



# CHAMELEON

Chameleon™ and Chameleon-XR are single-box, hands-free ultrafast lasers with ultrawide tuning ranges. Coherent's established Kerr Lens modelocking design and DPSS PermaAlign™ technology combine to provide the ultimate tunable ultrafast laser.

Incorporating the field-proven, solid-state Verdi™ laser as its pump source, Chameleon is an efficient, reliable and low-noise ultrafast laser. Both 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 their MRU miniature air recirculator, Chameleons can tune effortlessly through atmospheric water vapor absorption lines without an external purge.

Chameleon is purpose-built for multi-photon excitation (MPE) microscopy and provide a pulse width optimized for minimal broadening in microscope systems, with a superb specified beam quality to maximize sample excitation. The extended wavelength range provided by the Chameleon-XR 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 is also ideally suited to many other applications, including time-resolved photoluminescence, non-linear spectroscopy, fluorescence upconversion, quantum chemistry, and terahertz imaging.

		CHAMELEON & CHAMELEON-XR
<b>System Specifications</b>	Output Power <sup>1</sup>	1W Chameleon, 1.5W Chameleon-XR
	Tuning Range	720 to 950 nm Chameleon, 705 nm to 980 nm Chameleon XR
	Pulse Width <sup>1,2</sup>	<140 fs
	Noise <sup>3</sup>	<0.15%
	Output Power Stability <sup>4</sup>	<±0.5%
	Spatial Mode	TEM <sub>00</sub> (M <sup>2</sup> <1.1 <sup>1</sup> )
	Beam Diameter <sup>1,5</sup>	(1.2 ±0.2) mm
	Beam Ellipticity <sup>1,6</sup>	0.9 to 1.1
	Repetition Rate	90 MHz, nominal
Polarization	Horizontal, >500:1	
<b>Utility and Environmental Requirements</b>	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	3 m (10 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.)	

<sup>1</sup> Specified at peak of tuning curve.

<sup>2</sup> Based on sech<sup>2</sup> deconvolution of 0.65 times autocorrelation width. Pulse width is <200 fs across specified tuning range.

<sup>3</sup> Measured rms in a 10 Hz to 20 MHz bandwidth.

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

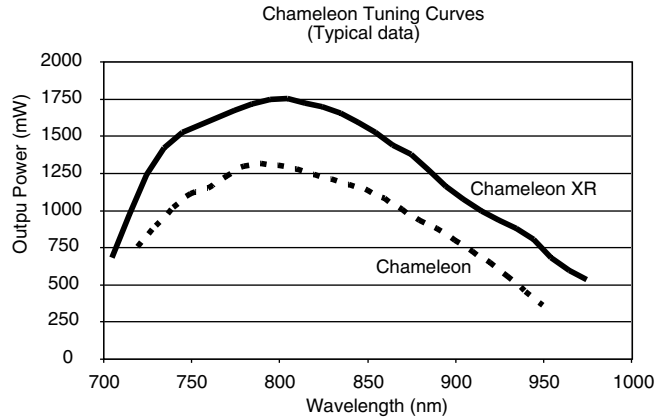
<sup>5</sup> 1/e<sup>2</sup> at exit port.

<sup>6</sup> Ratio of major to minor 1/e<sup>2</sup> beam diameter at exit port.

## Widely Tunable, Hands-Free, Modelocked Ti:Sapphire Lasers

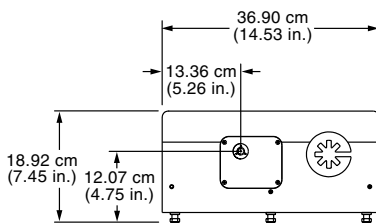
### FEATURES

- **Hands-free operation**
- **Extended ultra-wide tuning range (230 nm Chameleon, 275 nm Chameleon-XR)**
- **Pulse width optimized for minimal broadening in MPE microscope systems**
- **High output power (1W Chameleon, 1.5W Chameleon-XR)**
- **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)**

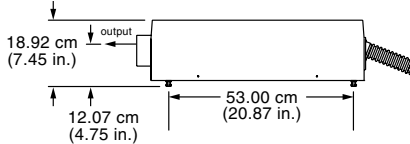


## Mechanical Specifications

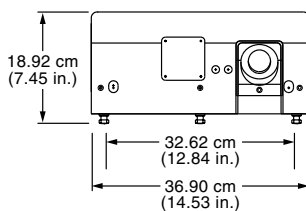
### Laser Head—Front View



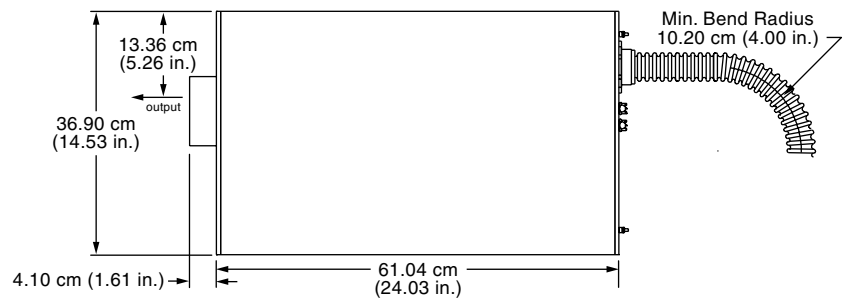
### Laser Head—Side View



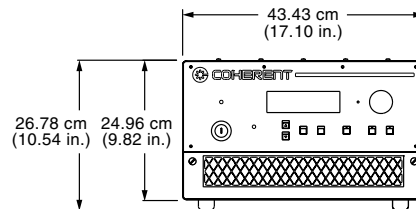
### Laser Head—Back View



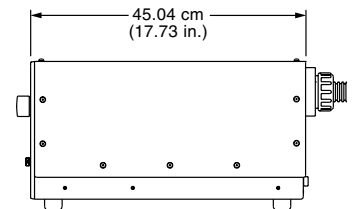
### Laser Head—Top View



### 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 and Support section at [www.Coherent.com](http://www.Coherent.com), or contact your local Sales or Service Representative.

