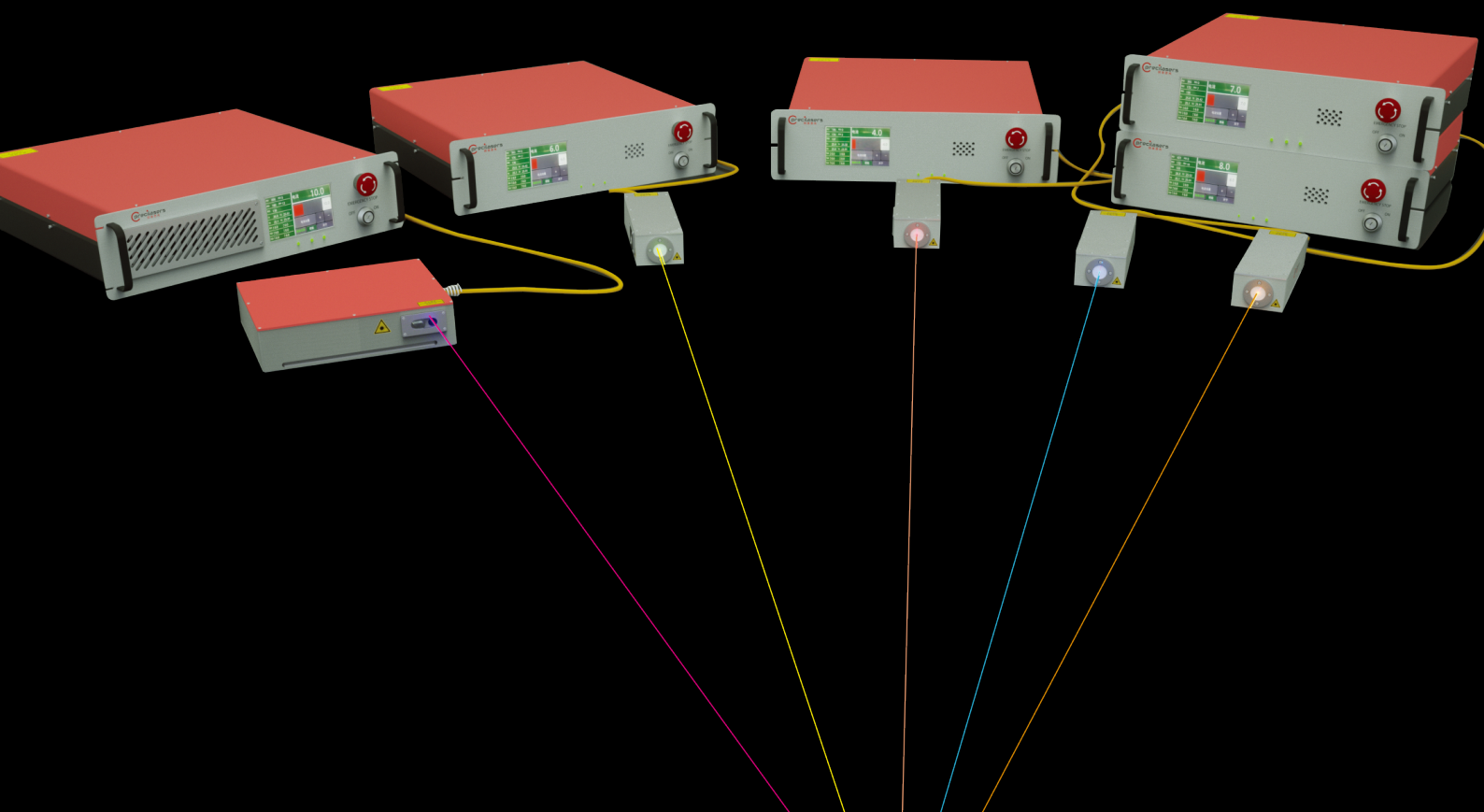
precilasers
频准激光

WE PROVIDE HIGH POWER LOW NOISE LASER SYSTEM FROM 190NM TO 5000NM

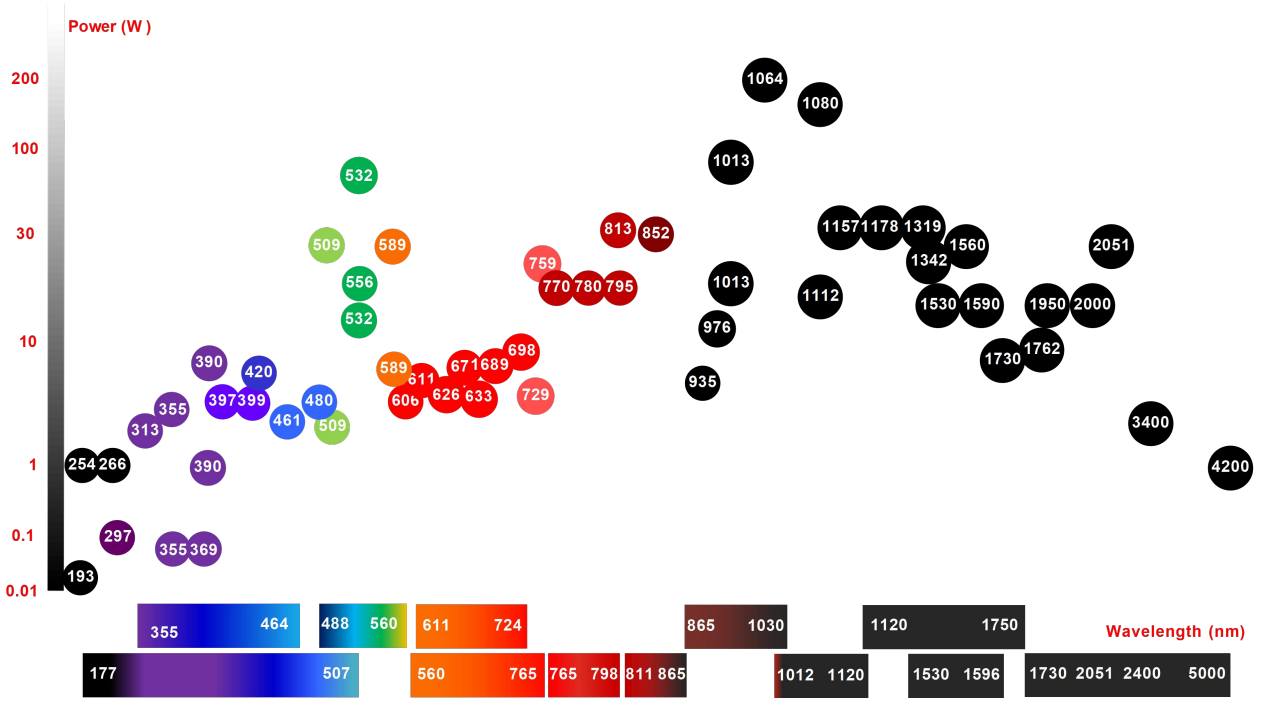


SHANGHAI PRECILASERS TECHNOLOGY CO., LTD.

ABOUT US

Shanghai Precilasers Technology Co., Ltd. is founded in 2017, Shanghai. Based on narrow linewidth fiber DFB/FECL seed laser, low noise fiber amplifier and high efficiency optical non-linear conversion technique, we develop and produce high power, low noise and single frequency laser system from 190nm to 5000nm. Up to now, thousands lasers has been used in famous lab all over the world with excellent performance, most of them are in quantum computation and quantum precision measrement area

- 190nm-5000nm All covered
- Narrow linewidth
- High power
- Low phase noise
- Low intensity noise
- High Availability



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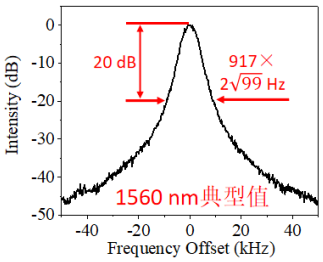
SEED LASER

Fiber DFB Seed Laser

Based on fiber bragg grating technique, Precilasers provide narrow linewidth fiber DFB seed laser with very low phase noise and intensity noise.

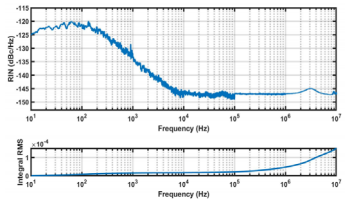
Gain Type	Yb		Er		Tm	
Range	1014-1156nm		1525-1610nm		1695-2100nm	
Linewidth	10kHz	3kHz	2kHz	1kHz	10kHz	5kHz
