

# Laser Welder Demo

Miller's Mobile  
Training Trailer  
will be on site at  
Airgas



Your local **American Welding Society** has worked with Miller Electric to bring you the Miller laser welder demo trailer — you don't want to miss this!

Demos begin at 8:00am, and end at 4:00pm with one hour time slots. Call or email Wayne Burns to reserve your spot.

At 4:30pm Miller will do a short presentation in the conference room explaining the laser process and the safety requirements.

Around 5:00pm we will head to the trailer for live demonstrations.

AWS will be providing a light dinner at 5:00pm. Please RSV to Beige Turner (bturner@vermeer.com) or Wayne Burns (wayne.burns@airgas.com) no later than April 1st, if you plan to attend the group meeting and meal at 4:30.

**Wayne Burns:** 515-577-4800  
wayne.burns@airgas.com



American Welding Society  
IOWA SECTION



## Event Details



### Date

April 2nd  
2025



### Time

One Hour  
Time Slots  
Available



### Airgas

2525 Dixon St  
Des Moines



### Contact

Wayne Burns  
to reserve you  
personal demo  
time.

# OptX™ 2kW

## Handheld Laser Welder

### Quick Specs

#### Applications

Sheet metal  
Fabrication  
Manufacturing  
Aerospace and defense  
Transportation  
HVAC

#### Processes

Laser welding  
Laser cleaning

#### Laser Output

2,000 W average power, 3,000 W peak power  
Class 4 primary laser: invisible high-power fiber laser (material processing laser for welding/cleaning)  
Class 2M guide laser: visible red guide laser beam (visual aid laser for positioning torch nozzle prior to starting welding/cleaning process)

#### Input Power

32 A, 240 V, single-phase

#### Process Gases

Argon, nitrogen

**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.**



**NEW!**

**CUSTOM MILLER  
PROGRAMS**



**INDUSTRIAL  
MILLER  
OptX  
WIRE FEEDER**

**HIGHLY  
PRODUCTIVE**

**EASY TO SET UP  
AND USE**  
**EASY**

**REDUCED  
TRAINING TIME**

#### 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®**  
3YR. WARRANTY

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



#### Miller Electric Mfg. LLC

An ITW Welding Company  
1635 West Spencer Street  
P.O. Box 1079  
Appleton, WI 54912-1079 USA

#### Equipment Sales US and Canada

Phone: 866-931-9730  
International Phone: 920-735-4554

#### MillerWelds.com



## 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 5–80 ipm
4. Toggle Switch
  - a. Left: Manual Wire Retract
  - b. Right: Manual Wire Jog
  - c. Right (Double Click): Auto Wire Load



## Specifications (Subject to change without notice.)

### OptX 2kW Power Source

Mode	Input Power	Output	Rated Output at 100% Duty Cycle	Amps Input at Rated Output, 50/60 Hz 240 V KVA KW			Dimensions (H x W x D)	Net Weight
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

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.)	.023–5/64 in. (0.6–2.0 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/Stainless Steel	20 gauge–1/4 in.	20 gauge–1/4 in.	15–20 ipm (0.3–0.5 mpm)	Nitrogen
Copper	18 gauge–1/8 in.	18 gauge–1/8 in.		

## 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	220 / —	300 / —	400 / —	500 / —	680 / —	880 / —	1,360 / —	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	— / —
			1/16 in.	A6	— / —	800 / 15	980 / 15	1,170 / 15	1,600 / 15	1,860 / 12	1,950* / 8	— / —	— / —
Stainless steel	100% nitrogen	Spot	—	A0	200 / —	240 / —	300 / —	400 / —	650 / —	740 / —	1,200 / —	1,720 / —	— / —
		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	— / —
			1/16 in.	A8	— / —	800 / 15	980 / 15	1,170 / 15	1,600 / 15	1,860 / 12	1,900* / 8	— / —	— / —
Steel/ stainless steel	100% nitrogen	Cleaning	—	C0	Low (Default Setting: 800 W, 15 mm)								
				C1	Medium (Default Setting: 900 W, 15 mm)								
				C2	High (Default Setting: 1,000 W, 15 mm)								

Notes: Recommended retract for .045 in. wire is 0.45 in. and 1/16 in. wire is 0.65 in. All parameters are suggested settings. Additional adjustments may be required.

