ONDAX

Advanced Solutions for Optical Measurements

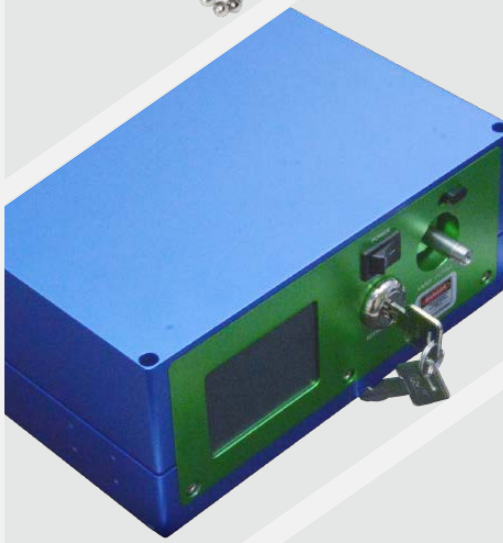
SureLock™

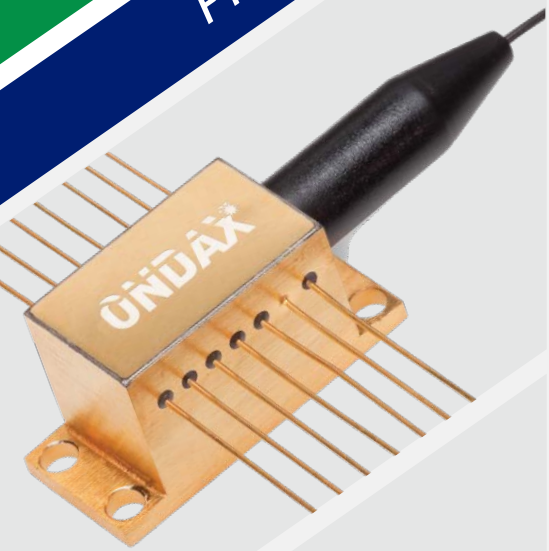
CleanLine™

NoiseBlock™

WAVELENGTH STABILIZED LASERS & ACCESSORIES

PRODUCT SELECTOR GUIDE





SureLock™

WAVELENGTH STABILIZED DIODE LASERS

All SureLock™ Wavelength Stabilized Laser Diodes and Laser Modules incorporate the Ondax PowerLocker® VHG filter, a miniature, ultra-narrowband Volume Holographic Grating (VHG), creating an external cavity that "locks" the diode laser wavelength into a narrowed optical spectrum. This increases spectral brightness and delivers stabilized optical performance over extended temperature ranges, transforming standard diode lasers into single-frequency or spectrum-narrowed, instrument-quality lasers. The extremely short external cavity configuration results in better mode selection and a smaller footprint than Littrow or Littman cavity designs, while reducing the spectral bandwidth of a typical laser by an order of magnitude.

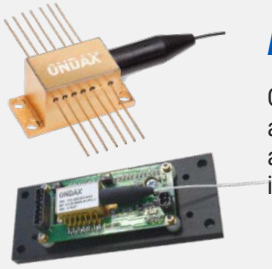
SureLock™ lasers deliver superior optical stability and low power consumption – enabling affordable, portable, instrument-quality performance for a diversity of applications. Available in a wide range of wavelengths, power levels, and form factors, Ondax can also custom-configure a wavelength-stabilized solution to meet your exact application requirements.

TO Can Lasers

Our **TO Series** lasers deliver stabilized, single-frequency performance in the industry's most compact and affordable package. Ideal for OEM applications, our TO lasers can be easily integrated into OEM platforms for Raman spectroscopy, holography, metrology, sensing, or bio-instrumentation applications. Ondax TO lasers incorporate PowerLocker® VHGs directly inside the can. Available in wavelengths from 638nm to 826nm.

Collimated TO Can Lasers

The **CP Series** Collimated TO packages incorporate both a PowerLocker® and collimating lens to roughly collimate the output beam, simplifying integration into compact optical systems. Available in both single frequency (with optional ASE clean-up filters) and multimode configurations, ranging from 405nm to 1064nm.



