

ti Series High Stability CO₂ Lasers

Compact, highly stable lasers with over 60, 80, or 100 Watts of average power for precision marking, cutting, and 3D printing applications



High performance CO₂ lasers engineered for optimal power stability and integration into compact, industrial systems

- Ensure highly consistent marking, cutting, and printing quality with power stability better than $\pm 2\%$
- Choose the most effective and economical average power for your system, available in 60, 80, and 100 W models
- Fast rise/fall times minimize wasted heat energy, ensuring higher quality results and faster processing speeds
- Utilize space efficiently with the same compact footprint of the standard ti series lasers
- Maximize design flexibility with consistent beam exit height across all lasers in the ti and vi series
- Patented taper technology delivers a high quality, circular output beam without the need for expensive corrective optics



3D SLS Printing

The ti Series High Stability CO₂ lasers are well suited for selective laser sintering (SLS) of various polymers. Excellent power stability combines with 60, 80, and 100 W power levels to enable easy integration into multiple sized machines to accommodate varying sizes of finished parts. The best choice for 3D printing equipment OEMs for maximum design flexibility.

Specifications

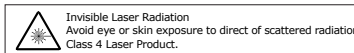
Laser Models	ti60-HS	ti80-HS	ti100-HS
Output Specifications			
Wavelength	10.6 μm		
Output Power ¹	>60 W	>80 W	>100 W
Power Stability (cold start) ²	$\pm 4\%$		
Power Stability (guaranteed after 3 min.) ³	$\pm 2\%$		
Beam Quality (M ²)	<1.2		
Beam Diameter ⁴	2.0 mm \pm 0.3 mm		
Divergence (full angle)	<7.0 mrad		
Ellipticity	<1.2		
Polarization	Linear (Vertical)		
Rise Time	<75 μs		
Operating Frequency	0 - 160 kHz		
Power Supply			
DC Input Voltage	48 VDC		
Maximum Current	18.0 A	22.0 A	35.0 A
Cooling			
Maximum Heat Load	900 W	1200 W	1700 W
Coolant Temperature	18-22° C (water)		
Minimum Flow Rate	1.0 GPM, <60 PSI		
Environmental			
Operating Ambient Temperature	15 - 40° C		
Maximum Humidity	95%, non-condensing		
Physical			
Dimensions (LxWxH) mm (inches)	544 x 104 x 150 (21.4 x 4.1 x 5.9)		
Weight kg (lbs.)	19.0 (42.0)		

1 - Power level guaranteed for 2 years from date of shipment, regardless of operation hours, within recommended coolant flow rate and temperature range.

2 - Measured from cold start as $\pm(P_{max}-P_{min})/(P_{max}+P_{min})$

3 - Measured after 3 minutes

4 - Measured 1/e² diameter at laser output.

