

RedChip 1500Q

1.54 μm MINIATURIZED HIGH
POWER PULSED CHIPLASER

The RedChip series of lasers are compact, high efficiency laser platforms capable of operating at wavelengths from $<1000\text{nm}$ to $>3000\text{nm}$. Based on the unique combination of specialty ZBLAN glass and laser inscribed waveguides, the chip laser brings performance characteristics normally only available to solid-state solutions to the size and economy regime of diode and fibre lasers.

Chip laser technology enables compact footprints and high wall efficiencies, requires no active cooling and delivers TEM₀₀ mode with near-perfect mode-quality, and low jitter in space, time and energy.

The RedChip 2900Q is a passively Q-switched chip laser designed for applications that require:

- High Peak Power
- Highest focusability
- Eyesafe output
- Compact / low mass packages
- Long term reliability
- High-power efficiency
- No service requirements

Ideal Applications include:

- Aerospace
- Mid-range LiDAR
- OPO pump
- Custom OPO stage can be integrated
- IR counter-measures

Features

Standard

- Waveguide chip laser technology
- Hermetically sealed, nitrogen back-filled cavity
- Long-lifetime telecom-grade pump diodes
- Ambient/passive air-cooled design

Optional

- Pulse energy monitor
- Analog pulse energy control
- Sync-out

- AC/DC power supply
- Custom mount points
- Custom I/O locations

Specifications

Optical

| | |
|---------------------------|---------------------|
| Wavelength | 1540 nm |
| Average Power (max) | $>75\text{ mW}$ |
| Pulse Energy (max) | $< 12\ \mu\text{J}$ |
| Pulse Duration (typ) | $< 10\text{ ns}$ |
| Energy stability (rms) | $< \pm 0.5\%$ |
| Repetition Rate Range | $> 5\text{ kHz}$ |
| Beam Diameter ($1/e^2$) | 1.0 mm |
| M ² | < 1.1 |

| | |
|------------|-------------------------------|
| Voltage | 5 VDC (12, 24VDC optional) |
| Current | $< 1\text{ A}$ |
| Trigger In | NA |

| | |
|------------------|----------------|
| Dimensions (LWH) | 40x20x20 (mm) |
| Mass | 100 g |
| Heat Dissipation | $< 1\text{ W}$ |

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