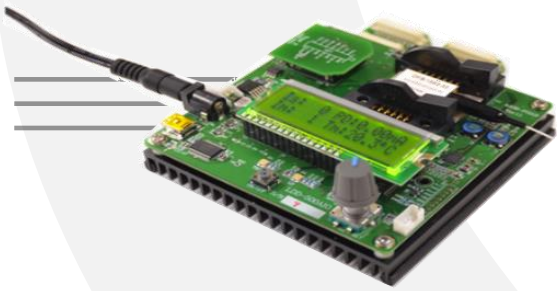
ULDC-500-DM



DEVICE

Universal Laser Diode Controller w/Modulation

OVERVIEW

The Optilab ULDC-500-DM is a fully integrated Universal Laser Diode Controller designed for 14 pin butterfly package, with internal and external modulation capability. This compact, easy to use laser diode driver module operates under a single + 5 V power supply. ULDC-500-DM offers LD current and temperature control that comes with a built in LCD display and a USB port for external PC control. The module is equipped with an adapter board, thus making it compatible with 14 pin butterfly LD module for any laser manufacturers by switching the daughter boards provided in the package. It also provides an optional external modulation board to plug-in to modulate up to 2 MHz. It features LD current range of 0 – 500 mA with a setting resolution of 1 mA and Temperature range of 10 to 40 ° C with a setting resolution of 0.1 ° C.

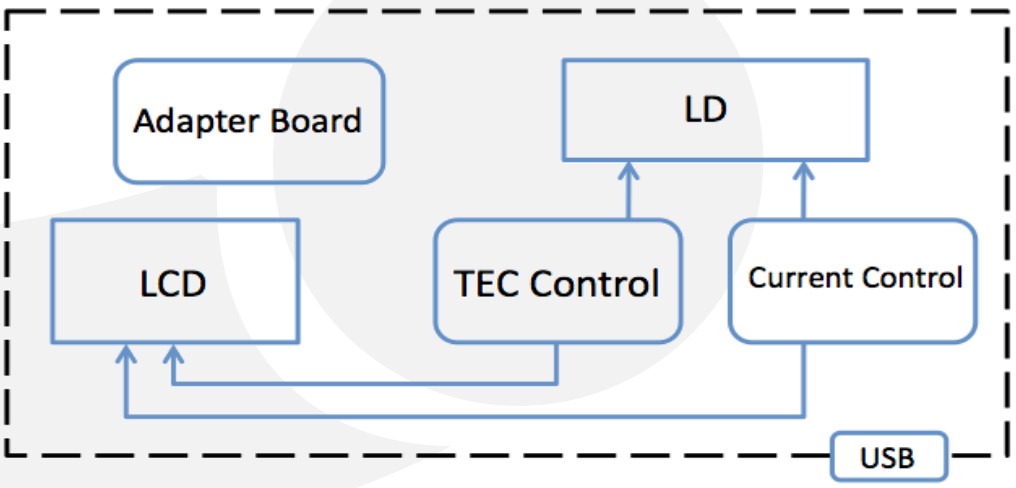
FEATURES

- External/Internal Modulation
- LD current and Temperature Control
- 500 mA LD current w/ resolution of 1 mA
- 1.5 A TEC current w/ resolution of 1 mA
- Zero Insertion Force (ZIF) socket
- On board LCD display
- USB port for external PC Control
- Compatible with any pinout

USE IN

- Laser diode characterization
- Research and development
- Laboratory use
- Failure analysis

FUNCTIONAL DIAGRAM



ULDC-500-DM

SPECIFICATIONS

GENERAL

Laser Diode Module Type	14 pin Butterfly Package
Drive Method	ACC or APC
LD Connection Form	Floating, Cathode GND
TEC	
Limit Current Setting	100～1500mA
Setting Resolution	100mA
Driving Current	0～±1.5A
Current Measurement Resolution	1mA
Driving Voltage	0～±3.5V
Temperature	
Driving Temperature	10 ~ 40°C
Setting Resolution	0.1°C
Monitoring Range	9～43°C
Thermistor Standard Resistance	9 k ~ 10kΩ

