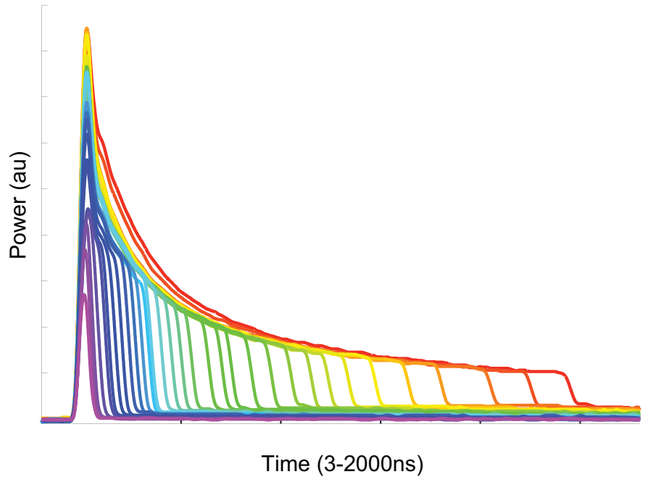
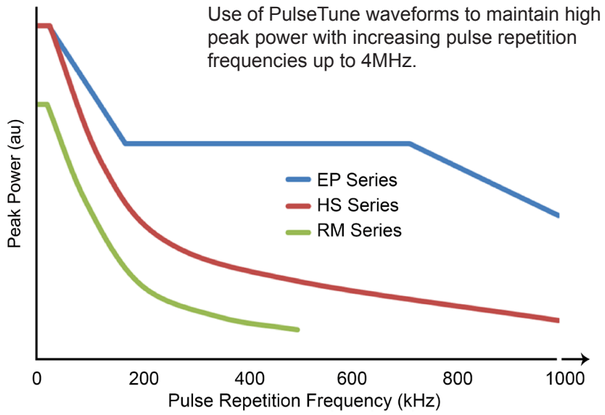
PulseTune Technology

Our PulseTune technology provides the ability to select waveforms, offering pulse durations from 3 ns - 2000 ns. Each pulse waveform is designed for maximum peak power and pulse energy at an optimised pulse repetition frequency.





Link to latest datasheet.

Finance Options available here https://wlsc.com/purchase/

✓✓= Optimal for ✓= Good for

Type	S Type	Z Type	L Type	H Type	M Type
Key Applications					
Ablation	✓✓	✓✓	✓	✓	✓
Cleaning		✓	✓	✓✓	✓✓
Drilling	✓✓	✓✓	✓	✓	✓
Engraving, deep	✓	✓✓	✓	✓✓	✓✓
Engraving, fine	✓✓	✓✓	✓		
Marking, anodised & painted materials	✓	✓✓	✓✓	✓	✓✓
Marking, general	✓	✓✓	✓✓	✓	
Marking, metal	✓	✓✓	✓✓	✓	✓
Marking, plastic (night & day)	✓✓	✓	✓✓	✓	
Micro-machining	✓✓	✓			
Precision cutting	✓✓	✓✓		✓	✓
Scribing	✓✓	✓✓	✓		
Solar cell processing	✓✓	✓✓	✓	✓	
Thin film patterning	✓✓	✓✓	✓	✓✓	
Thin foil cutting	✓✓	✓✓	✓	✓✓	
Welding	✓	✓✓		✓✓	✓✓

Terms and Conditions

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 and its application. These lasers are designed as products for incorporation or integration into other equipment.

www.spilasers.com | sales@spilasers.com

SM-S00219 Rev J 10/17

Worldwide Laser Service
Integrates SPI Lasers in all the LP9000F series of lasers this Data sheet detials the technical specification of of the SPI laser sereis utilized in the LP9000F series

