



ULDC-1000-MC



DEVICE

Universal Laser Diode Controller, up to 1000 mA

OVERVIEW

The Optilab ULDC-1000-MC is a fully integrated Universal Laser Diode Controller designed for butterfly laser diode. This compact, easy to use laser diode driver module operates under a single + 12 V DC power supply. ULDC-1000-MC offers LD current and temperature control that comes with a built in OLED display and a USB port for external PC control. The module is equipped with an adapter board, thus making it compatible with butterfly LD module for any laser manufacturers by switching the daughter boards provided in the package. It features LD current range of 0-1000mA with a setting resolution of 1 mA and temperature range of 10 °C-40 °C with a setting resolution of 0.1 °C.

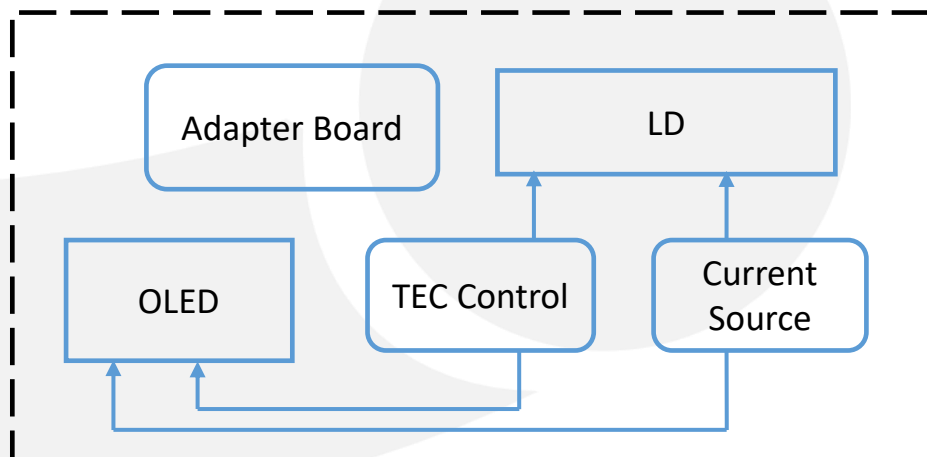
FEATURES

- Up to 1000 mA LD Current
- 2.3A TEC Current
- ZIF Socket
- On Board OLED Display
- USB Port for External PC Control
- Compatible with Arbitrary Pinout

USE IN

- Laser Diode Characterization
- Research and Development
- Laboratory Use
- Failure Analysis

FUNCTION DIAGRAM





ULDC-1000-MC

SPECIFICATIONS

GENERAL

Laser Diode Module Type	14-pin Butterfly, 2.54 mm pitch
LD Operation Mode	ACC
LD Drive Current Setting	1 ~ 1000 mA
Current Setting Resolution	1 mA
LD Current Limit Setting	1 ~ 1000 mA
LD Current Limit Setting Resolution	1 mA
Current Accuracy	+/- 2 + 0.1% mA
LD Max. Forward Voltage	4.2 V typ.
LD Voltage Meas. Resolution	0.001 V
LD Voltage Display Resolution	0.01 V
PD Current Measurement Range	0 ~ 9.99 mA
PD Current Meas. Resolution	1 μ A
PD Current Display Resolution	10 μ A
TEC Max. Drive Current	\pm 2.3 A
TEC Max. Voltage	\pm 4.6 V
TEC Temperature Setting Range	10 $^{\circ}$ C ~ 40 $^{\circ}$ C
TEC Temperature Setting Resolution	0.1 $^{\circ}$ C
Power Supply Voltage	+12 VDC
Power Consumption	45 W max

MECHANICAL

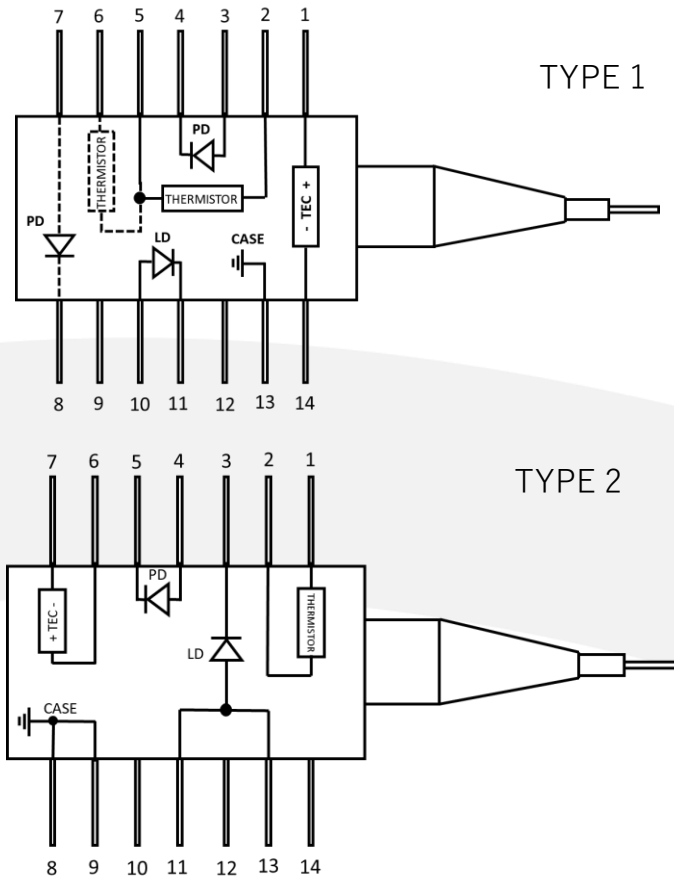
Operating Temperature	+5 $^{\circ}$ C to +35 $^{\circ}$ C
Storage Temperature	0 $^{\circ}$ C to +60 $^{\circ}$ C
Operating Humidity	0% to 85% Relative Humidity
Communication	USB / RS-485
Dimension	135 mm x 130 mm x 78 mm
Display	OLED
Cooling	Fan, bottom mount





