



KT100

KT150

KT200

LightWAVE®

Industrial CO<sub>2</sub> Lasers



## Laser

### Characteristics

- Liquid Cooled
- RF Excited
- Wide Operating Power Range
- Exceptional Power Stability  
±5%
- Fast Rise and Fall Time  
<50  $\mu$ sec
- Pulsed up to Quasi-CW  
Operation
- Under 50 lbs.

### Standard Features

- Metal Sealed Laser Cavity
- Integrated Red Beam
- Internally Collimated
- Circular Polarized
- Integrated RF
- Common Footprint
- Overbuilt Electronics
- Manufactured in the USA

LASER CHARACTERISTICS

OUTPUT POWER <sup>1</sup>	≥ 100 watts	≥ 150 watts	≥ 200 watts
POWER RANGE	10-100 watts	10-150 watts	10-200 watts
TYPICAL PEAK POWER <sup>2</sup>	≥ 400 watts	≥ 400 watts	≥ 400 watts
DUTY CYCLE RANGE	≤ 40%	≤ 60%	≤ 75%
POWER STABILITY <sup>3</sup>	± 5%	± 5%	± 5%
MAXIMUM PULSE ENERGY	> 200 mJ	> 450 mJ	> 750 mJ
PULSE LENGTH	≤ 2.0 ms	≤ 3.0 ms	≤ 3.75 ms
PULSE RISE/FALL TIME		< 50 μs	
MODE QUALITY		M <sup>2</sup> < 1.2	
BEAM ELLIPTICITY		< 1.2	
BEAM DIAMETER AT LASER OUTPUT		0.24" ± 0.04" (6.0 mm ± 1.0 mm)	
BEAM DIVERGENCE (FULL ANGLE) <sup>4</sup>		< 2.5 mrad	
POLARIZATION <sup>4</sup>		Circular	
MODULATION FREQUENCY		200 Hz to 200 kHz	
WAVELENGTH		10.6 μm	

PHYSICAL CHARACTERISTICS

WEIGHT	48.5 lbs. [22 kg]		
DIMENSIONS	35" x 7" x 7.25" [889 x 178 x 184 mm]		

ELECTRICAL REQUIREMENTS

DC INPUT VOLTAGE	48 V		
DC PEAK CURRENT	75 A		
DC CONTINUOUS CURRENT	< 35 A	< 45 A	< 55 A

COOLING REQUIREMENTS<sup>5</sup>

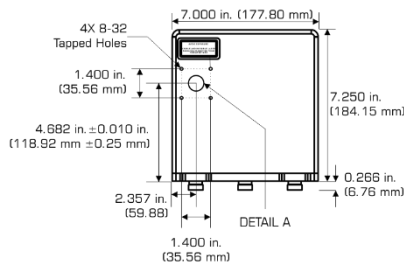
HEAT LOAD	1.6 kW	2.0 kW	2.4 kW
FLOW RATE		≥ 1.5 GPM (≥ 5.7 L/min)	
COOLANT MAXIMUM PRESSURE		90 PSI	
COOLANT	Distilled water with corrosion inhibitor		
COOLANT SETPOINT TEMP. RANGE	68°F - 77°F (20°C - 25°C)		
COOLANT TEMP. STABILITY	± 1°F (± 0.5°C)		

ENVIRONMENTAL CONDITIONS

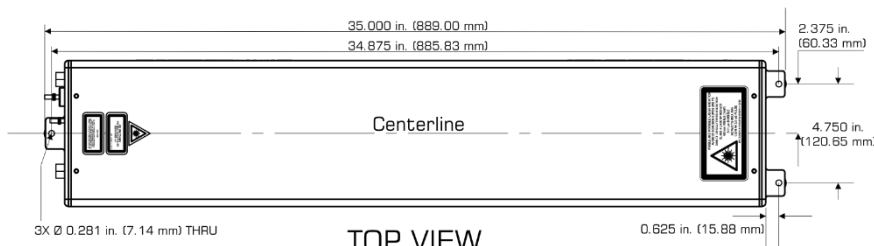
AMBIENT TEMP. RANGE	50°F - 100°F [10°C - 38°C]		
RELATIVE HUMIDITY	< 95% non-condensing		
ALTITUDE	≤ 6500 ft. (2000 m)		

MECHANICAL SPECIFICATIONS

FRONT VIEW



TOP VIEW



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.

<sup>1</sup> Measured at maximum duty cycle and a 5 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> Internally collimated and circularly polarized.  
<sup>5</sup> Refer to the manual for details.



1503 Industrial Drive  
 Wadena, MN 56482 USA  
 P: 218-632-5810  
 F: 218-632-5811  
 TF: 855-634-2436

EM: info@kerntechnologies.com