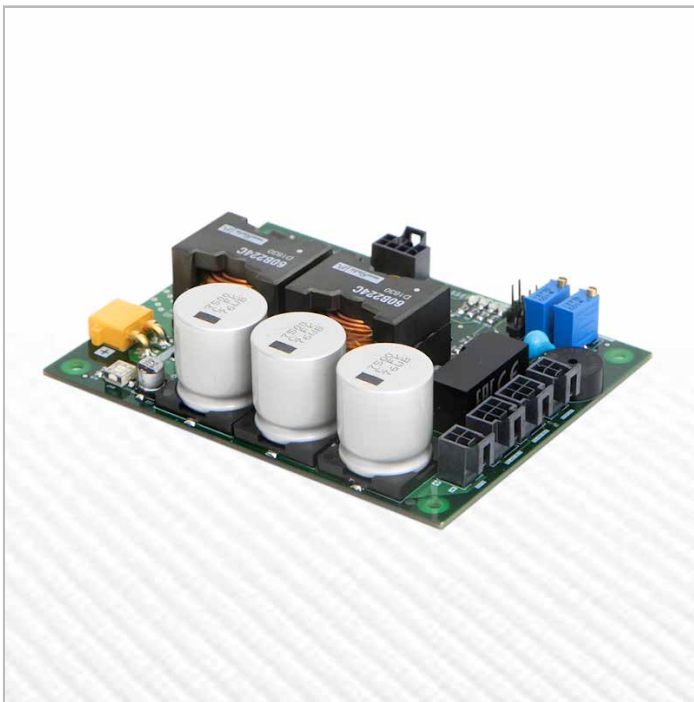




Offered by  
**LASER LAB SOURCE**

manufactured by  **OEM Tech**  
LASER ELECTRONICS

## Pulsed OEM Laser Diode Controller Pulsed 50A Laser Output, 50W TEC Controller



### **Part Number SDC-50A Pulsed Laser Diode Controller**

- o High Stability, High Accuracy Output
- o User-Adjustable 25  $\mu$ s to 500  $\mu$ s Pulse Width
- o 50 Amp Maximum Output, Adjustable
- o RS-485 or Stand-Alone Modes of Operation
- o 50 Watt TEC Controller, with 10 k $\Omega$  NTC Thermistor Feedback
- o Compact and Space-Efficient Design



## SDC-50A PULSED OEM LASER DIODE CONTROLLER

The SDC-50A is a compact pulsed laser diode driver: it is a fast-switching, accurate, efficient, and low-noise current source. It was developed specifically to drive pump laser diodes for microchip Nd:YAG lasers and other diode-pumped lasers. This is a QCW pulsed-mode only driver.

## VERSATILE CONTROL MODES FOR APPLICATION FLEXIBILITY

The controller is easily configured via RS-485 interface. The user sets the pulse width and frequency, output current, temperature set point, and temperature stabilization mode. The operational control mode is set either to RS-485 mode or Stand-Alone mode:

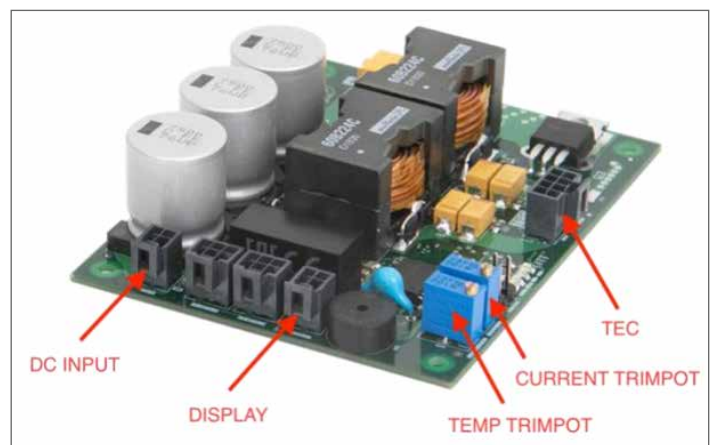
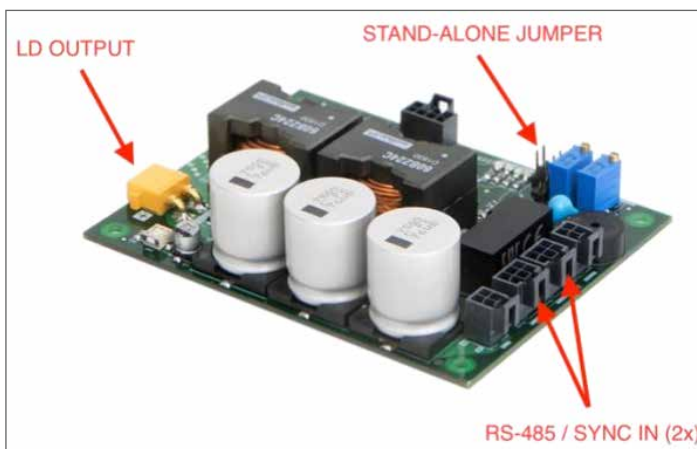
- RS-485 mode – requires active RS-485 connection, and all the controls are performed by commands sent via RS-485 interface. The command list is short and intuitive, and provides full control of the SDC-50A.
- Stand-Alone mode – doesn't require the active RS-485 connection; the SDC-50A begins operating immediately after the power is applied to the board, and operates per the parameters set in the device memory. An RS-485 connection is required to program the controller for stand-alone mode.

