LASER LAB SOURCE
marketplace for **Scientists & Engineers**

manufactured for Laser Lab Source by OSTECH

Laser Diode Controller - 75 A, 5 Volt Laser Output
336 Watt Thermoelectric Temperature Controller

75 Amp, 5 Volt Laser Diode Driver
336 Watt TEC Controller

- Laser Current to 75 A, Voltage up to 5 V
- Bipolar Temperature Controller up to 336 W
- Optimized for High Power Single-Emitter Laser Diodes from Coherent/DILAS, nLight, Lumentum, and II-VI
- CW Mode and Integrated Quasi-CW Pulse Generator, External Modulation Source
- Full Complement of Protection Features

LASER DIODE CONTROLLERS

Laser Lab Source
a division of Research Lab Source Corporation

www.LaserLabSource.com
phone: 800-887-5065

670 South Ferguson
Bozeman, MT 59718

LDC-579 Controller for Laser Diode Bars and Arrays

The LDC-579 can drive full CW power up to 75 Amps with a 5 Volt compliance, and 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.

Internal Function Generator & QCW Pulse Modes

In addition to CW (continuous wave) mode of operation, the LDC-579 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-579
REAR PANEL CONNECTIONS

Laser Connector

SubD-5W5 female

PIN.No	Abbr.	Function
A3; A4	LANO+	Laser Diode Anode (+)
A1; A2	LCAT-	Laser Diode Cathode (-)
A5	n.c.	

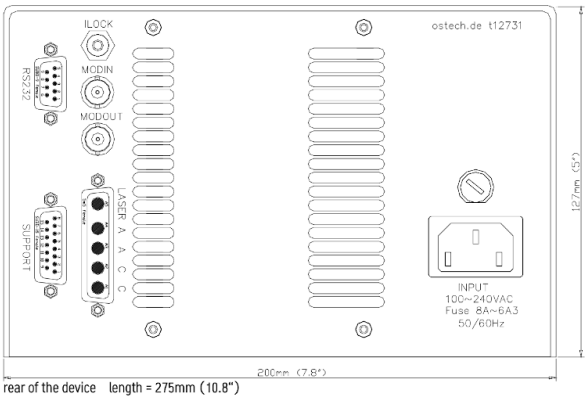
Support & Peltier Connector

SubD-15 female

PIN.No	Abbr.	Function
4	LLED	Laser Active LED +) ca.5mA v.s. GND
5	PL+	Pilot Laser (+) v.s. GND
6	PDC-	Photo Diode Cathode (-) v.s. GND
7;8	PEL+	Peltier element (+)
11	T1	Temperature Sensor 1 Input, default NTC10kΩ, v.s. GND
12	GND	Common Ground
13	S1..24V	1..24V supply, max. 500mA, vs. GND, supports fan etc.
14;15	PEL-	Peltier element (-)

RS232 Connector	AMOD/DMOD-IN Connector	MOD-OUT Connector	Interlock Connector
			
SubD-9 female Standard RS232-Connector 9600-Baud-8N1 (No Null-Modem Cable !)	BNC-Socked Impedance 10 kOhm Digital Modulation with TTL-Pegel Analog Modulation 0-4[V] => 0-Imax[A]	BNC-Socked, current monitor 0-Imax[A] -> 0-4[V] Take care for laser isolation if you connect GND potential to an oscilloscope f.e.	Jack Connector 3.5mm Laser runs only if closed (ca. 5mA over 2V -> R <= 400R)

LDC-579
REAR PANEL LAYOUT



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

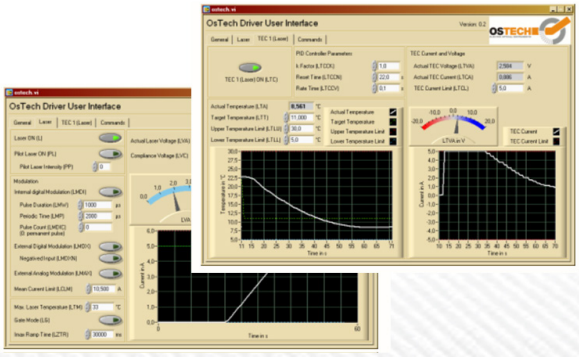
Bipolar Temperature Controller Features

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 High Power 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.

LABVIEW DRIVERS



LDC-579 Laser Diode Controller Specifications

LASER DIODE CURRENT SOURCE

- Output Current Range: 0.00 - 75.00 Amps
- Compliance Voltage Range: 0.00 - 5.00 Volts
- Current Noise & Ripple (rms): < ± 0.5% of Full Scale Current
- Current Setpoint Resolution: 18 mA
- Current Setpoint Accuracy: ± 0.5%
- Current Stability (4 hours): ≤ 500 ppm
- Current Limit Setpoint Accuracy: ± 2%
- Photodiode Current Measurement Accuracy: ± 0.5%
- Photodiode Current Measurement Range: 0.00 - 700 µA

INTEGRATED LASER DIODE PROTECTION FEATURES

- Soft-Start Current Ramp Factory Default Set to 300 Milliseconds; User Adjustable
- User-Programmable Current Limit
- Programmable Temperature Limits (Upper and Lower)
- Open Circuit Detection; 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
- Front Panel Emergency e-Stop Shut-Down Button

TEC TEMPERATURE CONTROLLER

- TEC Output Power Total: 336 Watts
- TEC Output Current Range (bipolar): ± 7.00 Amps
- TEC Output Voltage Range (bipolar) : ± 48.00 Volts
- Temperature Sensor Inputs: 10 kΩ 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 Upper Temperature Limit: 35°C
- Factory Set Default Lower Temperature Limit: 5°C

LDC-579 Laser Diode Controller Specifications

QCW PULSE MODE AND MODULATION

- QCW Pulse Width Range: 30 µs - CW
- QCW Pulse Time Base Absolute Accuracy: ± 1.0%
- QCW MODE 1: Internal Function Generator, User Adjustable Pulse Width and Rep. Rate
- QCW MODE 2: External Trigger, Rising Edge Triggered Pulse
- Modulation Input: BNC, Digital (TTL) or Analog, 10kΩ Impedance
- Modulation Bandwidth: 25 kHz
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- Modulation Input Voltage Range: 0 ~ 4 Volts (4V = Max Current)
- Analog Modulation Bandwidth: 1 Hz – 20 kHz

AUXILIARY FUNCTIONS

- Laser-On External LED Indicator: 5mA Output
- Pilot Laser Anode, vs. Ground: (5V, 150 mA)
- Temperature Sensor Input: 10kΩ NTC Thermistor
- External Fan Control Circuit, 1 - 24V, 500mA (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-5W5, 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-298 Power Cable, 60 Amp: Sub-D5W5 (male) -- Cable Lugs
- 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 warrantied 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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