



60 Amp Laser Diode Driver, 12 Volt Compliance Range



60 Amp, 12 Volt Laser Diode Driver for High Power Multi-Mode Lasers

- o Current up to 60 A, Voltage up to 12 V
- o Optimized for High Power Laser Diodes from nLight, II-VI, Lumentum, Coherent/Dilas, Lumics
- o CW Mode and Integrated Quasi-CW Pulse Generator; Pulse Widths from 25 μ s to CW
- o User-Programmable Soft-Start Current Ramp to Laser Diode Current Setpoint
- o Open Circuit Detection and Fast Shut-Down with Analog Control Loop



**LASER
DIODE
DRIVERS**

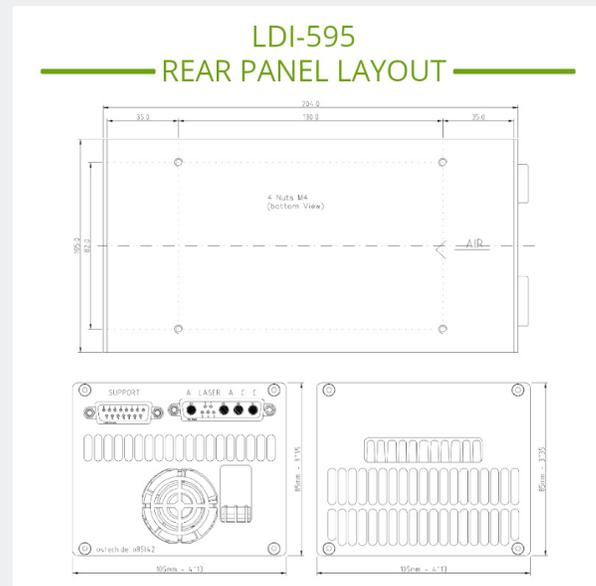
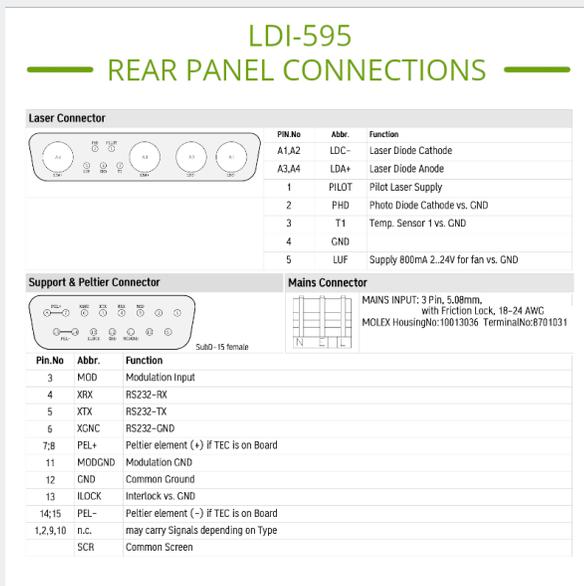
LDI-595 High Power Laser Diode Driver Overview

The LDI-595 laser diode driver is designed to drive high power multi-mode lasers in the 808 nm through 980 nm range for pumping applications.

Modulation, Internal Function Generator, and QCW Pulse Modes

The LDI-595 operates in CW (continuous wave) mode, and also provides flexible modulation capabilities and a QCW mode. On the backpanel is the BNC input for an analog or TTL digital modulation (10k Ω input impedance).

The integrated function generator can be programmed to generate QCW pulses from 25 microseconds to CW. The QCW pulse mode feature is capable of delivering continuous pulses, single pulses, and pulse bursts which are internally or externally triggered.



Laser Diode Protection Features

These current sources feature multiple levels of built-in laser diode protection which have been optimized for high power bars and arrays. Soft-start current, programmable current and temperature limits, and a fast and safe shut-down sequence keep your device protected at all times. Additionally, transient filters and AC line filters protect the laser against brown-out or black-out power conditions.

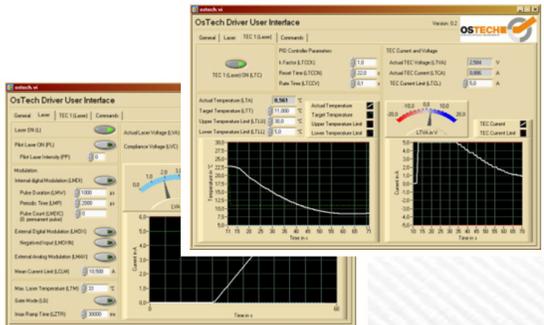
A back-panel safety interlock connector must be installed to prevent the laser diode current being switched on. The interlock allows the user to ensure the environment is safe for the laser and the user.

The 15-pin D-sub provides access to a range of ancillary control functions, including external photodiode measurement, pilot laser, Laser-On Indicator LED, temperature sensor input, and an external cooling fan control.

