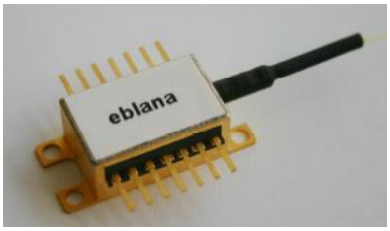
Laser Diode Discrete Mode
EP2108-DM-B Series



The EP2108-DM-B laser diode module is a cost effective, highly coherent laser source. The patented discrete mode (DFB-like) ridge waveguide technology and epistructure design is used to deliver an InP-based strained quantum-well laser diode source emitting at a wavelength of 2.108µm with high SMSR. The Discrete Mode laser diode chip is packaged in an industry standard, hermetically sealed 14 pin butterfly package with integrated optical isolator, thermo-electric cooler (TEC), monitor photodiode and thermistor.

Key Features

Excellent reliability
Mode-Hop free tuning >2nm
Integrated optical isolator
Narrow linewidth <2MHz

Applications

N_2O gas sensing

Optical and electrical characteristics: (T = 25°C)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
LASER DIODE					
Output Power in Fibre	P_f		2		mW
Centre Wavelength	λ_{cen}	2107	2108	2109	nm
Threshold Current	I_{th}	-	25	40	mA
Operating Current	I_{op}	-	80	120	mA
Forward Voltage	V_f	-	1.3	1.6	V
Side Mode Suppression Ratio	SMSR	30	40	-	dB
Temperature Tuning Coefficient		-	0.1	-	nm/K
Current Tuning Coefficient		-	0.06	-	nm/mA
Slope Efficiency	η	0.02	0.03	-	mW/mA
MONITOR DIODE*					
Monitor Photo Current	Im	0.2	0.4	0.8	mA
Monitor Operating Voltage	Vm	-	-	5.5	V
Monitor Dark Current (at 5V V_{DR})	Imd	-	-	< 0.2	µA

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THERMISTOR					
Thermistor Resistance	**R_T**	**9.5**	**10**	**10.5**	**kW**
Thermistor Temp. Coefficient		**-**	**-4.4**	**-**	**%/°C**
Thermoelectric Cooler					
TEC Forward Current	**I_C**	**-**	**0.5**	**1.0**	**A**
TEC Forward Voltage	**V_c**	**-**	**-**	**2.5**	**V**
FIBER					
Type	**-**	**single mode / polarisation maintaining**			
Core/Cladding Diamter	**D_c/D_{cl}**	**-**	**7/125**	**-**	**µm**
Length	**L**	**0.5**	**-**	**-**	**m**
Optical Connector	**-**	**FC/APC, FC/PC others available on request**			

Absolute Maximum Ratings (T_{sub}= 25°C)

Parameter	Symbol	Ratings	Units
Laser diode reverse voltage	**V_R**	**2**	**V**
Laser diode forward current	**I_F**	**120**	**mA**
Photodiode reverse voltage	**V_{DR}**	**20**	**V**
Peltier current	**I_P**	**1.2**	**A**
Operating case temperature	**T_{case}**	**-20 to 65**	**°C**
Storage temperature	**T_{stg}**	**-40 to 85**	**°C**

