



Laser Engine

High Power Multi-Mode SemiNex Laser
 2 Watts of CW Power
 1460, 1480, 1565, 1575 Wavelengths
 Custom Wavelengths Available
 Low Cost Packaging

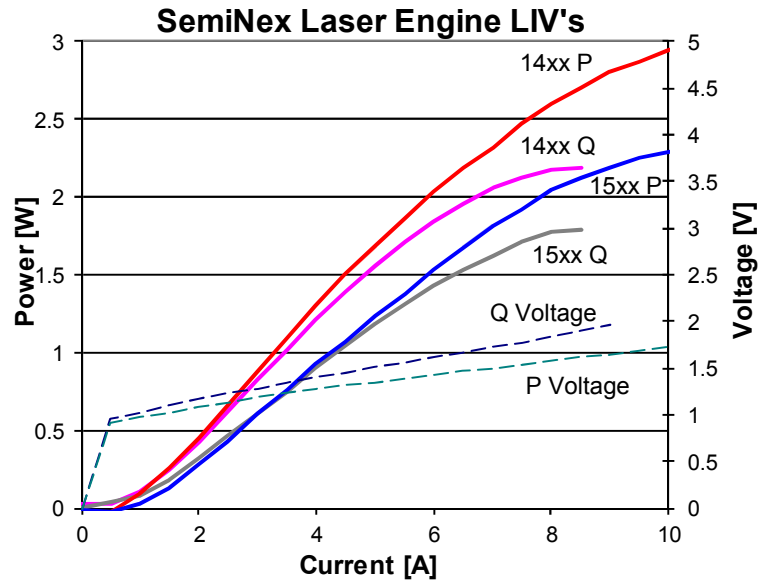
Features

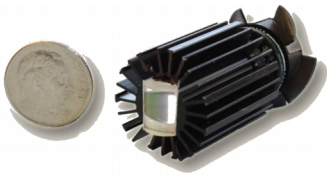
- Low Cost High Volume Assembly
- “P” and “Q” Packages Available
- High Efficiency
- High Output Power

Applications

- Medical laser equipment
- Home laser applications
- Low cost sensors
- Range finding

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





Laser Engine Q



| | Symbol | LEQ-111 | LEQ-108 | LEQ-103 | LEQ-106 | Units |
|--|-----------------|---------|-----------|---------|---------|-----------------|
| Optical | | | | | | |
| Center Wavelength | λ_c | 1460 | 1480 | 1565 | 1575 | nm (± 20) |
| Output power (CW) | P_o | 1.8 | 1.8 | 1.5 | 1.5 | W |
| Spectral Width | $\Delta\lambda$ | 10 | 10 | 10 | 10 | nm 3dB |
| X Axis Divergence** | θ_X | 9 | 9 | 9 | 9 | deg FWHM |
| Y Axis Divergence** | θ_Y | <6 | <6 | <6 | <6 | deg FWHM |
| Electrical | | | | | | |
| Power conversion Eff. | η | 0.21 | 0.21 | 0.15 | 0.15 | W/W |
| Threshold Current | I_{th} | 0.5 | 0.5 | 0.5 | 0.5 | A |
| Operating Current | I_{op} | 6 | 6 | 6.5 | 6.5 | A |
| Operating Voltage | V_{op} | 1.4 | 1.4 | 1.5 | 1.5 | V |
| Series Resistance | R_s | 0.1 | 0.1 | 0.1 | 0.1 | ohm |
| Fan | | | | | | |
| Voltage (DC) | VDC | 5 | 5 | 5 | 5 | VDC |
| Power | watts | 0.4 | 0.4 | 0.4 | 0.4 | W |
| Air Flow | CFM | 3 | 3 | 3 | 3 | CFM |
| Mechanical | | | | | | |
| Weight | | | 17.4 | | | g |
| Operating Temp. | | | 10 to 30 | | | $^{\circ}C$ |
| Storage Temp. | | | -20 to 80 | | | $^{\circ}C$ |
| QCW Performace - 5ms PW 7 ms Period | | | | | | |
| Output power (QCW)* | P_o | 2 | 2 | 1.7 | 1.7 | W |
| Power conversion Eff. | η | 0.24 | 0.24 | 0.17 | 0.17 | W/W |
| Threshold Current | I_{th} | 0.5 | 0.5 | 0.5 | 0.5 | A |
| Operating Current | I_{op} | 6 | 6 | 6.5 | 6.5 | A |
| Operating Voltage | V_{op} | 1.4 | 1.4 | 1.5 | 1.5 | V |
| Series Resistance | R_s | 0.1 | 0.1 | 0.1 | | ohm |

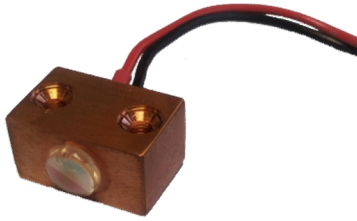
** Divergence is dependent on lens used it is customized to meet customer requirements.
Specified values are rated at a constant heat sink temperature of 20 $^{\circ}C$

