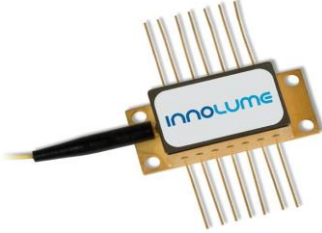


## SLD-1030-20-YY-150

Fiber Coupled Superluminescence Diode (SLD)



**Features:**

- High output power at 1030nm
- Low ripples
- Strong linear polarization
- Individual burn-in and thermal cycling screening
- RoHS compliance

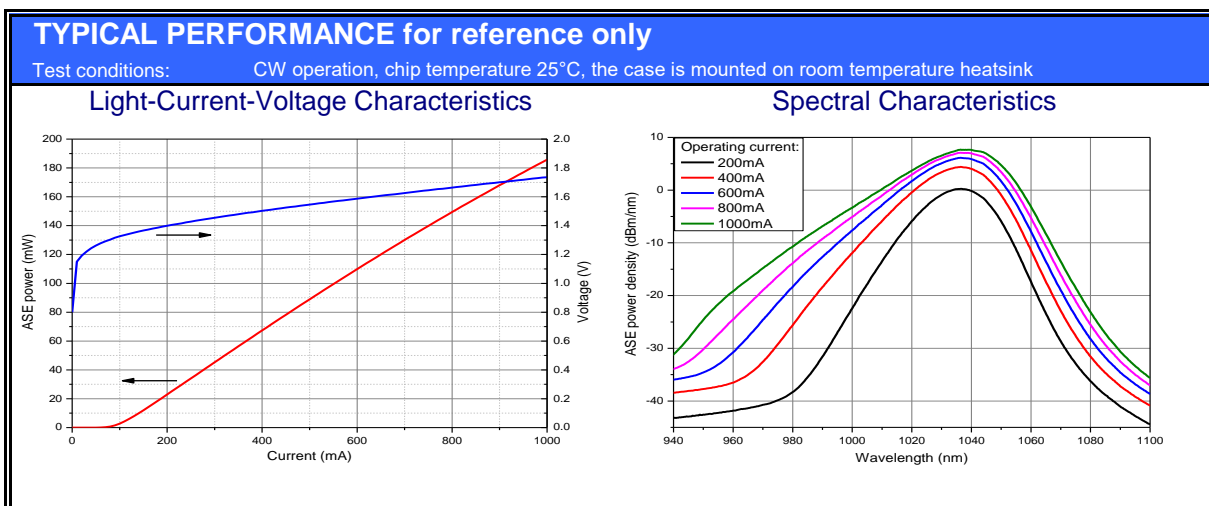
**Applications:**

- Fiber sensors, instrumentation, spectroscopy

| SPECIFICATIONS                |                 |      |      |      |      |
|-------------------------------|-----------------|------|------|------|------|
| Parameters                    | Symb.           | Min. | Typ. | Max. | Unit |
| Operating output power        | Pout            | 130  |      |      | mW   |
| Mean wavelength               | $\lambda_m$     | 1020 | 1030 | 1040 | nm   |
| Bandwidth @ -3dB              | $\Delta\lambda$ | 15   | 20   |      | nm   |
| ASE spectrum ripples*         |                 |      | 0.04 | 0.3  | dB   |
| Polarization Extinction Ratio | PER             | 15   | 20   |      | dB   |
| Operating current             | Iop             |      | 800  | 1000 | mA   |
| Forward voltage               | Vf              |      | 1.7  | 2.2  | V    |
| Rise time                     | Trise           |      | 0.15 |      | ns   |
| Fall time                     | Tfall           |      | 0.5  |      | ns   |

\* RMS in 1nm range at ASE maximum, 10pm resolution

| TYPICAL SLD PARAMETERS vs. OPERATING CURRENT |                  |                        |                 |  |
|--|------------------|------------------------|-----------------|--|
| Operating Current, mA                        | Output power, mW | ASE bandwidth @3dB, nm | Ripples RMS, dB |  |
| 200  | 25               | 20                     | 0.01            |  |
| 400  | 70               | 22                     | 0.03            |  |
| 600  | 110              | 24                     | 0.04            |  |
| 800  | 150              | 25                     | 0.05            |  |



