



## Laser Diode Controller - 20 A, 30 Volt Laser Output 216 Watt Thermoelectric Temperature Controller



### 20 Amp, 30 Volt Laser Diode Driver 216 Watt TEC Controller

- o Laser Current to 20 A, Voltage up to 30 V
- o Bipolar Temperature Controller up to 216 W
- o Optimized for High Power Multi-Emitter Laser Diodes 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-467 Controller for Multi-Emitter Laser Diodes


These 600 Watt high power controllers were designed with high compliance voltage to safely drive multi-emitter laser diode modules and devices connected in series. The standard current and voltage range for this model is 20 amps and 30 volts. On request, the current and voltage can be configured to match any customer specified range with a total of 600 Watts of output power to the laser.

## 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.

### LDC-467 REAR PANEL CONNECTIONS


**Laser Connector**



SubD-2W2 female

PIN. No	Abbr.	Function
A1	LDA+	Laser Diode Anode (+)
A2	LDC-	Laser Diode Cathode (-)


**Support & Peltier Connector**



SubD-15 female

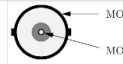
PIN.No	Abbr.	Function
1;2;7;8	PEL+	Peltier element (+)
4	LLED	Laser ON LED
5	PL+	pilot laser supply (5V), vs. GND
6	PD	photo diode cathode (-) input, vs. GND
9;10;14;15	PEL-	Peltier element (-)
11	T1	Temperature Sensor Input, vs. GND, default NTC10kQ
12	GND	Common Ground
13	S1,24V	1.24V Supply, max. 800mA, vs. GND, supports fan etc.

**RS232 Connector**




SubD-9 female  
Standard RS232-Connector  
9600-Baud-8N1  
(No Null-Modem Cable!)

**AMOD/DMOD-IN Connector**




BNC-Socketed  
Impedance: 10kΩ/30m  
Digital Modulation with TTL-Pegel  
Analog Modulation 0-4(V) → 0-Imax(A)

**MOD-OUT Connector**



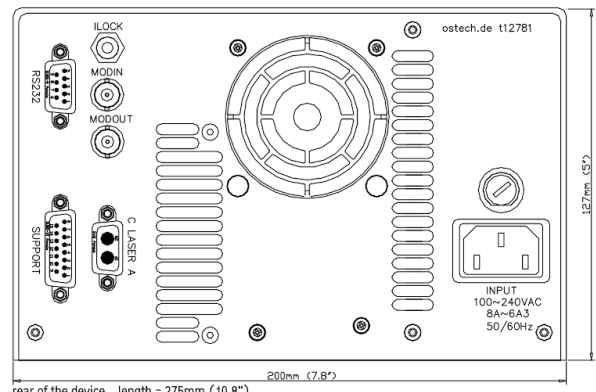
BNC-Socketed, current monitor  
0-Imax(A) → 0-4(V)  
Take care for laser isolation if you connect GND potential to an oscilloscope I.e.

**Interlock Connector**



Jack Connector 3.5mm  
Laser runs only if closed  
(ca. 5mA over 2V → R < 400R)

### LDC-467 REAR PANEL LAYOUT



ostech.de t12781

rear of the device length = 275mm (10.8")

