



Legend Elite Ultrashort Pulse

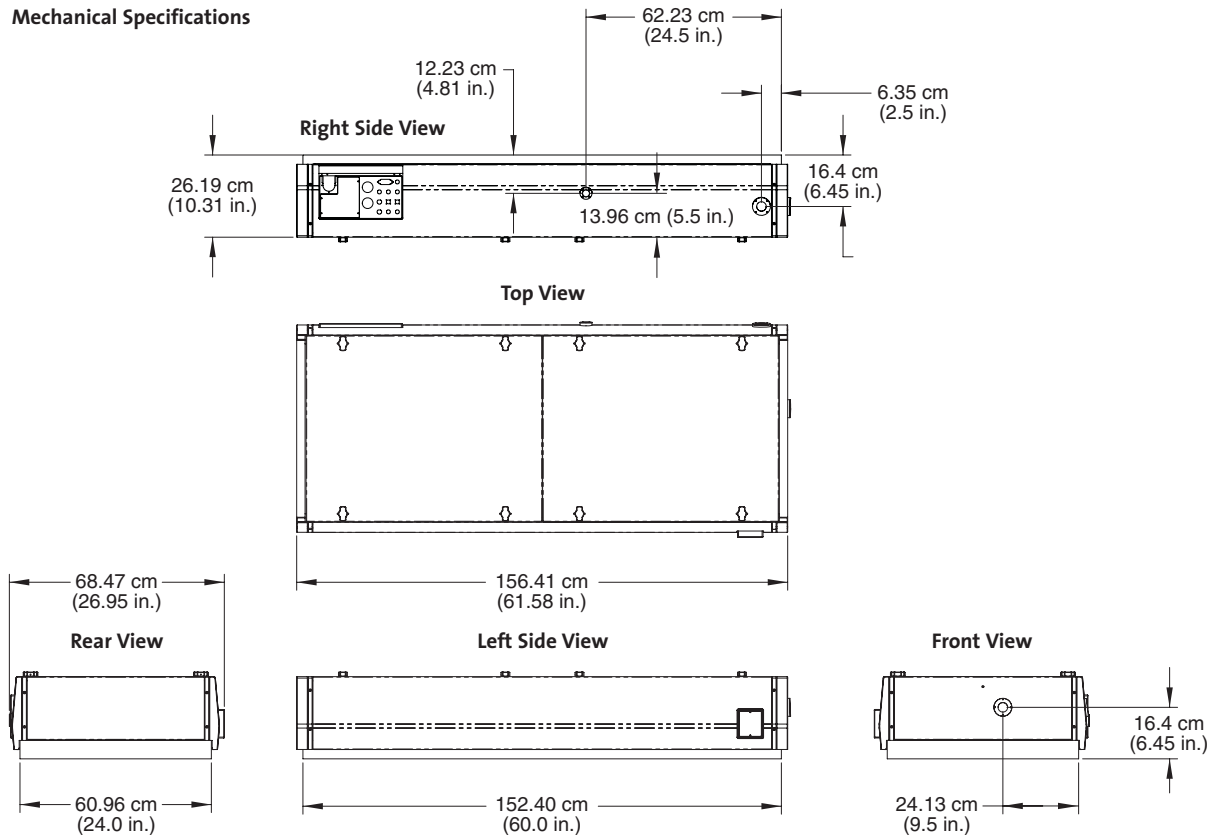
Ti:Sapphire Regenerative Amplifier

Features

- Pulse width <35 fs
- Integrated Evolution pump laser
- Thermally stabilized amplifier platform
- High-efficiency design (>3 mJ in high-energy version)
- High stability ($<0.75\%$ RMS noise)
- High beam quality ($M^2 <1.35$)
- High-contrast, high-reliability twin Pockels cavity
- 1 or 5 kHz, standard and high-energy versions
- Seeded by Micra™



Mechanical Specifications



Superior Reliability & Performance

Legend™ Elite Ultrashort Pulse Ti:Sapphire Regenerative Amplifier

System Specifications

	Legend Elite USP	Legend Elite USP-HE
Center Wavelength (nm)(nominal)	800	
Repetition Rate ¹ (kHz)	1 or 5	
Pulse Duration ² (fs)(FWHM)	<35	
Energy-per-Pulse (mJ)	>1.0 at 1 kHz >0.3 at 5 kHz	>3.0 at 1 kHz >0.6 at 5 kHz
Contrast Ratio ³	>1000:1 pre-pulse >100:1 post-pulse	
Energy Stability ⁴ (RMS)(8 hours)	<0.75%	
Beam Diameter (mm)(nominal)	6 to 7 1/e ²	
Spatial Mode	TEM ₀₀ , M ² <1.35	
Polarization	linear, horizontal	
Transform Limit ⁵	<1.5 times	
Pump Laser	Evolution-15	Evolution-30

¹ Repetition rate must be specified when ordered, and must be optimized prior to shipment.

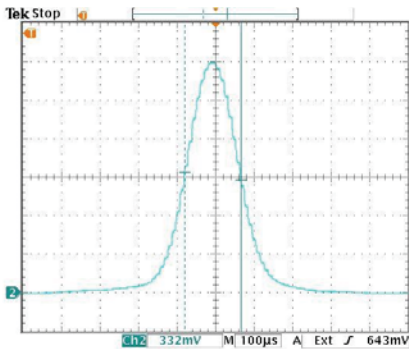
² When pumped by Micra. For other seed lasers, please contact factory. A gaussian pulse shape de-convolution factor (0.7) is used to determine the pulse width from an autocorrelator signal measured by a Coherent SSA (Single-Shot Autocorrelator).

³ Contrast ratio is defined as the ratio between the peak intensity of the output pulse to the peak intensity of any other pulse greater than 1 ns that occurs before or after the output pulse.

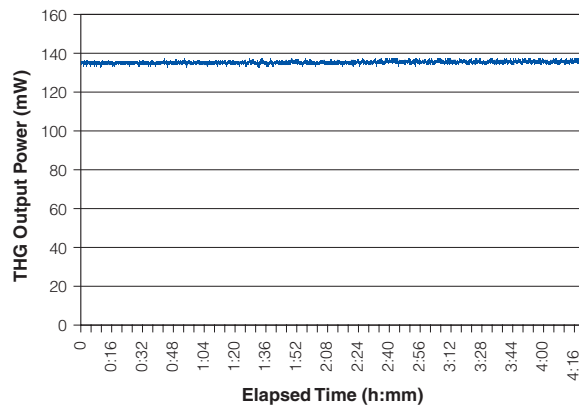
⁴ Under stable environmental conditions.

⁵ Assuming gaussian pulse shape. For more information on transform-limited pulses, see our Technical Note, "Chirped Pulses and the Meaning of Fourier Transform Limited" at www.coherent.com in the "Literature & Documentation" section on the Legend - Flexible Ti:S Amplifier page.

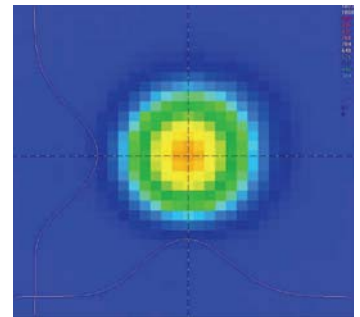
Typical Pulse Width
31 fs (assuming gaussian pulse shape)



THG (266 nm) Stability
0.42% RMS, >4 Hours



Typical Beam Quality
at Focus of Lens



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 Legend USP 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.



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