

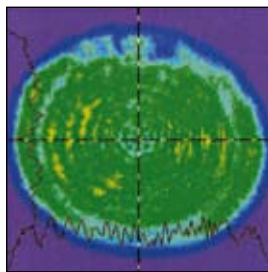
# Brilliant b



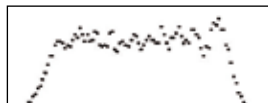
## High power compact Q-Switched Nd : YAG oscillator with super gaussian resonator

Beam diameter : 9mm - 2 flashlamps - air or water/water heat exchanger - interchangeable harmonic generators

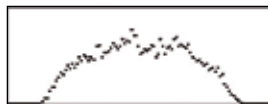
Beam profile in near field @ 1064 nm, 10 Hz



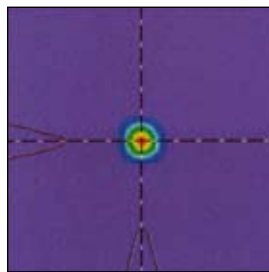
Horizontal Cursor Profile



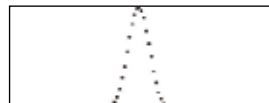
Vertical Cursor Profile



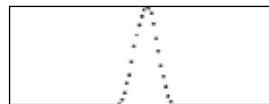
Beam profile in far field @ 1064 nm, 10 Hz



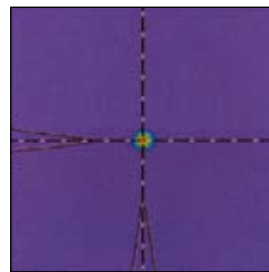
Horizontal Cursor Profile



Vertical Cursor Profile



Beam profile in far field @ 532 nm, 10 Hz



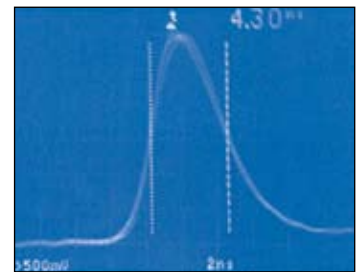
Horizontal Cursor Profile



Vertical Cursor Profile



Temporal profile @ 1064 nm, 10 Hz



**Optical laser head :**  
(H x L x W)

7 kg (15.43 lb)  
140 x 575 x 102 (5.51 x 22.64 x 4.02)

**Power supply and cooling group cabinet :**  
(H x L x W)

55 kg (121 lb)  
10 Hz : 585 x 592 x 286 (23.03 x 23.3 x 11.26)  
20 Hz : 745 x 800 x 550 (29.3 x 31.5 x 21.6)

**Harmonic generation module including separation package (each) :**  
(H x L x W)

2,1 kg (4.63 lb)  
118 x 158 x 78 (4.65 x 6.2 x 3.07)

**Remote control (foot print)**

195 x 100 (7.68 x 3.94)

All dimensions are in mm (inch).



**External synchronization flexibility :**  
flashlamp external full control through TTL signal or RS232 interface ; Q-Switch external full control through TTL signals, RS232 interface or remote control.  
**Reduced warm-up time :**  
heating element in coolant reservoir.



Remote control

# Brilliant b Specifications

Repetition rate (Hz)		10	10 SLM*	20	
Energy per pulse (mJ)	1064 nm	850	700	700	Measured with a calibrated wattmeter
	532 nm	400	290	300	
	355 nm	185/225	135	120/140	Regular/High energy UV option
	266 nm	90	60	60	
	213 nm	16	**	12	
Energy stability - shot to shot (%)	1064 nm	±2 (0.6)	±2 (0.6)	±2 (0.6)	Peak to peak, 100% of the shots (RMS)
	532 nm	±4 (1.3)	±4 (1.3)	±4 (1.3)	
	355 nm	±6 (2)	±6 (2)	±6 (2)	
	266 nm	±8 (2.6)	±8 (2.6)	±8 (2.6)	
	213 nm	±12 (4)	**	±12 (4)	
Power drift (%)	1064 nm	±3	±3	±3	Over 8 hours, without readjustment of phase-matching, 18°C<T°<25°C (10Hz) 18°C<T°<35°C (20Hz with W/W heat exchanger) W/W exchanger or chiller options available
	532 nm	±5	±5	±5	
	355 nm	±5	±5	±5	
	266 nm	±10	±10	±10	
	213 nm	±14	**	±14	
Pulse duration (ns)	1064 nm	≈6	≈6	≈6	FWHM, fast photodiode and 1GHz scope
	532 nm	≈5	≈5	≈5	
	355 nm	≈5	≈5	≈5	
	266 nm	≈5	≈5	≈5	
	213 nm	≈5	**	≈5	
Linewidth standard (cm <sup>-1</sup> )	1064 nm	0.7	**	0.8	FWHM, measured by a grating spectrometer with a 0,045 cm <sup>-1</sup> resolution LNE : 15% energy reduction
	532 nm	1.4	**	1.4	
Linewidth with etalon LNE (cm <sup>-1</sup> )	1064 nm	0.1	**	0.1	
Linewidth with Single Longitudinal Mode (cm <sup>-1</sup> )	1064 nm	**	0.005	**	
Jitter (ns)	1064 nm	±0.5	±1	±0.5	With respect to Q-switch trigger, measured at half-width of 500 accumulated shots
Pointing stability (μrad)	1064 nm	<50	<50	<50	Measured by SPIRICON LBA-100, RMS, on 200 pulses at the focal plane of a 2m focus lens
	532 nm	<50	<50	<50	
	355 nm	<50	<50	<50	
	266 nm	<50	<50	<50	
Divergence (mrad)	1064 nm	0.5	0.5	0.55	Full angle, at 1/e <sup>2</sup> of the peak, 85 % of total energy
Polarization ratio (%)	1064 nm	>80	>70	>70	Horizontal polarization
Beam diameter (mm)	1064 nm	9	9	9	At the output of the laser
Focusability (times Diffraction Limit)	1064 nm	<2	<2	<2	At 1/e <sup>2</sup> of the peak, by SPIRICON LBA-100
<b>Spatial profile (fit to gaussian)</b>					
Near field	1064 nm	0.70	0.70	0.65	At 1m from the laser output
Far field	1064 nm	0.90	0.90	0.90	At focal plane of a 2m focus lens Least square fit to gaussian (perfect fit=1)

Double pulse option is available. Contact us for more information.

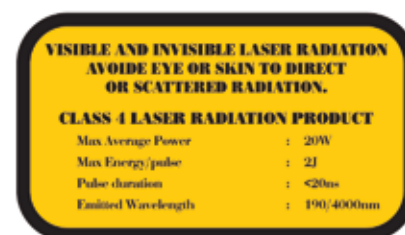
\*: SLM, Single Longitudinal Mode, Fourier transform linewidth, injection seeded laser, 20 Hz on request

\*\* : non applicable or on request



#### Service requirement

Power : 100-240V, 10A, 50/60Hz  
Water (only for 20Hz) : 10 l/mn, 1.5/3 bar, 10-25°C.  
Cable length : 3 m (10 feet)



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