



**PRE-CONFIGURED LASER DIODE MOUNTING PLATE & HEAT SINK**  
TEC / peltier cooled mounting plate



*product image with fiber coupled multimode pump*

**COMPLETE LASER DIODE PROTECTION**  
soft-start current ramp; current & temp. limits, ESD & power surge clamps

## Turn-Key Laser Diode Control Electronics and Mounting System

All-Inclusive Control Electronics and Mounting System with Pre-Configured Mounting Plate for eagleyard photonics CDL and FLW "flat-pack" type multimode laser diodes

Current & TEC Controller + Cooled Mount + Cables

Precision Current Source with TEC / Peltier Temperature Controller

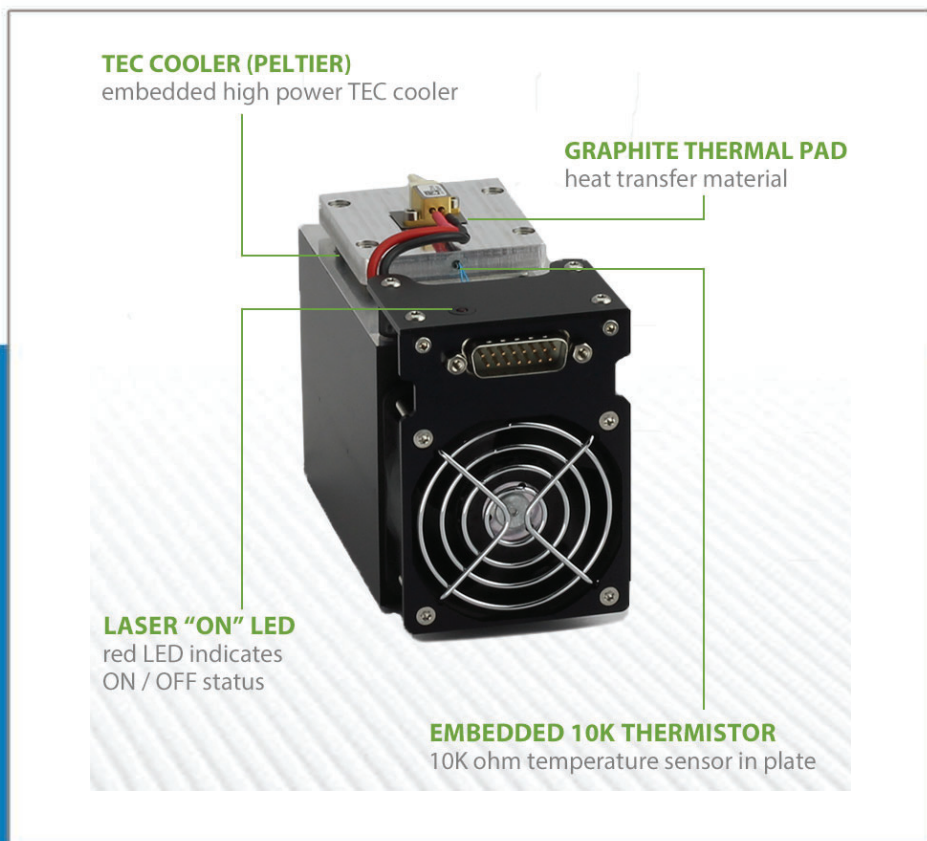
USB and LabView Drivers Available

**WORLD LEADING PRODUCTS  
FOR LASER SCIENTISTS AND ENGINEERS**

## DATA SHEET

### Product Overview:

This high power control solution is an all-inclusive system for controlling high power single emitter multimode lasers from Eagleyard Photonics. It is configured for the "flat-pack" style package. This pre-configured system includes a precision 22 amp current source, a full PID temperature controller, an actively cooled heat sink and all required cables. The current source offers industry leading protection for your laser diode. The heat sink and TEC cooled mounting plate offer a high performance pre-configured mounting solution. The EP-LDC-500X is an affordable, high performance solution for safely powering your laser and running at a stable temperature in laboratory environments.



