

Legend Elite Femtosecond

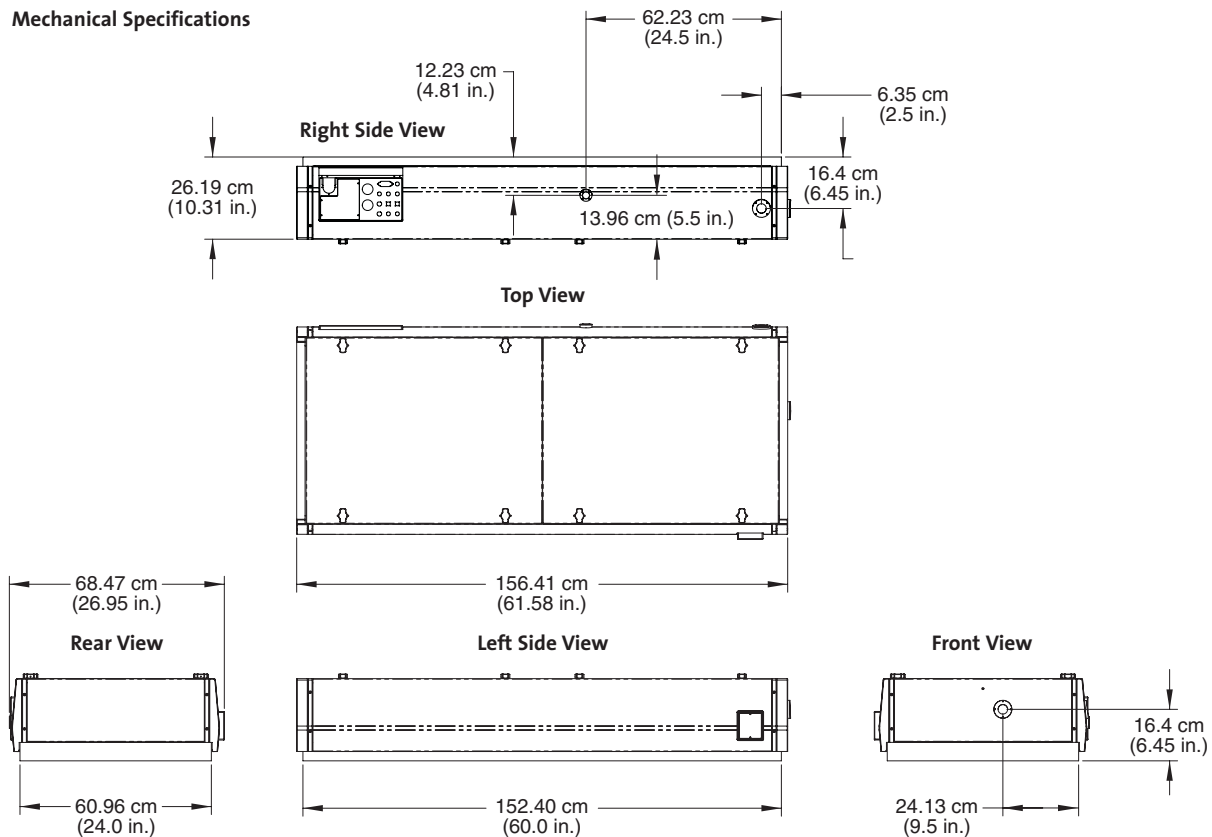
Ti:Sapphire Regenerative Amplifier

Features

- Pulse width $\lt; 130\text{ fs}$
- Integrated Evolution pump laser
- Thermally stabilized amplifier platform
- High-efficiency design (>3 mJ in high-energy version)
- High stability ($\lt; 0.75\% \text{ RMS noise}$)
- High beam quality ($M^2 < 1.35$)
- High-contrast, high-reliability twin Pockels cavity
- Patented back-to-back stretcher/compressor gratings
- 1 or 5 kHz, standard and high-energy versions
- Seeded by Vitesse™, Mira™ or Micra™ laser



Mechanical Specifications



Superior Reliability & Performance

Legend™ Elite Femtosecond Ti:Sapphire Regenerative Amplifier

System Specifications

	Legend Elite F	Legend Elite F-HE
Center Wavelength (nm)(nominal)	800	
Tunability ¹ (nm)	770 to 845	
Repetition Rate ² (kHz)	1 or 5	
Pulse Duration ³ (fs)(FWHM)	<130	
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 ⁴	>1000:1 pre-pulse >100:1 post-pulse	
Energy Stability ⁵ (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 ⁶	<1.5 times	
Pump Laser	Evolution-15	Evolution-30

¹ The system is tunable from 770 to 845 nm without an optics change (seed laser must also be tuned). Please contact factory for other wavelengths.

² Repetition rate must be specified when ordered, and must be optimized prior to shipment.

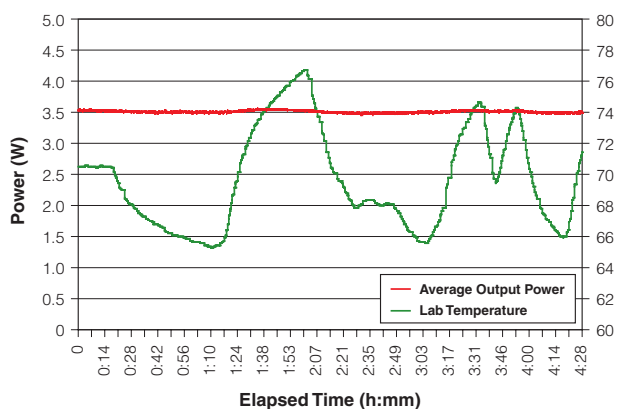
³ When seeded by Mira, Vitesse or Micra. For other seed lasers, please contact factory. A gaussian pulse shape de-convolution factor (0.7) is used to determine the pulse width from an autocorrelator signal measured by a Coherent SSA (Single-Shot Autocorrelator).

⁴ 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.

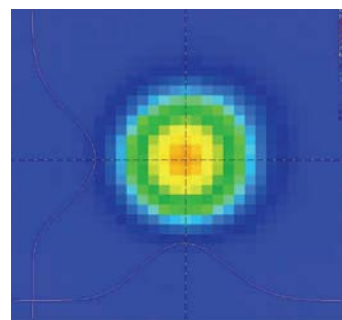
⁵ Under stable environmental conditions.

⁶ 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.

Stability vs. Temperature: 0.58% RMS, 11°F Swing Over 4 Hours, 800 nm



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-F 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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