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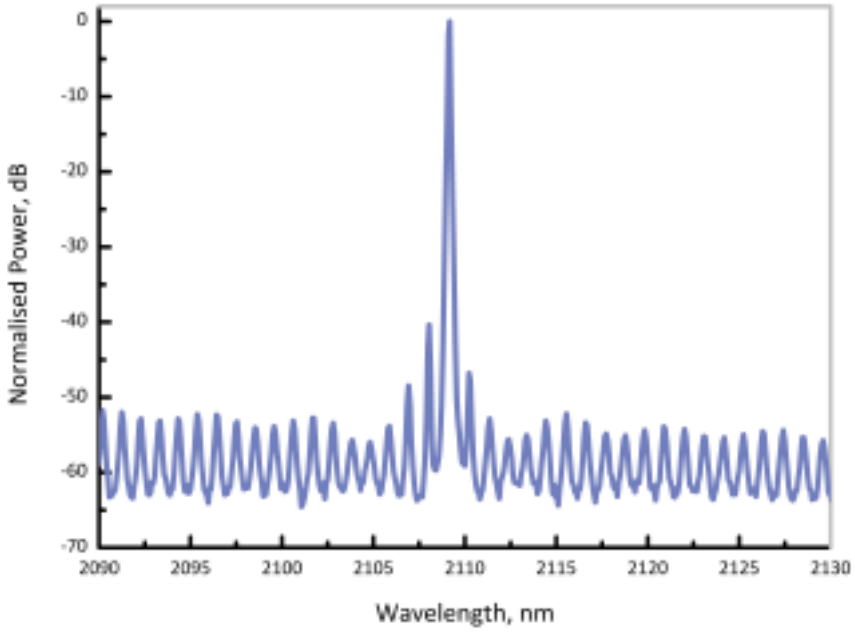
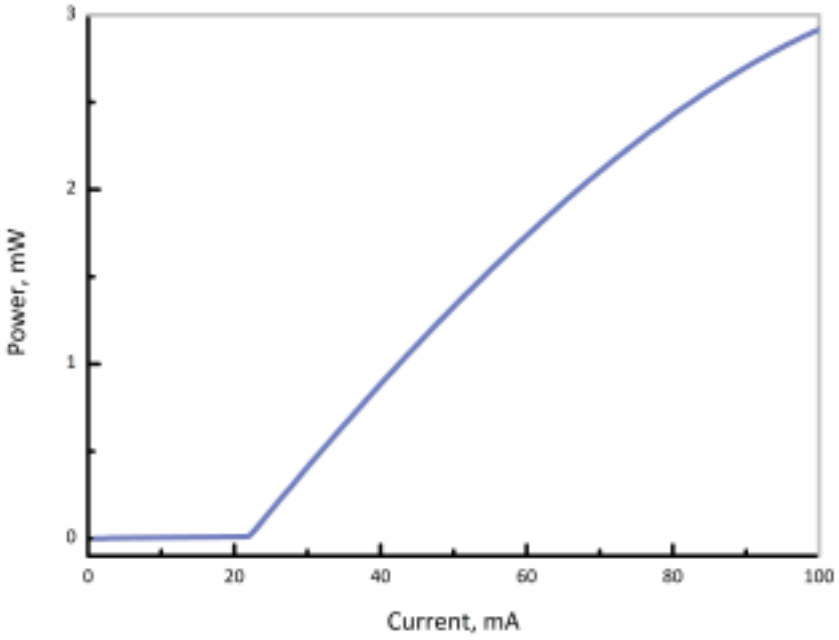
TYPICAL PERFORMANCE



Typical CW Spectrum



Power vs. Operating Current

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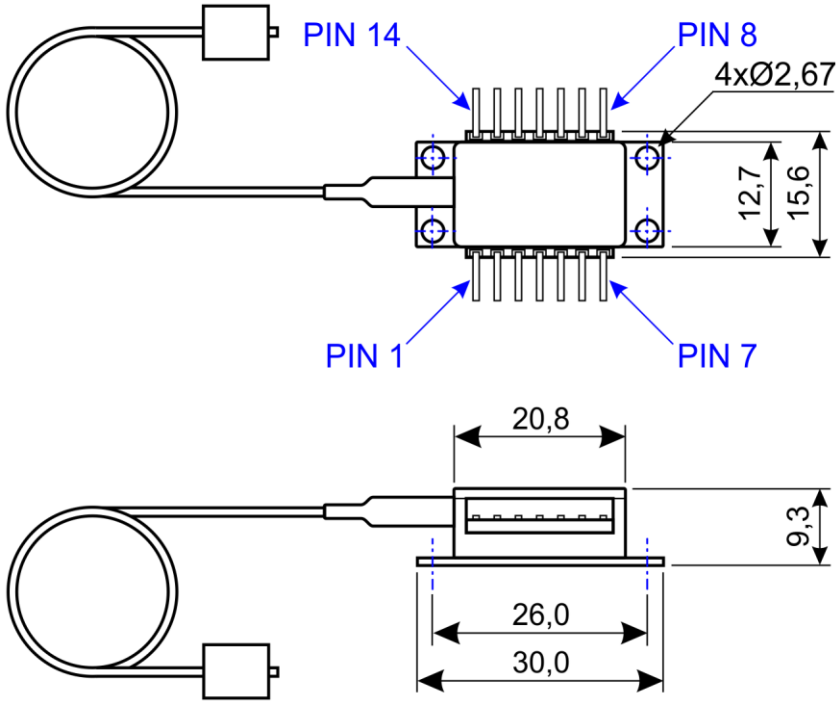
Package Specification

Housing drawing



Pin No.	Pin Information
1	Thermistor
2	Thermistor
3	Laser cathode
4	NC
5	NC
6	Thermoelectric cooler +
7	Thermoelectric cooler -
8	Case ground
9	Case ground
10	NC
11	Laser anode
12	Laser cathode
13	Laser anode
14	NC

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