

# LE-445-6000 6W Blue 445 nm Engraving, Marking, and Cutting Diode Laser



The LE-445-6000 Blue Diode Laser can be used in laser engraving, marking, and cutting applications. Process wood, plastics, metals, anodized aluminum, stone, tile, and other materials. The adjustable spot can be adapted to the needed distance from laser to the material. The spot, with a size of  $<100 \mu\text{m}$ , creates very fine engravings and sharp cutting edges. The built-in driver accepts TTL and analog signals for power adjustments. The laser can be controlled between 0% and 100% of output power. It comes preset and needs only a power supply and a signal source.

## Features

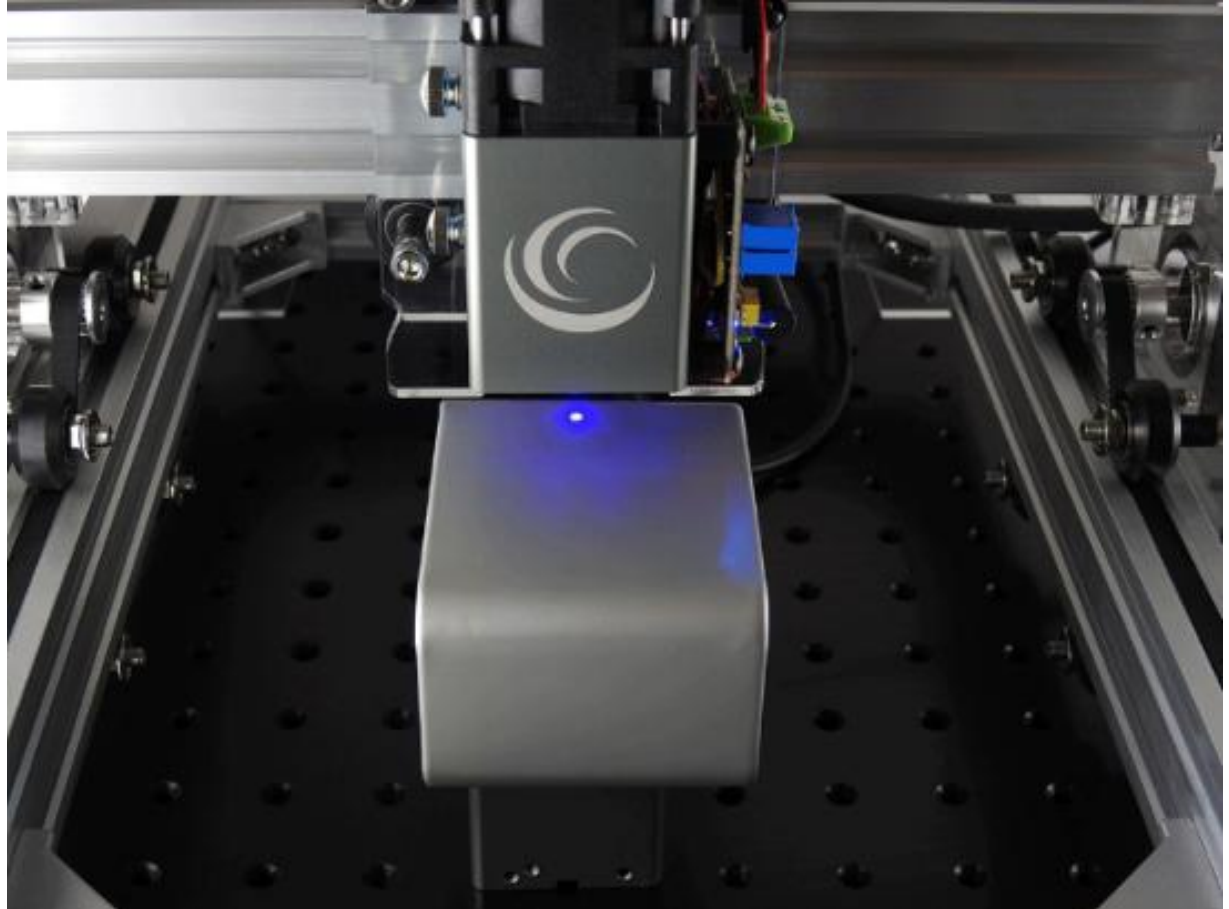
- High Output Power
- Adjustable Focus
- Fast Modulation and CW Operation
- Powerful Fan for Cooling and Fume Removal
- Plug & Play
- OEM Style for Ease of Integration
- Spot Size of  $<100\mu\text{m}$

