



Laser Diode Controller - 75 A, 4 Volt Laser Output 150 Watt Thermoelectric Temperature Controller



75 Amp, 4 Volt Laser Diode Driver 150 Watt TEC Controller

- o Laser Current to 75 A, Voltage up to 4 V
- o Bipolar Temperature Controller up to 150 W
- o Optimized for High Power Laser Diode Bars and Arrays from Coherent/DILAS, nLight, Lumentum, and II-VI
- o CW Mode and Integrated Quasi-CW Pulse Generator, External Modulation Source
- o Full Complement of Protection Features



**LASER
DIODE
CONTROLLERS**



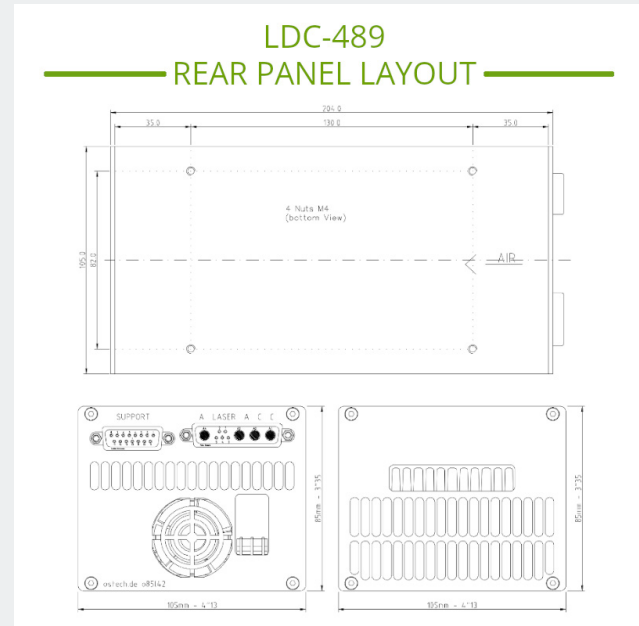
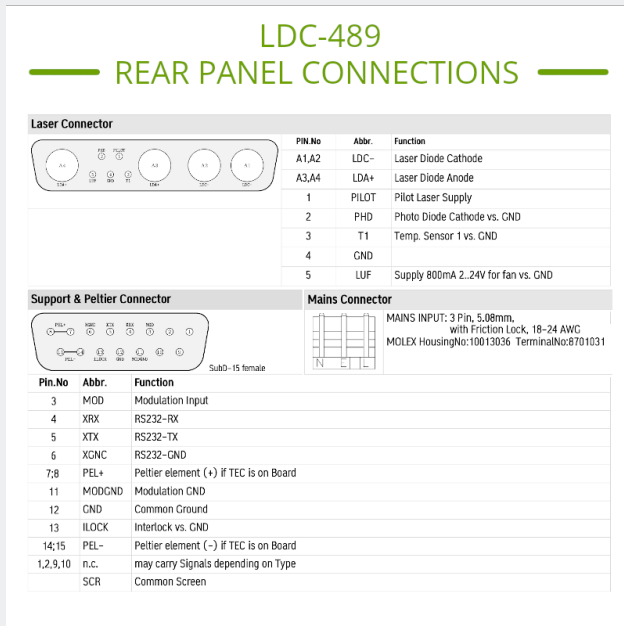


LDC-489 Controller for Laser Diode Bars and Arrays

These high power controllers were designed for power laser diode bars and arrays which require high current, and provide industry-leading safety features to protect your high-power laser diode devices. The current output can be set to a (CW) continuous wave mode or can be set to run in a quasi-CW mode. The QCW mode can be triggered externally or internally using an on-board pulse generator. The driver delivers clean pulses with pulse widths from 25 µsec to CW.

Internal Function Generator & QCW Pulse Modes

In addition to CW (continuous wave) mode of operation, the LDC-467 laser diode controller offers flexible modulation capabilities and a QCW mode. The rear panel of the controller has a BNC input for an analog or TTL digital modulation input with a 10 kΩ input impedance. The controller has an internal function generator which can be used to set the quasi-CW pulses. In QCW mode, the user can also set the 100µs to CW pulses from a remote TTL signal source.

