

Quantel

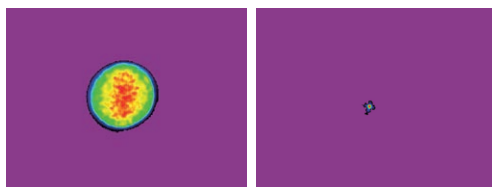
# Ultra

## Ultra compact Q-Switched Nd:YAG oscillator

- 1064, 532, 355, 266, 213 nm and 1.57  $\mu$ m available
- Alignment guaranteed
- Quick umbilical disconnects
- Compact and portable
- Gaussian or multimode resonators
- 50 million shots lamp lifetime guaranteed
- Built to withstand harsh environments



Near field @1064 nm, Stable resonator    Far field @1064 nm, GRM resonator



Near field @532 nm, Stable resonator    Far field @532 nm, GRM



**ICE 450**  
External synchronization  
flexibility: flashlamp and  
Q-Switch control through  
TTL signals,  
RS232 or remote box



### Optical laser head

51 x 206 x 76 [2 x 8 x 3]

### Weight

All weights  
are in kg [lbs]

0.9 [2]

### Integrated Cooling and Electronics

#### ICE 450

360 x 435 x 133 [14.2 x 17.2 x 5.25]

14 [31]

#### ICE450 Rack 19" (optional)

133 x 508 x 483 [5.25 x 20 x 19]

14.5 [32]

### Remote Control

195 x 100 [7.7 x 4]

### Options

#### Harmonic generators (2 $\omega$ , 2 $\omega/3$ $\omega$ , 2 $\omega/4$ $\omega$ ):

L = 91 [3.6]

0.5 [1.1]

#### Wavelength separation (WS2)

L = 45 [1.8]

0.2 [0.45]

#### Fiber Optical Adaptor IR (FOA)

L = 76 [3]

0.4 [1]

#### Motorized Variable Attenuator (MTVAT)

L = 100 [4]

0.6 [1.3]

#### OPO

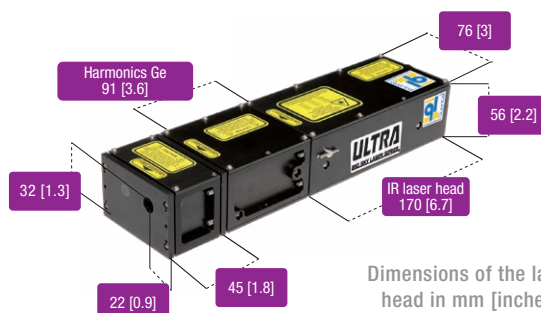
L = 95 [3.8]

0.6 [1.3]

**ULTRA**  
BIG SKY LASER SERIES



ICE 450 Rack 19"



Dimensions of the laser  
head in mm [inches]



Quantel  
laser

www.quantel-laser.com

# Ultra Specifications

	ULTRA 20		ULTRA 50		ULTRA 100	
RESONATOR <sup>[1]</sup>	<sup>[2]</sup> TEM <sub>00</sub>	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	15
213 nm					4	
1.57 µm *			8		25	
ENERGY STABILITY (%)						
1064 nm	<2	<2.5	<2	<4	<2	<2
532 nm	<3.5	<4	<2.5	<5	<2.5	<2.5
355 nm	<4	<3	<3	<6	<2	<3
266 nm	<5	<3	<3	<6	<2	<3
213 nm					<2	
1.57 µm			<2		<2	
PULSE DURATION (ns)						
1064 nm	9	11	8	7	8.5	7
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 <sup>-1</sup> )						
1064 nm			1			
532 nm			2			
355 nm			3			
266 nm			4			
1.57 µm			20			
JITTER (+/-ns WRT Q-Switch)			<2			
POINTING STABILITY (µrad)			<50			
DIVERGENCE (mrad)						
1064 nm	<2.5	<6	<7	<1.5	<8	<1.5
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)	1.3	2.5	3		4	

\* Other wavelength upon request

Variation from mean for 99% of shots (RMS)

FWHM +/- 2ns

Measured from Q-Switch Sync.  
Output Full Angle 99% of shots

Angle containing 86.5% energy. Other methods can predict lower values fro GRM systems

ENERGY DRIFT OVER 8 HOURS PERIOD <sup>[5]</sup>	< 10 %
POLARIZATION	
1064 nm	Horizontal
532 nm	Vertical
355 nm	Vertical
266 nm	Vertical
213 nm	Vertical
1.57 µm	Horizontal
SPECTRAL PURITY (%)	
532 nm	> 97
355 nm	> 90
266 nm	> 85
1.57 µm	> 99.9
OPERATIONAL TEMPERATURE RANGE <sup>[5]</sup>	Operating <sup>[4]</sup> 10 °C - 40 °C
STORAGE TEMPERATURE RANGE <sup>[5]</sup>	5 °C - 70 °C
ETHYLENE GLYCOL OPTION (EWG) <sup>[3] [5]</sup>	
Operating <sup>[4]</sup>	-10 °C - 40 °C
Storage	-30 °C - 70 °C
FLASHLAMP LIFETIME <sup>[5]</sup>	> 50 million shots
MAX. ALTITUDE <sup>[5]</sup>	3000 m [10.000 feet]
SERVICE REQUIREMENT	100 – 240 V 10 A 50 - 60 Hz Single phase
CABLE LENGTH	3 m [10 feet] other lengths available on request

<sup>[1]</sup> Stable systems may operate over a wide range of rep. rate; GRM may not have such flexibility.

<sup>[2]</sup> Engineering values.

<sup>[3]</sup> 10% energy drop at 1064 nm.

<sup>[4]</sup> For IR laser head only. Temperature performance available upon request for higher harmonics.

<sup>[5]</sup> Specifications applying to all 1064 nm laser heads.

## OPTIONS

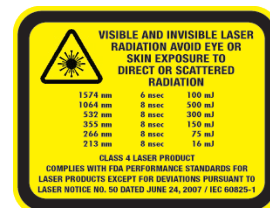
LOW TEMPERATURE OPERATION (EGW)  
MOTORIZED OR MANUAL VARIABLE ATTENUATOR ON REQUEST  
FIBER OPTION ADAPTER AT 1064 NM OR 532 NM ON REQUEST  
ICE450 RACK19"

Note on beam divergence:

Quantel pioneered beam measurement software and measures divergence as angle containig energy. For GRM systems, this returns a figure which can be considerably larger than that given using alternative criteria.



For more details and technical drawings, please visit [www.quantel-laser.com](http://www.quantel-laser.com)



**Quantel - France**  
2 bis, avenue du Pacifique  
Z.A. de Courtaboeuf - BP 23  
91941 Les Ulis Cedex - France  
Tel. +33 (0)1 69 29 17 00

**Quantel - USA**  
601 Haggerty Lane  
Bozeman, MT 59715 - USA  
Tel. +1 406 586 0131 / 1 877 QUANTEL

**Quantel - GmbH**  
Worringer Str. 30  
50668 Köln - Germany  
Tel. +49 (0) 221 / 677856750

E-mail : [quantel@quantel-laser.com](mailto:quantel@quantel-laser.com)

[www.quantel-laser.com](http://www.quantel-laser.com)

