# CEL Cateye Laser

*CEL v001 shown*



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 as shown, or an extended chassis with internal isolator and fibre coupling options.

## Features

- Cateye filter design
- Fast piezo feedback
- Precision alignment controls
- Microwave RF modulation input
- Diode protection circuit and relay

## Benefits

- High-performance
- Narrow linewidth
- Acoustically inert
- Low frequency noise
- High feedback bandwidth
- Use with MOGLabs Controller or your electronics

## Applications

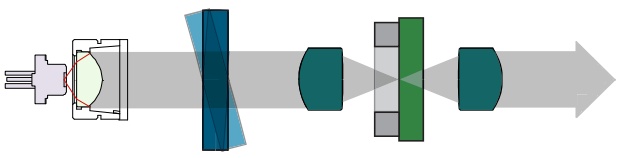
- Laser cooling and trapping
- Bose-Einstein condensation
- Quantum optics: squeezed light
- Electromagnetic transparency and slow light
- Time and frequency standards
- Laser spectroscopy
- Physics teaching labs

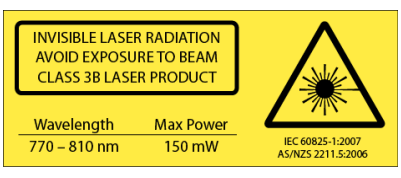
# Cateye Laser

## 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<br>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<br>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<br>Extended (as shown): 220 x 95 x 90.5 (LxWxH), 1.3kg |





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