

Astrella

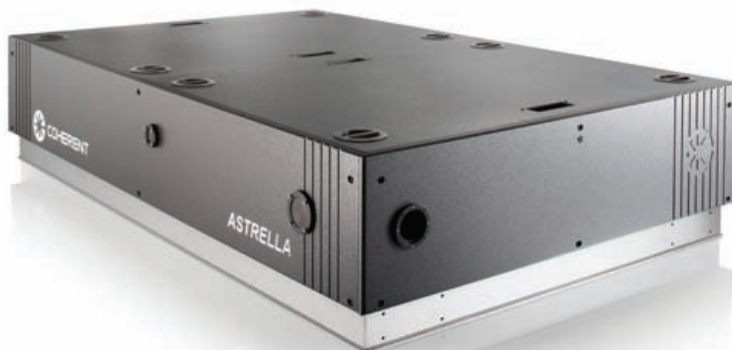
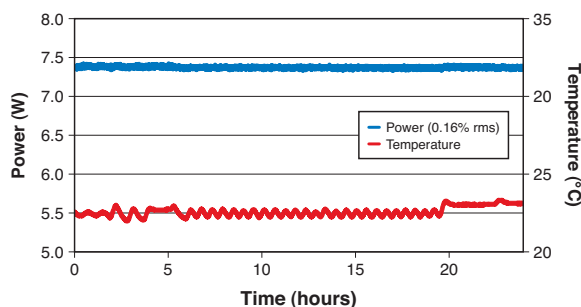
Ultrafast Ti:Sapphire Amplifier

Astrella is a next-generation, ultrafast, kHz amplifier that is the first to combine industry-leading performance and industrialized durability.

Manufactured to Coherent's rigorous standards using advanced stress-testing techniques, the one-box Astrella system enables a wide range of demanding scientific applications and operating conditions, offering higher productivity and lower data acquisition costs. Delivering high (7 mJ/pulse) energy, either <35 fs or <100 fs pulse widths, and excellent beam quality ($M^2 < 1.25$), Astrella is ideal for ultrafast spectroscopy, THz studies, femtosecond micromachining, etc.

With unmatched performance, reliability and affordability, Astrella stands at the forefront of the industrial revolution in ultrafast science.

Astrella Power and Pulse Width Stability



Superior Reliability & Performance

Astrella Features:

- **One-box, industrialized platform**
- **HASS* verified for quality and reliability**
- **>7 mJ, <35 fs or <100 fs pulses**
- **High performance STAR regen amplifier (water-only cooling)**
- **Hands-free Vitara oscillator**
- **Revolution pump laser for performance overhead**
- **Sealed stretcher/compressor section with advanced dispersion management for clean, short pulses**
- **Thermally-stabilized sub-systems for long term stability**

Astrella Applications:

- **Time-resolved Spectroscopy**
- **Multidimensional Spectroscopy**
- **THz Spectroscopy**
- **fs Micromachining**
- **Surface SFG/SHG**
- **Stimulated Raman Scattering**

www.Coherent.com/Astrella

* HASS – Highly Accelerated Stress Screening.

System Specifications¹

	Astrella-USP-1K	Astrella-F-1K
Center Wavelength ² (nm)(nominal)	795 to 805	780 to 820
Repetition Rate (kHz)	1	
Pulse Duration ³ (fs)(FWHM)	<35	<100
Contrast Ratio ⁴		
Pre-pulse	>1000:1	
Post-pulse	>100:1	
Power Stability ^{5,6} (rms)	<0.5	
Beam Pointing Stability ^{5,6} (μrad)(rms)	<10	
Beam Diameter (mm)(1/e ²)(nominal)	11	
Spatial Mode	TEM ₀₀ , M ² <1.25	
Polarization	Linear, horizontal	
Pump Laser	REVOLUTION-65	
Energy per Pulse (mJ)	>7	
Seed Laser	Vitara-S or Vitara-T	

¹ Specifications apply at 800 nm.

² Factory set, must be specified when ordered and will be optimized prior to shipment.

³ A Gaussian pulse shape de-convolution factor (0.7) is used to determine the pulse width from an autocorrelation signal measured by a Coherent SSA (Single-Shot Autocorrelator).

