

# UL-AQNL-DW-1200 active Q-switched subnanosecond laser



## DESCRIPTION

UL-AQNL-DW-1200 active Q-switched sub-nanosecond laser is a dual-wavelength sub-nanosecond laser with a high repetition rate, narrow linewidth, and peak power.

The laser can simultaneously output 1064 nm and 532 nm wavelength lasers. It has outstanding advantages in thermal depolarisation, beam quality control, and damage resistance based on fiber-coupled semiconductor end-pumping and semiconductor array side-pumping modules to achieve high-efficiency solid-state amplification. The laser can work at 0-40°C and be adapted to dynamic platforms such as a vehicle, airborne, shipboard or underwater. Modular design and universal components are adopted to ensure the reliability and easy maintenance of the underlying components of the laser. Widely used in point cloud imaging lidar, laser ranging, atmospheric detection, etc.

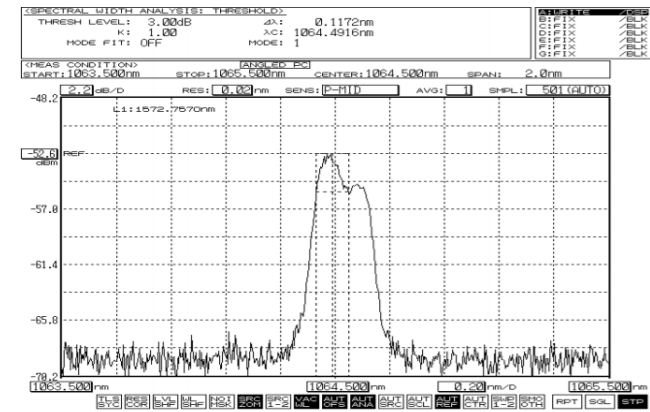
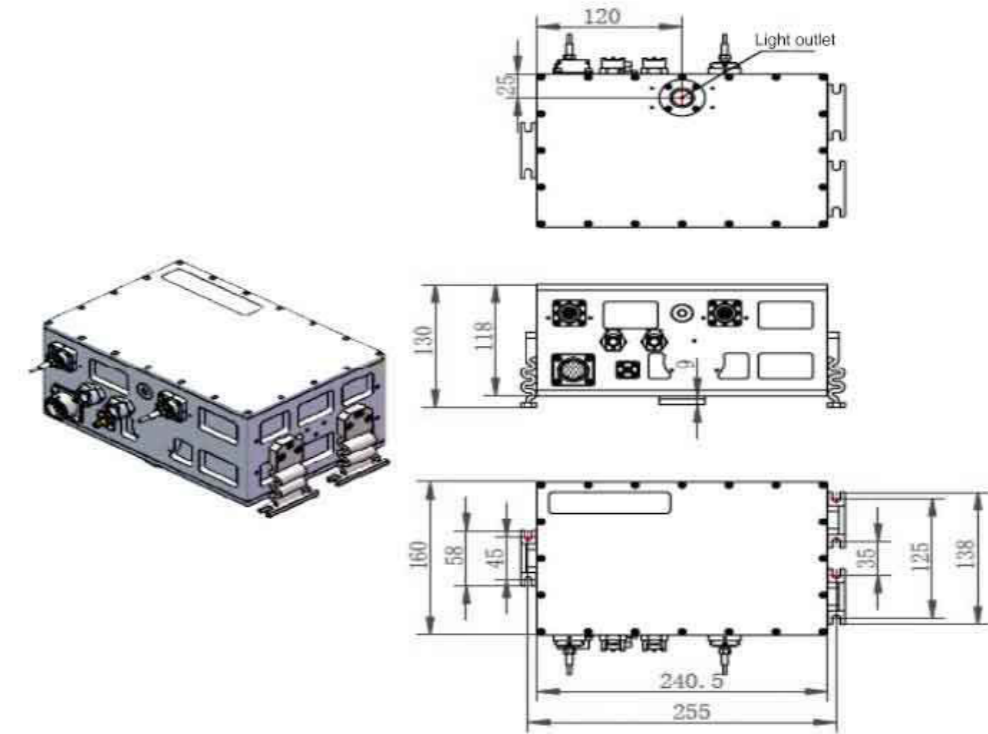
## FEATURES

- LD pump, long life
- ns level narrow pulse width
- Good beam quality and pointing stability
- Complicated working conditions
- High protection level, anti-vibration design

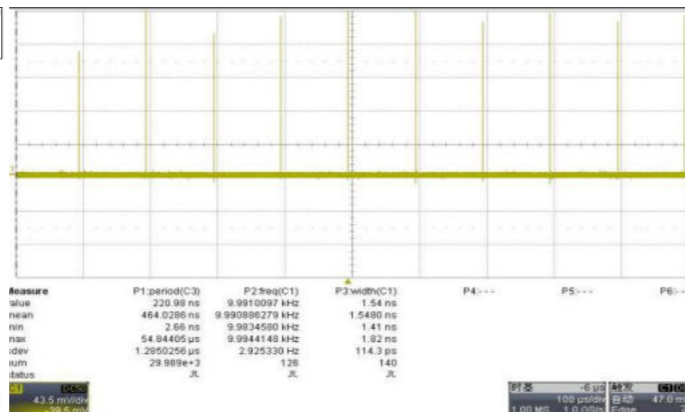
## APPLICATIONS

- Laser ranging
- Long-distance dynamic target capture and imaging
- Lidar point cloud imaging
- Multi-channel atmospheric sounding

