

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

## Achieve High Performance



### Unmatched Performance

Achieve better application results with our patented CERAMICORE® technology.



### Unmatched Longevity

No laser gas degradation for exceptional beam stability.



### Fast Part Production

High-speed pulsing option for most power levels and wavelengths.

## Versatility to Process Wide Range of Applications

### Widest Selection of Lasers with Same Footprint

The InFINITY CERAMICORE® CO<sub>2</sub> laser tubes represent the most **universal laser package** in the industry. InFINITY CO<sub>2</sub> laser tubes are available as 50, 60, 80, 120 and 150-Watt models with a choice of wavelengths and pulse specifications, **all with same footprint**.

Fan-cooling or water-cooling is available on all power levels except for the 150-Watt laser. All models can **easily be integrated** and are **interchangeable** to fit your product lines.

## Applications

### Faster Laser Processing

A wide range of industries including Automotive, Electronics, Identification marking or coding, Retail packaging, Food packaging, Job shop production and Industrial manufacturing have employed InFINITY lasers for:

- Cutting/perforating
- Marking/coding
- Engraving/etching
- Ablation
- 3D polymer sintering
- Textile processing

## Benefits

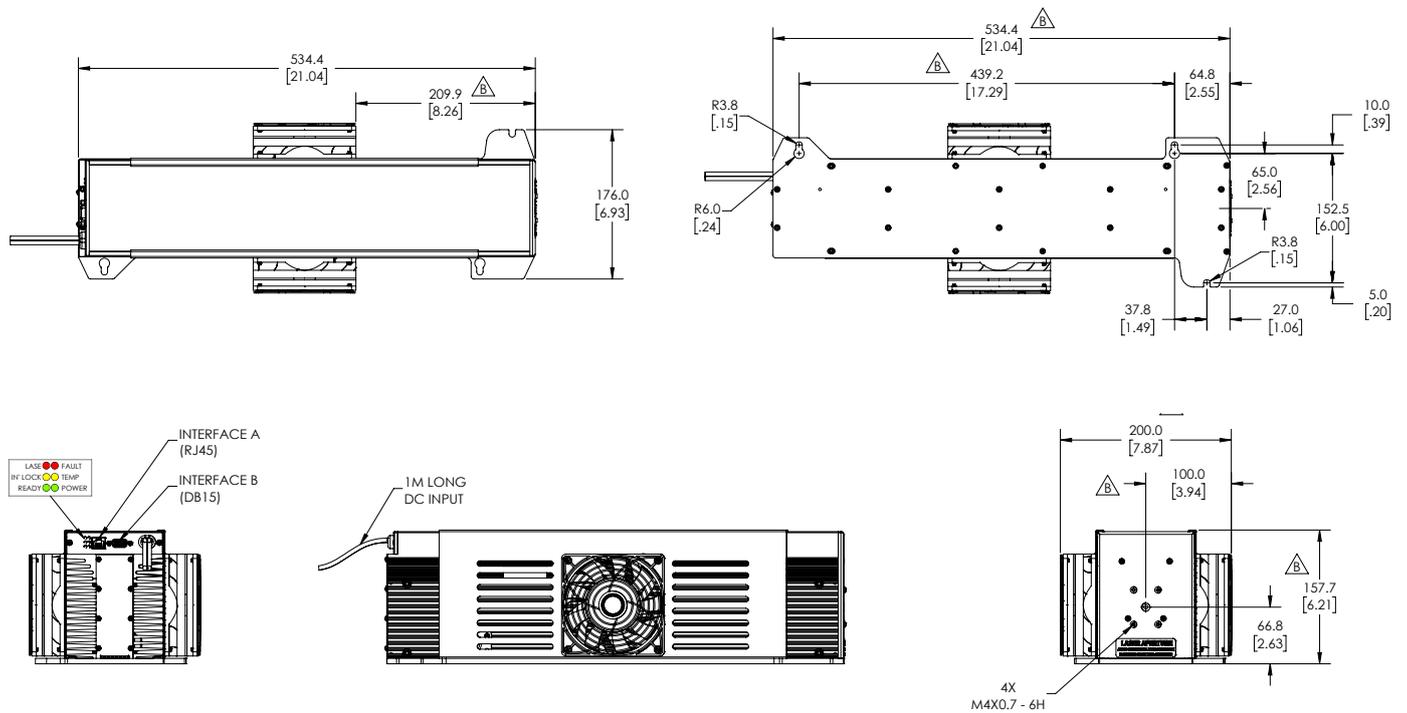
### Easy to Integrate

The InFINITY series is truly a universal laser source for all applications and platforms. Choose the power levels, wavelengths, and pulsing specifications to maximize your ability to handle all your applications.

