

Chameleon Vision

Widely Tunable, Femtosecond Ti:Sapphire Laser with Dispersion Precompensation

Chameleon Vision builds on the dependable and innovative Chameleon Ultra platform by adding dispersion precompensation to maximize peak power where it counts – at your sample plane.

Chameleon Vision's 680 nm to 1080 nm tuning range allows efficient excitation of a wide variety of fluorescent markers, calcium indicators, and long wavelength probes such as mCherry.

Careful design ensures the pristine beam parameters of the Chameleon Ultra cavity are preserved through the dispersion precompensation stage, ensuring lowest losses through your microscope and lowest astigmatism in the excitation plane, which in turn delivers best image resolution and optimal 2 photon excitation efficiency.

All Chameleon lasers are HASS tested to ensure highest product reliability, and benefit from Coherent's acclaimed Advanced Replacement (ARU) service strategy to maximize system uptime.



FEATURES & BENEFITS

- Automated tuning and alignment for hands-free operation
- PowerTrack™ active alignment for long-term stability and low maintenance
- Wide tuning range (400 nm) for efficient excitation of the widest gamut of probes
- Automated Dispersion precompensation maximizes fluorescent efficiency at the sample plane
- High output power for deepest imaging
- Simple menu-driven GUI or RS-232 for flexible, intuitive control
- On-board spectrometer for real time spectral feedback
- Extendable wavelength range to 1340 nm with Chameleon MPX

APPLICATIONS

- Multiphoton Excitation (MPE) Microscopy
- Time Resolved Spectroscopy
- Optogenetic Photo Activation
- Second Harmonic Generation (SHG) Imaging
- Pumping of Optical Parametric Oscillators (OPO)
- Supercontinuum Generation

SYSTEM SPECIFICATIONS	Chameleon Vision I	Chameleon Vision II
Tuning Range (nm)	690 to 1040	680 to 1080
Average Power at Peak (W)	2.5	3.0
Power Specifications	- 640 mW at 690 nm 1.07 W at 710 nm 2.5 W at 800 nm 920 mW at 920 nm 260 mW at 1040 nm -	500 mW at 680 nm - 1.5 W at 710 nm 3.0 W at 800 nm 1.35 W at 920 nm 400 mW at 1040 nm 180 mW at 1080 nm
Dispersion Compensation Range		
680 nm	-	0 to 47,000 fs ²
690 nm	0 to 43,000 fs ²	-
800 nm	0 to 22,000 fs ²	0 to 22,000 fs ²
1020 nm	0 to 10,000 fs ²	0 to 10,000 fs ²
1080 nm	-	0 to 9000 fs ²
Tuning Speed ² (nm/s)	>35	>40
Pulse Width ^{1,3} (fs)		140
Noise ^{1,4} (%)		<0.15
Output Power Stability ^{1,5}		<±0.5
Spatial Mode ¹		TEM ₀₀ (M ² <1.1)
Beam Diameter ^{1,6} (mm)		1.2 ±0.2
Beam Ellipticity ^{1,7}		0.9 to 1.1
Astigmatism ¹ (%)		<10
Repetition Rate (MHz)		80
Polarization		Horizontal >500:1
Pointing ⁸ (μrad/nm)		<80/100
Operating Voltage (VAC)		90 to 250 (auto ranging)
Maximum Operating Current (A)		
Power Supply		<15 at 90 VAC
Chiller		<7 at 90 VAC
MRU x1		<2 at 90 VAC
System Power Consumption (W)		2300 max., 1300 typical
Line Frequency (Hz)		47 to 63
Operating Temperature Range		15 to 35°C (59 to 95°F)
Non-operating Temperature Range		5 to 40°C (41 to 104°F)
Weight of Laser Head		52 kg (115 lbs.)
Weight of Power Supply		41 kg (90 lbs.)
Umbilical Length		3 m (10 ft.)
Chiller:		
Dimensions (L x W x H)		436 x 270 x 393 mm (17.17 x 10.63 x 15.47 in.)
Weight		11 kg (25 lbs.)
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 lbs.)

