

The Most Advanced Laser for Welding

While traditional lasers used for welding offer few adjustable parameters beyond power, spot size, and feed rate, Civan's Dynamic Beam Laser (DBL) allows manufacturers to quickly tailor the welding process to the application. With the ability to control beam shape, beam sequence, shape frequency, and focal depth at MHz speeds without any moving parts, Civan's disruptive DBL technology facilitates rapid process optimization, eliminating unwanted joining defects such as pores, cracks, and humping. Civan's lasers not only improve joint quality but also offer increased power, increased feed rates, and more efficient production of new, complex, products made of dissimilar materials.

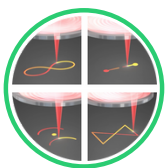
Unprecedented Laser Beam Management

Up to now, welding processes have had limited flexibility with at most a limited selection of preexisting beam shapes, and no flexibility in terms of shape sequence, shape frequency, and focus steering. With Civan's DBL, users can independently design and build beam shapes and sequences, and experiment with different frequencies and focal depths as circumstances change. With the ability to make unprecedented modifications of these laser beam parameters, Civan laser customers can quickly optimize each laser welding process to ensure optimal penetration and minimal defects. The DBL gives laser users a new set of parameters to influence weld geometry and weld quality by stabilizing the keyhole and melt pool, as well as control and influence over the microstructure, making new joining possibilities practical.

Production's welding bottlenecks? Not anymore

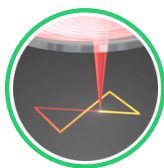
With Civan Lasers, manufacturers can:

- Stabilize the keyhole to eliminate spatter and porosity defects
- Manipulate melt pool dynamics to achieve ideal weld-seam quality
- Modulate shape frequency and sequence to eliminate humping
- Use pre- and post-heating beam shapes to eliminate hot cracking
- Control melt pool dynamics to optimize intermetallic mixing
- Steer beam to use existing material for welding across large gaps
- Weld dissimilar thicknesses and dissimilar materials and alloys
- Achieve desired weld quality even with highly reflective materials
- Increase welding power, speed, quality, and reliability.



Unlimited Beam Shapes

Create limitless custom beam shapes



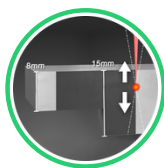
Shape Frequency

Control the speed at which each shape is generated



Shape Sequence

Switch between beam shapes within microseconds

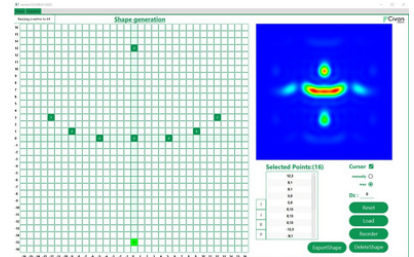


Focus Steering

Shift focus length at 50 MHz without moving parts

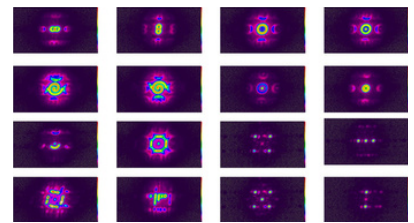
Design Beam Shape With Software:

Quickly upload to laser for testing



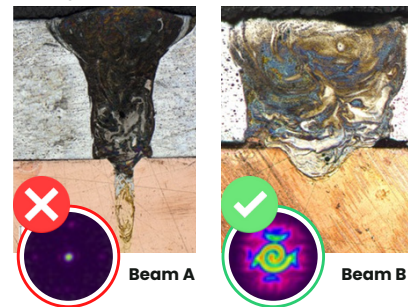
Unlimited Available Beam Shapes:

Facilitate rapid process development



Fast Custom Beam Shape Comparison:

Tailor intermetallic mixing of Al and Cu



Weld Large Gaps Without Filler:

Butt-weld pipes with 100µm gap

