

Operating Instruction for DBC laser diode module

OEM laser product for combing 2 diode's power or wavelengths

Introduction

The Dual Beam Combiner (DBC) is designed to combine the outputs of two laser diodes. The lasers can be of like wavelength or similar wavelengths.

This product can be configured with a variety of laser diodes at various output powers and operating wavelengths. Products having above 5mW output power or having IR output are not intended for surveying, leveling, and alignment applications. Visible units less than 5mW are CDRH certified as laser systems.

Installation

Do not mount the laser in a thermal insulating material, such as foam plastic. Heat can have adverse effect on laser diodes including decreased output power and large shifts in wavelengths. Lasers below 5mW may not need a heat sink. For best heat dissipation use a metal mounting fixture. If the system is to be run at or near the maximum rated input voltage, the use of a heat sink is recommended. A heat sink is always recommended for operating temperatures above 25°C.

The operating voltage for this laser module is from 3.3VDC to 9VDC. Positive power should be applied to the module's red wire and black wire should be connected to ground

If the label attached to the laser module reads "This product complies with 21CFR 1040.10 and 1040.11", a permanently installed switch at the power source will be required to retain the modules certification as a laser system. This certification is void if the unit is enclosed, or otherwise inaccessible, if the labels are modified or removed, or the system is permanently connected (i.e. soldered, etc.) directly to the power source without the required switch. Modifying the laser will void the CDRH certification. If the distance between the laser head and the power source switch exceeds two meters an emissions indicator must be mounted near the switch.

Operating Procedure & Control Description

This product uses PTI's LDP-214 laser diode drivers. See the enclosed operating instructions for their operating parameters.

Maintenance & Service

This laser module contains no user servicable parts. Occasionally the optics may need cleaning depending on environmental conditions. When cleaning is required, use of clean, compressed air is recommended to blow the optics clean. If compressed air fails, clean lens carefully with alcohol and a lint free rag or q-tip.

Warranty and Repair Return Policy

For systems that incorporate a centering option, adjustment of the centering set screws will void the diode warranty and possibly the warranty on the entire laser system since damage to the diode is easily achievable.

No return of merchandise will be accepted by PTI without an RMA, Return Material Authorization, number, issued by the factory and predominantly displayed on the return package.

No return shipments will be accepted "Collect" or "COD". On warranty returns PTI will pay for shipping charges on return of merchandise to the customer.

When contacting the factory for an RMA number, please have the following information available: model number, serial numbers, and a description of the problem.

Laser Safety



Power Technology Incorporated

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Class 3b and 4 lasers are not intended for use in surveying, leveling, alignment, or medical applications.

Caution: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Caution: The use of optical instruments with this product will increase eye hazard.

Do not shine laser in the direction of other people or at reflective surfaces that might cause exposure to the human eye. Do not unintentionally mount the laser at eye level.

Modifications, which affect any aspect of the product's performance or intended functions, will require re-certification and re-identification of the product in accordance with the provisions of 21CFR 1040.10 and 1040.11. A copy of 21CFR 1040.10 and 1040.11 can be downloaded from www.powertechnology.com.

The product labels shown below can typically be found on the laser head near the output optics.

