

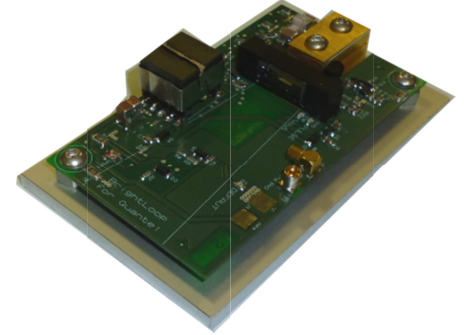
## 1 mJ 5 kHz diode pulse source

The device generates nanosecond pulses with energies in the 1 mJ range. The components have been designed to highest possible efficiency which leads to a low power consumption and low heat generation. Active cooling is therefore not necessary. The integration of the diodes on the driver board results in a very small footprint for this device of only ~ 30cm<sup>2</sup>.

The laser source is ideally suited for portable and even hand held devices. Typical applications are Gated **Active Imaging** systems, Fluorescent **Spectroscopy** or **Photo-acoustic Tomography**.

The module integrates:

- QCW stack, 1 to 15 bars collimated in the fast axe
- High efficiency current driver with an isolated DC convertor
- Beam homogenizer
- Wavelengths: 795-830 nm, 880 nm and 9xx nm
- Low thermal resistance assembly
- A mechanical robust design, shock and vibration resistant
- Approved for defense and space applications



### SPECIFICATIONS @ 25°C (Example with 10 bar stack)

PARAMETERS @ 25°C	QD-Q1910-SA
Number of Diode bars	Up to 10 bars
Energy per pulse	Up to 1 mJ
QCW Optical Peak Power	Up to 10 kW
Repetition rate	Up to 5 kHz
Pulse width Typ.	100 ns
Wavelength	8xx, 880, 9xx and 1500 nm
Spectral width @ FWHM (nm)	4
Spot Height @ FWHM (mm)	1 to 5
Spot Width @ FWHM (mm)	5 to 10
Input CW voltage	48 VDC, banana plug
Total E/O efficiency (stack + driver)	25% Typ.
Trigger	5 V TTL, BNC-MMCX plug
Output control signal	5 V TTL, BNC-MMCX plug
Dimension (mm)	80 X 50 x 19

#### Note :

- Standard Polarisation: TM or TE mode @ 808 nm, TE @ 9xx nm
- Variation of wavelength with temperature is approximately 0.26 nm/°C
- Standard tolerance on wavelength is +/- 3nm, +/- 1,5 nm on demand
- Possibility of other pulse width
- Spot dimension and divergence upon customer request (DOE integrated in the system)
- Specifications are for nominal lifetime > 1. 10<sup>8</sup> pulses @ +25°C (for 100ns pulse width). Higher value on demand

## ABSOLUTE MAXIMUM RATINGS

PARAMETERS	QD-Q1904-SA
Pulse width (ns)	500
Maximum duty cycle (%)	0,1
Operating temperature (°C)	- 40 to + 65
Storage temperature (°C)	-55 to +85

**Note :** Operation at temperature below dew point requests to use dry N2 environment

### Description

QD-Q1904-SA generates nanosecond pulses with energies in the 1 mJ range. The components have been designed to highest possible efficiency which leads to a low power consumption and low heat generation. Active cooling is therefore not necessary. The integration of the diodes on the driver board results in a very small footprint for this device of only ~ 30cm<sup>2</sup>. A DOE homogenizer is also integrated but can be removed on demand.

The laser diode QCW stack benefits from fully developed technology, designed for improved efficiency and reliable operation. Using AuSn hard solder technology, the stack assembly has been optimized to reduce thermal resistance. Using Quantel Laser Diode's proprietary hard solder technology, different diode arrays can be packaged upon pulse width and repetition rate requested.

The laser source is ideally suited for portable and even hand held devices. Typical applications are Gated **Active Imaging** systems, Fluorescent **Spectroscopy** or **Photo-acoustic Tomography**

### Applications

This source is ideal for active imaging system, photo-acoustic imaging or spectroscopy for a broad range of applications:

- aerospace,
- defense,
- scientific,
- medical.

### Accessoires

Cover and heatsink

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