



# HighLight™ FL-ARM

## Adjustable Ring Mode Fiber Laser

The HighLight FL-ARM laser enables unprecedented laser processing solutions, such as zero-gap welding of zinc coated steel and spatter-reduced welding of metals, to name a few.

The ARM technology provides two independently controlled co-axial beams from one fiber, leading to a new level of flexibility for demanding applications. Power levels in both the central spot and surrounding ring are independently adjustable. This flexible configuration enables very precise control over melt pool dynamics, allowing for precise optimization of power distribution to process a diverse range of metals. This optimization results in high speed and high throughput spatter-reduced processing and lowers overall production costs by largely eliminating the need for post-processing.

### FEATURES & BENEFITS

- Dynamic adjustable beam profile allowing for on-the-fly adjustments
- High output power up to 10 kW
- Superior back reflection resistance
- Excellent stability over the whole power range (1% to 100%)
- Closed-loop power control for center and ring beams
- Easy integration into automated production

### APPLICATIONS

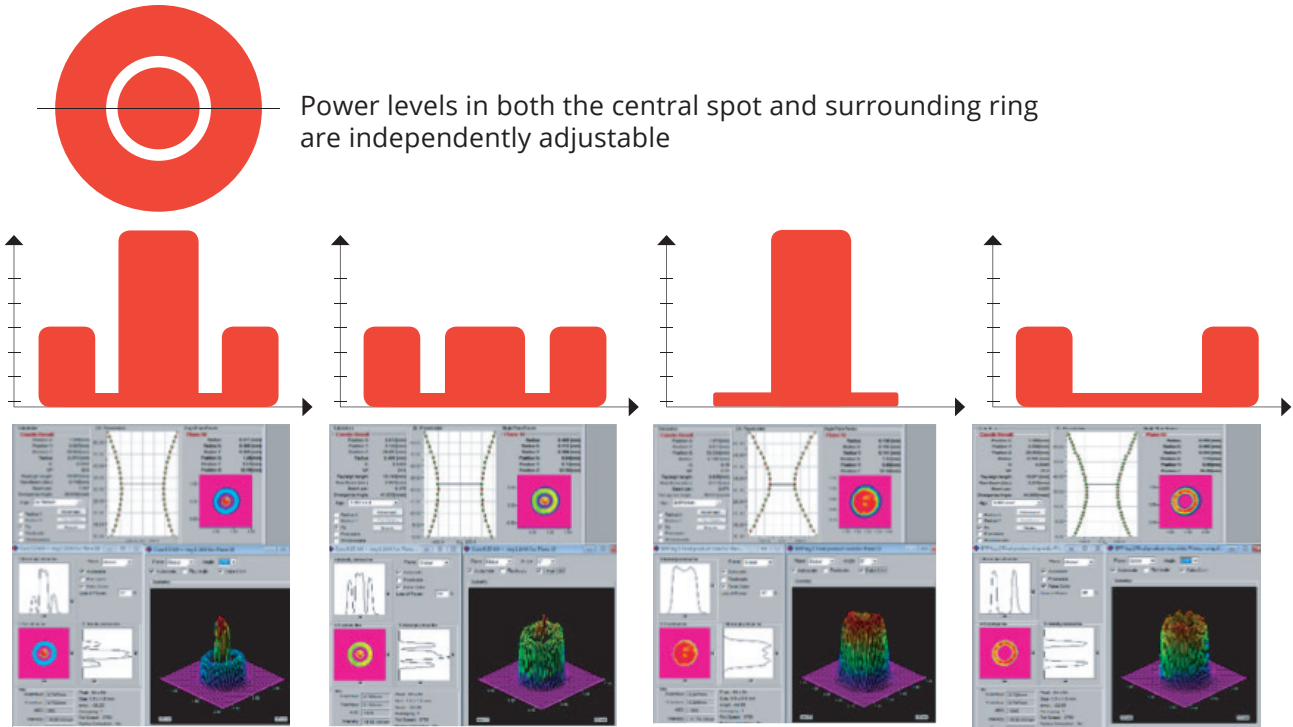
- Welding
- Cutting



| SPECIFICATIONS <sup>1</sup>                                      | HighLight FL-ARM   |                              |                  |                  |
|--|--|------------------------------|------------------|------------------|
| Power Rating   | Power at the Outer Ring (kW)   | Power at the Inner Spot (kW) |                  |                  |
|  |  | 2.5                          | 5                | 7.5              |
|  | 2.5  | <b>Standard</b>              | <b>Standard</b>  | Contact Coherent |
