*Home of Single Frequency Lasers*

## BRaMMS-Laser Family

- Feedback locked Single Longitudinal Mode
- CW operation
- Mode-hops and lock loss free
- Excellent beam quality from smallest footprint
- High conversion efficiency
- No external cooling required
- High power stability
- Ultra-low noise
- Very narrow linewidth (<0.5 MHz as standard)
- 100 m+ coherence length

| *Parameters** | *UV* | *Visible* | *NIR* |
|---|---|---|---|
| Wavelengths (nm) | 266, 320, 349, 355, 360 | 442, 515, 523, 532, 607, 640, 698 | 720, 780**, 813**, 1064, 1125** |
| Power options (mW) | <200 | <2000 | <3000 |
| Linewidth (MHz) | <0.5 | | |
| Coherence length (m) | >100 | | |
| Spectral position stability (pm, ±5°C, 4 hours) | 0.65 | 1.1 | 2.5 |
| Beam quality | $M^2$<1.05 | | |
| Beam pointing stability (µrad/°C) | <5 | | |
| Power stability (%, ±5 °C, 4 hours) | 2 | | |
| Mode-hop free tuning range (GHz) | 40-50 | 30-50 | 25-30 |
| Noise (%rms, 10 Hz-10 MHz) | 0.1 | | |

*All values quoted are highest or lowest in the range

**To be released in 2018

## Ideal for applications such as

| | | |
|---|---|---|
| Holography | Fine Resolution Spectroscopy | Quantum Technologies |
| Raman Spectroscopy | Interferometry | LiDAR |
| Optical Manipulation | Semiconductor metrology | Brillouin Scattering |

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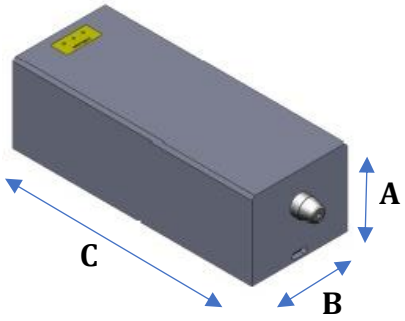
*Dedicated to Innovation*

## Laser head sizes



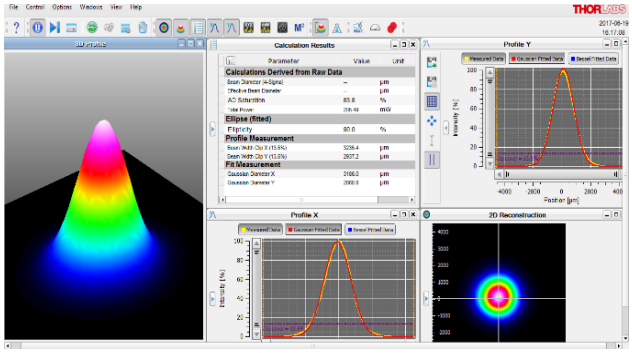

| (mm) | A | B | C |
|---|---|---|---|
| <500 mW | 65 | 80 | 170 |
| >500 mW | 75 | 80 | 200 |
| Quartetto | 85 | 180 | 200 |

## BRaMMS technology

All UniKLasers products use BRaMMS technology to ensure stable single frequency operation. BRaMMS utilises the spectrum discriminatory feature of a Michelson interferometer setup within a spectral range preselected by VBG (Volume Bragg Grating). This suppresses all but one lasing longitudinal mode within a laser cavity. Hence – **B**ragg **Ra**nge **M**ichelson **M**ode **S**election (BRaMMS).

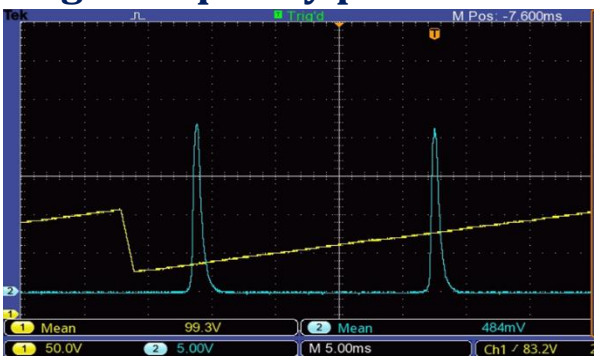
Due to significantly lower power consumption for any required output and the resulting simplified thermal management, the BRaMMS laser technology provides up to 10 times wider range of output power scalability from the smallest footprint.

## Typical beam profile



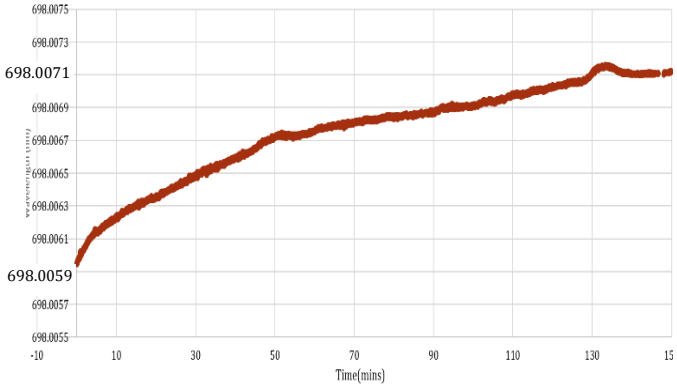
Near-field of Duetto532 as measured at 60 cm from laser head aperture

## Single frequency performance



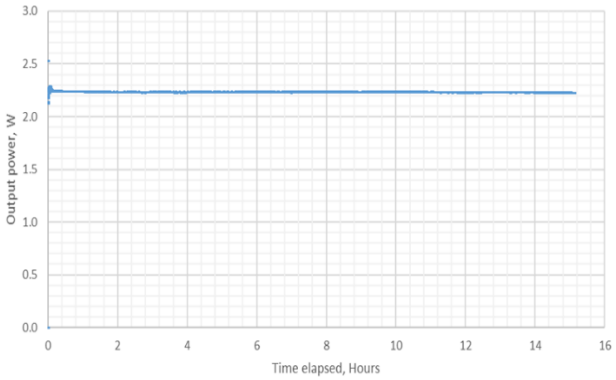

SLM operation of Solo640 measured with Thorlabs Spectrum Analyser model SA201

## Wavelength drift @698nm




**1.2 pm** drift within 2.5 hours of operation due to environmental temperature fluctuation

## Output power stability




Solo1064/2000: <1.5 %/8 hours

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