



KT300

KT500

LightWAVE®

Industrial CO₂ Lasers



Laser

Characteristics

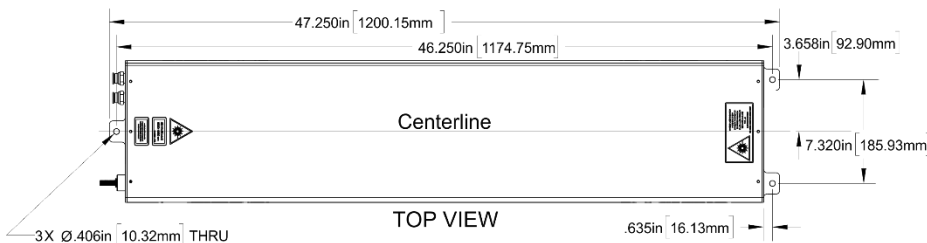
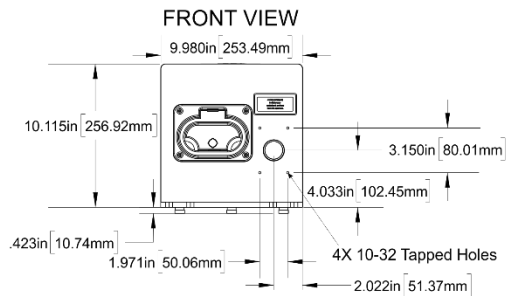
- Liquid Cooled
- RF Excited
- Wide Operating Power Range
- Exceptional Power Stability
- Fast Rise and Fall Time
- Pulsed up to Quasi-CW

Standard Features

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

LASER PARAMETERS	KT300-9.3	KT300-10.6	KT500-9.3	KT500-10.6
WAVELENGTH (μm)	9.3	10.6	9.3	10.6
OUTPUT POWER ¹ (W)	≥300	≥300	≥400	≥500
POWER RANGE (W)	20-300	20-300	20-400	20-500
TYPICAL PEAK POWER ² (W)	≥1200	≥1200	≥1200	≥1200
DUTY CYCLE RANGE (%)	≤40	≤40	≤70	≤70
POWER STABILITY ³ (%)	±6	±6	±6	±6
MAXIMUM PULSE ENERGY (mJ)	>600	>600	>1400	>1750
PULSE LENGTH (mS)	≤2.0	≤2.0	≤3.5	≤3.5
PULSE RISE/FALL TIME (μs)	30/50			
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 (mrad)	<2.5 mrad			
POLARIZATION	Linear (parallel to baseplate)			
MODULATION FREQUENCY (kHz)	0.2 to 200			
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 (VDC)	48			
DC PEAK CURRENT (A)	260			
DC CONTINUOUS CURRENT (A)	< 115		< 180	
COOLING REQUIREMENTS⁴				
HEAT LOAD (kW)	<5		<8	
FLOW RATE	≥3 GPM (≥11.4 L/min)			
COOLANT MAXIMUM PRESSURE (PSI)	90			
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 ⁴	Non-Condensing			
ALTITUDE	≤6500 ft. (2000 m)			

MECHANICAL SPECIFICATIONS



¹ Measured at maximum duty cycle and a 4 kHz pulse repetition frequency (PRF) at 10.6 μm and 10 kHz PRF at 9.3 μm.
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.

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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