DATA SHEET

EYP-RWL-1060-00100-1300-SOT01-0000

Revision1.00

07.09.2021

SINGLE MODE LASER DIODES
Fabry-Perot Laser

General Product Information

Product	Application
1060 nm Fabry-Perot Laser with hermetic TO Housing	Spectroscopy
Integrated Monitor Diode	

Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Storage Temperature	T_S	°C	-20		85	Stress in excess of one of the Absolute Maximum Ratings may damage the laser. Please note that a damaging optical power level may occur although the maximum current is not reached. These are stress ratings only, and functional operation at conditions beyond those indicated under Recommended Operational Conditions is not
Operational Temperature at Case	T_C	°C	-20		50	
Forward Current	I_F	mA			180	
Reverse Voltage	V_R	V			0	
Output Power	P_{opt}	mW			110	

Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Operational Temperature at Case	T_C	°C	15		40	
Forward Current	I_F	mA			170	
Output Power	P_{opt}	mW	10		100	

Characteristics at T_C = 25° C at Begin Of Life

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Center Wavelength	λ_C	nm	1050	1060	1070	
Spectral Width (FWHM)	$\Delta\lambda$	nm			1	
Temperature Coefficient of Wavelengtl	$d\lambda$ / dT	nm / K		0.3		
Output Power @ 170 mA	P_{opt}	mW	100			total output measured with integrating sphere
Slope Efficiency	η_d	W / A	0.6	0.8		
Threshold Current	I_{th}	mA			70	
Cavity Length	L	µm		1300		
Divergence parallel	$\Theta_{\parallel}$	°		8		FWHM
Divergence perpendicular	$\Theta_{\perp}$	°		14		FWHM
Polarization				TE		E field parallel to Pin 2 - Pin 3 - plane
Spatial Mode (transversal)				TEM_{00}		Fundamental Mode
Spectral Mode (longitudinal)				Single/Multi Mode		Depending on operating conditions

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Monitor Diode

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Monitor Detector Responsivity	I_{mon} / P_{opt}	µA / mW	0.2		10	U_R = 5 V, target values
Reverse Voltage Monitor Diode	$U_{R\ MD}$	V	3		5	

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Package Dimensions

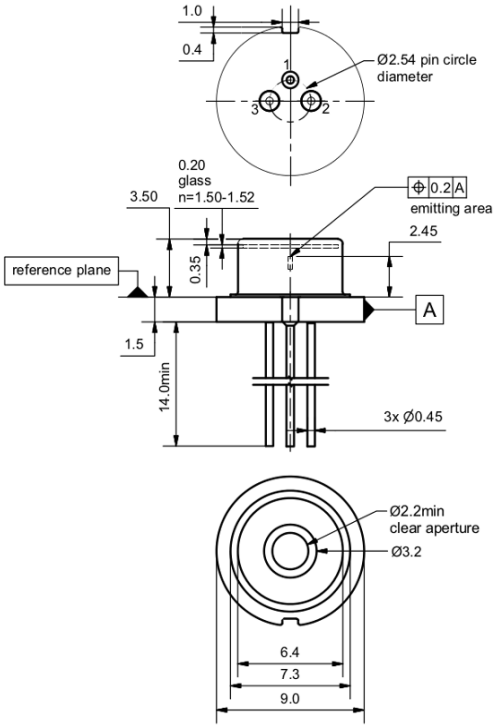
Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Height of Emission Plane	h_{EP}	mm	2.30	2.45	2.50	Reference plane: top side of TO header
Excentricity of Emission Center	R	mm			0.12	Reference: center of outer diameter of header
Pin Length	l_{PIN}	mm		14		

Package Pinout

1 Laser Diode Cathode, Monitor Diode Cathode, Case
2 Photo Diode Anode
3 Laser Diode Anode

Bottom View

Package Drawings



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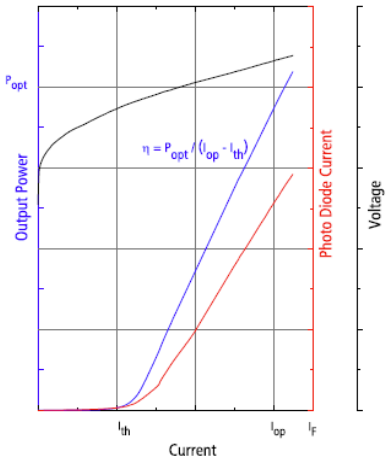
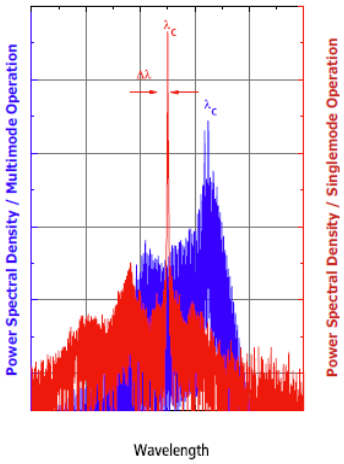
Typical Measurement Results

Output Power vs. Current



Spectra at Specified Optical Output Power



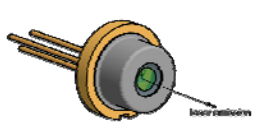
Unpacking, Installation and Laser Safety

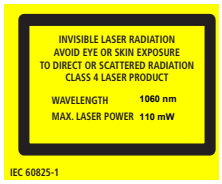
Unpacking the laser diodes should only be done at electrostatic safe workstations (EPA). Though protection against electro static discharge (ESD) is implemented in the laser package, charges may occur at surfaces. Please store this product in its original package at a dry, clean place until final use.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

The RWL diode type is known to be sensitive against thermal stress. It should not be operated without appropriate injection from a seed laser. Operating at moderate temperatures on proper heat sinks will contribute to a long lifetime of the diode. The chip should be protected against moisture. A water vapor content below 5000 ppm is recommended for applications with high reliability requirements.

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.





Complies with 21 CFR 1040.10 and 1040.40