

Monaco HE

Scientific Ultrafast Ytterbium Amplifier

The Monaco HE is the newest addition to the Monaco ultrafast amplifier family. Delivering <350 fs pulses with high pulse energy (>2 mJ, up to 10 kHz), high power (>25 W up to 250 kHz), and with the ability to vary pulse width, Monaco HE's flexibility allows the pursuit of a wide range of scientific or material processing applications. This array of capabilities allows users to dial in the ideal combination of repetition rate and energy for their experiment or process without the need to change the laser. Combined with the industrial reliability from Coherent's HALT/HASS testing, Monaco HE delivers. Better Ultrafast, Any Speed.

FEATURES & BENEFITS

- Flexible, user adjustable energy, rep rate, pulse width
- >2 mJ from 1 kHz to 10 kHz
- >25 W at rep rates up to 250 kHz
- <350 fs pulse width
- Variable pulse width up to >10 ps
- HALT-designed and HASS-verified to ensure quality and reliability

APPLICATIONS

- Time-Resolved Spectroscopy
- Multidimensional Spectroscopy
- Material Processing
- Optical Parametric Amplifier Pumping
- 2-Photon Polymerization
- THz Generation



SPECIFICATIONS	Monaco HE-2000-25
Center Wavelength (nm) (nominal)	1030 \pm 5
Pulse Duration ¹ (fs) (FWHM)	<350
Tuning Range	<350 fs to >10 ps
Contrast Ratio ²	
Pre-Pulse	>1000:1
Post-Pulse	>100:1
Power Stability ^{3,4} (% rms)	<0.5
Beam Pointing Stability ^{3,4} (μ rad) (rms)	<10
Beam Diameter (mm) ($1/e^2$) (nominal)	4
Spatial Mode	TEM ₀₀ , M ² <1.25
Polarization	Linear, Vertical
Repetition Rate ⁵	Single-Shot to 250 kHz
Energy per Pulse	
at 1 kHz	>2 mJ
at 10 kHz	>2 mJ
at 100 kHz	>250 μ J
at 200 kHz	>125 μ J

¹ Assuming Gaussian pulse shape.

² 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.

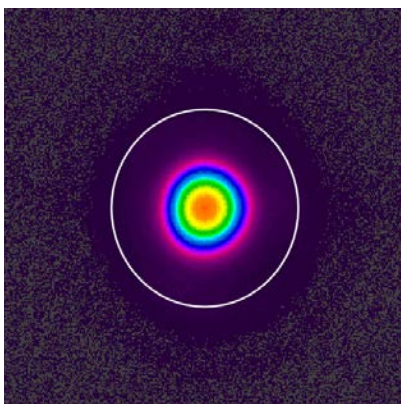
³ Under stable environmental conditions after system warm-up.

⁴ Over 24 hrs.

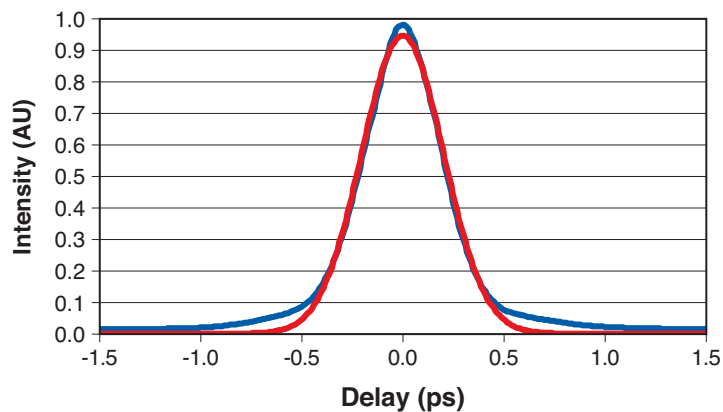
⁵ User selectable, some repetition rates are not accessible due to system design.

TYPICAL PERFORMANCE DATA

Sample Spatial Mode
at 2 mJ, 10 kHz



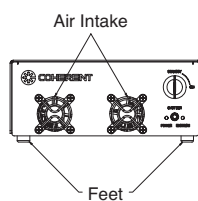
320 fs Pulse Width
(FWHM)



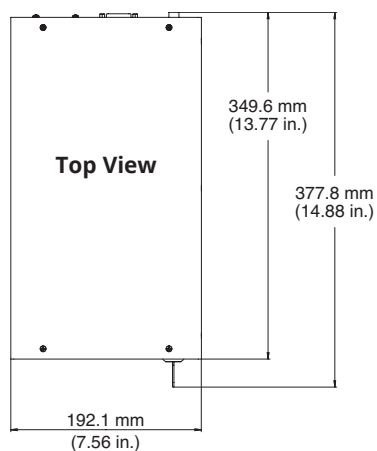
MECHANICAL SPECIFICATIONS

Monaco HE Power Supply

Front View



Top View



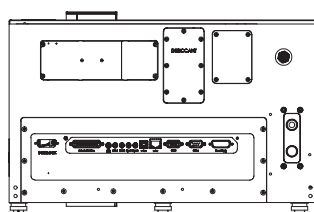
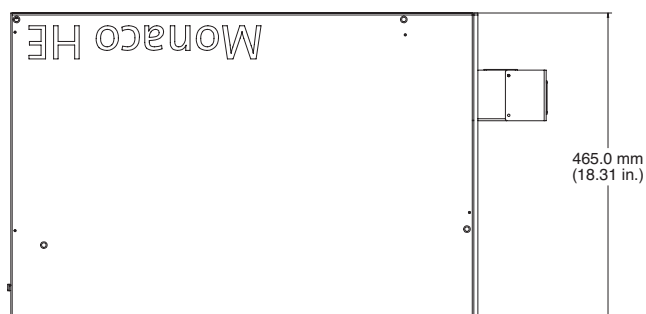
Side View



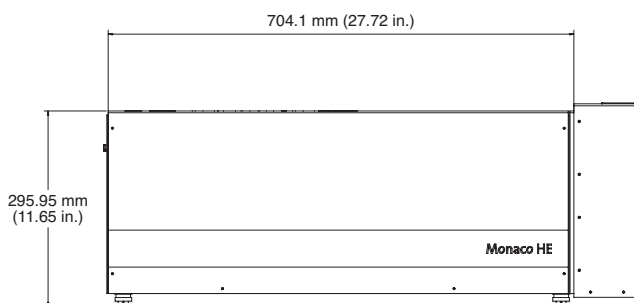
MECHANICAL SPECIFICATIONS

Monaco HE Laser Head

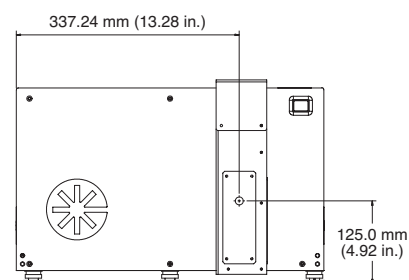
Top View



Rear View



Right Side View



Front View



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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 Monaco HE Lasers. 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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