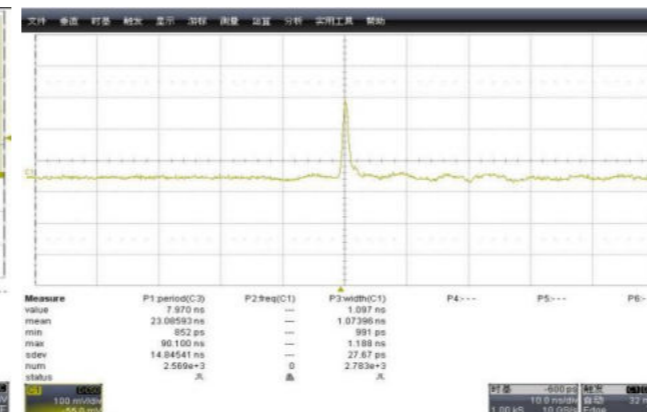
## OUTLINE SIZE(mm)



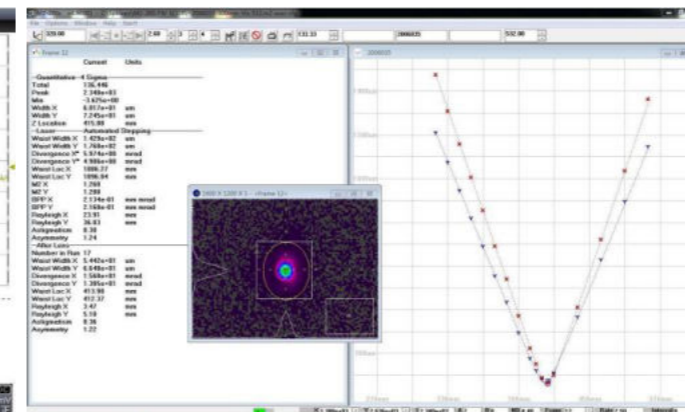
Laser wavelength: 1064.49 nm;  
line width: 0.1172 nm



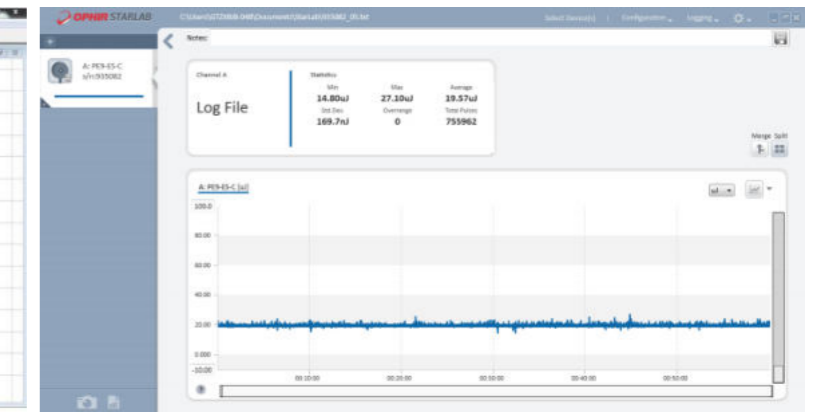
Repetition frequency: 10 kHz



Pulse width: 1.07ns



Beam quality factor  $M^2 \approx 1.28$ ,  
divergence angle  $\approx 5.44$ mrad



Output power 1.2mJ@10kHz (measured energy stability  
after attenuation 0.87%)

## PARAMETERS

	Model	UL-AQNL-DW-1200
Optical Parameters	Wavelength	1064nm, 532nm coaxial output
	Pulse energy	> 1.2mJ@1064nm; > 0.6mJ@532nm;
	Fundamental frequency light width	< 0.12nm
	Pulse width	≤1.5ns@10kHz
	Repetition frequency	10kHz
	Beam quality M <sup>2</sup>	< 2
	Divergence angle	5~6mrad
	Laser beam pointing jitter	< 0.05mrad (when the laser output is high-grade)
	Degree of polarization	> 100:1
	Laser energy stability (RMS@2h)	< 2.5%@room temperature@532nm
Function parameter	Communication Interface	RS232
	Control method	Host computer and communication command control
	trigger method	Internal/external trigger, external trigger 3~5V@50ΩTTL level, external trigger input pulse width range 200ns~10μs
	Q-switched synchronous trigger pulse signal output	Positive pulse, 3~5V@50ΩTTL level, rising edge time<25ns, pulse width range 200ns~10μs, synchronous trigger signal and output laser jitter
	The output energy can be adjusted in different stages	There are two gears, which can be set online through software. The high gear is for full power operation, and the low gear is used for optical path debugging. The output energy of the low gear is about 1% of the output energy of the high gear. The laser beam deviation angle of the high and low gears is <0.05mrad
	Cooling method	Water cooling
	Power supply	28±5VDC
	Laser lifetime (H)	> 1 billion times
	Laser layout	Laser head + power supply + water cooler
Environmental requirements	Operating temperature	0 ~ 40°C
	Storage temperature	-10 ~ 50°C, store at low temperature and drain clean water
	Relative humidity	0 ~ 80%
	Vibration requirements	Random vibration of the whole system (with damping pad), road spectrum (GB/T4857.23)