

Ultrafast fiber laser 1030nm Femtosecond



- **Product Description**

UFL 1030 features highly integrated optical and circuit architectures, making it compact and portable, especially suitable for industrial or OEM commercial system integration. The UFL 1030 offers a flexible range of performance parameters, with a typical output wavelength of 1030 ± 5 nm, a repetition frequency range of 25 ± 1 MHz, and a pulse width as low as less than 200 fs.



- **Product features**

Customizable wavelength、 High peak power、 Linear polarization、
Diffraction-limited beam quality

- **Part Number**

MP-PLS-FS-200-1030-60mW

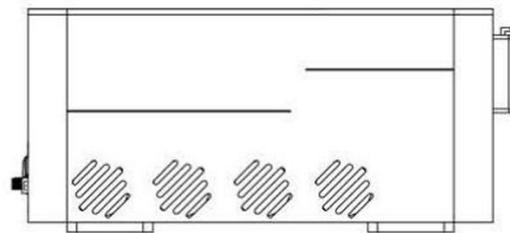
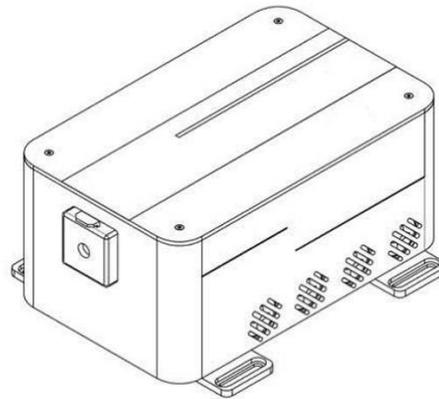
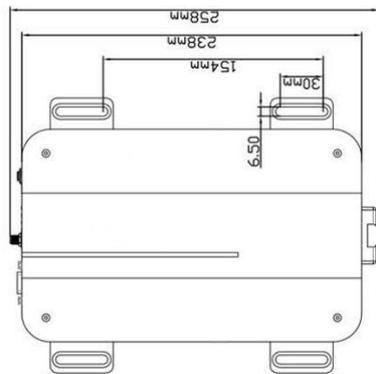
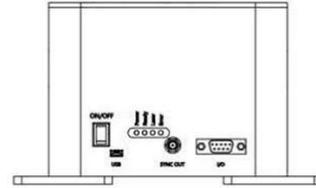
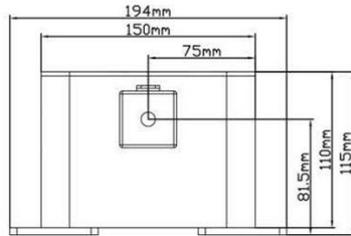
- **Application area**

Ultrafast spectroscopy、 Two-photon polymerization、 High-speed optical
sampling、 Light speed measurement

