

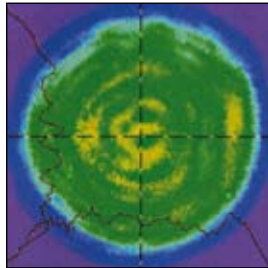
# Brilliant



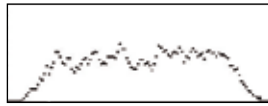
## Compact Q-Switched Nd : YAG oscillator with super gaussian resonator

**Beam diameter : 6mm - 1 flashlamp - air/water heat exchanger - interchangeable harmonic generators**

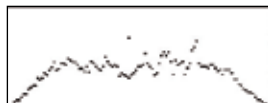
Beam profile in near field  
@ 1064 nm, 10 Hz



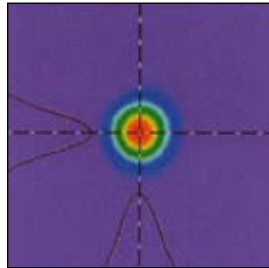
Horizontal Cursor Profile



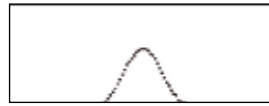
Vertical Cursor Profile



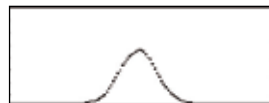
Beam profile in far field  
@ 1064 nm, 10 Hz



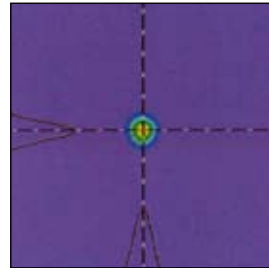
Horizontal Cursor Profile



Vertical Cursor Profile



Beam profile in far field  
@ 532 nm, 10 Hz



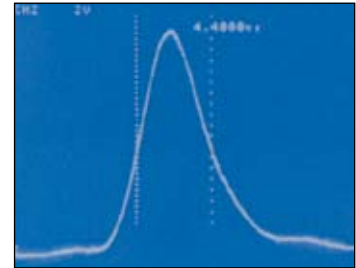
Horizontal Cursor Profile



Vertical Cursor Profile



Temporal profile @ 1064 nm, 10 Hz



**Optical laser head :**

(H x L x W)

5 kg

(11.02 lb)

136 x 469 x 80

(5.35 x 18.46 x 3.15)

**Power supply and cooling group cabinet :**

(H x L x W)

55 kg

(121 lb)

585 x 592 x 286

(23.03 x 23.3 x 11.26)

**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)**

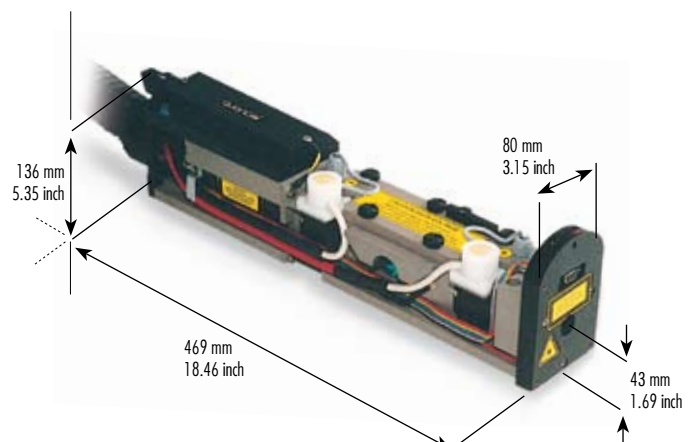
195 x 100

(7.68 x 3.94)

All dimensions are in mm (inch).



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

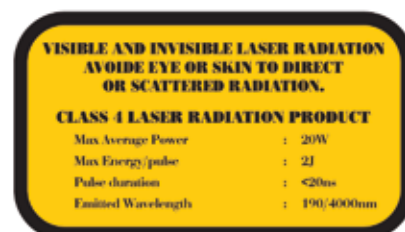


# Brilliant Specifications

Repetition rate (Hz)		10	20	50		
Energy per pulse (mJ)	1064 nm	360	350	150	Measured with a calibrated wattmeter  *High energy UV option	
	532 nm	180	160	65		
	355 nm	65/100*	60/70*	20		
	266 nm	40	30	12		
	213 nm	8	6	2		
Energy stability - shot to shot (%)	1064 nm	±2 (0.6)	±2 (0.6)	±3 (1)	Peak to peak, 100% of the shots (RMS)	
	532 nm	±4 (1.3)	±4 (1.3)	±7 (2.3)		
	355 nm	±6 (2)	±6 (2)	±9 (3)		
	266 nm	±8 (2.6)	±8 (2.6)	±12 (4)		
	213 nm	±12 (4)	±12 (4)	±16 (5.3)		
Power drift (%)	1064 nm	±3	±3	±3	Over 8 hours, without readjustment of phase-matching, 18°C<T°<28°C (10Hz/20Hz) 18°C<T°<25°C (50Hz) W/W exchanger or chiller options available	
	532 nm	±3	±3	±3		
	355 nm	±3	±3	±3		
	266 nm	±6	±6	±6		
	213 nm	±10	±10	±10		
Pulse duration (ns)	1064 nm	≈5	≈5	≈6	FWHM, fast photodiode and 1GHz scope	
	532 nm	≈4	≈4	≈5		
	355 nm	≈4	≈4	≈5		
	266 nm	≈4	≈4	≈5		
	213 nm	≈4	≈4	≈5		
Linewidth (cm-1)	1064 nm	0.7	0.7	0.7	FWHM, measured by a grating spectrometer with a 0,045 cm <sup>-1</sup> resolution	
	532 nm	1.4	1.4	1.4		
Jitter (ns)	1064 nm	±0.5	±0.5	±0.5	With respect to Q-switch trigger, measured at half-width of 500 accumulated shots	
Pointing stability (μrad)	1064 nm	<50	<75	<75	Measured by SPIRICON LBA-100, RMS, on 200 pulses at the focal plane of a 2m focus lens	
	532 nm	<50	<75	<75		
	355 nm	<50	<75	<75		
	266 nm	<50	<75	<75		
Divergence (mrad)	1064 nm	0.5	0.5	0.7	Full angle, at 1/e <sup>2</sup> of the peak, 85 % of total energy	
Polarization ratio (%)	1064 nm	>90	>90	>80	Horizontal polarization	
Beam diameter (mm)	1064 nm	6	6	6	At the output of the laser	
Focusability (times Diffraction Limit)	1064 nm	<2	<2	<3	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	0.70	At 1m from the laser output
	Far field	1064 nm	0.95	0.95	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.

**Service requirement** Power : 100-240V, 10A, 50/60Hz  
Cable length : 3 m (10 feet)



2 bis, Avenue du Pacifique - ZA de courtaboeuf - BP 23 - 91941 Les Ulis Cedex - France  
Tel : + 33 (0)1 69 29 17 00 - Fax : + 33 (0)1 69 29 17 29 - email : quantel@quantel.fr - www.quantel-laser.com  
Quantel - USA : 601 Haggerty Lane - Bozeman, MT 59715 - 2001 - USA - Tel : + 1 406 586 0131 - fax : + 1 406 586 2924