

**Алматы** (7273)495-231  
**Ангарск** (3955)60-70-56  
**Архангельск** (8182)63-90-72  
**Астрахань** (8512)99-46-04  
**Барнаул** (3852)73-04-60  
**Белгород** (4722)40-23-64  
**Благовещенск** (4162)22-76-07  
**Брянск** (4832)59-03-52  
**Владивосток** (423)249-28-31  
**Владикавказ** (8672)28-90-48  
**Владимир** (4922)49-43-18  
**Волгоград** (844)278-03-48  
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**Воронеж** (473)204-51-73  
**Екатеринбург** (343)384-55-89

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**Иваново** (4932)77-34-06  
**Иркутск** (395)279-98-46  
**Казань** (843)206-01-48  
**Калининград** (4012)72-03-81  
**Калуга** (4842)92-23-67  
**Кемерово** (3842)65-04-62  
**Киров** (8332)68-02-04  
**Коломна** (4966)23-41-49  
**Кострома** (4942)77-07-48  
**Краснодар** (861)203-40-90  
**Красноярск** (391)204-63-61  
**Курск** (4712)77-13-04  
**Курган** (3522)50-90-47  
**Липецк** (4742)52-20-81

**Киргизия** (996)312-96-26-47

**Магнитогорск** (3519)55-03-13  
**Москва** (495)268-04-70  
**Мурманск** (8152)59-64-93  
**Набережные Челны** (8552)20-53-41  
**Нижний Новгород** (831)429-08-12  
**Новокузнецк** (3843)20-46-81  
**Ноябрьск** (3496)41-32-12  
**Новосибирск** (383)227-86-73  
**Ноябрьск** (3496)41-32-12  
**Омск** (3812)21-46-40  
**Орел** (4862)44-53-42  
**Оренбург** (3532)37-68-04  
**Пенза** (8412)22-31-16  
**Петрозаводск** (8142)55-98-37  
**Псков** (8112)59-10-37

**Россия** (495)268-04-70

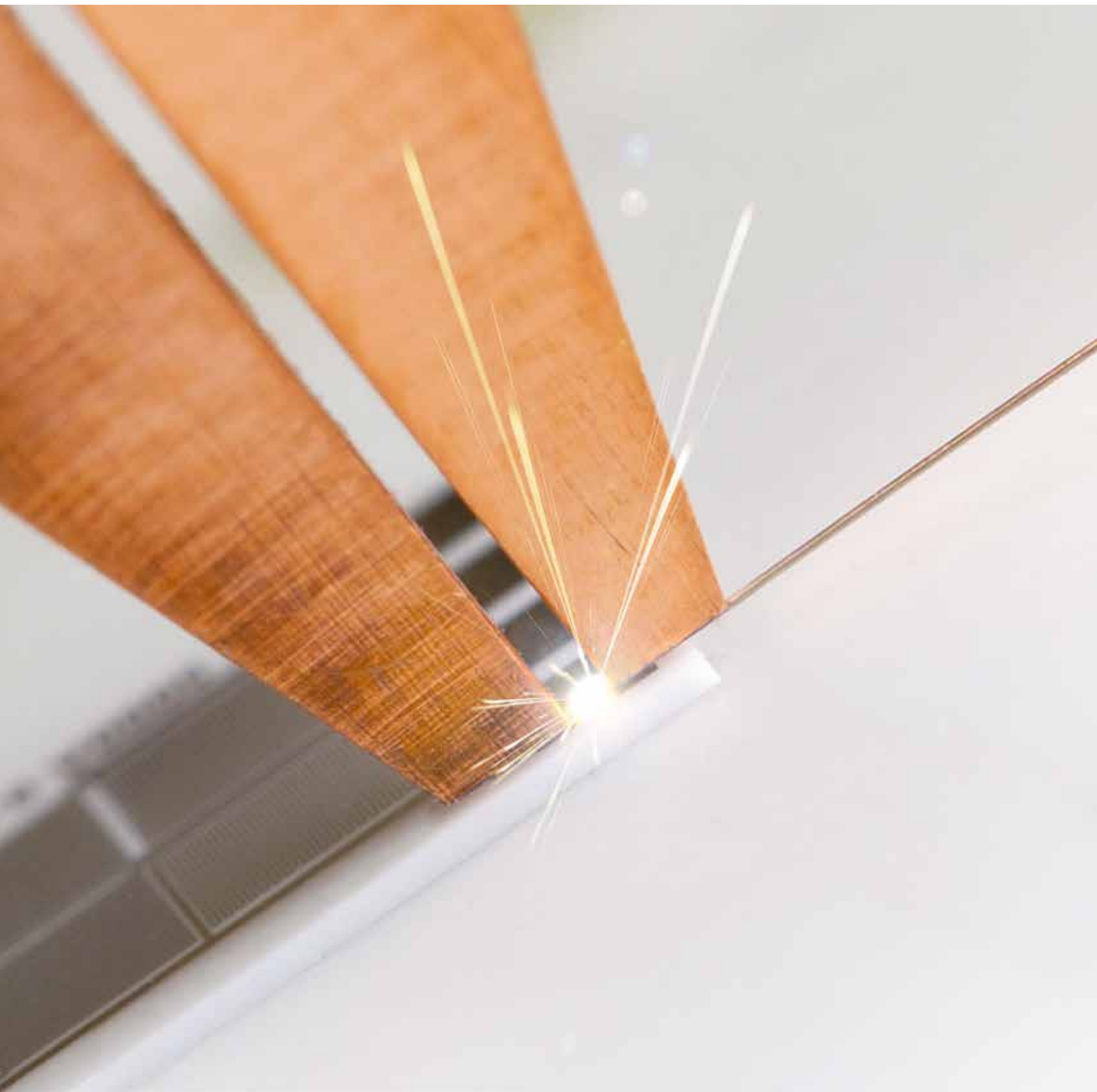
**Пермь** (342)205-81-47  
**Ростов-на-Дону** (863)308-18-15  
**Рязань** (4912)46-61-64  
**Самара** (846)206-03-16  
**Саранск** (8342)22-96-24  
**Санкт-Петербург** (812)309-46-40  
**Саратов** (845)249-38-78  
**Севастополь** (8692)22-31-93  
**Симферополь** (3652)67-13-56  
**Смоленск** (4812)29-41-54  
**Сочи** (862)225-72-31  
**Ставрополь** (8652)20-65-13  
**Сыктывкар** (8212)25-95-17  
**Сургут** (3462)77-98-35  
**Тамбов** (4752)50-40-97