MECHANICAL

Operating Temperature	15°C to + 35°C
Storage Temperature	0°C to + 60°C
Operating Humidity	0% to 85% Relative Humidity
Display	Monochrome LCD
Power Supply	5 VDC, 1 A
Power Consumption	15Wmax
Remote Control	USB

ORDERING OPTIONS

ULDC-xxx(x)-DM

xxx(x) LD Current Setting (mA): 500 or 2000

ULDC-500-DM

ACC Mode

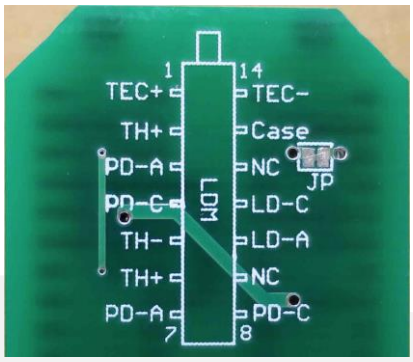
LD Current Setting	0 – 500 mA
Setting Resolution	1 mA
Current Protection Setting	10 ~ 500 mA
Accuracy	± 1mA + 0.5%
Stability	± 1mA + 0.2%
LD Voltage	<4V
LD Terminal Voltage Noise	4.7mVpp(when using Accessary AC Adaptor)
PD Current Monitor	0 ~ 2.5mA/ ~ 0.25mA
Internal Modulation	CW, Rectangular, Sine and Sawtooth waves, Pulse wave, Arbitrary wave
Internal Modulation Frequency	Rectangular, Pulse wave: 1Hz～10kHz Sine and Sawtooth waves, Arbitrary Wavw: 1Hz～1kHz(Sample Period 0.25ms)
Modulation Ratio	5～90%
Pulse Ratio	1%～99% (Pulse waves)
Sync. Trigger Out	Pulse synchronized with internal modulation
Signal Level	0/5V
Pulse width	125us (Sine and Sawtooth waves, Arbitrary Wave), Duty50% (Sine Wave), Pulse Ratio (Pulse waves)
Cycle	Same as modulation synchronized signal
Sync. Triger In	At the arbitrary wave and pulse wave. Synchronize with Trigger In signal
External Modulation	External voltage signal modulated in the decreasing direction from the LD peak current
Connector	SMA
Frequency	DC～100KHz

APC Mode

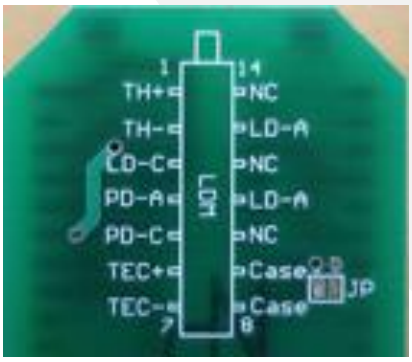
Optical power setting range	0～12dB (According to PD Gain)
PD current range equivalent to optical power setting	0.1 ~ 2mA/ 0.01 ~ 0.2mA
Setting resolution	0.1dB
Accuracy	± 0.5dB
Stability	± 1dB
PD light receiving sensitivity A/W	-50～0 dBm (A/W)

ULDC-500-DM

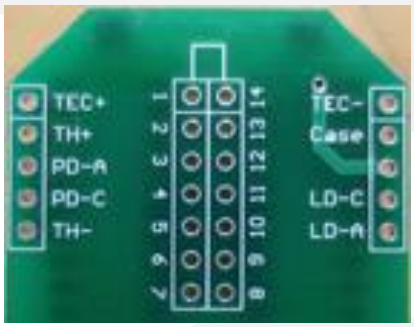
LASER DIODE PINOUT TYPE 1



LASER DIODE PINOUT TYPE 2



LASER DIODE PINOUT TYPE 3



EXTERNAL MODULATION

This is a plug-in external modulation board for ULDC-XXXXM series. User can modulate Sine, Square, Triangle waves, etc, up to 2 MHz (Depending on Laser Diode's capability). Please contact Optilab for more information.