



# LightWELD<sup>®</sup> COBOT SYSTEM

**AUTOMATED** LASER WELDING & CLEANING



# Automation **MADE EASY**

CONSISTENT | SAFE | EFFICIENT | PRODUCTIVE

The **LightWELD Cobot System** is a collaborative robot laser welding solution that makes automating a variety of welding jobs easy no matter your experience level.

Automated laser welding and cleaning maximizes your shop's productivity by tackling repetitive welds, freeing up skilled welders and resources for other projects while allowing you to scale your business.

## COBOT SYSTEMS EMPOWER SKILLED WELDERS



### **AUTOMATE** Repetitive Welds

Free up resources by delegating repetitive jobs so skilled welders can focus on more complex welds.



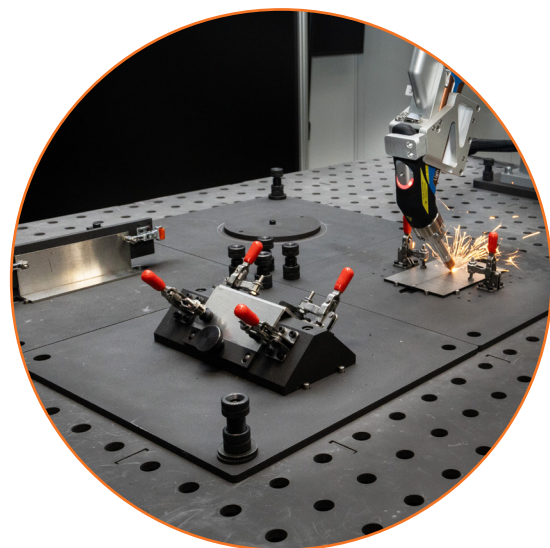
### **MAXIMIZE** Productivity

Repeat welds faster, scrap fewer parts, and save your welders from grinding and rework.



### **ENHANCE** Your Welders

Enable your welders to get more done with a system that complements their skills and optimizes their time.



### **Enhance the Way You Work**

The LightWELD Cobot System offers the flexibility and range of motion to tackle a variety of welding and cleaning no matter how you work.

- Flexible for multiple setups and any mix of small, large, simple, or complex parts
- Quickly tackle arrays of joint configurations and material combinations
- Clean or weld on the table or on adjacent work surfaces



### **Productivity Meets Portability**

The LightWELD Cobot System fits easily onto your shop floor.

Heavy duty leveling casters enable easy system repositioning, providing flexibility for your evolving operations.

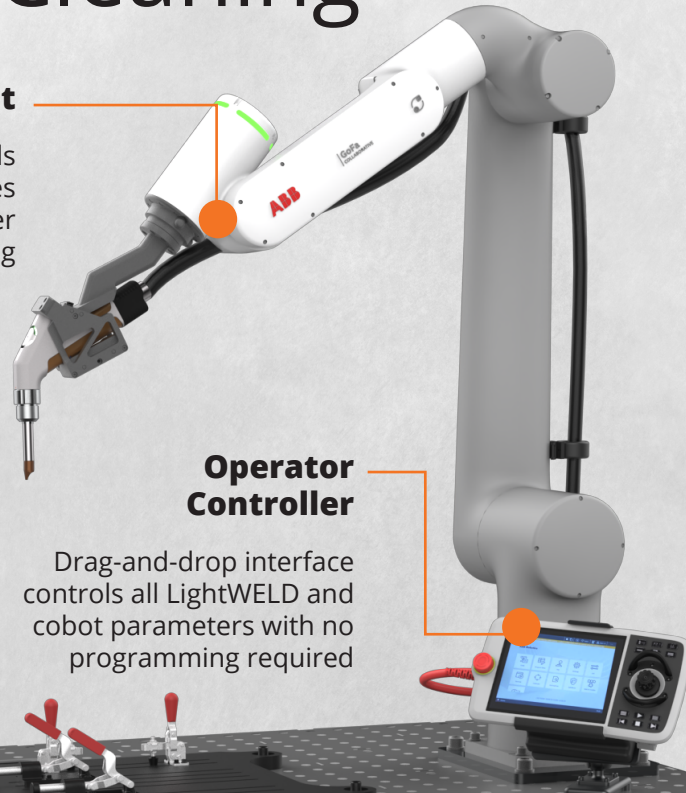
The integrated safety enclosure provides ready-to-go automated laser welding and cleaning capability anytime or anywhere.



