



14 Amp Laser Diode Driver, 24 Volt Compliance Range

COMPLETE PROTECTION FOR YOUR LASER DIODE

Soft-start current ramp to set-point
Power surge and transient clamps
Current and temperature limits



14 Amp, 24 Volt Laser Diode Driver High Compliance Voltage Range

- o Current up to 14 A, Voltage up to 24 V
- o Optimized for High Compliance Voltage Pump Laser Diodes from nLight, Lumics, II-VI, Lumentum, Coherent/Dilas
- o CW Mode and Integrated Quasi-CW Pulse Generator; Pulse Widths from 30 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**

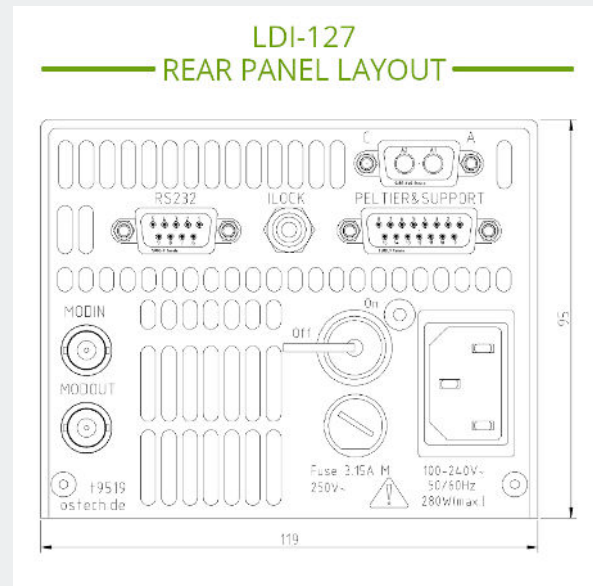
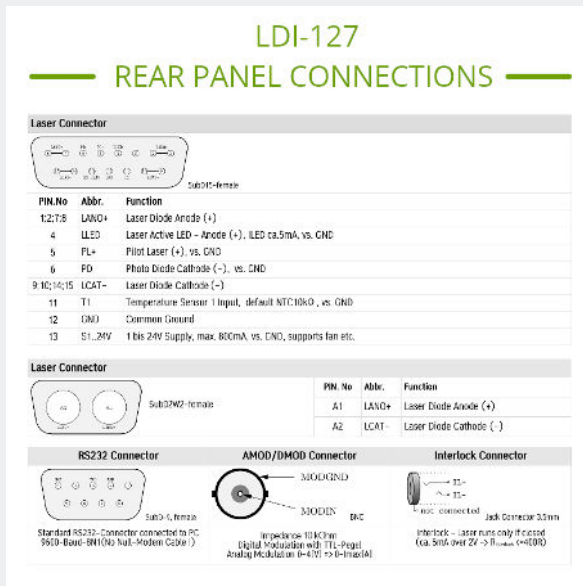
LDI-127 High Power Laser Diode Driver Overview

The LDI-127 high-compliance laser diode driver is designed to precisely and safely bias high-power a wide range of multi-single emitter lasers, such as nLight, Lumentum and II-IV. The LDI-127 also drives multi-emitter devices wired for series operation.

Modulation, Internal Function Generator, and QCW Pulse Modes

The LDI-127 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, DC up to 50 kHz (10k Ω input impedance).

The controller has an internal function generator which can be used to drive quasi-CW pulses in continuous, single, and burst-mode. In QCW mode, the user can also set 25 μ s-to-CW pulses to trigger from a remote TTL signal source.









Laser Diode Protection Features

These units provide a high degree of laser diode protection to ensure that your laser is protected at all times. 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.

