OptX™ 2kW
Handheld Laser Welder
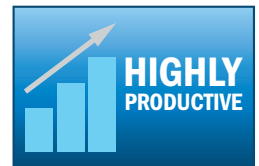
Quick Specs

Applications
Sheet metal
Fabrication
Manufacturing
Aerospace and defense
Transportation
HVAC

Processes
Laser welding
Laser cleaning

Laser Output
Weld mode: Class 1 red guide beam
2,000 W average power, 2,500 W peak power

Input Power
40 A, 240 V, single-phase

Process Gas
Argon, nitrogen, argon/CO_2 mix

Net Weight 140 lb. (64 kg)

Change the welding game with the OptX handheld laser welder. Unleash the workforce's welding potential and significantly reduce the learning curve, so any welder can drive output and be productive. Ideal for precision welding applications with tight fit-up with minimal gaps where high productivity is needed.

CUSTOM MILLER PROGRAMS

INDUSTRIAL MILLER OptX WIRE FEEDER

HIGHLY PRODUCTIVE

EASY TO SET UP AND USE
EASY

REDUCED TRAINING TIME

NEW!

Highly productive

- High speed welding that is up to four times faster than TIG, with simple material preparation and minimal post-finishing.
- Spot, autogenous and wire welding, along with a cleaning function provide high-quality, consistent results.
- The OptX 2kW wire feeder is designed and manufactured specifically for the handheld laser application, providing consistent results in an industrial setting.

Easy to use

- Simple interface with pre-built parameters for welding and cleaning applications, provide reliable results for different material types and thicknesses.
- Nearly eliminate the need for pre- and post-weld processing where tight part fit-up is available.

TRUE BLUE® 3 YR. WARRANTY

Power source is warrantied for three years, parts and labor.

ISO 9001 Quality
Certified System

OptX 2kW Control Panel

1. **Laser Emission Indicator**

2. **Interlock Indicator**

3. **Weld Gas Indicator**

4. **Error Indicator**

5. **Emergency Stop Button**

6. **Key (Power Switch)**

7. **Laser Power Control and Meter**
   Range   0−2,000 W

8. **Mode (Program) Selector**

9. **Wobble Frequency Control and Meter**
   Range   0−300 Hz

10. **Wobble Length Control and Meter**
    Range   0−0.59 in. (0−15 mm)

OptX Wire Feeder Control Panel

1. **Retract**

2. **Power Switch**

3. **Wire Feed Speed**
   Range   0–80 ipm

4. **Toggle Switch**
   a. Left: Manual Wire Retract
   b. Right: Manual Wire Jog
   c. Right (Double Click): Auto Wire Load

OptX 2kW Specifications (Subject to change without notice.)

Mode	Input Power	Output	Rated Output at 100% Duty Cycle	Amps Input at Rated Output, 50/60 Hz			Dimensions (H x W x D)	Net Weight
				240 V	KVA	KW		
Laser Welding and Cleaning	1-phase	2 kW	2 kW at 30°C	32	6	5.85	21 x 12.4 x 25.2 in. (533 x 315 x 640 mm)	140 lb. (64 kg)

OptX Wire Feeder Specifications (Subject to change without notice.)

Input Power	Wire Feed Speed	Wire Diameter Capacity	Spool Size Capacity	Dimensions (H x W x D)	Net Weight
120 VAC, 3.5 A, 50/60 Hz	5–80 ipm (0.127–2.032 m/min.)	.023–1/16 in. (0.6–1.6 mm) .045 in. (1.1 mm) recommended	8 in. (203 mm) and 12 in. (305 mm)	16 x 12.375 x 27.875 in. (406 x 314 x 708 mm)	46 lb. (21 kg)

OptX 2kW Performance Data

Metal	Material Thickness Range (Wire Autogenous)	Spot Welding Penetration Depth	Laser Welding Travel Speed	Shielding Gas Required
Aluminum	20 gauge–1/4 in.	20 gauge–1/4 in.	15–20 ipm (0.3–0.5 mpm)	Argon
Steel	20 gauge–1/4 in.	20 gauge–1/4 in.	15–20 ipm (0.3–0.5 mpm)	Nitrogen
Stainless Steel				
Copper	18 gauge–1/8 in.	18 gauge–1/8 in.	15–20 ipm (0.3–0.5 mpm)	Nitrogen