\*Wobble Frequency set at -25.

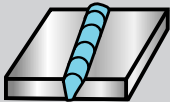
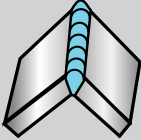
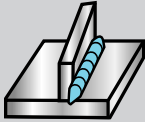
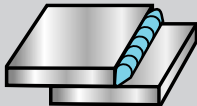
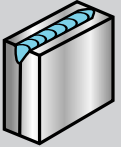
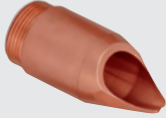
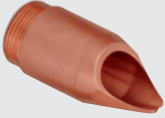
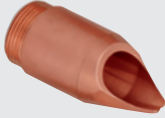
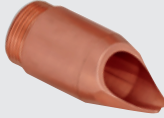
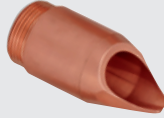
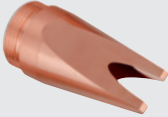


### Aluminum Parameters

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	— / —	— / —
			1/16 in.	F6	— / —	— / —	620 / 20	750 / 20	920 / 20	1,500 / 20	— / —	— / —	— / —
Aluminum 5XXX	100% argon	Spot	—	F0	— / —	300* / —	380 / —	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	— / —
			1/16 in.	F7	— / —	— / —	620 / 20	750 / 20	950 / 20	1,400 / 20	1,800 / 10	— / —	— / —
Aluminum 6XXX/ 5XXX	100% argon	Cleaning	—	H0	Low (Default Setting: 1,200 W, 15 mm)								
				H1	Medium (Default Setting: 1,300 W, 15 mm)								
				H2	High (Default Setting: 1,400 W, 15 mm)								

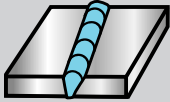
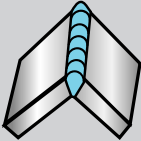
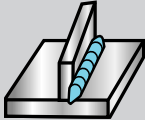
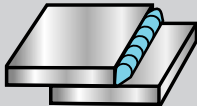
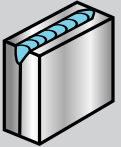
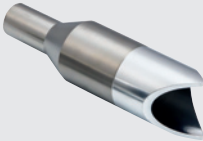
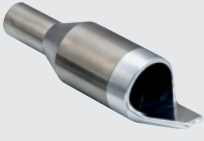

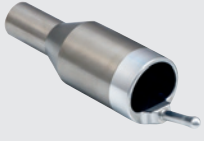
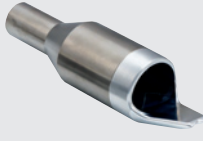
Notes: Recommended retract for .047 in. wire is 0.45 in. and 1/16 in. wire is 0.65 in. All parameters are suggested settings. Additional adjustments may be required.

\*Wobble Frequency set at -25.

## Welding Nozzle Selection

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

## Cleaning Nozzle Selection

Butt Joint	Corner Joint	T Joint	Lap Joint	Edge Joint
				
				
<b>301821</b> 2-point	<b>301819</b> Outer corner	<b>301820</b> 1-point	<b>301820</b> 1-point	<b>301819</b> Outer corner

## OptX 2KW Package



### 951000109 package includes:

- OptX 2kW laser machine
- OptX wire feeder
- OptX laser torch
- 11-foot (3.4 m) conduit wire, steel
- 11-foot (3.4 m) conduit wire, aluminum
- OptX accessory kit 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)
  - Contact tips
  - Protective windows with o-rings (5-pack of each)
  - 10-foot (3 m) Cat 6 Ethernet cable
  - Additional components and tools
- OptX hardware kit consisting of:
  - Work-sense clamp
  - Smith regulator (30-150-580)
  - 5-foot (1.5 m) gas hose
  - .045 in. V-groove 4-roll drive roll kit
  - .047 in. 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



