

# FLL Series Red Laser Line Module

Part No: FLL5-3.5P-650-\*\*



## Product Features

- High Stability and low noise
- Fixed focus
- Reverse Polarity Protection
- Low Cost

## Application

- Measurement
- Automation
- Alignment

## Mechanical Drawing



**Operational Hazard-Semiconductor Laser Diode Module:** This laser module emits radiation that is visible and harmful to human eye. When in use, do not look directly into the laser emitting aperture. Direct viewing of laser diode emission at close range may cause eye damage.

**Limited Warranty:** One year. No warranty coverage for disassembly, modifications or damage due to abuse or misapplication.

## Specification

### OPTICAL

Wavelength	650 nm
Optical Output Power	3.5 mW
Stability	<1%
Wavelength Drift	0.2nm/°C
Laser Operation	Continuous
Laser Structure	Single Mode Laser
Line Thickness	Fixed
Minimum Line Thickness	< 2mm up to 3 meter

### ELECTRICAL

Operating Voltage	3 to 5 VDC
Operating Current	<60 mA
Control Circuit	Auto Power Control
Electrical Connections	+Red, -Black

### MECHANICAL

Dimension	9mm(Dia) × 25mm(L)
Cable	380mm
Operating Temperature	-10°C to +50°C
Storage Temperature	-40°C to +80°C
Heat Sink Requirements*	Recommended for extended use

### Notes

2. Heat Sink: The FLL Series Red Laser Line Module is designed to operate without heat sink. Do not restrict air circulation around the device; an additional heat sink can be used to maximize the performance and life time of the laser.

**Caution:** The case is internally connected to the circuit; damage to the anodized surface may result in failure of the laser module.

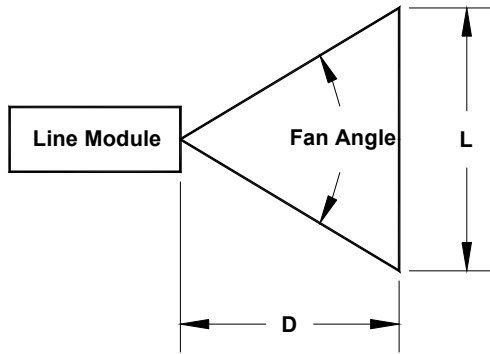


Complies with CDRH 21CFR 1040.10

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## Fan Angle Selection Guide



L: Line Length  
 D: Distance  
 a: Factor

For given Fan Angle, the Line Length **L** at distance **D** is calculated using the equation :

$$L = a \times D$$

For Example: using 4 ° Fan Angle at distance of 1.5m, the Line Length will be  $L = 0.07 \times 1.5m = 0.105m$ ;

Part No.	Fan angle	Factor a	Line Length(m)			Laser Class
			D=0.5m	D=1m	D=3m	
FLL5-3.5P-650-04	4 °	0.07	0.04	0.07	0.21	IIIa
FLL5-3.5P-650-15	15°	0.26	0.13	0.26	0.78	II
FLL5-3.5P-650-30	30 °	0.54	0.27	0.54	1.62	II
FLL5-3.5P-650-45	45°	0.83	0.42	0.83	2.49	II
FLL5-3.5P-650-60	60 °	1.15	0.58	1.15	3.45	II
FLL5-3.5P-650-75	75 °	1.53	0.77	1.53	4.59	II