



## 650nm Pre-Aligned Red Dot Laser Diode Modules, $\pm 0.05$ Degree Beam Centering for Alignment Application

### PLA650 Series



### Overview

The Lasermate PLA650 series laser diode module is a precision laser module at 650nm wavelength designed for OEM applications by which the output laser beam is pre-aligned to the center axial of the barrel of laser module. The precision laser is suitable for OEM assembly, and alignment and aiming applications.

### Features

- Typical 650nm red laser module
- Tolerance of  $\theta/2$  is  $\pm 0.05^\circ$  or  $\pm 0.9\text{cm}$  off the center axial of laser module at 10m distance, or  $\pm 1.1$  inches off the center axial of laser module at 100 feet distance
- No user's adjustment required
- Brass housing is negative

### Applications

- Alignment
- Aiming

### Product Overview

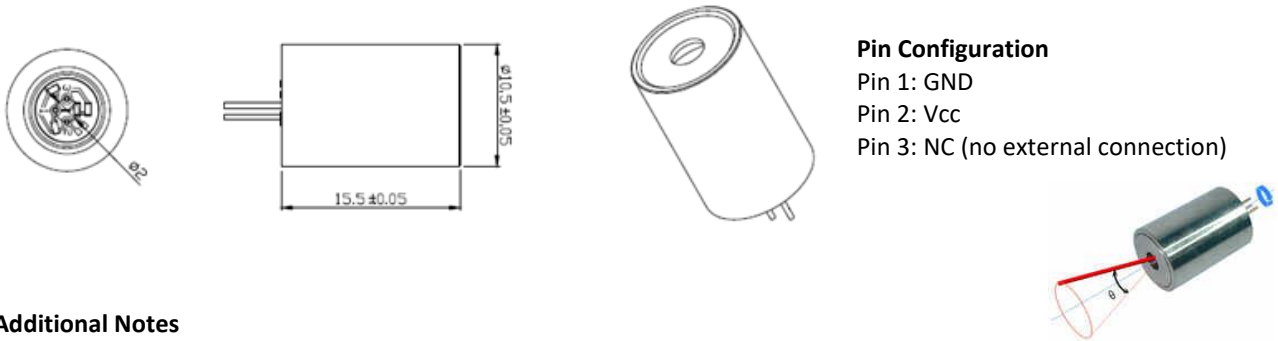
Part Number	Wavelength (nm)	Output power (typ.)	Operating voltage (typ.)	Operating current (typ.)	Operating temperature	Feature
PLA6505F3-A	650nm	4.5mW	3VDC	30mA	-5 to +40°C	3 pins version
PLA6505F3-AW3	650nm	4.5mW	3VDC	30mA	-5 to +40°C	3 inches wires version

**Specifications of PLA650 Series 650nm Pre-Aligned Laser Diode Modules**

Absolute Maximum Ratings			
Parameter	Symbol	Rating	Unit
Power supply voltage	Vcc	3.3	V
Laser module optical output power	Po	<5	mW
Operation temperature	Topr	-5 to 40	°C
Storage temperature	Tstg	-20 to 60	°C

Electrical-Optical Characteristics							
Parameter	Symbol	Min.	Typ.	Max	Unit	Conditions	
Wavelength	$\lambda$	650	655	660	nm	Po=4.5mW	
Output power	Pout	-	4.5	5	mW	Vcc=3V	
Operation current	Iop	-	30	40	mA	Po=4.5mW, Vcc=3V	
Operation voltage	Vop	2.8	3	3.3	Volt		
Laser beam spot size @ 10m	<15mm						
Divergence angle	1.2mrad						
Beam centering angle	< $\pm$ 1mrad (or < $\pm$ 0.05°)						
Mean time to failure (MTTF) @ 4.5mW, 25°C	>10,000hrs						

**Outline Dimensions of PLA650 Series 650nm Pre-Aligned Laser Diode Modules (unit: mm)**



**Additional Notes**

- The PLA650 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.
- Specifications are subject to change without notice.



**Lasermate Group, Inc.**  
 19608 Camino De Rosa  
 Walnut, CA 91789 USA  
 Tel: (909)718-0999  
 Fax: (909)718-0998  
[sales@lasermate.com](mailto:sales@lasermate.com)  
[www.lasermate.com](http://www.lasermate.com)