

# ETERNITY | CO<sub>2</sub> LASERS

## Compact and High Performance



### Compact Footprint

Easy integration and best application results



### Unmatched Longevity

No laser gas degradation for exceptional power stability.



### Superior Beam Quality

Consistent power stability for precise processing.

## Exceptional CeramiCore® Performance

### Powerful with a Small Footprint

The Eternity series represents our smallest laser tubes. Built with our **patented CERAMICORE® technology**, these CO<sub>2</sub> lasers are available as 25, 30, and 40-Watt models.

They provide **superior performance**, particularly for compact platforms. Enhance your automated web systems, laser scanner modules, and small workstations with **excellent process repeatability**.

## Benefits

### Superior Stability and Precision

Iradian CERAMICORE® Laser tubes produce reliable and stable maximum rated power levels as well as minimum power levels for heat sensitive applications. Unlike conventional CO<sub>2</sub> lasers that lose stability under 10% power settings, the Eternity series operates down to 2% **without any loss of power stability**.

The Eternity series exhibits exceptional beam quality and **pointing stability** ensuring precise procession of materials. Compared to conventional glass or metal laser tubes, our patented CERAMICORE® technology provides exclusive processing benefits.

## Applications

### CO<sub>2</sub> Laser Tubes for Your Application Needs

- Cutting/perforating
- Marking/coding
- Engraving/etching
- Wire Stripping
- Fiber optic splicing
- Medical surgery

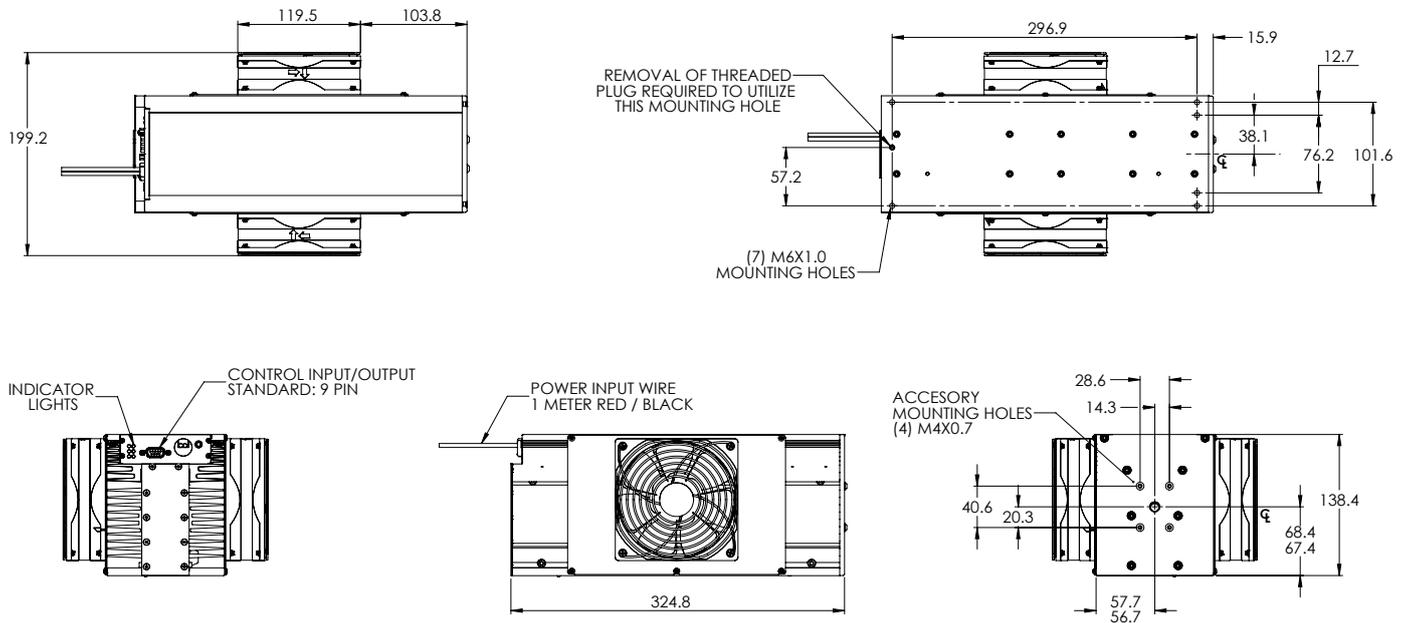
## Advantages

### Excellent Beam Stability

Get better process results with the Eternity series and enjoy the following advantages:

