

# LXR femtosecond laser sources: power with control

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## About us



Ben Fulford, Luxinar, 1<sup>st</sup> March Product Release

## We are Luxinar



**18000+**

Lasers installed around the world



**7500**

Square meters of manufacturing space



**20**

Years of experience in CO<sub>2</sub> laser technology



**12**

Product ranges of sealed CO<sub>2</sub> laser sources

**160+**

Employees worldwide



**6**

Sales & service centres globally



**100+**

Countries where our lasers are installed



**IP66 Rating**

Against dust & water (most lasers)

**ISO 9001:2015**

Quality management accreditation



**9-11 μm**

Wavelengths in our range



**10**

Working days to return your processed samples



**1200**

Characters per second are laser marked by MULTISCAN

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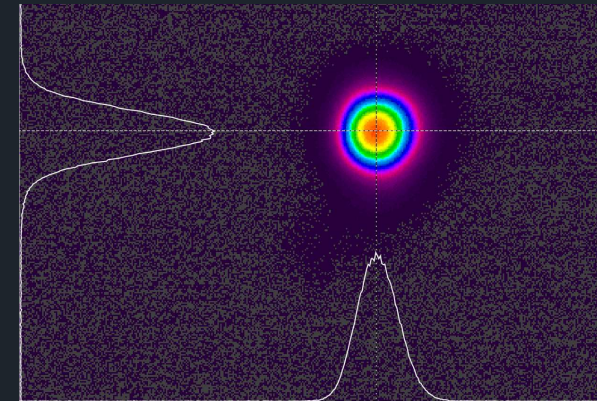
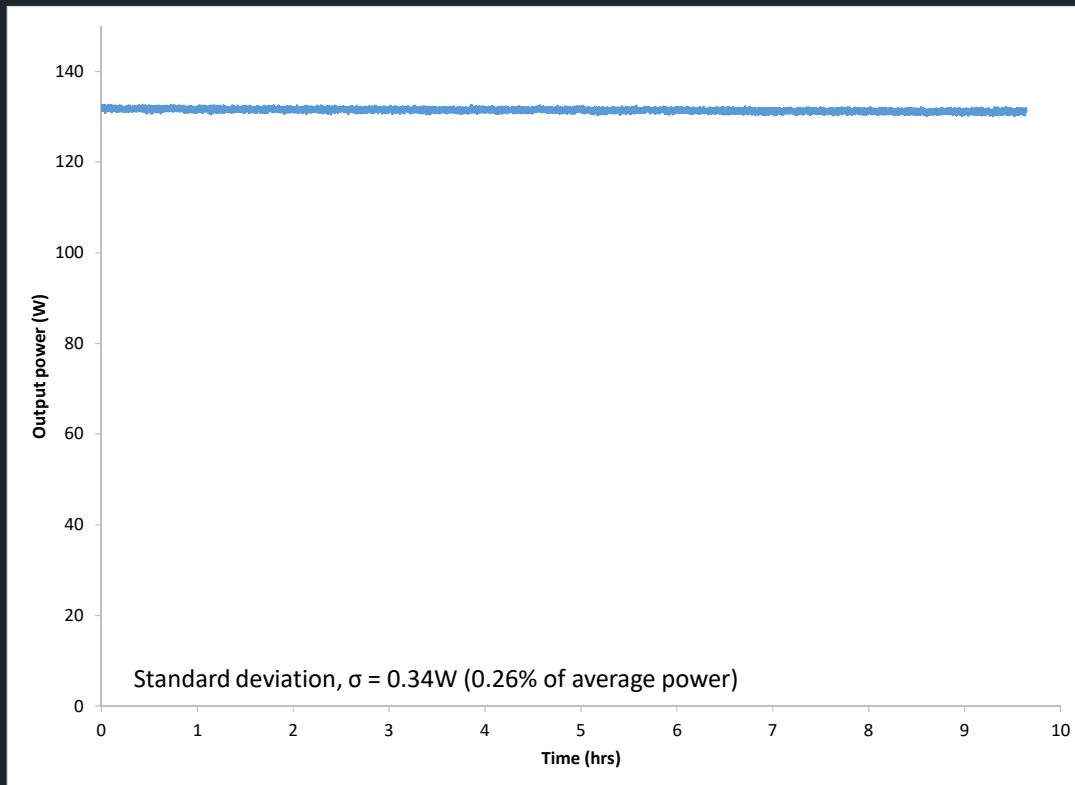
[info@luxinar.com](mailto:info@luxinar.com)

