



# CASCADE

## Cascade™ – Cavity-Dumped Ti:sapphire oscillator

### Applications

- Ultrafast imaging
- Harmonic Generation
- White light generation
- Nano-surgery
- Pump-probe experiments
- Spectroscopy

### Features

- High-energy pulses to >30nJ
- User-adjustable repetition rate
- Pulse energies up to 30 nJ
- Repetition rates from 40 kHz to 4 MHz
- Shortest pulse duration <15fs
- Excellent beam quality: near TEM00
- Intuitive control GUI including wavelength and bandwidth control with integrated diagnostics
- One-box configuration with integrated pump laser and cavity dumper
- Water-cooled baseplate for maximum long-term stability

### Cavity-dumped Ti:sapphire oscillator



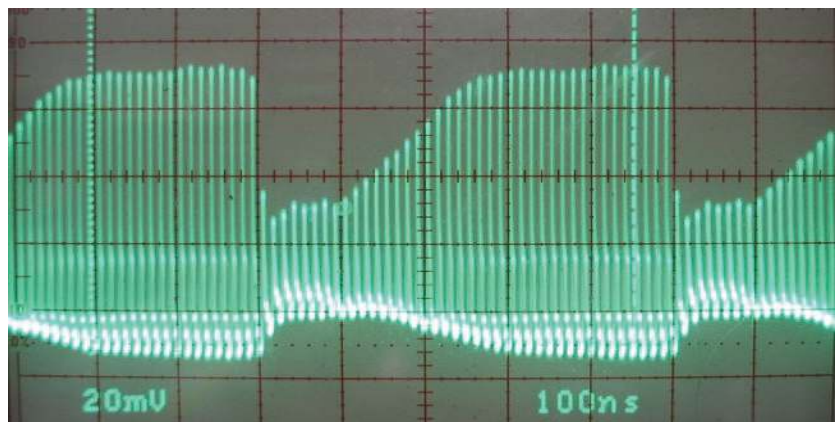
Cascade™ is KMLabs' cavity-dumped ti:sapphire oscillator. It is a fully engineered and integrated commercial source based on a single rugged opto-mechanical platform.

KMLabs had been building this integrated system for over a decade.

#### Cascade™ Unique Features

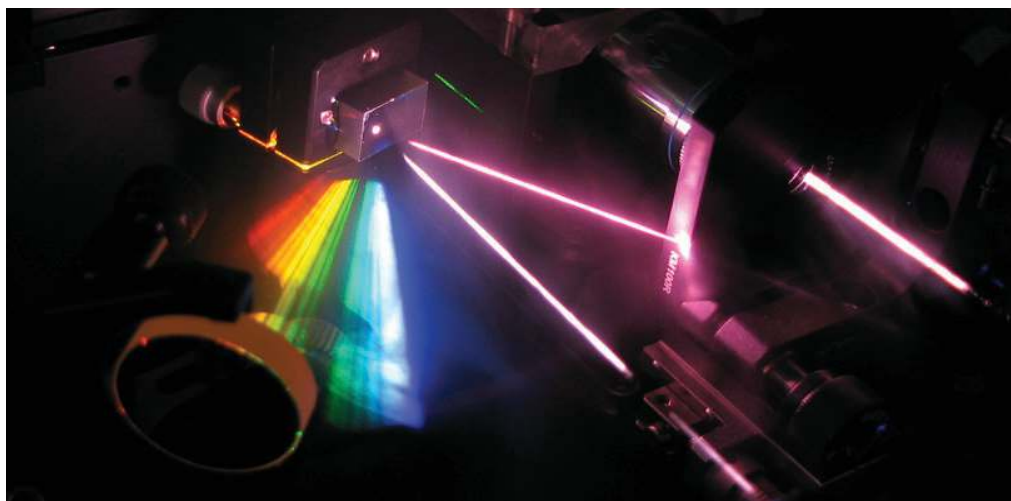
- Integrated, robust cavity-dumping technology
- High energy >30nJ pulses
- Ultrashort pulses < 15fs
- User-adjustable dumping rate: 40 kHz - 4 MHz

#### Cascade™ Intracavity Pulse Train



## Cascade™ Specifications

| Parameter                     | Cascade-5 Specification  |
|-------------------------------|--|
| Minimum Pulse Duration        | < 15 fs  |
| Wavelength Center             | 780 – 800 nm   |
| Maximum Bandwidth             | > 65 nm FWHM   |
| Minimum Bandwidth             | < 50 nm FWHM   |
| Average Power (Energy)        | > 300 mW [3.7 nJ] for non-dumped output                                    |
| Repetition Rate               | ~ 80MHz for non-dumped output  |
| Dumped Power Stability        | < 3% RMS for 2 hrs after warmup  |
| Pump Laser                    | Integrated 5W pump laser   |
| Dumped Output Repetition Rate | User adjustable from 40 kHz to 4 MHz                                       |
| Dumped Output Energy          | > 30 nJ, 40 kHz – 2 MHz<br>> 25 nJ, 4 MHz                                  |
| Integrated Diagnostics        | Includes laptop computer, fast photodiode, spectrometer, and power monitor |
| Optical Assembly Dimensions   | 83cm L x 41cm W x 14cm H, water-cooled baseplate                           |



White Light Generation from a KMLabs Cascade™ oscillator