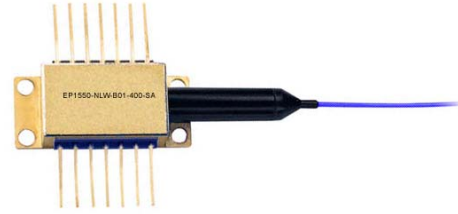


EP1550-NLW-B Series

1550nm Narrow Linewidth Laser - Butterfly



DESCRIPTION

The Eblana Photonics EP1550-NLW-B laser diode module is a cost effective, highly coherent laser source. A strained multi-quantum well Discrete Mode laser diode chip is integrated with optical isolator, thermo-electric cooler (TEC), thermistor and power monitor photodiode in an industry standard hermetically sealed 14 pin butterfly package.

FEATURES

- Narrow Linewidth (100kHz, 200 kHz & 400kHz versions)
- Excellent wavelength control and stability
- Industry Standard 14 pin Butterfly package
- High SMSR performance

APPLICATIONS

- Optical Sensing
- Lidar
- Coherent communications
- Interferometry
- Test and Measurement

ELECTRO-OPTICAL CHARACTERISTICS ($T_{sub} = 25^{\circ}\text{C}$, CW bias unless stated otherwise):

PARAMETER	VERSION	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS	
Spectral Line Width	$\Delta\nu = 100\text{kHz}$	$\Delta\nu$			100	kHz	$250 \leq I \leq 300 \text{ mA}$	
Wavelength Tuning Range		$\Delta\lambda$	2			nm	$T_{subMIN} < T_{sub} < T_{subMAX}$, $I=250\text{mA}$	
Peak Wavelength		λ	1540			1570	nm	$P_f = 5 \text{ mW}$
Side Mode Suppression Ratio		SMSR	30	40			dB	$P_f = 5 \text{ mW}$
Wavelength Current Coefficient				3			pm/mA	$P_f = 5 \text{ mW}$
Wavelength Temperature Coefficient				0.09			nm/ $^{\circ}\text{C}$	$P_f = 5 \text{ mW}$
Threshold Current			I_{th}		45	50	mA	
Operating Current			I_{op}		250	300	mA	$P_f = 5 \text{ mW}$
Output Power in Fibre			P_f	3	5		mW	$I = 250 \text{ mA}$
Quantum Efficiency			η	0.03	0.04		mW/mA	
Forward Voltage			V_f		1.3	1.6	V	$I = 250 \text{ mA}$
Monitor Photodiode Response			R_m	10	-	100	$\mu\text{A/mW}$	
Optical Isolation					55		dB	$\lambda = 1550\text{nm}$
Thermistor Resistance			R_T	9.5	10	10.5	$\text{k}\Omega$	
Thermistor Temp. Coefficient					-4.4		$\%/^{\circ}\text{C}$	
Spectral Line Width		$\Delta\nu = 200\text{kHz}$	$\Delta\nu$			200	kHz	$150 \leq I \leq 200 \text{ mA}$
Wavelength Tuning Range	$\Delta\lambda$		3			nm	$T_{subMIN} < T_{sub} < T_{subMAX}$, $I=160\text{mA}$	
Peak Wavelength	λ		1530			1560	nm	$P_f = 5 \text{ mW}$
Side Mode Suppression Ratio	SMSR		30	40			dB	$P_f = 5 \text{ mW}$
Wavelength Current Coefficient				5			pm/mA	$P_f = 5 \text{ mW}$
Wavelength Temperature Coefficient				0.09			nm/ $^{\circ}\text{C}$	$P_f = 5 \text{ mW}$
Threshold Current			I_{th}		32	37	mA	
Operating Current			I_{op}		160	200	mA	$P_f = 5 \text{ mW}$
Output Power in Fibre			P_f	3	5		mW	$I = 160 \text{ mA}$
Quantum Efficiency			η	0.03	0.04		mW/mA	
Forward Voltage			V_f		1.3	1.6	V	$I = 100 \text{ mA}$
Monitor Photodiode Response			R_m	10	-	100	$\mu\text{A/mW}$	
Optical Isolation					55		dB	$\lambda = 1550\text{nm}$
Thermistor Resistance			R_T	9.5	10	10.5	$\text{k}\Omega$	
Thermistor Temp. Coefficient					-4.4		$\%/^{\circ}\text{C}$	



ELECTRO-OPTICAL CHARACTERISTICS (T_{sub} = 25°C, CW bias unless stated otherwise):

