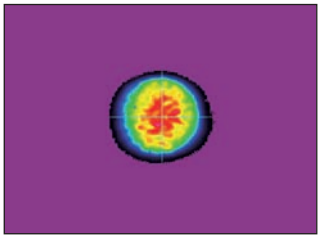
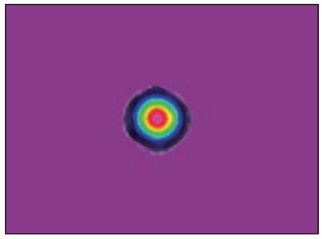
Ultra.

Rugged Q-Switched Nd: YAG oscillator
100mJ at 1064nm, up to 50Hz
Compact folded resonator design
Stable or GRM resonator
Up to 5th harmonic available
1.57µm OPO for "Eyesafe" operation
1 flashlamp, air-water heat exchanger
Extremely compact power supply, detachable cables

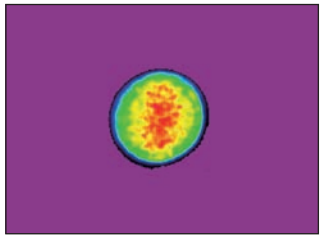
Beam profile in near field @1064 nm, Stable Resonator



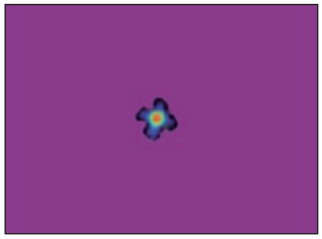
Beam profile in far field @1064 nm, GRM Resonator



Beam profile in near field @532 nm, Stable Resonator



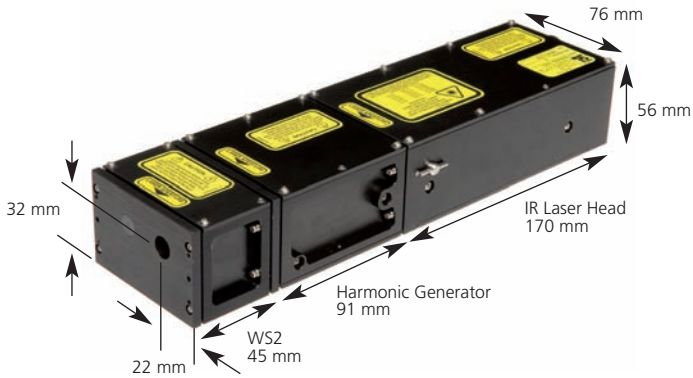
Beam profile in far field @532 nm, GRM Resonator



Optical Laser Head	51 x 170 x 76 0.9 kg	(2 x 6.7 x 3) (2 lbs)
Integrated Cooling and Electronics		
ICE 450	360 x 435 x 133 14 kg	(14.2 x 17.2 x 5.25) (31 lbs)
ICE 450 Rack 19" (Optional)	133 x 508 x 483 14.5 kg	(5.25 x 20 x 19) (32 lbs)
Remote Control	195 x 100	(7.7 x 4)
OPTIONS		
Harmonic Generators (2ω, 2ω/3ω, 2w/4ω)	L = 91 / 0.5 kg	(3.6 / 1.1 lbs)
Wavelength Separation (WS2)	L = 45 / 0.2 kg	(1.8 / 0.45 lbs)
Fiber Optical Adaptor IR (FOA)	L = 76 / 0.4 kg	(3 / 1 lbs)
Variable Attenuator (MTA-MNA)	L = 100 / 0.6 kg	(4 / 1.3 lbs)
OPO	L = 95 / 0.6 kg	(3.8 / 1.3 lbs)

All dimensions HxLxW are in mm (inch), all weights are in kg (lbs).

External synchronization flexibility: flashlamp and Q-Switch control through TTL signals, RS232 or remote box



Dimensions of the Laser Head

ICE 450

ICE 450 Rack 19"

Ultra.

