



LSP Series — 635nm to 980nm Miniature Laser Diode Modules *Elliptical Beam, 8mm Diameter, 3-6VDC*



Overview

The Lasermate LSP series laser diode modules are designed for OEM applications requiring a compact, cost-effective solution with reliable beam focusing. Covering a wide wavelength range from 635nm to 980nm, the LSP series supports different output power levels for each wavelength. These modules feature fixed or adjustable focus options, elliptical beam profiles, and singlet plastic collimating lenses, housed in a miniature brass case measuring 8mm diameter. The integrated Automatic Power Control (APC) circuit ensures stable output power. For continuous long-term operation, additional heat sinking is recommended. The LSP series is ideal for pointing, leveling, sensing, and various low power laser applications.

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
- Fixed or adjustable focus
- Elliptical beam profile
- Singlet plastic collimating lens
- Automatic Power Control (APC) circuit design
- Miniature design: Brass case size of Dia. 8mm x L. 12.5mm

Applications

- Pointing
- Leveling
- Sensing

Product Overview

The following table shows the list of available part numbers, wavelength, optical output power, laser class, PCB size, operating temperature, and focus for LSP series laser modules.

Part Number	Wavelength (nm)	Optical output power (mW)	Laser class	PCB size (mm)	Typ. Operating Current (mA)	Operating Temp (°C)	Focus
LSP6351AE-B	635	0.5-0.99	II	Dia. 8.9	40	-10 to +40	Adjustable
LSP6351FE-B	635	0.5-0.99	II	Dia. 8.9	40	-10 to +40	Fixed
LSP6353AE-B	635	2.1-3	IIIa	Dia. 8.9	40	-10 to +40	Adjustable
LSP6353FE-B	635	2.1-3	IIIa	Dia. 8.9	40	-10 to +40	Fixed
LSP6351AE-A	635	0.5-0.99	II	Dia. 8.9	40	-10 to +50	Adjustable
LSP6351FE-A	635	0.5-0.99	II	Dia. 8.9	40	-10 to +50	Fixed
LSP6353AE-A	635	2.1-3	IIIa	Dia. 8.9	40	-10 to +50	Adjustable
LSP6353FE-A	635	2.1-3	IIIa	Dia. 8.9	40	-10 to +50	Fixed
LSP6351AW-B	635	0.5-0.99	II	W 7.5xL 11.7	40	-10 to +40	Adjustable
LSP6351FW-B	635	0.5-0.99	II	W 7.5xL 11.7	40	-10 to +40	Fixed
LSP6353AW-B	635	2.1-3	IIIa	W 7.5xL 11.7	40	-10 to +40	Adjustable
LSP6353FW-B	635	2.1-3	IIIa	W 7.5xL 11.7	40	-10 to +40	Fixed
LSP6351AW-A	635	0.5-0.99	II	W 7.5xL 11.7	40	-10 to +50	Adjustable
LSP6351FW-A	635	0.5-0.99	II	W 7.5xL 11.7	40	-10 to +50	Fixed
LSP6353AW-A	635	2.1-3	IIIa	W 7.5xL 11.7	40	-10 to +50	Adjustable
LSP6353FW-A	635	2.1-3	IIIa	W 7.5xL 11.7	40	-10 to +50	Fixed
LSP6501AE-B	650	0.5-0.99	II	Dia. 8.9	25	-10 to +40	Adjustable
LSP6501FE-B	650	0.5-0.99	II	Dia. 8.9	25	-10 to +40	Fixed
LSP6503AE-B	650	2.1-3	IIIa	Dia. 8.9	25	-10 to +40	Adjustable
