MicroJewel DPSS Lasers

The MicroJewel Lasers
Diode Pumped Solid State
Nd:YAG, 1064nm, 532nm

A rugged cost-effective, ultra-compact micro laser measuring at just .5" x 3.5" and weighing just 40 grams. The MicroJewel is a 1064 diode pumped laser with Q-switched, high peak power pulses and excellent shot-shot stability. Even with its compact design, it still delivers up to 10mJ of energy and up to a 30Hz rep rate.

FEATURES:

- Dimensions: .5" diameter and 3" in length
- Weight: 40 grams
- Energy max: Up to 10mJ
- Rep max: Up to 30Hz
- Compact, inline resonator
- Excellent shot to shot stability
- Efficient, reliable diode pump

Quantum® COMPOSERS

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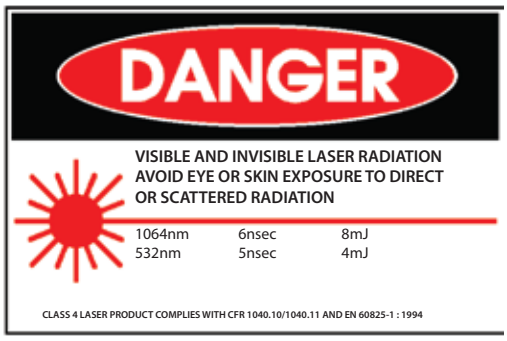
MicroJewel Specifications and Information

ADDITIONAL DATA

Resonator Size [inches (mm)][1]	0.5 dia X 3.63 (12.7 dia x 92)
Diode Driver & Controller	3.0 x 2.0 x 3.4 (76 x 51 x 86)
Nonlinear Module	0.5 dia X 1.375 (12.7 dia x 35)
Warm-Up-Power On To Ready	≤5 min
Operating Temperature [°C]	15 to 30
Storage Temperature [°C]	-10 to 50
Power Requirements	36 VDC, .4 A
Repetition Rate	Up to 30Hz
Transvers Mode	multi-mode
Pointing Stability [µrad][8]	≤ 200
Energy Drift [%]	≤ 10 over 5 minutes
Polarization	150:1 for linear outputs

LASER SPECIFICATIONS

OUTPUT ENERGY[mJ][2]	
1064nm	≥10
1064/532nm	≥3 @1064, ≥4@532
Near Field Beam Diameter (mm)[3]	
1064nm	1.0 ± 0.4
532nm	1.0 ± 0.4
Beam Divergence [mrad][4]	
1064nm	≤3.0
532nm	≤2.5
RMS Stability [%][5]	
1064nm	≤0.6
532nm	≤1.2
Energy Variance [%][6]	
1064nm	≤1.5
532nm	≤2.5
Pulsewidth [ns][7]	
1064nm	6.0 ± 1.5
532nm	5.0 ± 1.5



FURTHER INFORMATION

[1] 1064 nm only

[2] Nominal factory configuration. For OEM applications energies can be optimized to favor a specific wavelength, which in some cases can double the specified energy.

[3] Beam widths are measured at the output window of the laser. Beam widths are measured using the second moment energy distribution.

[4] Beam divergence is full angle. Beam divergence is determined by measuring the widths of the transformed beam by an aberration-free focusing element, one focal length away from the rear principle plane of the element.

[5] RMS stability is defined as: (standard deviation)/(mean). RMS Stability is measured using the full laser beam for 1000 shots after a 100 shot turn-on at 20 Hz operation.

[6] Energy Variance is defined as: (max-min)/(max+min). Energy Stability is measured using 98% of the pulses of the full laser beam for any 100 shot interval, after the initial 100 shot stabilization from turn-on, up to 1000 shots of 20 Hz operation.

[7] Pulsewidth is measured at 20 Hz PRF. The energy shall be within +/- 10% of the specified energy when pulse width is measured. Pulsewidth is calculated from the full-width half-maximum (FWHM) of the waveform.

[8] Pointing stability is measured on the 1064 nm laser output. It is measured as theangular shift between the centroid of the beam for the 1st pulse and the centroid of the beam exhibiting the strongest angular shift within the first 1000 consecutive shots at 20 Hz operation. Measurement is far field, measured with an aberration-free focusing element, one focal length away from the rear principle plane of the element.

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