

HQD-FP Series Solid State 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. Standard package comes along with a 15x beam expander at 1064nm and 532nm wavelength. 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)	1500	2000	2000	750	1000	1000
Pulse energy (μJ)	600	400	280	300	200	140
Pulse width (ns)	3.5	6	8	3	5	7
Power stability (8h)	±3%					
Beam profile	TEM ₀₀					
Collimated beam diameter (mm)	≈9					
Beam divergence, full angle (typ., @1/e ² , mrad)	≤1					
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					

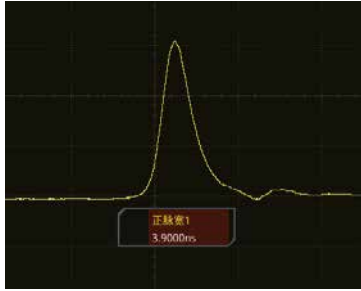
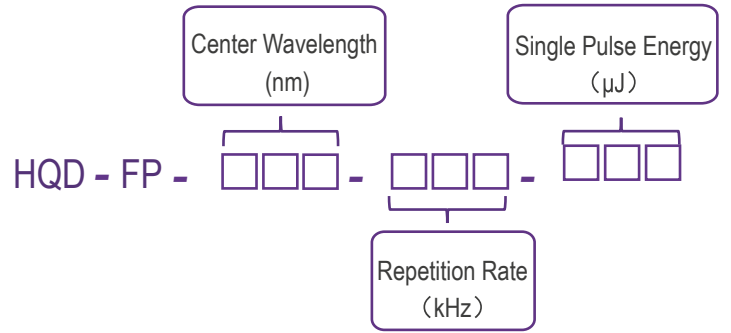
Notes:

1. External beam expanders are available upon request, to meet smaller divergence requirements(5-20x beam expander).
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.

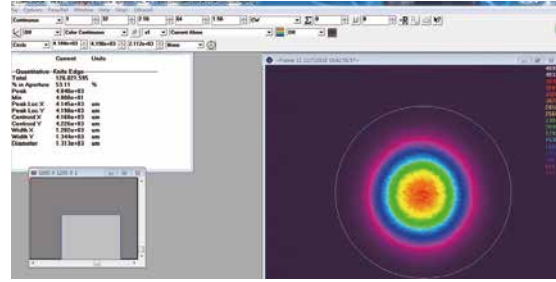
Order Information

Wavelength (nm)	Part Number	Repetition rate (kHz)	Pulse energy (μJ)	Pulse width (ns)
1064	HQD-FP-1064-2.5-600	2.5	600	3.5
	HQD-FP-1064-5-400	5	400	6
	HQD-FP-1064-7-280	7	280	8
532	HQD-FP-532-2.5-300	2.5	300	3
	HQD-FP-532-5-200	5	200	5
	HQD-FP-532-7-140	7	140	7

Part Numbering Schema

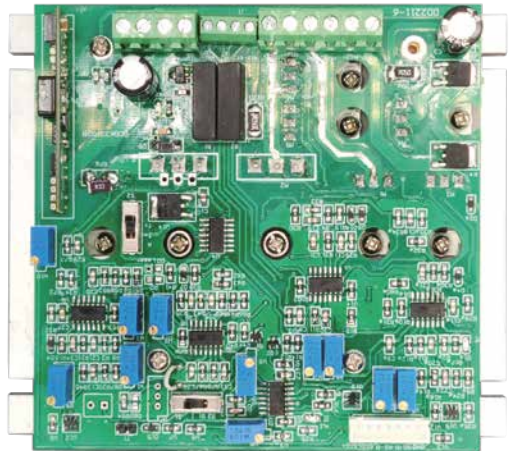
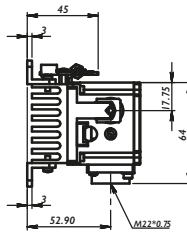
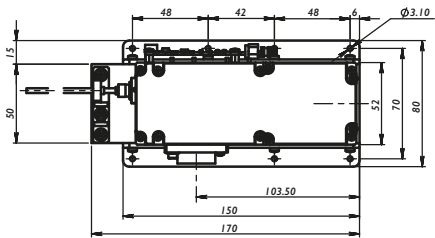
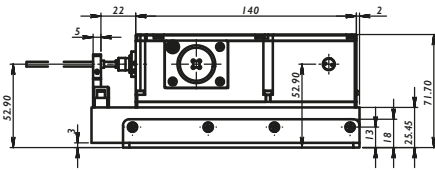


Typical Pulse



Beam Profile (without beam expander)

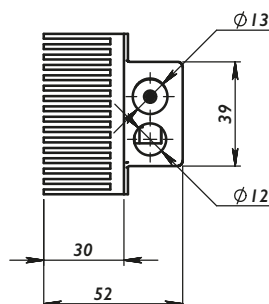
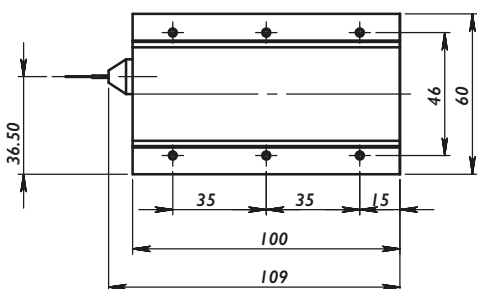
Mechanical Drawings (in mm)



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

Laser Head



Pumping source

