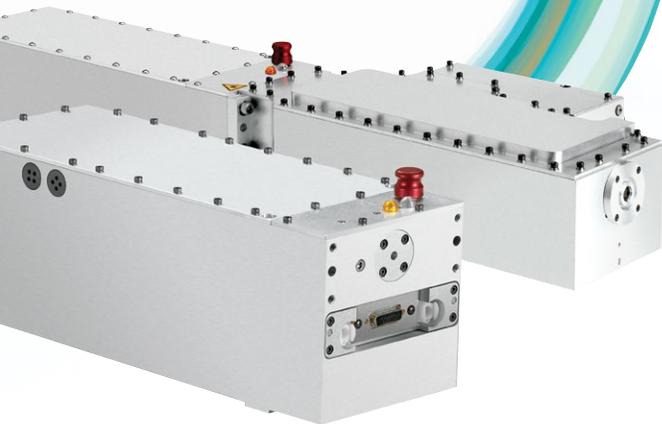


# HIPPO™

## MID-POWER Q-SWITCHED LASERS

### *The HIPPO Advantage*

- *Rugged, industrial design for reliable 24/7 operation*
- *Modular design allows easy field change of key components, including the harmonics module*
- *High peak power and short pulse lengths minimize thermal damage to substrates*
- *Excellent mode and pulse-to-pulse stability for consistent processing*



The Spectra-Physics HIPPO lasers are a family of high power diode-pumped solid state (DPSS) Q-switched lasers with available outputs of 1064 nm and 266 nm wavelengths. With an extensive history and a strong performance record in industrial uses around the world, HIPPO is the tool of choice in applications where uptime is critical. HIPPO's modular design allows easy field replacement of key components including diodes, the laser output window, and the harmonic module without costly tool realignment.

### **Excellent Performance**

HIPPO Q-switched lasers are characterized by high peak power and short pulse widths, which minimize undesirable thermal damage such as heat affected zones, recast material, kerfs, and micro-cracking of the substrate.

HIPPO Q-switched lasers have excellent TEM<sub>00</sub> beam quality, which ensures a large depth of field and guarantees consistent and reliable scribing results over a wider range of material flatness, thickness, and surface variations.

HIPPO lasers have stable power, low pulse-to-pulse energy variation, and stable beam pointing over a wide range of operating conditions, including time, temperature, and pulse repetition rate.

### **High Reliability**

HIPPO lasers have a number of unique design features that significantly increase both the laser life and uptime. The HIPPO lasers' modular design separates known wear components and key failure mechanisms into small components that are easy to change in the field without costly tool realignment. This lowers service inventory holding costs while shortening mean time to repair (MTTR).

### **Applications**

#### *1064 nm*

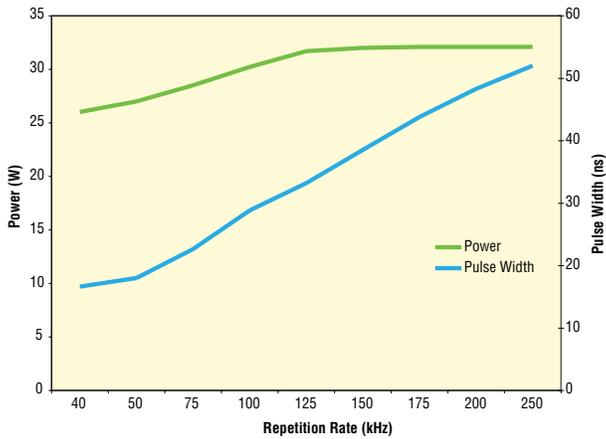
- *Scribing of thin film solar cells*
- *Crystalline Silicon solar cell edge isolation*
- *Flexible circuit board processing/ drilling/cutting*
- *Marking metals and plastics*
- *Si wafer scribing*

