



## 120 Amp Laser Diode Driver, 5 Volt Compliance Range

### COMPLETE LASER DIODE PROTECTION

programmable soft-start current ramp  
I & T limits, ESD & power surge clamps

### CW & QCW MODES

qcw pulses 25 $\mu$ s - CW



### USB, RS232 & INTUITIVE FRONT PANEL CONTROLS

set & monitor all functions from PC or main menu

### 120 Amp, 5 Volt Laser Diode Driver Laser Diode Bars and CCP Mounts

- o Current up to 120 A, Voltage up to 5 V
- o Optimized for Fiber-Coupled Laser Diode Bars and CCP-Style Mounted Devices from DILAS and Coherent.
- o Open Circuit Detection and Fast Shut-Down with Analog Control Loop
- o CW Mode and Integrated Quasi-CW Pulse Generator; Pulse Widths from 25 $\mu$ s to CW
- o Front-Panel Control and RS232 Remote Control; USB Optional



**LASER  
DIODE  
DRIVERS**

## LDI-581 High Power Laser Diode Driver Overview

The LDI-581 driver offers 5 Volts compliance voltage at 120 Amps, and is designed specifically to safely drive fiber coupled bar modules and CCP style copper mount bars from companies such as DILAS and Coherent. The LDI-581 is easy and conveniently controlled by the front panel, or remotely via RS232, and USB control is available as an option.

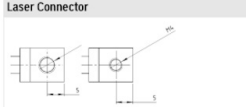
## Modulation, Internal Function Generator, and QCW Pulse Modes

The LDI-581 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  $\Omega$  input impedance). 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.


### LDI-581 REAR PANEL CONNECTIONS

**Laser Connector**




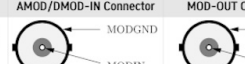
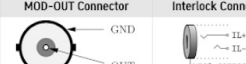

	Abbr.	Function
M4	LDA+	Laser Diode Anode (+)
M5	LDC-	Laser Diode Cathode (-)

**Support Connector**

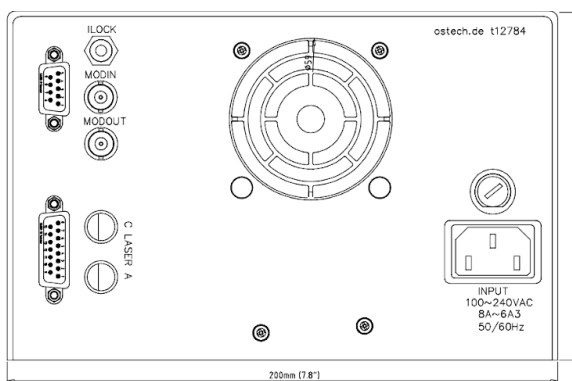


SubD-15 female

PIN.No	Abbr.	Function
4	LLED	Laser Active LED - Anode (+), 5V over 470R, v.s. GND
5	PL+	Pilot Laser (+), v.s. GND
6	PDC-	Photo Diode Cathode (-), v.s. GND
11	T1	Temperature Sensor 1 Input, default NTC10k $\Omega$ , v.s. GND
12	GND	Common Ground
13	1-24V	1 to 24V Supply, max. 800mA, vs. GND, supports fan etc.
	SCR	Common Screen

RS232 Connector	AMOD/DMOD-IN Connector	MOD-OUT Connector	Interlock Connector
 <p>SubD-9 female Standard RS232-Connector 9500-Baud-9N1 (No Null-Modem Cable!)</p>	 <p>BNC-Socket Impedance 10k<math>\Omega</math>cm Digital Modulation with TTL-Preset Analog Modulation 0-4[V] <math>\rightarrow</math> 0-Imax[A]</p>	 <p>BNC-Socket, current monitor 0-Imax[A] <math>\rightarrow</math> 0-4[V] Take care for laser isolation if you connect GND potential to an oscilloscope f.e.</p>	 <p>Jack Connector 3.5mm Laser runs only if closed (ca. 5mA over 2V <math>\rightarrow</math> R &lt; 400R)</p>

### LDI-581 REAR PANEL LAYOUT



ostech.de t12784

200mm (7.8")

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

## Laser Diode Protection Features

These current sources feature multiple levels of built-in laser diode protection which have been optimized for high power bars, arrays, stacks, and multi-emitter devices. 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, pilot laser, Laser-On Indicator LED, temperature sensor input, and an external cooling fan control.

