



RLU4116E

- **Ultra Violet Radiation Source**
- **375 nm**
- **70 mW**
- **5.6mm TO, integrated PD**



Description

RLU4116E is an Ultra Violet Laser Diode emitting at 375 nm with rated output power of 70 mW in standard 5.6mm TO package. It features integrated photo diode and ESD protection circuit.

Maximum Ratings

| Parameter | Symbol | Values | | Unit |
|-----------------------|--------------|--------|------|------|
| | | Min. | Max. | |
| Optical Output Power | P_O | | 85 | mW |
| PD Reverse Voltage | $V_R (PD)$ | | 5 | V |
| Reverse Current | I_R | | 85 | mA |
| Operating Temperature | T_{CASE} | + 10 | + 40 | °C |
| Storage Temperature | T_{STG} | - 40 | + 85 | °C |
| Soldering Temperature | T_{SOLDER} | | 260 | °C |

Laser Characteristics ($T_{CASE} = 25^{\circ}C$, $P_O = 70$ mW)

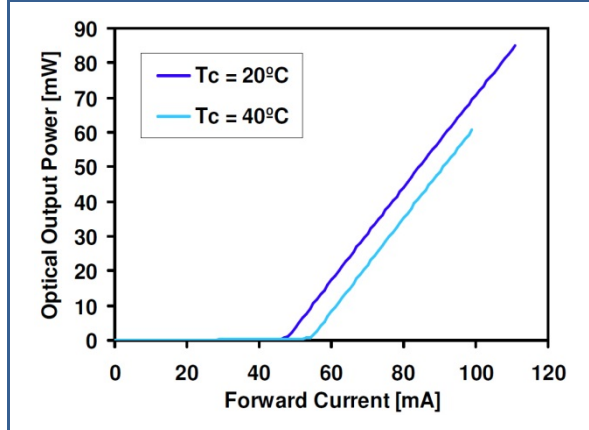
| Parameter | Symbol | Values | | | Unit |
|-------------------------------|--|----------|--------|-------|------|
| | | Min. | Typ. | Max. | |
| Emission Wavelength | λ_{peak} | 370 | - | 380 | nm |
| Optical Output Power | P_O | | | 70 | mW |
| Spectral Width | $\Delta\lambda$ | | 2 | | nm |
| Threshold Current | I_{th} | | 50 | 75 | mA |
| Operating Current | I_F | | 110 | 140 | mA |
| Operating Voltage | V_F | | 5.4 | 6.0 | V |
| Beam Divergence (FWHM) | $\theta_{ } \times \theta_{\perp}$ | 6x19 | 9x22.5 | 11x26 | deg. |
| Beam Pointing Accuracy (FWHM) | $\Delta\theta_{ } / \Delta\theta_{\perp}$ | - 3 / -3 | - | 3 / 3 | deg. |
| Slope Efficiency | η | 0.9 | 1.2 | | W/A |
| Monitor Current* | I_m | 0.05 | 0.2 | 2.0 | mA |

*Monitor current is short term power reference only. Not guaranteed for accuracy.

