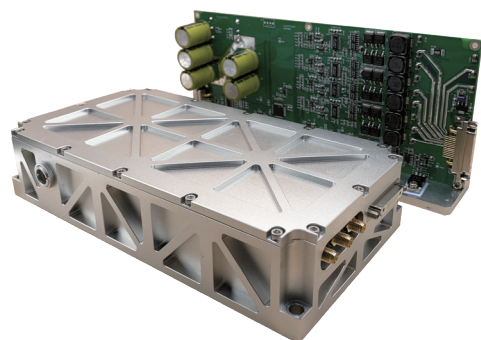


# HQP Series High Peak Power Sub-nanosecond Lasers



HQP series high peak power sub-nanosecond lasers are designed for micromachining and LIDAR applications, using Reallight's self-developed components like seed laser, isolator, pumping source and amplifier. This sub-nanosecond laser with narrow pulse width and high peak power features compact design, light weight and high reliability, is perfect for LIDAR, laser marking, laser engraving and more. HQP series is available in wavelengths of 1064nm and 532nm, delivering pulse width down to 500ps. Laser with 355nm wavelength or higher repetition rate can be customized upon request.

## Key Features

- ◆ Pulse width down to 500ps
- ◆ Average power up to 5W
- ◆ Repetition Rate up to 50kHz
- ◆ Air cooling, Low energy consumption
- ◆ Sealed package, high reliability

## Applications

- LiDAR
- Laser engraving
- Laser etching
- Laser precision
- Laser Precision drilling
- Laser-induced breakdown spectroscopy (LIBS)
- Ophthalmic treatment
- Scanning and imaging lidar
- Micro-nano processing
- Ultrasonic testing

## Technical Specifications

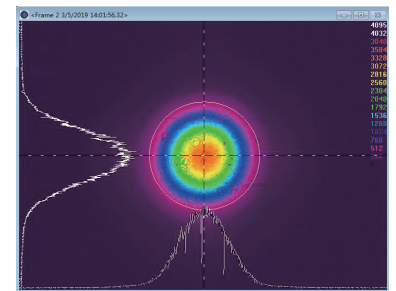
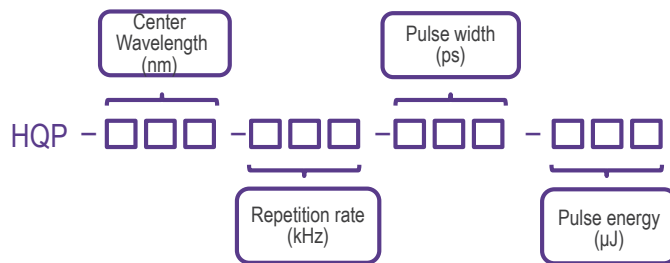
| Optical Parameters                |                              |       |      |       |       |      |
|-----------------------------------|------------------------------|-------|------|-------|-------|------|
| Wavelength (nm)                   | 1064                         |       |      | 532   |       |      |
| Repetition rate (kHz)             | 5                            | 20    | 50   | 5     | 20    | 50   |
| Average power (W)                 | 2.5                          | 5     | 4    | 1.25  | 2.5   | 2    |
| Pulse energy (μJ)                 | 500                          | 250   | 80   | 250   | 125   | 40   |
| Pulse width (ps)                  | <2000                        | <1000 | <500 | <2000 | <1000 | <500 |
| Power stability (RMS, @8h)        | <3%                          |       |      |       |       |      |
| Beam profile                      | TEM <sub>00</sub>            |       |      |       |       |      |
| Beam full divergence (typ., mrad) | Horizontal @1/e <sup>2</sup> |       | <10  |       |       |      |
|                                   | Vertical @1/e <sup>2</sup>   |       | <10  |       |       |      |
| Polarization ratio                | >100:1                       |       |      |       |       |      |
| System Parameters                 |                              |       |      |       |       |      |
| Supply power voltage              | 15VDC                        |       |      |       |       |      |
| Modulation input                  | 5V TTL                       |       |      |       |       |      |
| Trigger output                    | 3V@50Ω                       |       |      |       |       |      |
| Control interface                 | RS232                        |       |      |       |       |      |
| Power consumption (W)             | <200                         |       |      |       |       |      |
| Power dimensions (W×H×L,mm)       | 106×42×230                   |       |      |       |       |      |
| Laser head dimensions (W×H×L,mm)  | 140×64×230                   |       |      |       |       |      |
| Operation temperature (°C)        | 15-35                        |       |      |       |       |      |
| Storage temperature (°C)          | -20~60                       |       |      |       |       |      |

