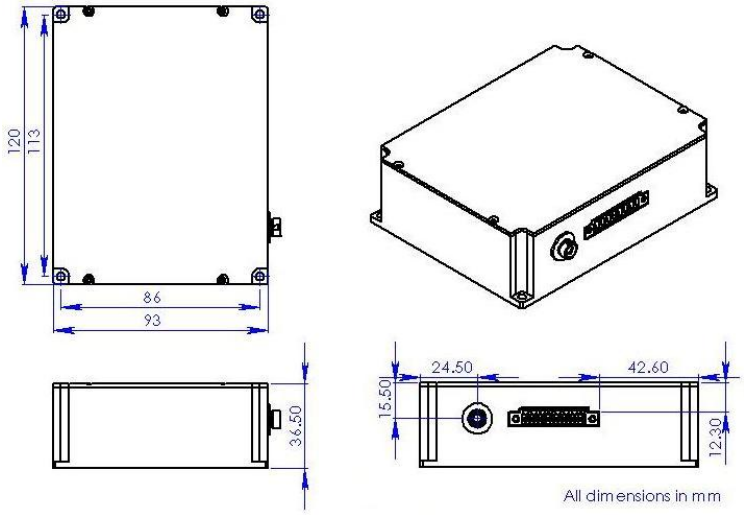
- Output power > 10mW
- Center Wavelength 1550 nm +/-2 nm
- Wavelength stability better than +/-1pm
- Typical linewidth of <50kHz
- SMSR >45dB
- PER >15dB
- Built-in current driver and temperature controller
- Single +5V power supply with power adapter included
- RoHS compliance, Telcordia GR-468-CORE
- Integrated optical isolator
- Optical output: PMF-Panda FC/APC receptacle, 1550mn PM Patch Cord
- Dimension: L120 x W93 x H36.5 mm

C. APPLICATIONS

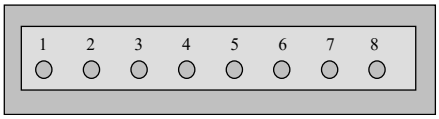
- OTDR (Optical Time Domain Reflectometry)
- B-OTDR (Brillouin Optical Time Domain Reflectometry)
- Optical measuring instrumentation
- Optical gas and chemical sensor
- LIDAR

D. PHYSICAL DIMENSIONS AND MECHANICAL SPECIFICATION

Dimension:	L120 x W93 x H36.5 mm
Enclosure:	Metal Case
Optical output:	PMF FC/ APC receptacle
Cooling:	Air-cooled. Passively cooled with heat sink at the base
Electronic interface:	8-pin terminal block with flange



E. PIN ASSIGNMENT AND FUNCTION



8-pin terminal block (Pin 1 near to FC/APC receptacle)

Pin No.	Symbol	Power/Control /Monitor	Analog /Digital	Input /Output	Description
1	P_{GND}	P			Power Supply Ground
2	V_S	P			+5V d.c.
3	N/C				
4	N/C				
5	N/C				
6	T_{MON}	M	A	O	To monitor the temperature of PCB
7	N/C				
8	A_{GND}				Signal Ground for Control and Monitor Signals

F. ABSOLUTE MAXIMUM RATINGS

Operation beyond the absolute maximum ratings can cause degradation in device performance, permanent damage to the device, and will annul the device warranty.

Parameter	Symbol	Condition	Min	Max	Unit
Operating temperature (chassis)	T_{op}	I_{op}	0	50	°C
Operating Relative Humidity	RH	I_{op}		85	%
Storage temperature	T_{stg}	Unbiased	-40	85	°C
Input current	I_s			6	A
Input Power Supply	V_S			6	V

G. ELECTRICAL SPECIFICATIONS[1]

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Input Power Supply	V_S	T_{op} =0 to 50 °C	4.75	5	5.5	V
Input Current	I_S	T_{op} =0 to 50 °C			2.5	A
Total Power consumption	P_S	T_{op} =0 to 50 °C			12.5	W
Internal PCB Temperature Monitor	T_{MON1}	Analog voltage: T_{MON} = 395mV + (6.2mV/°C x T), T = PCB temperature in °C				mV
Voltage	V_{OUT}	R_X = infinite	0		2.5	V
Output Impedance	R_{OUT}			150		Ω
Source Current	$\|I_{OUT}\|$	V_{OUT} = 2.5V			4	mA

