



CHAMELEON-ULTRA

Chameleon™-Ultra, which utilizes Coherent's established Kerr Lens Modelocking design and DPSS PermAlign™ technology, is a single-box, hands-free ultrafast laser with an ultrawide tuning range.

Incorporating the field-proven, solid-state Verdi™ Laser, Chameleon-Ultra is an efficient, reliable and low-noise ultrafast laser. All Chameleon models feature the Power Pulse™ system, which uses our patented dispersion-balanced tuning mechanism to ensure that output power and pulse width are optimized automatically at all wavelengths. With its MRU miniature air recirculator, Chameleons can tune effortlessly through atmospheric water vapor absorption lines without an external purge.

Chameleon-Ultra is purpose-built for multi-photon excitation (MPE) microscopy and provides a pulse width optimized for minimal broadening in microscope systems, with a superb specified beam quality to maximize sample excitation. The ultrawide wavelength range provided by the Chameleon-Ultra enables even more optimal excitation of cutting-edge fluorescent proteins, calcium indicators and native fluorescence, as well as higher power for deeper imaging into samples.

| | | CHAMELEON-ULTRA |
|---|-------------------------------------|--|
| System Specifications¹ | Peak Power ¹ | >2W |
| | Tuning Range | 690 to 1040 nm |
| | Power Specifications | 600 mW @ 690 nm 800 mW @ 700 nm 2W @ 800 nm 1.1W @ 920 nm 400 mW @ 1020 nm 300 mW @ 1040 nm |
| | Tuning Speed | >25 nm/s |
| | Pulse Width ^{1,2} | 140 fs |
| | Noise ³ | <0.15% |
| | Output Power Stability ⁴ | <±0.5% |
| | Spatial Mode | TEM ₀₀ (M ² <1.1 ¹) |
| | Beam Diameter ^{1,5} | (1.2 ±0.2) mm |
| | Beam Ellipticity ^{1,6} | 0.9 to 1.1 |
| | Astigmatism | <10% |
| | Repetition Rate | 80 MHz, nominal |
| | Polarization | Horizontal, >500:1 |
| Utility and Environmental Requirements | Operating Voltage | 90 to 250 VAC (auto ranging) |
| | Maximum Operating Current | <15A at 90 VAC (power supply) <7A at 90 VAC (chiller) <2A at 90 VAC (MRU-1000) |
| | System Power Consumption | 2300W max., 1300W typical |
| | Line Frequency | 47 to 63 Hz |
| | Operating Temperature Range | 15 to 35°C (59 to 95°F) |
| | Weight of Laser Head | 42 kg (93 lb.) |
| | Weight of Power Supply | 41 kg (90 lb.) |
| | Umbilical Length | 4 m (13 ft.) |
| | Chiller: | |
| | Dimensions (L x W x H) | 27 x 20 x 38 cm (11 x 8 x 15 in.) |
| | Weight | 11 kg (25 lb.) |
| MRU Air Recirculator: | | |
| Dimensions (L x W x H) | 46 x 43 x 8.5 cm (18 x 17 x 3 in.) | |
| Weight | 9 kg (20 lb.) | |

¹ Specified at peak of tuning curve.

² Based on sech² deconvolution of 0.65 times autocorrelation width. Pulse width is <200 fs across specified tuning range.

³ Measured rms in a 10 Hz to 20 MHz bandwidth.

⁴ Power drift in any two-hour period with less than ±1°C temperature change after a one-hour warm-up.

⁵ 1/e² at exit port.

⁶ Ratio of major to minor 1/e² beam diameter at exit port.