1 Specified at peak of tuning range.

2 Average speed measured over entire tuning range.

3 Based on sech² deconvolution of 0.65 times autocorrelation width.

4 Measured RMS in a 10 Hz to 20 MHz bandwidth.

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

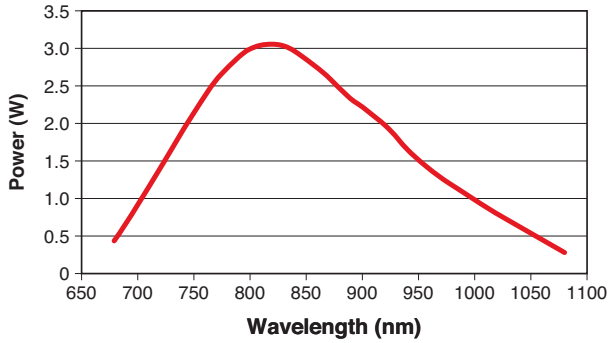
6 1/e² at exit port.

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

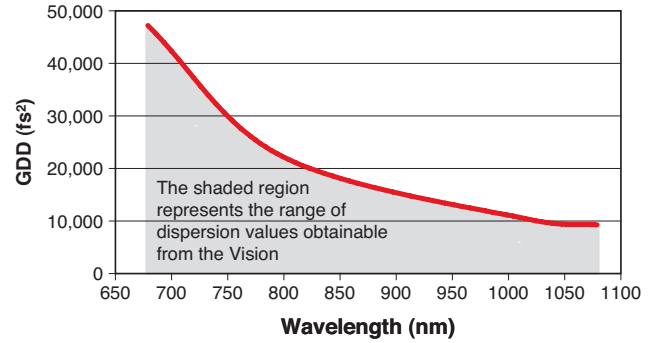
8 Measured over the whole wavelength and GDD dispersion adjustment range.

TYPICAL PERFORMANCE DATA

Chameleon Vision II
Tuning Curve (typical)