## An Introduction to LXR series femtosecond lasers

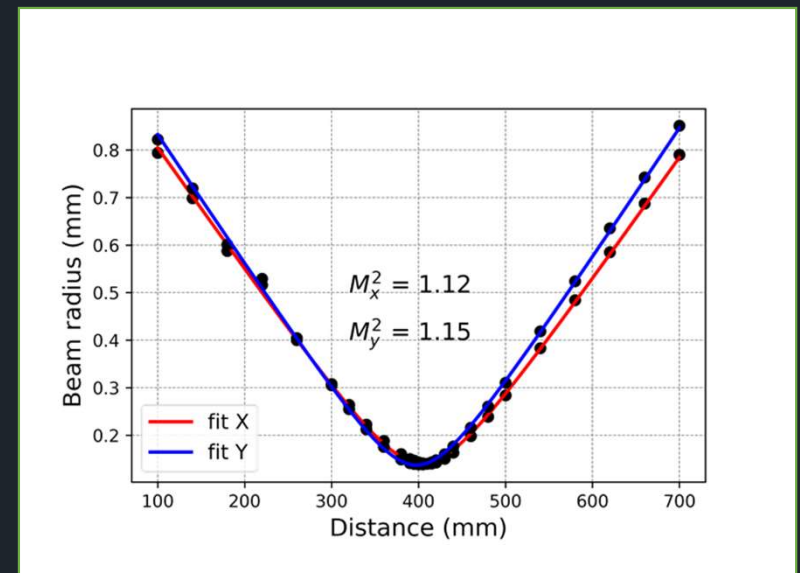
- Patented technology<sup>1,2</sup> allowing high output power *with* control
- Large dynamic range of pulse repetition frequencies and energies
- High beam quality with  $M^2 < 1.3$
- Pulse-on-demand for high quality processing
- Fast burst mode for increased efficiency of some processes
- PC app with local or remote diagnostics
- Handheld touchscreen interface available upon request
- Available at 50W and 120W rated power @ 1030nm
- Also available at 515nm and 343nm

LXR 120-1030 SPECIFICATION OVERVIEW	
Rated average power	up to 120W
Pulse duration	900 ± 100fs
Rated pulse energy	120µJ
Max. fast burst energy	600µJ
Frequency	single shot to 40MHz
Power stability	< ± 1%rms
Polarisation	linear
Beam quality	$M^2 < 1.3$
Output beam diameter	3mm ± 0.25mm

