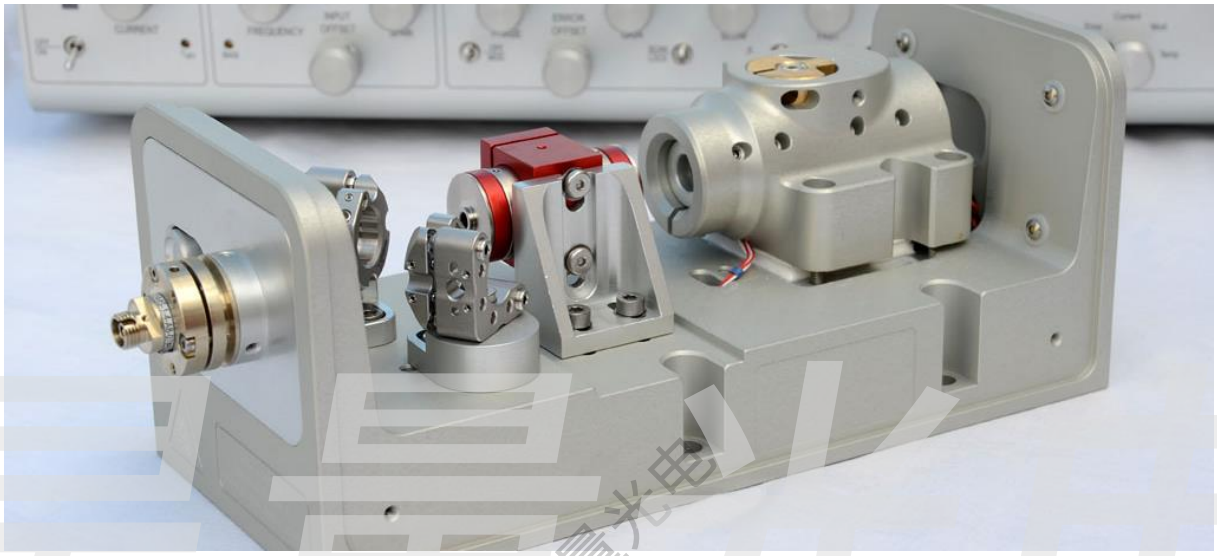
moglabs

CEL Cateye Laser



The MOGLabs Cateye Laser offers a new twist in external cavity diode lasers.

A cateye reflector and ultranarrow filter replace the alignment-sensitive diffraction grating of conventional Litman-Metcalf and Littrow designs.

The CEL is robust, stable, and acoustically inert. In combination with MOGLabs electronics, the linewidth can be well below 100 kHz. Common wavelengths are available including 370nm, 398/399nm, 671nm, 780nm, 795nm, 852nm, 866nm, 895nm and many others, at powers up to 250mW extra-cavity. It is available in an economical compact chassis, or with internal isolator and fibre coupling options as shown.

Features

- Cateye filter design
- Fast piezo feedback
- Self-aligning
- Precision wavelength adjustment

Benefits

- High-performance
- Narrow linewidth
- Acoustically inert
- Very low frequency noise

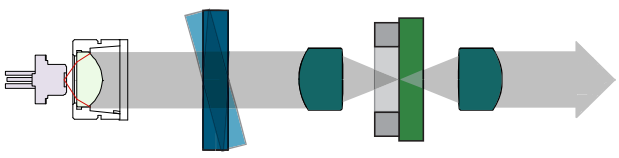
Applications

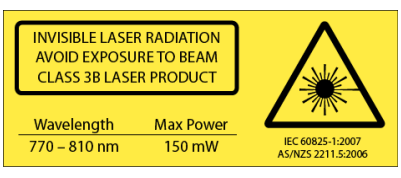
- Laser cooling and trapping
- Bose-Einstein condensation
- Trapped ion quantum computing
- Quantum optics: squeezed light
- Electromagnetic transparency and slow light
- Time and frequency standards
- Laser spectroscopy
- Physics teaching labs

Cateye Laser

Specifications CEL v002

Wavelength/frequency	
780nm, 852nm, others	Up to 250mW output power, diode dependent
Linewidth	Typically <100kHz, configuration dependent
Modulation	10MHz bandwidth, AC or DC coupled RF bias tee option: >2.5GHz bandwidth
Coarse tuning range	Diode dependent; e.g. 776nm – 802nm or 850 – 895nm (single diode)
Optical	
Beam diameter ($1/e^2$)	Typically 0.6 x 0.3mm; diode-dependent
Polarisation	Vertical linear 100:1 typical (standard diode)
Thermal	
TEC	±14.5V 3.3A *Q* = 23W standard
Sensor	NTC 10kΩ standard; AD590, 592 optional
Stability at base	±1mK (controller dependent)
Cooling	Water cooling connections optional (usually not required)
Sweep/scan	
Scan range	15 GHz typical, with MOGLabs controller, diode dependent
Mode-hop free scan	15 GHz typical, with current feed-forward
Piezo	0 – 150V, >2 µm
Electronics	
Protection	Relay, cover interlock connection, reverse diode
Indicator	Laser ON/OFF (LED)
Modulation input	SMA DC to 10MHz or AC 10kHz to 10MHz, ground isolated Option: RF bias tee, 16MHz – 2.5GHz (lower cutoff optional)
Connector	MOGLabs DLC Diode Laser Controller (single cable connect)
Dimensions	
Dimensions	Compact: 108 x 70 x 83mm (LxWxH), 0.5kg Extended (as shown): 220 x 95 x 90.5 (LxWxH), 1.3kg





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