The rise and fall time specifications of the InFINITY Plus CO<sub>2</sub> laser tube are among the fastest in the industry. Experience **faster processing speeds** with a **higher resolution**. Increase your part production by up to 4 times compared to conventional CO<sub>2</sub> laser tubes.

All InFINITY models are scalable and modular for easy integration into new or existing systems. The footprint, beam specification and laser operation are nearly identical, giving integrators, OEM equipment builders and users maximum versatility and flexibility for their product lines and systems. **CERAMICORE's superior performance, reliability and longevity outperform conventional CO<sub>2</sub> lasers, enabling the lowest total cost of ownership.**

## Technical Drawings



## Customizations & Options

### Optimize Your Laser Processes

Customize your Infinity CERAMICORE® laser for your applications with power, wavelength, pulsing, and cooling options:

- Power levels: 50 W, 60 W, 80 W, 100 W, 120 W, 150 W
- Wavelengths options: 10.6  $\mu\text{m}$ , 10.2  $\mu\text{m}$
- Beam expansion or collimation: 2.5x, 3x, 4x, 5x, 6x
- Pulse options: standard, fast pulse
- Cooling system: Fan-cooled or water-cooled
- Mounting adaptor plates: Retrofit replacement of old lasers
- Power supply models and sources
- Laser controls
- Customized final testing
- Operation and training programs
- Rapid response service program
- Laser gas degradation insurance

## Advantages

### Better Process Results

Experience consistent power and longevity with the following additional advantages:

- Compact package for robotic and gantry laser mounting
- Retrofit replacement for your old conventional CO<sub>2</sub> laser
- 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

## Specifications

Infinity						
<b>Model</b>	i50	i60	i80	i100	i120	i150
<b>Nominal Power</b>	50 W	60 W	80 W	100 W	120 W	150 W
<b>Beam Quality</b>	$M^2 \leq 1.2$	$M^2 \leq 1.2$				
<b>Beam Ellipticity</b>	< 1.2:1	< 1.2:1	< 1.2:1	< 1.2:1	< 1.2:1	< 1.2:1
<b>Beam Diameter (mm), 1/e<sup>2</sup> @ 0m</b>	2.5 ± 0.5	2.5 ± 0.5	2.5 ± 0.5	2.5 ± 0.5	2.5 ± 0.5	2.5 ± 0.5
<b>Beam Divergence (full angle)</b>	6 ± 1 mrad	6 ± 1 mrad				
<b>Wavelength</b>	10.2 μm, 10.6 μm	10.2 μm, 10.6 μm				
<b>Rise Time</b>	< 75 μs	< 75 μs				
<b>Power Stability. Fan (Water)</b>	< ± 5% (< ± 3%)	< ± 5% (< ± 3%)	< ± 5% (< ± 3%)	< ± 5% (< ± 3%)	< ± 5% (< ± 3%)	< ± 5% (< ± 3%)
<b>Polarization</b>	Random	Random	Random	Random	Random	Random
<b>Cooling</b>	Fan / Water	Water				
<b>Input power / Heat Load</b>	900 W	1000 W	1125 W	1440 W	1500 W	1800 W
<b>Input Voltage, Current</b>	36 V / 25 A	40 V / 25 A	45 V / 25 A	48 V / 30 A	50 V / 30 A	60 V / 30 A
<b>Frequency Range</b>	0.1 kHz - 140 kHz	0.1 kHz - 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)	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	Non-Condensing	Non-Condensing	Non-Condensing
<b>Shipping Temperature</b>	-10° - 60° (14° F- 140° F)	-10° - 60° (14° F- 140° F)				
<b>Weight</b>	14.7 kg / 32.4 lbs.	14.7 kg / 32.4 lbs.				
<b>Dimensions (for i150) (L x W x H)</b>	534.4 mm x 200.0 mm x 157.7 mm (water-cooled width: 176.0 mm)	534.4 mm x 200.0 mm x 157.7 mm (water-cooled width: 176.0 mm)	534.4 mm x 200.0 mm x 157.7 mm (water-cooled width: 176.0 mm)	534.4 mm x 200.0 mm x 157.7 mm (water-cooled width: 176.0 mm)	534.4 mm x 200.0 mm x 157.7 mm (water-cooled width: 176.0 mm)	643.2 mm x 176.0 mm x 157.7 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.**

