

Astrella and the new Astrella HE are next-generation, ultrafast, kHz amplifiers that are 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 (up to >9 mJ/pulse) energy, a range of pulse-width options from <35 fs to <100 fs, 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.

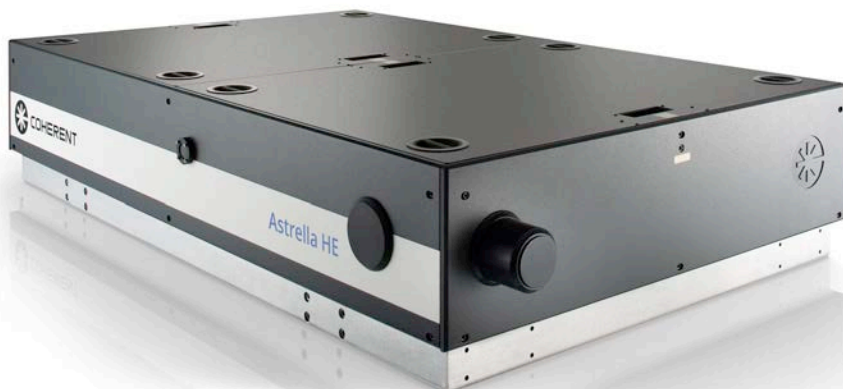
### Features and Benefits

- One-box, industrialized platform
- HASS\* verified for quality and reliability
- >5 mJ, >7 mJ or >9 mJ pulse energies
- <35 fs, <60 fs, <80 fs, or <100 fs pulse width options
- 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

### Applications

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

\* HASS – Highly Accelerated Stress Screening



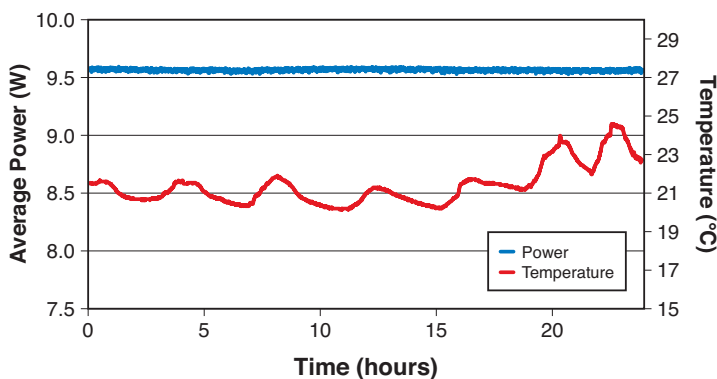
## SPECIFICATIONS<sup>1</sup>

	Astrella USP	Astrella F	Astrella HE USP	Astrella HE F
Center Wavelength <sup>2</sup> (nm) (nominal)	795 to 805	780 to 820	795 to 805	780 to 820
Repetition Rate <sup>3</sup> (kHz)	1, 5			
Pulse Duration <sup>3,4</sup> (fs) (FWHM)	<35	<60, <80, <100	<35	<60, <80, <100
Contrast Ratio <sup>5</sup>				
Pre-Pulse	>1000:1			
Post-Pulse	>100:1			
Power Stability <sup>6,7</sup> (rms)	<0.5			
Beam Pointing Stability <sup>6,7</sup> (μrad) (rms)	<10			
Beam Diameter (mm) (1/e <sup>2</sup> ) (nominal)				
1 kHz	11		13	
5 kHz			11	
Spatial Mode	TEM <sub>00</sub> , M <sup>2</sup> <1.25			
Polarization	linear, horizontal			
Energy per Pulse (mJ)				
1 kHz	>5.0, >7.0		>9.0	
5 kHz	>1.6		>2.0	
Pump Laser	Revolution-50, Revolution-65		Revolution-80	
Seed Laser	Vitara-S, Vitara-T, or Vitara-T-HP			
Each System HASS Verified	Yes			

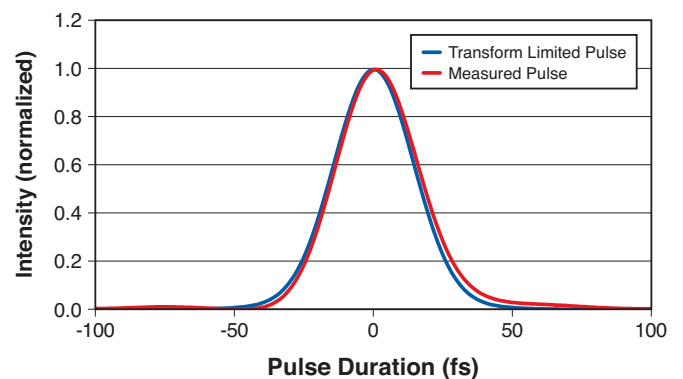
1. Center of mass, ±3 nm.
2. Assumes sech<sup>2</sup> deconvolution factor.
3. Ratio of waist sizes.
4. Measured at beam waist locations.
5. Over 2 hours, environment stability ±1°C, after warm-up.
6. RMS, 10 Hz to 10 MHz.
7. Adjustable via externally accessible fine adjust. Higher values on request.