|  | 5  | <b>Standard</b>              | <b>Standard</b>  | Contact Coherent |
|  | 7.5  | <b>Standard</b>              | Contact Coherent | Contact Coherent |
|  | 10   | Contact Coherent             | Contact Coherent | Contact Coherent |
| Power Modulation (kHz)   | 5, Center and Ring independently   |                              |                  |                  |
| Output Fiber (°C)<br>Fiber Optic Cable<br>Fiber Length (m)       | QBH/QD<br>20   |                              |                  |                  |
| Interfaces   | Digital I/O, Analog control, Ethernet  |                              |                  |                  |
| Cooling<br>Flow (liter/minute)<br>Cooling Water Temperature (°C) | 75 to 130<br>+25 ±1  |                              |                  |                  |
| Dimensions (H x W x D)   | 830 x 800 x 903 mm (32.7 x 31.5 x 35.6in.) or 1328 x 800 x 903 mm (52.3 x 31.5 x 35.6 in.) |                              |                  |                  |
| Options<br>Optics<br>Cabinet Air Conditioner                     | External optics  |                              |                  |                  |

**ARM TECHNOLOGY**

Coherent HighLight FL-ARM technology creates a dynamic ringmode which can be adjusted on-the-fly as the application requires.



## KEY APPLICATION BENEFITS

### Cutting

- any thickness up to 30 mm
- any metal
- variable thickness cutting
- high cutting quality
- piercing power

### Welding

- reduced hardening effect
- relaxed butt welding mechanical tolerances
- melting of filler wire with ring, key hole welding with center



COPPER CUTTING (10 mm)



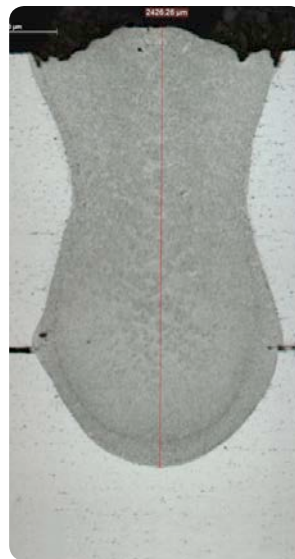
ZINC COATED STEEL WELDING



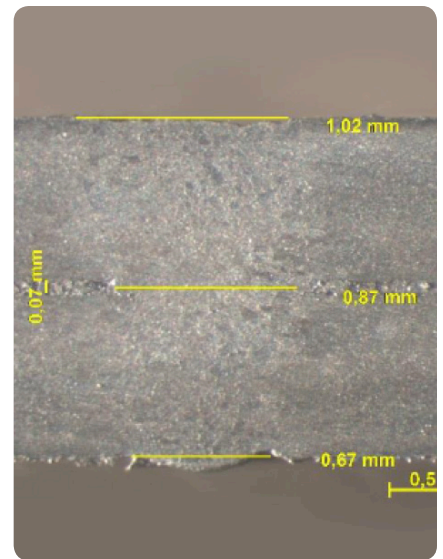
ALUMINUM CUTTING (10 mm)



ALUMINUM WELDING  
(1.6 mm + 1.6 mm)