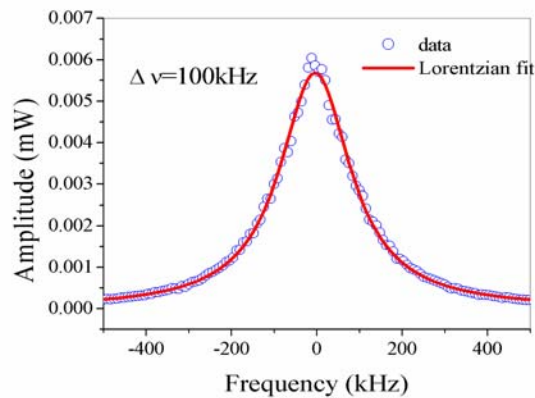
PARAMETER	VERSION	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Spectral Line Width	Δv = 400kHz	Δv			400	kHz	100 ≤ I ≤ 150 mA
Wavelength Tuning Range		Δλ	3			nm	T _{subMIN} < T _{sub} < T _{subMAX} , I=100mA
Peak Wavelength		λ	1530		1560	nm	P _f = 6 mW
Side Mode Suppression Ratio		SMSR	30	40		dB	P _f = 6 mW
Wavelength Current Coefficient				5		pm/mA	P _f = 6 mW
Wavelength Temperature Coefficient				0.09		nm/°C	P _f = 6 mW
Threshold Current		I _{th}		25	30	mA	
Operating Current		I _{op}		100	150	mA	P _f = 6 mW
Output Power in Fibre		P _f	4	6		mW	I = 100 mA
Quantum Efficiency		η	0.05	0.08		mW/mA	
Forward Voltage		V _f		1.3	1.6	V	I = 100 mA
Monitor Photodiode Response		R _m	10	-	100	μA/mW	
Optical Isolation				55		dB	λ = 1550nm
Thermistor Resistance		R _T	9.5	10	10.5	kΩ	
Thermistor Temp. Coefficient				-4.4		%/°C	

ABSOLUTE MAXIMUM RATINGS:

PARAMETER	VERSION	MIN	MAX	UNIT	
Forward Current (LD)	Δv = 100kHz		350	mA	
	Δv = 200kHz		250	mA	
	Δv = 400kHz		180	mA	
TE Cooler Current (I _c)	All Versions		1.5	A	
Reverse Voltage (LD)			2	Volts	
Reverse Voltage (PD)			20	Volts	
Case Temperature (T _{case}) T _{sub} = 25°C *			-20	65	°C
Chip Submount Temperature (T _{sub})			0	30	°C
Storage Temperature		-40	85	°C	

* For T_{sub} < 25°C, Max Case Temperature should be derated to T_{case MAX} = T_{sub} +40°C

TYPICAL SPECTRUM (100kHz version):



Delayed self heterodyne spectrum at 250mA



PACKAGE:

The EP1550-NLW-B product series is offered in a 14 Pin Butterfly package - see package outline drawing below (Fig 1). The package pinout is specified in Fig 2.

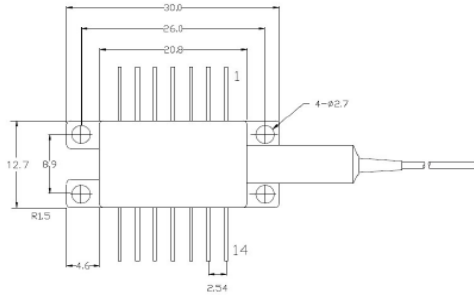


Fig. 1 - Package Outline

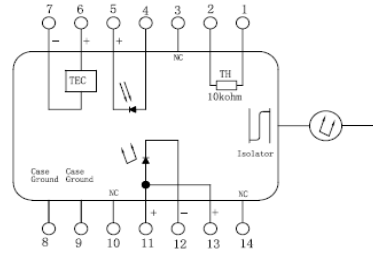
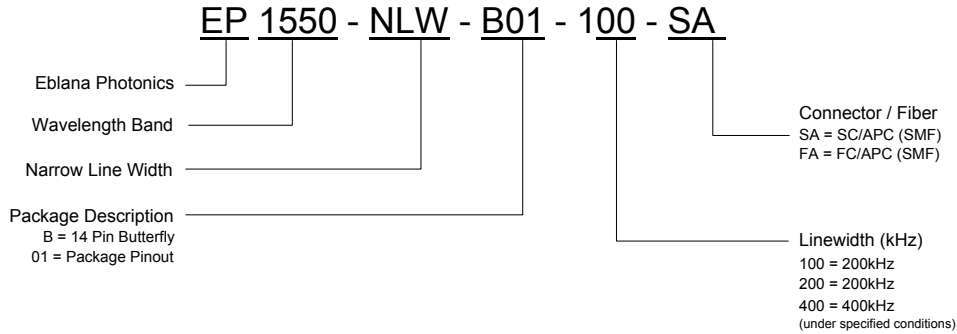


Fig. 2 - Pinout "01"

HOW TO ORDER (example):

Please construct the part number you require using the following information.



LASER SAFETY:

Class 3R Laser Product

This is a Class 3R Laser Product as defined by International Standard IEC 60825-1, Edition 2. Invisible Laser radiation is emitted from the end of the fiber or connector. Avoid direct eye exposure to the beam. Laser safety labels are not attached to the module due to space limitations but instead are affixed to the outside of the shipping carton.

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SALES:

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