redENERGY® G4
20W - 200W
Pulsed Fiber Lasers

WITH GTwave®
AND PulseTune TECHNOLOGY

GREATER FLEXIBILITY

SUPERIOR QUALITY

INCREASED PRODUCTIVITY

IMPROVED PROFITABILITY

redENERGY G4 20W-200W Pulsed Fiber Lasers

Product selection parameters

Wavelength	1060nm																						
Beam quality options [1]	**S Type**			**Z Type**												**L Type**		**H Type**			**M Type**	
M^2	<1.3		<1.3	<1.6												1.8		3			5	
Rated average power (W)	20		50	20		30	50			70		100	130		200	20		40		70	130	200
PulseTune Functionality[2]	HS	EP	HS	RM	EP	RM	RM	EP	RM	EP		EP	EP		EP	HS		HS		HS	EP	EP
Beam delivery cable length (m)	2			3							3/5	1/3	3/5			2/3		3/5				
Beam delivery optic / connector	ILOC											HE-ILLK	IBeam1			ILOC					IBeam2	
Pulse parameters																						
Max peak power (kW)*	>7			>10												>12		>20			>40	
Max pulse energy (mJ)	>0.6	>0.7		>1									>1.5			>0.8		>1.25			>5	
Pulse repetition frequency range (kHz)	1-1000			1-500	1-1000	1-500		1-1000	1-500	1-1000			1-4000			1-1000					1-4000	
PulseTune waveforms	24	40	24	2	40	2		38	2	37		32	>40			25		24			>40	
Pulse duration range (ns)	10-240	3-500	11-220	26-250	3-500	26-250		6-500	28-260	9-500		12-500	5-2000		9-2000	10-220		10-240		10-250	3-2000	
CW mode with modulation	Yes			No	Yes	No		Yes	No	Yes			No			Yes					No	
Modulation range in CW (kHz)	1-100			N/A	1-100	N/A		1-100	N/A	1-100			N/A			1-100					N/A	
Output power stability %p-p*	<5															<8		<5				
Cooling options																						
Air cooled or Water cooled	Air											Water	Air									
Environmental																						
Ambient temperature range (°C)	0-45		0-42	0-45			0-40					15-35	10-40			0-45				0-40	10-40	
Relative humidity	5-95% RH (non-condensing)																					

* As measured at rated average power, waveform 0, max pulse energy and over full operating temperature range.

1. Beam quality options

S Type - Single mode (M^2 <1.3)
Generating very fine spot size <20 microns with high power stability and large depth of focus. Ideally suited to applications requiring small feature sizes.

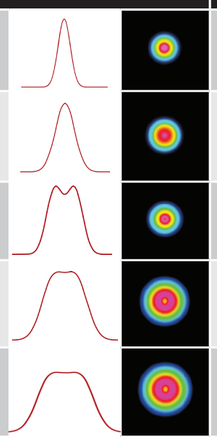
Z Type - General purpose - (M^2 <1.6)
Offering higher peak power and pulse energy with only minor increase in spot size and good depth of focus.

L Type - Low mode (M^2 1.6 - 2.0)
General marking applications giving slightly larger spots and features that are more appropriate to making marks visible to the naked eye.

H Type - High mode (M^2 2.5 - 3.5)
Offering higher pulse energies, peak powers and even larger spots ideal for wide lines, filled font type applications and large area coverage.

M Type - Multimode (M^2 4.0 - 6.0)
Highest pulse energies and longer pulse durations ideal for welding and cleaning.

Feature Combinations

	At a glance		PulseTune Functionality[2]		
			RM	HS	EP
Beam Quality[1]	S Type			20W, 50W	20W
	Z Type		20W, 30W, 50W, 70W		20W, 50W, 70W, 100W, 130W, 200W
	L Type			20W	
	H Type			40W, 70W	
	M Type				130W, 200W

2. PulseTune Functionality

Gives users greater control of pulse conditions providing increased pulse energy, peak power and pulse repetition frequency.

RM Series (Reduced Mode)
- Models benefit from 2 PulseTune waveforms
- Up to 0.5 MHz pulse repetition frequencies

HS Series (High Specification)
- Up to 25 PulseTune waveforms
- Up to 1 MHz pulse repetition frequencies

EP Series (Extended Performance)
- Up to 40 optimised PulseTune waveforms
- Up to 4 MHz pulse repetition frequencies

Mirror Aperture	7 mm | 10 mm | 14 mm
Scan Angle	± 20° | ± 22° | ± 22°
Typical Marking Speed (m/s)	4.0 | 3.1 | 2.5
Typical Write Speed 1,2(cps)	1100 | 1000 | 890
Step Response3,4 (µsec)	85 | 220 | 280
Repeatability5,6(µrad)	20 | 16 | 12
Command Resolution	16-bit
Long Term Drift	Offset: <200 µrad
Scale:	<200 ppm
Thermal Drift Offset:	<25 µrad/°C
Scale:	<50 ppm/°C
Wattage	10w to 400w
Cooling	10w to 400w air cooled – water cooling optional

Items included in LP9000F Fiber Series

Laser Generator with Fiber Cable and Beam Expander

Galvo scanner -- Fixed beam delvieries also available

Laser controller software and interface cards

Computer, monitor, keyboard, mouse

System integrated on mounting plate, aligned, and beam emitting from laser through scanner head and focus lens

Software integrated and set up on computer ready for new or imported laser files

110v 20mp power requirements – 220v optional on power over 100 watts

36 month warranty with expected laser generator ife time of 100,000 hours before replace

Lead times and accessories required for full integration will be quoted separately

20, 25 and 30+ mm scanner heads are also available and can be quoted upon request.