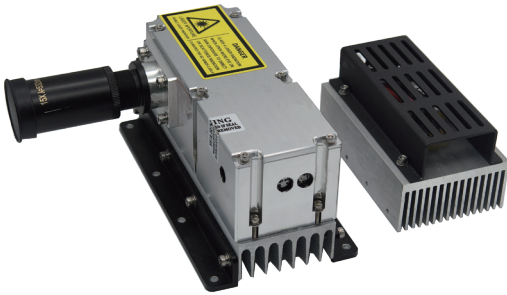


# HQD-FP Series Diode Pumped Q-switched Laser



HQD-FP series lasers are Reallight's self-developed, passively Q-switched diode-pumped solid-state lasers. HQD-FP series utilizes a split-cavity design, delivering high power, high repetition rate and large energy, with standard wavelengths of 1064nm and 532nm. Beam expanders and other customized specifications are available upon request.

## Key Features

- ◆ Repetition rate up to 7kHz
- ◆ Average power up to 2W@1064nm
- ◆ Sealed package, high reliability

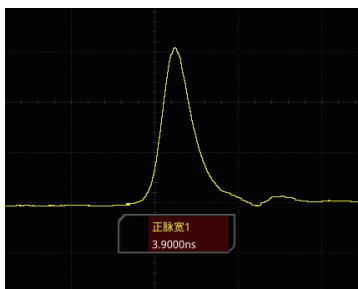
## Applications

- Laser marking    Laser etching
- Laser ablation    LIDAR
- Laser internal engraving

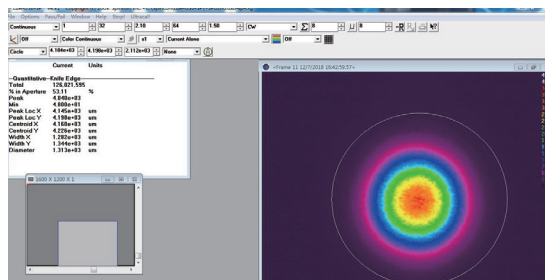
## Technical Specifications

| Optical Parameters   |   |      |      |     |      |      |
|--|---|------|------|-----|------|------|
| Wavelength (nm)  | 1064                                      |      |      | 532 |      |      |
| Repetition rate (kHz)  | 2.5                                       | 5    | 7    | 2.5 | 5    | 7    |
| Average power (mW)   | 1400                                      | 2000 | 2000 | 750 | 1000 | 1000 |
| Pulse energy (μJ)  | 560                                       | 400  | 280  | 300 | 200  | 140  |
| Pulse width (ns)   | 3.5                                       | 6    | 8    | 3   | 5    | 7    |
| Power stability (8h)   | ±3%                                       |      |      |     |      |      |
| Beam profile   | TEM <sub>00</sub>                         |      |      |     |      |      |
| Beam divergence, full angle (typ., @1/e <sup>2</sup> , mrad) | ≤10                                       |      |      |     |      |      |
| Polarization ratio   | >100:1                                    |      |      |     |      |      |
| System Parameters  |   |      |      |     |      |      |
| Supply power voltage   | 12V,>180W                                 |      |      |     |      |      |
| External trigger   | gated, 5V TTL, drive high to enable laser |      |      |     |      |      |
| Laser head dimensions (W×H×L,mm)                             | 60×39×158                                 |      |      |     |      |      |
| Operation temperature (°C, require air cooling)              | 15~35                                     |      |      |     |      |      |
| Storage temperature (°C)                                     | -20~60                                    |      |      |     |      |      |

1. Beam expanders are an optional part and are not included by default unless otherwise noted.
2. Temperature control is required for laser head during operation. The temperature of the base plate should be controlled at 15-35°C.
3. As products are constantly being updated, the right of final interpretation of technical specifications or illustrations in datasheet belongs to Reallight.