**Казахстан** (772)734-952-31

**Тверь** (4822)63-31-35  
**Тольятти** (8482)63-91-07  
**Томск** (3822)98-41-53  
**Тула** (4872)33-79-87  
**Тюмень** (3452)66-21-18  
**Улан-Удэ** (3012)59-97-51  
**Ульяновск** (8422)24-23-59  
**Уфа** (347)229-48-12  
**Хабаровск** (4212)92-98-04  
**Чебоксары** (8352)28-53-07  
**Челябинск** (351)202-03-61  
**Череповец** (8202)49-02-64  
**Чита** (3022)38-34-83  
**Якутск** (4112)23-90-97  
**Ярославль** (4852)69-52-93

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## КАТАЛОГ





# The World's Bestselling Pulse Arc Welders

## Orion™ Pulse Arc Technology with Precision Energy Control!

- **Save Time.** Ball up wires, add metal, or fill porosity quickly and easily.
- **Faster ROI.** Accomplish most of what a laser can do at half the cost.
- **Touchscreen Simplicity.** Control all aspects of the weld digitally. No knobs!
- **Precision in a Broad Power Range.** Choose the Orion model right for your needs.



### Orion mPulse

*For small studios or budgets!  
Starting at USD \$2,400\**



### Orion PJ

*Perfect For Permanent Jewelry!  
Starting at USD \$2,800\*.  
Patent Pending.*

## Specifications

|                                    | orion™ mPulse               | orion™ PJ                   |
|------------------------------------|-----------------------------|-----------------------------|
| POWER SUPPLY FOOTPRINT (L X W X H) | 13.79x13.34x9.21cm          | 5.24 x 10.16 x 15.24 cm     |
| TOTAL WEIGHT                       | 13.2 kg                     | 10 kg                       |
| INPUT VOLTAGE                      | 100-240 VAC (AUTO DETECTED) | 100-240 VAC (AUTO DETECTED) |
| ENERGY RANGE (JOULES)              | <b>3-30 J</b>               | <b>1-15 J</b>               |
| EST WELD SPOT DIAMETER RANGE       | ≈ 0.75 - 1.5 mm             | ≈ 0.5 - 1 mm                |
| DISPLAY (TOUCH SCREEN)             | 11 cm                       | 11 cm                       |
| WELD SPEED                         | 1 weld/2 seconds            | 1 weld/1 seconds            |
| HIGH FREQ AGITATION OPTIONS        | None                        | None                        |
| AVAILABLE POWER SETTINGS           | 27                          | 29                          |
| SAVE SETTINGS SPACES               | 0                           | 0                           |
| 5X MAGNIFICATION                   | •                           | •                           |
| IR & UV EYE PROTECTION VIA SCOPE   | •                           | •                           |
| 20+ ON-SCREEN LANGUAGES            |                             |                             |
| FOOT PETAL INPUT                   |                             |                             |
| ARC START TECHNOLOGY               |                             |                             |
| TACK MODE                          |                             |                             |
| BASIC SCREEN METAL PRESETS         |                             |                             |
| UPGRADEABLE SOFTWARE               |                             |                             |
| ON SCREEN TRAINING VIDEOS          |                             |                             |
| ADAPTIVE WELD IGNITION             |                             |                             |
| DYNAMIC ENERGY ADJUSTMENT          |                             |                             |
| MULTIPLE WELDING WAVEFORMS         |                             |                             |
| PICO MODE                          |                             |                             |



**Orion 100c**  
*More energy and capability!*  
 Starting at USD \$4,400



**Orion 150s**  
*Our best selling model!*  
 Starting at USD \$5,900



POWER SOURCE  
 NOT PICTURED

**Orion 200i**  
*For studios that want it all!*  
 Starting at USD \$8,400

| orion™ 100c                 | orion™ 150s                 | orion™ 200i                 |
|-----------------------------|-----------------------------|-----------------------------|
| 27.3x15.2x16.9 cm           | 30.5x12.7x25.4 cm           | 40.6x12.7x26.7 cm           |
| 17.2 kg                     | 19.9 kg                     | 26.3 kg                     |
| 100-240 VAC (AUTO DETECTED) | 100-240 VAC (AUTO DETECTED) | 100-240 VAC (AUTO DETECTED) |
| <b>3-100 J</b>              | <b>1-150 J</b>              | <b>0.2-200 J</b>            |
| ≈ 0.75 - 2.5 mm             | ≈ 0.5 - 3.5 mm              | ≈ 0.1 - 4.5 mm              |
| 13 cm                       | 20 cm                       | 25 cm                       |
| 1 weld/0.7 seconds          | 1 weld/0.3 seconds          | 1 weld/0.2 seconds          |
| Basic                       | Multiple                    | Advanced                    |
| 100                         | 280                         | 20,000                      |
| 30                          | 1000+                       | Unlimited                   |
| •                           | •                           | •                           |
| •                           | •                           | •                           |
| •                           | •                           | •                           |
| •                           | •                           | •                           |
| •                           | •                           | •                           |
| •                           | •                           | •                           |
| •                           | •                           | •                           |
| •                           | •                           | •                           |
|                             |                             | •                           |
|                             |                             | •                           |
|                             |                             | •                           |
|                             |                             | •                           |
|                             |                             | •                           |



# Advanced Fine-Spot Resistance Welders

*Precise, Repeatable Control Over Every Aspect of Every Weld*



## The Sunstone® CDDP-A

*Now available in Four Models:  
200, 400, 600, 1200*

- Touchscreen, Full-color Interface
- Visual Graph of Weld Waveform
- High-precision Energy Adjustment
- Histogram
- Comparator with Voltage, Current, Power
- Alarms and Warnings
- Timestamp Data Feedback
- Import/Export Weld Data
- Multiple Languages
- Software Updates with WiFi Connectivity
- Save Settings
- Built-in Training Videos, Documentation
- Full Welder Cloning Capabilities
- Easy-to-Reach Emergency Stop
- PLC Ready
- Dual Weld Head Control
- Roll-spot Welding
- Lock-out Mode

## Application Ideas

Honeycomb Tacking; Battery Pack Connections; Continuous Roll Spot Welding; Cross-wire Welding; Thermocouples; Thin Sheets or Wire of Copper, Aluminum, Brass, and other Conductive Metals; Miscellaneous Resistive Applications; and More!