H. OPTICAL SPECIFICATIONS[1]

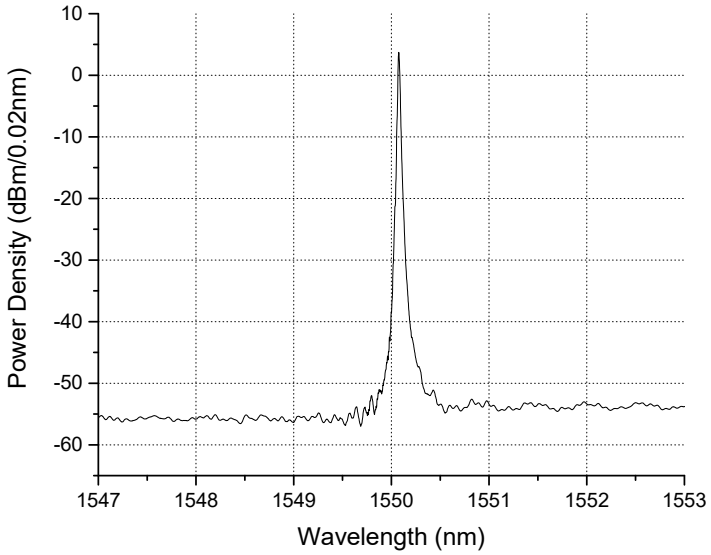
Parameter	Symbol	Min	Typ	Max	Unit
Power in PMF	P_o	10	-	-	mW
Peak wavelength	λ	1548	1550	1552	nm
Linewidth	Δλ	-	-	50	kHz
Side Mode Suppression Ratio	SMSR	45	-	-	dB
Polarization Extinction Ratio	PER	15	-	-	dB
Power stability[2] 1 hour 8 hours	P_{Stb}	- -	- -	± 0.03 ±0.05	dB dB
Wavelength stability[2]	$\lambda_{stability}$	-	-	± 1	pm

1) Unless otherwise specified. Tests are performed at T_{op} = 25°C
2) After one hour of warm-up

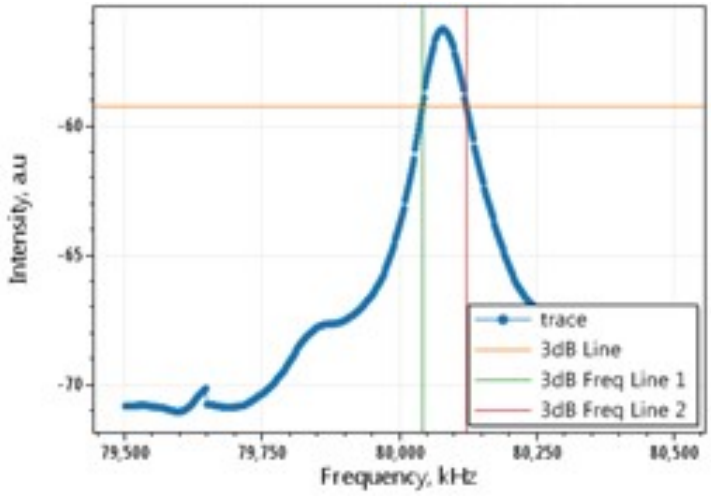
I. TYPICAL PERFORMANCE CHARACTERISTICS

1. Optical Spectrum Plots

OSA Resolution: 0.02nm



2. Linewidth



J. DISCLAIMER FOR CUSTOMER SPECIFIC APPLICATIONS

Denselight product is not intended for use other than stated on the application note or as defined in the product specification. The performance of the product should always be tested in the actual application conditions. As our products are used in conditions beyond our control, we cannot assume any liability for damage caused through their use. Users of DenseLight products are solely responsible to thoroughly test and qualify their system and / or application for their intended application and have determined such at their sole discretion. DenseLight cannot assume any liability for the use of our products in conjunctions with other. Customer assumes the sole risk and liability of the product performance other than specified by the product specific data sheet or application notes without DenseLight's specific written consent.

K. SAFETY INFORMATION

The DL-BF9C-CLS101B-FP-S1550-LW50 is classified as Class 3R products per IEC 60825-1 laser safety requirements. All electronic assemblies meet IPC-A-610F Class 2 requirements.