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Compatible Laser Diode Pinout



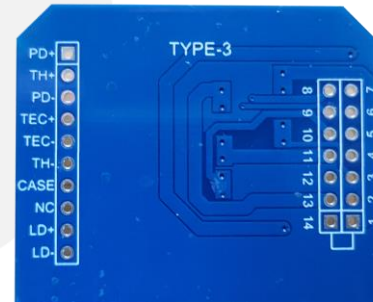
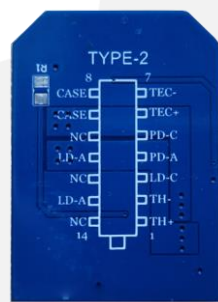
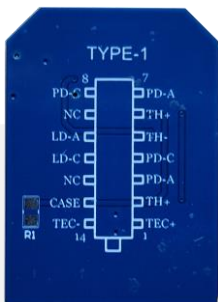
#	Type 1	Type 2
1	TEC +	Thermistor
2	Thermistor (to 5)	Thermistor
3	PD +	LD -
4	PD -	PD +
5	Thermistor	PD -
6	Thermistor (to 5)	TEC +
7	PD +	TEC -
8	PD -	Case GND
9	N.C.	Case GND
10	LD +	N.C.
11	LD -	LD +
12	N.C.	N.C.
13	Case GND	LD +
14	TEC -	N.C.

Pinout Daughter Adapter Board

TYPE 1

TYPE 2

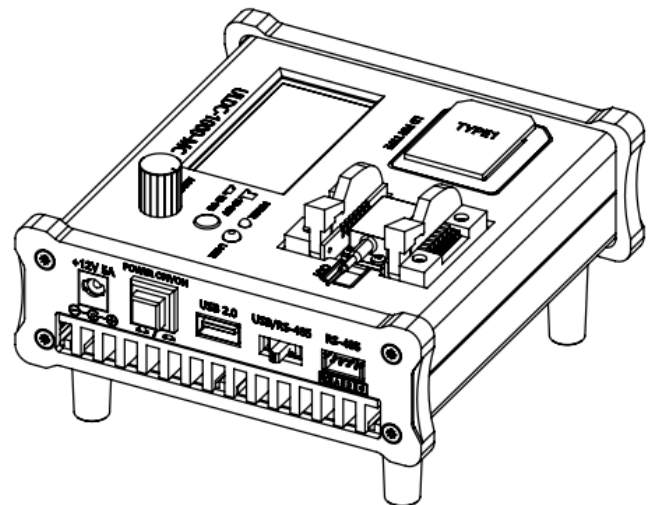
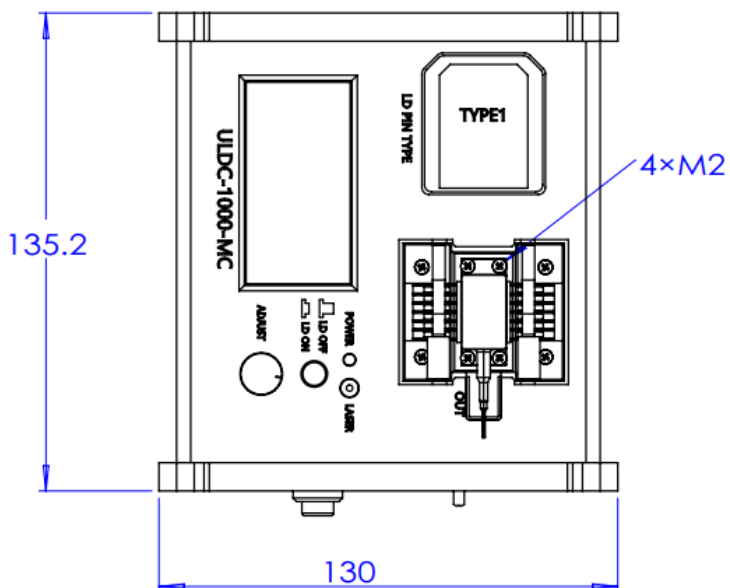
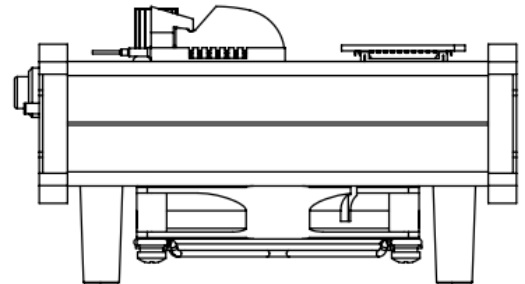
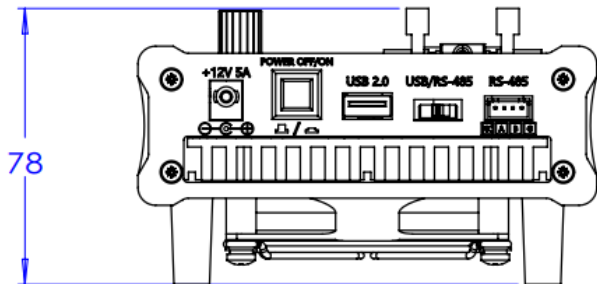
TYPE 3
CONFIGURABLE BY WIRING





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Mechanical Drawing (mm)



What's In the Package:

1. Universal Laser Diode Controller – 1
2. Daughter Board – (Type 1, 2, and 3)
3. Insulation Sheet – 1
4. M2 Plastic Screws – 4
5. AC to 12VDC Adapter – 1
6. User's Manual