| ABSOLUTE MAXIMUM RATINGS         |      |      |      |
|----------------------------------|------|------|------|
| Parameters                       | Min. | Max. | Unit |
| SLD reverse voltage              | -    | 2    | V    |
| SLD CW forward current           | -    | 1300 | mA   |
| Thermo Electric Cooler current   | -    | 3    | A    |
| Thermo Electric Cooler voltage   | -    | 4    | V    |
| Fiber bend radius                | 3    | -    | cm   |
| Chip operating temperature range | 5    | 40   | °C   |
| Case operating temperature range | 0    | 70   | °C   |
| Storage temperature range        | -40  | 85   | °C   |

| THERMISTOR SPECIFICATION |          |      | FIBER SPECIFICATION   |                     |           |      |  |  |  |
|--------------------------|----------|------|---|---------------------|-----------|------|--|--|--|
| Parameters               | Value    | Unit | Parameters  | HI1060              | PM980     | Unit |  |  |  |
| Thermistor type          | NTC      | -    | Numerical aperture (Typical)  | 0.14                | 0.12      |      |  |  |  |
| Resistance @25°C         | 10 ± 0.1 | kOhm | Cutoff wavelength   | 920±50              | 900±70    | nm   |  |  |  |
| Beta 0-50°C              | 3375±1%  | K    | Mode-field diameter (@1060nm)   | 6.2±0.3             | 6.6±0.3   | µm   |  |  |  |
|                          |          |      | Cladding diameter   | 125±1               | 125±1     | µm   |  |  |  |
|                          |          |      | Coating diameter  | 245±15              | 245±15    | µm   |  |  |  |
|                          |          |      | Length  | 1.0 ± 0.1           | 1.0 ± 0.1 | m    |  |  |  |
|                          |          |      | Connector   | FC/APC (narrow key) |           |      |  |  |  |
|                          |          |      | <p>Connector alignment to the PANDA fiber</p>                         |                     |           |      |  |  |  |
|                          |          |      | <p>The output light is polarized along the slow axis of PM fiber.</p> |                     |           |      |  |  |  |

| DIMENSIONS (in mm) |  |
|--------------------|--|
|                    | <p><b>Pin identification:</b></p> <ol style="list-style-type: none"> <li>1 TEC "+"</li> <li>2 Thermistor</li> <li>3 -</li> <li>4 -</li> <li>5 Thermistor</li> <li>6 -</li> <li>7 -</li> <li>8 -</li> <li>9 -</li> <li>10 SLD anode "+"</li> <li>11 SLD cathode "-"</li> <li>12 -</li> <li>13 Case</li> <li>14 TEC "-"</li> </ol> |

## SAFETY AND OPERATING INSTRUCTIONS

The light emitted from this device is invisible and can be harmful to the human eye. Avoid looking directly into the fiber connector when the device is in operation. Proper laser safety eyewear must be worn during operation with open connector.

Absolute Maximum Ratings may be applied to the device for short period of time only. Exposure to maximum ratings for extended period of time or exposure to more than one maximum rating may cause damage or affect the reliability of the device. Operating the device outside of its maximum ratings may cause device failure or a safety hazard. Power supplies used with the component must be employed such that the maximum forward current cannot be exceeded.

A proper heatsink for the device on thermal radiator is required. The device must be mounted on radiator with 4 screws (bolt down in X-style fashion with initial torque set to 0.075Nm and final X-style bolt down at 0.15Nm) or with clamps. The deviation from flatness of radiator surface must be less than 0.05mm. It's recommended using of Indium foil or thermal conductive and soft material between bottom of the case and heatsink for thermal interface. It's undesirable to use thermal grease for this.

Avoid back reflection to the device. It may give impact on the device performance in aspects of spectrum and power stability. It also may cause fatal facet damage. Using of optical isolators is highly recommended to block back reflection.

Do not pull the fiber. Do not bend a fiber with a radius smaller than 3 cm. Fiber tip should always be protected from any contamination or damage during the process of installation. After removing the dust-preventing cap covered at fiber tip, carefully clean fiber tip by wiping through one direction using optical lens cleaning paper or cotton swab dabbed with Iso-Propanol or Ethyl alcohol. Operate the device with clean fiber connector only.

Electrostatic discharge is the primary cause of unexpected product failure. Take extreme precaution to prevent ESD. During device installation, ESD protection has to be maintained - use wrist straps, grounded work surfaces and rigorous antistatic techniques when handling the product.



## Part Number Identification

YY: Optical fiber type

PM – PM980 fiber

HI – HI1060 fiber

Example: SLD-1030-20-PM-150

**NOTE:** Innolume product specifications are subject to change without notice