

# Laser Diode/TEC Controllers—Benchtop Kit



up to 1A laser current, , constant current/power mode, up to 2A TEC current, ultra-stable feedback control

DATASHEET

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The Agiltron LDCB series benchtop laser source is designed for easy coupling and precise control of a laser diode. Each system features a single FC/APC connector output and incorporates high-precision, low-noise auto-feedback in the drive electronics to ensure constant output power or a constant driving current. An integrated temperature control unit maintains optimal operating conditions. The system provides up to 1A driving current and up to 2A TEC cooling current. The user interface includes an intuitive LCD display for independent control of output power and temperature via two front rotating knobs. The LDCB also includes a universal power supply compatible with 100 to 240 VAC. Convenient rear-panel fuse access is provided. Additionally, reflection-induced laser emissions instability can be prevented with an optional built-in isolator.

The LDCB is also designed as a laser diode and TEC controller kit for customer to install laser diode. It has three types of pluggable laser mounts of butterfly, DIL, and TOCAN. The TOCAN mount contains an external TEC that maintains a constant temperature for wavelength stability.

## Features

- Compact
- Easy to User
- LD Current up to 1A
- Compatible with All Laser Types
- Adjustable Laser Diode Current
- Constant Current or Constant Power
- Ultra-Stable Feedback Control

## Applications

- Laser Modules
- Laboratory Use
- Systems



## Specifications

Parameter	Min	Typical	Max	Unit
Output Laser Control Current			1	A
Noise Ripple		150	180	µA RMS
Stability <sup>[1]</sup>	1hr	0.08		%
	24hr	0.04		
Slow Start Ramp	15			mA/ msec
External Modulation Bandwidth <sup>[1]</sup>	DC		500	kHz
External Modulation Depth <sup>[2]</sup>	97			%
External Modulation Rise/Fall <sup>[3]</sup>	300		-	ns
Power Supply Voltage	4.5	5	6	V
Power Supply Current			6	A
Internal Power Dissipation <sup>[4]</sup>			2	W
Operating Temperature	-40		80	°C
Storage Temperature	-60		85	°C
TEC Control Current			2.2	A
Lase Temperature Stability <sup>[4]</sup>	0.02		0.3	°C

### Notes:

- [1] Constant current
- [2] 100kHz sine wave
- [3] laser current 500 mA
- [4] 25°C

## Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 µm. Maximum power = 30 mW.

Rev 09/05/24



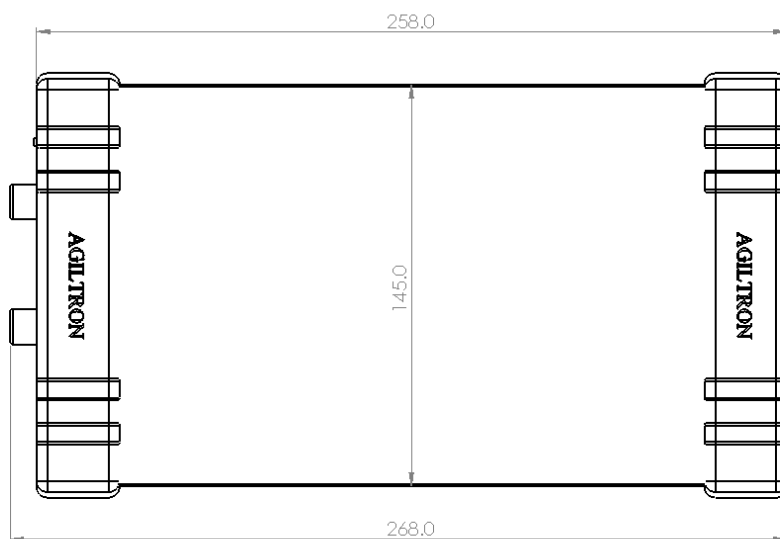
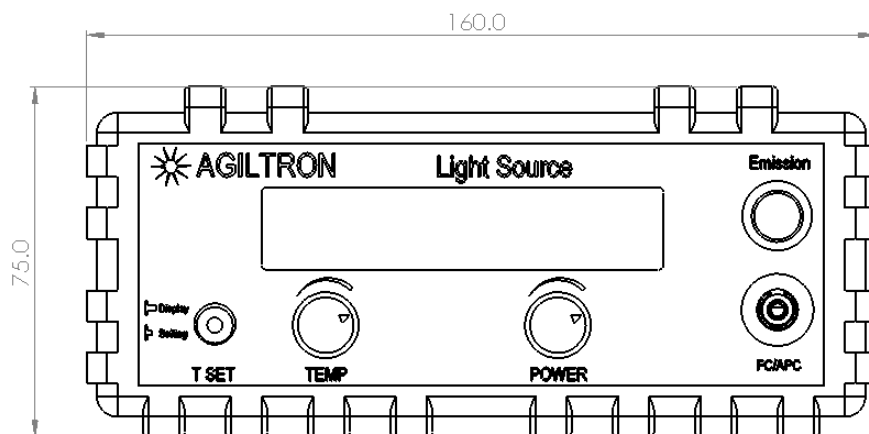
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### Mechanical Dimension (mm)