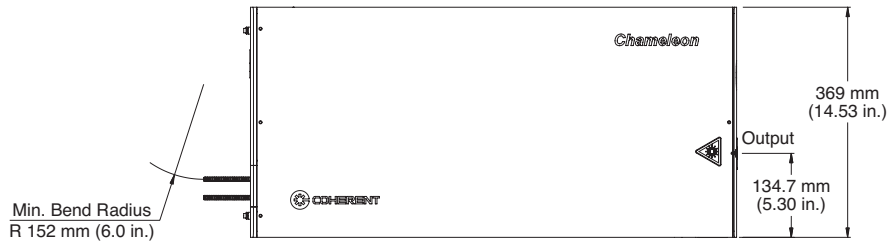
Maximum Negative
Dispersion Capability



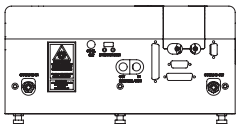
MECHANICAL SPECIFICATIONS

Chameleon Vision

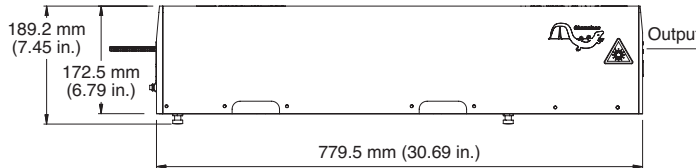
Top View



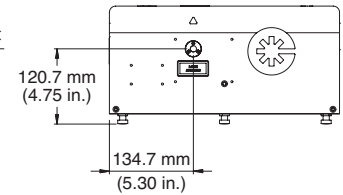
Rear View



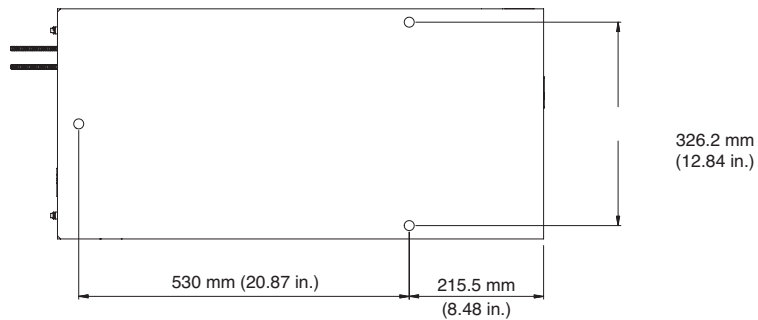
Side View



Front View

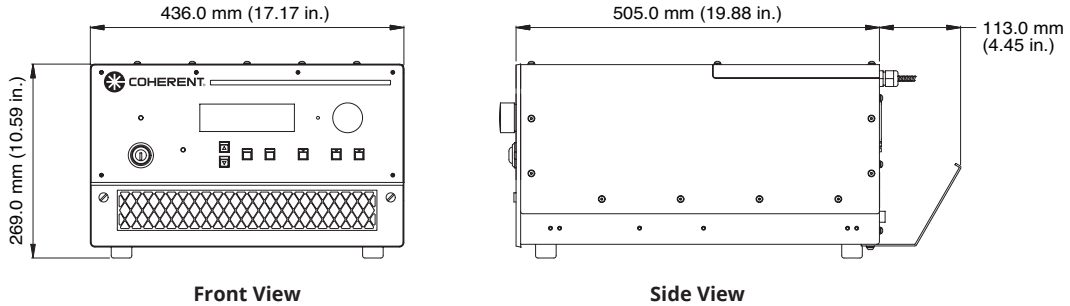


Bottom View

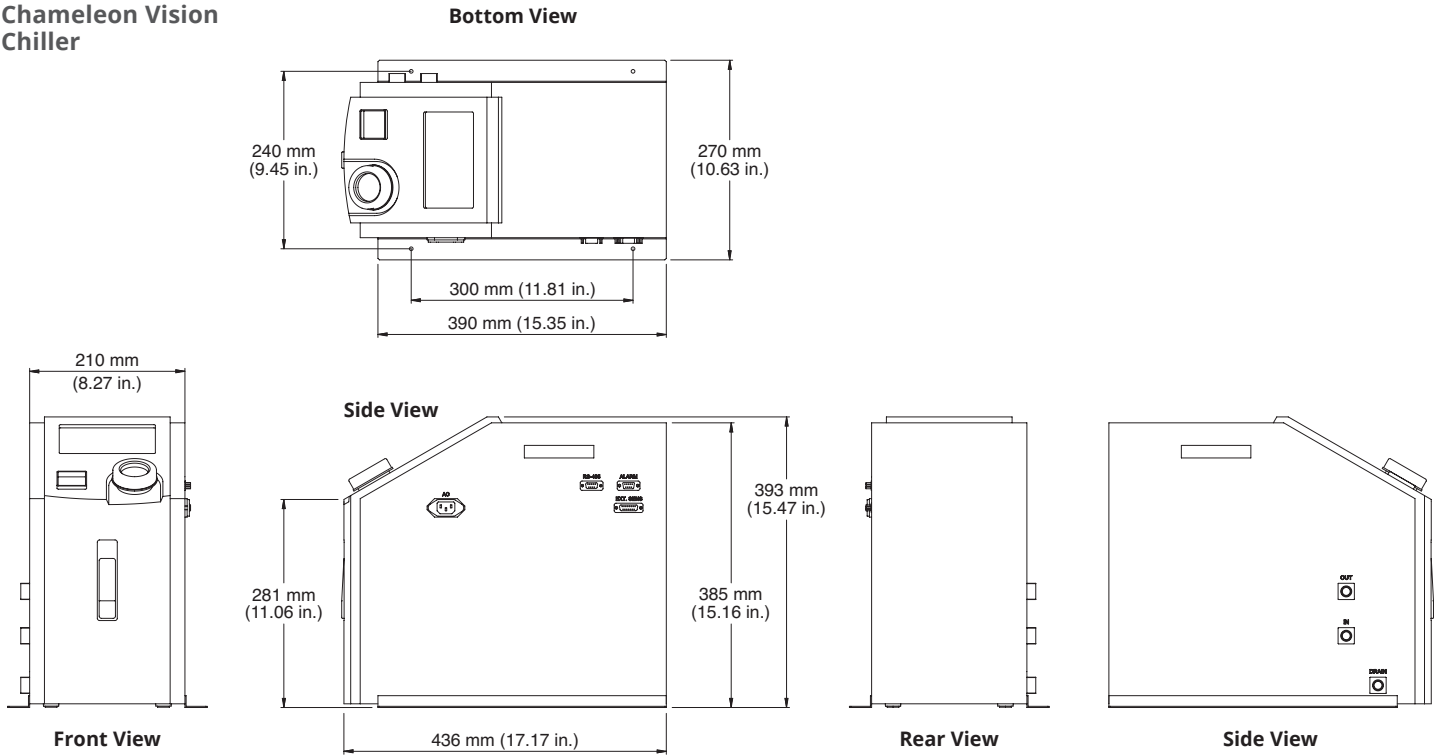


MECHANICAL SPECIFICATIONS

Chameleon Vision Power Supply



Chameleon Vision Chiller



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Coherent offers a limited warranty for all Chameleon Systems. For full details of this warranty coverage, please refer to the Service section at www.coherent.com or contact your local Sales or Service Representative. MC-031-18-0M0119 Copyright ©2019 Coherent, Inc.