# All-in-One **AUTOMATED** Laser Welding & Cleaning

## Cobot

Long-reaching robotic arm holds the LightWELD gun and provides consistent, high-speed laser welding & cleaning



## Operator Controller

Drag-and-drop interface controls all LightWELD and cobot parameters with no programming required



## Work Surface

1 x 1.5 m zinc phosphate coated surface with 16 or 50 mm hole spacing



## System Controls

Mobile operator station with buttons for emergency stop, cycle start, laser enable, and reset



## System Base

Built-in storage and shelving holds LightWELD and all accessories, with heavy-duty leveling casters for easy repositioning

## LightWELD

Selection of air-cooled welding & cleaning laser sources by IPG to best match fabrication requirements

# Powered by LightWELD®

## Welding & Cleaning Laser Source

Consistent high-quality results  
Easy to learn and fast to setup  
Clean and weld a variety of materials



### 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- & POST-WELD CLEANING

Pre-weld cleaning removes rust and other contaminants from materials and increases weld quality. Post-weld cleaning removes heat discoloration and improves visual finishes without post-weld grinding.

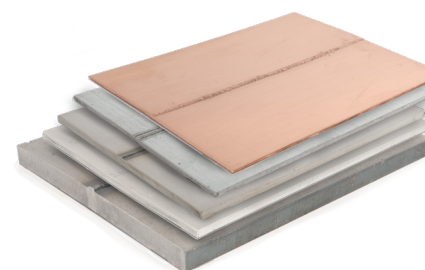


### SWAP BETWEEN WELDING & CLEANING IN SECONDS

LightWELD laser technology enables your cobot to weld and clean from the same source. Simply switch to cleaning mode and change out the nozzle, no tools required.

## LIGHTWELD COBOT SYSTEM WELDING & CLEANING CAPABILITIES

Steels (Stainless, Mild and Galvanized)	up to 0.315"
Aluminum 3 & 5 Series	up to 0.315"
Aluminum 6 Series	up to 0.200"
Titanium & Nickel Alloy	up to 0.275"
Copper	up to 0.120"
Welding Speed	up to 2 m/s
Weld Seam Width	up to 0.200"
Cleaning Width	up to 0.600"





# Effortless PART PROGRAMMING

## TEACH YOUR COBOT WITH MANUAL GUIDANCE IN MINUTES

1. Enable manual guided teaching mode
2. Move cobot through job steps
3. Program weld positions with a single button push
4. Select the recommend LightWELD welding preset

## CONTROL EVERYTHING FROM ONE SCREEN

- An easy-to-use graphic interface makes programming and control simple.
- Test and simulate weld paths in a 3D environment.
- Control motion and LightWELD parameters from an intuitive interface.
- Save time with easily editable preset welding and cleaning templates.