## TYPICAL PERFORMANCE DATA

Astrella HE 24-Hour Stability

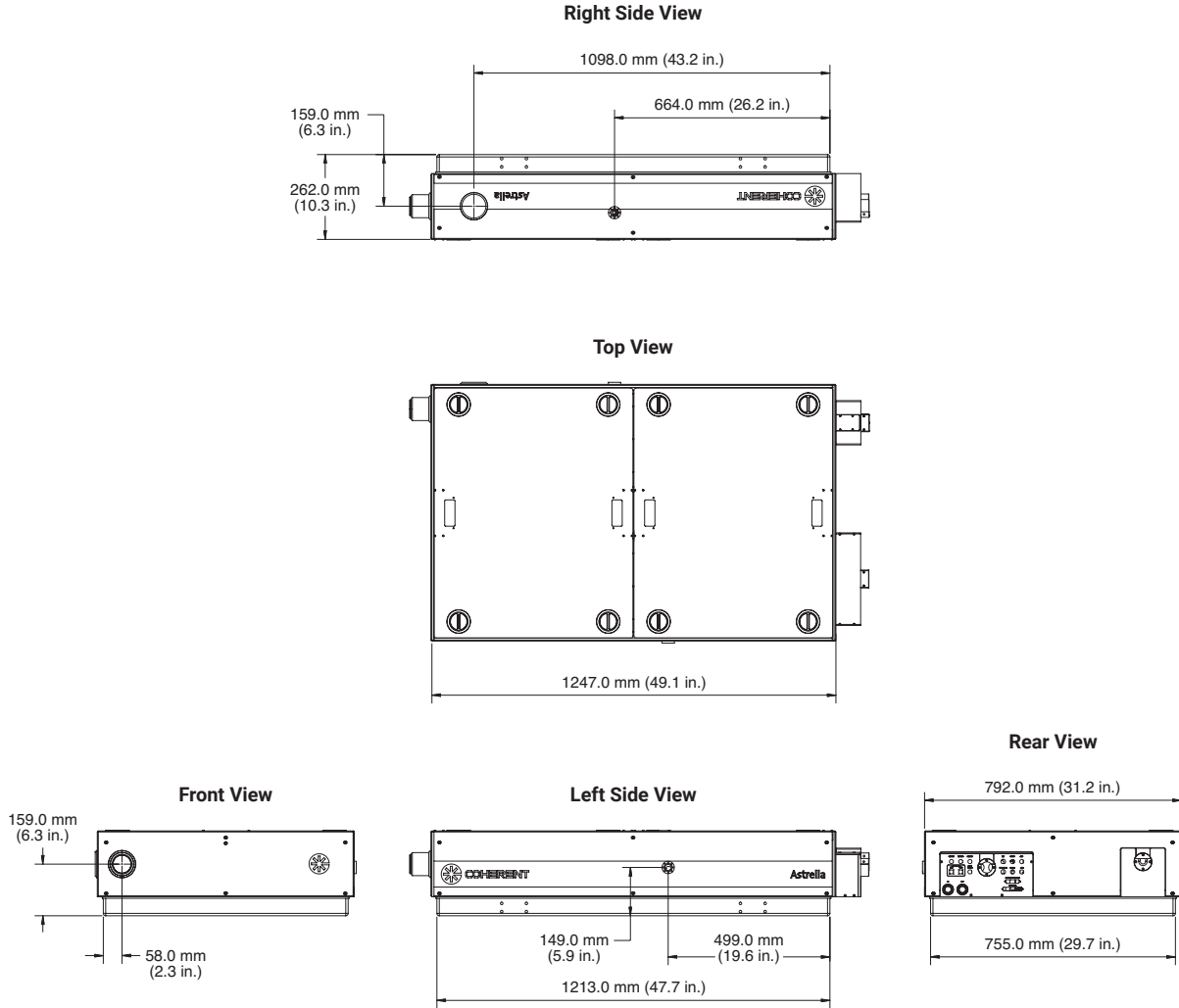


Astrella HE USP Pulse Width



## MECHANICAL SPECIFICATIONS

### Astrella



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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 Astrella Ti:S Amplifiers. For full details of this warranty coverage, please refer to the Service section at [www.coherent.com](http://www.coherent.com) or contact your local Sales or Service Representative.

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