

MULTIPASS Ti:SAPPHIRE ULTRAFAST AMPLIFIERS

QUANTRONIX®

Odin-II



FEATURES AND BENEFITS

- Pulse duration < 25 fs
- Pulse energy > 5 mJ
- High contrast > 1000:1
- Low ASE, no pedestals
- Superior beam quality & stability

SPECIFICATIONS	Odin-II	Odin-II-HE
Pulse Energy @ 1 kHz	>3.5 mJ	>5.0 mJ
Repetition Rate	1 kHz	1 kHz
Pulse Duration (FWHM)	< 25 fs	<30 fs
Spatial Mode	$M^2 < 1.3$ (TEM ₀₀)	$M^2 < 1.3$ (TEM ₀₀)
Contrast Ratio	>1000:1 Pre & Post Pulse	>1000:1 Pre & Post Pulse
Energy Stability	<0.75% RMS	<0.75% RMS
Pointing Stability	<20 μ rad	<20 μ rad
Center Wavelength	800 \pm 10 nm	800 \pm 10 nm
Beam Diameter (1/e ²)	~10 mm	~10 mm
Polarization	Linear, Vertical	Linear, Vertical

Output specified over 4°C temperature range.
Odin-II is designed to accept most commercial seed oscillators with a bandwidth of 70-100 nm and power >200 mW.

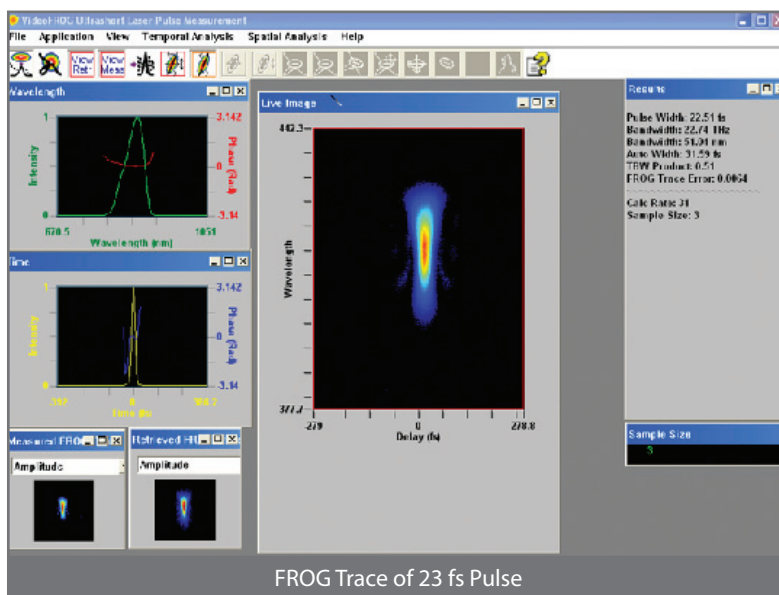
The Odin-II is the shortest pulse, highest peak power integrated ultrafast Ti:Sapphire system available, producing <25 fs pulses. The Odin-II contains an internal Nd:YLF pump laser along with the Ti:Sapphire multipass amplifier stages and the grating stretcher/compressor; the wide-band seed source (for example, the Quatronix Ti-Light) is external.

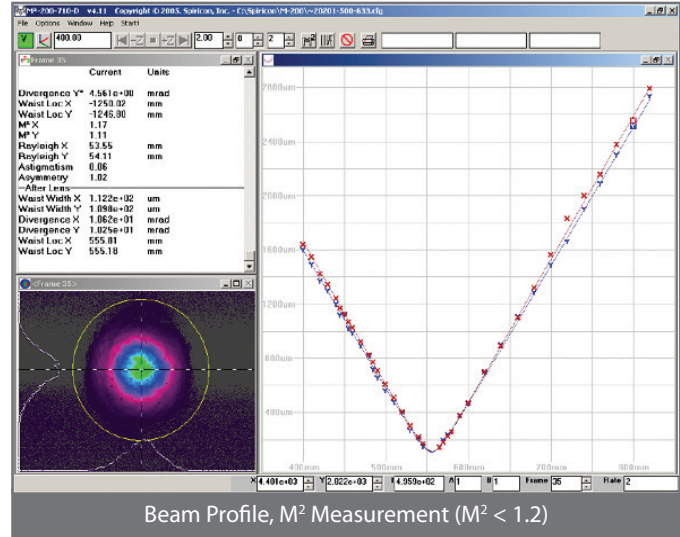
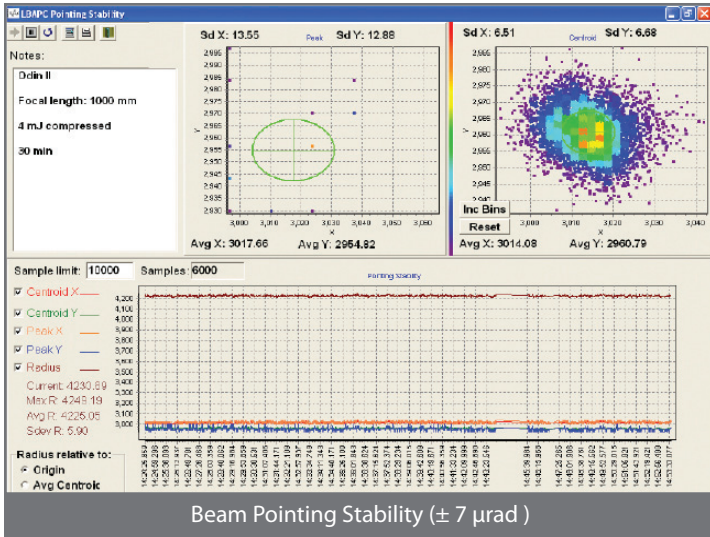
Odin-II provides pulse energies of greater than 3.5 mJ and pulse widths <25 fs with excellent energy stability. The Odin-II-HE produces pulses over 5 mJ, while maintaining pulse durations of <30 fs with superior beam quality and stability.