<p align="center">Class II Laser: Visible Laser Radiation Do Not Stare Into Beam</p> <p align="center"> <input type="checkbox"/> Component <input type="checkbox"/> System </p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p align="center">CAUTION</p> <p align="center">VISIBLE LASER RADIATION DO NOT STARE INTO BEAM</p> <p align="center">1 MILLIWATT MAX. OUTPUT CLASS II LASER PRODUCT</p> <p>WAVELENGTH: nm</p> <p>MODEL:</p> <p>SERIAL:</p> <p>DATE OF MFG:</p> <p><small>THIS MODULE IS DESIGNATED FOR USE AS A COMPONENT AND THEREFORE DOES NOT COMPLY WITH FDA 21 CFR 1040.10 AND 1040.11 POWER TECHNOLOGY INC. PO BOX 191117 LITTLE ROCK, AR 72219</small></p> </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p align="center">CAUTION</p> <p align="center">VISIBLE LASER RADIATION DO NOT STARE INTO BEAM</p> <p align="center">1 MILLIWATT MAX. OUTPUT CLASS II LASER PRODUCT</p> <p>WAVELENGTH: nm</p> <p>MODEL:</p> <p>SERIAL:</p> <p>DATE OF MFG:</p> <p><small>CERTIFICATION: THIS PRODUCT COMPLIES WITH FDA 21 CFR 1040.10 AND 1040.11 POWER TECHNOLOGY INC. PO BOX 191117 LITTLE ROCK, AR 72219</small></p> </div> </div> <p align="center">One of the above labels is attached to the laser head.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p align="center">CAUTION</p> <p align="center">VISIBLE LASER RADIATION DO NOT STARE INTO BEAM</p> <p align="center"> </p> <p>PEAK POWER < 1.0mW WAVELENGTH 400-690nm CLASS II LASER PRODUCT</p> </div>	<p align="center">Class IIIa Laser: Visible Laser Radiation, Avoid Direct Eye Exposure</p> <p align="center"> <input type="checkbox"/> Component <input type="checkbox"/> System </p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p align="center">DANGER</p> <p align="center">VISIBLE LASER RADIATION AVOID DIRECT EYE EXPOSURE</p> <p align="center">5 MILLIWATT MAX. OUTPUT CLASS IIIa LASER PRODUCT</p> <p>WAVELENGTH: nm</p> <p>MODEL:</p> <p>SERIAL:</p> <p>DATE OF MFG:</p> <p><small>THIS MODULE IS DESIGNATED FOR USE AS A COMPONENT AND THEREFORE DOES NOT COMPLY WITH FDA 21 CFR 1040.10 AND 1040.11 POWER TECHNOLOGY INC. PO BOX 191117 LITTLE ROCK, AR 72219</small></p> </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p align="center">DANGER</p> <p align="center">VISIBLE LASER RADIATION AVOID DIRECT EYE EXPOSURE</p> <p align="center">5 MILLIWATT MAX. OUTPUT CLASS IIIa LASER PRODUCT</p> <p>WAVELENGTH: nm</p> <p>MODEL:</p> <p>SERIAL:</p> <p>DATE OF MFG:</p> <p><small>CERTIFICATION: THIS PRODUCT COMPLIES WITH FDA 21 CFR 1040.10 AND 1040.11 POWER TECHNOLOGY INC. PO BOX 191117 LITTLE ROCK, AR 72219</small></p> </div> </div> <p align="center">One of the above labels is attached to the laser head.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p align="center"> </p> <p align="center">VISIBLE LASER RADIATION - AVOID DIRECT EYE EXPOSURE</p> <p>PEAK POWER <5mW WAVELENGTH 400-690nm CLASS IIIa LASER PRODUCT</p> </div>	<p align="center">Class IIIb Laser: Visible Or Invisible Laser Radiation Avoid Direct Exposure To Beam</p> <p align="center"> <input type="checkbox"/> Component <input type="checkbox"/> System </p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p align="center">DANGER</p> <p align="center">LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM</p> <p align="center">500 MILLIWATT MAX. OUTPUT CLASS IIIb LASER PRODUCT</p> <p>WAVELENGTH: nm</p> <p>MODEL:</p> <p>SERIAL:</p> <p>DATE OF MFG:</p> <p><small>THIS MODULE IS DESIGNATED FOR USE AS A COMPONENT AND THEREFORE DOES NOT COMPLY WITH FDA 21 CFR 1040.10 AND 1040.11 POWER TECHNOLOGY INC. PO BOX 191117 LITTLE ROCK, AR 72219</small></p> </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p align="center">DANGER</p> <p align="center">LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM</p> <p align="center">500 MILLIWATT MAX. OUTPUT CLASS IIIb LASER PRODUCT</p> <p>WAVELENGTH: nm</p> <p>MODEL:</p> <p>SERIAL:</p> <p>DATE OF MFG:</p> <p><small>CERTIFICATION: THIS PRODUCT COMPLIES WITH FDA 21 CFR 1040.10 AND 1040.11 POWER TECHNOLOGY INC. PO BOX 191117 LITTLE ROCK, AR 72219</small></p> </div> </div> <p align="center">One of the above labels is attached to the laser head.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p align="center"> </p> <p align="center">VISIBLE OR INVISIBLE LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM</p> <p>PEAK POWER mW WAVELENGTH nm CLASS IIIb LASER PRODUCT</p> </div>
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