## Power stability and beam quality

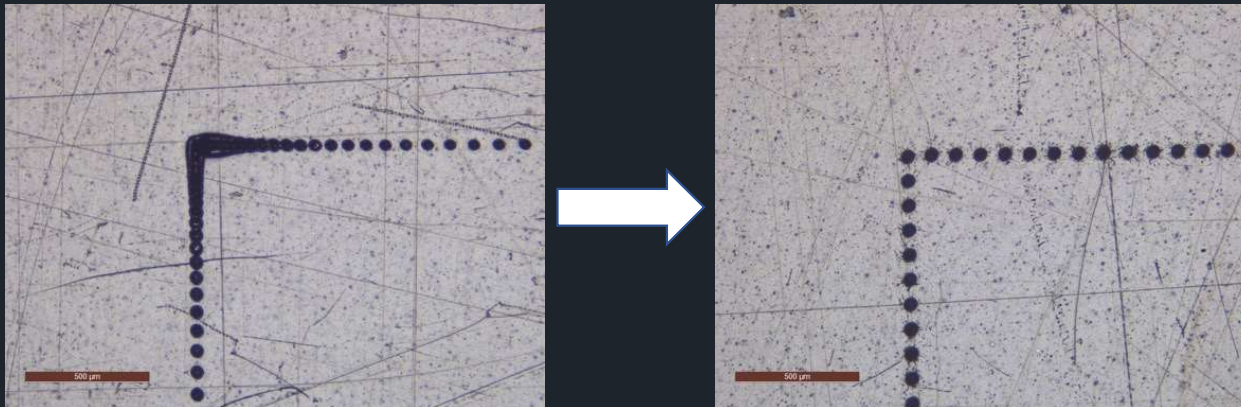


Typical beam at focus and caustic plot



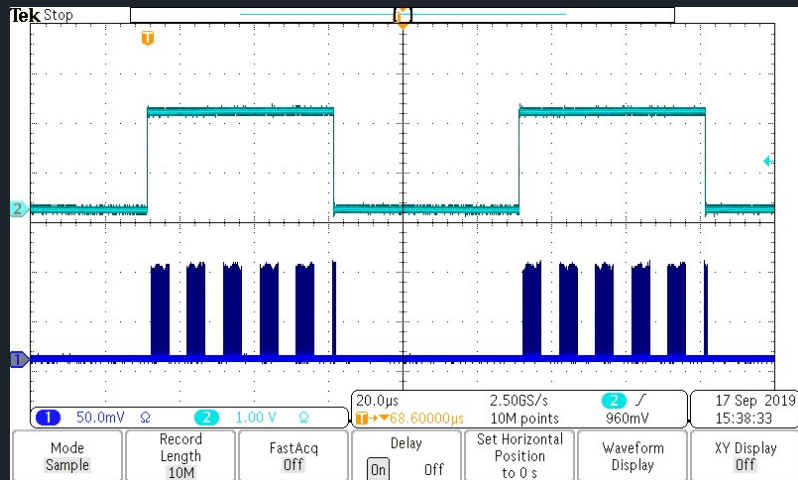
## Pulse-on-demand feature

- Laser can be controlled by an external source which “tells” it when to fire
- Useful for going round corners when scan mirrors are accelerating and decelerating
- Pulse energy can be maintained whether 10 kHz is requested or 10 MHz is requested
- Sync output available which allows the user/scanner to synchronise *exactly* with the laser output