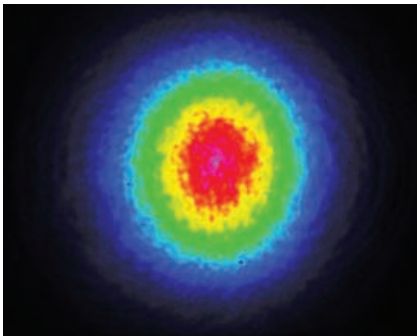
⁴ Contrast ratio is defined as the ratio between the peak intensity of the output pulse to the peak intensity of any other pulse that occurs greater than 1 ns before or after the output pulse.

⁵ Under stable environmental conditions after system warm-up.

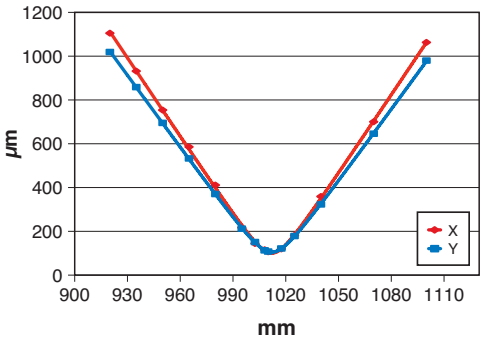
⁶ Over 24 hrs.

Astrella
Superior Mode Quality

Typical Near Field Mode Quality



M² (x = 1.18, y = 1.14)

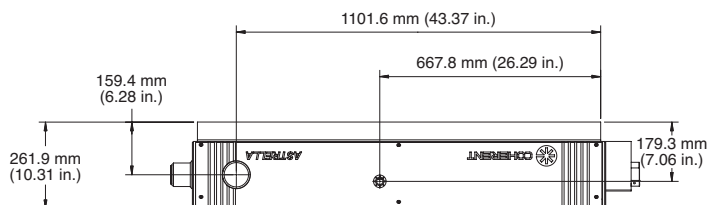


Astrella

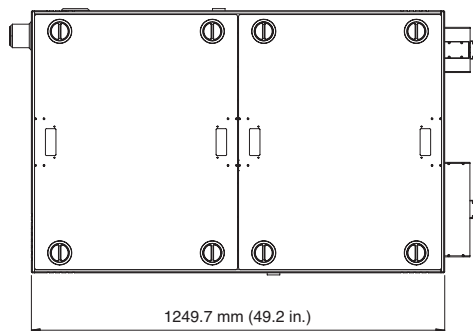
Ultrafast Ti:Sapphire Amplifier

Mechanical Specifications

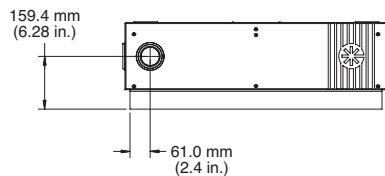
Right Side View



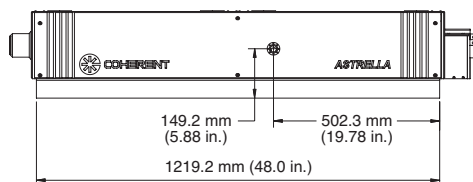
Top View



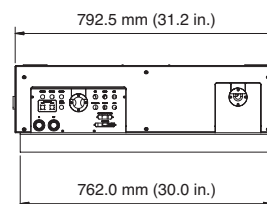
Front View



Left Side View



Rear View



COHERENT®

www.Coherent.com

Coherent, Inc.,

5100 Patrick Henry Drive
Santa Clara, CA 95054

phone (800) 527-3786
(408) 764-4983

fax (408) 764-4646

e-mail tech.sales@Coherent.com

Benelux +31 (30) 280 6060

China +86 (10) 8215 3600

France +33 (0)1 8038 1000

Germany/Austria/

Switzerland +49 (6071) 968 333

Italy +39 (02) 31 03 951

Japan +81 (3) 5635 8700

Korea +82 (2) 460 7900

Taiwan +886 (3) 505 2900

UK/Ireland +44 (1353) 658 833

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 Astrella Ti:S amplifiers. 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.