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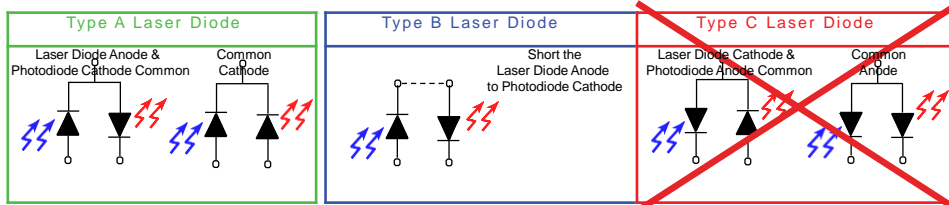


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### Connection Guide

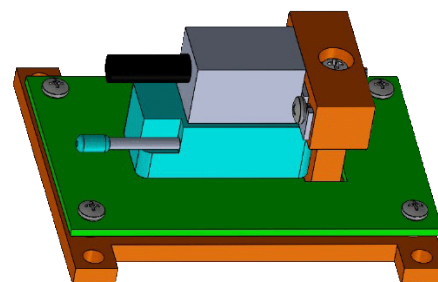
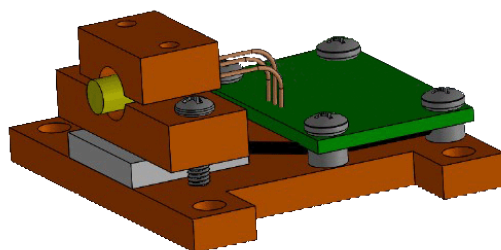
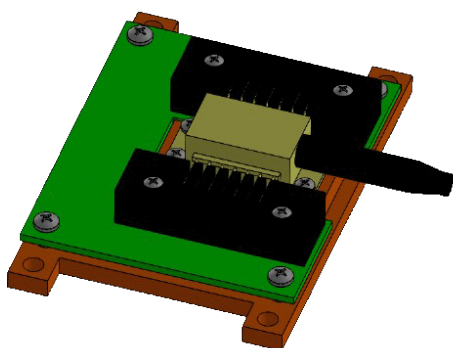
**Note: only suitable to driver lasers with connection type of A and B of both butterfly and TOCAN packages**



### Laser Mounts

**Note: we offer laser mounts for butterfly, DIL, and TOCAN packages with cable direct connect to the LDCD laser driver module**

- Butterfly
- TOCAN with external TEC cooling
- 14-pin DIL



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### Operation Manual

- EN/DIS Enable or Disable Laser Control
- LLIM Hard Setting the Maximum Laser Current Limit
- ISET Set the Laser Current for Internal Control Mode
- TLIM Hard Setting the Maximum TEC Current

### Ordering Information

Prefix	Configuration	Laser Current	TEC Current	Type	Package	Power Supply	Laser Mount
LDCB-	Standard = 1 Special = 0	1A = 1 Special = 0	2.2A = 1 Special = 0	Standard = 11 Special = 00	Benchtop = 2 Special = 0	Non = 00 Yes = 11	TOCAN A = 1 Butterfly A = 2 Butterfly B = 3 Butterfly C = 4 TOCAN B = 5 DIL A = 6 DIL B = 7

Red is non-standard specially made at a higher cost

### Caution Extremely Electrostatic Sensitivity



- Never touch laser diode and the module using hands
- Always use protections when handle a laser diode
- Recommend mounting the laser diode using an ionic gun and ESD finger cots



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### Typical Laser Output Stability (butterfly package with temperature control)

