



## RAEA Next-Generation Ultrafast Ti:sapphire Amplifier

# Continuing the KMLabs tradition of advancing ultrafast science

RAEA<sup>™</sup> Ti:sapphire amplifier builds on KMLabs' 20-year tradition of leadership in ultrafast science, bringing the unmatched flexibility of previous amplifier systems into a single, hands-free platform.

### Unprecedented reliability

RAEA has been engineered to make system operation as simple as possible. With temperature-controlled modules, contamination-minimizing enclosures, and remote alignment capability, maintaining your RAEA system is easier than ever. We have designed every aspect of this system to ensure that you spend more time on your experiments and less time working on your laser.



Winner of the  
2018 Innovation  
Award



### Unmatched flexibility

While RAEA has been designed for unparalleled robustness, our team understands that each experiment has specific needs. That's why we've worked hard to keep all of the flexibility the

original KMLabs amplifier systems were known for in a user-friendly platform that's right for any skill level: standard RAEA configurations are designed to cover the same range as our legacy amplifier systems and then some. Though our standard range of amplifiers covers from 1 to 200kHz, modified configurations can extend down to even single-shot operation. And, RAEA offers a unique software-tunable repetition rate in order to maximize experiment flexibility. For more information on which system configuration will best meet your requirements, please reach our experts via [sales@kmlabs.com](mailto:sales@kmlabs.com).

## Uncompromising performance

The award-winning RAEA has been engineered for the most challenging applications rather than the most common, including high harmonic generation. Future-proof your lab with RAEA.

## Exceptionally suited for high harmonic generation (HHG)

In addition to being a comprehensive standalone system, RAEA is designed to be a powerful and robust source for our high harmonic generation system, XUUS.

## Expand your lab's capabilities

The RAEA amplifier provides more than enough power to fuel the XUUS high harmonic generation system. This combination allows you to achieve synchrotron-quality time-resolved experiments on a tabletop system, while still having remaining Ti:sapphire power to use in other experiments.



## Wide-ranging applications

The flexibility and reliability of the RAEA system provide advantages in many other experiments as well. Listed below are just some of the other applications RAEA is suited for:

- Materials characterization
- Femtochemistry
- THz generation
- Ultrafast imaging
- 2-photon polymerization
- Pump-probe experiments
- Attosecond science

The RAEA system has been designed with a large number of potential applications in mind. There are four primary factors to take into consideration when buying an ultrafast laser system:

- Power level
- Rep rate

- Energy
- Pulse duration

RAEA offers four primary options intended to address these requirements:

**RAEA HE:** a system designed to maximize pulse energy – offers a lower repetition rate range than the HP and HR systems but with more than double the energy. Options ranging from 1-5 kHz and up to 20 mJ.

**RAEA HP:** our workhorse system – a mid-range option with a wider repetition range than the HE but with more pulse energy than the HR. Options ranging from 5-30 kHz and up to 6 mJ.

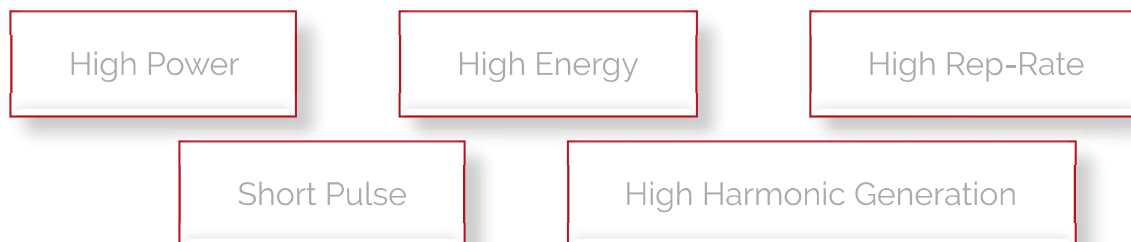
**RAEA HR:** the most flexible system we offer – designed with flexibility in mind, this system has the widest range of repetition rates of the systems we offer but with less pulse energy. Options from 30-200 kHz and up to 400  $\mu$ J.

**Short Pulse Option:** a secondary option for the HE and HP systems – this option provides a shorter pulse on both of these systems with a small reduction to the highest achievable power. Shortens the pulse width from 35 fs down to 25 fs.

Contact us to discuss your experiment requirements. Our technologists can help you find the best configuration for your needs.

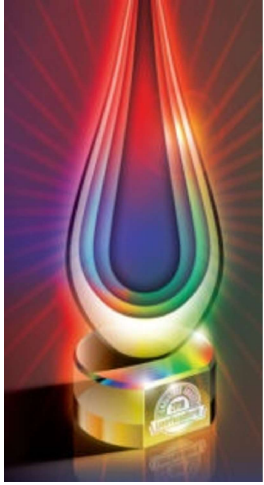
RAEA Specifications	High Energy	High Power	High Rep-Rate	HE Short Pulse	HP Short Pulse
Software Tunable PRF Range	1-5 kHz	5-30 kHz	30-200 kHz	1-3 kHz	5-15 kHz
Pulse Energy	8 mJ @ 1 kHz 3 mJ @ 3 kHz	3 mJ @ 5 kHz 2 mJ @ 10 kHz 0.6 mJ @ 20 kHz	200 $\mu$ J @ 50 kHz 100 $\mu$ J @ 100 kHz 37 $\mu$ J @ 200 kHz	5 mJ @ 1 kHz Up to 10 mJ @ 1 kHz	2 mJ @ 5 kHz 1.3 mJ @ 10 kHz Up to 4mJ @ 5 kHz
Pulse Width	35 fs			25 fs	
Spatial Mode	Near TEM <sub>00</sub> M <sup>2</sup> < 1.25			Near TEM <sub>00</sub> M <sup>2</sup> < 1.3	

**Click for details on specific RAEA configurations:**



**Committed to the cutting edge**

KMLabs has always been and continues to be uniquely understanding of the individual needs of high-end, cutting-edge laboratories. Please contact KMLabs sales at [sales@kmlabs.com](mailto:sales@kmlabs.com) for modified system requests, or to request a collaboration project that advances science.



## Laser Focus World 2018 Innovation Award Platinum Winner

### KMLABS LEADING IN ULTRAFAST

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