### Optimized for High Voltage Multi-Chip Laser Diodes

nLight Element



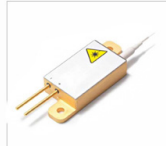
Lumics LuOcean



Lumentum ST Series



II-VI Multimode Pump



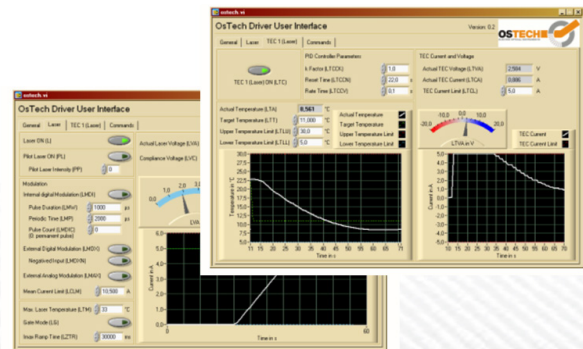
nLight Pearl



Coherent | Dilas Pump



### LABVIEW DRIVERS





## LDI-581 High Power Laser Diode Driver Specifications

### LASER DIODE CURRENT OUTPUT

- Output Current Range: 0.00 - 120.00 Amps
- Compliance Voltage Range: 0.00 - 5.00 Volts
- Current Noise & Ripple (rms):  $< \pm 0.5\%$  of Full Scale Current
- Current Setpoint Resolution: 30 mA
- Current Setpoint Accuracy:  $\pm 0.5\%$
- Current Stability (4 hours):  $\leq 300$  ppm
- Current Limit Setpoint Accuracy:  $\pm 2\%$
- Photodiode Current Measurement Accuracy:  $\pm 0.5\%$
- Photodiode Current Measurement Range: 0.00 - 700  $\mu$ A

### LASER DIODE PROTECTION FEATURES

- 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
- Rear Panel Keylock Switch and Safety Interlock
- Front Panel e-Stop Button Emergency Shut-Down

### QCW (QUASI-CW) MODE AND MODULATION

- Pulse Width Range  $< 25 \mu$ s to CW, 10%-90% ( $< 20 \mu$ s on request)
- Integrated Function Generator
- Pulse Time Base Accuracy:  $\pm 1.0\%$
- QCW Mode Trigger: Internal (Integrated) Function Generator or External Trigger
- Modulation Input: BNC, Digital (TTL) or Analog, 10k $\Omega$  Impedance
- Modulation Input Voltage Range: 0 ~ 4 Volts (4V = Max Current)



## LDI-581 High Power Laser Diode Driver Specifications

### AUXILIARY FUNCTIONS AND CONNECTIONS

- Laser On/Off Status Indication (TTL; On = High), vs. Gnd
- Pilot Laser Output, vs. Gnd
- Photodiode Cathode, vs. Gnd
- External Cooling Fan Output (1 - 24 V, 800 mA), vs. Gnd
- External Temperature Sensor Input (NTC 10k $\Omega$ , vs. GND)

### USER INTERFACE AND CONNECTORS

- Front Panel: Alphanumeric LCD with Key Pad
- RS232 Standard, SubD-9, Female
- USB Optional: \$95.00 (Option SVC-USB)
- LabView Drivers Included
- Laser Diode Connector: Threaded Lugs for Bolt-On Leads
- Auxiliary Functions Connector: SubD-15 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 275mm (L)

### RECOMMENDED ACCESSORIES

- kab-39 Unterminated Connecting Cable -or- kab-231 Terminated Connecting 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.



Laser Lab Source  
670 S. Ferguson St., Suite 3  
Bozeman, MT 59718 USA  
800-887-5065  
LaserLabSource.com

Ostech, GmbH  
Plauener Str. 163-165 • Haus i • 13053  
Berlin