

SemiNex delivers the highest available power at infrared wavelengths between 13xx and 17xx nm. When necessary we will further optimize the design of our InP laser chips to meet our customers' specific optical and electrical performance needs. Diodes, bars and packages are tested to meet customer and market performance demands. Typical results and packaging options are shown. Contact SemiNex for additional details or to discuss your specific requirements.



## 4CM Packaged Laser Diode

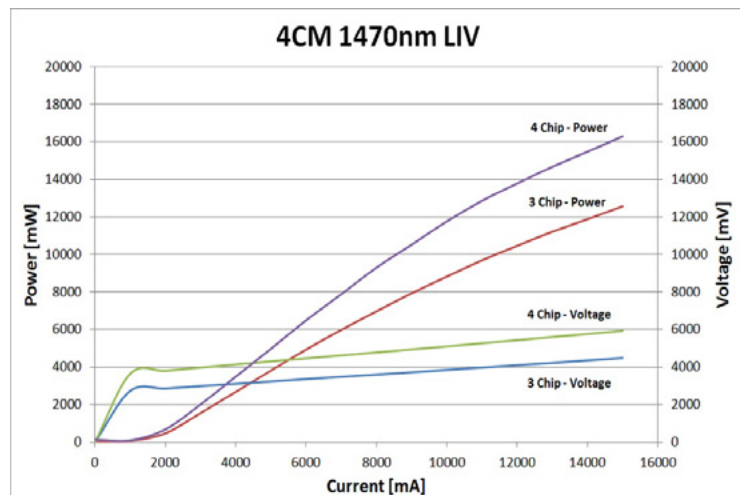
High Power Multi-Mode SemiNex Lasers  
10 to 15.5 Watts of CW Power in a single fiber at 1470 nm

### Applications

- Medical
- Thermal Processing
- DPSS Pump Lasers

### Features

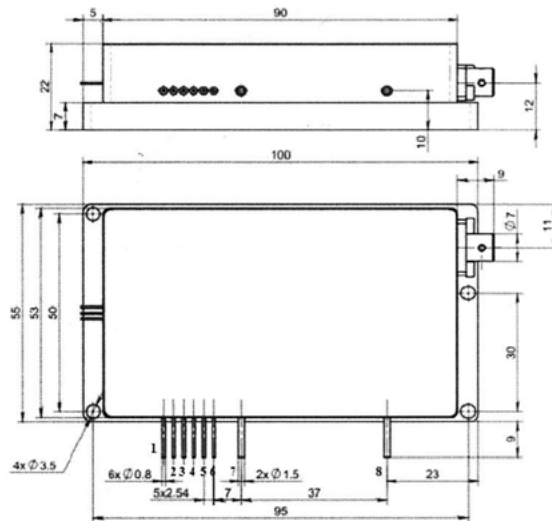
- 1470 nm wavelength
- Custom Wavelengths Available
- Red Aiming Beam
- Thermistor
- Monitor Photodiode



## 4CM

|                         | Symbol           | 4CM-109   | 4CM-111   | 4CM-103   | 4CM-104   | 4CM-105   | 4CM-107   | Units           |
|-------------------------|------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------------|
| <b>Optical</b>          |                  |           |           |           |           |           |           |                 |
| Center Wavelength       | $\lambda_c$      | 1320      | 1320      | 1480      | 1480      | 1580      | 1580      | nm ( $\pm 20$ ) |
| Output Power (CW)       | P <sub>c</sub>   | 13.0      | 15.5      | 11.5      | 14.0      | 10.5      | 13.0      | watts           |
| Spectral Width          | $\delta\lambda$  | 20        | 20        | 10        | 20        | 20        | 20        | nm 3dB          |
| Slope Efficiency        | $\eta_s$         | 1.13      | 1.5       | 1.1       | 1.1       | 1         | 1         | W/A             |
| Optical Fiber Core Dia. | $\eta_c$         | 400       | 400       | 400       | 400       | 400       | 400       | $\mu\text{m}$   |
| Optical Fiber NA        |                  | 0.22      | 0.22      | 0.22      | 0.22      | 0.22      | 0.22      |                 |
| Fiber Length            |                  | 1.5       | 1.5       | 1.5       | 1.5       | 1.5       | 1.5       | meters          |
| Connector               |                  | SMA905    | SMA905    | SMA905    | SMA905    | SMA905    | SMA905    |                 |
| <b>Electrical</b>       |                  |           |           |           |           |           |           |                 |
| Power Conversion Eff.   | $\eta$           | 28.00     | 25.00     | 25.00     | 23.00     | 22.00     | 21.00     | %               |
| Threshold Current       | I <sub>th</sub>  | 0.9       | 0.9       | 0.9       | 0.9       | 1         | 1         | A               |
| Operating Current       | I <sub>op</sub>  | 14        | 14        | 14        | 14        | 14        | 14        | A               |
| Operating Voltage       | V <sub>op</sub>  | 4.4       | 5.8       | 4.4       | 5.8       | 4.6       | 5.8       | V               |
| Series Resistance       | R <sub>s</sub>   | 0.13      | 0.2       | 0.13      | 0.17      | 0.13      | 0.17      | ohm             |
| Lead Soldering Temp.    | °C               | 250       | 250       | 250       | 250       | 250       | 250       | °C              |
| <b>Aiming Beam</b>      |                  |           |           |           |           |           |           |                 |
| Output Power            | P <sub>a</sub>   | 2         | 2         | 2         | 2         | 2         | 2         | mW              |
| Wavelength              | $\lambda_a$      | 635       | 635       | 635       | 635       | 635       | 635       | nm              |
| Operating Current**     | I <sub>op</sub>  | 50        | 50        | 50        | 50        | 50        | 50        | mA              |
| Voltage Limit           | V <sub>max</sub> | 5         | 5         | 5         | 5         | 5         | 5         | V               |
| <b>Mechanical</b>       |                  |           |           |           |           |           |           |                 |
| Weight                  |                  | 550       | 550       | 400       | 400       | 550       | 550       | g               |
| Operating Temp.         |                  | 10 to 30  | 10 to 30  | 10 to 30  | 10 to 30  | 10 to 30  | 10 to 30  | °C              |
| Storage Temp.           |                  | -20 to 80 | -20 to 80 | -20 to 80 | -20 to 80 | -20 to 80 | -20 to 80 | °C              |
| <b>Thermistor</b>       |                  |           |           |           |           |           |           |                 |
| Thermistor Constant     | $\beta$          | 3477      | 3477      | 3477      | 3477      | 3477      | 3477      | $\beta$         |
| Thermistor Resistance   | R                | 10000     | 10000     | 10000     | 10000     | 10000     | 10000     | K ohm           |

Specified values are rated at a constant heat sink temperature of 20°C



| Pins | Function      |
|------|---------------|
| 1    | PD ( P ) *    |
| 2    | PD ( N ) *    |
| 3    | Red Aim ( + ) |
| 4    | Red Aim ( - ) |
| 5    | Thermistor*   |
| 6    | Thermistor*   |
| 7    | LD ( - )      |
| 8    | LD ( + )      |

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