Welding and Cleaning Parameters

Steel/Stainless Steel Parameters

Metal	Shielding Gas	Weld Type	Wire Size	Program	Power /WPS								
					20 gauge	18 gauge	16 gauge	14 gauge	12 gauge	1/8 inch	3/16 inch	1/4 inch	5/16 inch
Steel	100% nitrogen	Spot	–	A3	400 / –	500 / –	600 / –	800 / –	1,000 / –	1,290 / –	1,890 / –	2,000** / –	– / –
		Autogenous	–	A4	310 / –	390 / –	470 / –	620 / –	750 / –	970 / –	1,480 / –	1,940* / –	1,940* / –
		Wire ER70S-6	.045 in.	A5	720 / 15	790 / 15	920 / 15	1,060 / 15	1,300 / 15	1,500 / 15	1,840 / 10	2,000* / 5	– / –
Stainless steel	100% nitrogen	Spot	–	A0	320 / –	400 / –	480 / –	650 / –	850 / –	1,050 / –	1,530 / –	2,000 / –	– / –
		Autogenous	–	A1	310 / –	390 / –	470 / –	620 / –	800 / –	970 / –	1,480 / –	1,940* / –	2,000* / –
		Wire 308L	.045 in.	A2	720 / 15	790 / 15	920 / 15	1,060 / 15	1,360 / 15	1,600 / 15	1,720 / 10	2,000* / 5	– / –
Steel/ stainless steel	100% nitrogen	Cleaning	–	C0	Low								
				C1	Medium								
				C2	High								

Note: Parameters are suggested settings. Additional adjustments may be required.
*Wobble Frequency set at -25   **Wobble Length set at -2

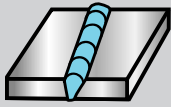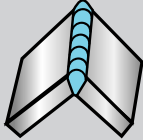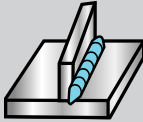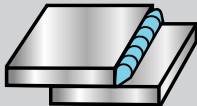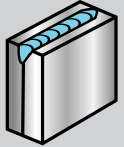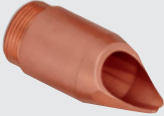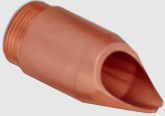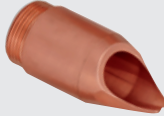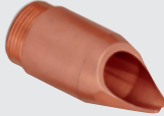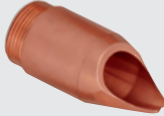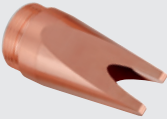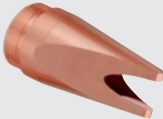### Aluminum Parameters

Metal	Shielding Gas	Weld Type	Wire Size	Program	Power /WPS								
					20 gauge	18 gauge	16 gauge	14 gauge	12 gauge	1/8 inch	3/16 inch	1/4 inch	5/16 inch
Aluminum 6XXX	100% argon	Spot	–	F3	– / –	300* / –	400 / –	480 / –	600 / –	950 / –	1,500 / –	– / –	– / –
		Autogenous	–	F4	– / –	300 / –	400 / –	480 / –	600 / –	900 / –	1,400 / –	– / –	– / –
		Wire 5356	.047 in.	F5	– / –	500 / 20	600 / 20	750 / 20	900 / 20	1,300 / 20	1,700 / 20	– / –	– / –
Aluminum 5XXX	100% argon	Spot	–	F0	– / –	300* / –	375 / –	450 / –	550 / –	900 / –	1,600 / –	– / –	– / –
		Autogenous	–	F1	– / –	300 / –	400 / –	450 / –	600 / –	900 / –	1,350* / –	1,750* / –	– / –
		Wire 5356	.047 in.	F2	– / –	500 / 20	600 / 20	750 / 20	900 / 20	1,300 / 20	1,700 / 20	2,000 / 15	– / –
Aluminum 6XXX/ 5XXX	100% argon	Cleaning	–	H0	Low								
				H1	Medium								
				H2	High								
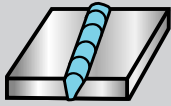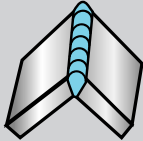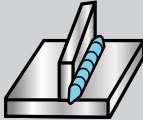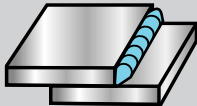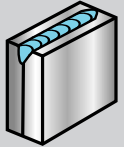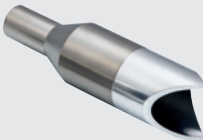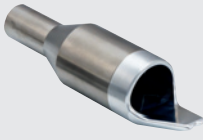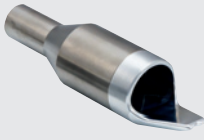
Note: Parameters are suggested settings. Additional adjustments may be required.
*Wobble Frequency set at -25   **Wobble Length set at -2