Widely Tunable, Hands-Free, Modelocked Ti:Sapphire Laser

FEATURES

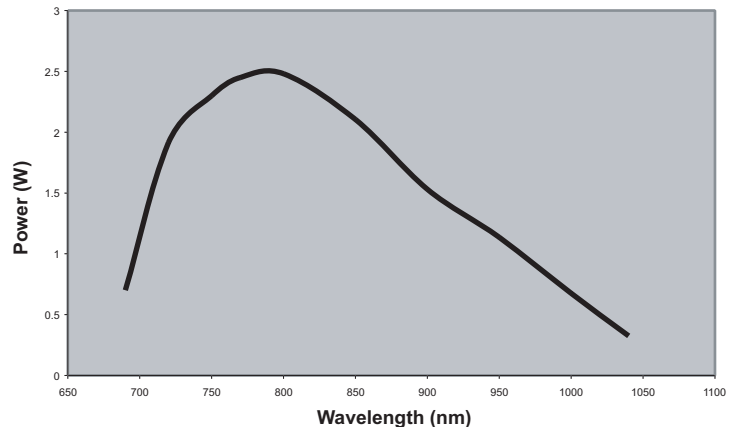
- **Hands-free operation**
- **Ultrawide tuning range (350 nm)**
- **Pulse width optimized for minimal broadening in MPE microscope systems**
- **High output power (>2W)**
- **Superb, specified beam quality**
- **Power Pulse™ system optimizes output power and pulse width automatically at all wavelengths**
- **PowerTrack™ active alignment for long-term stability**
- **Tuning above 920 nm provided by MRU air recirculator (included)**
- **Simple menu-driven GUI or RS-232 operator interface**
- **On-board spectrometer with simple USB interface shows wavelength and bandwidth**
- **Sealed, maintenance-free design**
- **Proprietary opto-mechanical mounting for permanent alignment**
- **Long-life AAA™ laser diodes, with easy diode replacement**
- **Closed-loop chiller (included)**

CHAMELEON-ULTRA

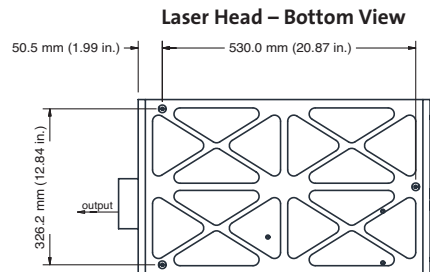
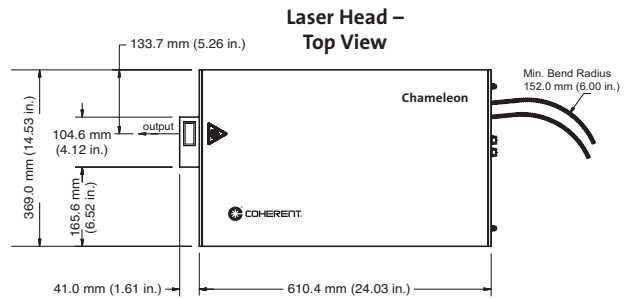
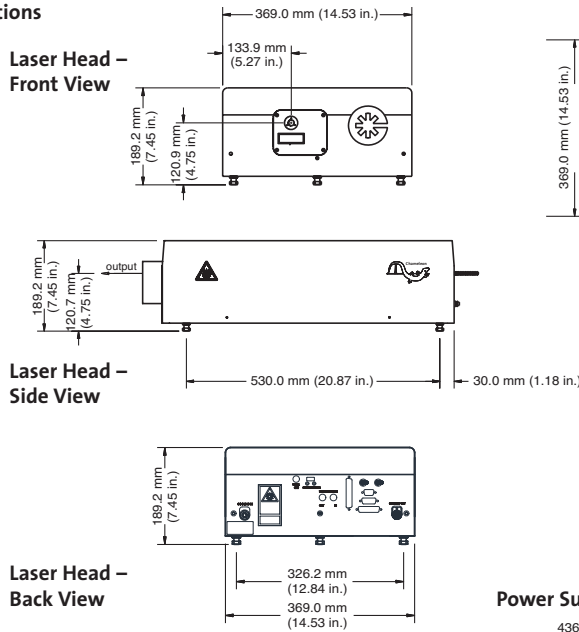
Widely Tunable, Hands-Free,
Modelocked Ti:Sapphire Laser



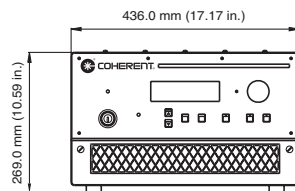
Typical Tuning Curve



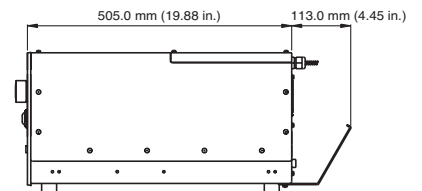
Mechanical Specifications



Power Supply – Front View



Power Supply – Side View



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Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice.

Coherent's scientific and industrial lasers are certified to comply with Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all its Chameleon systems. For full details on warranty coverage, please refer to the Service section at www.Coherent.com, or contact your local Sales or Service Representative.

