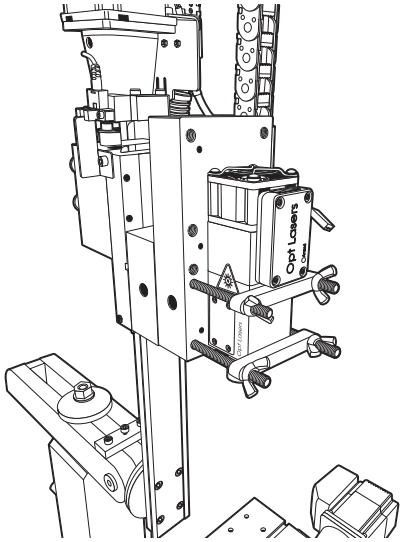

SHERLINE PRODUCTS
INCORPORATED 1974

Opt Lasers
P/N PLH3D-XT-50

Features & Benefits of the Cutting and Engraving Laser Head

Adjustable, Microscopic and Square Beam Spot 25 - 500 DPI

All of the laser heads from PLH3D-XT-Series are distinguished by an adjustable, microscopic and square beam spot. By adjusting the height of the laser head above the material, one can adjust the beam spot size up to 2 mm. The PLH3D-XT-50 laser head achieves beam spot width below 50um when set in perfect focus. The square spot allows for perfect details when rasterizing graphics and ensures a consistent cutting line thickness so that even small details are perfectly reproduced according to the design. With the XT-50, you can achieve an ultra HD resolution of over 500 DPI or engrave large-scale formats or images down to 25 DPI.

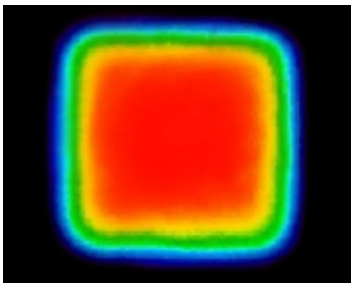

FIGURE 1—Example of the microscopic beam spot.

High Power Density

Power density is defined by how much power is located in certain areas. Typically, power density is specified in kilowatts over cm2 or mm2 (kW/cm2 or kW/mm2). This parameter is one of the most crucial for cutting or engraving different materials. PLH3D-XT-Series laser heads achieve a small-beam spot size, resulting in a proportional power density increase. Higher power density reveals new cutting and engraving possibilities. Cutting and engraving processes are significantly faster than laser heads without anamorphic optics. For example, with the XT-50, you can engrave (not only mark) stainless steel and tool steel.

Cutting and Engraving: The PLH3D-XT-50 blue laser can cut and engrave various materials such as wood, cardboard, rubber, paper, textiles, leather, plastic, balsa, plywood, and many others, as well as mark stainless steel, titanium, and low-heat conductance subtypes of steel. To learn more, please check our Manuals and Articles section.

Improved Safety: The cutting and engraving laser head now has an "Armed" indication LED. Whenever the engraving laser head is connected to the power supply, the indication LED will turn on. Additionally, the LED will indicate overheating if it happens. Whenever the ambient temperature of the environment in which the engraving laser operates in a CW mode exceeds 40ºC (104ºF), the indication LED will start blinking. Such a warning means the temperature is about to exceed the maximum operating temperature. If the ambient temperature reaches 45ºC (113ºF) and above, the indication LED will no longer work, and the engraving laser head will shut down.

Factory Set Lens: The engraving laser head is shipped with a lens installed and adjusted to focus at 60.0 mm (measured from the front-face surface of the laser head to the engraving plane). This focal distance has a well-optimized focal spot size, suitable for many laser cutting and engraving applications. This focal length is the best-optimized focus distance to start with!

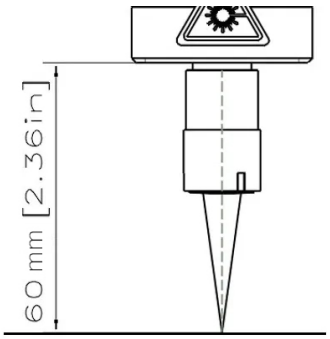

FIGURE 2—Focal length of the laser lens is 60 mm (2.3").

Input Signal Versatility and 5/10V Analog Input Switch: the built-in driver accepts various signals: 0 - 5 V analog signal and 0 - 5 V, 0 - 10 V, or 0 - 24 V for PWM/TTL signal. The engraving laser head has an additional 10 V analog input switch. Modulation Input 1 of the cutting engraving laser can be changed from 0–5 V analog input to 0-10 V analog input. This change makes this cutting and engraving laser even more versatile and compatible with more CNC machines and 3D printers. Please refer to the user manual to find out how to change the voltage range on Modulation Input 1.

The Built-in Driver inside the Engraving Laser Head: Opt Lasers is the first company to directly integrate the

laser diode driver into the cutting and engraving laser head. A short connection between the laser diode and a driver ensures better protection for a diode, the possibility of high-frequency current modulation, and the elimination of inductance effects during the switch-on. In contrast to the previous generation of the driver, the engraving laser diode driver features enhanced efficiency, produces less noise, and is built with even higher quality components, which ensures improved reliability and a longer lifetime of the engraving laser.

Accepts a Wide Range of Power Supplies – 12 - 24 V: The integrated high-efficiency DC-DC converter adjusts the input voltage to the proper diode compliance voltage. This reduces the amount of heat generated and ensures overvoltage protection.

No Additional Cooling Required – 24 hours/7 days: This lightweight 300g (10.6 oz) engraving laser requires no additional cooling and can work constantly 24 hours every day. The engraving laser's body acts as a heatsink, and the fan design allows it to function as an air nozzle, protecting the lens from the smoke while also cooling the laser head. Rigorous testing on tens of prototype designs allowed us to optimize the heatsink's shape and enable efficient cooling while maintaining the module's notably compact design. The distinct shape of the cutting and engraving laser heads provides the best possible cooling method for a 6 W laser diode. Numerous prototypes have been tested to find the best solution for cooling the laser diode. The current design allows the engraving laser to warm up by only 2 - 3 degrees Celsius after a whole hour of constant work at full power.

The Strongest Fan Available on the Market in Its Size: cooling is not the only thing that the fan does: 43 m3 of air per hour (25 CFM) makes a great smoke removal system. Additionally, the fan has a life expectancy of 70,000 hours.

Compatible with Accessories for the Ease of Use: Ease of work and safety are crucial to us. The accessories we produce are of the highest quality, milled on a CNC machine, which makes work easy and safe.

Opt Lasers Website

If you need more information about Opt Lasers, or if you are having any problems with the laser, please contact Opt Lasers directly at: optlasers.com

Thank you,
Sherline Products Inc.