

The LDI-4001 Laser Diode Driver is a Power Factor Corrected, microcontroller driven, precision continuous wave (CW) current source designed for driving solid state laser diodes and thermoelectric coolers. The device is capable of operating laser diodes in current, light or external control mode. The device also has an integrated thermoelectric cooler (TEC) controller capable of driving various Peltier Elements to regulate the temperature of the laser diode being driven.



The Diode Drive is capable of driving laser diodes up to 24 V @ 10 A for a total of 240 W of electrical energy. The output is full floating, permitting grounding of the laser diode for safety and noise immunity. Three operating modes are available for the user to select; Current, Light and External.

The Diode Drive is designed with various functions to ensure the proper operation of a laser diode. The diode drive is designed to minimize any current overshoot during ON/OFF transitions as well as changes in output levels. The driver includes open circuit and short circuit protection for the laser diode.

The TEC Controller is a bi-directional current source capable of producing 25 V @ 15 A for a total of 375 W of electrical energy. The TEC controller uses the signal produced by a temperature sensor to regulate the temperature of the laser diode. The TEC controller has the capability to operate 5K, 10K and 30K thermistor as well as an AD590 temperature sensor.

The Aiming Beam Driver is available for operating a small solid state laser diode. Typically a small visible solid state laser diode is used as a pointer to show where the high-powered laser diode is focused or aimed and is used for safety.

Specifications

- Drives Continuous Wave (CW)
 - 24 VDC Compliance
 - 0-10 Amp Current
 - 0.1 Amp / 0.1 Volt Resolution
- Diode Protection Circuits
- Current Ramp 1A/100mSec
- Universal Input 100-240 VAC
- Power Factor Correction 0.99 typical
- TEC Controller
 - 25 VDC / 15 Amp
 - Temperature Stability $\pm 0.5\%$
- Temperature Sensing
 - Resolution 0.1°C
 - Second Sensor Input / Fault Indicator
- Aiming Beam Driver 5 VDC / 0-50 mA
- Temperature Range 10°C to 40°C
- Dimensions 11.0" x 8.375" x 4.4"
- USB 2.0 Interface

The information contained in this document is for reference only and subject to change without notice. Please contact Laser Drive for information (724) 443-7688 ▪ www.laserdrive.com ▪ sales@laserdrive.com