

Chameleon Vision-S

Widely Tunable, High Peak Power, Single Box
Precompensation, Hands-Free, Modelocked Ti:S Laser

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.

Chameleon Vision-S delivers the highest peak power at the sample, providing at the same time the broadest tuning range among automated short pulse Ti:Sapphire lasers designed for non-linear imaging.

This exceptional performance enables Chameleon Vision to easily manage pulse duration 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, to study of the interplay of peak power, average power and pulse duration on different samples. For example, by mismatching the pre-compensation, it is possible to vary the pulse duration at the sample between the fully compensated value of 75 fs to chirped pulse durations of several hundreds of femtoseconds.

The flexibility of the Vision family makes it ideal not only for microscopy but also for time-resolved spectroscopy and Terahertz studies.

Chameleon Vision lasers are qualified and proven on all major commercial two-photon microscope platforms. All Chameleon lasers are HASS tested to ensure highest product reliability, and benefit from Coherent's acclaimed Advanced Replacement (ARU) service strategy to maximise system uptime.



Superior Reliability & Performance

Chameleon Vision-S Features:

- **Hands-free operation**
- **Sealed maintenance-free design**
- **Ultrawide tuning range (360 nm)**
- **Automated dispersion precompensation in a single box**
- **Fully-controllable dispersion precompensation down to 0 at all wavelengths**
- **High output power (up to 2.5W)**
- **Highest peak and average power**
- **Ultra wide dispersion compensation range from 0 to >43,000 fs²**
- **HASS screened for high reliability**
- **Simple menu-driven GUI or RS-232 operator interface for laser and precompensation features**
- **PowerTrack™ active alignment for long-term stability**
- **On-board spectrometer with simple USB interface shows wavelength**

Chameleon Vision-S Applications:

- **Multiphoton Excitation (MPE) Microscopy**
- **Time Resolved Spectroscopy**
- **Optogenetic Photoactivation**
- **Second Harmonic Generation Imaging**
- **Supercontinuum Generation**

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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 (μrad/nm)	<80/100 total
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 x1)
System Power Consumption (W)	2300 max., 1300 typical
Line Frequency (Hz)	47 to 63
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)
Weight of Laser Head	52 kg (115 lbs.)
Weight of Power Supply	33 kg (73 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.

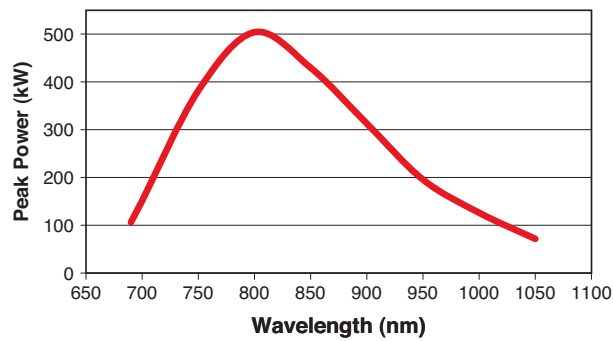
⁶ 1/e² at exit port.

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

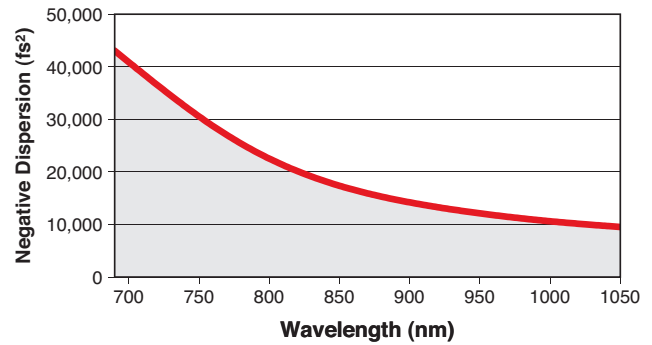
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Chameleon Vision-S Peak Power (typical)