## THREE MODES TO SYNCHRONIZE PULSE FREQUENCY AND DURATION

The pulse output can be synchronized in three ways: from the internal clock; the pulse is triggered by an external signal and the pulse width is equal to external synchronization signal duration; the pulse is triggered externally, and with the pulse width is set by the value programmed in device memory.

## BUILT-IN HIGH POWER TEMPERATURE CONTROLLER

An integrated 5 Amp / 10 Volt Peltier controller allows control of high power thermoelectric coolers for laser diode temperature stabilization laser during operation. The feedback temperature sensor input is for 10 k $\Omega$  NTC thermistors (Negative Temperature Coefficient). The set point temperature is factory set at 25°C.





### LASER DIODE OUTPUT SPECIFICATIONS

- Maximum Output Current: 50 Amps
- Maximum Output Voltage: 4 to 6 Volts (with 12 VDC to 15 VDC Input Respectively)
- Output Mode: Pulsed / QCW
- Pulse Width: 50  $\mu$ s to 500  $\mu$ s \*
- Pulse Repetition Rate: Up to 50 Hz \*
- Rise / Fall Time: < 25  $\mu$ s / < 15  $\mu$ s
- Output Accuracy: 1%
- Output Stability: 1%
- \* Can Be Factory Modified; Inquire for Details

### TEC OUTPUT SPECIFICATIONS

- Maximum TEC Current: 5 Amps
- Maximum TEC Voltage: 10 Volts
- TEC Temperature Control Range: 10°C to 40°C
- TEC Temperature Control Accuracy / Stability: 0.1°C
- TEC Temperature Sensor Input: 10 k $\Omega$  NTC Thermistor

### CONTROL MODES

- RS-485 Mode: Real-time control of the SDC-50A by RS-485 interface.
- Stand-Alone Mode: Control settings saved in on-board memory.
- On-Board Control: Current and temperature set with trimpots.

### THREE PULSE SYNCHRONIZATION MODES

- Fully Internal: Pulses triggered by internal clock.
- Fully External: Pulses width is set and triggered by external signal.
- External Trigger: Pulse is triggered externally, pulse width set by the value programmed in device memory.

### GENERAL SPECIFICATIONS

- Input Voltage: 12 VDC to 15 VDC
- Operating Temperature: 10°C to 40°C
- Storage Temperature Range: -20°C to 60°C
- Humidity: 0 to 90%, Non-Condensing
- Size: 95 mm x 75 mm x 30 mm
- Weight: 0.1 kg



Offered by  
**LASER LAB SOURCE**



**LASER  
DIODE  
DRIVERS**

## **PRODUCT SALES AND SERVICE:**

Orders for this product are fulfilled by Laser Lab Source in North America and select international regions. It is manufactured by OEM Tech, Poland.

## **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, a division of Research Lab Source, Inc.  
670 S. Ferguson St., Suite 3  
Bozeman, MT 59718 USA

Phone: 406-219-1472

[www.LaserLabSource.com](http://www.LaserLabSource.com)



OEM Tech Sp. z o.o.  
ul. Stepinska 22/30, local #234  
00-739 Warsaw, Poland