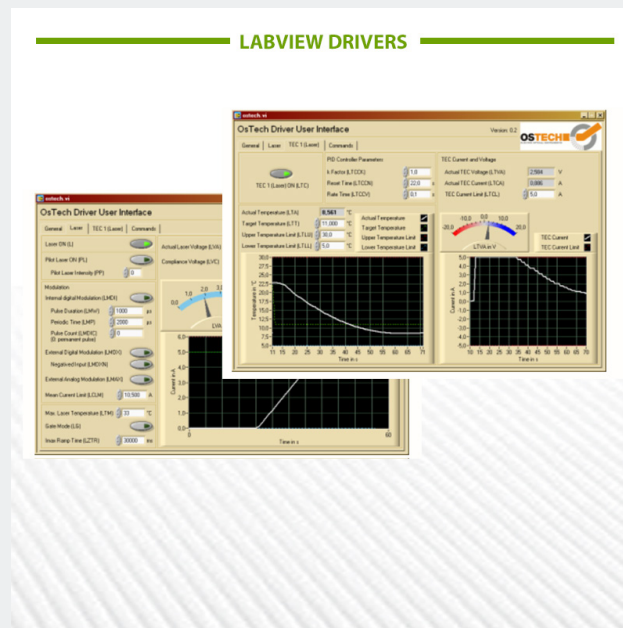


## Bipolar Temperature Controller Features

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 Multi-Emitter Laser Diodes

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-467 Laser Diode Controller Specifications

### LASER DIODE BIAS CURRENT OUTPUT

- Output Current Range: 0.00 - 20.00 Amps
- Compliance Voltage Range: 0.12 - 30.00 Volts
- Current Noise & Ripple (rms):  $< \pm 0.5\%$  of Full Scale Current
- Current Setpoint Resolution: 5 mA
- Current Setpoint Accuracy:  $\pm 0.5\%$
- Current Stability (4 hours):  $\leq 200$  ppm
- Current Limit Setpoint Accuracy:  $\pm 2\%$
- Photodiode Current Measurement Range: 0.00 - 700  $\mu$ A

### INTEGRATED LASER DIODE PROTECTION FEATURES

- Soft-Start Current Ramp Factory Default Set to 300 Milliseconds; User Adjustable
- User-Programmable Current Limit
- Temperature Limits (Upper and Lower)
- Open Circuit Detection; Short Circuit when Laser Diode Current Turned OFF
- Short Circuit when Laser Diode Current Turned OFF
- ESD and Power Surge Clamp, AC Line Filter
- Reverse Voltage Transient Clamp
- Factory Pre-Set Default Upper Temperature Limit: 35°C
- Rear Panel Keylock Switch and Safety Interlock

### TEC TEMPERATURE CONTROLLER

- TEC Output Power Total: 216 Watts
- TEC Output Current Range (bipolar):  $\pm 12.00$  Amps
- TEC Output Voltage Range (bipolar) :  $\pm 14.00$  Volts
- Temperature Sensor Inputs: 10 k $\Omega$  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°C
- Temperature Range: -25°C to 150°C
- Factory Set Default Lower Temperature Limit: 5°C
- Factory Set Default Upper Temperature Limit: 35°C



## LDC-467 Laser Diode Controller Specifications

### MODULATION & QCW MODE

- QCW Mode Pulse Rise and Fall Time: <math>< 25\mu\text{s}</math>, 10%-90%
- QCW Pulse Mode Patterns: Continuous, Single Pulses, Bursts
- QCW Mode Trigger: Internal Function Generator or External Trigger
- Modulation Input: BNC, Digital (TTL) or Analog, 10k $\Omega$  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 $\Omega$  NTC Thermistor
- Laser-On External LED Indicator: 5mA Output
- Pilot Laser Anode, vs. Ground: (5V, 150 mA)
- Photodiode Cathode (Analog Connected to Gnd)
- External Fan Control Circuit, 1 - 24V, 800mA (max)

### USER INTERFACE AND CONNECTORS

- Front Panel: Alphanumeric LCD
- USB Optional: \$95.00 (Option SVC-USB)
- LabView Drivers Included
- Support and Peltier Connector: SubD-15, Female
- Laser Connector: SubD-2W2, Female
- RS232 Connector: SubD-9, Female
- Safety Interlock: Jack Connector, Stereo 3.5mm

### DIMENSIONS AND POWER INPUT

- Power Input: Universal 100V ~ 240 VAC, 50/60 Hz
- Dimensions: 127 mm (H) x 200 mm (W) x 275 mm (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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