**Compatible with Many Weld Heads and Hand Pieces: High Force, Opposed, Parallel, Tweezer, and More!**

## Specifications

|                                                                                                                            | CD200DP-A                         | CD400DP-A                         | CD600DP-A                         | CD1200DP-A                        |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| TABLETOP FOOTPRINT (L X W X H)                                                                                             | 22.8x48.2x30.5 cm                 | 22.8x48.2x30.5 cm                 | 22.8x48.2x30.5 cm                 | 30.5x33x48.2 cm                   |
| UNIT WEIGHT                                                                                                                | 19.6 kg                           | 20.2 kg                           | 20.8 kg                           | 30.4 kg                           |
| INPUT VOLTAGE                                                                                                              | 85 - 260 VAC                      | 85 - 260 VAC                      | 85 - 260 VAC                      | 85 - 260 VAC                      |
| FREQUENCY RANGE                                                                                                            | 47 - 63 Hz                        | 47 - 63 Hz                        | 47 - 63 Hz                        | 47 - 63 Hz                        |
| POWER FACTOR (typ.)                                                                                                        | PF>0.94/230 VAC<br>PF>.99/115 VAC | PF>0.94/230 VAC<br>PF>.99/115 VAC | PF>0.94/230 VAC<br>PF>.99/115 VAC | PF>0.94/230 VAC<br>PF>.99/115 VAC |
| AC CURRENT (typ.)                                                                                                          | 8.5A/115 VAC<br>5A/230 VAC        | 8.5A/115 VAC<br>5A/230 VAC        | 8.5A/115 VAC<br>5A/230 VAC        | 17A/119 VAC<br>10A/230 VAC        |
| POTENTIAL PEAK INPUT<br>ACTUAL AVERAGE CURRENT (welding)                                                                   | 5A/115 VAC<br>3A/230 VAC          | 5A/115 VAC<br>3A/230 VAC          | 5A/115 VAC<br>3A/230 VAC          | 8.9A/119 VAC<br>5A/230 VAC        |
| SINGLE AND DUAL PULSE                                                                                                      | YES                               | YES                               | YES                               | YES                               |
| PULSE 1 ENERGY ADJUSTMENT                                                                                                  | 0-30%                             | 0-30%                             | 0-30%                             | 0-30%                             |
| PULSE 2 ENERGY ADJUSTMENT                                                                                                  | 0-100%                            | 0-100%                            | 0-100%                            | 0-100%                            |
| <b>WELD PULSE CHARACTERISTICS</b>                                                                                          |                                   |                                   |                                   |                                   |
| MIN AND MAX OUTPUT                                                                                                         | 0.2 ws - 200 ws                   | 0.2 ws - 400 ws                   | 0.2 ws - 600 ws                   | 0.2 ws - 1,200 ws                 |
| MIN AND MAX PULSE WIDTH                                                                                                    | 0.27 ms - 19.5 ms                 | 0.29 ms - 30 ms                   | 0.31 ms - 40.5 ms                 | 1.13 ms - 60 ms                   |
| RISE TIME (to max voltage)                                                                                                 | 0.2 ms                            | 0.2 ms                            | 0.2 ms                            | 0.2 ms                            |
| MIN AND MAX PULSE HEIGHT                                                                                                   | 1.1 V - 15.8 V                    | 0.9 V - 18.3 V                    | 0.8 V - 19.4 V                    | 0.3 V - 19.4 V                    |
| <b>WELDS PER MINUTE BY % OF TOTAL WELD ENERGY (IN DUAL PULSE MODE, MAX ENERGY, PULSE WIDTH AT 100%)</b>                    |                                   |                                   |                                   |                                   |
| 0.10% with both pulses enabled                                                                                             | 650 (0.2 ws)                      | 600 (0.4 ws)                      | 530 (0.6 ws)                      | 460 (1.2 ws)                      |
| 0.10%                                                                                                                      | 550 (0.2 ws)                      | 530 (0.4 ws)                      | 500 (0.6 ws)                      | 260 (1.2 ws)                      |
| 1%                                                                                                                         | 450 (2 ws)                        | 290 (4 ws)                        | 240 (6 ws)                        | 214 (12 ws)                       |
| 5%                                                                                                                         | 250 (10 ws)                       | 160 (20 ws)                       | 130 (30 ws)                       | 120 (60 ws)                       |
| 10%                                                                                                                        | 190 (20 ws)                       | 120 (40 ws)                       | 90 (60 ws)                        | 85 (120 ws)                       |
| 25%                                                                                                                        | 130 (50 ws)                       | 70 (100 ws)                       | 60 (150 ws)                       | 52 (300 ws)                       |
| 50%                                                                                                                        | 90 (100 ws)                       | 50 (200 ws)                       | 40 (300 ws)                       | 36 (600 ws)                       |
| 100%                                                                                                                       | 60 (200 ws)                       | 30 (400 ws)                       | 30 (600 ws)                       | 23 (1200 ws)                      |
| <b>PEAK WELD CURRENT* (BY EXTERNAL CABLING GAUGE NUMBER, AWG. FOUR AND EIGHT AWG IS TYPICAL FOR HAND-HELD ATTACHMENTS)</b> |                                   |                                   |                                   |                                   |
| 1 AWG 8ft                                                                                                                  | 6583 A                            | 7625 A                            | 8080 A                            | 8500 A                            |
| 4 AWG 8ft                                                                                                                  | 4575 A                            | 4910 A                            | 5225 A                            | 5800 A                            |
| 8 AWG 8ft                                                                                                                  | 3038 A                            | 3520 A                            | 3730 A                            | 3960 A                            |

\*MINIMUM LOAD = 1mOhm. USING A SMALLER LOAD MAY DAMAGE THE WELDER.

## RECOMMENDED WELD HEADS



SUPER P



PRO P  
OPPOSED



PRO P  
PARALLEL



PRO E  
OPPOSED



PRO E  
PARALLEL



# Closed-loop Feedback, Onboard Monitoring!

## *Onboard Force and Displacement Monitoring\* Saves Money*

### The Sunstone Picó™ DC

*A DC resistance welder with closed-loop feedback!*

- Closed-Loop Feedback
- Force and Displacement Monitoring\*
- Full-Color, Touchscreen Interface
- Visual Weld Waveform Graphic
- Single- and Dual-Pulse Capability
- High-Precision Energy Adjustment
- Histogram and Comparator
- Alarms and Warnings
- Timestamp Data Feedback
- Import/Export Weld Data
- Multiple Languages
- WiFi Software Updates
- Save and Clone Capabilities
- PLC Ready
- Lock-Out Mode

### *Application Ideas*

Thermocompression, Fine Wire Welding, Solar Cell Welding, PCB Repair, Heating Elements, Fine Ribbon Bonding, Magnet Wire Welding, Small Coil Termination, Electronics.

