



Product Operation Manual

DIODE LASER CONCEPTS, INC.
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 An ISO 9001 Registered Company
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Thank you for purchasing a laser product from Diode Laser Concepts, Inc. DLC strives to design and manufacture the highest quality and most dependable lasers. Our products are reliable, user-friendly, and low maintenance. Please read the following safety precautions and instructions to ensure proper operation.

User Safety Precautions

- 1) To avoid potential eye damage, avoid direct eye exposure. DO NOT look directly into the laser beam, either from the module or from a reflected surface. Laser radiation is emitted from the aperture. For specific radiation emission profiles and intensities, please refer to the Product Specifications.
- 2) **CAUTION**—Use of controls or adjustments or performance of procedures other than those specified herein or in the Product Specifications may result in hazardous radiation exposure, and/or product damage.
- 3) Class II and Class IIIa labeled products are certified and in compliance with the Center for Devices and Radiological Health (CDRH) and its regulations. Class IIIb labeled products are for OEM/EXPORT applications only and do not comply with all US product performance standards for lasers, 21 CFR 1010/1040. OEM is responsible for safe handling, operation, and regulation conformance. See labels below to identify product classification.



Class II

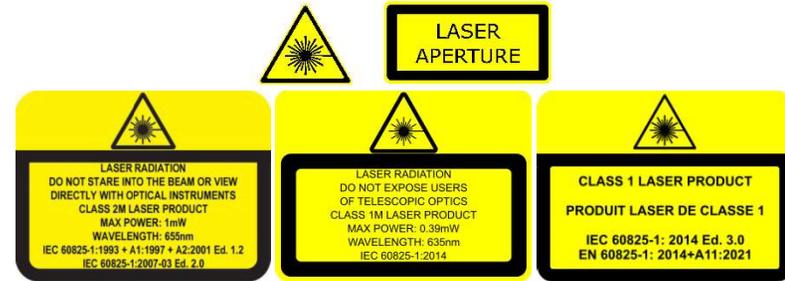


Class IIIa



Class IIIb

- 4) Products complying with the International Electrotechnical Commission (IEC) standards use different labels. Examples are shown in the images below. Specific wording may vary depending on the laser class. For specific label type, see the Product Specifications.



- 5) For product classified as Class 1M and 2M, viewing the laser output with telescopic optical instruments (for example, telescopes and binoculars) may pose an eye hazard and thus the user should not direct the beam into an area where such instruments are likely to be used.
- 6) The laser identification label is arranged as follows.

- Line 1: Nominal Wavelength of Radiation
- Line 2: DLC Part Number and Revision
- Line 3: DLC Serial Number
- Line 4: Manufacture Origin
- Line 5: Month and Year of Manufacture
- Line 6: Company and Phone Number

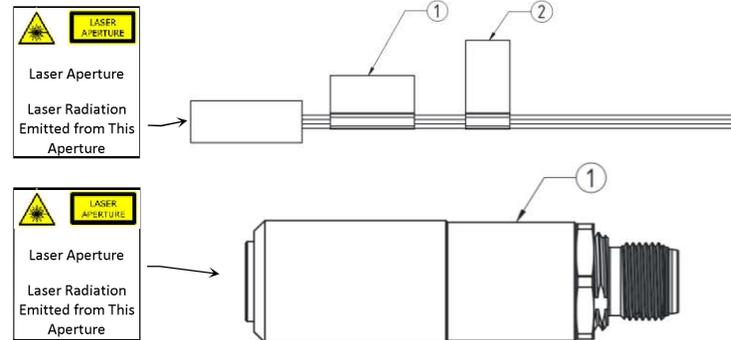
LASER: ###nm
 P/N: XXXXX-XXXX Rev X
 LOT: XXXX-X
 MANUFACTURED USA
 MONTH YEAR
 DLC, INC. 541-773-5321

Identification Label

LASER: ###nm
 P/N: XXXXX-XXXX Rev X
 LOT: XXXX-X
 MANUFACTURED USA
 MONTH YEAR
 DLC, INC. 541-773-5321
 Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3, as described in Laser Notice No. 56, dated May 8, 2019.

Identification Label with IEC Statement

- 7) The following diagrams illustrate where labels are affixed to the interconnecting wires or module body depending on the product. Check the Product Specifications for full details. Labels do not interfere with mounting surfaces to not impede with positioning and/or thermal heat transfer out of the product. If aperture, logotype, and certification labels are not affixed and included in the bag, due to functional constraints, they must be attached to the unobstructed laser where they can be viewed without exposure to laser radiation. Place the label so one of the arrows in the top right identifies the laser emission location. The label must be oriented correctly and unhindered for viewing.



- Labels:
- (1) Identification
 - (2) Aperture, Logotype, and Certification

Operation

General operations are described below. Refer to the Product Specifications for precise details about voltages, wire color, logic, connections, and environmental conditions. Product Specifications may contain additional details and pertinent information for operation.

- 1) Unpack and verify no damage has occurred in shipping. Keep the optics and/or window clean during unpacking, mounting, and use. Mount and verify the laser is safe to operate according to all applicable safety standards.
- 2) Proper operation requires the module have adequate heat sinking through mounting. Mount on the proper mounting surface indicated in the Products Specifications. Do not mount over labels. For Industrial modules, mount on the wide aluminum portion. Do not mount over the nose piece or the Lexan cover.
- 3) Use a regulated power supply with the specified DC voltage capable of sourcing the maximum current stated in the Product Specifications. Most products use an illuminated green or red LED to indicate the laser is ON.

If supplied, a clock generator can be used to modulate the laser emission OFF and ON using the TTL wire. Product Specifications state the specific interconnections. The recommended wire connecting order and/or voltage application order include, first ground, second +VDC, and lastly TTL.

- 4) To turn off, remove or disconnect supply voltage(s) from the laser.

Maintenance

Perform maintenance with laser OFF.

- 1) If necessary, remove the module from mount to access front optics or window.
- 2) Blow the window or output optics free of any particulates using clean dry air.
- 3) Lightly soak a clean cotton tipped swab with Isopropyl Alcohol (IPA) or a high-grade lens cleaner.
- 4) Gently move swab across the optical surface being cleaned. Rotating the swab while contacting the optical surface. Use swab only once and do not use excessive force as the optical element may crack or scratch the optical surface.
- 5) Visually inspect the optical surface and repeat procedure if necessary.

Under no circumstance should the user attempt further troubleshooting or maintenance. Damage to the module may result and the warranty will be invalidated. All warranty work and further maintenance is to be performed only at the DLC factory.

Service or Repair

All warranty, service, or repair work, is to be performed only at the DLC factory. To return product, contact DLC to receive a Return Material Authorization number, (RMA). Reference this number on any shipping documents.

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