

Chameleon Vision-S

Widely Tunable, High Peak Power Femtosecond Ti:Sapphire Laser with Dispersion Precompensation

The Chameleon Vision-S is purpose designed for applications in two photon microscopy where having the shortest pulses is paramount to ensure optimum image brightness when working with thermally sensitive samples.

Exceptional performance enables Chameleon Vision to easily manage peak power and excitation wavelength, providing brighter images and better sample viability. The built in pre-compensation provides user friendly method to optimize pulse width at the focal plane. The flexibility of the Vision family makes it ideal not only for microscopy but also for time-resolved spectroscopy and terahertz generation.

Chameleon Vision lasers are qualified and proven on all major commercial two photon microscope platforms.

All systems are Highly Accelerated Stress Screened (HASS) to ensure highest product reliability, and benefit from Coherent's acclaimed Advanced Replacement (ARU) service strategy to maximize system uptime.



FEATURES & BENEFITS

- Highest peak power for deepest imaging with low thermal load
- Automated tuning and alignment for hands-free operation
- PowerTrack™ active alignment for long-term stability and low maintenance
- Wide tuning range (360 nm) for efficient excitation of the widest gamut of probes
- Automated Dispersion precompensation maximizes fluorescent efficiency at the sample plane
- Simple menu-driven GUI or RS-232 for flexible, intuitive control
- On-board spectrometer for real time spectral feedback

APPLICATIONS

- Multiphoton Excitation (MPE) Microscopy
- Time Resolved Spectroscopy
- Optogenetic Photo Activation
- Second Harmonic Generation (SHG) Imaging
- Supercontinuum Generation
- Terahertz Spectroscopy

SYSTEM SPECIFICATIONS		Chameleon Vision-S
Tuning Range (nm)		690 to 1050
Average Power at Peak (W)		>2.5
Peak Power at Peak (kW)		>440
Peak Power Specifications		80 kW at 690 nm 440 kW at 800 nm 240 kW at 920 nm 50 kW at 1050 nm
Dispersion Compensation Range		690 nm 0 to -43,000 fs ² 800 nm 0 to -22,000 fs ² 1050 nm 0 to -9500 fs ²
Tuning Speed ² (nm/s)		>25
Pulse Width ^{1,3} (fs)		75
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
ENVIRONMENTAL SPECIFICATIONS		
Operating Temperature Range		15 to 28°C (59 to 82.5°F)
Non-operating Temperature Range		5 to 40°C (41 to 104°F)
Storage Temperature Range		5 to 40°C (41 to 104°F)
ELECTRICAL REQUIREMENTS		
Operating Voltage (VAC)		90 to 250 (auto ranging)
Maximum Operating Current (A)		<15 at 90 VAC (power supply) <7 at 90 VAC (chiller) <2 at 90 VAC (MRU)
System Power Consumption (W)		2300 max., 1300 typical
Line Frequency (Hz)		47 to 63
MECHANICAL PARAMETERS		
Weight of Laser Head		52 kg (115 lbs.)
Weight of Power Supply		33 kg (73 lbs.)
Umbilical Length		3 m (10 ft.)
Dimensions (L x W x H)		
Chiller		436 x 270 x 393 mm (17.17 x 10.63 x 15.47 in.)
MRU Air Recirculator		46 x 43 x 8.5 cm (18 x 17 x 3 in.)
Weight		
Chiller		11 kg (25 lbs.)
MRU Air Recirculator		9 kg (20 lbs.)

1 At 800 nm

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.

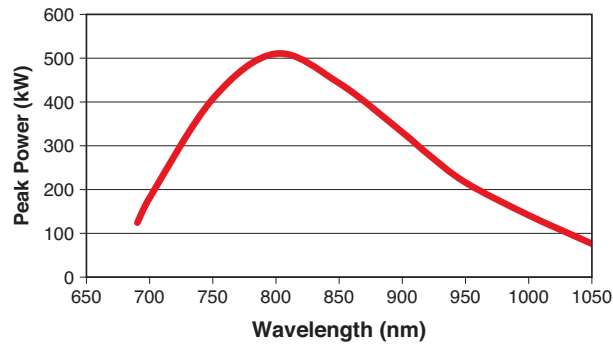
5 Power drift in any two-hour period with less than ±1°C temperature change after a one-hour warm-up.

6 1/e² at exit port.7 Ratio of major to minor 1/e² beam diameter at exit port.

