



redPOWER® PRISM

Multi kW OEM

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. We are a vertically integrated manufacturer of Fiber Laser sources. By offering only the “Laser engine”, we allow machine builders who do not have “in-house” Fiber Laser manufacturing capability, to compete equally with those who do. This scalable solution uses modules of 1.5kW achieving output powers up to 6kW when combined through the SPI proprietary High Power Combiner (HPC). Taking advantage of 60 years’ experience, these Laser modules combine single mode beam quality, high efficiency & reliability, fast modulation capability and to easy install features.

Full feature list

- Single modules of 1.5kW output power.
- Combined output power options of 3kW, 4.5kW & 6kW.
- Patented back reflection protection.
- Integrated pierce detection as standard.
- Simple integration into existing equipment.
- Field replaceable delivery fiber.
- Process monitoring capability via back reflected radiation signal.
- Extremely compact design.
- Rack mount 19” format.
- Integrated pulse shaping capability.
- High frequency modulation.

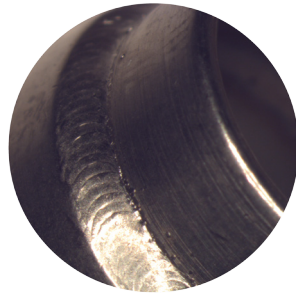
Optimised for...

High volume OEMs’ who:

- Want to tightly integrate the Fiber Laser within their overall system design.
- Want to provide 100% of the machine and laser service to their customers.
- Want 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, 4.5kW & 6kW. The units can either be ordered as a single pre-configured unit (i.e. Fiber Laser modules spliced into the HPC with a delivery fiber fitted). Or for high volume customers with fiber splicing capabilities, separate modules can be supplied allowing the output power to be customised based on customer orders. This option allows OEMs’ to reduce stock and delivery times. 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. More than a Laser reseller
- We offer OEMs’ training for field servicing of modules (including delivery fiber)
- High stability, repeatability & reliability

Key features

- 3kW, 4.5kW & 6kW outputs
- Multiple fiber delivery options
- Patented back reflection protection in industry standard QBH compatible fiber connector
- 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 for information on our full suite of Pulsed and CW Fiber Lasers.

Product Selection Parameters

Model	3kW	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 ⁽¹⁾	± 2% peak		
Wavelength (nm)	1080		
Linewidth (nm)	<10		
Polarisation	Un-polarised		
Min. Rise / Fall Time (µs)	<5 / <6		
Max. Modulation Frequency (kHz)	≤50		

Fiber Optic Beam Delivery

50 µm Fiber	2.1mm mrad BPP ⁽²⁾	X	X
100µm Fiber	Enhanced, 3.3mm.mrad BPP ⁽²⁾		
100 µm Fiber	4.5mm mrad BPP ⁽²⁾		
Alignment Laser Wavelength (nm)	630 – 680 (Class 2)		

Electrical

Voltage (nominal)	48V DC		
Current (A)	240	360	480

Environment / Cooling

Ambient Temperature (°C)	5-45		
Coolant Flow Rate (litres / min) ⁽³⁾	42	61	76
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 divergance
3. At Maximum 30°C 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



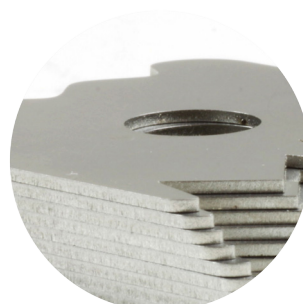
Cutting

Mild Steel, Copper,
Aluminium, Stainless
Steel, Brass



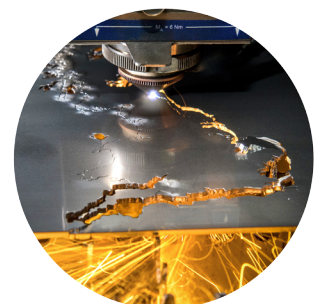
Cutting

Mild Steel



Cutting

Stainless Steel



Cutting

Aluminium

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