

Femtosecond Laser Performance With/Without MIIPS™

Laser tested	Specifications from Company website	FWHM (nm) (When measured)	Pulse duration before MIIPS™ (fs) *	Pulse duration after MIIPS™ (fs)	$\tau_{\text{pulse}}/\tau_{\text{TL}}$
Coherent Mira™ seed oscillator	FWHM > 50 nm, <20 fs	57.7	36.1	22.1	1.001
Coherent Micra™ oscillator	FWHM: >100 nm ¹	101	91.1	12.4	1.01
-/- -/- with Silhouette™ Phase & Amplitude Shaping	--- ^{1,2}	147 ³	100	9.9	1.01
Coherent RegA™ 9000 amplifier	FWHM~10nm, <200fs	12.2	670	99.7	1.005
Coherent Legend™ USP amplifier	<35~50 fs ²	29	75	32.5	1.005
Legend™ Elite with Silhouette™ Amplitude Shaping	<35~50 fs ²	52 ³	45	26.3	1.01
Spectra-Physics Spitfire™ amplifier	<35 fs ²	25	71	35.5	1.004
Spectra-Physics Spitfire™ Pro amplifier	<35 fs ²	32	46.3	30.9	1.008
Quantronix Ti-light™ oscillator	FWHM 30~100 nm ¹	48.7	73	20	1.002
Quantronix Odin™ II Multipass amplifier	<30 fs ²	67.9 ⁴	43.8	21.5	1.002
Quantronix Integra™ C Regen amplifier	<40 fs ²	30.7	114 ⁵	34.7	1.007
KM Labs Wyvern™ Regen amplifier	FWHM~30 nm, <50fs	27.7	175	39.6	1.001
KM Labs Griffin™ oscillator	FWHM >70 nm, <15fs	45.1 ³	37	11.7	1.009
KM Labs oscillator kit	Adjustable bandwidth	96.4	275	12.6	1.004
Clark-MXR CPA™ 1000 amplifier	<150 fs ²	22.7	98.1	45.7	1.004
IMRA CX-20 780 nm output	< 100 fs ²	4.3 ³	285.4	73.9	1.006
IMRA CX-20 1560 nm output	< 100 fs ²	4.0 ³	121.0	78.8	1.01
Nanolayers Venteon™ oscillator ⁴	FWHM~300nm, <8 fs	300 ³	480	4.6	1.006

* The numbers reported were obtained without touching or optimizing any parameter of the laser systems. The pulses are chirped by optical components before being measured at the experimental target position. The pulse duration measured before MIIPS may not agree with the laser specifications and should not be considered as actual/typical laser performance. In most cases the laser systems can be manually tweaked to be within 10-30% of TL. However MIIPS achieves better than 1% of TL in less than one minute without touching the laser. This is performance you can count on every day from anyone in your lab. We have found that the chance for a failure of a laser system decreases significantly when no one opens and tweaks the laser system. This page was last updated on February 18, 2009. Check often for new measurements.

- 1 Pulse duration not specified
- 2 Bandwidth not specified
- 3 Non-Gaussian shape profile
- 4 With special/custom designed optics, not typical performance
- 5 Pulse arbitrarily chirped to highlight MIIPS performance

If you have numbers to report, please send us a computer screen printout of your laser system with the initial and final numbers obtained by MIIPS. Once we confirm your results we will post them in this web page. Alternatively, you can email us to arrange for one of our Applications Scientists to measure your pulses.