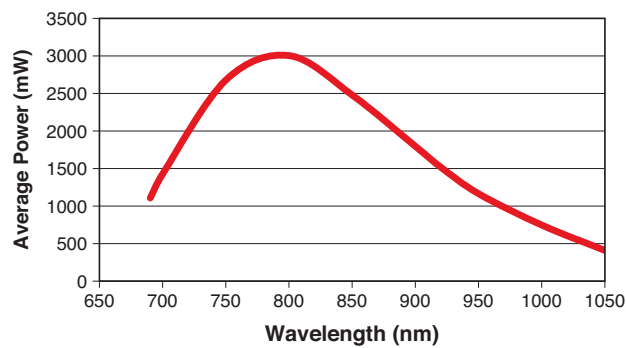
8 Measured over the whole wavelength and GDD dispersion adjustment range.

TYPICAL PERFORMANCE DATA

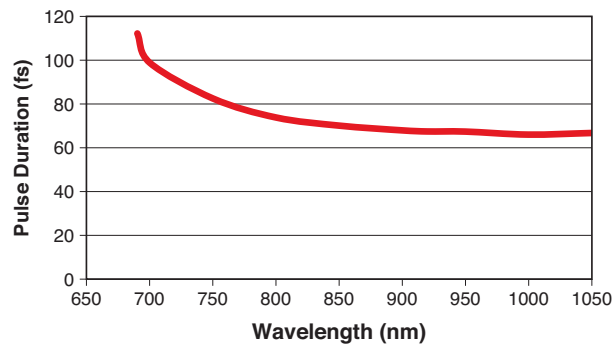
Chameleon Vision-S Peak Power (typical)



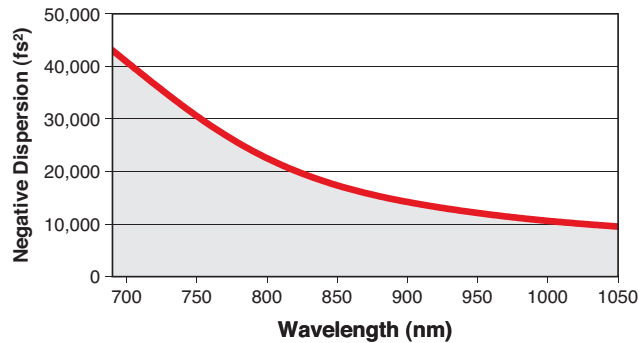
Chameleon Vision-S Average Power (typical)



Chameleon Vision-S Pulse Duration (typical)



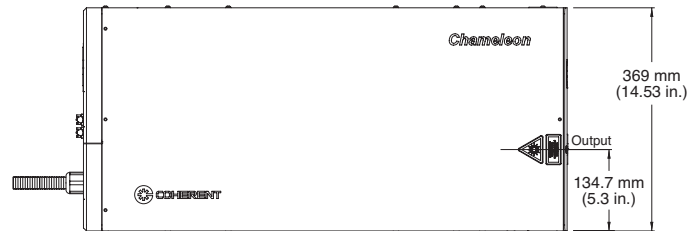
Chameleon Vision-S Dispersion Compensation Range