- Compact footprint, easy to integrate
- Patented CERAMICORE® design ensures longevity
- Inert CERAMICORE® prevents laser gas contamination, power loss
- Low thermal expansion CERAMICORE® for high stability
- Extended power stability from 2% to maximum power
- Short rise and fall times; good pulsing characteristics
- Advanced RF driver electronics: reliable, efficient and state-of-the-art
- 30% fewer laser components; highest reliability

## Technical Drawings



## Customizations & Options

### Flexibility for Your Applications with Eternity Laser Tubes

Customize your Eternity CERAMICORE® laser for your applications with power, wavelength and other options:

- Power levels: 25 W, 30 W, 40 W
- Wavelength options: 9.3  $\mu\text{m}$ , 10.2  $\mu\text{m}$ , 10.6  $\mu\text{m}$ , 11.2  $\mu\text{m}$
- Cooling options: fan-cooled or air-cooled
- Beam expansion or collimation: 2.5x, 3x, 4x, 5x, 6x
- Power supply models and sources
- Laser controls
- Customized final testing
- Operation and training programs
- Rapid response service program
- Laser gas degradation insurance

## Specifications

<b>Eternity</b>			
<b>Model</b>	E25	E30	E40
<b>Nominal Power</b>	25 W	30 W	40 W
<b>Beam Quality</b>	$M^2 \leq 1.2$	$M^2 \leq 1.2$	$M^2 \leq 1.2$
<b>Beam Ellipticity</b>	< 1.2:1	< 1.2:1	< 1.2:1
<b>Beam Diameter (mm), 1/e2 @ 0m</b>	2.5 ± 0.5	2.5 ± 0.5	2.5 ± 0.5
<b>Beam Divergence (full angle)</b>	8 ± 1 mrad	8 ± 1 mrad	8 ± 1 mrad
<b>Wavelength</b>	9.3 μm	10.2 μm, 10.6 μm	10.2 μm, 10.6 μm
<b>Rise Time</b>	< 75 μs	< 75 μs	< 75 μs
<b>Power Stability, Fan</b>	< ± 5%	< ± 5%	< ± 5%
<b>Polarization</b>	Random	Random	Random
<b>Cooling</b>	Fan	Fan	Fan
<b>Input power / Heat Load</b>	580 W	580 W	720 W
<b>Input Voltage, Current</b>	48 V / 12 A	48 V / 12 A	48 V / 15 A
<b>Frequency Range</b>	0.1 -140 kHz	0.1 -140 kHz	0.1 -140 kHz
<b>Operating Temperature</b>	5 °C - 40 °C / 40 °F - 104 °F	5 °C - 40 °C / 40 °F - 104 °F	5 °C - 40 °C / 40 °F - 104 °F
<b>Operating Humidity</b>	Non-Condensing	Non-Condensing	Non-Condensing
<b>Shipping Temperature</b>	-10 °C - 60 °C / 14 °F - 140 °F	-10 °C - 60 °C / 14 °F - 140 °F	-10 °C - 60 °C / 14 °F - 140 °F
<b>Weight</b>	9 kg / 20 lbs.	9 kg / 20 lbs.	9 kg / 20 lbs.
<b>Dimensions (L x W x H)</b>	324.8 mm x 199.2 mm x 138.4 mm	324.8 mm x 199.2 mm x 138.4 mm	324.8 mm x 199.2 mm x 138.4 mm

\*Power Stability is measured after 5 minutes warmup.  
Iradion follows a policy of continuous product improvement. All specifications are subject to change without notice. Rev. 1.0, 06/2023.

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**ENDURING EXCELLENCE, PULSE BY PULSE.**

