



## **PLC-X9 Series 635nm-980nm Cross Hair Generating Laser Diode Modules** *With Adjustable Focus and APC Circuit Design*



### **Overview**

The Lasermate high performance PLC-X9 series laser diode modules with cross hair profile are designed for OEM applications with fine cross hair profile, low cost, miniature size, and beam focusing requirements. 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 all wavelengths
- Good performance and low cost
- Automatic Power Control (APC) circuit
- Adjustable focus
- Miniature design: Dia. 10.5mm x L. 19.3mm
- Beam profile: “+” cross hair
- Beam length: ~15.7cm @ 1m distance
- Full fan angle: ~9 degrees
- Size of cross hair lens: Dia. 7mm x T. 1mm

## 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-X9 series laser modules.

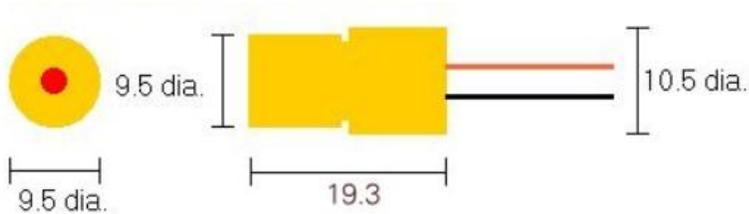
Part Number	Wavelength (nm)	Optical output power (mW)*	Laser class	Operating voltage (VDC)	Operating Current typical (mA)	Operating temperature (°C)	Focus
PLC6351AE-BX9	635	0.5-0.99	II	3-6	40	-10 to +40	Adjustable
PLC6351FE-BX9	635	0.5-0.99	II	3-6	40	-10 to +40	Fixed
PLC6352AE-BX9	635	1.2-2	IIIa	3-6	40	-10 to +40	Adjustable
PLC6352FE-BX9	635	1.2-2	IIIa	3-6	40	-10 to +40	Fixed
PLC6351AE-AX9	635	0.5-0.99	II	3-6	40	-10 to +50	Adjustable
PLC6351FE-AX9	635	0.5-0.99	II	3-6	40	-10 to +50	Fixed
PLC6352AE-AX9	635	1.2-2	IIIa	3-6	40	-10 to +50	Adjustable
PLC6352FE-AX9	635	1.2-2	IIIa	3-6	40	-10 to +50	Fixed
PLC6501AE-BX9	650	0.5-0.99	II	3-6	25	-10 to +40	Adjustable
PLC6501FE-BX9	650	0.5-0.99	II	3-6	25	-10 to +40	Fixed
PLC6502AE-BX9	650	1.2-2	IIIa	3-6	30	-10 to +40	Adjustable
PLC6502FE-BX9	650	1.2-2	IIIa	3-6	30	-10 to +40	Fixed
PLC6501AE-AX9	650	0.5-0.99	II	3-6	25	-10 to +50	Adjustable
PLC6501FE-AX9	650	0.5-0.99	II	3-6	25	-10 to +50	Fixed
PLC6502AE-AX9	650	1.2-2	IIIa	3-6	30	-10 to +50	Adjustable
PLC6502FE-AX9	650	1.2-2	IIIa	3-6	30	-10 to +50	Fixed
PLC6701AE-X9	670	0.5-0.99	II	3-6	40	-10 to +50	Adjustable
PLC6701FE-X9	670	0.5-0.99	II	3-6	40	-10 to +50	Fixed
PLC6702AE-X9	670	1.2-2	IIIa	3-6	40	-10 to +50	Adjustable
PLC6702FE-X9	670	1.2-2	IIIa	3-6	40	-10 to +50	Fixed
PLC7802AE-X9	780	1.2-2	IIIb	3-6	30	-10 to +50	Adjustable
PLC7802FE-X9	780	1.2-2	IIIb	3-6	30	-10 to +50	Fixed
PLC8082AE-X9	808	1.2-2	IIIb	3-6	30	-10 to +50	Adjustable
PLC8082FE-X9	808	1.2-2	IIIb	3-6	30	-10 to +50	Fixed
PLC8502AE-X9	850	1.2-2	IIIb	3-6	30	-10 to +50	Adjustable
PLC8502FE-X9	850	1.2-2	IIIb	3-6	30	-10 to +50	Fixed
PLC9042AE-X9	904	1.2-2	IIIb	3-6	30	-10 to +50	Adjustable
PLC9042FE-X9	904	1.2-2	IIIb	3-6	30	-10 to +50	Fixed
PLC9804AE-X9	980	2.4-4	IIIb	3-6	45	-10 to +50	Adjustable
PLC9804FE-X9	980	2.4-4	IIIb	3-6	45	-10 to +50	Fixed

\*Optical output power before adding crosshair lens.

**Specifications of PLC-X9 Series Laser Diode Modules with Cross Hair Lens**

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 structure	Index guided							
Diode output power	5-10mW							
Operating current	25-50mA typical							
Operating voltage	3-6 VDC							
Drive circuit	Regulated APC (automatic power control)							
Optics	Singlet plastic collimating lens plus with the crosshair lens							
Beam divergence	~9° full fan angle							
Beam profile	~15.7cm cross hair at 1m distance							
Focus	Standard: Adjustable (Optional: Fixed)							
Operating temperature	-10 to +40 °C or -10 to +50 °C							
Connector	Black wire -, red wire + & brass case +							
Dimensions	Brass housing: Dia. 10.5mm x L. 19.3mm + Cross hair: dia. 7mm x T. 1mm							
Weight	12 gm typical							
Cross hair optics	~9-degree full fan angle cross hair optics attached on the aperture							

**Outline Dimensions of PLC Series Laser Diode Modules (unit: mm)**



**Additional Notes**

- The PLC-X9 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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