DATA SHEET

EYP-RWL-0808-00800-4000-BFW39-0010

Revision 0.90

17.11.2020

SINGLE MODE LASER DIODES
Fabry-Perot Laser

General Product Information

Product	Application
808 nm Fabry-Perot Laser with hermetic Butterfly Package	Metrology
Monitor Diode	
Beam Collimation	
RoHS compliant	

Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Storage Temperature	T_S	°C	-40		85	Stress in excess of one of the Absolute Maximum Ratings can cause permanent damage to the device.
Operational Temperature at Case	T_C	°C	-20		75	
Forward Current	$I_{F\ Peak}$	A			1.6	
Reverse Voltage	V_R	V			2	
Output Power	$P_{opt\ Peak}$	W			0.9	

Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Operational Temperature at Case	T_C	°C	0		40	
Forward Current	$I_{F\ Peak}$	A		1.0	1.5	see Pulse Mode Conditions
Output Power	$P_{opt\ Peak}$	W			0.8	see Pulse Mode Conditions

Characteristics at T_{case} = 25° C, at Begin Of Life

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Center Wavelength	λ_C	nm	796	806	816	
Spectral Width (FWHM)	$\Delta\lambda$	nm		1	3	$P_{opt\ Peak}$ = 0.8 W, multi mode emission
Temperature Coefficient of Wavelength	$d\lambda / dT$	nm / K		0.28		
Threshold Current	I_{th}	A			0.3	
Output Power @ $I_{F\ Peak}$ = 1.5 A	$P_{opt\ Peak}$	W	0.8			see Pulse Mode Conditions
Divergence parallel ($1/e^2$)	$\Theta_{\parallel}$	°		0.1	0.15	full angle, parallel to base plate (see p. 3)
Divergence perpendicular ($1/e^2$)	$\Theta_{\perp}$	°		0.1	0.15	full angle, perpendicular to base plate (see p. 3)
Divergence Ratio	$\Theta_{\perp} / \Theta_{\parallel}$		0.66		1.5	

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Characteristics at T_{case} = 25° C, at Begin Of Life

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Beam Diameter parallel ($1/e^2$)	$d_{\parallel}$	mm		1	1.5	parallel to base plate (see p. 3)
Beam Diameter perpendicular ($1/e^2$)	$d_{\perp}$	mm		1	1.5	perpendicular to base plate (see p. 3)
Aspect Ratio of Beam Diameters	$d_{\parallel} / d_{\perp}$		0.66		1.5	
Beam propagation factor	M^2			1.2	1.5	
Polarization Extinction Ratio	DOP	%		90		E field perpendicular to base plate (see p. 3)

Pulse Mode Conditions

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Pulse Length	t_P	ms	0.1		10	
Duty Cycle	D	%			10	

Monitor Diode

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Monitor Detector Responsivity	I_{mon}	µA	10		1000	U_R = 5 V; P_{opt} = 800 mW

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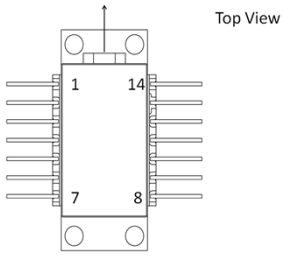
Package Dimensions

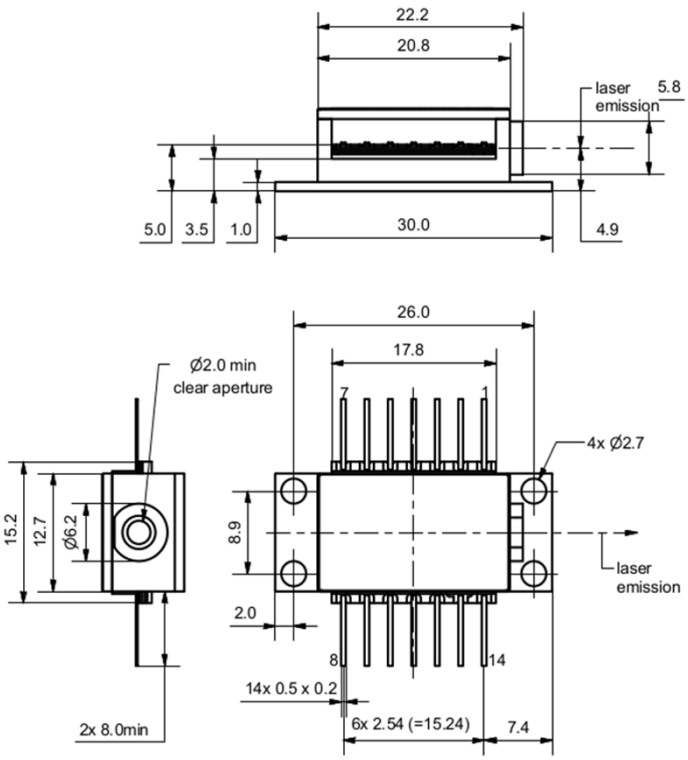
Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Height of Emission Plane	h_{EP}	mm		4.9		

Package Pinout

1	not connected	14	not connected
2	not connected	13	Case
3	not connected	12	not connected
4	not connected	11	Laser Diode (Cathode)
5	not connected	10	Laser Diode (Anode)
6	not connected	9	Photodiode (Anode)
7	not connected	8	Photodiode (Cathode)



Package Drawings



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Polarization:

E field perpendicular to base plate

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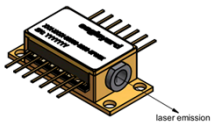
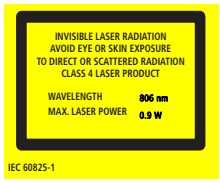
Unpacking, Installation and Laser Safety

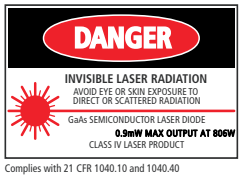
Unpacking the laser diodes should only be done at electrostatic safe workstations (EPA). Though protection against electro static discharge (ESD) is implemented in the laser package, charges may occur at surfaces. Please store this product in its original package at a dry, clean place until final use. During device installation, ESD protection has to be maintained.



Operating at moderate temperatures on proper heat sinks willl contribute to a long lifetime of the diode.



The laser emission from this diode is close to the invisible infrared region of the electromagnetic spectrum. Avoid direct and/or indirect exposure to the free running beam. Collimating the free running beam with optics as common in optical instruments will increase threat to the human eye.



Each laser diode will come with an individual test protocol verifying the parameters given in this document.

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