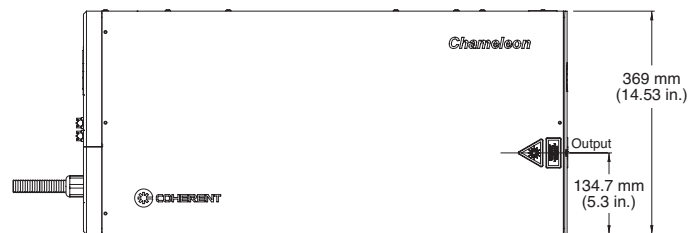


Chameleon Vision-S Dispersion Compensation Range

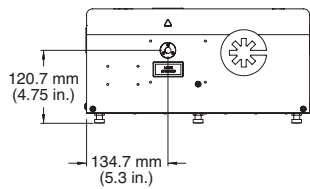


Mechanical Specifications

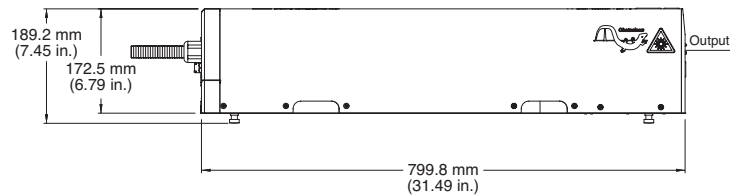
Top View



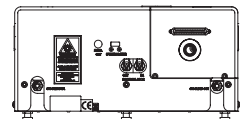
Front View



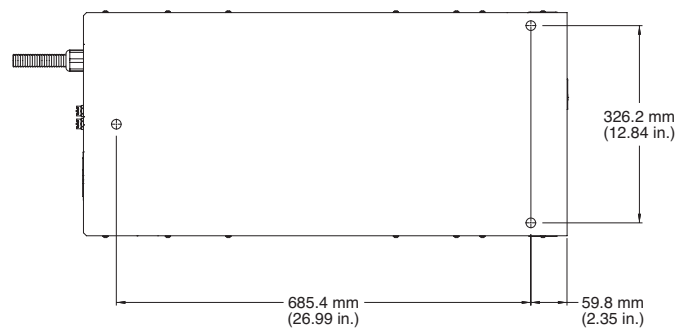
Side View



Rear View



Bottom View

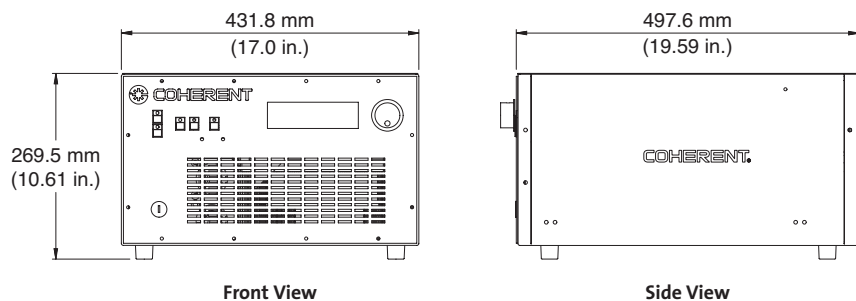


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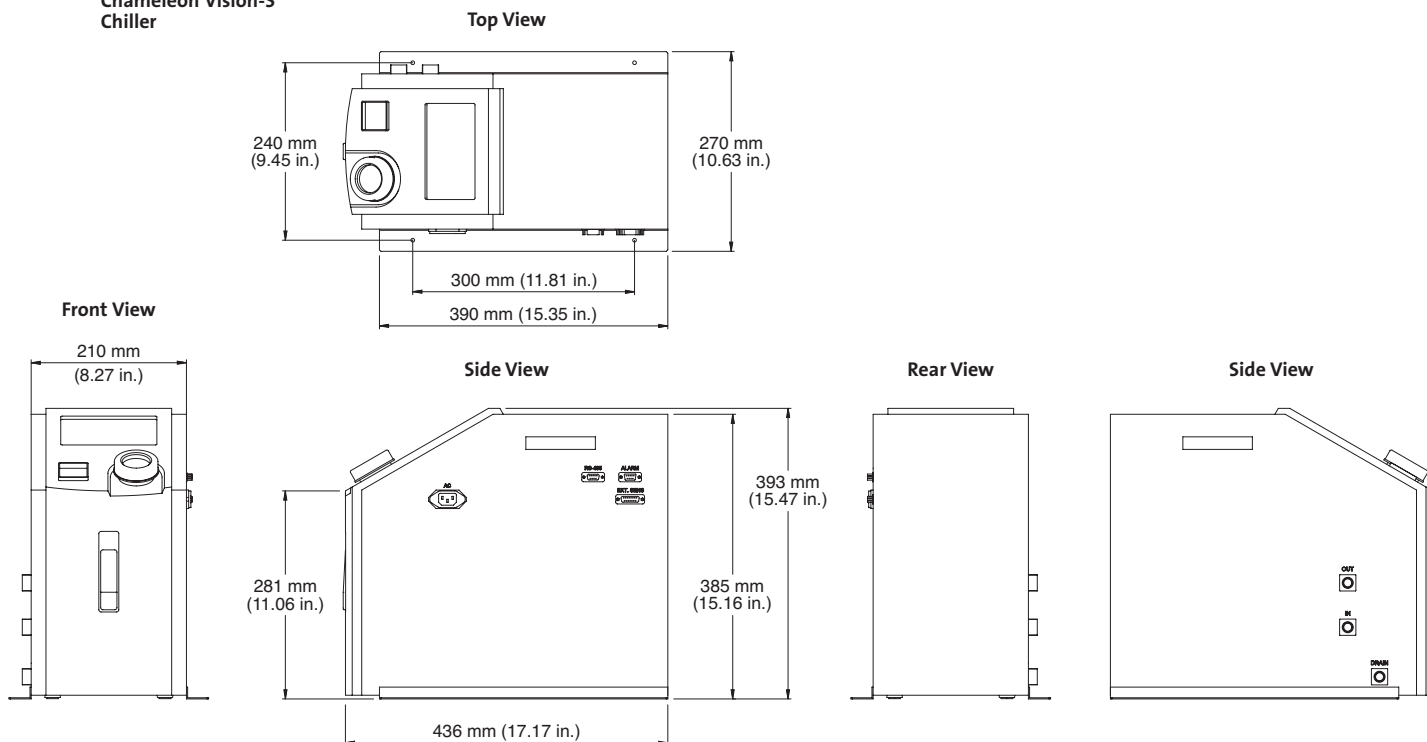
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Mechanical Specifications

Chameleon Vision-S Power Supply



Chameleon Vision-S Chiller



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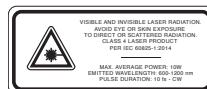
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Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice.

Coherent's scientific and industrial lasers are certified to comply with the 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 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.



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