

User Instructions for Operation of SheauPac Laser Module

Warning:

- Handle packages at static-safe workstations only. The lasers are extremely delicate devices susceptible to ESD damage.
- This is a Class-IV laser product. High laser power (<10W @ 900-1000nm) is emitted from the fiber. This can cause significant damage to exposed body parts or combustible materials. Proper eye protection is required when the product is in operation. Also, the fiber should be properly terminated before operating the laser diode.
- ALL SheauPac laser diode packages REQUIRE PROPER HEATSINKING before they can be operated. FAILURE TO DO SO WILL RESULT IN DAMAGE TO THE DEVICE AND WILL VOID ALL PRODUCT WARRANTY.

1. The SheauPac devices have been carefully tested and packaged prior to shipment. Please wear proper ESD protection before opening the package.
2. The top lid is snapped into place with 4 wing style tabs. Separate the overlapped wings and pry open the lid from the four corners with fingers and remove lid without tilting the package over.
3. The internals of the shipping container are shown in figure below. Remove the tape and foam pieces holding the fiber end.
4. The end user needs to provide a proper heat sink for mounting the SheauPac. The heat sink should be capable of dissipating 15W of power with a maximum temperature not to exceed the SheauPac T_{max} specification. Typical heat sinks used for these packages are water cooled/air cooled copper or aluminum plates.
5. Prepare the heat sink as shown in Figure 2 below. Mounting hole locations should be centered on the heat sink if possible. The heat sink requires four screw holes for securing the package. Four SS-SHCS (socket head cap screws) 0.06-80x 0.25 x 0.25N and a thermal pad (included in the mounting kit – Fig. 4) are required for mounting.



Figure 1

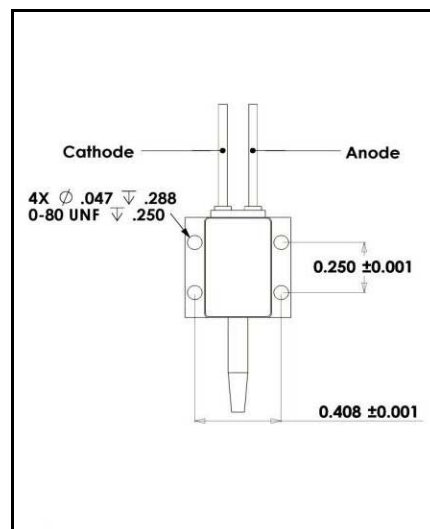


Figure 2 (top view)

6. Once the proper hole spacing and threading has been completed, the surface should be cleaned and prepared for attaching the supplied thermal pad. Verify the surface and threaded holes are burr free.
7. Lift the package up by pulling the wire leads up. Care should be taken to not damage/break the fiber exiting the package at this point.
8. Place the package carefully on the area where the thermal pad has been placed (see Fig. 3 a and b). Finger tighten the four holding screws making sure the base of the package is flat on the heatsink surface before tightening the screws down completely. Torque the screws using an X pattern incrementally starting at 2 in-oz, then 7 in-oz and finally 11 ± 2 in-oz. Do not exceed 16 in-oz.

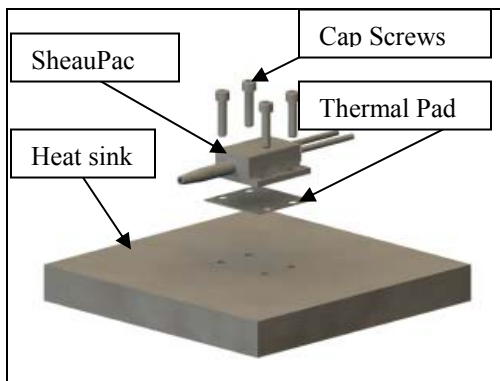


Fig. 3a: Exploded Assembly

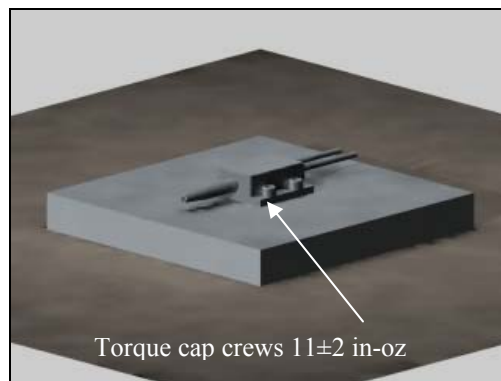


Fig. 3b: Final Assembly

9. If a power kit was purchased (Fig. 5), connect the power leads to the laser package with the included connector as shown below. If soldering to the package leads, use an ESD safe soldering station and stay below the maximum lead soldering temperature specified on the SheauPac datasheet.



Fig. 4: Mounting Kit



Fig. 5: Package with Power Connectors

10. Cleave and connect output fiber to power meter or beam block.
11. Wear eye protection.
12. Connect power to laser using a current controlled power supply, preferably **0-10A, 0-3V**. Adjust current to change laser power according to the LIV sheet supplied with the product.
13. **Do not exceed maximum current specification for each part as indicated in the LIV datasheet. Do not reverse bias the laser or it will destroy the chip.**