Fiber Coupled Butterfly Lasers

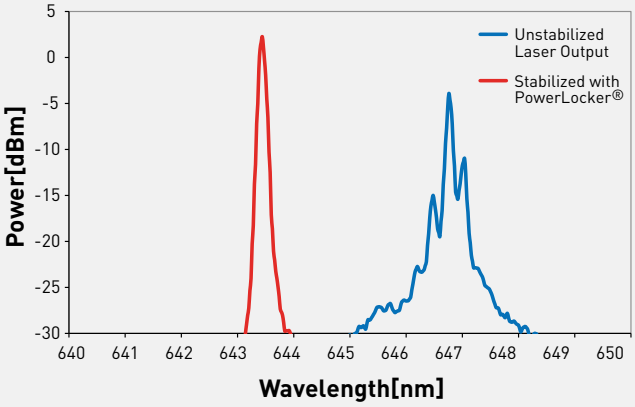
Ondax offers two fiber-coupled, high-power, multimode stabilized laser platforms for flexible integration, and both come with a 100 micron MM fiber output and FC/PC connectors. The **BF Series** is a traditional 14-pin butterfly laser that incorporates a TEC, and the **BF-OEM Series** is an affordable, ultra-compact OEM board incorporating temperature and current control, ideal for tight packaging requirements. Both solutions are ideal for Raman spectroscopy applications.

RO Series Laser Modules

The **RO Series** Laser Module integrates any of our TO or CP wavelength-stabilized lasers with collimating optics, active TEC cooling and precision current control circuitry into a compact, cylindrical package with USB control. Designed for easy mounting and integration, this rugged self-contained module is ideal for OEM instrumentation or for laboratory applications. Available in wavelengths from 633nm to 830nm (single frequency) and higher-power 785nm to 1064nm (multimode). High power versions come with a heat-sink mount.

Principle of Operation

The PowerLocker® acts as an ultra- narrowband, wavelength-selective filter that provides stable, controlled optical feedback into the laser. This increases the power in the desired mode and reduces unwanted spectral components, reducing the linewidth of multimode lasers or forcing single mode lasers into single frequency operation.



LM Series Compact Laser Module

The **LM Series** incorporates any of our TO or CP stabilized laser diodes into a user-friendly, ultra-compact footprint. Offering both computer and integrated user keypad controls, the LM Series includes precision temperature and current controls to deliver better than 1m coherence length (single frequency), with excellent power stability with less than 1 minute warm-up. This tightly integrated package makes it the ideal choice for both OEM instrumentation and laboratory applications. Available in wavelengths from 405nm to 826nm (single frequency) and from 405nm to 1064nm (narrowband multi-transverse mode).

LMFC Series Compact Laser Module

The **LMFC Series** Fiber Coupled Laser Module shares the compact footprint and integrated controls of the LM Series, while offering the convenience and exceptional mode quality of a fiber-coupled output. The LMFC is also available in high-power, narrowband multimode models at 785nm, 830nm, 976nm and 1064nm. Ideal for lab use or easy integration into Raman or analytical instrumentation applications.

Benchtop Laser Module

Ondax's new Mini-Benchtop Lasers are ultra-compact and an easy-to-use, rugged solution for the lab. Incorporating an Ondax SureLock™ VHG-stabilized laser diode, the Mini-Benchtop Laser delivers steady, high-power, spectrum-narrowed performance. With both easy-to-adjust manual power controls and a digital touchscreen interface, the Mini-Benchtop Laser provides better than 1% power stability and less than 1 minute warm-up. Delivering extreme temperature insensitivity, these lasers are perfect for the lab user or OEM doing Raman spectroscopy. Comes with an FC/PC front panel connector and optional 105 mm 3-meter fiber cable with FC/PC or SMA end connector.

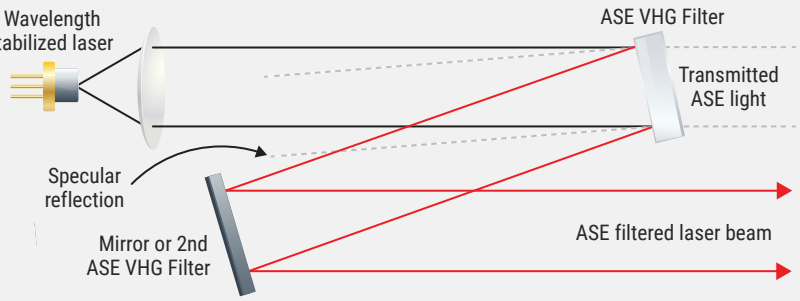
NoiseBlock™ CleanLine™ ASE Filters and Beamsplitters

The NoiseBlock™ ASE (Amplified Spontaneous Emission) filters and CleanLine™ filter assemblies transmit ASE emission and reflect only the desired single frequency line, suppressing the broadband ASE spectral background of a single frequency laser by >40dB resulting in a clean, ASE-free beam (**Fig. 1**). NoiseBlock filters ensure the pure spectral excitation beam required for ultra-low frequency THz-Raman spectroscopy and other demanding applications. They are designed to match the ultra-narrow spectral profile of our SureBlock™ Notch Filters, and are incorporated into all Ondax XLF Series THz-Raman™ Systems. They can also be used as spectrally selective 90/10 Beamsplitters, providing up to a 4x throughput improvement in Raman spectroscopy applications. Available from 400nm to 2000+nm, in free-space, fiber-coupled, and pre-assembled CleanLine™ configurations.