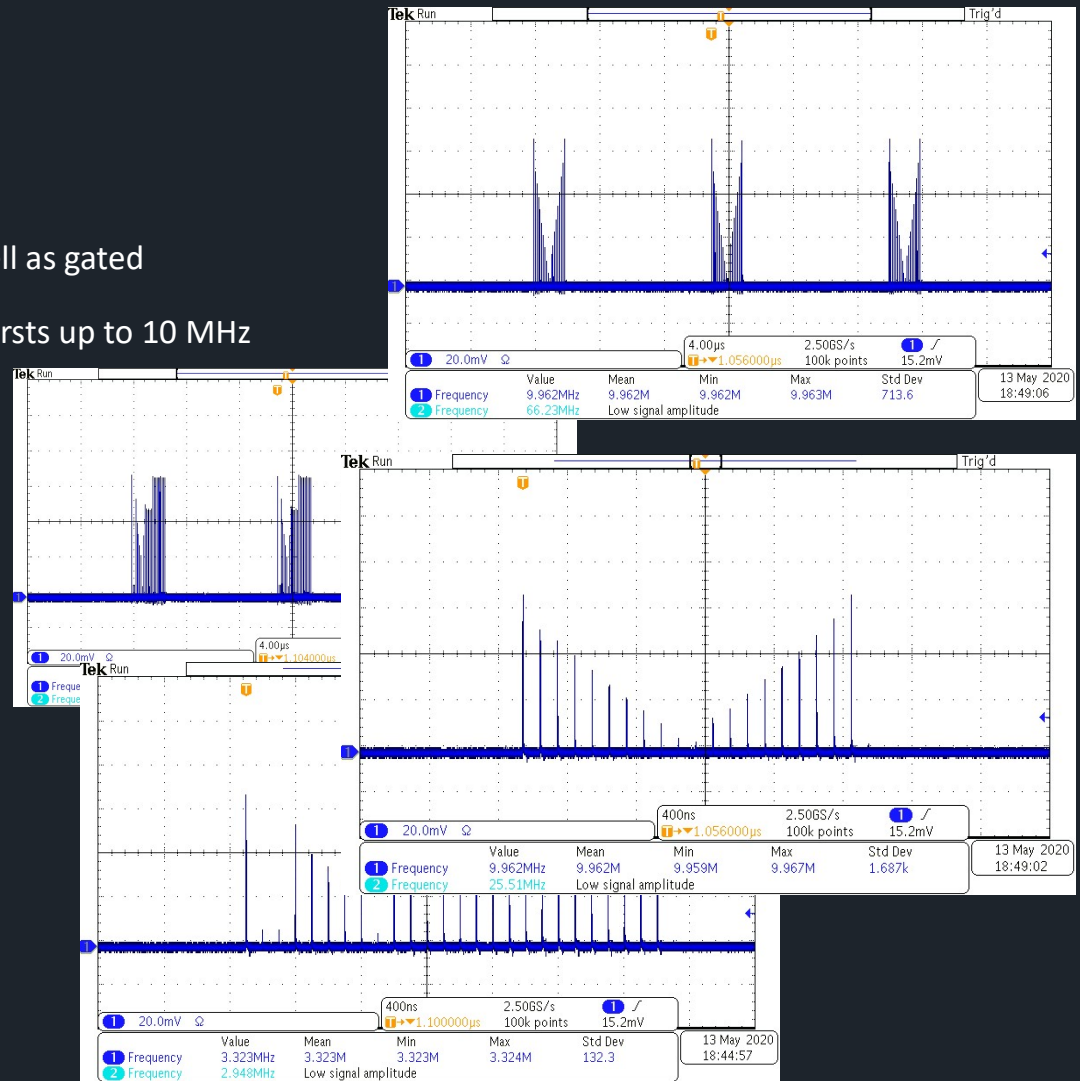
## Pulse-on-demand feature

- Laser can be programmed to operate bursts as well as gated
- Individual pulse energy can be set within these bursts up to 10 MHz



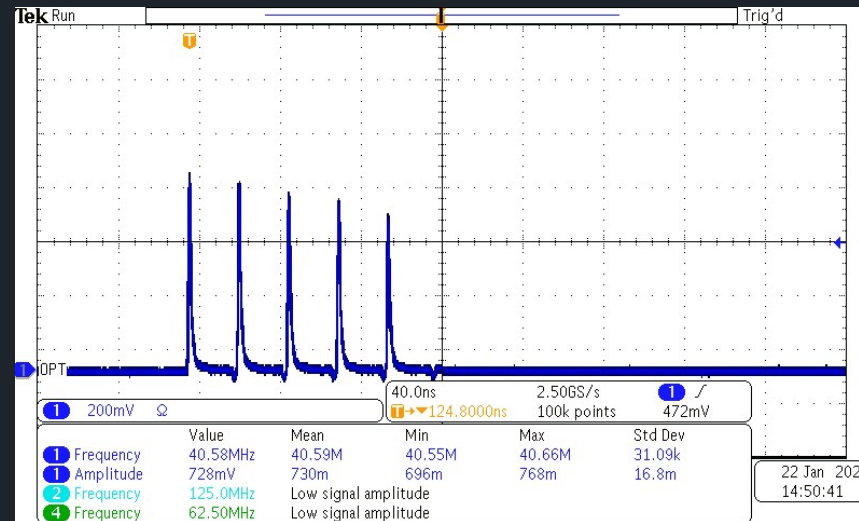
- Intraburst frequency 10MHz
- 50 pulses per burst
- Burst frequency 100kHz
- Gating frequency 10kHz

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## Fast burst mode feature

- Key functionality for applications such as glass separation and drilling
- Can increase the efficiency of material removal whilst maintaining high quality machining
- Pulses within bursts have a period of 25ns (40MHz)
- Maximum pulse energy of 120 $\mu$ J
- Maximum burst energy of 600 $\mu$ J

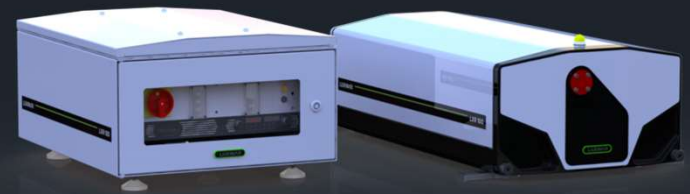


*5 pulse burst at 200kHz with 600 $\mu$ J burst energy*



## Summary

- Large dynamic range of pulse repetition frequencies and energies
- Excellent power stability and beam quality
- Pulse-on-demand for high quality processing
- Fast burst mode for increased efficiency of some processes
- PC app with local or remote diagnostics
- Available at 50W and 120W rated power @ 1030nm
- Variants also available @ 515nm and 343nm



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