

405nm, 12/25/40mW Wavelength Stabilized Lasers



Single Frequency
Collimated Output Beam

Ondax's 405nm Wavelength Stabilized Lasers are single mode, collimated single frequency lasers 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			12/25/40	mW
Center Wavelength (vacuum) ¹	L_p	404.5	405	405.5	nm
	L_p	405.5	406	406.5	nm
Linewidth (MHz)	$\Delta\lambda$		160		MHz
Central Stabilized Temperature	T_c	15	25	35	°C
Stabilized Temperature Range	T_r	10	14		°C

Operating Specifications

Parameter	Symbol	Min	Typ	Max	Unit
Threshold Current	I_{th}		30	35	mA
Operating Current	I_{op}		45/55/75	65/75/100	mA
Operating Voltage	V_{op}		5.4	6.5	V
Laser Reverse Voltage	V_{rl}			2	V
Collimated Beam Size (FWHM)	Q_v		0.8 x 0.4		mm
Differential Efficiency	DE (dp/dI)		1		mW/mA
Operating Temperature ²	T_{op}	0	25	60	°C
Storage Temperature ²	T_s	-10		60	°C
Polarization			100:1		
Polarization Orientation			TE		

¹Please specify wavelength at time of ordering ²Non-condensing All specifications are at rated power with a case temperature of 25°C unless otherwise noted

Features:

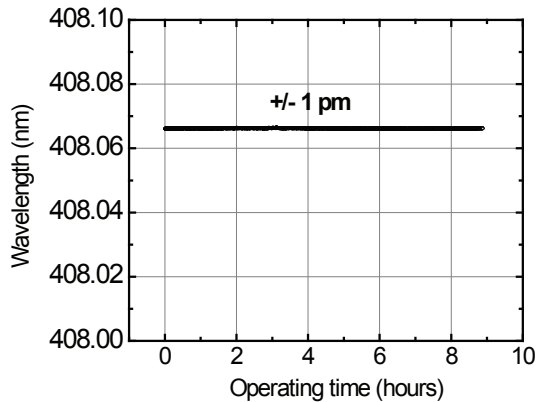
- Single frequency performance
- Narrow linewidth ~160 MHz
- Wavelength stability across operating range 0.015nm/°C
- Coherence length >1m
- Collimated output beam
- Custom wavelengths available

Applications:

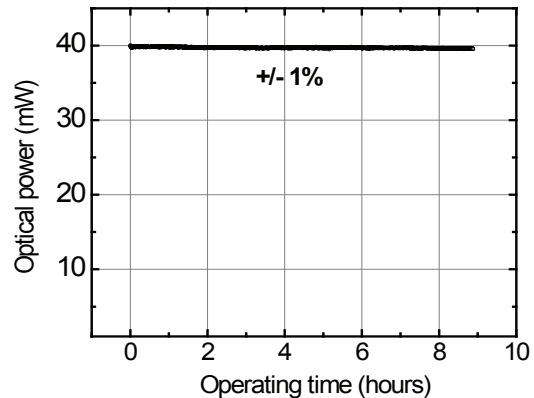
- Raman Spectroscopy
- Metrology
- Bio-instrumentation
- Confocal Microscopy
- Data Storage
- LIDAR
- Sensing
- Analytical Instrumentation

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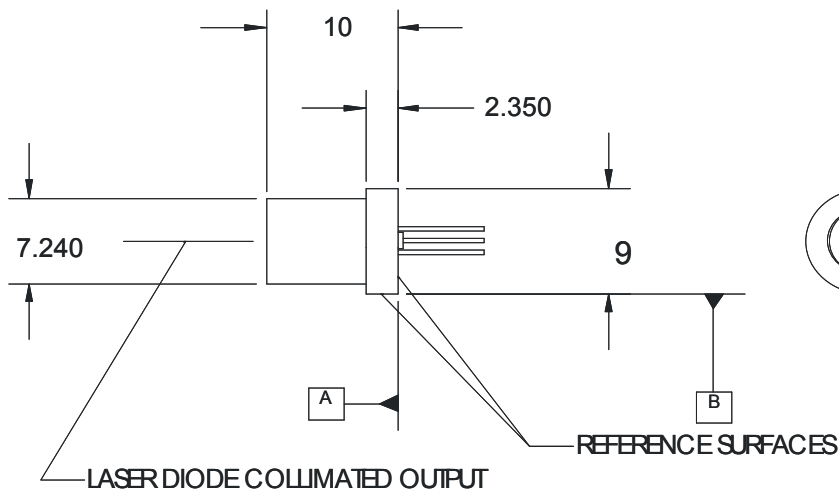
Wavelength Stability



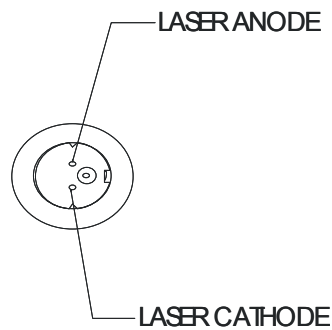
Optical Power Stability



Side View



Bottom View



Pinout

Pin	Description
1	Laser Diode Anode
2	Case
3	Laser Diode Cathode

Model Numbers

- CP-40X-PLR12
- CP-40X-PLR25
- CP-40X-PLR40