The multipass amplifier design uses the absolute minimum amount of material in the amplifier, thus minimizing the residual uncompensated high-order dispersion typically associated with regenerative amplifier designs. This results in clean, pedestal-free pulses. Also the constant number of passes in a multipass amplifier allows energy tunability without changing the dispersion characteristics of the system.

The Odin-II multipass design, combined with unique Pockels cell placement within the amplifier, increases the contrast ratio while maintaining a single pass through the Pockels cell for <25 fs pulse generation.

Applications that require multipass amplifiers include HHG, X-ray generation, CEP stabilization and attosecond generation.





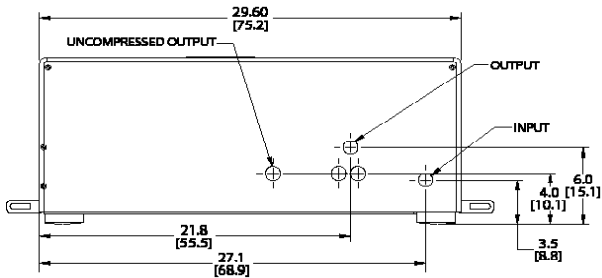
MECHANICAL & UTILITIES

	Odin-II	Odin-II-HE
Size (LxWxH)	Laser Head: 45.00 x 29.60 x 13.00 in (114.3 x 75.2 x 32.9 cm) Control Unit: 29.22 x 21.44 x 23.73 in (74.2 x 54.5 x 60.3 cm) Chiller: 27.57 x 19.02 x 16.2 in (70.0 x 48.3 x 41.1 cm)	Laser Head: 45.00 x 29.60 x 13.00 in (114.3 x 75.2 x 32.9 cm) Control Unit: 29.22 x 21.44 x 23.73 in (74.2 x 54.5 x 60.3 cm) Chiller: 27.57 x 19.02 x 19.38 in (70.0 x 48.3 x 49.2 cm)
Electrical Service	Control Unit: Single-phase: 208-240 VAC, 50/60 Hz Operating Current: 10 A, Maximum Current: 15 A Chiller: Single-phase: 230 \pm 10% VAC, 50/60 Hz Operating Current: 10 A, Maximum Current: 15 A	Control Unit: Single-phase: 208-240 VAC, 50/60 Hz Operating Current: 15 A, Maximum Current: 20 A Chiller: Single-phase: 230 \pm 10% VAC, 50/60 Hz Operating Current: 12 A, Maximum Current: 20 A
Water Service	No external cooling required for standard models; external water to water cooling available as option	

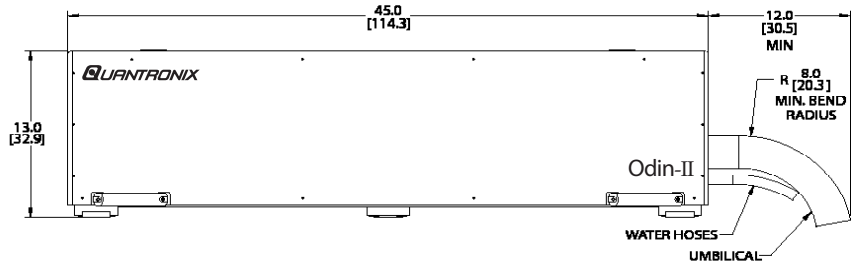
LAYOUT

All dimensions are in inches [cm]

LASER HEAD

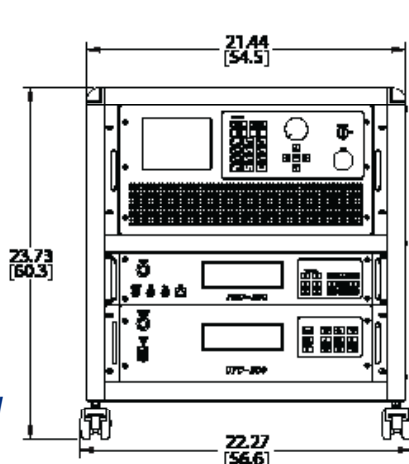


OUTPUT VIEW

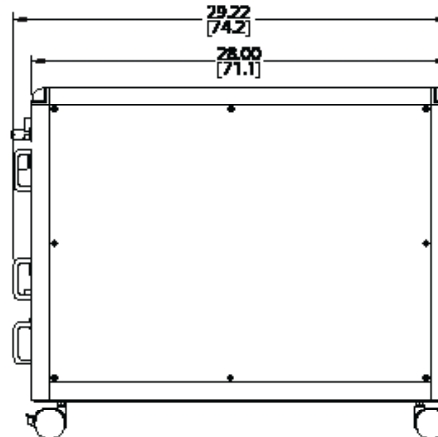


SIDE VIEW

CONTROL UNIT



FRONT VIEW



SIDE VIEW



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