PRODUCT LAUNCH | INNOVATION | JEWELRY TECHNOLOGY

Introducing the iWeld® F300: Industrial Fiber Laser Welder, Now Built for Jewelers

By LaserStar Technologies • May 2025

For decades, fiber laser welding has been the gold standard in industrial manufacturing. Its precision, consistency, and low operating costs have made it the technology of choice in aerospace, automotive, electronics and medical device production. Until now, however, due to large upfront costs, those benefits have been largely out of reach for bench jewelers, craftsmen, repair profit centers, and small-scale precision shops.

That changes today….

LaserStar Technologies is proud to announce the launch of the iWeld F300 - the first laser welder to bring true industrial fiber laser technology to the jewelry industry. This is not a minor upgrade. It is a fundamental leap forward in what a benchtop laser welder can do.

What Makes Fiber Laser Technology Different?

Traditional Nd:YAG laser welders used in jewelry shops rely on water cooled flashlamp laser resonators. These systems have served the industry well, but they come with meaningful limitations: consumable flashlamps that degrade over time, deionized or distilled water-cooling systems requiring regular changes, and first pulse beam instability that can affect weld quality especially at higher power settings.

Fiber laser technology eliminates these pain points at the source. Instead of a flashlamp, the laser medium is a fiber optic cable doped with rare-earth elements. The flashlamp is now replaced with industrial grade semiconductor diodes. The result is a laser that is fundamentally more stable, more efficient, and dramatically easier to maintain.

The iWeld F300: Built for the Bench

The iWeld F300 was engineered from the ground up to deliver industrial-grade fiber laser performance in a form factor and price point accessible to jewelry professionals. Here is what sets it apart:

LaserStar Technologies Corporation
1717 Diplomacy Row, Orlando, Florida 32809 USA
+1-407-248-1142 • Fax: 866-708-5274 • Email: sales@laserstar.net
WWW.LASERSTAR.NET

Flat Top Beam Profile

The iWeld F300 produces what photonics engineer's call a "flat top" beam; meaning energy is distributed with exceptional uniformity across the entire weld spot. The practical result? Smoother welds with significantly less pitting, undercutting, and outgassing, even when working with thick filler wire.

±1% Pulse-to-Pulse Stability

Where flashlamp systems offer ±3% beam stability, the iWeld F300 delivers ±1%. That tighter tolerance is especially meaningful for thin-wire repairs and delicate work where consistency is everything.

Power That Never Fades

The 300-watt fiber source is powerful enough for even the trickiest of common jewelry applications with gold, silver, platinum, titanium and other highly reflective alloys. The fiber laser source does not degrade over time. The power output on day one is the same power output years down the road. No performance creep, no replacement cycles.

Speed Welding

The iWeld F300 can operate with speeds up to 100Hz, these speeds are much faster than even the best flashlamp. Allowing the operator to complete welds and repair work in a fraction of the time.

Near-Zero Maintenance

Forget the semi-annual water coolant filter exchange, the challenge of flashlamp replacement and beam re-alignment, and the welding chamber air filter replacements every few months. The iWeld F300 requires only periodic air filter changes and regular cleaning of the protective disk. That's it!

Universal Power Supply Circuit

The iWeld F300 incorporates a universal supply circuit (100V – 240V, 15A, 50/60Hz, 1P) making it and excellent choice for the worldwide jewelry marketplace.

A Lower Total Cost of Ownership

The upfront cost of an iWeld F300 fiber laser system reflects the technology inside it, but the operating economics tell an even more compelling story. Flashlamp systems carry ongoing consumable costs that add up quickly: flashlamps, filters, water coolant, and the labor time to manage all of it. The iWeld F300 eliminates the vast majority of those recurring expenses.

For a busy repair shop or production environment, the iWeld F300 can pay for itself faster than you might expect.

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Why LaserStar? Why Now?

LaserStar Technologies has been at the forefront of laser welding innovation for the jewelry and precision manufacturing industries for over three decades. We introduced one of the first laser welders designed specifically for bench jewelers, and we have continued to push the technology forward ever since.

The iWeld F300 represents the next chapter in that story bringing the technology that has transformed medical device, aerospace and industrial manufacturing within reach of every jeweler, goldsmith, and bench craftsman who demands the best.

We did not simply adapt an industrial machine. We engineered a system based on our 35 years of industry experience and training bench jewelers, understanding the precision required, the variety of materials encountered, and the expectation of reliability in a fast-paced shop environment.

Ready to See It for Yourself?

The iWeld F300 is available for an in person or live virtual demonstration. Contact your LaserStar representative to schedule a live demonstration and see what the iWd F300 fiber laser welding can do for your work.

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