



KT250

KT400

LightWAVE®

Industrial CO₂ Lasers



Laser

Characteristics

- Liquid Cooled
- RF Excited
- Wide Operating Power Range
- Exceptional Power Stability
±6%
- Fast Rise and Fall Time
≈60 μsec
- Pulsed up to Quasi-CW
Operation

Standard Features

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

LASER CHARACTERISTICS

OUTPUT POWER ¹	≥250 watts	≥400 watts
POWER RANGE	20-250 watts	20-400 watts
PEAK POWER ²	≥1000 watts	≥1000 watts
DUTY CYCLE RANGE	≤40%	≤70%
POWER STABILITY ³	±6%	±6%
MAXIMUM PULSE ENERGY	>500 mJ	>1400 mJ
PULSE LENGTH	≤2.0 ms	≤3.5 ms
PULSE RISE/FALL TIME		≈60 μs
MODE QUALITY		M ² < 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

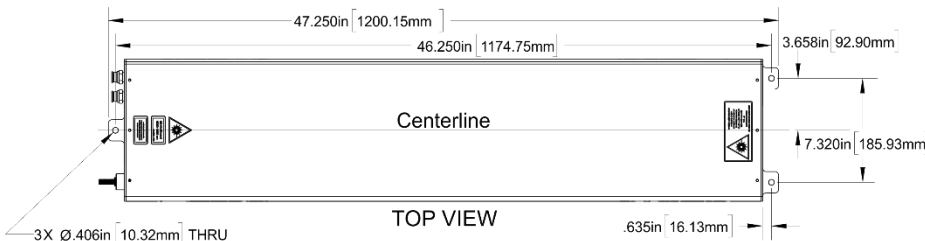
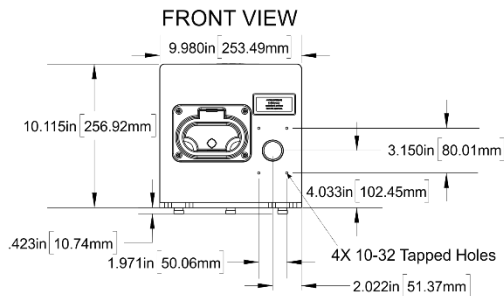
COOLING REQUIREMENTS⁴

HEAT LOAD	<5 kW	<8 kW
FLOW RATE	≥3 GPM (≥11.4 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



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



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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.