#### *266 nm*

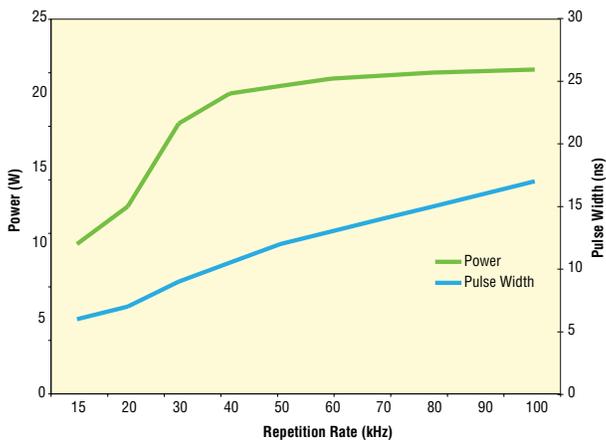
- *LED laser lift-off*
- *Sapphire (LED) scribing*

## HIPPO Performance

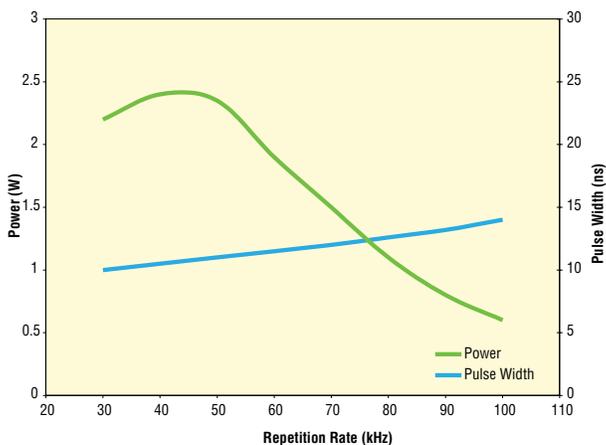
### HIPPO 1064-27 Typical Performance<sup>1</sup>



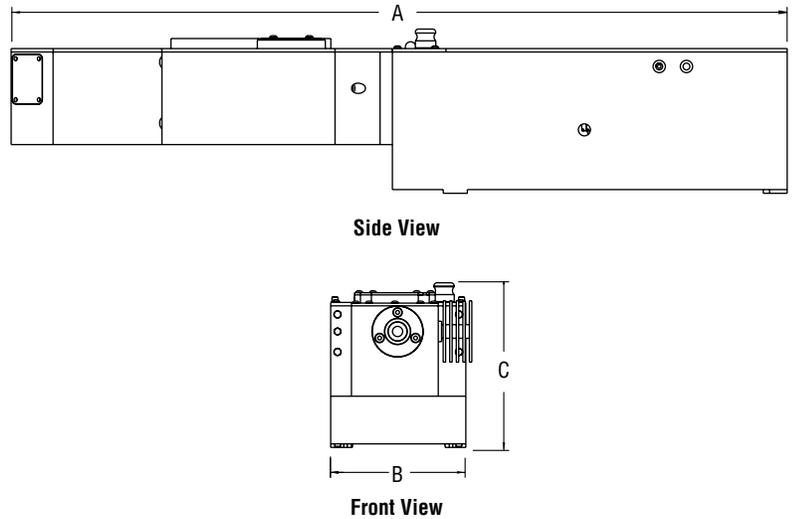
### HIPPO 1064-17 Typical Performance<sup>1</sup>