**OptX™ Contact Tips (Package of 10)**

**301822** .045–.047 in. (1.2 mm)

**301845** 1/16 in. (1.6 mm)



**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	Wire Type	Guide Conduit	V-Groove Drive Rolls	U-Groove Drive Rolls
.045 in. (1.1 mm)	Steel	<b>301809</b>	<b>301825 (kit)</b>	—
.047 in. (1.2 mm)	Aluminum	<b>301808</b>	—	<b>301826 (kit)</b>
1/16 in. (1.6 mm)	Steel	<b>301834</b>	<b>301843 (kit)</b>	—
1/16 in. (1.6 mm)	Aluminum	<b>301835</b>	—	<b>301844 (kit)</b>



## Ordering Information

Package	Stock No.	Description	Qty.	Price
<b>OptX™ 2KW Package</b>	<b>951000109</b>	See page 6 for package contents		
<b>Accessories</b>				
OptX™ Carbon Fiber Laser Welding Helmet	<b>301829</b>			
OptX™ Laser Safety Glasses	<b>301830</b> <b>301831</b>	Standard glasses Oversized frame		
OptX™ Cart	<b>301792</b>			
OptX™ Torch Cradle	<b>301803</b>			
OptX™ Torch Cover	<b>301798</b>			
Work-Sense Clamp	<b>296162</b>			
Welding Nozzles		See page 7		
Cleaning Nozzles		See page 7		
Contact Tips		See page 7		
Protective Window (5-pack)	<b>301823</b>			
Ethernet Cable	<b>301810</b>			
Performance TIG Gloves		See page 7		
Grain Leather Jacket		See page 7		
OptX™ Wire Delivery Guide Attachment	<b>301806</b>			
OptX™ Wire Delivery Guide Adapter	<b>301807</b>	For conduit to attachment		
OptX™ 11-Foot Liner	<b>301796</b> <b>301795</b> <b>301836</b> <b>301837</b>	For 0.045 in. steel For 0.047 in. aluminum For 1/16 in. steel For 1/16 in. aluminum		
1/16-Inch Conversion Kits	<b>301827</b>  <b>301828</b>	Steel kit: 1/16 in. steel wire conduit (11 ft. length), 1/16 in. V-groove drive roll kit, and 1/16 in. contact tips (10-pack) Aluminum kit: 1/16 in. aluminum wire conduit (11 ft. length), 1/16 in. U-groove drive roll kit, and 1/16 in. contact tips (10-pack)		
OptX™ Focus Lens Installation Tool	<b>301794</b>			
OptX™ Nozzle Protective Cap	<b>301799</b>			
OptX™ Nozzle Extension	<b>301817</b> <b>301816</b>	Steel Aluminum		
OptX™ Nozzle Tube	<b>301818</b>	58 mm		
<b>Feeder Consumables</b>				
OptX™ 11-Foot Conduit Wire	<b>301809</b> <b>301808</b> <b>301834</b> <b>301835</b>	For 0.045 in. steel For 0.047 in. aluminum For 1/16 in. steel For 1/16 in. aluminum		
V-Groove 4-Drive Roll Kit for Steel Wire	<b>301825</b> <b>301843</b>	.045 in. Includes inlet wire guide and intermediate wire guide 1/16 in. Includes inlet wire guide and intermediate wire guide		
U-Groove 4-Drive Roll Kit for Aluminum Wire	<b>301826</b> <b>301844</b>	.047 in. Includes inlet wire guide and intermediate wire guide 1/16 in. Includes inlet wire guide and intermediate wire guide		

Date:

Total Quoted Price:

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

Distributed by:

