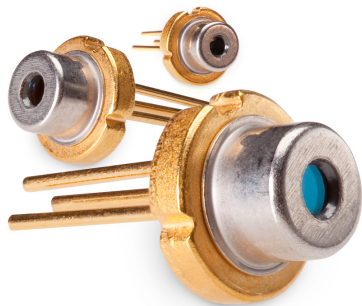


638nm, 32mW Wavelength Stabilized Lasers



Single Frequency
Wavelength Stability: $\sim 0.015\text{nm}/^\circ\text{C}$

Ondax's 638nm Wavelength Stabilized Laser is a single mode, single frequency laser packaged in an ultra-compact, TO-can footprint. The extremely narrow linewidth, broad temperature operating characteristics, and low power consumption deliver affordable, portable instrument-quality performance for a broad range of instrumentation applications.

All SureLock™ Series lasers are stabilized using the Ondax PowerLocker® Volume Holographic Grating (VHG), ensuring precise, ultra-stable center wavelengths, low temperature dependence, and consistent optical performance over the locked region.

Specifications:

Specification Summary

Parameter	Symbol	Min	Typ	Max	Unit
Output Power	P_o			32	mW
Center Wavelength (vacuum) ¹	L_p	637	638	639	nm
	L_p	639	640	641	nm
Linewidth (MHz)	$\Delta\lambda$		300		MHz
Central Stabilized Temperature	T_c	15		45	$^\circ\text{C}$
Stabilized Temperature Range	T_r	10	14		$^\circ\text{C}$

Operating Specifications

Parameter	Symbol	Min	Typ	Max	Unit
Threshold Current (CW)	I_{th}		45	60	mA
Operating Current	I_{op}		80	105	mA
Operating Voltage	V_{op}		2.4	2.6	V
Laser Reverse Voltage	V_{rl}			2	V
Photodiode Reverse Voltage	V_{rp}			30	V
Monitoring Output Current	I_m	0.07	0.15	0.2	mA
Beam Divergence, Perpendicular	Q_v	16	21	24	Degrees
Beam Divergence, Parallel	Q_h	7	10	13	Degrees
Off Axis Angle, Perpendicular	dQ_v	-	-	-	Degrees
Off Axis Angle, Parallel	dQ_h	-	-	-	Degrees
Emitter Size			1 x 2		μm
Differential Efficiency	$DE (dP/dI)$		1		mW/mA
Operating Temperature ³	T_{op}	-10		50	$^\circ\text{C}$
Storage Temperature ³	T_s	-40		80	$^\circ\text{C}$
Polarization Ratio			60:1		
Polarization Orientation			TM		

¹Please specify wavelength at time of ordering ²Non-condensing ³All specifications are at rated power with a case temperature of 25 $^\circ\text{C}$ unless otherwise noted

Features:

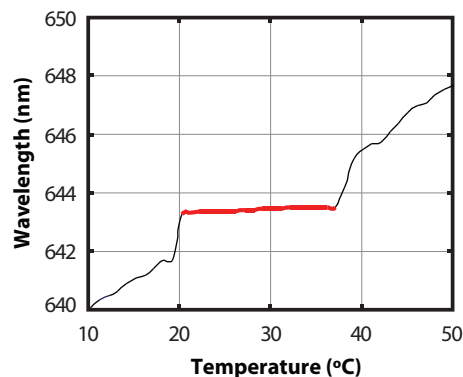
- Single frequency performance
- Narrow linewidth 300 MHz
- Wavelength stability across operating range 0.015nm/ $^\circ\text{C}$
- Coherence length 0.5m
- Compact, hermetically sealed TO footprint
- Custom wavelengths available
- NoiseBlock™ narrow-band ASE suppression filters and beamsplitters available in matching wavelengths to further reduce linewidth and ASE noise

Applications:

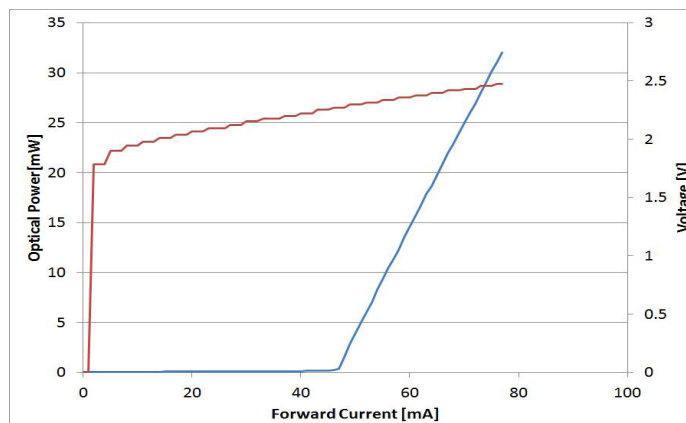
- HeNe Replacement
- Raman Spectroscopy
- Metrology
- Bio-instrumentation
- Graphic Arts
- Sensing
- Analytical Instrumentation

638nm, 32mW Wavelength Stabilized Lasers

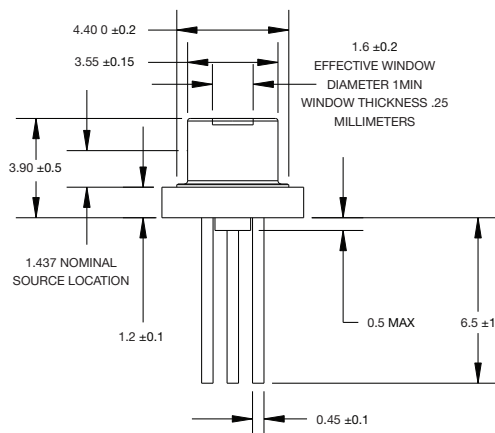
Stabilized Temperature Range



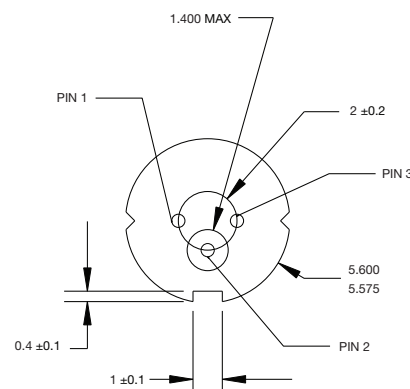
Output Power vs Forward Current (Typical)



Side View

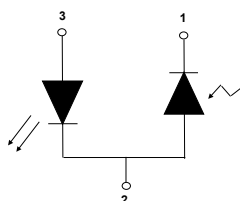


Bottom View



Pinout

Pin	Description
1	Photodiode Cathode
2	Case
3	Laser Diode Anode



Model Numbers

TO-638-PLR32

TO-640-PLR32

