MADE in USA

IRADION

Laser, Inc.

www.iradion.com

Iradion Laser, Inc.

Iradion is dedicated to the development and manufacture of custom CO_2 lasers for applications in Industry, Medicine, and Science. Iradion Laser's employ a ceramic based, "inside out" concept placing all the reactive metal components outside the ceramic vacuum enclosure. This approach makes it far easier to build, much more reliable, and longer lasting.

About us

Iradion Laser was formed in 2007 to design and produce a new kind of commercial CO_2 laser based on ceramic design concepts developed by the founder of Iradion, Cliff Morrow. Operations at our current facility started in 2001 under the name Nutfield Technology Laser Division. During this early period, a compact food and drug coding system was developed that incorporated a new 10 Watt ceramic laser. Today, Iradion is incorporated in Delaware with facilities in Rhode Island.

Our Technology

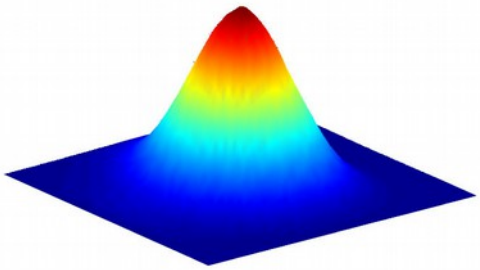
By comparison, most competitive CO_2 laser designs to date are based on the original R&D approach developed at several different aerospace companies since the 1970's. This old approach involves extruding or machining aluminum bodies to contain the optical and electrical components inside the laser gas envelope. These designs are convenient for R&D work, but not ideal for building lasers that are reliable.

The leading reliability issue with "All-Metal" lasers is that the metal is highly reactive with the gas mixture. Over time, as internal components wear on each other, fresh aluminum is exposed and free oxygen in the gas reacts with this raw metal changing the composition of the original gas mixture. In addition, many of these designs use O-ring seals that can allow air and moisture to enter the enclosure and further changing the all-important gas mixture.

Ceramic technology solves these problems by moving all the reactive components to the outside of the vacuum enclosure leaving only pure clean Alumina (Al_2O_3) ceramic in contact with reactive gasses. Alumina, or fully oxidized aluminum, will not react with the gas. Alumina can also be fired to very high temperatures as part of the cleaning process. This further assures there are no organic contaminants (dust, oils and other environmental contaminants) remaining to react with the gas.

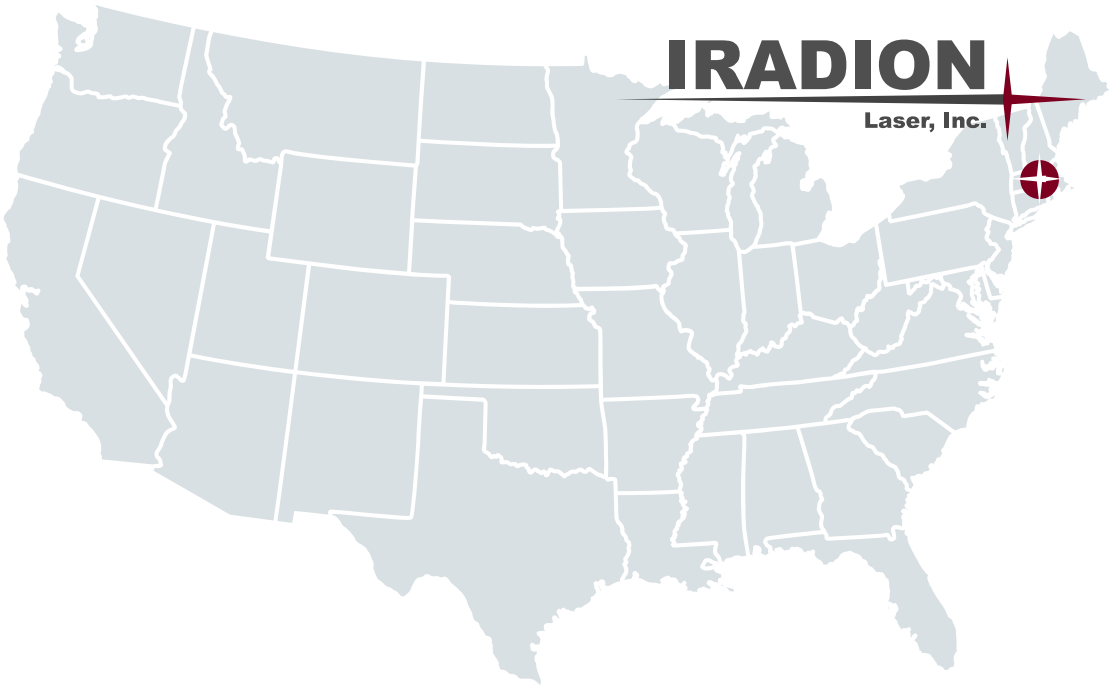
The ceramic core body is also the optical cavity frame supporting the optics assembly at each end. As the optical cavity frame, alumina expands at 1/3 the rate of aluminum. As a result, power fluctuations occur at 1/3 the rate of a metal laser as the body heats up. This leads to more stable beam power.

Ceramic also enables gas mixtures of comparatively high pressure to be used. High pressure mixes provide faster rise and fall speed as well as much better power stability.



Type	integrated HF	air cooled	water cooled	integrated beam shaper	Class 4
Infinity 40	•	•	•	•	•
Infinity 60	•	•	•	•	•
Infinity 80	•	•	•	•	•
Infinity 100	•	•	•	•	•

Specifications are preliminary and subject to change without notice.



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