Optimized for High Voltage Multi-Chip Laser Diodes

<p>nLight Element</p> 	<p>Lumics LuOcean</p> 	<p>Lumentum ST Series</p> 
<p>II-VI Multimode Pump</p> 	<p>nLight Pearl</p> 	<p>Coherent Dilas Pump</p> 

LABVIEW DRIVERS



The screenshot displays the OsTech Driver User Interface, a LabVIEW-based control software. It features a 'General' tab with various control parameters such as 'Laser On/Off', 'Pilot Laser On/Off', 'Pulse Width (µs)', 'Pulse Rate (kHz)', 'Current Limit (mA)', 'Temperature Limit (°C)', and 'Soft-Start Time (ms)'. There are also 'Actual' and 'Target' values for temperature and current. The interface includes several graphs: a 'Temperature vs. Time' graph showing a curve that rises and then levels off, and a 'Current vs. Time' graph showing a step function. The software is branded with the OsTech logo in the top right corner.



LDI-595 High Power Laser Diode Driver Specifications

LASER DIODE DRIVER CURRENT OUTPUT

- Output Current Range: 0.00 - 60.00 Amps
- Compliance Voltage Range: 0.12 -12.00 Volts
- Current Noise & Ripple (rms): < 1% of full scale current
- Current Setpoint Resolution: 15 mA
- Current Setpoint Accuracy: $\pm 0.5\%$
- Current Stability (4 hours): ≤ 100 ppm
- Current Limit Setpoint Accuracy: $\pm 2\%$
- Photodiode Current Measurement Accuracy: $\pm 0.5\%$
- Photodiode Current Measurement Range: 0.00 - 700 μ A

INTEGRATED LASER DIODE PROTECTION FEATURES

- Soft-Start Current Ramp to Setpoint (User Programmable)
- Soft-Start Current Ramp Factory Default Set to 300 Milliseconds
- User-Programmable Current Limit
- Open Circuit Detection
- ESD and Power Surge Clamp, AC Line Filter
- Reverse Voltage Transient Clamp
- Short Circuit when Laser Diode Current Turned OFF
- Temperature Limits (Upper and Lower)
- Safety Interlock Connection

QCW PULSE MODE AND MODULATION

- Pulse Rise / Fall Time: < 25 μ s, 10%-90%
- Integrated QCW Pulse Generator, Also Accepts External Trigger for QCW Pulses
- QCW Mode 1: User Adjustable Pulse Width and Repetition Rate using Internal Pulse Generator
- QCW Mode 2: External Trigger to Internal Pulse Generator: Rising Edge Triggered QCW Pulse with Internally Adjusted Pulse Width
- Modulation Input: BNC, Digital (TTL) or Analog, 10k Ω Impedance
- Modulation Input Voltage Range: 0 ~ 4 Volts (4V = Max Current)



LDI-595 High Power Laser Diode Driver Specifications

AUXILIARY FUNCTIONS

- Temperature Sensor Input: 10k Ω NTC Thermistor
- Photodiode Cathode (Analog Connected to Gnd)
- Pilot Laser Anode, vs. Ground: (4 - 5V, 150 mA)
- Modulation Input
- Electronic Safety Interlock
- RS232 Connections
- External Fan Control Circuit, 2 - 24V, 800mA (max)

USER INTERFACE AND CONNECTORS

- RS232 Standard (*USB Adapter Optional - Price \$125.00*)
- LabView Drivers Included
- Laser Diode Anode / Cathode Output Connector: DB-9W4, Female
- Support and Peltier Connector: SubD-15, Female
- Main Power Connector: MOLEX Housing 10013036; Terminal 8701031

DIMENSIONS AND POWER INPUT

- Power Input: Universal 90V ~ 230 VAC, 50/60 Hz
- Dimensions: 85 mm (H) x 105 mm (W) x 200 mm (L)

RECOMMENDED ACCESSORIES

- kab-39 Unterminated Connecting Cable -or-
kab-231 Terminated Connecting Cable

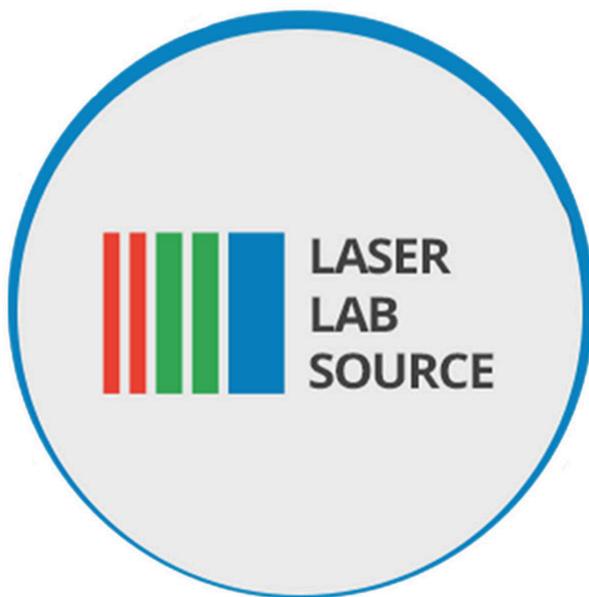


Product Sales and Service

Orders for this product are fulfilled by LaserDiodeControl.com, part of the Laser Lab Source group. It is manufactured for Laser Lab Source by OsTech, GmbH.

Product Warranty

This product is sold with a full one-year warranty. It is warranted to be free from defects in material and/or workmanship for a period of one year from the date of shipment.



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