CFR

Compact Folded Resonator pulsed Nd:YAG laser

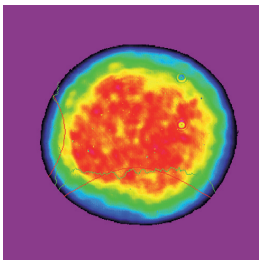
MAIN FEATURES

- 1064, 532, 355, 266 nm and 1.57 µm available
- Alignment guaranteed
- Compact and portable, with quick umbilical disconnects
- Choice of resonators available to meet the need of demanding applications
- Motorized variable attenuator or harmonics integrated in the laser head
- MIL-STD-810 standard tested to withstand harsh environments

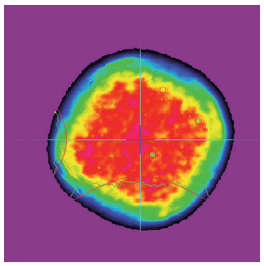
MAIN APPLICATIONS

- **LIBS**
- **PUMPING**
- **FPD REPAIR**
- **LiDAR**
- **ABLATION**
- **PULSED LASER DEPOSITION**
- **PHOTOACOUSTIC IMAGING**

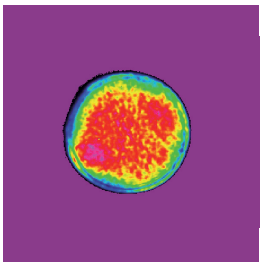
Typical beam profiles



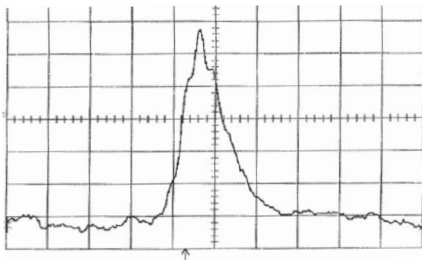
Near field @ 1064 nm, stable resonator



Near field @ 532 nm, stable resonator



Near field @ 355 nm, stable resonator



Temporal profile @ 1064 nm, 20 Hz

www.quantel-laser.com

Many options and configurations are available. Please contact Lumibird to find the best match for your needs and compatibility between options.

CFR

Compact Folded Resonator pulsed Nd:YAG laser

Quantel laser BY LUMIBIRD

SPECIFICATIONS

		CFR 200						CFR 400			
Resonator type		**Stable**			**GRM**			**Stable**		**GRM**	
Repetition rate (Hz)		**To 10**	**To 20**	**To 30**	**10**	**20**	**30**	**To 10**	**To 20**	**10**	**20**
Energy per pulse (mJ)	**1064 nm**	200			200		180	400		330	
	532 nm	130			130		110	200		180	
	355 nm	70		50	70	60	45	90		90	80
	266 nm	50		N/A	50		N/A	N/A		N/A	
	1.57 µm	N/A		35	N/A			70	65	N/A	
Pulse duration (ns) (1)	**1064 nm**	< 15			< 12		< 13	< 12		< 13	
	532 nm	< 12			< 11		< 12	< 10		< 11	
	355 nm	< 13		< 12	< 11		< 12	< 10		< 11	
	266 nm	< 12		N/A	< 12		N/A	N/A		N/A	
	1.57 µm	N/A		< 16	N/A			< 13		N/A	
Beam diameter (mm) (2)	**1064 nm**	6.35						< 7			
Beam divergence (mrad) (3)	**1064 nm**	< 4			1.5			< 4.5		< 1.5	
	532 nm	< 4			1.5			< 4		< 1.5	
	355 nm	< 3.5		< 3	1.5			< 3.5		< 1.5	
	266 nm	< 3.5		N/A	1.5		N/A	N/A		N/A	
	1.57 µm	N/A		< 12	N/A			< 12		N/A	
Pulse to pulse energy stability (%) (4)	**1064 nm**	< 2			< 2			< 2			
	532 nm	< 2.5			< 2.5			< 2.5			
	355 nm	< 2		< 3	< 2		< 3	< 2			
	266 nm	< 3		N/A	< 3		N/A	N/A		N/A	
	1.57 µm	N/A		< 5	N/A			< 5		N/A	

(1) Measured at FWHM with fast photodiode and 1 GHz oscilloscope (2) At the output of the laser
(3) Full angle, at 1/e² of the peak (4) RMS, 99 % of shots

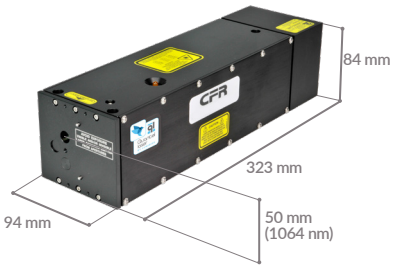
Power drift (%) (1)	**1064 nm**	**< 10**
Pointing stability (µrad) (2)	**All wavelengths**	**100**
Jitter (ns) (3)	**All wavelengths**	**< 1**
Linewidth (cm-1) (4)	**1064 nm**	**1**

(1) Over 8 hours, 18 °C < T < 28 °C, for ΔT < ± 5 °C. Specifications applying to all 1064 nm laser head systems
(2) Angle containing 86.5% energy. Other methods can predict lower values for GRM systems
(3) With respect to Q-Switch output trigger
(4) Measured at FWHM

OTHER INFORMATION			
Power requirements		100-240 VAC, 50/60 Hz, single phase, 850 VA	
Cooling		Water to air	
Temperatures	**Operating**	+ 10 °C to + 40 °C	
	Storage	+ 5 °C to + 70 °C	
Laser head sealing		IP 66	
Vibration and shocks		Complies with MIL-STD-810	
Max. altitude (m)		2000	
Cable length (m)		3 (1)	
Flashlamps warranty		50 million shots (2)	
Weight (kg)	**Laser head**	3.6	
	Integrated cooling & electronics	**Upright**	**Rack**
		14	14.5

(1) Other lengths up to 15 m on request. Decrease in output energy is to be expected.
(2) 80 % of energy, or 1 year, whichever comes first

Laser head



Remote Box

Integrated cooling & electronics

Upright

19" rack

Options

- Wavelength separation packages : two apertures (WS2), high spectral purity (WSP)
- Motorized Variable Attenuator for IR (installed in the laser head); energy decrease up to 20 % @ 1064 nm is to be expected at maximum transmission
- Long cables up to 15 m; energy may be reduced

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