**Compatible with the Micro E Weld Head!**



### Specifications

|                                    |                                          |
|------------------------------------|------------------------------------------|
| TABLETOP FOOTPRINT (L X W X H)     | 22.4x48.2x30.5 cm                        |
| UNIT WEIGHT                        | 19.6 kg                                  |
| INPUT VOLTAGE (SINGLE PHASE)       | 90-264 VAC                               |
| FREQUENCY RANGE                    | 47-63 Hz                                 |
| POWER FACTOR (TYP.)                | 0.95/230 VAC (0.98/115 VAC at Full Load) |
| OUTPUT VOLTAGE RANGE               | 0.10-5.00 V (0.01 V Intervals)           |
| OUTPUT CURRENT RANGE               | 10.0-250 A                               |
| OUTPUT POWER RANGE                 | 1.0-650 W                                |
| WELD TIME (EACH PULSE)             | 1-500 ms (1 ms intervals)                |
| SINGLE AND DUAL PULSE              | YES                                      |
| PULSE 1, PULSE 2 ENERGY ADJUSTMENT | 0-100%                                   |
| NUMBER OF SCHEDULES                | 1,000+                                   |
| TYPICAL RISE TIME (TO MAX VOLTAGE) | 10 ms                                    |

# Ultra Precision with Electromagnetic Linear Motion!

*Providing as Little as 30 Grams of Force and 1 Micron in Accuracy*

## The Sunstone Micro E™ Weld Head

*The weld head of choice when precision in force, position, and displacement are paramount!*

- Electromagnetic Linear Motion
- 30-2000 g Adjustable Weld Head Force
- Positional Accuracy of 1 Micron
- Built-in Force, Position, and Displacement Feedback\*
- 7x Microscopic Optics
- Multi-Joint Microscopic Arm
- 300 Lumens LED Lamp
- Removable Ceramic Base Plate
- Rotary Height Adjustment



### Specifications

|                                              |                                                                                    |
|----------------------------------------------|------------------------------------------------------------------------------------|
| TABLETOP FOOTPRINT (L X W X H)               | 56x10.8x45.7 cm w/ MICROSCOPE, 14x10.8x45.7 cm w/o MICROSCOPE                      |
| UNIT WEIGHT                                  | 10.1 kg w/ MICROSCOPE 8.9 kg w/o MICROSCOPE                                        |
| ELECTRODE STROKE (TRAVEL DISTANCE) DISTANCE) | 25 mm                                                                              |
| FORCE RANGE                                  | 30-2000 g                                                                          |
| POSITION DISPLACEMENT ACCURACY               | ±1 Micron                                                                          |
| DUTY CYCLE (30 G TO 2 KG HOLDING FORCE)      | 100%                                                                               |
| HEAD TYPE                                    | PARALLEL                                                                           |
| WELD FORCE METHOD                            | DIRECT                                                                             |
| ACTUATION METHOD                             | LINEAR SERVO ACTUATOR                                                              |
| THROAT DEPTH                                 | 17.8 cm                                                                            |
| ELECTRODE SPEED                              | HOME POINT TO HOVER POINT: 1-100 mm/sec<br>HOVER POINT TO WELD POINT: 1-100 mm/sec |
| POWER INPUT                                  | 48 Vdc @ 2.5 A                                                                     |
| WELDING CURRENT                              | 300 A @ 50% DC                                                                     |
| OPERATING TEMPERATURE                        | 0 to 65° C                                                                         |

### Application Ideas

Microelectronics, Electric Motors and Coils, Actuators, Magnetic Wire, Solar Cells, and More!

***Compatible with the Picó DC Welder!***

\*Force, displacement, and position monitoring only available when the Picó is paired with the Micro E.



# Advanced HF Inverter Technology

*Perfection in Every Weld!*



## The Sunstone Aeon™ HF

### *The Most Advanced HF Inverter Technology*

The Aeon HF is a high frequency inverter spot welder that leverages the latest technology to produce an exceptional weld for many different applications. With the Aeon HF, Sunstone has re-invented high frequency welding technology, providing manufacturers with an ultra-modern HF welding solution backed by experienced customer service and a 2-year warranty. With one look, you can tell the Aeon HF is not your typical HF inverter welder. Patent Pending.

- Higher Duty Cycle Than the Competition
- Exceptionally Clean, Smooth Welds
- 3-Phase Power Input
- Digital Touchscreen for Faster Learning and Easy Operation
- Adjustable Upslope/Downslope Energy Control
- Production-Ready with Closed-Loop Feedback
- Independently Control 2 Separate Welding Pulses
- Ready to Pair with ALL Sunstone Weld Head
- Weld Times up to 3 Seconds
- Backed by a 1-Year Warranty



## Specifications

|                                                         |                                                                                                                         |             |             |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------|-------------|
| Model Number                                            | HF-2500/208                                                                                                             | HF-2500/400 | HF-2500/480 |
| Nominal voltage range (3 phase)                         | 208 VAC                                                                                                                 | 400 VAC     | 480 VAC     |
| Line voltage range (VAC)                                | 192 to 220VAC                                                                                                           | 360 to 420  | 430 to 504  |
| Output kW @ maximum demand                              | 6.25kW                                                                                                                  |             |             |
| Output transformer voltage @ max rated output current   | 2.5V                                                                                                                    |             |             |
| Open circuit max. output voltage @ nominal line         | 10V                                                                                                                     |             |             |
| Output Current                                          | 2500A @ 12% duty cycle                                                                                                  |             |             |
| Output feedback response time (current, voltage, power) | 40μS                                                                                                                    |             |             |
| Programmable weld pulse segments                        | Squeeze, pulse 1(P1) upslope, P1 weld, P1 downslope, cool, P2 upslope, P2 weld, P2 downslope, hold                      |             |             |
| Weld schedule memory                                    | Save thousands of weld schedules which can be locked and protected                                                      |             |             |
| Control Modes                                           | Constant power, current, voltage, and combo modes                                                                       |             |             |
| Measurement Parameters                                  | Monitoring current, power, and resistance independently on each pulse. Also monitoring envelope, time limits and energy |             |             |
| Graphic display                                         | 10" touch HD LCD displays all information pertinent for welding                                                         |             |             |
| Current measurement range/accuracy                      | 200A to 2500A, +/- 2A                                                                                                   |             |             |
| Voltage measurement range/accuracy                      | 0.10V to 10.00V +/- 0.05V                                                                                               |             |             |
| Power measurement range/accuracy                        | 0.01kW to 6.25kW +/- 20W                                                                                                |             |             |
| Alarms                                                  | Display alert, audio alarm, PLC Outputs for alarms                                                                      |             |             |