# Choose Your LightWELD®



	LightWELD 2K	LightWELD XR	LightWELD XC	LightWELD 1500
<b>Steels (Stainless Steel, Mild Steel, Galvanized Steel)</b>	0.315" (8 mm)	0.250" (6 mm)	0.160" (4 mm)	0.160" (4 mm)
<b>Aluminum 3 &amp; 5 Series</b>	0.315" (8 mm)	0.250" (6 mm)	0.160" (4 mm)	0.160" (4 mm)
<b>Aluminum 6 Series</b>	0.200" (5.00 mm)	0.200" (5.00 mm)	---	---
<b>Titanium &amp; Nickel Alloy</b>	0.275" (7 mm)	0.200" (5 mm)	---	---
<b>Copper</b>	0.120" (3 mm)	0.080" (2 mm)	---	---
<b>Wobble Welding (width)</b>	Up to 0.200" (5 mm)	Up to 0.200" (5 mm)	Up to 0.200" (5 mm)	Up to 0.200" (5 mm)
<b>Cleaning Scan Width (Pre- &amp; Post-weld)</b>	Up to 0.600" (15 mm)	Up to 0.600" (15 mm)	Up to 0.600" (15 mm)	---
<b>High Frequency Peak Power for Cleaning</b>	3000 W	2500 W	2500 W	---
<b>Laser Power</b>	2000 W Max Avg. Power	1500 W Max Avg. Power	1500 W Max Avg. Power	1500 W Max Avg. Power

# Choose Your ENVIRONMENT



## Base Cobot System

Get started with just the basics. Requires integration onto your shop floor into a separate enclosed space for safe laser operation.



## Integrated Safety Enclosure

Add a removable safety enclosure built specifically for the LightWELD Cobot System that is fume extraction ready with dual-channel interlocking doors and a laser-safe viewing window.



## LightWELD Studio

Customize your workspace with 2 or more laser safe anodized aluminum walls. Built from 4' modular panels and includes door, viewing window, and laser safety signage.



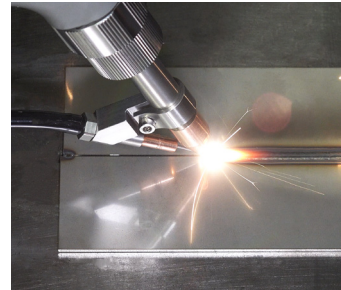
# LightWELD® Accessories



This optional wire feeder kit includes all necessary hardware and software to add a wire welding capability to the LightWELD Cobot System.

### Included with Wire Feeder Kit:

- Wire Feed Unit
- Proprietary Weld Head Nozzle Attachment
- System Trigger Cable
- 4 Contact Tips: 0.030", 0.035", 0.045", 0.063"
- 4 Drive Rolls (2 U-Rollers, 2 V-Rollers)
- 4 Liners (2 Teflon liners, 2 Steel liners)
- LightWELD Wire Welding Presets



Used for laser wire welding of low carbon steel, stainless steel, aluminum, non-ferrous metals & other alloys. Wire feeder nozzle attachment guides wire precisely to the weld pool. LightWELD Process Modes provide standard parameter settings for typical materials and wire types.

### LightWELD Wire Feeder Specifications

<b>Wire feed delivery length</b>	10 ft. (3 m) Optional: 15 ft. (5 m)
<b>LightWELD Interface</b>	Low Voltage enable signal cable
<b>Wire Feed Speed Range</b>	0.5 - 230 ipm (1 - 600 cm/min)
<b>Compatible Wire Diameters</b>	0.030" - 0.063" (0.8 mm - 1.6 mm)
<b>Wire Reel Capacity</b>	Up to 30 lbs. (12" diameter)
<b>Compatible Wire Materials</b>	Steel, Stainless Steel, Aluminum, Copper, Nickel
<b>Power Requirements</b>	115 - 230V 50/60 Hz
<b>Weight and Dimensions</b>	28.7 lb (13 kg)   20.5" (520 mm) L x 9.7" (245 mm) W x 16.5" (420 mm) H