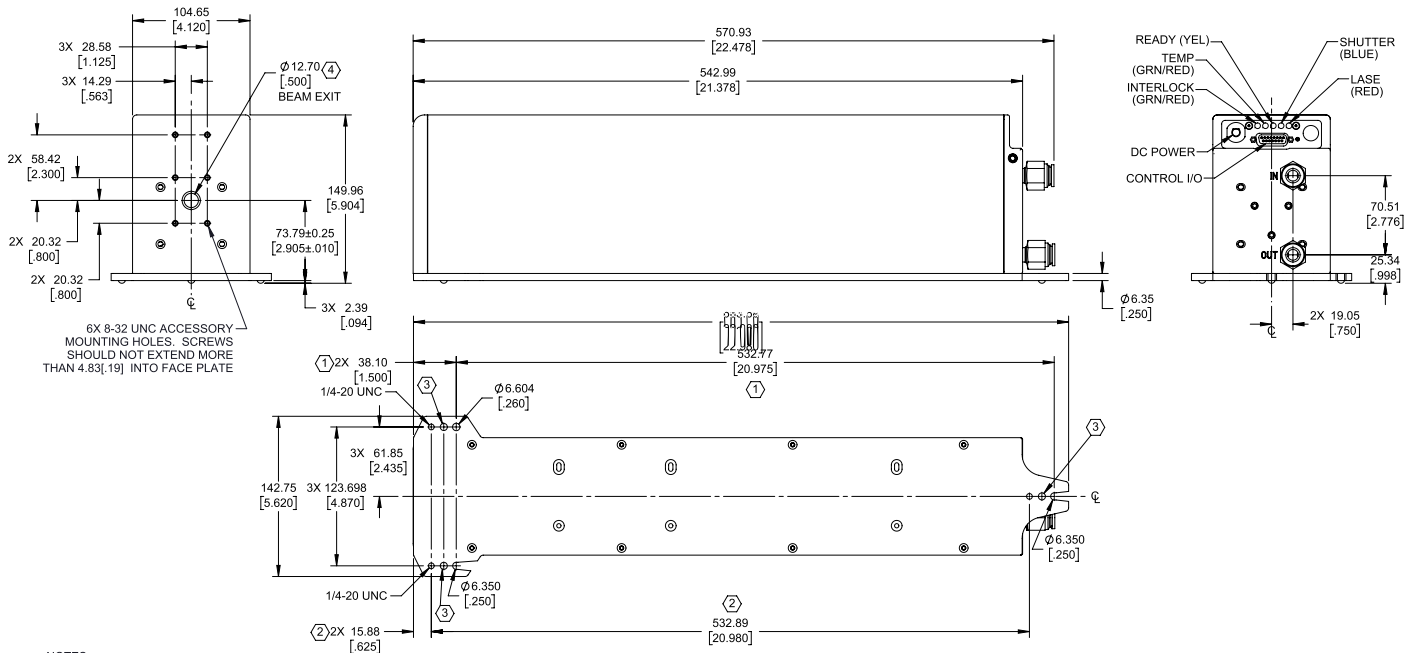


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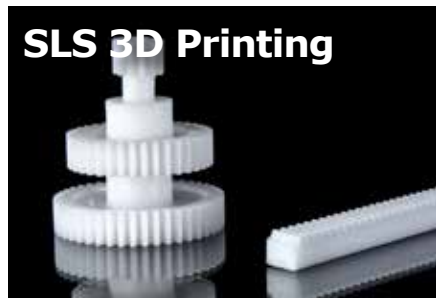
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Technical Illustrations dimension are in mm (inches)



- NOTES:
- ① THIS HOLE PATTERN USED WHEN TOP ACCESS FASTENING DESIRED.
 - ② THIS HOLE PATTERN USED WHEN BOTTOM ACCESS FASTENING DESIRED.
 - ③ HARDENED BALL MOUNTING POINT (Ø.250 STEEL BALL).
 - ④ BEAM PATH MAY NOT BE CENTERED OR PERPENDICULAR TO FACEPLATE APERTURE.

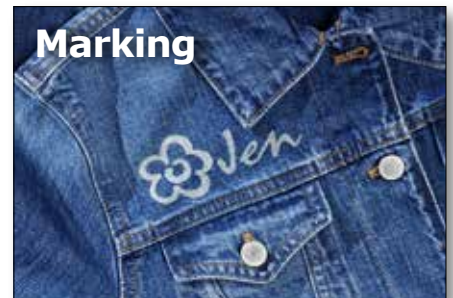
Recommended Applications



SLS 3D Printing
Excellent power density stability and a range of power levels make the ti Series High Stability CO₂ lasers the best choice for 3D printing equipment OEMs.



Cutting
Precise cutting and engraving applications benefit from the ti Series High Stability CO₂ lasers, delivering excellent detail and clean cut edges.



Marking
High power density stability and fast rise/fall times makes the ti Series High Stability lasers an excellent choice for sensitive marking applications, like denim.

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