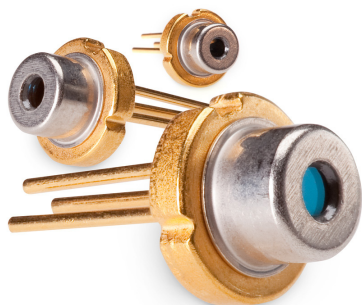


685nm, 45mW Wavelength Stabilized Lasers



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

Features:

- Single frequency performance
- Narrow linewidth $< 50\text{ MHz}$
- Wavelength stability across operating range $0.015\text{nm}/^\circ\text{C}$
- Coherence length $> 2\text{m}$
- Compact, hermetically sealed TO footprint
- NoiseBlock™ narrow-band ASE suppression filters and beamsplitters available in matching wavelengths to further reduce linewidth and ASE noise

Applications:

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

Ondax's 685nm 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			45	mW
Center Wavelength (vacuum) ¹	L_p	684	685	686	nm
	L_p	686	687	688	nm
Linewidth (MHz)	$\Delta\lambda$		50		MHz
Central Stabilized Temperature	T_c	15		40	$^\circ\text{C}$
Stabilized Temperature Range	T_r	10	15		$^\circ\text{C}$

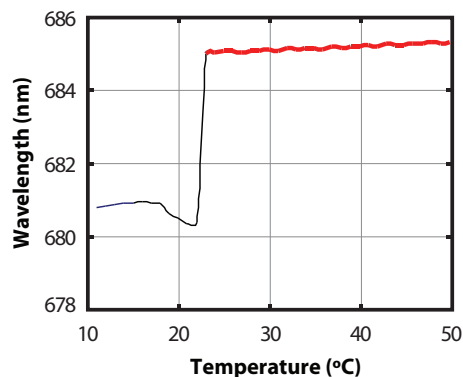
Operating Specifications

Parameter	Symbol	Min	Typ	Max	Unit
Threshold Current (CW)	I_{th}		35	60	mA
Operating Current	I_{op}		75	140	mA
Operating Voltage	V_{op}	2	2.7	3	V
Laser Reverse Voltage	V_{rl}			2	V
Monitoring Output Current	I_m	0.05	0.3	2.5	mA
Beam Divergence, Perpendicular	Q_v	16	20	25	Degrees
Beam Divergence, Parallel	Q_h	8	10.5	14	Degrees
Off Axis Angle, Perpendicular	dQ_v	-2.5		2.5	Degrees
Off Axis Angle, Parallel	dQ_h	-2		2	Degrees
Differential Efficiency	$DE (dP/dI)$		0.9		mW/mA
Operating Temperature ²	T_{op}	0		50	$^\circ\text{C}$
Storage Temperature ²	T_s	-10		60	$^\circ\text{C}$
Polarization			100:1		
Polarization Orientation			TE		

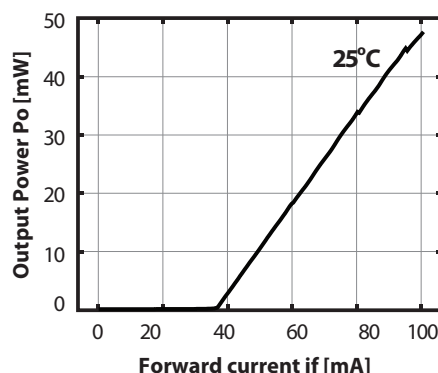
¹Please specify wavelength at time of ordering ²Non-condensing All specifications are at rated power with a case temperature of 25°C unless otherwise noted

685nm, 45mW Wavelength Stabilized Lasers

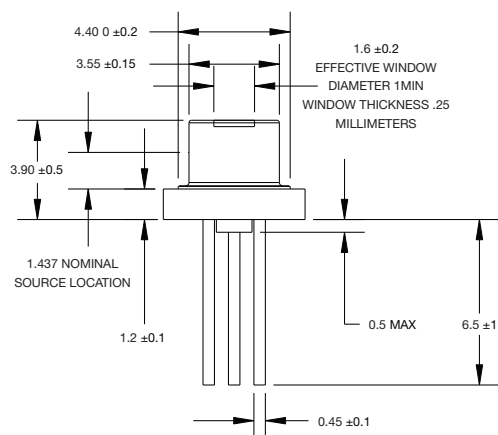
Stabilized Temperature Range



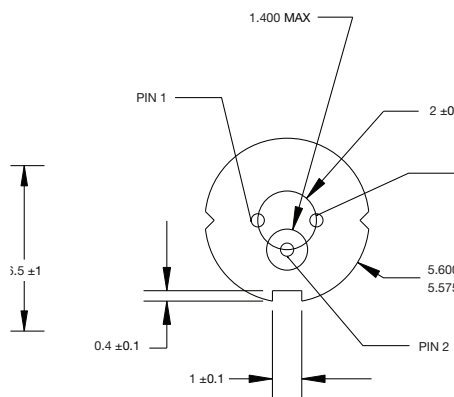
Output Power vs Forward Current (Typical)



Side View

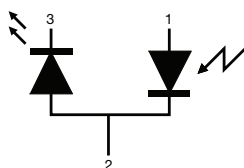


Bottom View



Pinout

Pin	Description
1	Photodiode Anode
2	Case
3	Laser Diode Cathode



Model Numbers

T0-685-PLR45-2

T0-687-PLR45-2