### Carbon Fiber Welding Helmet

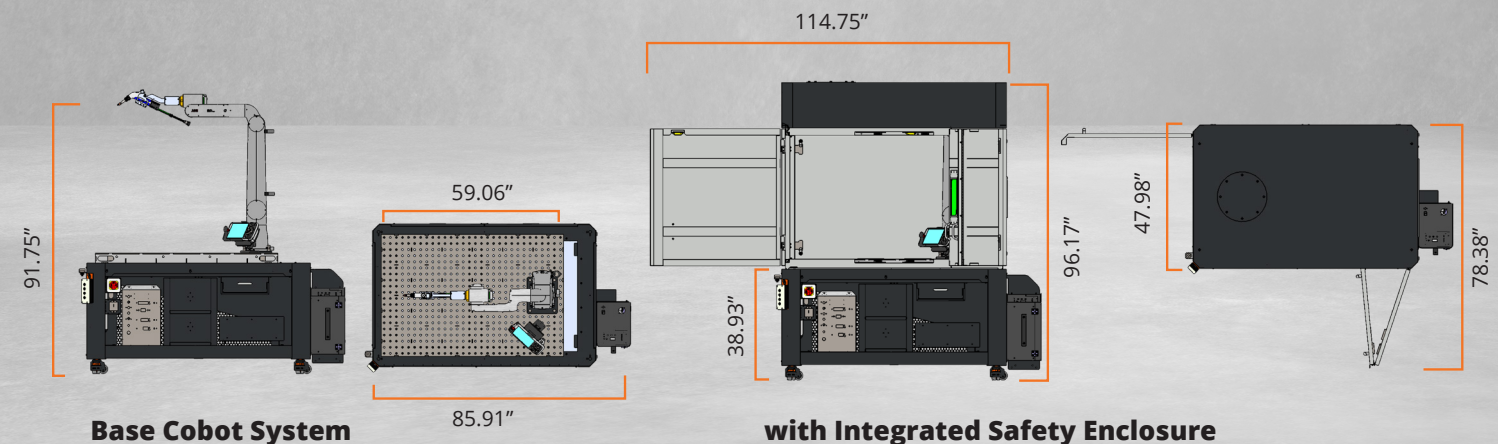
The helmet features a lightweight carbon fiber shell incorporating both UV and IR filters appropriate for use with LightWELD systems. Designed to be compliant with EN207 DLB8 + ILB9 @ 1070nm & ANSI+W16 rated for superior protection.