## I/O and Data Communications

|                          |                                                                                                       |
|--------------------------|-------------------------------------------------------------------------------------------------------|
| Input Isolation          | All inputs and outputs are fully isolated                                                             |
| Firing switch initiation | Multiple methods: Single or dual foot, mechanical, and/or optical firing switch                       |
| Remote control           | Basic weld remote schedule select, advanced remote weld settings select, weld inhibit, emergency stop |
| Ethernet - Modbus        | Change weld schedules, change individual weld parameters, receive detailed weld data                  |
| Electrode voltage        | Weld voltage feedback operation                                                                       |
| Dimensions               | 12.5" x 19.5" x 15" (318mm x 496mm x 381mm) [W x L x H]                                               |
| Weight                   | 67lbs (31kg)                                                                                          |



# Build a Better Battery

*Attach Copper Tabs to Any Battery and Boost Efficiency*



## The Sunstone Omega™

*The battery welding solution available in three different configurations!*

- **Dissimilar Welding Capabilities.** Copper to steel, copper to aluminum, nickel to steel—ideal for battery welding!
- **3 Available Configurations:** Stylus only, weld head, CNC table or robotic arm.
- **250 Ws Max Energy.** Our most powerful pulse arc micro welder.
- **Weld materials 0.003-.030" (0.075-0.75mm) in thickness.** Perfect for attaching copper tabs to power cells.
- **Digital Control.** Adjust and control all energy attributes with color touch screen.
- **Visual Waveform Graphs.** View energy waveforms.
- **PLC-Ready.** 5 outputs/2 inputs easily integrate into your production process.
- **CNC Compatibility.** Attaches to a CNC table for maximum production levels (call for details).
- **127 Remote Schedules.** Quick access to saved welds.
- **Import/Export Saved Welds.** Easily transfer to other units.
- **Lock-Out Mode.** Prevent unintended changes to settings.
- **Alarms and Warnings.** Avoid time-consuming errors or potentially hazardous conditions.
- **WiFi Software Upgrades.** Software is easily maintained.

# Omega™ Configurations

Stylus • Weld Head • CNC/Robotic Table



## Omega Control Panel and Stylus

Use the stylus configuration for R&D or manual production processes.

## Omega Power Source

Small footprint fits under a worktable or can be attached to any vertical surface.

## Omega Weld Head

The electrode housing is specifically designed for batteries. Expertly controlled by the Omega control panel.

## CNC/Robotics

A specialized Omega weld head for automated production lines is also available.

## Power Supply Specifications

|                               |                                                         |
|-------------------------------|---------------------------------------------------------|
| Energy (min-max in Joules)    | 0.01 - 250                                              |
| Current (min-max in Amps)     | 6 - 1000A                                               |
| Power Settings                | 20,000 (0.1-250 Ws (Joules))                            |
| Pulse Arc Weld Current        | 6-1000 Amps                                             |
| Length (min-max)              | 0.2 - 100ms                                             |
| Length Settings               | 6000                                                    |
| Weld Spot Diameter Range      | ≈ 0.1 - 4.5mm                                           |
| High Frequency Agitation      | Multiple/Advanced                                       |
| Pulse Shaping                 | Advanced                                                |
| *Max Welding Speed (Hz)       | 30Hz                                                    |
| *Max Charging Time            | 1.2 s                                                   |
| Frequency                     | 1 Weld/0.5 Sec or<br>1-5 Welds/Sec or<br>1-30 Welds/Sec |
| Tack Welding                  | Yes                                                     |
| Microscope Magnification      | 5x                                                      |
| Microscope UV Protection      | >UV 16                                                  |
| Microscope IR Protection      | >IR 16                                                  |
| Microscope Lens               | Auto Variable Darkening Les                             |
| Internal Weld Monitoring      | Yes                                                     |
| Display (Touch Screen)        | 10" Color Touch Screen                                  |
| Languages                     | 25 +                                                    |
| Welder (L x W x H)            | 17.5" x 5" x 11" ( 43.2 x 12.7 x 27.9 cm)               |
| Weld Programs                 | 16                                                      |
| Save Settings Spaces          | 1000                                                    |
| CE Certificate                | Yes                                                     |
| USB/WiFi Upgradeable Software | Yes                                                     |

## Weld Head Specifications

|                            |                       |
|----------------------------|-----------------------|
| Collets                    | 1.0 mm                |
| Pressure Range             | 30-90psi (120psi max) |
| Height Adjustment          | 0-7" (17.8 cm)        |
| Force Weight               | 1-14 lbs (4.5-62N)    |
| Preferred Working Distance | 1/8-1/2"              |
| Actual Working Distance    | See chart at right    |
| Weld Cycle Rate            | 30 welds per minute   |
| Weight                     | 28 lbs. (12.7 Kg)     |
| Shipping Weight            | 36 lbs. (16.33 Kg)    |