## LDC-500X SPECIFICATIONS

### LASER DIODE CURRENT SOURCE

Output Current Range:	0.00 - 22.00 Amps
Compliance Voltage Range:	6.00 Volts
Current Noise & Ripple (rms):	< 1% of Full Scale Current
Current Setpoint Resolution:	5.0 mA
Current Setpoint Accuracy:	± 0.5%
Current Stability (4 hours):	≤ 100 ppm (@ full scale)
Current Limit Setpoint Accuracy:	± 2%
Photodiode Current Measurement Accuracy:	± 0.5%
Photodiode Current Measurement Range:	0.00 - 700 µA

### THERMOELECTRIC (TEC) TEMPERATURE CONTROLLER

TEC Output Power Total:	128Watts
TEC Output Current Range (bipolar):	± 8.00 Amps
TEC Output Voltage Range (bipolar) :	± 16.00 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
TEC Output Stability:	± 0.01°C (subject to ambient temp. stability)
Temperature Range:	-25°C to 150°C
Factory Set Default Lower Temperature Limit:	5°C
Factory Set Default Upper Temperature Limit:	35°C

### MOUNTING PLATE, HEAT SINK & CABLES

Cooling Method:	TEC-Peltier Cooler, Fan for Waste Heat Removal
TEC Rating (max):	9 Amps, 17 Volts
Heat Sink Thermal Load Maximum:	38 Watts (@25°C)
Fan Rated Input Voltage 24 VDC (supplied by controller)	
Fan Rated Input Current:	300 mA (supplied by controller)
Mounting Plate Material:	Anodized Aluminum
Mounting Plate Area:	105 mm x 75mm
Mounting Plate Hole Footprint:	Customer Specified Package Style
Mounting Plate Integrated Thermistor:	10 kΩ
Electrical Connector to Controller:	DSUB, 15-pin
System Includes 1 x 1.5 meter Current Interface Cable (50A rated)	
System Includes 1 x 1.5 meter TEC Control Interface Cable (20A rated)	

## LDC-500X SPECIFICATIONS

### MODULATION & QCW PULSE MODE

Internal Pulse Generator QCW Pulse Width Rise Time:	20 $\mu$ sec to CW
Pulse Time Base Accuracy:	$\pm$ 1.0%
QCW MODE 1:	User Adjustable Pulse Width and Repetition Rate using Internal Pulse Generator
QCW MODE 2: External Trigger to Internal Pulse Generator:	Rising Edge Triggered QCW Pulse with Internally Adjusted Pulse Width
MODULATION Input (BNC):	Digital (TTL) or Analog
MODULATION BNC Input Impedance:	10K ohm MODULATION Input
MODULATION Input Voltage Range:	0 ~ 4 Volts (4V = Max Current)

### INTEGRATED LASER DIODE PROTECTION FEATURES

User Programmable Soft-Start Current Ramp to Setpoint
Soft-Start Current Ramp Default Set to 300 Milliseconds
Current Limit
Temperature Limits (Upper and Lower)
Open Circuit Detection
Short Circuit when Laser Diode Current Turned OFF
ESD and Power Surge Clamp
Reverse Voltage Transient Clamp
Factory Pre-Set Default Upper Temperature Limit: 35°C
AC Line Filter
Rear Panel Keylock Switch and Interlock

### CONTROLLER COMPUTER INTERFACE

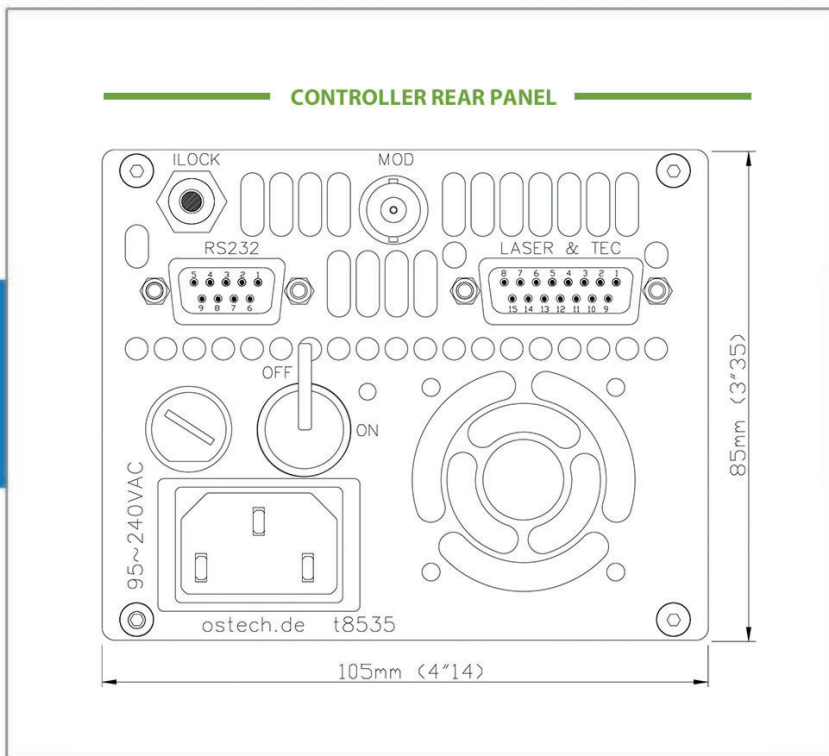
RS232 Standard	
USB Optional:	\$95.00 (Option SVC-USB)
LabView Drivers Included	