- **Core parameters**

Center Wavelength	Pulse Width	Repetition Frequency
1030nm	<200fs	25MHz

- **Dimension Drawing**



● General Parameters

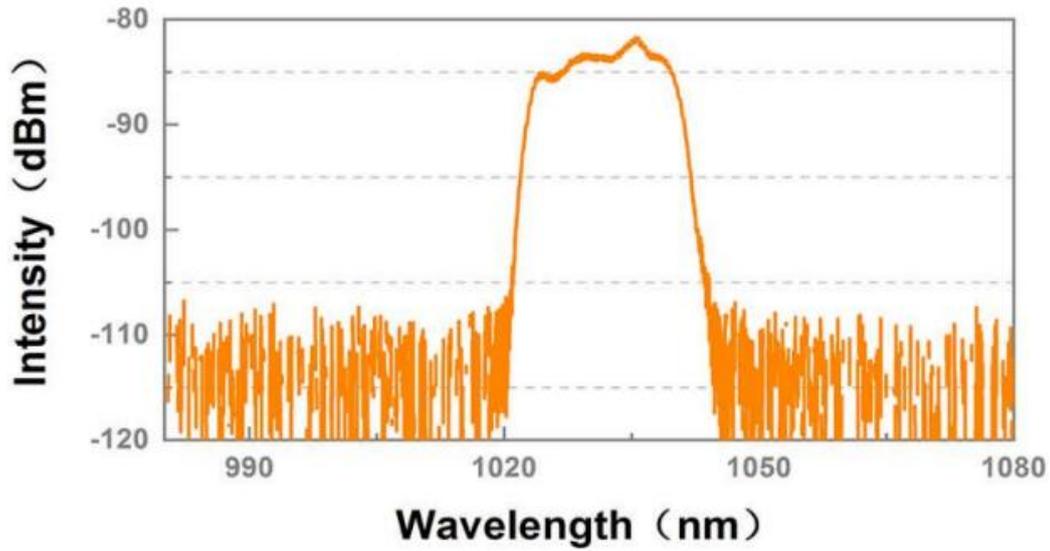
Parameters

Laser parameter		
Operating wavelength	1030±5 nm	Single pulse energy >4 nJ
Pulse width	<200 fs	Polarization extinction ratio >20 dB
Repetition frequency	25±1 MHz	Beam quality TEM00,M2<1.2
Average power	>60 mW	Output mode spatial light output
Power stability	<0.5%RMS(24h@25°C)	
Electronic, environmental, mechanical parameters		
Power consumption	<30 Watt	Operating humidity 20-80%
Synchronous signal	1 V@50 Ohm	machine weight 1.2 kg
Power supply voltage	12 VDC	Dimensions 258×194×115 mm
Operating temperature	15-35°C	Cooling method: air cooling