**Free Sample!**  
Scan and have an Omega Battery  
Weld Sample to be shipped to door!

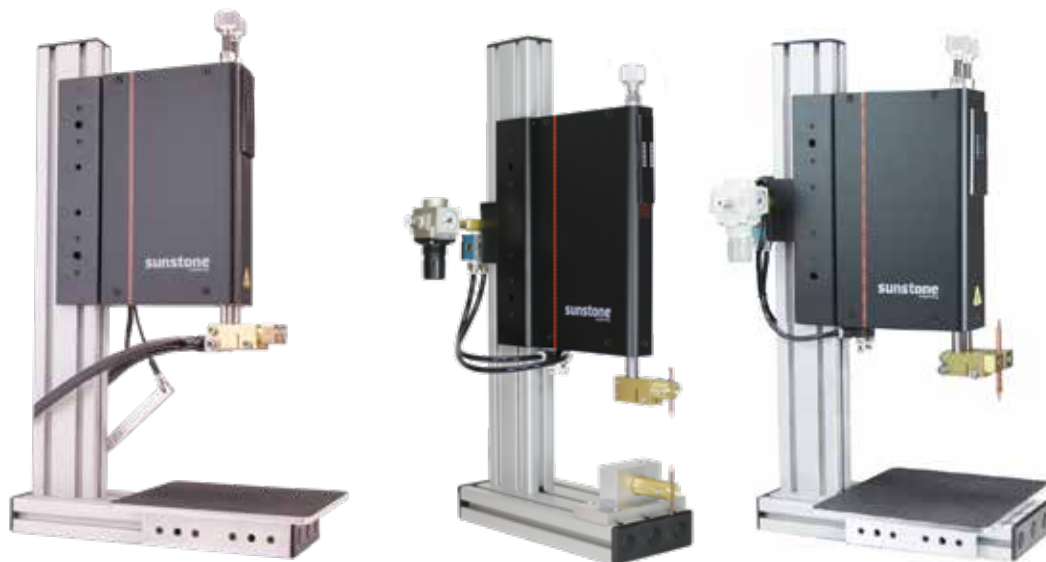


# Sunstone® Quality Weld Heads

*Select from Manual, Pneumatic, Electromagnetic, High Force Options!*

## Sunstone® Pro Series

Sunstone's Pro weld head series is ideal for opposed or parallel resistance welding applications and can be actuated manually (M), pneumatically (P), or electromagnetically (E)—see the next page for electromagnetic options. The Pro X is a modular weld head designed for robotic arms and CNC tables. The Super weld head series delivers high weld forces, up to 45 pounds.



|                                     | <b>Pro M</b><br>PARALLEL   | <b>Pro P</b><br>OPPOSED    | <b>Pro P</b><br>PARALLEL   |  |
|-------------------------------------|----------------------------|----------------------------|----------------------------|--|
| FOOTPRINT (L X W X H)               | 49.5x20.3x30.5 cm          | 30.5x11.45x49.5 cm         | 49.5x22.9x30.5 cm          |  |
| UNIT WEIGHT                         | 11.35 kg                   | 11.35 kg                   | 11.35 kg                   |  |
| WELD FORCE                          | 1-15 lbs                   | 1-15 lbs                   | 1-15 lbs                   |  |
| ELECTRODE DIAMETER (AVAIL UPGRADES) | .125 in (.1875 in, .25 in) | .125 in (.1875 in, .25 in) | .125 in (.1875 in, .25 in) |  |
| ELECTRODE CONFIG/HOLDER TYPE        | PARALLEL                   | OPPOSED/IN LINE            | PARALLEL                   |  |
| MAX THROAT SIZE (HxD)               | OFFSET                     | 5.25 x 6.5 in              | OFFSET                     |  |
| WELD CABLE SIZE/LENGTH              | 7.25 X 6.5 in              | 1 AWG / 24 in              | 7.25 X 7.5 in              |  |
| FRONT PEDAL TYPE                    | MANUAL CABLE               | AC, 3 DIN OR PNEUMATIC     | AC, 3 DIN OR PNEUMATIC     |  |
| AIR PRESSURE BY MAX FORCE           |                            | 60-80 PSI                  | 60-80 PSI                  |  |
| AIR CYLINDER INSIDE DIAMETER BORE   |                            | .75 in                     | 1.5 in                     |  |
| ELECTRODE TRAVEL (STROKE)           | 1 in                       | 1 in                       | 1 in                       |  |



*The Pro P opposed is also available in a manual configuration, the Pro M opposed.*



| Pro X<br>OPPOSED |                   | Pro X<br>PARALLEL |                   | Super P<br>OPPOSED |                        |
|------------------|-------------------|-------------------|-------------------|--------------------|------------------------|
|                  | 8.9x6.4x15.2 cm   |                   | 15.2x6.4x15.2 cm  |                    | 35.6x17.1x61.9 cm      |
|                  | 0.68 kg           |                   | 1.4 kg            |                    | 12.7 kg                |
|                  | 3.5-20 lbs        |                   | 3.5-20 lbs        |                    | 1.7-45 lbs             |
|                  | 1/8 in            |                   | 1/8 in            |                    | .1875 in (.25 in)      |
|                  | OPPOSED           |                   | PARALLEL          |                    | OPPOSED/IN LINE        |
|                  | 2.75 in           |                   | 2.75 in           |                    | 7.5 x 6.5 in           |
|                  | 1 AWG/48 in       |                   | 1 AWG/48 in       |                    | 1 AWG / 24 in          |
|                  | PROXIMITY TRIGGER |                   | PROXIMITY TRIGGER |                    | AC, 3 DIN OR PNEUMATIC |
|                  |                   |                   |                   |                    | 60-80 PSI              |
|                  |                   |                   |                   |                    | 1.125 in               |
|                  |                   |                   |                   |                    | 1 in                   |



# Sunstone® Modular E Series Weld Heads

## *Advanced Electromagnetic Linear Motion Weld Heads!*

### Sunstone® Pro E

The Pro E represent Sunstone's most precise weld head. Designated as E models, these weld heads are driven by advanced electromagnetic linear motion. When precision is paramount, the Pro E should be your go-to weld head solution. Pair the Pro E with the following Sunstone welders: CDDP-A, Pico DC, and Aeon HF.



|                                        | <b>Pro E</b><br>PARALLEL          | <b>Pro E</b><br>OPPOSED           |
|----------------------------------------|-----------------------------------|-----------------------------------|
| FOOTPRINT (L X W X H)                  | 33.0x20.2x60.9 cm                 | 29.2x11.4x55.9 cm                 |
| UNIT WEIGHT                            | 16.33 kg                          | 10.88 kg                          |
| WELD FORCE                             | 1 - 25 LBS                        | 1 - 25 LBS                        |
| ELECTRODE DIAMETER (AVAIL UPGRADES)    | 1/8 IN                            | 1/8 IN                            |
| ELECTRODE CONFIG/HOLDER TYPE           | PARALLEL (SERIES)                 | OPPOSED                           |
| MAX THROAT SIZE (HxD)                  | 48VDC @ 4A                        | 48VDC @ 2A                        |
| WELD CABLE SIZE/LENGTH                 | 1 AWG/24 IN                       | 1 AWG/24 IN                       |
| FRONT PEDAL TYPE                       | ANALOG/DIGITAL                    | ANALOG/DIGITAL                    |
| DUTY CYCLE (1 TO 20 LBS HOLDING FORCE) | 100%                              | 100%                              |
| OPERATING TEMPERATURE MIN/MAX          | 0°F/65°F                          | 0°F/65°F                          |
| ELECTRODE SPEED                        | HOME TO HOVER POINT: 1-100 MM/SEC | HOME TO HOVER POINT: 1-100 MM/SEC |
| POSITIONAL DISPLACEMENT ACCURACY       | ±1 MICRON                         | ±1 MICRON                         |
| ACTUATION METHOD                       | AUTOMATIC OR DIRECT               | AUTOMATIC OR DIRECT               |

# Pulse Heat Power Supplies

*Resolve Solder Reflow, Bonding, and Heat Fusing Challenges with Avio!*

For reflowing solder, thermocompression bonding, or heat fusing challenges, the Avio TCW and PHU-35 pulse heat power supplies paired with an Avio weld head deliver excellent solutions.