Typical Pluse

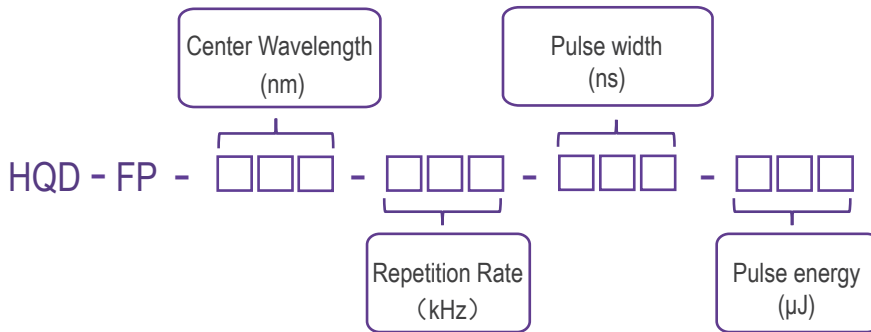


Beam Profile (without beam expander)

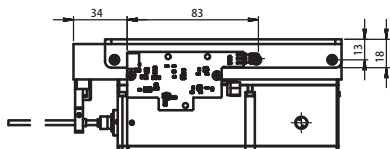
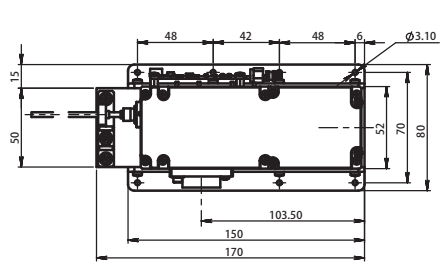
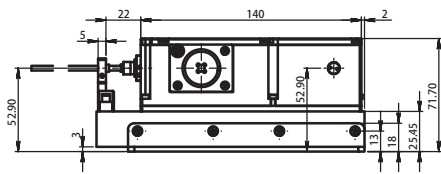
## Order Information

| Wavelength(nm) | Part Number             | Repetition rate(kHz) | Pulse width(ns) | Pulse energy(μJ) |
|----------------|-------------------------|----------------------|-----------------|------------------|
| 1064           | HQD-FP-1064-2.5-3.5-560 | 2.5                  | 3.5             | 560              |
|                | HQD-FP-1064-5-6-400     | 5                    | 6               | 400              |
|                | HQD-FP-1064-7-8-280     | 7                    | 8               | 280              |
| 532            | HQD-FP-532-2.5-3-300    | 2.5                  | 3               | 300              |
|                | HQD-FP-532-5-5-200      | 5                    | 5               | 200              |
|                | HQD-FP-532-7-7-140      | 7                    | 7               | 140              |

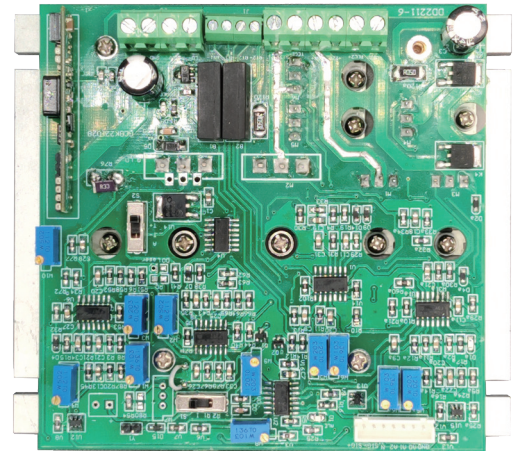
## Part Numbering Schema



## Mechanical Drawings (in mm)

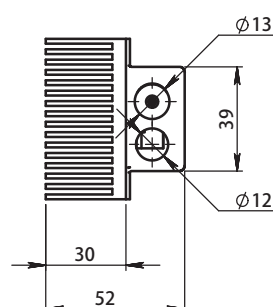
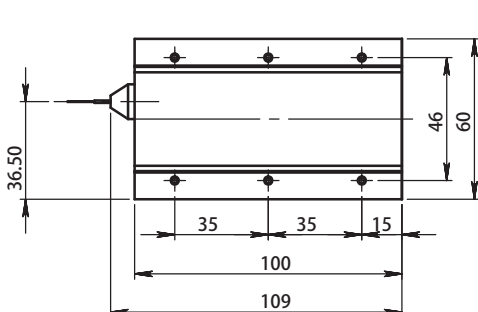


Laser Head



|                   |  |
|-------------------|--|
| System size       | 140×160mm  |
| Voltage           | 12VDC, >200W   |
| Power consumption | 120W (room temperature)                                |
| Trigger mode      | internal/external trigger, can be switched by hardware |
| External trigger  | gated, 5V TTL, drive high to enable                    |
| Cooling method    | conductive cooling                                     |

Drive Board



Pumping source

