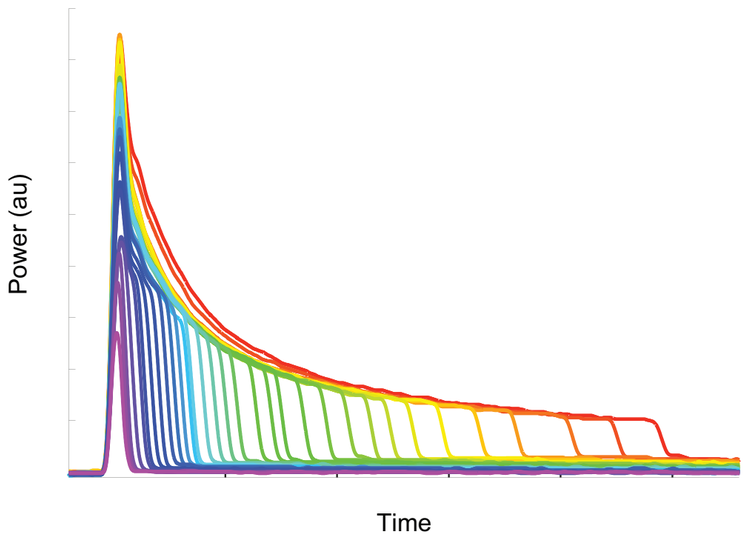
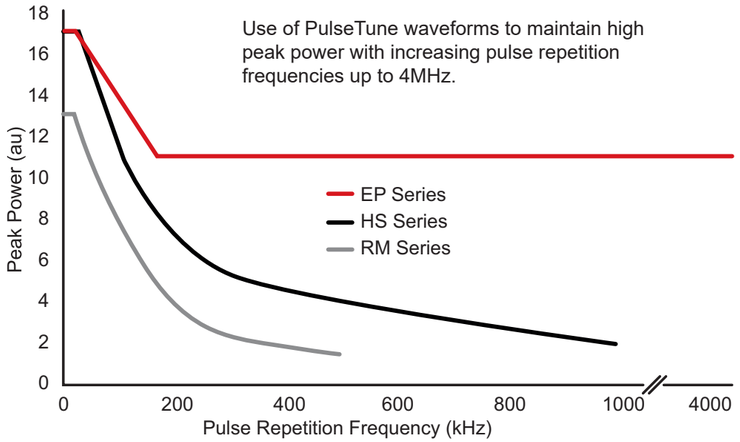
PulseTune Technology

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.





Visit our NEWLY configured redENERGY G4 Page

Still not sure which is the ideal solution, use our online selector tool.

✓✓= Optimal for ✓= Good for

Product range by beam quality	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 L 03/19

SPI® Lasers

redENERGY® G4

20W - 250W

Pulsed Fiber Lasers

WITH GTwave®
AND PulseTune TECHNOLOGY

GREATER FLEXIBILITY

SUPERIOR QUALITY

INCREASED PRODUCTIVITY

IMPROVED PROFITABILITY

redENERGY G4 20W - 250W
Pulsed Fiber Lasers


redENERGY G4 70W


redENERGY G4 200W

Product selection parameters

Wavelength	1060nm																								
Beam quality options [1]	**S Type**				**Z Type**																**L Type**	**H Type**			**M Type**	
M^2	<1.3				<1.6																1.8	3			5	
Rated average power (W)	20	20	30	50	20		30	50		70		100		130	200	250					20	40	70		130	200
PulseTune Functionality[2]	HS	EP	HS	HS	RM	EP	RM	RM	EP	RM	EP	EP	EP	EP	EP	EP					HS	HS	HS		EP	EP
Beam delivery cable length (m)	2				2/3		3				3/5	1/3	3/5	3							2/3	3/5				
Beam delivery optic / connector	ILOC / ILLK		ILLK		ILOC / ILLK							ILOC +		IBeam1							ILOC / ILLK				IBeam1	
Pulse parameters																										
Max peak power (kW)*	>7				>10																>12	>20			>50	
Max pulse energy (mJ)	>0.6				>1								>1.3	>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	
Pulse duration range (ns)	10-240	3-500	10-240	11-220	26-250	3-500	26-250		6-500	28-260	9-500	12-500	4-2000	3-2000	9-2000	10-1400					10-220	10-240	10-250		12-2000	
PulseTune waveforms	24	40	24		2	40	2		38	2	37	32	48	47	45	42					25	24			45	
CW mode	Yes				No	Yes	No		Yes	No	Yes			No							Yes				No	
Modulation range in CW mode (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					Water	Air							
Environmental																										
Ambient temperature range (°C)	0-45		0-42		0-45			0-40				15-35	5-40	10-45	10-40		15-35				0-45		0-40		10-40	
Relative humidity range	5-95% RH (non-codensing)																									

*Measured at rated average power, waveform 0, max pulse energy and over full operating temperature range. Models with longer beam delivery cables may have lower peak power than stated.

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, 30W, 50W	20W
	Z Type		20W, 30W, 50W, 70W		20W, 50W, 70W, 100W, 130W, 200W, 250W
	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 frequency

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

EP Series (Extended Performance)
- Up to 48 optimised PulseTune waveforms
- Up to 4 MHz pulse repetition frequenciesy