- High Precision Displacement Control
- Monitors Temperature, Displacement
- Digital Temperature Control
- Four-stage Heating
- Built-in Motor Control



| AV TCW PRECISION        |                                                                                          |
|-------------------------|------------------------------------------------------------------------------------------|
| FOOTPRINT/WEIGHT        | 22x400x320/23 kg                                                                         |
| HEATING TEMPERATURE     | ROOM TEMP-600°C IN 1°C STEPS, E TYPE/J TYPE (Option)<br>ROOM TEMP-600°C, K TYPE (Option) |
| HEATING TIME            | 0.00-99.99 SECONDS                                                                       |
| RATED CAPACITY          | 750 VA, 50% DUTY CYCLE                                                                   |
| HEATING STEPS           | 4                                                                                        |
| MONITOR                 | SINK AMOUNT, TEMPERATURE, WORK HEIGHT                                                    |
| MOTOR RESOLUTION        | 1 m/PULSE                                                                                |
| DISPLACEMENT RESOLUTION | 1 um                                                                                     |
| INTERFACE               | rs-232c, I/O                                                                             |
| TRANSFORMER             | BUILT-IN                                                                                 |
| TAP VOLTAGE             | 0.88 V, 1.24 V, 1.75 V, 2.47 V, 3.5 V                                                    |
| POWER SOURCE            | AC200-240±10%, 1 Φ, 50/60Hz, 15A                                                         |



# State-of-the-Art Micro Laser Welders

## *Harnessing Light for a Perfect, Tiny Weld*

The Orion™ LZR Benchtop Laser Welder

*Available in Six Models: LZR ECO 35, ECO 160*

*LZR 80, 160, 200, 240*

With an Orion LZR benchtop laser welder in your shop you'll complete work faster, weld next to sensitive areas without worry, and seam weld at up to 30 welds per second!

- 0.2 to 2.0mm Spot Weld Size
- Up to 30 Welds per Second
- Precision Control with Touchscreen Interface
- Stay Informed with Internal Heads Up Display\*
- Convenient Live Video Feed\*
- Ultra Clear 10x Leica Optics\*
- HDMI Port\*

### The Dado!

The Dado is the laser welder for the masses! Any shop can afford to place the Dado on a bench to take advantage of its laser welding capabilities.



Orion LZR  
ECO Series



| Specifications           | Dado<br>VERSION 2.0    | LZR ECO 35                                       | LZR ECO 160 |
|--------------------------|------------------------|--------------------------------------------------|-------------|
| AVERAGE POWER            | 150 W                  | 320 W                                            | 100 W       |
| PEAK POWER [KW]          | 1.8 kW                 | 3 kW                                             | 6.5 kW      |
| ENERGY RANGE             | 1 - 10.8 J             | 0.1 - 35 J                                       |             |
| LASER SOURCE: WAVELENGTH | Nd: YAG 1064 nm        | Nd: YAG 1064 nm                                  |             |
| IMPULSE TIME             | 0.1 - 6 ms             | 0.1 - 12 ms                                      | 0.1 0 25 ms |
| WELDS PER SECOND         | 1                      | 0.5 - 6                                          | 0.5 - 15    |
| SPOT DIAMETER            | 0.2 - 1.5 mm           | 0.2 - 2.0 mm                                     |             |
| PROGRAMS                 | None                   | 6 Pulse Shaping Presets                          |             |
| MEMORIES CELL STORED     | 4                      | 100                                              |             |
| CONTROL JOYSTICK         | On Board               | None                                             |             |
| EXTERNAL CONTROL         | App on Mobile/Tablet   | 7" Color Touch Screen                            |             |
| INPUT POWER              | 110/230 V AC, 50/60 hz | 110 or 230 V AC, 50/60 Hz, single, Non-Switching |             |
| AMPERE                   | T16A                   | 10A                                              |             |
| MAX DIMENSIONS [LxWxH]   | 34x34x34 cm            | 61x54x48 cm                                      |             |
| Optics                   | 5X Stereo Microscopic  | 10X Stereo Microscopic                           |             |
| TYPE                     | Benchtop               | Benchtop                                         |             |
| ARGON / AIR NOZZLE       | Optional Upgrade       | Yes / Not Available                              |             |
| SPOT SIZE ADJUSTMENT     | Manual                 | Motorized with 30 Positions                      |             |

- Advanced Cooling System for Sustained Use
- No Messy Water Filters to Change
- High-efficiency, Industrial Components
- Large Ceramic Cavity
- Removable Chamber Floor for Larger Items and Easy Cleaning\*
- Cool LED Lighting Reduces Heat
- Low Maintenance Costs
- Ergonomic Adjustable Pedestal (Optional)



## Application Ideas

Mold and Die Repair, Medical Devices, Stents and Catheters, Thermocouplers, Lighting Fixtures, Mounting Brackets, Magnet Wire Welding, Jewelry and Jewelry Repair, Dental Appliance Repair, Orthodontic Welding, and more!

\*Not available with the Dado or LZR ECO Series.

