



1500 mA Laser Diode Driver, 14 Volt Compliance Range



1.5 Amp, 14 Volt Laser Diode Driver for High Power Butterfly Pumps

- o Current up to 1.5 A, Voltage up to 14 V
- o Optimized for High Power Fiber-Coupled Pump Laser Diodes - 1064nm, 940nm, 808nm, 980nm
- o CW Mode and Integrated Quasi-CW Pulse Generator; Pulse Widths from 15 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**

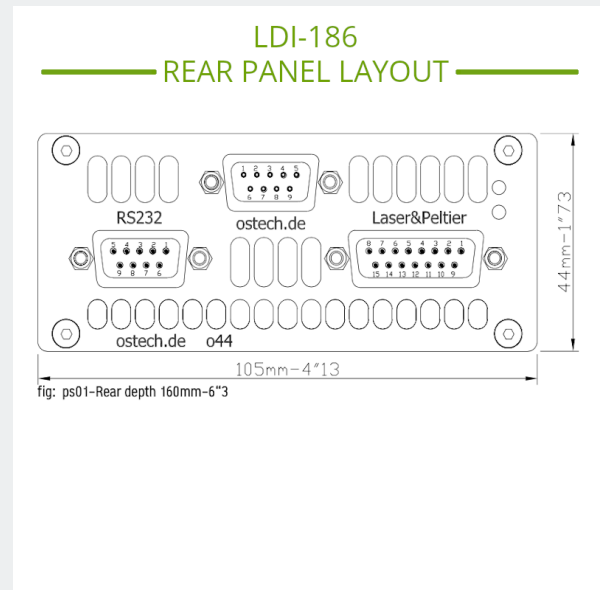
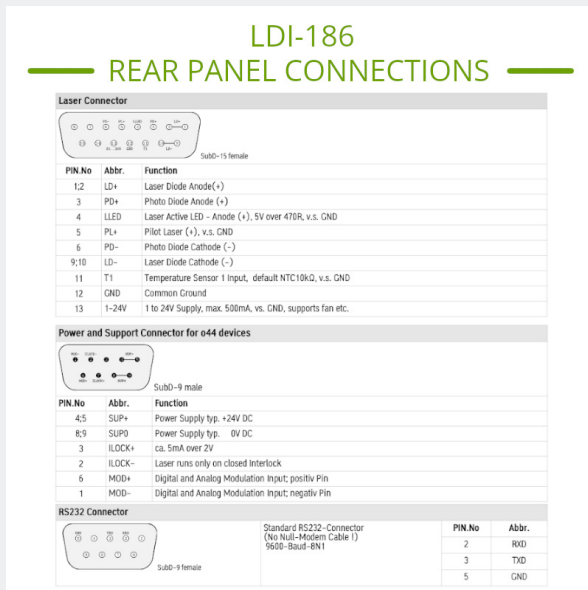
LDI-186 High Power Laser Diode Driver Overview

The LDI-186 laser diode driver is an affordable bias current source for semiconductor lasers, and includes industry-leading safety features to protect the laser diode across a wide range of operating conditions. The driver delivers a maximum output power up to 1.5 amps and up to 14 volts of compliance voltage.

Modulation, Internal Function Generator, and QCW Pulse Modes

The LDI-186 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 15 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.

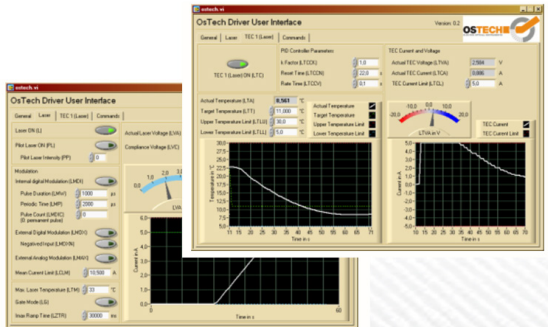
A back-panel safety interlock connector must be installed to prevent the laser diode current being switched on. The interlock allows the user to ensure the environment is safe for the laser and the user.

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', 'Pulse Width (PW)', 'Pulse Rate (PR)', 'Pulse Delay (PD)', 'Pulse Length (PL)', 'Pulse Width (PW)', 'Pulse Rate (PR)', 'Pulse Delay (PD)', 'Pulse Length (PL)'. It also includes a 'Temperature' section with 'Actual Temperature', 'Target Temperature', 'Upper Temperature Limit', and 'Lower Temperature Limit'. The interface contains several graphs showing temperature and current over time, and a 'TEC Control' section with 'TEC Current' and 'TEC Voltage'.



LDI-186 High Power Laser Diode Driver Specifications

LASER DIODE CURRENT OUTPUT

- Output Current Range: 0.00 - 1500.00 mA
- Compliance Voltage Range: 14.00 Volts
- Current Setpoint Accuracy: $\pm 0.5\%$
- Current Noise & Ripple (rms): $< \pm 0.5\%$ of Full Scale Current
- PD Power Monitoring Included
- Current Setpoint Resolution: 4 μA
- 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 μA

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; Short Circuit when Laser Diode Current Turned OFF
- ESD and Power Surge Clamp, AC Line Filter
- Reverse Voltage Transient Clamp
- Electronic Safety Interlock Connection
- Short Circuit when Laser Diode Current Turned OFF

QCW PULSING MODE & MODULATION

- QCW Mode Rise/fall: $< 15 \mu\text{s}$ (optional $< 5 \mu\text{s}$)
- 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-186 High Power Laser Diode Driver Specifications

AUXILIARY FUNCTIONS

- Laser Active LED Output; 4 - 5V, 5mA Output
- Pilot Laser Anode, vs. Ground: (4 - 5V, 150 mA)
- Temperature Sensor Input: 10k Ω NTC Thermistor
- External Fan Control Circuit, 1 - 24V, 500mA (max)

USER INTERFACE AND CONNECTORS

- RS232 Standard: SubD-9, Female
- LabView Drivers Included
- USB Optional: \$95.00 (Option SVC-USB)
- Laser Connector: SubD-15, Female
- Power and Support Connector: SubD-9, Male
- RS232 Connector: SubD-9, Female

INPUT POWER REQUIREMENTS

- The LDI-186 requires a 24 VDC power supply; the power supply can be supplied by the customer or it can be purchased as an option with the LDI-186 ~ please refer to the link to the RLS/LDC-PS120 on right side of this product page to see the optional power supply

DIMENSIONS

- 44 mm (Height) x 105 mm (Width) x 160 mm (Depth)

RECOMMENDED ACCESSORIES

- kab-39 Unterminated Connecting Cable -or- kab-231 Terminated Connecting Cable
- nt-82 24 VDC / 90 W Power Supply
- 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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