



KT250

KT400

LightWAVE®

Industrial CO<sub>2</sub> Lasers



## Laser

### Characteristics

- Liquid Cooled
- RF Excited
- Wide Operating Power Range
- Exceptional Power Stability  $\pm 6\%$
- Fast Rise and Fall Time  $\cong 60 \mu\text{sec}$
- Pulsed Up to 200 kHz

### Standard Features

- Metal Sealed Laser Cavity
- Internally Collimated
- Integrated RF
- Common Footprint
- Overbuilt Electronics
- Three Point Mounting
- Other Wavelengths Available
- Manufactured in the USA

LASER CHARACTERISTICS

|                                   |              |                                |
|-----------------------------------|--------------|--------------------------------|
| OUTPUT POWER <sup>1</sup>         | ≥250 watts   | ≥400 watts                     |
| POWER RANGE                       | 25-250 watts | 40-400 watts                   |
| PEAK POWER <sup>2</sup>           | ≥1000 watts  | ≥1000 watts                    |
| DUTY CYCLE RANGE                  | ≤40%         | ≤70%                           |
| POWER STABILITY <sup>3</sup>      | ±6%          | ±6%                            |
| MAXIMUM PULSE ENERGY <sup>4</sup> | 500 mJ       | 1400 mJ                        |
| PULSE LENGTH                      | ≤2.0 ms      | ≤3.5 ms                        |
| PULSE RISE/FALL TIME              |              | ≈60 μs                         |
| MODE QUALITY                      |              | M <sup>2</sup> < 1.2           |
| BEAM ELLIPTICITY                  |              | <1.2                           |
| BEAM DIAMETER AT LASER OUTPUT     |              | 0.31" ±0.04" (8.0 mm ±1.0 mm)  |
| BEAM DIVERGENCE (FULL ANGLE)      |              | <2.0 mrad                      |
| POLARIZATION                      |              | Linear (parallel to baseplate) |
| MODULATION FREQUENCY              |              | 200 Hz to 200 kHz              |
| WAVELENGTH                        |              | 10.6 μm                        |

PHYSICAL CHARACTERISTICS

|            |  |  |
|------------|--|--|
| WEIGHT     | 122 lbs. [55 kg]                           |  |
| DIMENSIONS | 47.25" x 10" x 10.1" [1200 x 254 x 257 mm] |  |

ELECTRICAL REQUIREMENTS

|                       |        |        |
|-----------------------|--------|--------|
| DC INPUT VOLTAGE      | 48 V   |        |
| DC PEAK CURRENT       | 230 A  |        |
| DC CONTINUOUS CURRENT | <100 A | <160 A |

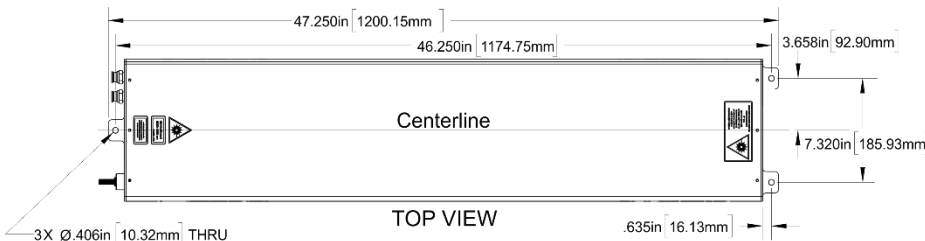
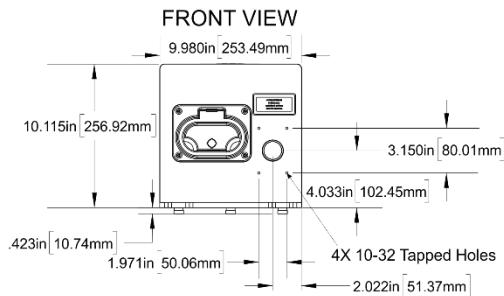
COOLING REQUIREMENTS<sup>5</sup>

|                               |  |       |
|-------------------------------|--|-------|
| HEAT LOAD                     | <5 kW                                    | <8 kW |
| FLOW RATE                     | ≥3 GPM (≥11.5 L/min)                     |       |
| PRESSURE                      | <60 PSI                                  |       |
| COOLANT                       | Distilled water with corrosion inhibitor |       |
| COOLANT SETPOINT TEMP. RANGE  | 68°F - 77°F (20°C - 25°C)                |       |
| COOLANT TEMP. STABILITY (MAX) | ±1°F (±0.5°C)                            |       |

ENVIRONMENTAL CONDITIONS

|                     |                            |  |
|---------------------|----------------------------|--|
| AMBIENT TEMP. RANGE | 50°F - 100°F [10°C - 38°C] |  |
| RELATIVE HUMIDITY   | <95% non-condensing        |  |
| ALTITUDE            | ≤6500 ft. (2000 m)         |  |

MECHANICAL SPECIFICATIONS



<sup>1</sup> Measured at maximum duty cycle and a 3.8 kHz pulse repetition frequency (PRF).  
<sup>2</sup> Measured at 10% duty cycle at 1 kHz PRF.  
<sup>3</sup> Power stability may not be met at low duty cycle or acoustic PRF.  
<sup>4</sup> Maximum pulse energy at rated power.  
<sup>5</sup> Refer to the manual for details.

Disclaimer

The laser is a component of a laser system. It is the responsibility of the OEM to provide all required laser safety features. Check with CDRH for safety requirements. Do not operate laser without proper safety training. The laser parameters listed within this sheet are subject to change without notice.



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