Orion LZR Series

| LZR 80                            | LZR 180     | LZR 200     | LZR 240     |
|-----------------------------------|-------------|-------------|-------------|
| 100 W                             | 100 W       | 100 W       | 100 W       |
| 3.5 kW                            | 7.2 kW      | 8 kW        | 10 kW       |
| 0.1 - 80 J                        | 0.1 - 180 J | 0.1 - 200 J | 0.1 - 240 J |
| Nd: YAG 1064 nm                   |             |             |             |
| 0.1 - 25 ms                       |             |             |             |
| 1 - 30                            |             |             |             |
| 0.2 - 2.0 mm                      |             |             |             |
| 6 Pulse Shaping Presets           |             |             |             |
| 100                               |             |             |             |
| On Board                          |             |             |             |
| 10" Color Touch Screen            |             |             |             |
| 110 or 230 V AC, 50/60 Hz, Single |             |             |             |
| 10A                               |             |             |             |
| 76x53x56 cm                       |             |             |             |
| 10X Leica Stereo Microscopic      |             |             |             |
| Benchtop                          |             |             |             |
| Yes / Yes                         |             |             |             |
| Motorized with 30 Positions       |             |             |             |



# High-Precision Laser Engraving & Cutting

*The Control and Flexibility You Expect from Orion™!*



## The Orion™ LZR 3D Engraver

*Available in 20, 30, 50, 70, 100 W*

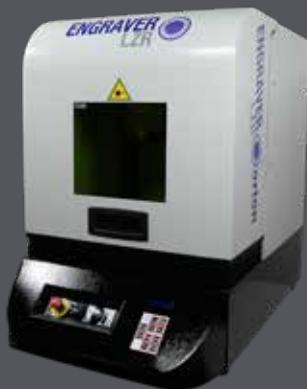
- 3D Bas-Relief Capability
- Marking or Cutting on Uneven Surfaces
- Dynamic Automatic Focus System
- 110x110 mm Marking Area
- Use on Any Metal



## The Orion™ LZR Pro

*Available in 20, 30, 50, 70, 100, 200 W*

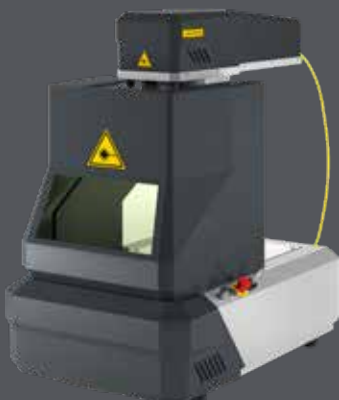
- High Precision and Control
- 110x110 mm Marking Area
- Resolutions up to 40 µm
- Use on Any Metal
- Touchscreen Control



## The Orion™ LZR Eco

*Available in 20, 30, 50 W*

- High Precision and Control
- 110x110 mm Marking Area
- Resolutions up to 40 µm
- Use on Any Metal



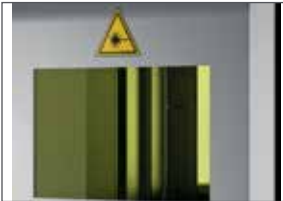
## The Orion™ LZR Nano

*Available in 20, 30 W*

- High Precision and Control
- 100 x 100 mm Marking Area
- Resolutions up to 30 µm
- Use on Any Metal

## Application Ideas

- Perfect for High Precision Cut Outs
- Permanent Marking for S/N's, Barcodes, Certifications, Company Info
- Excavation by Layers and 3D Bas-Reliefs (LZR 3D & PRO engravers only)
- Photographs, Names, Designs, Logos
- Automated Sequential Numbering
- Software Included



## Specifications

|                              | LZR NANO                 | LZR ECO                  | LZR PRO                                  | LZR 3D                            |
|------------------------------|--------------------------|--------------------------|------------------------------------------|-----------------------------------|
| OUTPUT POWER                 | 20 W, 30 W               | 20 W, 30 W, 50 W         | 20 W, 30 W, 50 W, 70 W, 100 W, 200 W     | 20 W, 30 W, 50 W, 70 W, 100 W     |
| WAVE LENGTH                  | 1064 nm                  | 1064 nm                  | 1064 nm                                  | 1064 nm                           |
| M <sup>2</sup>               | <1.8                     | <1.8                     | <1.6, <1.4 at 200 W                      | <1.6                              |
| POWER SUPPLY                 | 110V or 230 VAC 50/60 Hz | 110V or 230 VAC 50/60 Hz | 110V or 230 VAC 50/60 Hz                 | 110V or 230 VAC 50/60 Hz          |
| ABSORBED POWER               | 250 W, 350 W             | 250 W, 350 W, 350 W      | 300 W, 300 W, 300 W, 450 W, 450 W, 900 W | 500 W, 500 W, 500 W, 600 W, 650 W |
| DIMENSIONS (LXWXH)           | 65.2x39.2x62.9 cm        | 75x45x104 cm             | 75x45x70 cm                              | 96.5x47x10.5 cm                   |
| CHAMBER DIMENSIONS (LXWXH)   | 25X25X31 cm              | 25x25x35 cm              | 25x25x35cm                               | 23x38x35 cm                       |
| WEIGHT                       | 35 kg                    | 55 kg - 58 kg            | 50 kg - 130 kg                           | 55 kg - 60 kg                     |
| FOCAL 100: MARKING AREA/SPOT | 60x60 mm / 16 µm         | 60x60 mm / 16 µm         | 60x65 mm / 11 µm                         | 60x60 mm / 11 µm                  |
| FOCAL 160: MARKING AREA/SPOT | 100x100 mm / 26 µm       | 110x110 mm / 26 µm       | 110x110 mm / 26 µm                       | 110x110 mm / 26 µm                |
| FOCAL 210: MARKING AREA/SPOT | N/A                      | N/A                      | 160x160 mm / 34 µm                       | N/A                               |
| SPEED OF SALVO HEAD          | 5000 mm/s                | 5000-7000 mm/s           | Up to 7000 m/s                           | 6000 m/s                          |
| MAX PULSE ENERGY             | Up to 1 mJ               | Up to 1 mJ               | Up to 1 mJ                               | Up to 1.5mJ                       |
| MAX FREQUENCY                | 60 kHz                   | Up to 1000 kHz           | 1000 kHz, 400 kHz at 200 W               | 1000 kHz                          |
| COOLING SYSTEM               | Air                      | Air                      | Air                                      | Air                               |
| PULSE DURATION               | 100 nsec @20kHz          | 100-120 nsec @20kHz      | 10-200 nsec<br>30-100 nsec at 200 W      | 10-200 nsec                       |
| LASER CLASS                  | IV                       | Class IV                 | Class IV                                 | Class 4/1                         |
| Z FOCUS RANGE, 100mm LENS    | N/A                      | N/A                      | N/A                                      | 10mm                              |
| Z FOCUS RANGE, 160mm LENS    | N/A                      | N/A                      | N/A                                      | 35mm                              |

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