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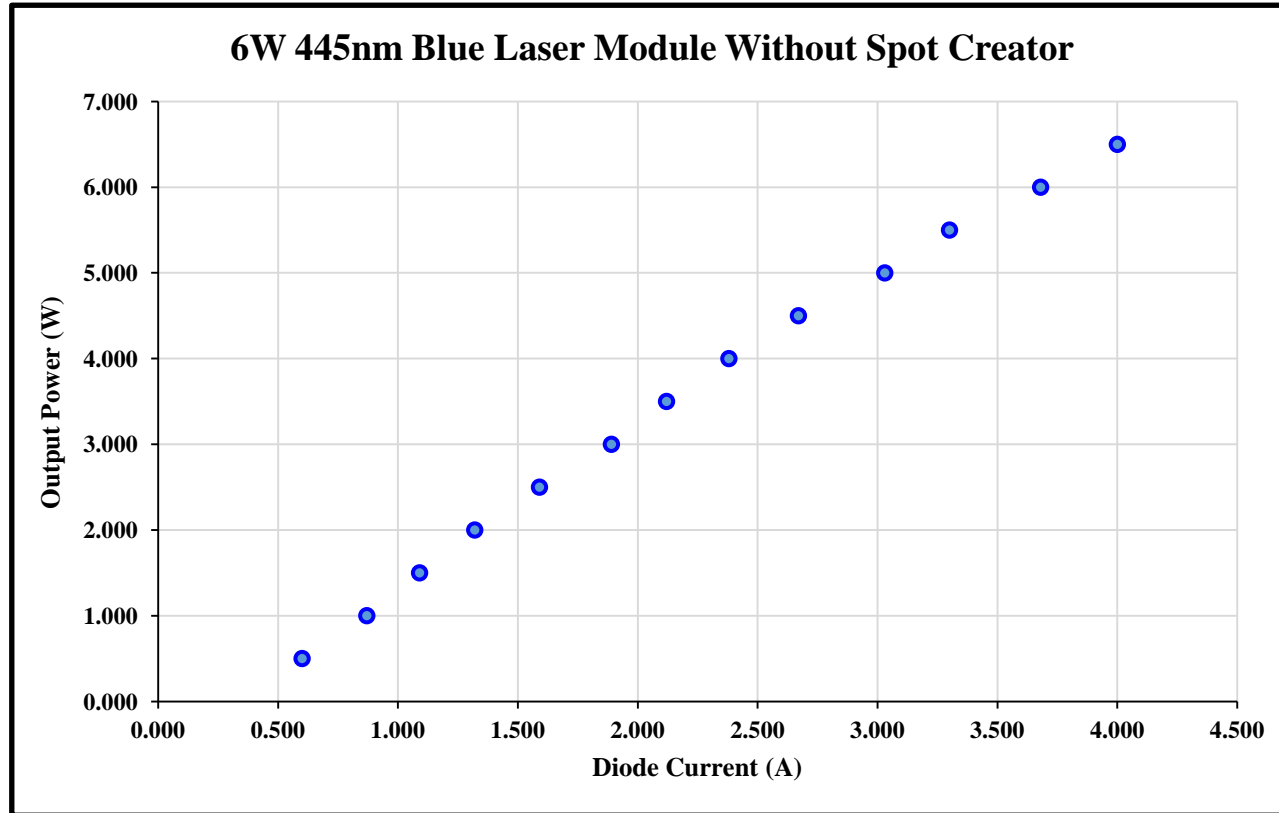


