



redPOWER PRISM

300W - 2kW

Power and control for cutting, welding, micro-machining and additive manufacturing.

CW OEM Fiber Laser.



Key benefits and features

A true OEM Fiber Laser allowing machine builders to offer leading edge high reliability Fiber Laser based cutting and welding machines maintaining their own brand throughout. The unique offering of up to 2kW in a single unit allows compact machine design with minimal installation time. Taking advantage of 60 years' experience, these Laser modules combine single mode beam quality, high reliability, high efficiency and fast modulation capability with easy install features.

Full feature list

- Single modules of up to 2kW output power.
- Patented back reflection protection.
- Simple integration into existing equipment.
- Process monitoring capability via back reflected radiation signal.
- Extremely compact design.
- Rack mount 19" format.
- Optional integrated pulse shaping capability.
- High frequency modulation capability.

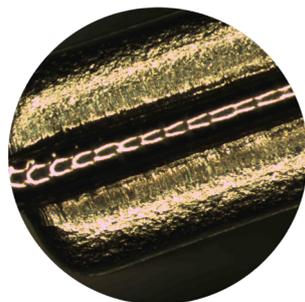
Optimised for...

High volume OEMs who want to:

- Tightly integrate the Fiber Laser within their overall system design.
- Provide 100% of the machine and Laser service to their customers.
- Build their own systems to order, combining individual modules as required.



Thick Metal Cutting
Mild Steel, Stainless Steel,
Aluminium



Welding
Stainless Steel



Cutting
Copper, Brass,
Aluminium

PRISM concept overview

With up to 2kW of output power and output fiber options delivering M² of 1.1, or BPP of 2.1 - 4.5mm.mrad these are extremely versatile units. The units are 19" rack mount compatible and can be installed within Laser processing machines rather than as a separate cabinet, meaning only the integrator's brand name is visible to an 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.

www.spilasers.com | sales@spilasers.com

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SM-S00470-7

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

- Single mode and multimode fiber delivery options
- PIPA-Q fiber termination with industry standard opto-mechanical compatibility
- Integral patented Back Reflection protection
- 19" Rack modular design
- Optional integral pulse shaping capability
- High frequency modulation

Applications

- Additive Manufacturing
- Remote 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 | 300W | 500W | 750W | 1kW | 1.5kW | 2kW |
|-------|------|------|------|-----|-------|-----|
|-------|------|------|------|-----|-------|-----|

Performance Data

| | | | | | | |
|---|------------------|--|--|--|--|--|
| Operating Modes | CW and Modulated | | | | | |
| Output Power Range | 10 – 105% | | | | | |
| Long Term Output Power Stability ⁽¹⁾ | ± 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

| | | | | | | |
|---------------------------------|--|--|--|--|--|--|
| Single Mode Fiber | M ² 1.1 ± 0.1 | | | | | M ² 1.1 (Typ), 1.3 (Max) |
| 50µm Fiber | 2.1mm.mrad BPP ⁽²⁾ | | | | | |
| 100µm Fiber | Enhanced 3.3mm.mrad BPP ⁽²⁾ | | | | | |
| 100µm Fiber | 4.5mm.mrad BPP ⁽²⁾ | | | | | |
| 300µm Fiber | 13mm.mrad BPP ⁽²⁾ | | | | | |
| Alignment Laser Wavelength (nm) | 630-680 (Class 2) | | | | | |

Electrical

| | | | | | | |
|---------------------|--------|----|----|----|-----|-----|
| Voltage (nominal) | 48V DC | | | | | |
| Typical Current (A) | 20 | 35 | 50 | 70 | 100 | 120 |

Environment / Cooling

| | | | | | | |
|--|------------------------------|---|---|----|----|-------|
| Coolant Temperature (°C) | 18-30 | | | | | 18-25 |
| Coolant Flow Rate (litre/min) ⁽³⁾ | 3 | 5 | 8 | 10 | 15 | 20 |
| Coolant Connections | 10mm | | | | | |
| Humidity | 5-85% RH, 35°C Max Dew Point | | | | | |

Module Dimensions

| | | | | | | |
|--------|------------------------|--|--|--|-------|--|
| Height | 2U (88mm) | | | | | |
| Width | 19" Rack Mount (445mm) | | | | | |
| Depth | 550mm | | | | 702mm | |

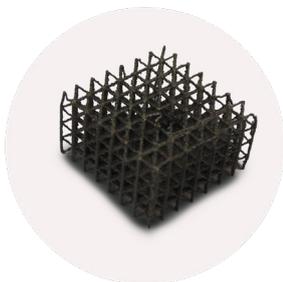
Notes

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

Terms and conditions

Some specific combinations of product specifications and optional accessory may not be available. These Lasers are designed as units 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.

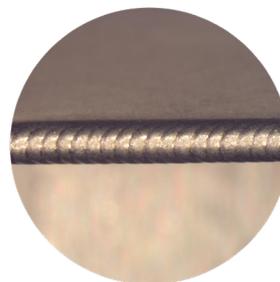
Applications



3D Printing / Additive Manufacturing
Metal Powders



Cutting
Brass, Aluminium,
Copper, Mild Steel &
Stainless Steel



Welding
Stainless Steel



Cutting
Mild Steel