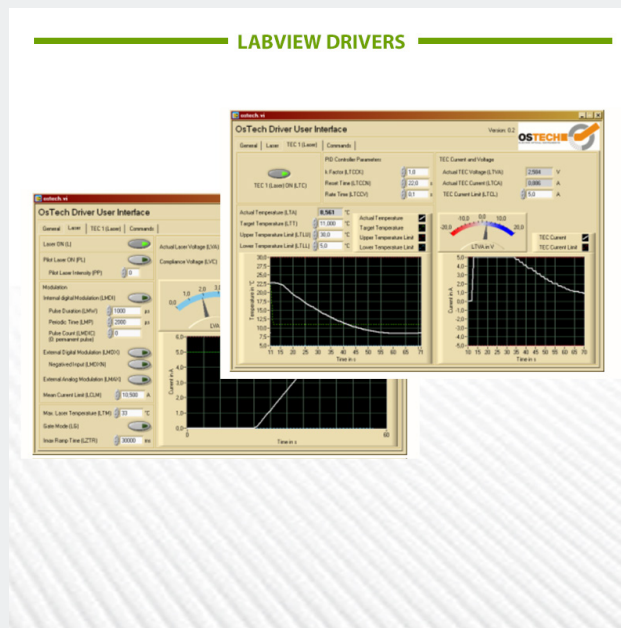


Bipolar Temperature Controller Features

The full PID loop provides millidegree temperature stability, and can quickly stabilize high heat loads to the temperature set-point to reduce the risk of damage to your laser. User adjustable upper and lower temperature limits protect the laser diode and the Peltier device. Additionally, TEC output current limits are user-configured to protect the Peltier device from over-drive damage.

Protection Features for Laser Diode Bars and Arrays

These current sources feature multiple levels of built-in laser diode protection which have been optimized for bars and arrays. One of the unique features is a user programmable soft-start ramp of the bias current to the device under test. The factory sets the ramp time to 300 milliseconds as a default, but the user can adjust this time period from 1 millisecond up to 10's of seconds. This current ramp up and down function is designed to protect the laser from thermal shock during power up and down sequences.





LDC-489 Laser Diode Controller Specifications

LASER DIODE CURRENT OUTPUT

- Output Current Range: 0.00 - 75.00 Amps
- Compliance Voltage Range: 0.12 - 4.00 Volts
- Current Noise & Ripple (rms): $< \pm 0.5\%$ of Full Scale Current
- Setpoint Accuracy: $\pm 0.5\%$
- Current Setpoint Resolution: 18 mA
- Current Stability (4 hours): ≤ 200 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 FEATURE

- Soft-Start Current Ramp Factory Default Set to 300 Milliseconds; User Adjustable
- 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
- Temperature Limits (Upper and Lower)
- Safety Interlock Connection

TEC CONTROLLER

- TEC Output Power Total: 150 Watts
- TEC Output Current Range (bipolar): ± 8.00 Amps
- TEC Output Voltage Range (bipolar): ± 24.00 Amps
- Temperature Sensor Inputs: 10 k Ω Thermistor, NTC, PT100, PT1000
- TEC Control Loop Algorithm: Full P.I.D.
- P.I.D. Variables: User Adjustable to Optimize Temp. Settling Speed
- TEC Setpoint Resolution: 0.01 $^{\circ}$ C
- Temperature Range: -25 $^{\circ}$ C to 150 $^{\circ}$ C
- Factory Set Default Lower Temperature Limit: 5 $^{\circ}$ C
- Factory Set Default Upper Temperature Limit: 35 $^{\circ}$ C



LDC-489 Laser Diode Controller Specifications

QCW PULSE MODE AND MODULATION

- QCW Pulse Width: 25 μ sec to CW
- Pulse Time Base Accuracy: \pm 1.0%
- 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
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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
- 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
- LabView Drivers Included
- Laser Connector: DB-9W4, Female
- Support and Peltier Connector: SubD-15, Female
- Main Power Connector: MOLEX Housing 10013036; Terminal 870103

DIMENSIONS AND POWER INPUT

- Power Input: Universal 90V ~ 230 VAC, 50/60 Hz
- Dimensions: 85 mm (H) x 105 mm (W) x 204mm (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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