All the data in the above table are the typical values obtained from the tests at room temperature of 25°C, and the final data is subject to the final test report.

## Order Information

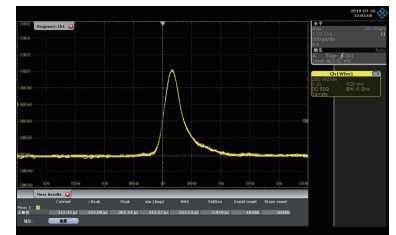
| Wavelength( nm ) | Part Number          | Repetition rate(kHz) | Pulse width(ps) | Pulse energy(μJ) |
|------------------|----------------------|----------------------|-----------------|------------------|
| 1064             | HQP-1064-5-2000-500  | 5                    | <2000           | 500              |
|                  | HQP-1064-20-1000-250 | 20                   | <1000           | 250              |
|                  | HQP-1064-50-500-80   | 50                   | <500            | 80               |
| 532              | HQP-532-5-2000-250   | 5                    | <2000           | 250              |
|                  | HQP-532-20-1000-125  | 20                   | <1000           | 125              |
|                  | HQP-532-50-500-40    | 50                   | <500            | 40               |

## Part Numbering Schema

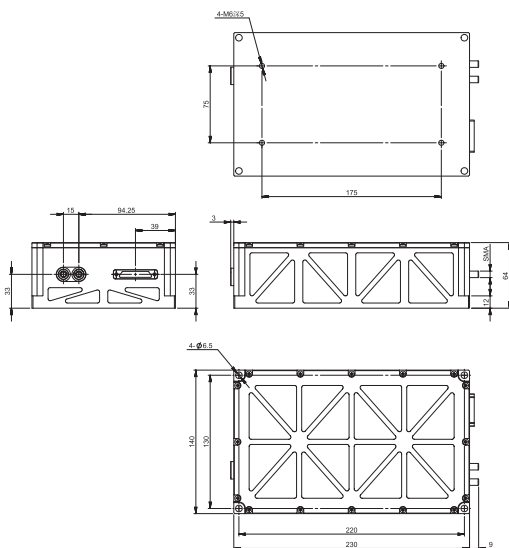


Beam Profile

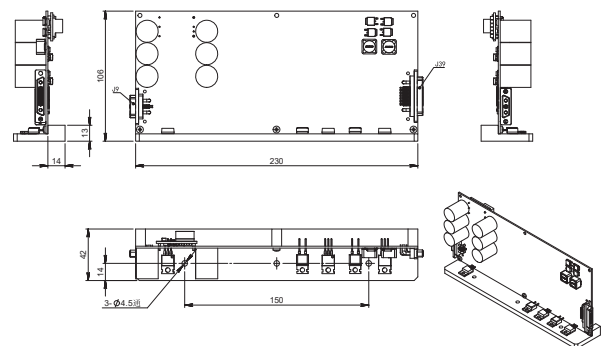
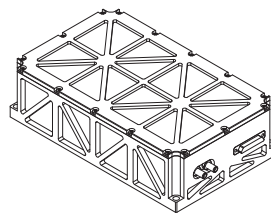
## Mechanical Drawings (in mm)



Typical Pulse Width



Laser Head



Drive Board