### POWER SUPPLY, WEIGHT AND DIMENSIONS

Power Input:	Universal 90 ~ 230 VAC, 50/60 Hz
System Weight (total):	~ 10 kg
Dimensions:	200mm x 105mm x 85mm

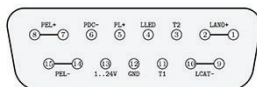


DATA SHEET



**REAR PANEL LASER DIODE BIAS AND TEC CONNECTOR**

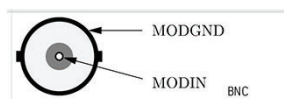
current and TEC controller connectors, 15 pin female DSUB



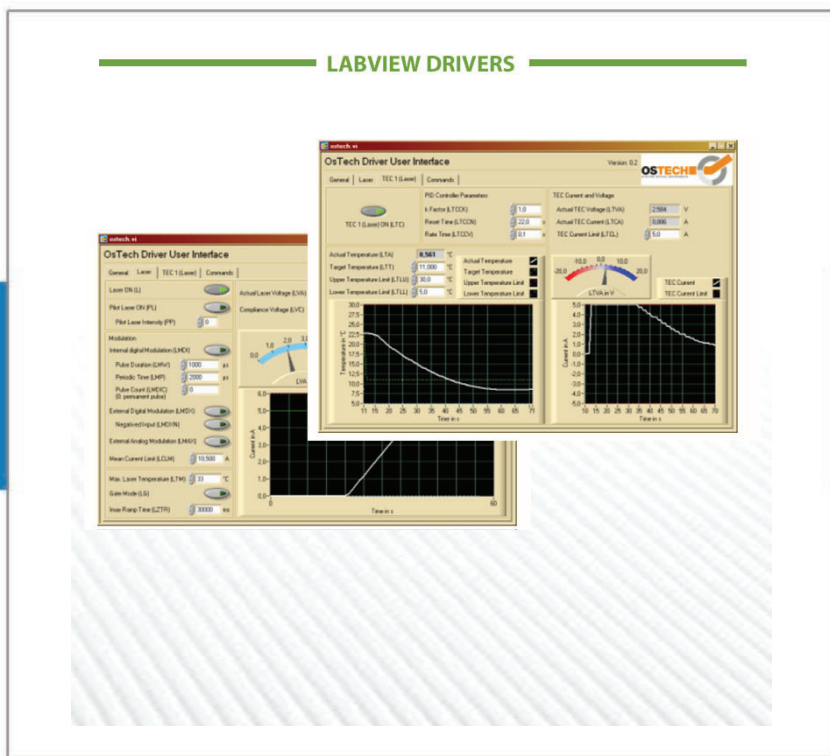
SubD15-female

PIN.No	Abbr.	Function
1;2	LANO+	Laser Diode Anode (+)
3	T2	Temperature Sensor 2 Input, default NTC10kΩ, v.s. GND
4	LLED	Laser Active LED - Anode (+), 5V over 470R, v.s. GND
5	PL+	Pilot Laser (+), v.s. GND
6	PDC-	Photo Diode Cathode (-) <sup>1)</sup>
8	PEL+	Peltier element (+) TEC +
9;10	LCAT-	Laser Diode Cathode (-)
11	T1	Temperature Sensor 1 Input, default NTC10kΩ, v.s. GND
12	GND	Common Ground
13	1-24V	1 to 24V Supply, max. 500mA, vs. GND, supports fan
15	PEL-	Peltier element (-) TEC -

**MODULATION INPUT**  
BNC, 10kOhm impedance



- digital modulation TTL
- analog modulation 0 ~ 4V (4V = max current)



## Product Warranty:

In addition to the standard full one year warranty, this product is offered with an additional 3 months of extended warranty for a total of 15 months of warranty coverage. The warranty includes all parts and labor. The warranty does not include customer induced product damage.

## Our Customer Commitment:



### You Get Direct, Fast Tech-Support from a Product ENGINEER ... Not a Sales Person

You get DIRECT access to the correct factory engineer for your product. We eliminate the sales person "middle-man" back and forth time delays resolving technical issues. No more "Contact Us" forms. Every product has an assigned engineer in our auto-messaging data base to give you direct, immediate access to the correct tech-support info.



### You Get an Extended Warranty

All products from Laser Lab Source come with a 12 month factory warranty. Additionally, we offer and extra 3 months of warranty on top of the standard warranty. Warranty does not include customer induced product damage.



### You Get the Lowest Factory-Direct Prices Worldwide

All of our 3rd party global suppliers set & quote their own direct pricing. There are NO Mark-Up's. You get their lowest direct price.