LightWeld™

Handheld Laser Welding & Cleaning Systems

Has partnered with

HANDHELDLASERWELDER.COM

IPG PHOTONICS®

Light**WELD** Handheld Laser Welding Technology

Light**WELD**™ handheld laser welding and cleaning systems are fast, easy to learn and operate, and produce high quality, consistent results across a wide range of materials and thicknesses. Pre-weld and post-weld laser cleaning functionality optimizes weld quality while increasing productivity.

A Family of Productive Laser Processing Tools

Each Light**WELD** system is designed for high quality, speed, ease of use, and repeatability. Light**WELD** 1500, Light**WELD *XC***, and Light**WELD *XR*** offer fabricators a complete range of highly productive solutions to choose from, specific to their welding applications.

Light**WELD *XR***

Light**WELD *XR*** delivers a higher-brightness beam for welding an extended range of materials and thicknesses up to 0.250" (6.35 mm), including reflective materials. Welding and cleaning materials such as titanium and copper are easy with Light**WELD *XR***

Light**WELD *XC***

Light**WELD *XC*** provides additional functionality of pre- and post-weld cleaning with the same high-quality welding capabilities of the Light**WELD 1500** system

Light**WELD *1500***

The most cost-effective solution for laser welding steel, stainless steel, and aluminum up to .160" (4 mm) thick. Light**WELD 1500** can be paired with a wire feeder, but does not have any cleaning capability

	Light**WELD *XR*** **Extended Range Welding & Cleaning**	Light**WELD *XC*** **Welding & Cleaning**	Light**WELD 1500** **Welding**
Welding Capability: Steels	Stainless Steel, Mild Steel, Galvanized Steel 6.35 mm (0.250")	Stainless Steel, Mild Steel, Galvanized Steel 4 mm (0.160")	Stainless Steel, Mild Steel, Galvanized Steel 4 mm (0.160")
Welding Capability: Aluminum 3 & 5 Series	Aluminum (3XXX, 5XXX, series) 6.35 mm (0.250")	Aluminum (3XXX, 5XXX series) 4 mm (0.160")	Aluminum (3XXX, 5XXX series) 4 mm (0.160")
Welding Capability: Aluminum 6 Series	3.0 mm (0.120")	---	---
Welding Capability: Titanium & Nickel Alloy	Titanium and Nickel Alloys 5 mm (0.200")	---	---
Welding Capability-Copper	Copper 2 mm (0.080")	---	---
Wobble Welding	Up to 5 mm width	Up to 5 mm width	Up to 5 mm width
Cleaning Scan Width	Pre- & Post-weld up to 15 mm	Pre- & Post-weld up to 15 mm	---
High Frequency Peak Power for Cleaning	2500 W	2500 W	---
Wire Welding Capability	Yes	Yes	Yes

LASER WELDING
High speed, low heat input, and a small HAZ make laser welding thick, thin, reflective materials, and materials with dissimilar thicknesses far less challenging for all skill levels.

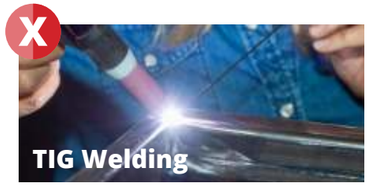
LASER PRE-CLEANING
Pre-weld cleaning removes rust and other contaminants from materials and increases weld quality. This is much faster than manual cleaning and uses no chemicals or abrasives.

LASER POST-CLEANING
Post-weld cleaning removes heat discoloration and improves visual finishes without post-weld grinding.

Light**WELD** ADVANTAGES & BENEFITS

Light**WELD** enables dramatically faster welding and is easier to learn and operate than MIG or TIG. Light**WELD** provides higher-quality, consistent results with minimal distortion or part deformation.

	Traditional Systems	Light**WELD** Systems
Speed	Average	Fast - Over **4X Faster** than TIG
Quality	Depends on user experience	Consistent high-quality results
Learning curve	Steep	Quick and easy
Part Setup	Critical and time consuming	Minimal and fast
Material flexibility	Limited with consumables changes	Wide range with no set up
Heat affected zone	Large	Small
Distortion & Deformation	High	Very Low
Wobble welding	No	Yes - up to 5 mm
Pre-Weld Cleaning	No	Yes - Removes rust, oxides, oil & grease
Post-weld Polishing	No	Yes - Removes soot, debris & discoloration



TIG welding can generate extreme heat that deforms thin materials and produces poor visual finishes. Welding copper is difficult and welding metals of dissimilar thicknesses is limited. TIG welding is a highly skilled process, and experienced TIG welders are a scarce resource.

MIG welding requires consumable wire, material pre-cleaning, and beveled joints for full penetration of thick metals. Travel and work angles are limited, and vertical positions are extremely challenging. MIG is a high-heat process that can cause part deformation.

Light**WELD** systems are easier to learn and operate and are **4X** faster than TIG welding. The low heat input and extensive material and thickness capabilities increase productivity, repeatability, and improve weld quality for operators of all skill levels.