### HIPPO Prime 266-2 Typical Performance<sup>1</sup>

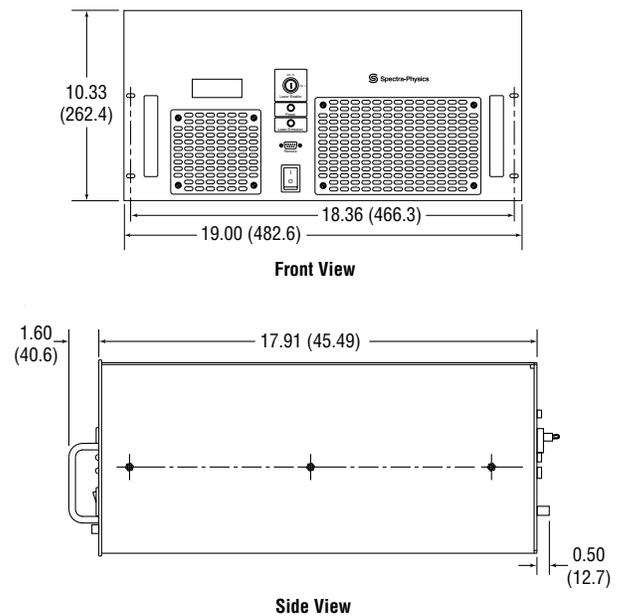


## HIPPO Laser Dimensions



	HIPPO 1064-27 HIPPO 1064-17	HIPPO Prime 266-2
A Length	14.6 in (371 mm)	28.5 in (724 mm)
B Width	5.0 in (127 mm)	9.0 in (229 mm)
C Height	6.0 in (152 mm)	6.0 in (152 mm)

## HIPPO Power Supply Dimensions



1. Typically measured performance; not a guaranteed or warranted specification.

Dimensions are in inches (mm)

## Specifications<sup>1</sup>

	HIPPO 1064-27	HIPPO 1064-17	HIPPO Prime 266-2
<b>General Characteristics</b>			
Wavelength	1064 nm	1064 nm	266 nm
Power	27 W at 100 kHz	17 W at 50 kHz	2 W at 50 kHz
Repetition Rate	30–250 kHz	15–300 kHz	30–300 kHz
Pulse Width, nominal	<30 ns at 100 kHz	<15 ns at 50 kHz	<12 ns at 50 kHz
Peak Power	~9 kW	~22.7 kW	~3.3 kW
<b>Beam Characteristics<sup>2</sup></b>			
Spatial Mode	TEM <sub>00</sub>		
M <sup>2</sup>	<1.2	<1.2	<1.4
Polarization	>100:1, vertical		
Beam Diameter, at waist	0.6 mm nominal	0.6 mm nominal	2 mm nominal
Waist Location, nominal	17 cm from output	17 cm from output	at output
Beam Divergence, full angle	<3.0 mrad	<3.0 mrad	<0.28 mrad
Beam Ellipticity	<10%	<10%	<20%
Beam Pointing Stability <sup>3</sup>	<±50 μrad/°C		
Pulse-to-Pulse Stability	<2% rms	<2% rms	<8% rms
<b>Operating Conditions</b>			
Warm-up Time	<10 min	<10 min	<30 min
Temperature Range	18–35°C		
Altitude	0–3,000 m		
Humidity	8–95%, non-condensing		
Water Cooling	Yes		
Water Temperature	20°C ±0.1°C		
Water Flow Rate	1.5 liter per minute		
Thermal Load	100 W		
<b>Non-operating Conditions</b>			
Temperature Range	0–50°C		
Altitude, Non-operating	0–12,000 m		
Humidity, Non-operating	8–95%, non-condensing		
<b>Physical Characteristics</b>			
Dimensions (Laser Head) (L x W x H)	14.6 x 5.0 x 6.0 in (341 x 127 x 152 mm)	14.6 x 5.0 x 6.0 in (341 x 127 x 152 mm)	28.5 x 9.0 x 6.0 in (724 x 229 x 152 mm)
Weight (Laser Head)	17.6 lbs (8.0 kg)	16.8 lbs (7.6 kg)	35.0 lbs (15.9 kg)
Dimensions (Power Supply) (L x H x W)	19.0 x 10.3 x 17.9 in (482.6 x 262.3 x 455 mm)		
Weight (Power Supply)	55 lbs (24.9 kg)		

1. Due to our continuous product improvement program, specifications may change without notice.

2. All beam characteristic specifications are at 50 KHz, as noted in power specification above.

3. Stability specification applies over a ±2°C range within the stated operating temperature range.