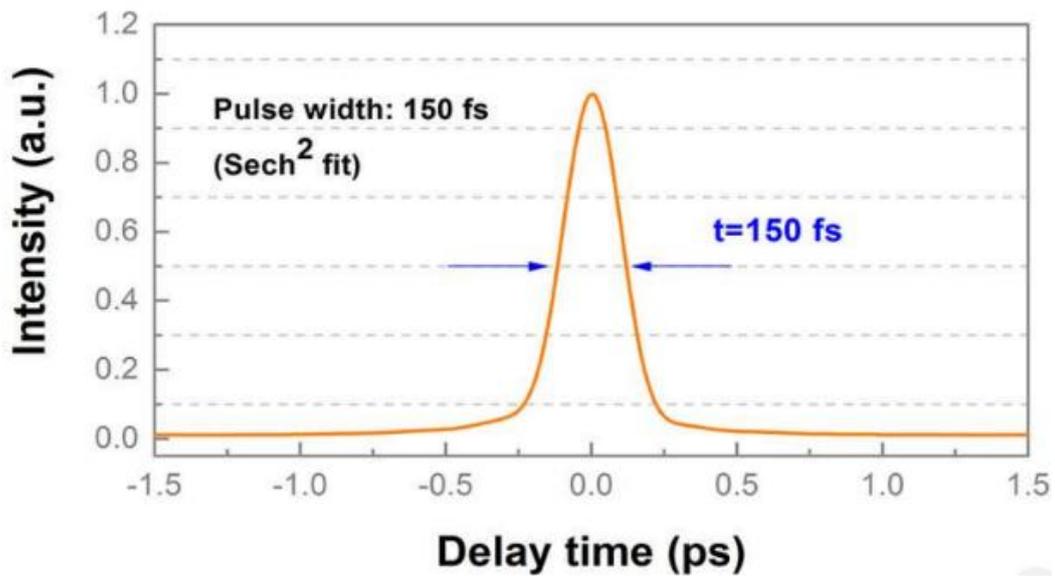


Test Date

Output spectrum

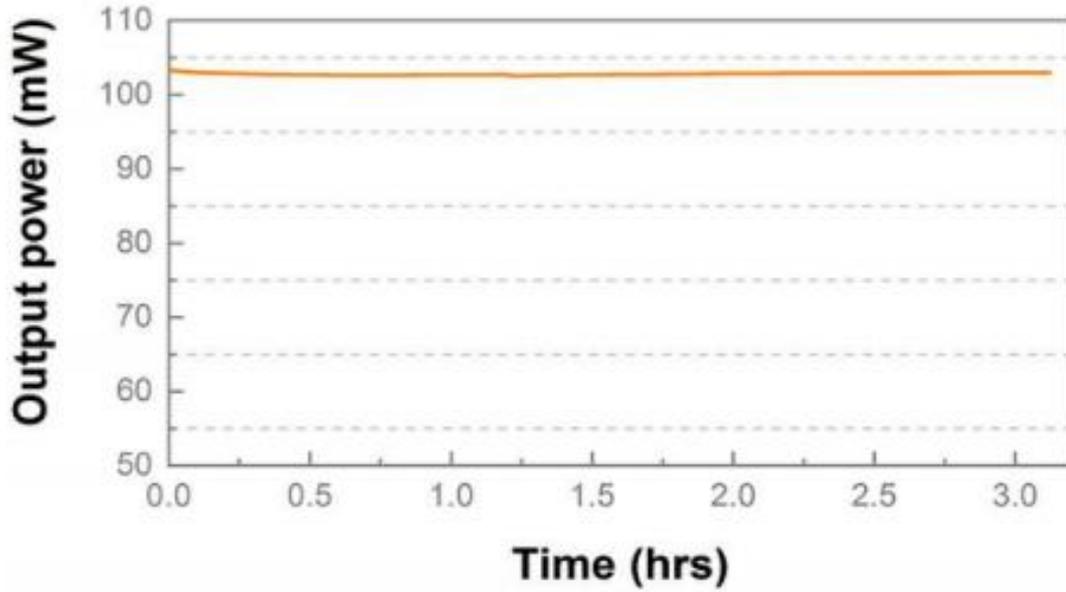


Pulse autocorrelation trace





Output power stability



Test data:

Test time 2022-08-04

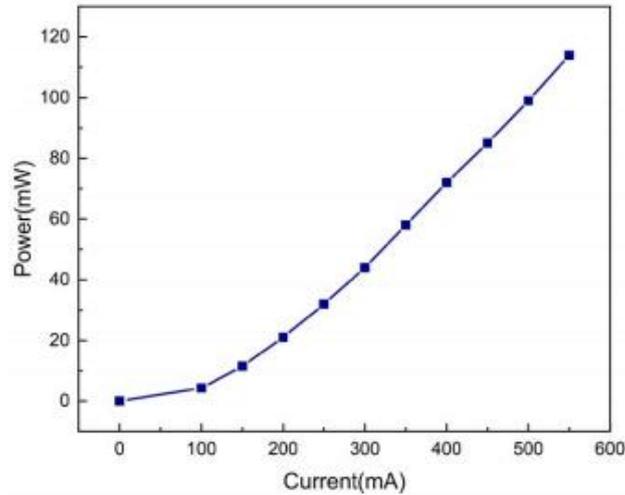
Test temperature 25°C (± 1)

