ULL Series Red Laser Line Module

*Part No: ULL5-0.4G-650-***

Specifications

OPTICAL	
Wavelength	650 nm
Optical Output Power (after line)	< 0.4 mW
Stability	<1%
Wavelength Drift	0.2nm/°C
Noise (20MHz Bandwidth)	<0.5% RMS
Laser Operation	Continuous
Laser Structure	Single Mode Laser
Line Thickness	Adjustable
Minimum Line Thickness	<1mm up to 1 meter
Pointing Stability	<50µrad
ELECTRICAL	
Operating Voltage[1]	3 to 5 VDC
Operating Current	<40 mA
Control Circuit	Auto Power Control
Electrical Connections	+Red, -Black
MECHANICAL	
Dimension	See chart
Cable	380 mm
Operating Temperature	+10ºC to +50°C
Storage Temperature	-40ºC to +80°C
Heat Sink Requirements[2]	Recommended

Notes
1. Please ensure there is no voltage surge
2. Heat Sink: The ULL Series Red Laser Line Module is designed to dissipate heat through its body. 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.

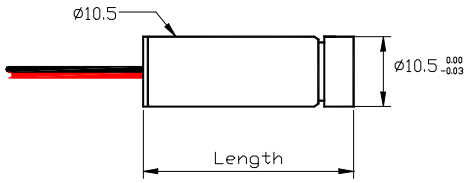
Product Features

- High Stability and low noise
- Collimated or Adjustable focus beam
- Reverse Polarity Protection
- Custom Options Available

Applications

- Measurement
- Bioanalytical
- Automation
- Alignment

Mechanical Drawing



Complies with CDRH 21CFR 1040.10

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.

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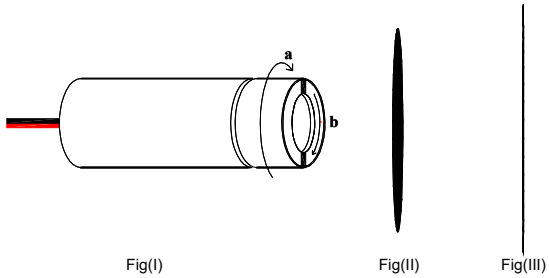
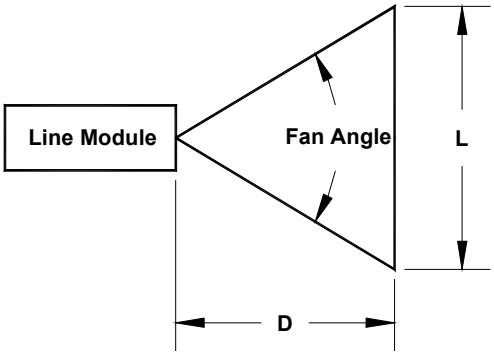
ISO9001:2000 Registered

Focus Adjustment of Line Generators



The line generator lens assembly consists of: aspherical lens assembly *a* and cylindrical lens assembly *b*. Lens assembly *a* adjusts the coarse thickness of the line and lens assembly *b* adjusts the fine thickness of the line. To focus the line at a given distance rotate lens assembly a, until you get the thinnest possible line. Your line at this point may look the line in Fig (II), thick in the center and thin along the edges. To adjust to a thin line focused line (Fig (III)), keep lens assembly a fixed and gently rotate lens assembly *b*(<90°) (making sure not to move lens assembly *a* during this process) until you get a thin uniform line as shown in Fig (III).

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 x D

For Example: using 4 º Fan Angle at distance of 1.5m, the Line Length will be L= 0.07 x 1.5m = 0.105m;

Part No.	Fan angle	Factor a	Line Length(m)			Laser Class	Dimension (Diameter x Length)
			D=0.5m	D=1m	D=3m		
ULL5-0.4G-650-04	4 º	0.07	0.04	0.07	0.21	II	10.5mm X 30mm
ULL5-0.4G-650-15	15º	0.26	0.13	0.26	0.78	II	10.5mm X 30mm
ULL5-0.4G-650-30	30 º	0.54	0.27	0.54	1.62	II	10.5mm X 30mm
ULL5-0.4G-650-45	45º	0.83	0.42	0.83	2.49	II	10.5mm X 30mm
ULL5-0.4G-650-75	75 º	1.53	0.77	1.53	4.59	II	10.5mm X 30mm
ULL5-0.4G-650-90	90º	2.00	1.00	2.00	6.00	II	10.5mm X 35mm

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