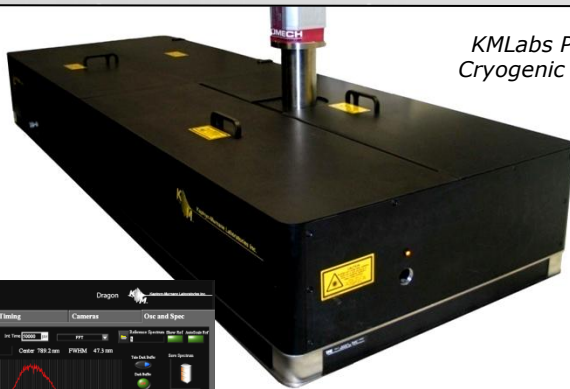
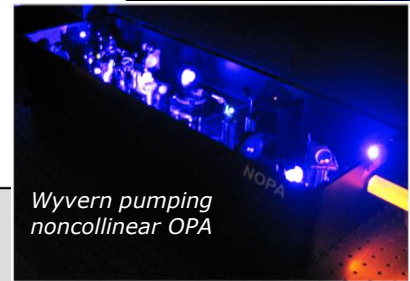
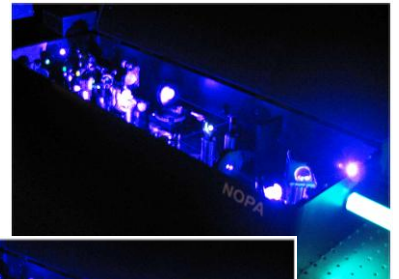


Industry Leading... Computer controlled, variable Repetition Rate

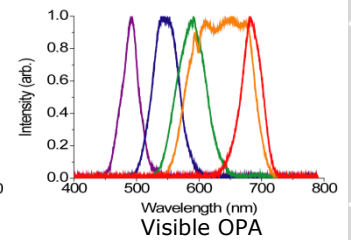
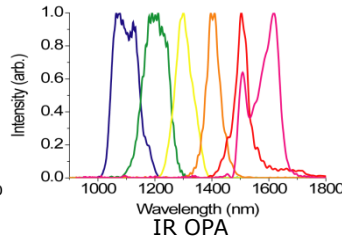
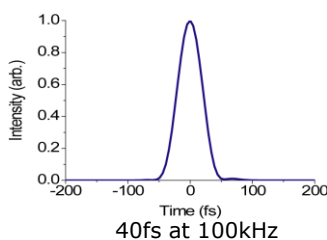
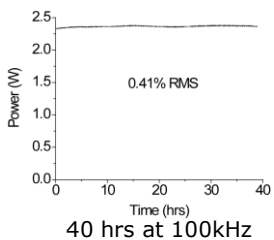
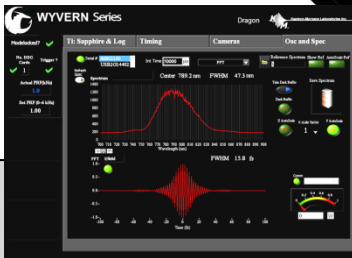
- *Pulse energy: μJ – 20mJ*
- *Repetition rates: 1kHz up to 1MHz*
- *Pulse duration: <45fs*
- *Unprecedented average power from a single-stage amplifier*



*KMLabs Patented
Cryogenic 1st Stage*



*Wyvern pumping
noncollinear OPA*



Wyvern-OPA and Wyvern-NOPA operate in the μJ 100kHz regime

**Ultrafast Imaging • Spectroscopy (THz, nonlinear, molecular, surface) •
Materials Processing • Lithographic Metrology • Mask Inspection**

High Rep Rate Regenerative Amplifier	Wyvern series				
	Wyvern-1000	Wyvern-500	Wyvern-50	Wyvern-X	Wyvern - Dual Stage series
Repetition Rate:	1kHz thru 50kHz	10 thru 200kHz	10 thru 150kHz	200 kHz thru 1 MHz	1 kHz thru 20 kHz
Energy at 150kHz:		15 to 55uJ	8uJ	5.5 or 11uJ	
Energy at 100kHz:		25 to 130uJ	10 to 12uJ	6 or 12uJ	
Energy at 50kHz:	220uJ	60 to 150uJ	25 to 40uJ		
Energy at 40kHz:	280uJ				
Energy at 30kHz:	400uJ	120 to 350uJ	40 to 60uJ		
Energy at 20kHz:	550uJ	190 to 630uJ	80uJ		
Energy at 15kHz:	750uJ				
Energy at 10kHz:	1 or 1.3mJ	250, 500 or 750uJ	140uJ		2.3 to 3.3mJ
Energy at 5kHz:	2mJ				5 to 7.5mJ
Energy at 3kHz:	3mJ or 3.3mJ				5.6 to 8.2mJ
Energy at 1kHz:	4mJ or 5.5mJ				8 to 20mJ
Pulse Duration: ^{1, 2}	< 45 fs	< 45 fs	< 50 fs	< 55 fs - 80 fs	< 45 fs
Beam Quality:	$M^2 < 1.3$				
Pre-pulse contrast on ns scale:	> 250:1				
Post-pulse contrast on ns scale: ³	> 100:1				
Polarization:	Horizontal				
Power instability: ⁴	< 1% RMS				
Long term instability (8hrs):	< 1%RMS				
Beam Diameter (1e ²):	~8mm				

¹ Longer pulse options available, up to 130 fs.

² Shorter Pulse options coming soon.

³ Higher Contrast options available.

⁴ Power instability <1% RMS options available.

The Wyvern™ is a complete, single-box system™, housing the Ti:sapphire laser oscillator, regenerative amplifier and oscillator pump laser within a single enclosure. The Wyvern's™ short pulses, high energy and excellent spatial profile are exceptionally well-suited to nonlinear optics applications, e.g. allowing efficient white light production.

The Wyvern™ series offers industry leading "hands-off" computer-controlled tuning of repetition rate for the operating ranges described and simple and rapid alignment to provide the widest range of rep-rates in the industry today.

Surpassing ultrafast providers in the industry today... the Wyvern™ series does not require the added cost of re-alignment by a factory authorized service technician when a change in Rep-Rate is needed to reach success with your project.

... Don't settle for anything less



Kapteyn-Murnane Laboratories, Inc.™

USA: 1855 South 57th Court, Boulder, CO 80301 [] Tel: 303-544-9068 [] Fax: 419-821-2284 [] www.kmlabs.com

China: 86 10 82800851
Japan: 81 3(3686)4711

France: 33 (0) 1 41906180
Singapore: (65) 6746 8068

Germany/Austria: 081 91 985199 0
South Korea: 042 823 5300

India: 91 22 27801176
UK: 44 01295 672500