



# redPOWER PRISM

Multi kW OEM 3kW - 6kW

Building blocks for high power Fiber Lasers.

CW OEM Fiber Lasers.



## Key benefits and features

A true OEM Fiber Laser allowing machine builders to offer a leading edge, highly reliable Fiber Laser based cutting and welding machine maintaining their own brand throughout. This scalable solution uses individual laser modules to achieve output powers up to 6kW when combined through the SPI proprietary High Power Combiner (HPC). These Laser modules combine single mode beam quality, high efficiency & reliability, fast modulation capability and easy install features.

### Full feature list

- Combined output power options of 3kW, 4kW, 4.5kW & 6kW.
- Patented back reflection protection.
- Integrated pierce detection as standard.
- Simple integration into existing equipment.
- Replaceable delivery fiber.
- Rack mount 19" format.
- Integrated pulse shaping capability.
- High frequency modulation.
- Process monitoring capability via back reflected radiation signal.

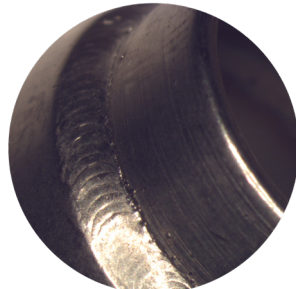
## Optimised for...

High volume OEMs who want:

- To tightly integrate the Fiber Laser within their overall system design.
- To provide 100% of the machine and Laser service to their customers.
- The flexibility to build systems to order, combining individual modules as required.



**Cutting**  
Mild Steel



**Welding**  
Stainless Steel



**Cladding**  
Dissimilar Metals

## PRISM concept overview

The Multi-kW PRISM is available with 2, 3 or 4 Fiber Laser modules combined with one High Power Combiner (HPC). This gives total output power options of 3kW to 6kW. The units are generally delivered as a single pre-configured unit (i.e. Fiber Laser modules spliced into the HPC with a delivery fiber fitted). The units are 19" rack compatible and can be installed within a separate cabinet or, more interestingly, into the machine itself, so only the OEM's brand name is visible to the end user. The System Integrator adds value to these modules by providing the DC power supply, a suitable enclosure with environmental control where necessary, a temperature controlled coolant supply and system level safety control.

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## Benefits

- Lowest cost Laser for high volume manufacturers
- Opportunity for OEMs to add value becoming more than a Laser reseller
- We offer OEMs training for field servicing of modules (including delivery fiber)
- High stability, repeatability & reliability

## Key features

- Multiple fiber delivery options
- PIPA-Q fiber termination with industry standard opto-mechanical compatibility
- Integral patented Back Reflection protection
- Pierce detection signal
- 19" Rack modular design
- Integral pulse shaping capability
- High frequency modulation

## Applications

- Thick Sheet Cutting
- Fast Thin Sheet Cutting
- High Speed Welding
- Remote Welding
- Cladding

## Industries

- Automotive
- Advanced Manufacturing
- Flat Sheet Cutting
- General Fabrication

Go to [spilasers.com](http://spilasers.com) for information on our full suite of Pulsed and CW Fiber Lasers.

## Product Selection Parameters

Model	3kW	4kW	4.5kW	6kW
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### Performance Data

Mode Of Operation	CW and Modulated			
Output Power Range	10 -105% of specified power			
Long Term Output Power Stability <sup>(1)</sup>	± 2% peak			
Wavelength (nm)	1075-1080			
Linewidth (nm)	<10			
Polarisation	Un-polarised			
Min. Rise / Fall Time (µs)	<5 / <6			
Max. Modulation Frequency (kHz)	≤50			

### Fiber Optic Beam Delivery

50µm Fiber	2.1mm.mrad BPP <sup>(2)</sup>	N/A	N/A
100µm Fiber	Enhanced, 3.3mm.mrad BPP <sup>(2)</sup>		
100µm Fiber	4.5mm.mrad BPP <sup>(2)</sup>		
300µm Fiber	13mm.mrad BPP <sup>(2)</sup>		
Alignment Laser Wavelength (nm)	630 – 680 (Class 2)		

### Electrical

Voltage (nominal)	48V DC			
Current (A)	210	250	320	420

### Environment / Cooling

Ambient Temperature (°C)	5-45			
Coolant Flow Rate (litres / min) <sup>(3)</sup>	35	45	50	65
Coolant Connections	10mm			
Max Relative Humidity	85% (20°C), 50% (40°C)			

### Module Dimensions

Height (mm)	6U (267)	8U (356)	10U (445)
Width (mm)	19" rack mount (445)		
Depth (mm)	702		

#### Notes

1. Constant Temperature
2. Beam Parameter Product = beam radius x half angle divergence
3. At 25°C Water Temperature

#### Terms and conditions

Some specific combinations of product and optional accessory may not be available. These units are Class 4 Lasers designed as components for incorporation or integration into other equipment. All product information is believed to be accurate and subject to change without notice. A complete product specification will be issued on request and also at time of order acknowledgement. The user assumes all risks and liability whatsoever in connection with the use of the product or its application.

## Applications



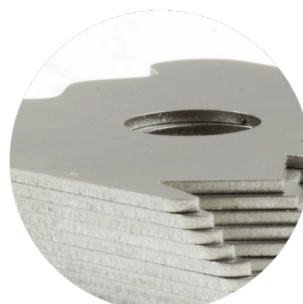
### Cutting

Mild Steel, Copper,  
Aluminium, Brass  
Stainless Steel



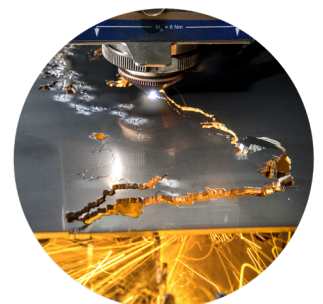
### Cutting

Mild Steel



### Cutting

Stainless Steel



### Cutting

Aluminium

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