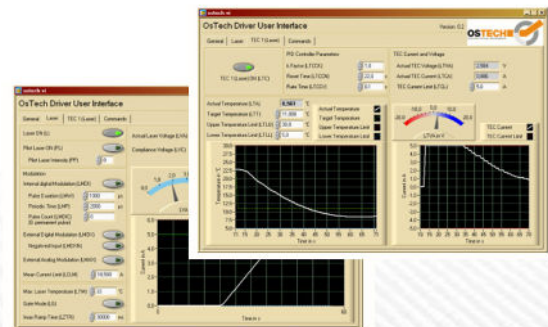
A back-panel safety interlock connector and safety key-switch ensure that the laser diode current is not switched on until the user has determined it is safe to do so.

The 15-pin D-sub provides access to a range of ancillary control functions, including external photodiode measurement, 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 'Pulse Current Limit', 'Pulse Width', and 'Pulse Frequency'. There are also several graphs showing 'Temperature vs. Time' and 'Current vs. Time'. The interface includes a 'Start' button and a 'Stop' button, along with a 'Safety Interlock' indicator.



LDI-127 High Power Laser Diode Driver Specifications

LASER DIODE CURRENT AND VOLTAGE OUTPUT

- Compliance Voltage Range: 0.00 - 24.00 Volts
- Output Current Range: 0.00 - 14.00 Amps
- Current Noise & Ripple: 1% to 0.01% of I_{max} (rms)
- Current Setpoint Resolution: 3.5 mA
- Current Setpoint Accuracy: $\pm 0.5\%$
- Current Stability (4 hours): ≤ 100 ppm
- Current Limit Setpoint Accuracy: $\pm 2\%$

INTEGRATED LASER DIODE PROTECTION FEATURES

- Programmable Soft-Start Current Ramp to Set Point (300ms Default)
- Independent Pilot Laser Output (5V, 150mA max)
- User-Programmable Current Limit
- Open Circuit Detection
- ESD and Power Surge Clamp, AC Line Filter
- Reverse Voltage Transient Clamp
- Rear Panel Keylock Switch and Safety Interlock
- Short Circuit when Laser Diode Current Turned OFF

INTERNAL PULSE MODE

- Pulse Width Range: (model specific) 10 μ s - 71 minutes
- Pulse Period Range: Pulse Width + 100 μ s
- Time Base Accuracy: $\pm 1\%$
- Pulse-to-Pulse Accuracy: 30 μ s
- Pulse Rise Time: ~ 18 μ s
- Pulse Fall Time: 70% - 100% of Rise Time



LDI-127 High Power Laser Diode Driver Specifications

MODULATION AND QCW MODE

- QCW Mode Rise / Fall Time: 20 μ s to CW, 10%-90% (< 5 μ s on request)
- QCW Trigger: Internal Pulse Generator or External
- Modulation Input (BNC): Digital (TTL) or Analog
- Modulation BNC Input Impedance: 10K
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- Modulation Input Voltage Range: 0 ~ 4 Volts (4V = Max Current)
- Analog Modulation Bandwidth: 1 Hz - 20 kHz

AUXILIARY FUNCTIONS

- Temperature Sensor Input: 10k Ω NTC Thermistor
- External Fan Control Circuit, 1 - 24V, 300mA (max)
- Laser-On External LED Indicator: 5mA Output
- Pilot Laser Anode, vs. Ground
- Photodiode Current Measurement Accuracy: \pm 0.5%
- Photodiode Current Measurement Range: 0.00 - 700 μ A

USER INTERFACE

- Front Panel: Alphanumeric LCD
- RS232 Standard
- USB Optional: \$95.00 (Option SVC-USB)
- LabView Drivers Included

DIMENSIONS AND POWER INPUT

- Universal 110V ~ 240 VAC Input
- 95mm (H) x 119mm (W) x 280mm (L)

RECOMMENDED ACCESSORIES

- kab-39 Unterminated Connecting Cable -or- kab-231 Terminated Connecting Cable
- kab-286 Unterminated Power Cable -or- kab-297 Terminated Power Cable
- acc-417 USB-RS232 Converter



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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