LSP6503FE-B	650	2.1-3	IIIa	Dia. 8.9	25	-10 to +40	Fixed
LSP6501AE-A	650	0.5-0.99	II	Dia. 8.9	30	-10 to +50	Adjustable
LSP6501FE-A	650	0.5-0.99	II	Dia. 8.9	30	-10 to +50	Fixed
LSP6503AE-A	650	2.1-3	IIIa	Dia. 8.9	30	-10 to +50	Adjustable
LSP6503FE-A	650	2.1-3	IIIa	Dia. 8.9	30	-10 to +50	Fixed
LSP6501AW-B	650	0.5-0.99	II	W 7.5xL 11.7	25	-10 to +40	Adjustable
LSP6501FW-B	650	0.5-0.99	II	W 7.5xL 11.7	25	-10 to +40	Fixed
LSP6503AW-B	650	2.1-3	IIIa	W 7.5xL 11.7	25	-10 to +40	Adjustable
LSP6503FW-B	650	2.1-3	IIIa	W 7.5xL 11.7	25	-10 to +40	Fixed
LSP6501AW-A	650	0.5-0.99	II	W 7.5xL 11.7	30	-10 to +50	Adjustable
LSP6501FW-A	650	0.5-0.99	II	W 7.5xL 11.7	30	-10 to +50	Fixed
LSP6503AW-A	650	2.1-3	IIIa	W 7.5xL 11.7	30	-10 to +50	Adjustable
LSP6503FW-A	650	2.1-3	IIIa	W 7.5xL 11.7	30	-10 to +50	Fixed
LSP7803AE	780	2.1-3	IIIb	Dia. 8.9	30	-10 to +50	Adjustable
LSP7803FE	780	2.1-3	IIIb	Dia. 8.9	30	-10 to +50	Fixed
LSP7803AW	780	2.1-3	IIIb	W 7.5xL 11.7	30	-10 to +50	Adjustable
LSP7803FW	780	2.1-3	IIIb	W 7.5xL 11.7	30	-10 to +50	Fixed
LSP8083AE	808	2.1-3	IIIb	Dia. 8.9	30	-10 to +40	Adjustable
LSP8083FE	808	2.1-3	IIIb	Dia. 8.9	30	-10 to +40	Fixed
LSP8083AW	808	2.1-3	IIIb	W 7.5xL 11.7	30	-10 to +40	Adjustable
LSP8083FW	808	2.1-3	IIIb	W 7.5xL 11.7	30	-10 to +40	Fixed
LSP8503AE	850	2.1-3	IIIb	Dia. 8.9	30	-10 to +50	Adjustable
LSP8503FE	850	2.1-3	IIIb	Dia. 8.9	30	-10 to +50	Fixed
LSP8503AW	850	2.1-3	IIIb	W 7.5xL 11.7	30	-10 to +50	Adjustable
LSP8503FW	850	2.1-3	IIIb	W 7.5xL 11.7	30	-10 to +50	Fixed
LSP9043AE	904	2.1-3	IIIb	Dia. 8.9	30	-10 to +50	Adjustable
LSP9043FE	904	2.1-3	IIIb	Dia. 8.9	30	-10 to +50	Fixed
LSP9043AW	904	2.1-3	IIIb	W 7.5xL 11.7	30	-10 to +50	Adjustable
LSP9043FW	904	2.1-3	IIIb	W 7.5xL 11.7	30	-10 to +50	Fixed
LSP9806AE	980	4-6	IIIb	Dia. 8.9	45	-10 to +40	Adjustable
LSP9806FE	980	4-6	IIIb	Dia. 8.9	45	-10 to +40	Fixed
LSP9806AW	980	4-6	IIIb	W 7.5xL 11.7	45	-10 to +40	Adjustable
LSP9806FW	980	4-6	IIIb	W 7.5xL 11.7	45	-10 to +40	Fixed

Specifications of LSP Series Laser Diode Modules

Wavelength (nm)	635	650	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) Dia. 8.9mm or W. 7.5 x L. 11.7mm						
Optics	Singlet plastic collimating lens						
Beam divergence	< 0.5 mrad						
Beam size @ 5 m	~4 x 7 mm						
Beam profile	Elliptical						
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 case: Dia. 8mm x L. 12.5mm + PCB dia. 8.9mm or W. 7.5 x L. 11.7mm						
Weight	10 gm typical						
Option	Connecting to DL-X9 cross hair optics						

Additional Notes

- The LSP 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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