

# Iradion® Infinity Series

Ceramic CO<sub>2</sub> Lasers, Models 15XX-SB

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The new **Iradion Infinity** CO<sub>2</sub> laser series combines the exceptional performance of a monolithic ceramic resonator with the latest RF design into a single integrated package. The result is a compact, efficient, and powerful laser with fast rise and fall time and great optical characteristics.

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- Pure ceramic, no contamination, no leaks.
  - Low thermal expansion, stability.
  - Fast driver electronics, quick rise/fall time.
  - High efficiency, air cool up to 120 Watts.
  - 30% fewer parts, high reliability.
  - Adjustable power (<1 Watt-MAX), flexibility.
  - Long lifetime, never refill.
  - Custom OEM configurations available.
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[www.Iradion.com](http://www.Iradion.com)

**IRADiON**  
Ceramic Core CO<sub>2</sub> Lasers

# Specifications

| Infinity 15XX*SB Models                     | 154-9.3µm    | 155          | 156-9.3µm    | 156          | 158          | 1510         | 1512         |
|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Rated Optical Power                         | 40           | 50           | 60           | 60           | 80           | 100          | 120          |
| Mode Quality (M <sup>2</sup> )              | ≤ 1.2        | ≤ 1.2        | ≤ 1.2        | ≤ 1.2        | ≤ 1.2        | ≤ 1.2        | ≤ 1.2        |
| Beam Ellipticity                            | < 1.2:1      | < 1.2:1      | < 1.2:1      | < 1.2:1      | < 1.2:1      | < 1.2:1      | < 1.2:1      |
| Beam Diameter (mm) 1/e <sup>2</sup>         | 2.5          | 2.5          | 2.5          | 2.5          | 2.5          | 2.5          | 2.5          |
| Beam Divergence (mR, full angle)            | <7           | <7           | <7           | <7           | <7           | <7           | <7           |
| Wavelength (µm)                             | 9.3          | 10.2, 10.6   | 9.3          | 10.2, 10.6   | 10.2, 10.6   | 10.2, 10.6   | 10.2, 10.6   |
| Rise Time (µS)                              | <75          | <75          | <75          | <75          | <75          | <75          | <75          |
| Power Stability, Fan Cooled (% from cold)   | <± 7 %       | <± 5 %       | <± 7 %       | <± 5 %       | <± 5 %       | <± 5 %       | <± 5 %       |
| Power Stability, Water Cooled (% from cold) | <± 5 %       | <± 3 %       | <± 5 %       | <± 3 %       | <± 3 %       | <± 3 %       | <± 3 %       |
| Polarization                                | Random       | Random       | Random       | Random       | Random       | Random       | Random       |
| Cooling                                     | Air or Water | Air or Water | Air or Water | Air or Water | Air or Water | Air or Water | Air or Water |
| Input power (Watts)                         | 1125         | 620          | 1500         | 1000         | 1125         | 1500         | 1500         |
| Input Voltage / Current                     | 45V / 25A    | 31V / 20A    | 50V / 30A    | 40V / 25A    | 45V / 25A    | 48V / 28A    | 50V / 30A    |
| Weight (Kg / Lbs.)                          | 14.7 / 32.4  | 14.7 / 32.4  | 14.7 / 32.4  | 14.7 / 32.4  | 14.7 / 32.4  | 14.7 / 32.4  | 14.7 / 32.4  |

Specifications are preliminary and subject to change without notice.

## Laser Interface

| Connectors          | 15 pin D | RJ45 |
|---------------------|----------|------|
| Fire Command        | Yes      | Yes  |
| Interlock           | Yes      | Yes  |
| Fault Signal        | Yes      | Yes  |
| RS232 Comm*         | Yes      | Yes  |
| Ready Signal        | Yes      | No   |
| Key Switch Control  | Yes      | No   |
| Forward RF Signal   | Yes      | No   |
| Reflected RF Signal | Yes      | No   |
| Lase Light Signal   | Yes      | No   |
| Temperature Warn    | Yes      | No   |

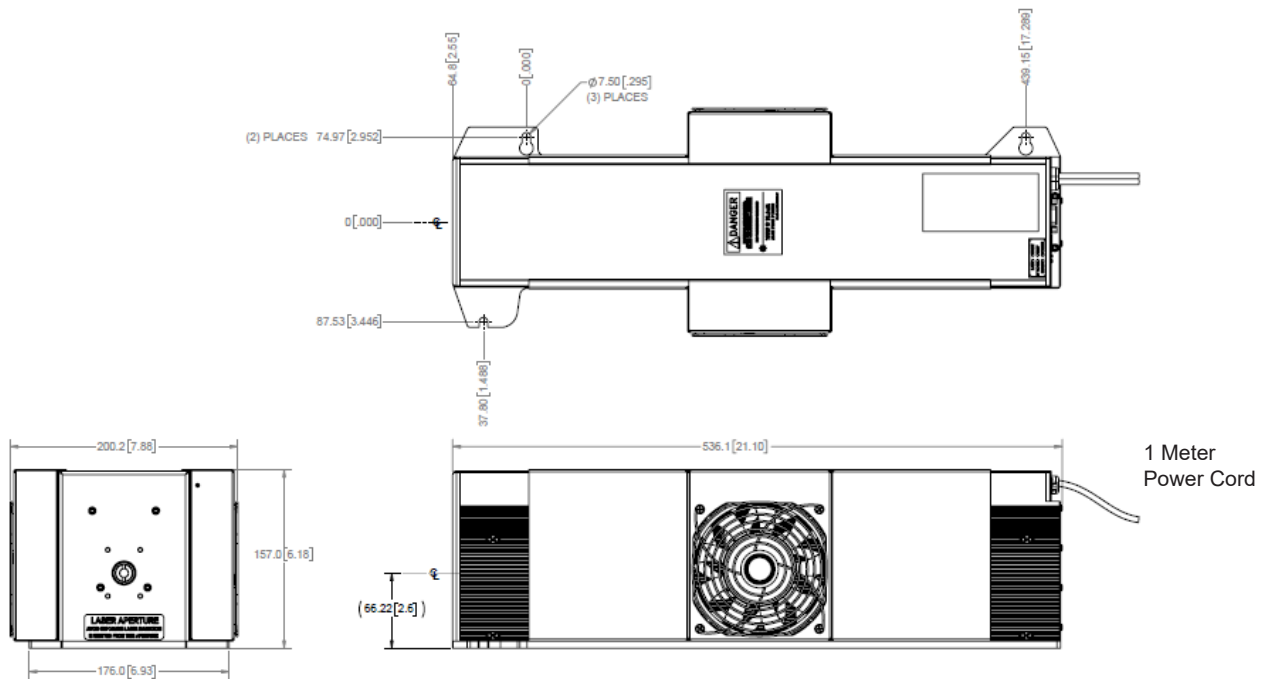
\* The laser control card can be monitored via RS232 communications. A variety of signals, laser information, and the temperature can be interfaced to your host controller.

Indicator lights:

LASE      ● ●    FAULT  
 IN LOCK   ● ●    TEMP  
 READY    ● ●    POWER

**Water cooled**

**Fan cooled**



**Order Information: 15XX\*SB**

\*Model designator:

- F = for fan cooled
- W = for water cooled
- A = for air cooled (no fans)

Example: 60 Watt fan cooled  
156FSB

**Patents** US 7460577 B2  
US 8295319 B2  
PN 92-3013 B



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Invisible Laser Radiation  
Avoid eye skin exposure to direct  
or scattered radiation.  
Class 4 Laser Product



92-3032  
Rev A