1. Output power test results

Electric current/mA	Power/mW
0	0.6
100	4.3
150	11.5
200	21
250	32
300	44
350	58

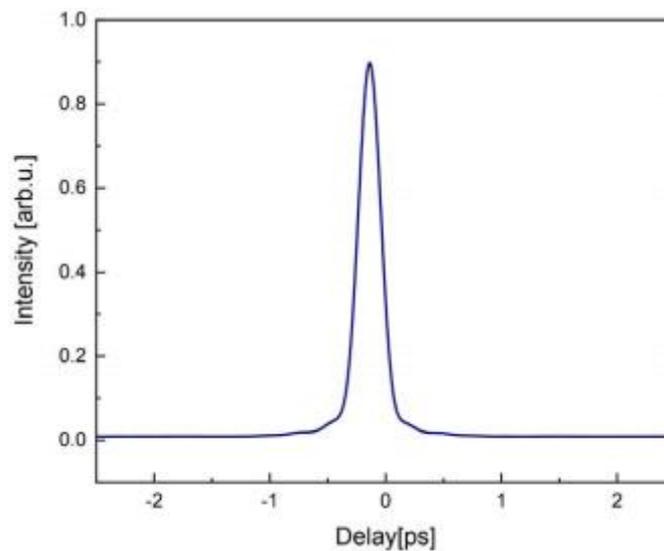


Electric current/mA	Power/mW
400	72
450	85
500	99
550	114



Test Equipment: Power Meter Thorlabs

2. Pulse width: ($\tau=147\text{fs}$):

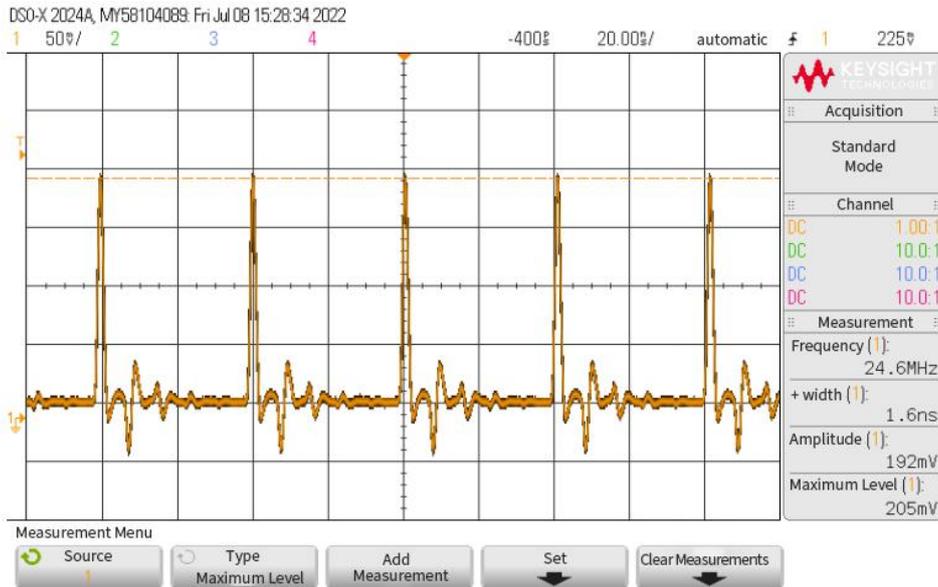


Test instruments: APE autocorrelator; Sech² fitting



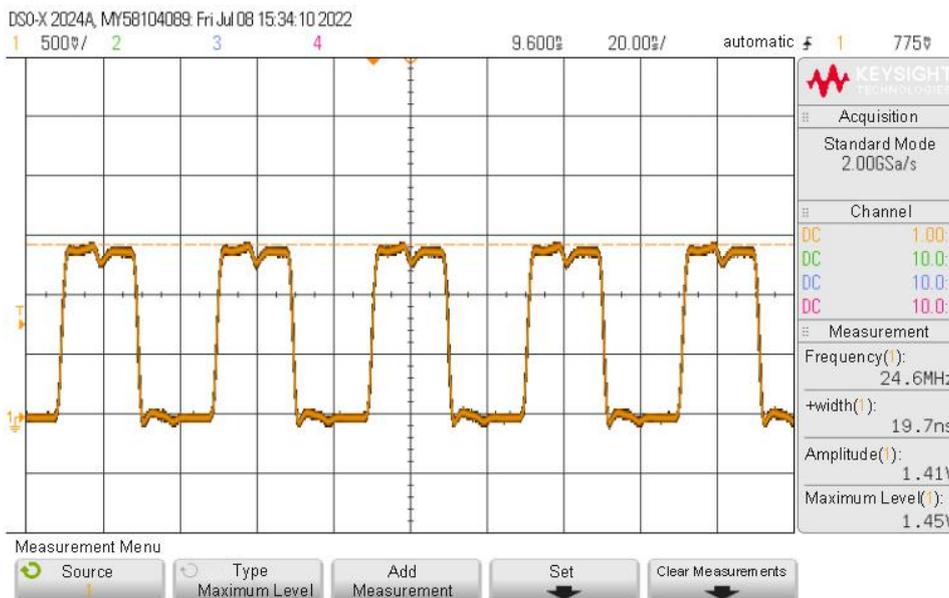
3. Pulse sequence: (f=24.6MHz)

Main output pulse:



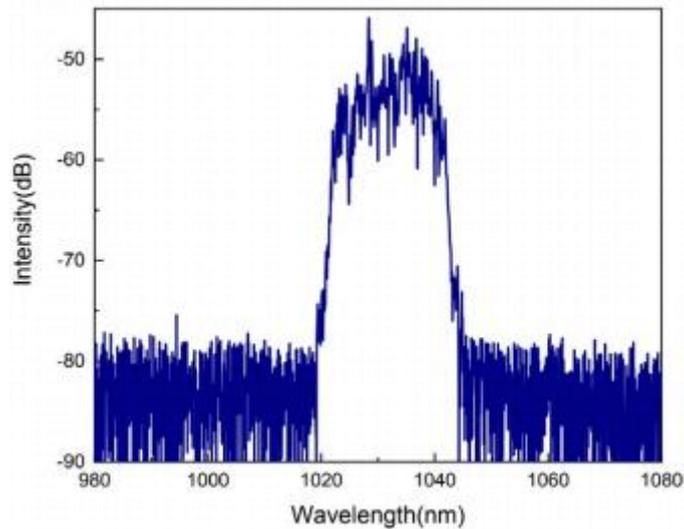
~ 2 ~

Synchronous output:



Test instruments: DSOX2022A (oscilloscope); DET08C/M (probe)

