



The Summit™ NL-QD-Q1y0z-A package is a high power diode laser stack operating in Quasi-CW mode. This product is designed with 2 to 5 highly efficient 1cm linear bar arrays. The 'y' in NL-QD-Q1y0z-A characterizes the optical power of each bar.

For $y = 2, 3, 4,$ and $5,$ peak optical power is 360W, 480W, 600W, and 900W, respectively, with power densities ranging from 1.8 to 3kW/cm².

The robust processes used to manufacture these diode lasers lead to longer lifetime and improved reliability. This helps to make the NL-QD-Q1y0z-A stacked array ideal for applications under severe environmental conditions, such as pumping solid-state lasers in illuminators and designators. This compact and rugged design is well suited to defense and space applications requiring small footprint and high reliability.

Features

- Highest Efficiency
- Low Thermal Resistance
- Mechanically Robust
- Shock and Vibration Resistant
- Passively Cooled Package

Applications

- Target Designation
- Ranging
- LIDAR
- Medical
- Ignition

Typical Device Performance

| Package | | NL-QD-Q1205-A | NL-QD-Q1305-A | NL-QD-Q1405-A |
|------------------------|---------|---------------|---------------|---------------|
| Parameters | | | | |
| QCW Output Power | Watt | 300 | 400 | 500 |
| Energy Per Pulse | mJ | 60 | 80 | 100 |
| Emitting Area | mm x mm | 10 x 1.6 | 10 x 1.6 | 10 x 1.6 |
| Threshold Current | Amp. | 18 | 18 | 18 |
| Operating Current (If) | Amp. | 66 | 84 | 102 |
| Operating Voltage | Volt | <10 | <10 | <10 |
| Total Efficiency | % | 50 | 50 | 52 |
| Beam Divergence (FWHM) | Degree | 10 x 40 | 10 x 40 | 10 x 40 |
| Spectral Width (FWHM) | nm | <3.5 | <3.5 | <3.5 |

Standard wavelength is 808nm.

Other wavelength selections are available in the range of 9x nm.

Standard pitch between diode bars: 400µm (possibility of 500µm).

Tolerance on wavelength is +/- 3nm.

Standard variation of wavelength with temperature: $\Delta\lambda/\Delta T \sim 0.26 \text{ nm}/^\circ\text{C}$.

Specifications are for nominal lifetime 10^9 pulses (for 200µs pulse width).

Operating at higher power or higher temperature will accelerate component aging, increase threshold current, and decrease slope efficiency.

CFR Regulation

These components do not comply with the federal regulation (Title 21 CFR, Chapter 1, Subchapter J) as administered by the Center for Device and radiological Health. Purchaser acknowledges that their products must comply with these regulations before they can be sold to an end-user.



Notice

nLIGHT continually improves its products to provide our customers with outstanding quality and reliability. nLIGHT may make changes to specifications and product descriptions at any time, without notice. In addition, nLIGHT offers a limited warranty to ensure customer satisfaction. For complete details, please contact your nLIGHT sales representative.

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Package Dimensions