Light**WELD XC** and Light**WELD XR** offer laser cleaning capability in addition to welding. Pre-weld cleaning remove oxides, rust, paint, oil, or grease from surfaces to be welded. Post-weld cleaning removes soot and weld-related debris.

Light**WELD** LASER WELDING & CLEANING CAPABILITY

Light**WELD** built-in optimized presets provide high-quality, consistent welds for any skill level. Light**WELD XC** and Light**WELD XR** offer the added functionality of pre- and post-weld cleaning. Pre-weld cleaning removes oil, grease, paint, or any potential contaminants that can affect weld quality. Post-weld cleaning creates visually appealing welds while eliminating need for post processing

Light**WELD *XR*** easily welds steel, stainless steel, aluminum, titanium, copper, and nickel alloys without part deformation. Preset modes ensure proper laser settings for consistent high-quality welds. Built-in wobble function accommodates wider seams, while wire welding capability extends welding application to poorly fit up parts.

Light**WELD** is powerful enough to melt metal and create a weld pool even if contaminants are present. However, to improve weld quality and reduce porosity, best results are attained by pre-cleaning to remove any oil, grease, or any debris that could enter the weld pool and create a defect.

Even the best welders can leave soot, debris, and visual signs of localized heating. A quick, final cleaning pass with Light**WELD XC** or Light**WELD XR** leaves a beautiful, clean weld without the need for manual post-finishing.

Switching between welding and cleaning is fast and easy. Simply loosen the collet, insert the welding or cleaning nozzle, select a preset from the front panel, and the system is ready to clean or weld.

Light**WELD** FEATURES

Laser welding power up to 1500 W is easily adjusted with intuitive controls to quickly dial in optimum weld settings for various materials and thicknesses. With up to 74 stored preset and user-defined process parameters, novice welders can be trained and welding in a matter of hours.

Lightweight Handheld Welding & Cleaning Gun

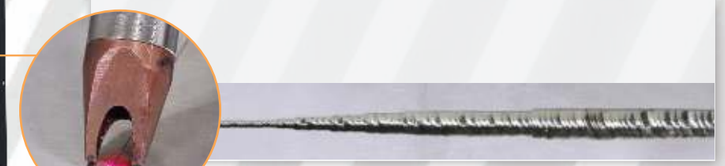
The handheld welding & cleaning gun is compact, ergonomic, and comfortable. Specially designed nozzle tips for welding and cleaning applications, plus built in wobble functionality enable operators to produce high quality welds consistently. Nozzle tips switch out quickly and easily to accommodate fusion welding, wire welding, and cleaning, further optimizing and increasing productivity.

Optimized Factory Presets and Laser Power Control

- Built-in parameters ensure high-quality results and can be customized for later use
- Operators can instantly switch between presets to accommodate many material thickness combinations
- Simple controls allow new welders to be trained within hours and experienced welders realize an immediate increase in productivity

Built-in Wobble Welding for Increased Productivity

- Create highly aesthetic seams and weld parts with poor fit up
- Adjustable frequency and weld width up to 5 mm optimizes results
- Wobble parameters are preprogrammed and can be adjusted on the fly, saved, and recalled immediately

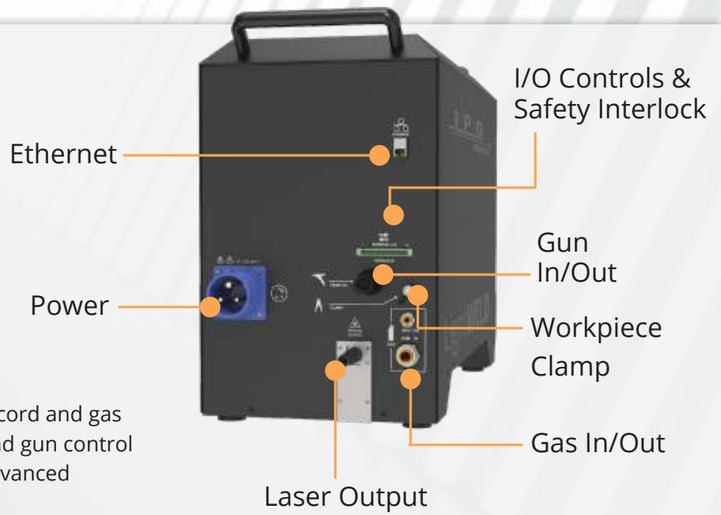


Simple Installation and Operation

1 220 V Power

2 Standard Gas

3 Workpiece Clamp



Clearly labeled rear connections make getting started fast and easy. Just plug in the power cord and gas connection, attach the workpiece clamp, and the system is ready to go. Laser power, gas and gun control is delivered through a single cable. An ethernet computer connection provides access to advanced settings to fine tune and save process parameters.

Optional Wire Feeding Package

- Wire welding capability extends laser welding applications to poorly fit-up parts
- Used for low carbon steel, stainless steel, aluminum, non-ferrous metals & alloys