



## **PLC-T Series – 635nm–980nm Miniature Laser Diode Modules**

*TTL up to 100kHz, Circular Beam, Adjustable Focus, and Compact OEM Integration*



### **Overview**

The Lasermate PLC-T series laser diode module system with TTL modulation is a self-contained laser diode system designed for OEM applications with adjustable focusing and APC circuit design features. Additional heat sink may be needed for the laser module under continuously operating for a long period of time. Designed for OEM, the laser is ideal for a wide range of low power laser applications, such as general sighting, leveling and positioning.

### **Features**

- Wide range of wavelengths from 635nm to 980nm (including 650nm, 670nm, 780nm, 808nm, 850nm, 904nm)
- Different output power levels for different wavelengths
- Adjustable focus
- Circular beam profile
- Automatic Power Control (APC) circuit
- TTL modulation to 100kHz

### **Applications**

- General sighting
- Leveling
- Positioning

## Product Overview

The following table shows the list of available part numbers, wavelength, optical output power, laser class, operating voltage, operating current, and operating temperature for PLC-T series laser modules.

| Part Number   | Wavelength (nm) | Optical output power (mW) | Laser class | Operating voltage (V DC) | Operating Current typical (mA) | Operating temperature (°C) |
|---------------|-----------------|---------------------------|-------------|--------------------------|--------------------------------|----------------------------|
| PLC6351A5-T-B | 635             | 0.5-0.99                  | II          | 5                        | 40                             | -10 to +40                 |
| PLC6352A5-T-B | 635             | 1.2-2                     | IIIa        | 5                        | 40                             | -10 to +40                 |
| PLC6351A5-T-A | 635             | 0.5-0.99                  | II          | 5                        | 40                             | -10 to +50                 |
| PLC6352A5-T-A | 635             | 1.2-2                     | IIIa        | 5                        | 40                             | -10 to +50                 |
| PLC6501A5-T-B | 650             | 0.5-0.99                  | II          | 5                        | 25                             | -10 to +40                 |
| PLC6502A5-T-B | 650             | 1.2-2                     | IIIa        | 5                        | 25                             | -10 to +40                 |
| PLC6501A5-T-A | 650             | 0.5-0.99                  | II          | 5                        | 25                             | -10 to +50                 |
| PLC6502A5-T-A | 650             | 1.2-2                     | IIIa        | 5                        | 25                             | -10 to +50                 |
| PLC6504A5-T   | 650             | 2.4-4                     | IIIa        | 5                        | 28                             | -10 to +50                 |
| PLC6701A5-T   | 670             | 0.5-0.99                  | II          | 5                        | 40                             | -10 to +50                 |
| PLC6702A5-T   | 670             | 1.2-2                     | IIIa        | 5                        | 40                             | -10 to +50                 |
| PLC7802A5-T   | 780             | 1.2-2                     | IIIb        | 5                        | 30                             | -10 to +50                 |
| PLC8082A5-T   | 808             | 1.2-2                     | IIIb        | 5                        | 30                             | -10 to +50                 |
| PLC8502A5-T   | 850             | 1.2-2                     | IIIb        | 5                        | 30                             | -10 to +50                 |
| PLC9042A5-T   | 904             | 1.2-2                     | IIIb        | 5                        | 30                             | -10 to +50                 |
| PLC9804A5-T   | 980             | 2.4-4                     | IIIb        | 5                        | 35                             | -10 to +50                 |

**Specifications of PLC-T Series Laser Diode Modules with TTL Modulation**

| Wavelength (nm)       | 635  | 650 | 670 | 780 | 808        | 850 | 904 | 980 |
|-----------------------|--|-----|-----|-----|------------|-----|-----|-----|
| Laser light           | Visible Red  |     |     |     | Infrared   |     |     |     |
| Laser class           | Class II <1mW, Class IIIa <5mW                             |     |     |     | Class IIIb |     |     |     |
| Diode output power    | 5-10mW   |     |     |     |            |     |     |     |
| Operating current     | 25-40mA typical  |     |     |     |            |     |     |     |
| Operating voltage     | 5 VDC (red wire "+" & black wire "-")                      |     |     |     |            |     |     |     |
| Control voltage       | Maximum 5V DC (yellow wire "+" & black wire "-")           |     |     |     |            |     |     |     |
| Drive circuit         | APC (automatic power control) with modulator               |     |     |     |            |     |     |     |
| Modulation frequency  | Up to 100KHz   |     |     |     |            |     |     |     |
| Optics                | Singlet plastic collimating lens                           |     |     |     |            |     |     |     |
| Beam divergence       | < 0.5 mrad   |     |     |     |            |     |     |     |
| Beam size @ 5 m       | ~ dia. 5 mm  |     |     |     |            |     |     |     |
| Beam profile          | Circular   |     |     |     |            |     |     |     |
| Focus                 | Adjustable   |     |     |     |            |     |     |     |
| Operating temperature | -10 to +40 °C or -10 to +50 °C                             |     |     |     |            |     |     |     |
| Connector             | Red & yellow wires "+"; black wire "-"                     |     |     |     |            |     |     |     |
| Dimensions            | Brass case: Dia. 10.5mmx L. 19.3mm + PCB: W.10mm x L. 11mm |     |     |     |            |     |     |     |
| Remark                | Brass case is positive.                                    |     |     |     |            |     |     |     |

**Additional Notes**

- The PLC-T series laser modules are designated solely as OEM components for incorporation into the customer's end products. Therefore, it is the customer’s responsibility to comply with the appropriate requirements of FDA 21CFR, section 1040.10 and 1040.11 for complete laser products. For the code of FDA regulations, please refer to [FDA Performance Standards for Light-Emitting Products](#) for detailed information.
- Additional heat sink may be needed if the laser module is operated continuously for a long period of time.
- Specifications are subject to change without notice.



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