CROSS SECTION OF  
ALUMINUM WELDING



CROSS SECTION OF  
ZINC COATED STEEL WELDING

## Superior Back Reflection Resistance

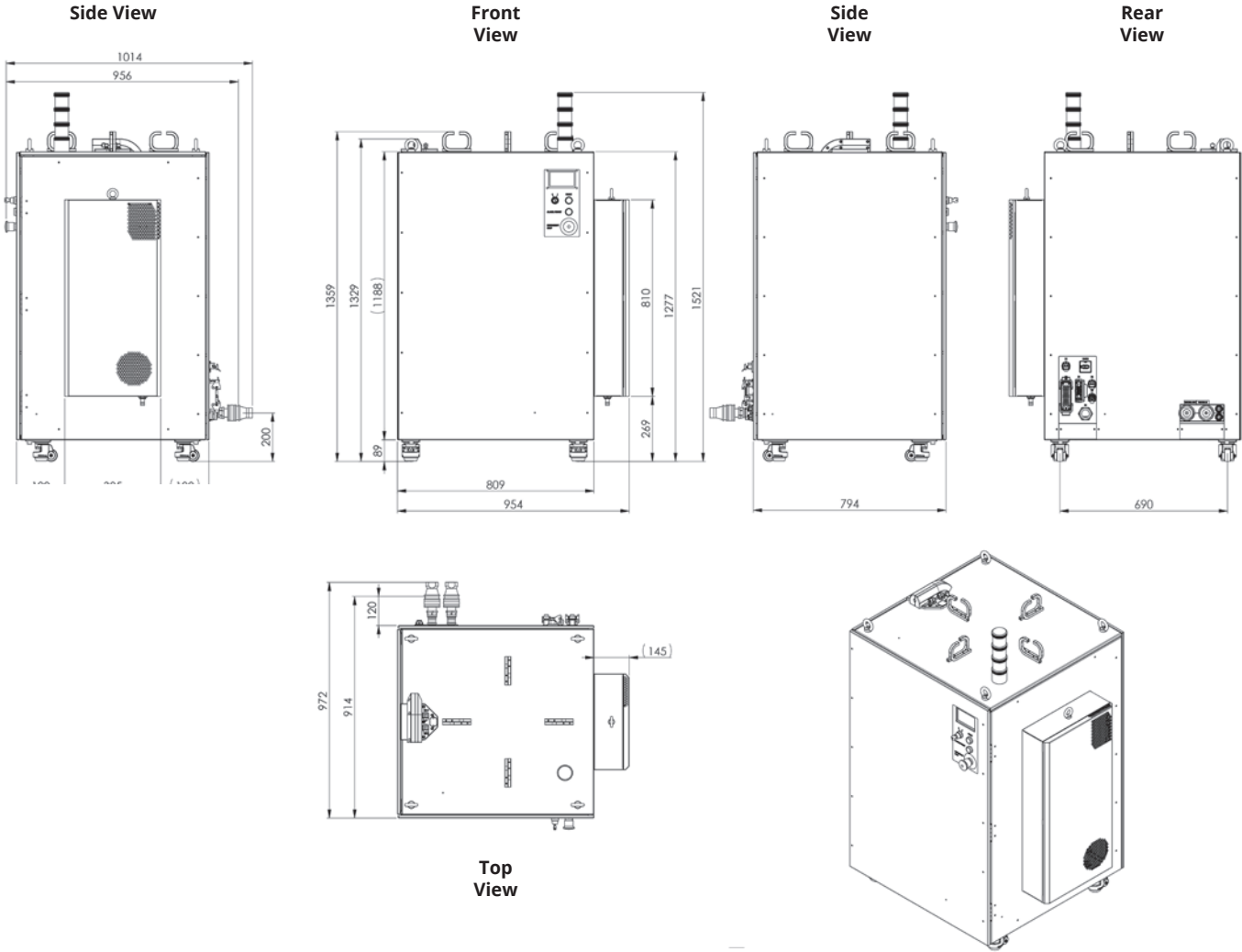
HighLight FL-ARM is equipped with a five-step back reflection resistance system which enables processing of highly reflective materials such as copper, aluminum, and brass.

## Ease of System Integration

A compact design with standard interfaces makes HighLight FL-ARM ideal for integration into a broad variety of new or existing cutting and welding machines.

**MECHANICAL SPECIFICATIONS**

**HighLight FL-ARM**



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Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice. Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all HighLight FL-ARM Fiber Lasers. For full details of this warranty coverage, please refer to the Service section at [www.Coherent.com](http://www.Coherent.com) or contact your local Sales or Service Representative. MC-013-18-0M0418 Copyright ©2018 Coherent, Inc.