Miller

Welding Nozzle Selection

Butt Joint	Corner Joint	T Joint	Lap Joint	Edge Joint
301812 1-point **301815** Wire feed	**301812** 1-point **301815** Wire feed	**301812** 1-point **301815** Wire feed	**301812** 1-point **301815** Wire feed	**301812** 1-point **301815** Wire feed
301813 2-point (6 mm) **301814** 2-point (9 mm)		**301811** Conical	**301813** 2-point (6 mm) **301814** 2-point (9 mm)	

Cleaning Nozzle Selection

Butt Joint	Corner Joint	T Joint	Lap Joint	Edge Joint
301821 2-point	**301819** Outer corner	**301820** 1-point	**301820** 1-point	**301819** Outer corner

951000109 package includes:

- OptX 2kW laser machine
- OptX wire feeder
- OptX laser torch
- OptX accessory kit (301828) consisting of:
  - OptX carbon fiber laser welding helmet
  - OptX standard laser safety glasses
  - OptX torch cradle
  - OptX torch cover
  - Welding nozzles (set of 5)
  - Cleaning nozzles (set of 3)
  - Protective windows with o-rings (5-pack of each)
  - 10-foot (3 m) Cat 6 Ethernet cable
  - Contact tips
  - Additional components and tools
- OptX hardware kit (301801) consisting of:
  - Work-sense clamp
  - Smith regulator (30-150-580)
  - 5-foot (1.5 m) gas hose
  - .045 V-groove 4-roll drive roll kit
  - .047 U-groove 4-roll drive roll kit
  - Trigger cable

Genuine Miller® Accessories

OptX™ Carbon Fiber Laser Welding Helmet 301829
This lightweight, carbon fiber helmet was developed specifically for the OptX handheld laser system to protect against 1070 nm infrared laser light.

OptX™ Laser Safety Glasses
301830 Standard glasses
301831 Oversized frame
Polycarbonate glasses rated for OD 7 or greater at 1070 nanometers. The lightweight design and adjustable nose pads provide all-day comfort.

OptX™ Cart   301792
Provides a sturdy foundation for your OptX handheld laser welder, OptX wire feeder and two gas bottles. With plenty of storage for accessories, consumables and PPE, the rugged wheels allow for the ability to move the system around.

OptX™ Torch Cradle 301803
Magnetic cradle used to support the OptX torch head. Attached to metal tabletop or OptX cart for easy storage.

OptX™ Torch Cover   301798
Rubber cover that helps protect the torch assembly from impact.

Work-Sense Clamp   296162
Ensures continuity between the laser torch nozzle and the workpiece.

Welding Nozzles
301811 Conical
301812 1-point
301813 2-point (6 mm)
301814 2-point (9 mm)
301815 Wire feed
301832 Set of five — conical, 1-point, 2-point (6 mm and 9 mm) and wire feed

Cleaning Nozzles
301819 Outside corner
301820 1-point
301821 2-point
301833 Set of three — outside corner, 1-point and 2-point

Protective Window (5-pack)   301823
Used to protect the laser optics from debris in the OptX torch.

Ethernet Cable   301810
Used to connect a PC to the OptX power source for online access to customizing parameter settings and troubleshooting.

Performance TIG Gloves
263346 Small
263347 Medium
263348 Large
263349 X-Large
Completely unlined, goat grain leather with triple-padded palm.

Grain Leather Jacket
231090 Large
231091 X-Large
231092 2X-Large
Top-grain pigskin leather with flame-resistant inside cuff, satin lining and tapered, athletic cut. Sewn entirely with Kevlar® thread, adding structural durability at each seam.

Feeder Consumables

Wire Size	Guide Conduit	U-Groove Drive Rolls	V-Groove Drive Rolls	Guide Tips
.045 in. (1.1 mm)	301809	—	301825 (kit)	301822
.047 in. (1.2 mm)	301808	301826 (kit)	—	301822

Ordering Information

Package	Stock No.	Description	Qty.	Price
OptX™ 2KW Package	**951000109**	See page 6 for package contents		
Accessories				
OptX™ Carbon Fiber Laser Welding Helmet	**301829**			
OptX™ Laser Safety Glasses	**301830**	Standard glasses		
	301831	Oversized frame		
OptX™ Cart	**301792**			
OptX™ Torch Cradle	**301803**			
OptX™ Torch Cover	**301798**			
Work-Sense Clamp	**296162**			
Welding Nozzles		See page 7		
Cleaning Nozzles		See page 7		
Protective Window (5-pack)	**301823**			
Ethernet Cable	**301810**			
Performance TIG Gloves		See page 7		
Grain Leather Jacket		See page 7		
Consumables		See page 7		

Date: **Total Quoted Price:**

Call us toll-free at 866-931-9730 or email us at PWSService@millerwelds.com for additional information on safety and laser processes.

Miller
The Power of Blue®