# High Power Laser Diode Chip

## Part Number: CHP-108

High Power Chip
Multi-Mode Fabry-Perot
CW Wavelength at 1470nm



## Features

- High Output Power
- High Dynamic Range
- High Efficiency
- Standard Bare Die
- Cost Effective

## Application

- Professional Medical
- Home Medical
- Laser Rangefinders

SemiNex delivers the highest available power at infrared wavelengths between 12xx and 19xx nm. When necessary, we will further optimize the design of our InP & GaSb 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.

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## Specification

CHP-108



| Optical | Symbol | Typ. | Units |
|---|---|---|---|
| Center Wavelength | $\lambda_c$ | 1470 | nm (±20) |
| Output Power (CW)* | $P_{out}$ | 5 | watts (±10%) |
| Chip Cavity Length | CL | 2500 | µm |
| Emitter Width | W | 95 | µm |
| Spectral Width FWHM | $\Delta\lambda$ | 15 | nm |
| Slope Efficiency | $\eta$ | 0.4 | W/A |
| Fast Axis Div. | $\Theta_{\perp}$ | 28 | deg FWHM |
| Slow Axis Div. | $\Theta_{\parallel}$ | 9 | deg FWHM |
| **Electrical** | **Symbol** | | **Units** |
| Power Conversion Eff. | $\eta$ | 23 | % |
| Threshold Current | $I_{TH}$ | 0.5 | A |
| Operating Current | $I_{op}$ | 13 | A |
| Operating Voltage | $V_{op}$ | 1.7 | V |
| **Mechanical** | | **Range** | **Units** |
| Operating Temp.** | | -40 to 60 | °C |
| Storage Temp. | | -40 to 80 | °C |

*Specified values are rated on B-mounts at a constant heat sink temperature of 20°C.
**High temperature operation will reduce performance and MTTF.
Unless otherwise indicated all values are nominal.



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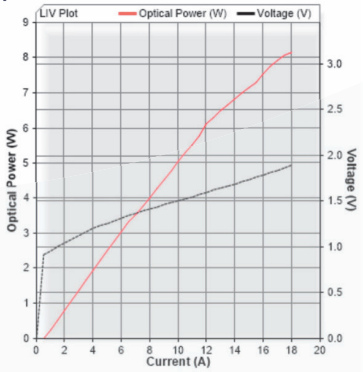
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## SemiNex Laser Diodes CHP-108

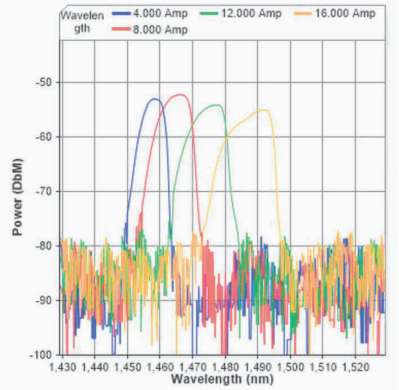
Graphs & Data



### Typical CHP L-I-V Characteristics




### Typical CHP Output Spectrum




*Graphs and Data were collected from mounted parts



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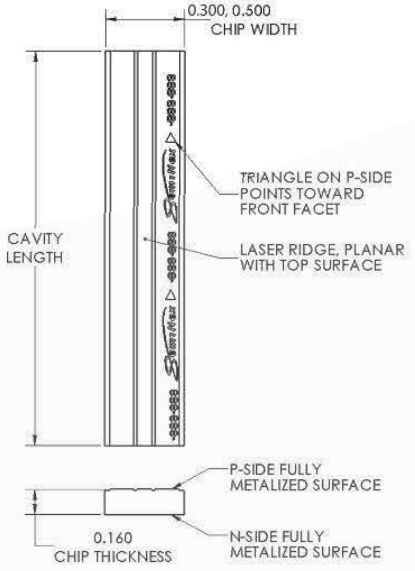
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## Mechanical Drawing






**CHIP ATTRIBUTES**

| | |
|---|---|
| APERTURE WIDTH (µm) | Single Mode (4, 5) ± 1<br>Multi Mode (50, 95, 180, 350) ± 3 |
| CHIP WIDTH (µm) | 300, 500 ± 10 |
| THICKNESS (µm) | 160 ± 10 |
| CAVITY LENGTH (µm) | Varies ± 10 |

**P METALIZATION**

| MATERIAL | THICKNESS (nm) | TOLERANCE (nm) |
|---|---|---|
| Ti | 50 | ± 10 |
| Pt | 125 | ± 25 |
| Au | 250 | ± 50 |

**N METALIZATION**

| MATERIAL | THICKNESS (nm) | TOLERANCE (nm) |
|---|---|---|
| Ti | 30 | ± 10 |
| Pt | 125 | ± 25 |
| Au | 400 | ± 40 |

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