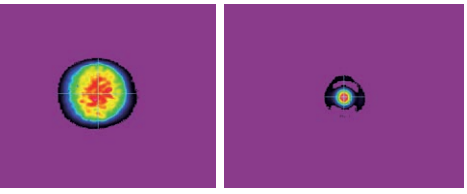
Ultra

Ultra compact Q-Switched Nd:YAG oscillator

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

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

	Dimensions All dimensions H x L x W are in mm [inches]	Weight All weights are in kg [lbs]
Optical laser head	52 x 177 x 76 [2 x 7 x 3]	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 ω, 2 ω/3 ω, 2 ω/4 ω):	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]

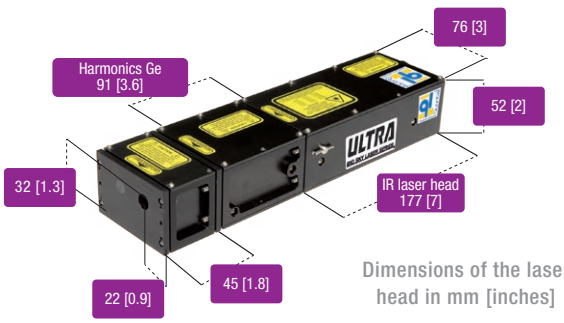


Near field @1064 nm, Stable resonator

Near field @532 nm, Stable resonator

Far field @532 nm, GRM

ICE 450 Rack 19"



Dimensions of the laser head in mm [inches]

ULTRA

Quantel laser BY LUMIBIRD

Ultra Specifications

	ULTRA 20		ULTRA 50		ULTRA 100		
RESONATOR [1]	[2]TEM_{00}	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	Variation from mean for 99% of shots (RMS)
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	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.
POINTING STABILITY (µrad)	<50						Output Full Angle 99% of shots
DIVERGENCE (mrad)							
1064 nm	<2.5	<6	<7	<1.5	<8	<1.5	Angle containing 86.5% energy. Other methods can predict lower values fro 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)	1.3	2.5	3		4		

* Other wavelength upon request

ENERGY DRIFT OVER 8 HOURS PERIOD [5]	< 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 [5]	Operating [4] 10 °C - 40°C
STORAGE TEMPERATURE RANGE [5]	5°C - 70°C
ETHYLENE GLYCOL OPTION (EWG) [3] [5]	
Operating [4]	-10°C - 40°C
Storage	-30°C - 70°C
FLASHLAMP LIFETIME [5]	> 50 million shots
MAX. ALTITUDE [5]	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

[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.
[5] 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 laser pionnered 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