



L820P200

Description

Thorlabs' 820 nm, 200 mW laser diode is suited for a variety of applications, including IR illumination and instruments for sensing, measurement, and imaging. Packaged in a $\varnothing 5.6$ mm TO can with a C pin configuration, this single spatial mode laser diode exhibits minimal thermal rollover at elevated temperatures. The diode has a low aspect ratio with similar divergence along the parallel and perpendicular axes. It is recommended to have the base of the laser diode in good thermal contact with a heat sink.

Specifications

Absolute Maximum Ratings*		
Specification	Symbol	Maximum
Output Power, CW	P_{\max}	220 mW
LD Reverse Voltage	V_{reverse}	2 V
PD Reverse Voltage	$V_R(\text{PD})$	20 V
Operating Case Temperature	T_{op}	-10 to +70 °C
Storage Temperature	T_{stor}	-40 to +80 °C

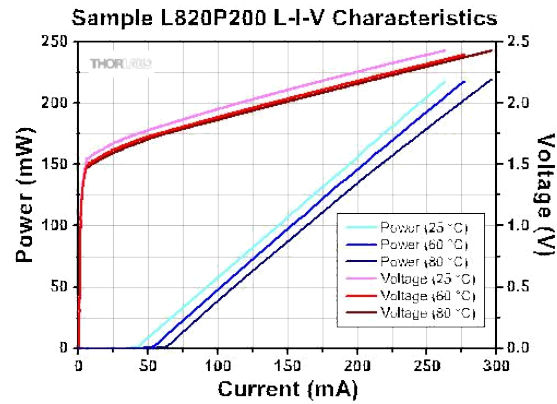
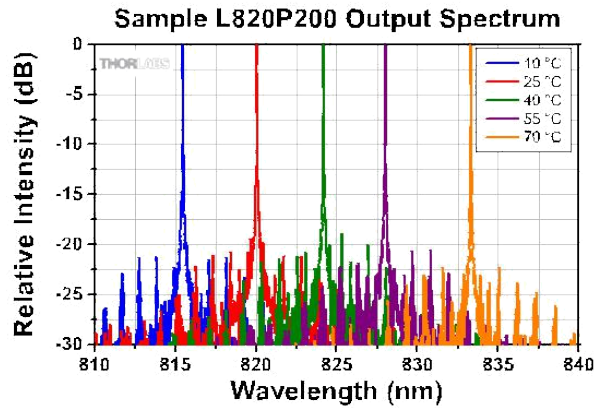


*Absolute Maximum Rating specifications should never be exceeded. Operating at or beyond these conditions can permanently damage the laser.

L820P200 Specifications					
	Symbol	Min	Typical	Max	
Center Wavelength @ P_{op}	λ_o	812 nm	815 nm	832 nm	
Output Power, CW	P_{op}	-	200 mW	-	
Threshold Current	I_{TH}	-	50 mA	70 mA	
Operating Current CW @ P_{op}	I_{op}	-	250 mA	340 mA	
Operating Voltage @ P_{op}	V_{op}	-	2.4 V	3.3 V	
Slope Efficiency	η	0.7 W/A	0.95 W/A	-	
Monitor PD Current @ P_{op}	I_{mon}	0.1 mA	0.3 mA	1.5 mA	
Polarization Extinction Ratio (TE/TM)	PER	-	20 dB	-	
Beam Divergence (FWHM) @ P_{op}	Parallel	θ_{\parallel}	7°	9°	12°
	Perpendicular	θ_{\perp}	13°	17°	22°
Off-Axis Deviation @ P_{op}	Parallel	$\Delta\theta_{\parallel}$	-3°	-	3°
	Perpendicular	$\Delta\theta_{\perp}$	-3°	-	3°
Emission Point Accuracy	X, Y, Z	- 80 μm	-	+ 80 μm	

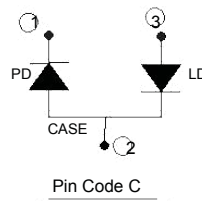
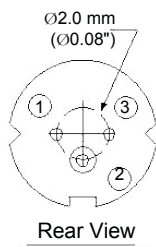
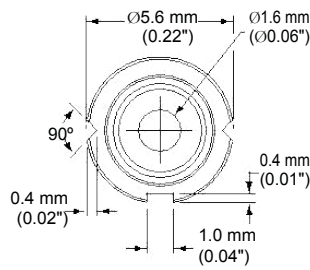
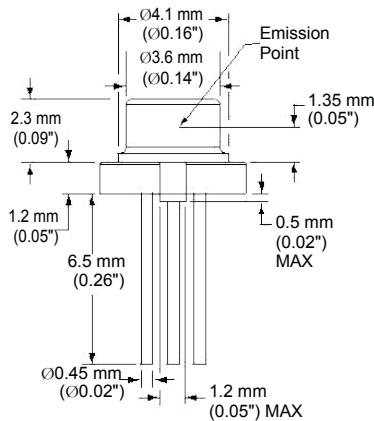
$T_{\text{CASE}} = 25^\circ\text{C}$, CW

Performance Plots



The data presented here was measured for one particular laser diode. Slight variations in performance will occur from device to device. The sample spectrum of the L820P200 laser diode was measured using a Thorlabs OSA201 Spectrum Analyzer with 7.5 GHz resolution.

Drawings



Pin	Description
1	Cathode
2	Case
3	Anode