SPECIFICATIONS

		ULTRA 20		ULTRA 50		ULTRA 100		
Resonator[1]		**TEM00[2]**	**Stable**	**Stable**	**GRM**	**Stable**	**GRM**	
Repetition rate (Hz)		**1 to 20**	**1 to 50**	**1 to 20**	**20**	**1 to 20**	**20**	
Energy per pulse (mJ)	**1064 nm**	**10**	**20**	**50**		**100**		
	532 nm	6	12	30		55		
	355 nm	2	4	12		30		
	266 nm	1	4	10		25		
	213 nm					4		
	1.57 µm*			8		25		
Energy stability (%)	**1064 nm**	**<2**	**<2.5**	**<2**	**<2**	**<2**	**<2**	Variation from mean for 99% of shots (RMS)
	532 nm	<3.5	<4	<2.5	<2.5	<2.5	<2.5	
	355 nm	<4	<3	<3	<3	<2	<2	
	266 nm	<5	<3	<3	<3	<2	<2	
	213 nm					<2		
	1.57 µm			<2		<2		
Pulse duration (ns)	**1064 nm**	**9**	**11**	**8**	**7**	**8.5**	**7**	FWHM +/- 2ns
	532 nm	8	10	7	7	6	6.5	
	355 nm	7	9	6	6	6	5.5	
	266 nm	7	9	6	6	6	6	
	213 nm					5		
	1.57 µm			8		7		
Linewidth (cm^{-1})	**1064 nm**	**1**						
	532 nm	2						
	355 nm	3						
	266 nm	4						
	1.57 µm	20						
Jitter (+/-ns WRT Q-Switch)		**<2**						Measured from Q-Switch Sync. Output
Pointing stability (µrad)		**<50**						Full Angle 99% of shots
Divergence (mrad)	**1064 nm**	**<1.8**	**<6**	**<7**	**<1.5**	**<8**	**<1.5**	Angle containing 86.5% Energy. Other methods can predict lower values for GRM systems
	532 nm	<1.5	<5	<6	<1.5	<7	<1	
	355 nm	<1	<4	<5	<1.2	<5	<1.5	
	266 nm	<1	<4	<7	<1.5	<4	<1.5	
	213 nm					<3		
	1.57 µm			<12		<12		
Beam diameter (mm)	**1064 nm**	**1.3**	**2.5**	**3**		**4**		

* *Other wavelength upon request*
The specifications correspond to the selected primary wavelength
[1] Stable systems may operate over a wide range of rep. rate; GRM may not have such flexibility
[2] Engineering values
[3] 10% Energy drop at 1064 nm
[4] For IR laser head only. Temperature performance available upon request for higher harmonics

Specifications applying to all 1064 nm laser heads			
	Energy Drift over 8 hours period	<10%	
	Temperature Range	Operating[4] 10/40°C	Storage 5/70°C
	Ethylene Glycol Option (EGW)[3]	Operating[4] -10/40°C	Storage -30/70°C
	Flash lamps lifetime	> 50 millions shots	
	Max. Altitude	3000 m (10,000 feet)	

Wavelength (nm)	Polarization	Spectral Purity (%)
1064	H	
532	V	> 97
355	V	> 90
266	V	> 85
213	V	
1.57 µm	H	> 99.9

Service Requirement: Power: 100-240V, 10A, 50/60Hz, single phase
Cable length: 3m. Other lengths on request
Options: Low temperature operation (EGW)
Motorized Variable Attenuator (MTA)
Manual Variable Attenuator on request (MNA)
Fiber Option Adaptator at 1064 nm or 532 nm on request (FOA)
ICE 450 Rack19"

Note on Beam Divergence: Quantel USA pioneered beam measurement software and measures divergence as angle containing energy. For GRM systems, this returns a figure which can be considerably larger than that given using alternative criteria.

Quantel
2 bis avenue du Pacifique - Z.A. de Courtabœuf
BP 23 - 91941 Les Ulis Cedex - France
Ph: +33 (0)1 69 29 17 00 - Fax: +33 (0)1 69 29 17 29
Quantel USA
601 Haggerty Lane - Bozeman - MT 59715-2001 - USA
Ph: +1 406 586 0131 - Fax: +1 406 586 2924
E.mail: quantel@quantel.fr - www.quantel-laser.com

CE

RoHS

VISIBLE AND INVISIBLE LASER RADIATION AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION

1574 nm	6 nsec	100 mJ
1064 nm	8 nsec	500 mJ
532 nm	8 nsec	300 mJ
355 nm	8 nsec	150 mJ
266 nm	8 nsec	75 mJ
213 nm	8 nsec	16 mJ

CLASS 4 LASER PRODUCT
COMPLIES WITH FDA PERFORMANCE STANDARDS FOR LASER PRODUCTS EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO. 50 DATED JUNE 24, 2007 / IEC 60825-1

03/09 – Quantel reserves the right to change specifications without prior notice. Printed on PEFC™ certified paper (Programme for Endorsement of Forest Certification schemes).