SCAN HERE FOR ALL LIGHTWELD ACCESSORIES

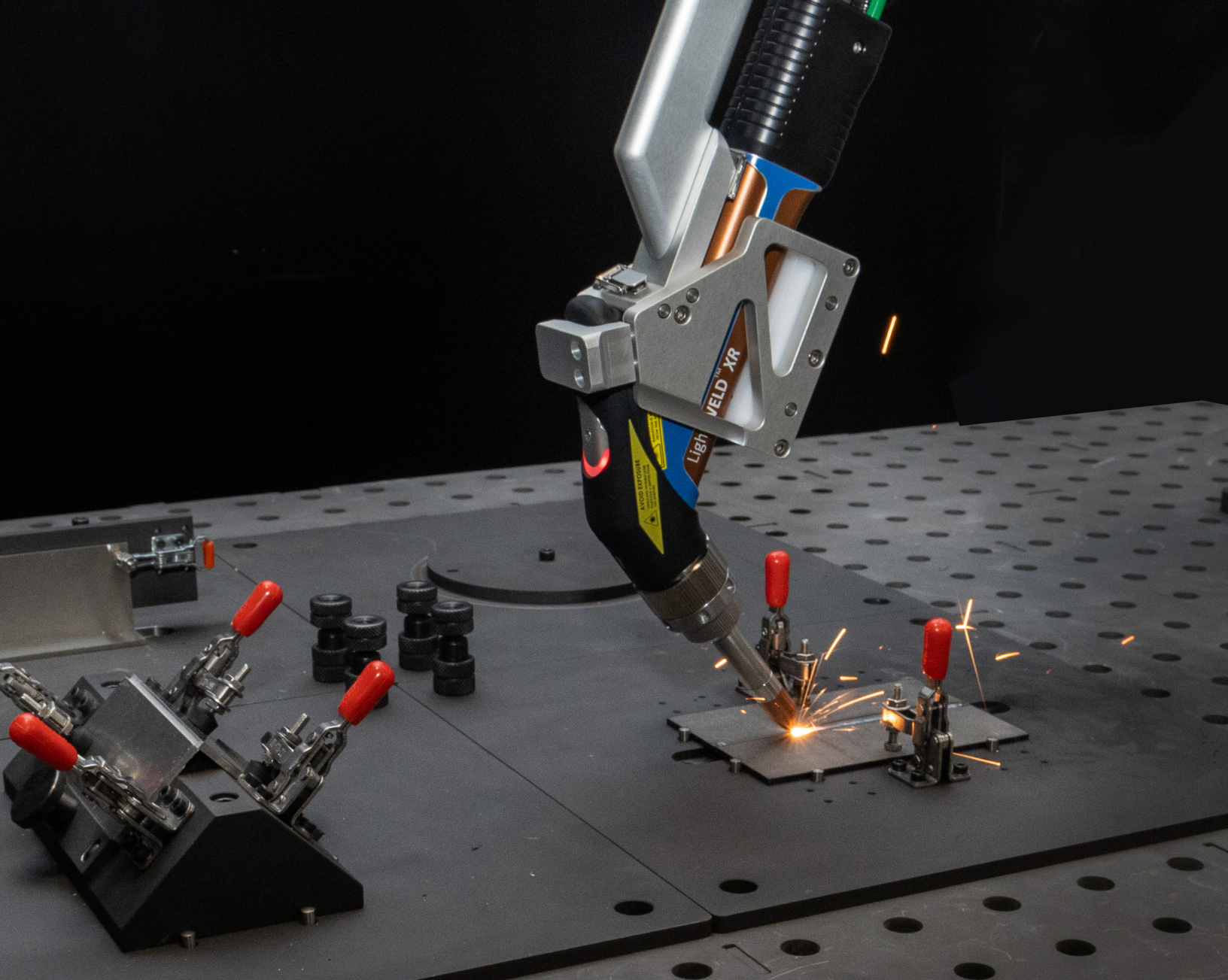


# System SPECIFICATIONS

LightWELD			
<b>Welding &amp; Cleaning Laser Selection</b>	LightWELD 1500 (welding only), LightWELD 1500 XC LightWELD 1500 XR, LightWELD 2000 XR		
<b>Laser Power Output</b>	Up to 2 kW		
<b>Input Power</b>	200-240VAC, 3PH, 50/60 Hz, 24 Amps (LightWELD 1500 Models), 32 Amps (LightWELD 2000 Models)		
<b>Welding &amp; Cleaning Presets</b>	Up to 100		
<b>Process Gas</b>	Argon/Nitrogen, Working Pressure 15-30 psi (1-2 Bar)		
<b>Cooling</b>	Air-Cooled (No External Chiller Required)		
Cobot			
<b>Model</b>	ABB GoFa 12	<b>Repeatability</b>	0.020 mm
<b>Reach</b>	54" (1370 mm)	<b>Payload</b>	12 kg
<b>Maximum Speed</b>	79 in/sec (2 m/s)	<b>Protection Level</b>	IP67
<b>Motion</b>	6-Axis	<b>Control</b>	OmniCore C30 with 8" FlexPendant
Baseline System			
<b>Work Surface (W×L×H)</b>	39" × 59" × 39" (1,000mm × 1,500 mm × 990 mm) Zinc Phosphate Coated		
<b>Dimensions (W×L×H)</b>	49" × 75" × 87" (1,235 mm × 1,900 mm × 2,210 mm)		
<b>Table Fixturing</b>	16 mm Holes on 50 mm Spacing		
<b>Power</b>	120 VAC, 1PH, 50/60 Hz		
<b>Mobility</b>	Heavy-Duty Casters with Leveling Feet		







FOR SALE IN USA



LEARN MORE



IPG PHOTONICS  
LIGHTWELD.COM



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