



10 – 20W Pulsed Fiber Lasers With GTWave™ and PulseTune Technology

Features of 10 W/RM, 12 & 20W/G3, and 20W/RM:

- 12kW nominal peak power with 20W average output power
- Up to 500 kHz pulse repetition frequency *
- Pulsed and CW operation *
- First and last pulse equally useable
- High speed marking compatible (2000 cps)
- Bitmap marking compatible
- Pulse width variable (across 25 pre-set waveforms) *
- Maximized peak power over full operational repetition rate *
- Isolated optical output
- High reliability/repeatability/stability design
- Analogue power control input, pulse gate, and pulse trigger
- Hardware-only interface or simple RS-232 software control *
- Status monitoring and safe shut down

* Not applicable to 10 & 20W/RM

Applications

- Marking
 - Plastics
 - Metals
 - Poly-compounds
- Scribing
- Ablation
- Diamond Bruting / Planning
- Silicon Processing
- Resistor trimming
- Solar Cell Processing
- ITO Removal
- Thin film cutting
- Fine foil drilling

redENERGY™



The redENERGY™ G3 fiber laser platform uses SPI's innovative PulseTune technology that offers the OEM integrator highly flexible control over pulse width and peak power for deployment in multiple applications. The unique PulseTune function enables market leading repetition rates whilst maintaining your application's peak power threshold. These products are designed to address the majority of all laser-marking applications with peak powers up to 12kW. By enabling high repetition rates this product is high speed marking compatible out of the box – plus with the added function of a CW mode of operation - bitmap marking is just plug and play. It is an easy-to-integrate DC-powered OEM fiber laser module, controller designed to interface with common laser-marking equipment.

The new 10 & 20W RM pulsed lasers from SPI Lasers are the first in a family of four lasers covering applications across the Nd:YAG, Q switched Fiber Laser and YV04 application spaces. These entry models have a single pre set waveform (top end models 25 pre set waveforms) to cover the main laser marking application space.





10 – 20W Pulsed Fiber Lasers

With GTWave™ and PulseTune Technology

Specifications

	Model	10W/RM	12W/G3	20W/G3	20W/RM
	Nominal Specifications	10W/6kW	12 W/10 kW	20 W/12 kW*	20W/12kW*
Specifications	Peak emission wavelength	1064 ± 5 nm			
	Modes of Operation	Pulsed	Pulsed and CW / modulated CW		Pulsed
	Pulse repetition range - Full power range	20 – 100kHz	20 - 500kHz	25 – 500 kHz	25 – 100kHz
	- Reduced power range	1 – 20 kHz	1 – 20 kHz	1 – 25 kHz	1 – 25 kHz
	Pulse characteristics, nominal (with PulseTune)	20kHz 0.5 / 50 (mJ/ns)	25kHz 0.6 / 35 (mJ/ns)		50kHz 0.75 / 25 (mJ/ns)
			65kHz 0.24 / 50 (mJ/ns)		100kHz 0.28 / 50 (mJ/ns)
			125kHz 0.12 / 35 (mJ/ns)		200kHz 0.15 / 30 (mJ/ns)
			250kHz 0.06 / 20 (mJ/ns)		400kHz 0.075 / 20 (mJ/ns)
			500kHz 0.03 / 15 (mJ/ns)		500kHz 0.038 / 15 (mJ/ns)
	Modulation range in CW	N/A	DC to 100 kHz		N/A
	Output power stability	5%			
Output beam characteristics*	Beam diameter, nominal	3.1 mm Standard			
		6.2, 8.7, or 11.5 mm with optional beam expander			
	M ²	< 2			
	Polarization state	Random			
	Beam delivery cable length	2 m			
	Red Alignment Laser	Optional	Standard	Standard	Optional
Electrical	Laser head power supply requirement	24 V / 7 A		24 V / 10A	
Mechanical	Laser module weight	<6 kg			
	Laser module dimensions	352 x 198.2 x 77 mm			
	Cooling	Requires heat sink attached to base ≤0.1°C/W			
Environmental	Module temperature with Auto-shutdown	0°C to +45°C			
	Humidity	5-95%RH (non condensing)			

[For compliance and safety information, click here](#)

- Laser not warranted in marking applications without use of SPI Isolator Accessory

* 20W G3 has a maximum 1.25W power drop from nominal over a base plate temperature range of 15 - 35°C



Accessories

- Beam expanders: 0.4X, 1.4X, 2.8X & 3.7X
- Power Supply
- Pulsed laser cooling kit
- Power and Communications Cables – RM versions only
- [Click here for datasheets](#)
- Retrofit Adaptors – adaptor sleeve to size iBDO assembly to previous BDO & Isolator assembly.

Terms and conditions

Some specific combinations of product and optional accessory may not be available. These lasers are designed as products 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.

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