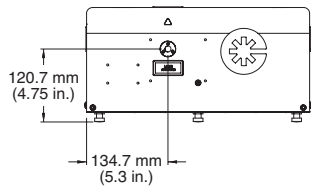
MECHANICAL SPECIFICATIONS

Chameleon Vision-S

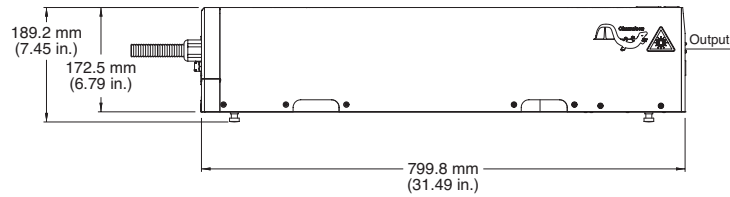
Top View



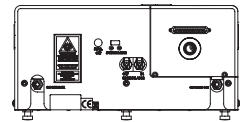
Front View



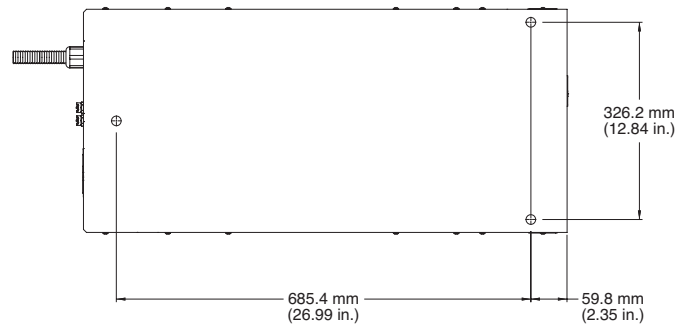
Side View



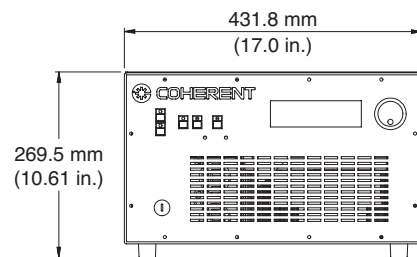
Rear View



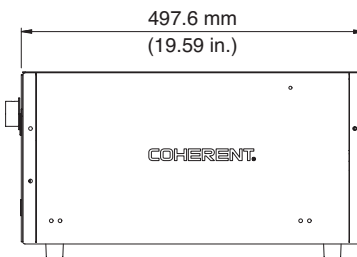
Bottom View



Chameleon Vision-S Power Supply



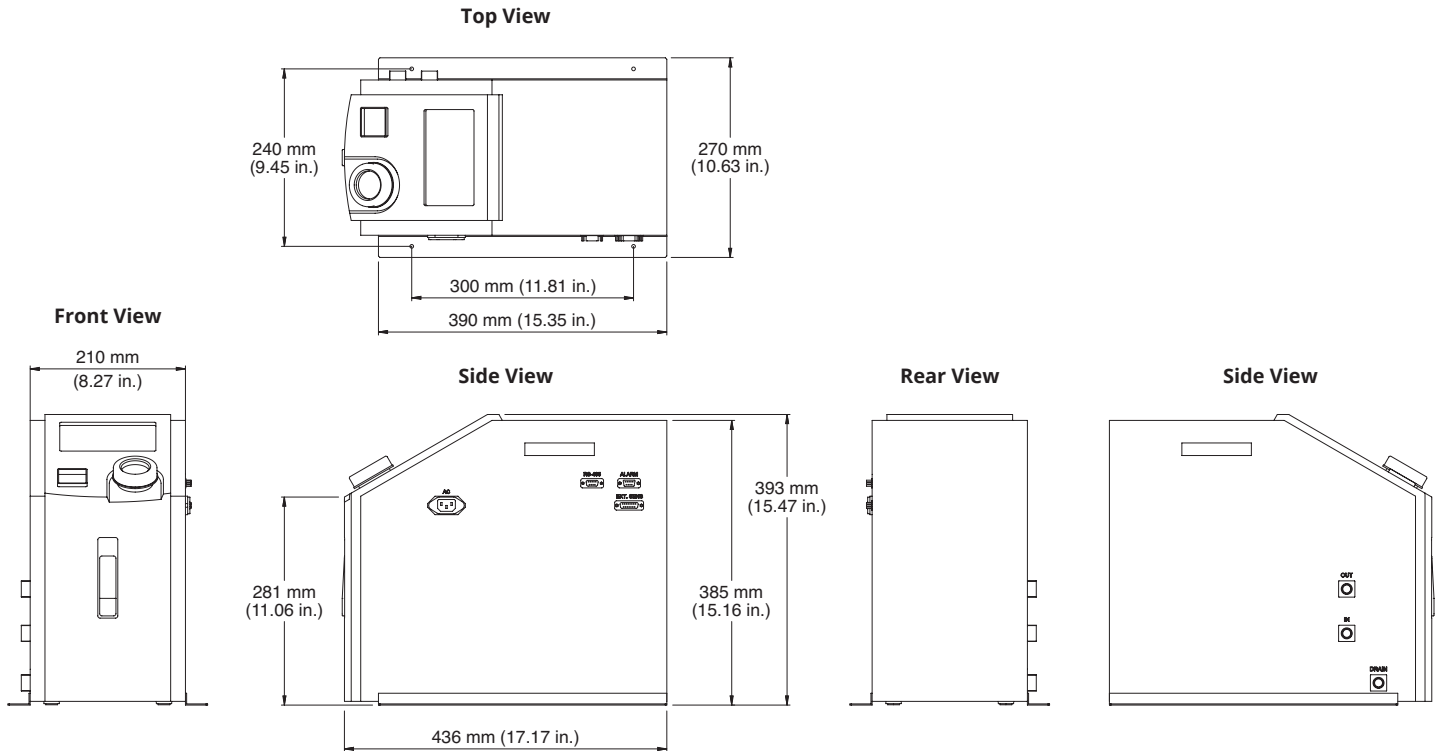
Front View



Side View

MECHANICAL SPECIFICATIONS

Chameleon Vision-S 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-032-18-0M0119 Copyright ©2019 Coherent, Inc.

