



## Laser Safety and Handling Precautions

1. The laser could be permanently damaged by static electric discharge (ESD). To protect the laser from ESD, ground the laser package on a static controlled workstation before opening the box. Wear a grounded wrist strap / heel straps / static dissipative outer garment while handling the laser.
2. Never test the laser using a multimeter. The applied voltage of the meter may be higher than the maximum reverse bias voltage of the laser and could cause permanent damage to the laser.
3. Make sure to follow the pin-out diagram (supplied with the laser) while connecting the laser pins. The polarity is critical for both the Thermal Electric Cooler (TEC) and the laser, and improper connections can cause permanent damage.
4. The laser and internal TEC generate a significant heat load and a heat-sink is required for continuous operation. Ensure there is good thermal contact between the laser and the heat-sink. A thin film of thermal paste (thermal grease) is recommended between the laser base and the heat-sink to improve the thermal conductivity. Clamp the laser to the heat-sink tightly using the flange at the base of the package. Do not use the lens holder to clamp the laser.
5. We recommend using a socket to connect to the laser pins. The connecting wires may be soldered directly to the socket pins which allows for much easier mounting and unmounting of the laser. If soldering directly to the laser pins is preferred, we recommend that the soldering time be kept as short as possible.

6. It is very important to make sure that the laser current and the TEC current are limited to the maximum values given in the specification sheet for each particular laser and packaging format. Current over the rated maximum could cause permanent damage to the TEC and the laser.
7. The thermistor temperature should be monitored to ensure the TEC does not go into a run-away condition. This type of run-away can occur if the TEC pins are incorrectly connected or if there is poor thermal contact to the heat-sink. The laser and TEC should be shut off immediately if this occurs.
8. Always switch off the output of the power supply to the laser and TEC before connecting or removing the laser.
9. Wear protective goggles designed for the laser wavelength when the laser is on. NEVER look directly in to the laser while it is running.

**For further technical assistance, please contact us directly by phone at 780-431-9637 or by email ([info@norcada.com](mailto:info@norcada.com)).**