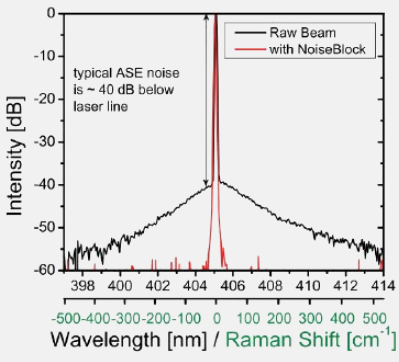
Integrated LM Module and CleanLine™ ASE Filter assembly

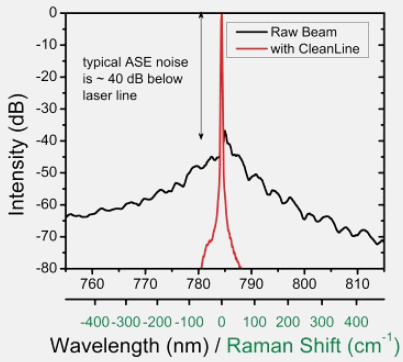
Free space ASE and 90/10 Beamsplitter or standalone CleanLine™ ASE Filter Assembly

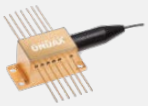
Fig. 1



Raw laser diodes produce ASE light on the order of 40-60dB below the laser line that can affect critical measurements within 400-500cm-1 of the laser line. NoiseBlock™ filters efficiently Suppress ASE, leaving a spectrally pure source for measurements down to <10cm -1. Typical performance is shown at right for a 405nm and 785nm lasers.





Wavelength (nm)	 TO CAN (TO)	 COLLIMATED TO (CP)	 BUTTERFLY (BF)	 OEM BUTTERFLY (OEM-BF)	 ROUND MODULE (RO)	 COMPACT MODULE (LM)	 FIBER COUPLED MODULE (LMFC)	 Benchtop (BT)
SINGLE FREQUENCY POWER								
405 / 406		12 mW / 25mW 40mW				12 mW / 25mW 40mW	3mW SM/PM 6mW SM/PM	
633		40mW / 70mW			40mW / 70mW	40mW / 70mW	29mW SM/PM	
638	32 mW	120mW			30mW 120mW	30mW 120mW	14mW SM/PM 45mW SM/PM	
640	32 mW				30mW	30mW	14mW SM/PM	
643		120mW			120mW	120mW	50mW SM/PM	
658	40 mW				30mW	30mW	12mW SM/PM	
660	40 mW				38mW	38mW	15mW SM/PM	
685-693	45 mW				40mW	40mW	15mW SM/PM	
780.25	80mW				75mW		25mW SM/PM	
785	80mW 100mW	175mW / 225mW			75mW / 95mW	75mW/95mW 175mW/225mW	30mW SM/PM 50mW SM/PM 70mW SM/PM	
808	120 mW				110mW	110mW		
826	170 mW				150mW	150mW		
NARROW BAND MULTI TRANSVERSE MODE								
405		250mW NB				250mW NB	150mW NB/MM	150mW NB
445		325mW NB				325mW NB	200mW NB/MM	200mW NB
520		375mW NB				375mW NB	225mW NB/MM	225mW NB
638		280mW NB				280mW NB	170mW NB/MM	170mW NB
785		500mW NB	600mW NB/MM	600mW NB /MM	500mW NB	500mW NB	500mW NB/MM 350mW NB/MM	350mw NB 500mW NB
830		500mW NB	600mW NB/MM	600mW NB /MM	500mW NB	500mW NB	500mW NB/MM 350mW NB/MM	350mw NB 500mW NB
976			1000mW NB/MM	1000mW NB/MM			1000mW NB/MM	350mw NB 500mW NB
1064		500mW NB	600mW NB/MM	600mW NB/MM	500mW NB	500mW NB	500mW NB/MM	350mw NB 500mW NB

NOTES :

NB = Narrowband (typically 0.08nm FWHM bandwidth, diode dependent)
SM/PM = Single Mode/PM Fiber Coupled (PM Standard with FC/PC Connector)
NB/MM = Narrow Band/Multimode Fiber Coupled (100 micron fiber standard with FC/PC Connector)
† = Fiber connectored output
*** = Available Upon Request

ONDAX Online Store

Visit the Ondax Online Store to find off-the-shelf samples of hundreds of products, available for immediate delivery.

ONDAX
850 E. Duarte Rd. Monrovia, CA 91016
626.357.9600 (Tel)
626.513.7494 (Sales Fax)
www.ondax.com
www.THz-Raman.com

For more information about Ondax products and the name of a local representative or distributor, visit **www.ondax.com**, email **sales@ondax.com**, or call **626.357.9600**