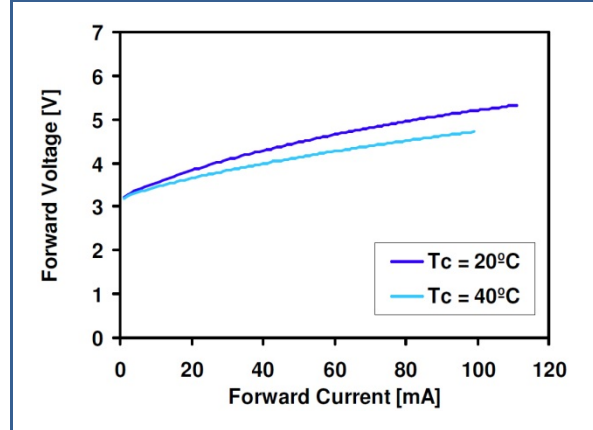


Performance Characteristics

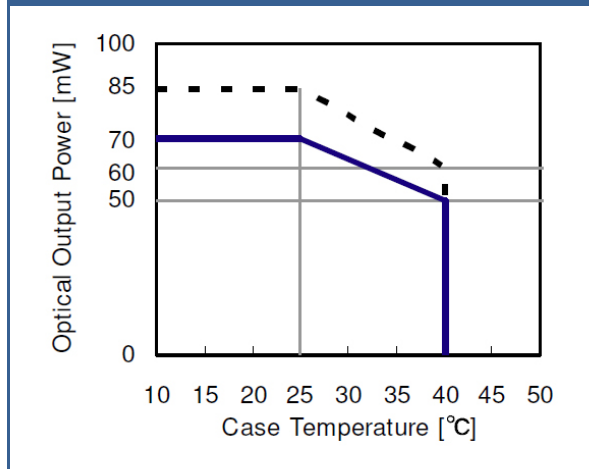
Output Power vs. Forward Current



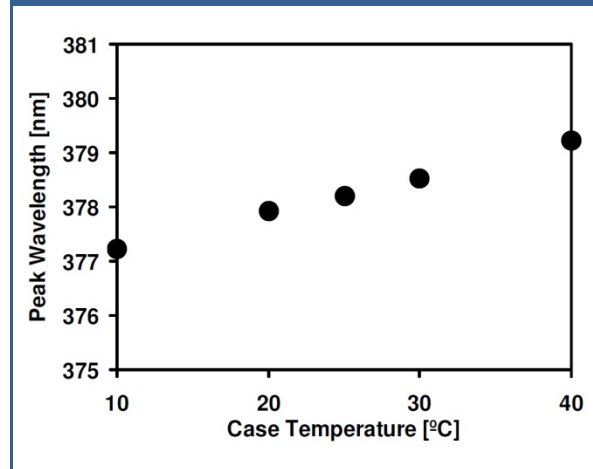
Forward Voltage vs. Forward Current



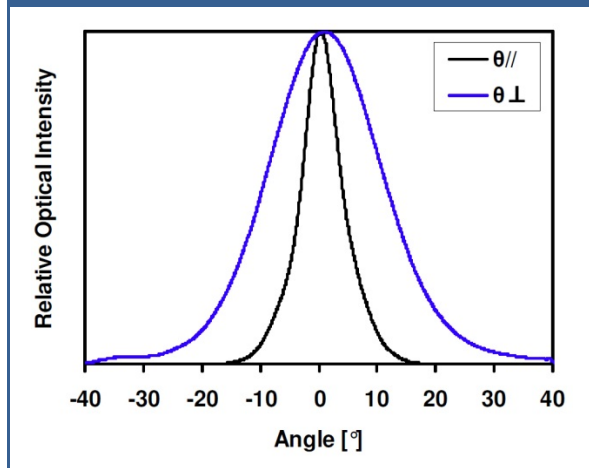
Output Power vs. Case Temperature



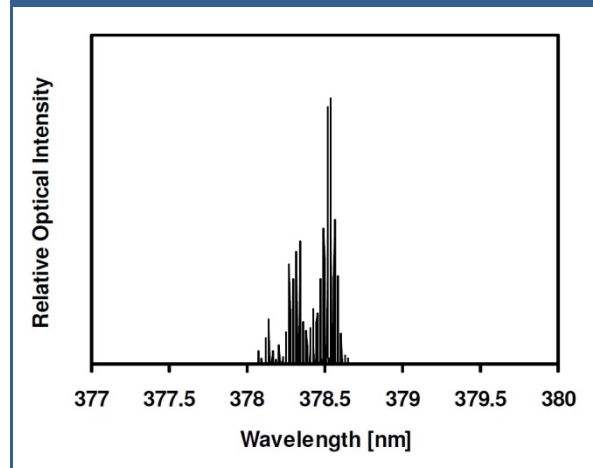
Peak Wavelength vs. Case Temperature



Far Field Pattern

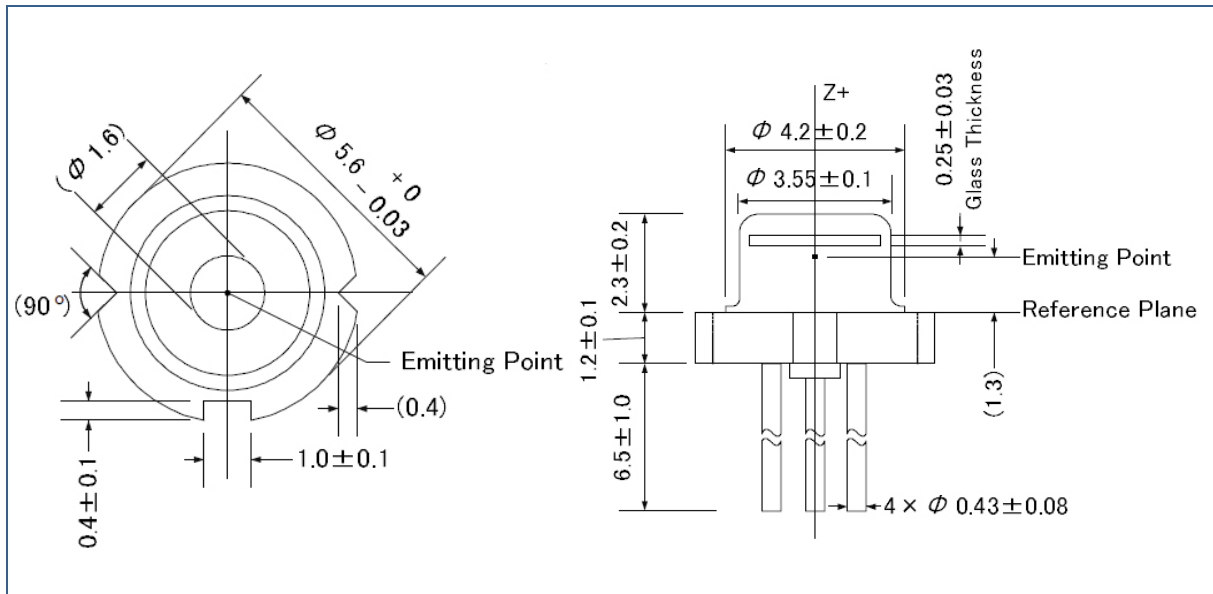


Spectrum





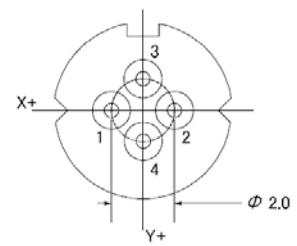
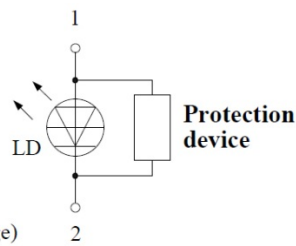
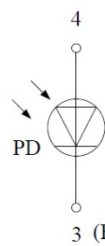
Drawing



Dimensions in mm

Electrical Connection

| Lead | Description |
|-------|-------------|
| Pin 1 | LD Anode |
| Pin 2 | LD Cathode |
| Pin 3 | PD Cathode |
| Pin 4 | PD Anode |



View from below, dimensions in mm



Mounting Instruction

In order to maintain lifetime and stability of the laser diode it is essential to provide efficient heat management. Heat dissipation is possible through the base plate only. For long time stable operation proper contact between laser diode base plate and heat sink is mandatory



Safety Advice

This laser diode emits highly concentrated ultra violet light which can be **hazardous to the human eye**. This diode is classified as **Class 3B laser product** according to **IEC 60825-1** and **21 CFR Part 1040.10 Safety Standards**. Actual laser light emitted and precautions necessary strongly depend on mode of operation.



This product is comply with 21 CFR Part 1040.10

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