Optional



PN LE Tube-101

Laser Engine Air Flow Tube



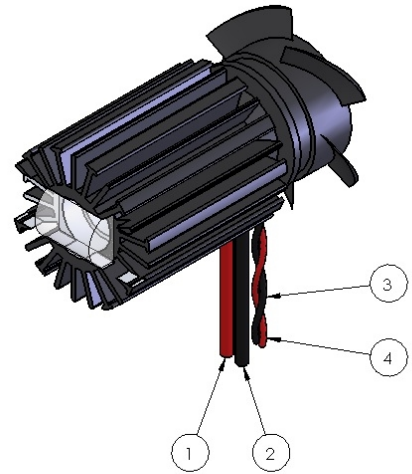
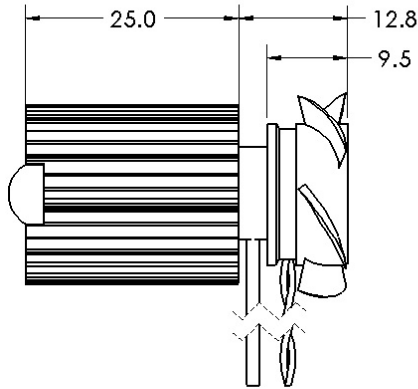
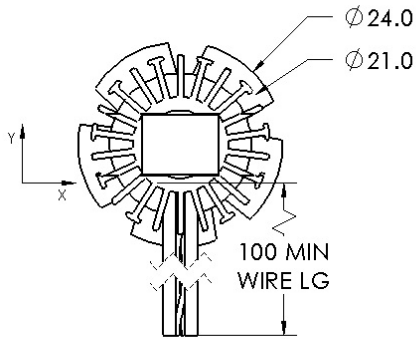
Laser Engine P



| | Symbol | LEP-112 | LEP-103 | LEP-102 | LEP-101 | Units |
|---|-----------------|---------|-----------|---------|---------|--------------------|
| Optical | | | | | | |
| Center Wavelength | λ_c | 1465 | 1475 | 1570 | 1580 | nm (± 20) |
| Output power (CW) | P_o | 2.6 | 2.6 | 2 | 2 | W |
| Spectral Width | $\Delta\lambda$ | 10 | 10 | 10 | 10 | nm 3dB |
| X Axis Divergence* | θ_X | 9 | 9 | 9 | 9 | deg FWHM |
| Y Axis Divergence* | θ_Y | <6 | <6 | <6 | <6 | deg FWHM |
| Electrical | | | | | | |
| Power conversion Eff. | η | 0.19 | 0.19 | 0.15 | 0.15 | W/W |
| Threshold Current | I_{th} | 0.5 | 0.5 | 0.5 | 0.5 | A |
| Operating Current | I_{op} | 8 | 8 | 7.5 | 7.5 | A |
| Operating Voltage | V_{op} | 1.5 | 1.5 | 1.5 | 1.5 | V |
| Series Resistance | R_s | 0.05 | 0.05 | 0.05 | 0.05 | ohm |
| Mechanical | | | | | | |
| Weight | | | 25.5 | | | g |
| Operating Temp. | | | 10 to 30 | | | $^{\circ}\text{C}$ |
| Storage Temp. | | | -20 to 80 | | | $^{\circ}\text{C}$ |
| QCW Performance - 5ms PW 7 ms Period | | | | | | |
| Output power (QCW)* | P_o | 2.8 | 2.8 | 2.2 | 2.2 | W |
| Power conversion Eff. | η | 0.3 | 0.3 | 0.2 | 0.2 | W/W |
| Threshold Current | I_{th} | 0.5 | 0.5 | 0.5 | 0.5 | A |
| Operating Current | I_{op} | 6 | 6 | 6.5 | 6.5 | A |
| Operating Voltage | V_{op} | 1.4 | 1.4 | 1.5 | 1.5 | V |
| Series Resistance | R_s | 0.1 | 0.1 | 0.1 | | ohm |

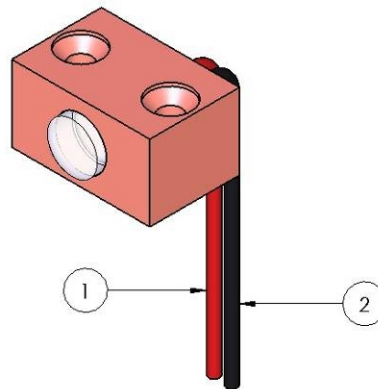
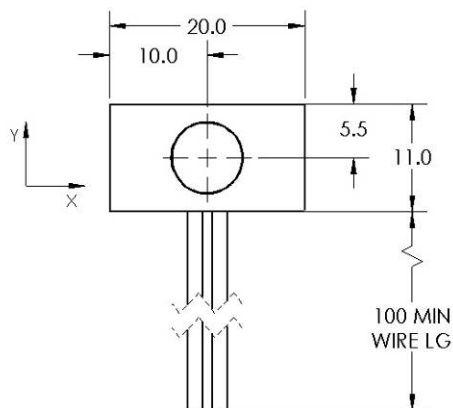
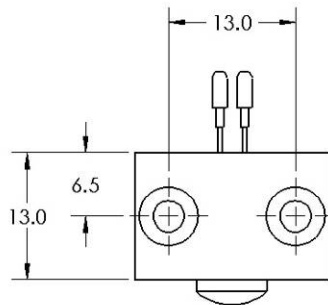
* Divergence is dependent on lens used it is customized to meet customer requirements.
Specified values are rated at a constant heat sink temperature of 20 $^{\circ}\text{C}$

Laser Engine Q & P



PIN OUT:

1. LD ANODE (+), #20AWG
2. LD CATHODE (-), #20AWG
3. FAN (+5V), #28AWG
4. FAN (-), #28AWG



PIN OUT:

1. LD ANODE (+), #20AWG
2. LD CATHODE (-), #20AWG

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