# Summit™ QCW Package Series – A Package

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/cm$^2$.

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.

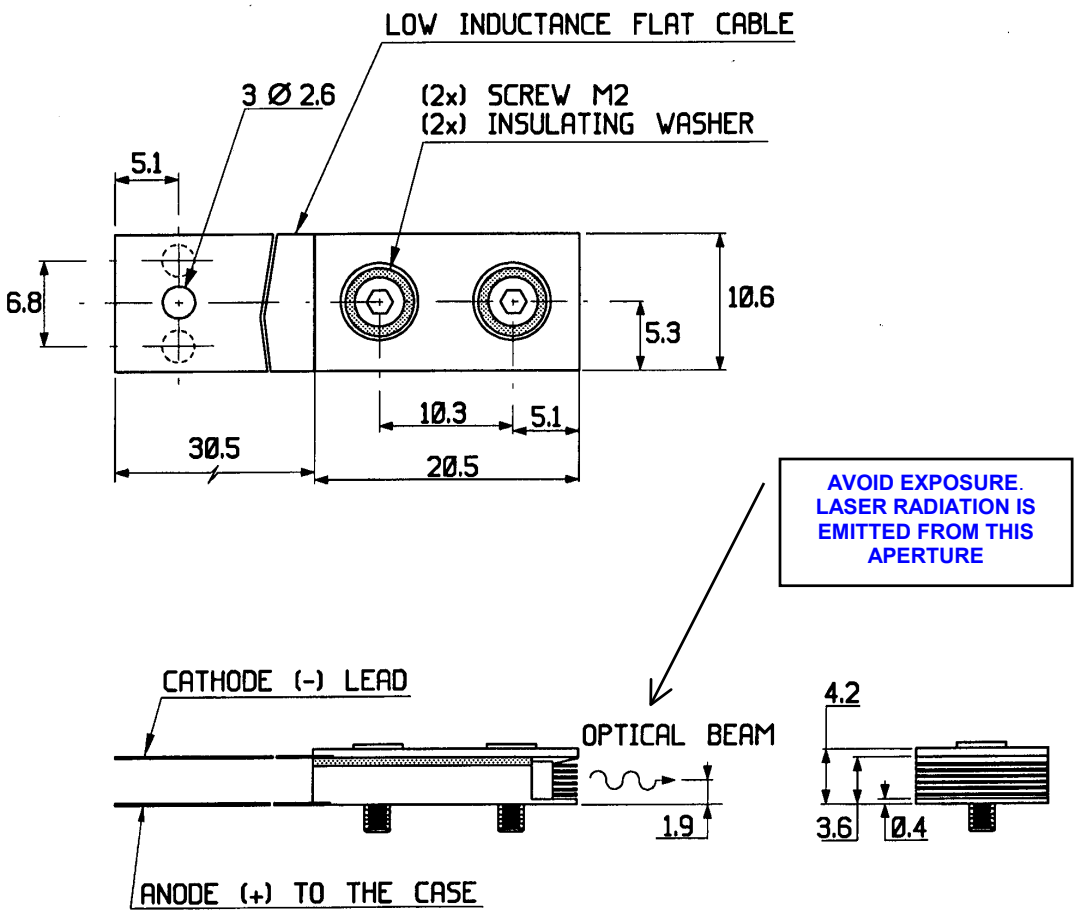
## Features

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

## Applications

- Target Designation
- Ranging
- LIDAR
- Medical
- Ignition

## Package Dimensions



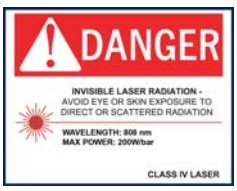
Case temperature: 25° C

Quasi-continuous mode: pulse width = 200µs
repetition rate = 100Hz

| Device Specifications | | UNITS | 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) | Typ. | Amp. | 66 | 84 | 102 |
| | Max. | Amp. | 74 | 95 | 115 |
| Operating voltage | | Volt | <10 | <10 | <10 |
| Total efficiency | Typ. | % | 50 | 50 | 52 |
| | Min. | % | 44 | 44 | 44 |
| Beam divergence (FWHM) | | degree | 10 x 40 | 10 x 40 | 10 x 40 |
| Spectral width (FWHM) | | nm | < 3.5 | < 3.5 | < 4 |

**Notes:**
Standard wavelength is 808nm.
Other wavelength selections are available in the range of 9xx nm.
Standard pitch between diode bars: 400µm (possibility of 500µm).
Tolerance on wavelength is +/- 3nm.
Standard variation of wavelength with temperature: $\Delta\lambda/\Delta T$ ~0.26 nm/°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. *n*LIGHT may make changes to specifications and product descriptions at any time, without notice. In addition, *n*LIGHT offers a limited warranty to ensure customer satisfaction. For complete details, please check with your *n*LIGHT sales representative.

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