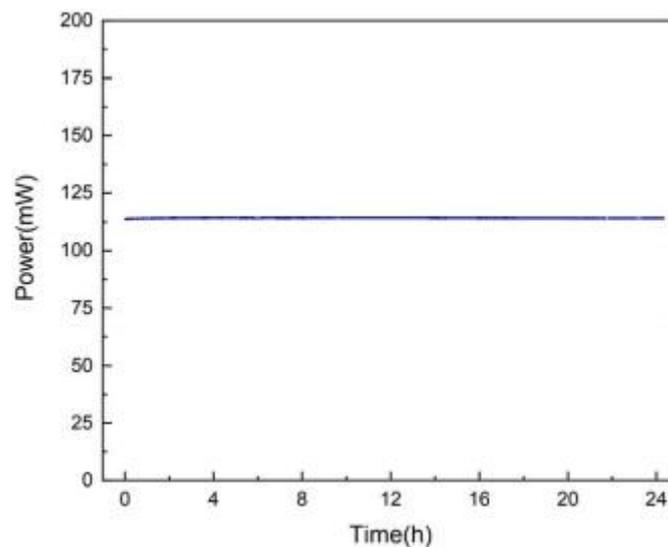
4. Output spectrum @114mW: ($\lambda_c=1032.5\text{nm}, \Delta\lambda=8.5\text{nm}$)



Test instrument: Anritsu MS9740A spectrometer

5. Power stability test: (Power Stability 0.7%RMS)

Average power 114.3mW, stability qualified



Test instrument: power meter Thorlabs, test temperature ($25 \pm 1^\circ\text{C}$)



6. Locking mode detection: Start times 1000 times, successful start times within 3s 1000 times, success rate 100%.

Self-starting test of mode-locked laser

Test Data		Eye Diagram Test													
Number	Temp (°C)	Current 1 (mA)	Current 2 (mA)	Number	Frequency (MHz)	Volt (mV)	+Width (ns)	Power(mW)	Temp 1(°C)	Temp 2(°C)	Temp 3(°C)	Temp 4(°C)	Result	Pass rate	
984	25.00	440.00	188	984	24.70	990.00	20.90	0.69	25.48	22.67	25.74	26.62	T	100.00 %	
985	25.00	440.00	188	985	24.70	990.00	20.90	0.74	26.18	22.90	24.78	28.76	T	100.00 %	
986	25.00	440.00	188	986	24.70	990.00	20.90	0.70	24.76	22.92	25.14	27.85	T	100.00 %	
987	25.00	440.00	188	987	24.70	990.00	20.90	0.72	25.47	23.33	24.27	28.08	T	100.00 %	
988	25.00	440.00	188	988	24.70	990.00	20.90	0.68	24.97	22.90	24.50	28.73	T	100.00 %	
989	25.00	440.00	188	989	24.70	990.00	20.90	0.70	25.01	23.27	24.94	26.16	T	100.00 %	
990	25.00	440.00	188	990	24.70	990.00	20.90	0.74	24.51	22.36	25.26	28.43	T	100.00 %	
991	25.00	440.00	188	991	24.70	990.00	20.90	0.74	26.11	23.14	25.01	26.74	T	100.00 %	
992	25.00	440.00	188	992	24.70	990.00	20.90	0.71	24.42	23.01	24.96	26.08	T	100.00 %	
993	25.00	440.00	188	993	24.70	990.00	20.90	0.71	25.47	22.70	24.73	28.88	T	100.00 %	
994	25.00	440.00	188	994	24.70	990.00	20.90	0.73	24.96	22.01	24.32	27.24	T	100.00 %	
995	25.00	440.00	188	995	24.70	990.00	20.90	0.68	24.99	22.58	25.55	27.99	T	100.00 %	
996	25.00	440.00	188	996	24.70	1000.00	20.90	0.69	25.13	23.00	24.67	28.95	T	100.00 %	
997	25.00	440.00	188	997	24.70	1000.00	20.90	0.69	25.32	22.70	25.34	26.11	T	100.00 %	
998	25.00	440.00	188	998	24.60	990.00	20.90	0.67	25.91	23.32	25.71	26.59	T	100.00 %	
999	25.00	440.00	188	999	24.70	990.00	20.90	0.67	25.41	23.64	24.69	28.39	T	100.00 %	
1000	25.00	440.00	188	1000	24.70	990.00	20.90	0.67	25.35	22.89	25.69	27.89	T	100.00 %	

7. Polarization extinction ratio test

Test structure: laser collimated output → half-wave plate → PBS.

Test method: By rotating the half-wave plate, measure the Max. and Min. power values at the two output ports of PBS. Polarization extinction ratio $PER=10\log(P_{max}/P_{min})$.

Pmax=112mW	Pmin=0.6mW
Polarization extinction ratio: 22.7dB	



8. Typical light spot (ellipticity 95%@0.2m)