# Laser Specifications

Model	LE-445-6000
Wavelength (nm)	445 ± 5
Output Power (mW typ.)	6000 (- 10 to + 25 °C) > 5300 (25 to + 40 °C)
Beam Mode	Low-Order Mode, Near TEM <sub>00</sub>
Beam Size at Aperture (mm <sup>2</sup> )	4 x 1
Beam Divergence at Aperture	Focus Setting Dependent
Spot Size (mm)	Adjustable
Modulation (kHz)	Up To 250
Modulation Voltage (V)	0 to ≈ 5
Power Stability After Warmup	< 1 %
Polarization Orientation	Vertical (+/- 2°)
Polarization Extinction Ratio	100:1
Modulation Signal	Analog and TTL
Rise Time (μsec)	1.4
Cooling Method	Fan
Laser Dimensions (mm <sup>3</sup> )	81 x 62 x 40
Power Supply (VDC / mA)	9-12 / 4000
Dimensions (L x H x W)	78 x 62 x 40
MTTF (Hours)	>10,000
Operating Temperature (°C)	- 10 to + 40
Storage Temperature (°C)	- 10 to + 85



# Laser Output Power as a Function of Diode Current



## About This Data

Data for the plot above was generated by applying a constant + 5 VDC signal across the Mod terminals, and a 12 VDC signal across the Vin pins with the circuit gain = 0. The output power was then varied by adjusting the gain of the small pot; the measurement of the input current was performed by using the large 0.1  $\Omega$  resistor in series with the laser diode.

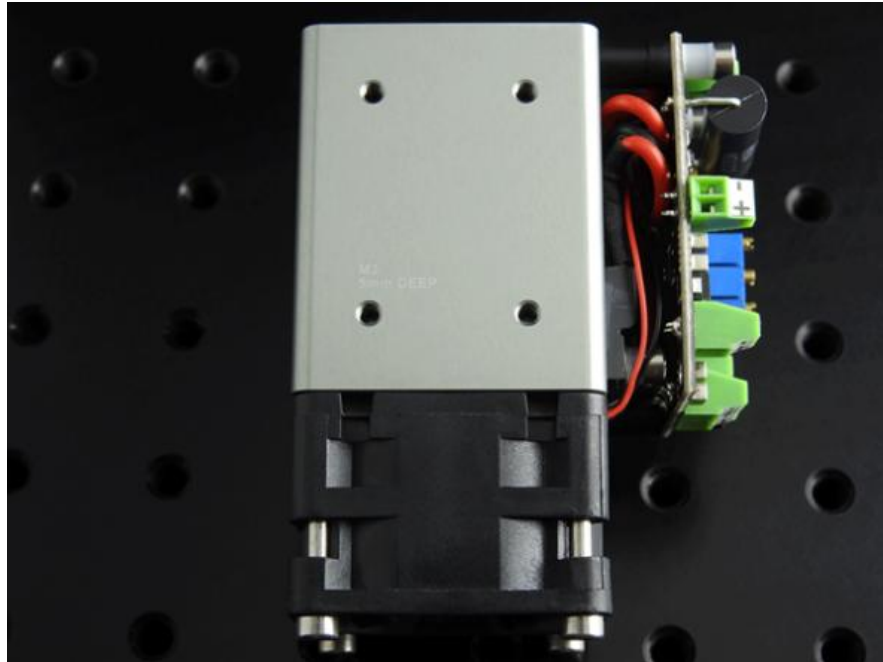
# SHS-4500 Power Supply



## Note About SHS-4500 Power Supply

While the input power supply voltage can be 3-12 VDC, we highly recommend that users employ a 12 VDC power source. The cooling fans require 12 VDC and will not provide the proper cooling at lower voltages where the fan speed is lower.

## Dimensions (mm)



### Heatsinking

Use an appropriate heatsink to attach the LE-445-6000 laser to, that will efficiently remove the heat. Four M3x0.5 screws are used to accomplish this, as shown above.