Output power	10mW		40mW		10mW	
Thermal tuning range	>0.7nm		>1nm		>1nm	
PZT tuning range	>3GHz					
PZT tuning bandwidth	>5kHz					
AOM tuning bandwidth (optional)	>500kHz					
RIN peak	<-130dBc/Hz		<-110dBc/Hz		<-130dBc/Hz	
RIN@10MHz	<-140dBc/Hz					
Output mode	PM fiber					



Linewidth:<1kHz@1560nm

Er & Yb seed laser
Size: 210mm*118mm*33mm

Tm seed laser
Size: 461mm*366mm*44.5mm

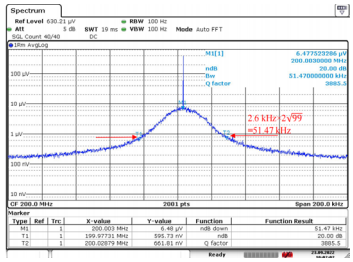


RIN:<-145dBc/Hz@peak, 1064nm

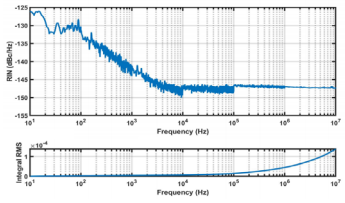
FECL (Fixed External Cavity Diode Laser)

FECL seed laser
Size: 140mm*83mm*25mm

Range	450-1000-1625nm	
Linewidth(100us)	10kHz	5kHz
Output power	>10mW	
Total Tuning Range	>7GHz	
Current tuning range	>500MHz	
Current tuning bandwidth	>1MHz	
RIN	<-145dBc/Hz@10kHz	
Output mode	PM fiber	Free space



Linewidth:<5kHz

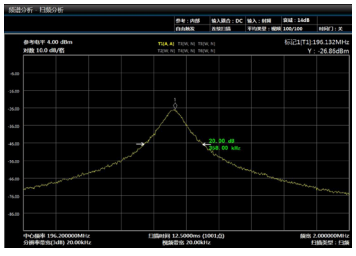


RIN:<-145dBc/Hz, 1064nm

External Cavity Diode Laser

Controller size: 200mm*144mm*334mm
Laser head size: 85mm*94mm*300mm

Range	760-1600nm	
Linewidth(100us)	100kHz	50kHz
Output power	>20mW	
Total Tuning Range	>±10nm	
Mode-hop free range	>20GHz	
PZT tuning range	5GHz	
PZT tuning bandwidth	5kHz	
Current tuning range	>500MHz	
Current tuning bandwidth	>1MHz	



Linewidth:<18kHz

HIGH POWER AMPLIFIER

KEY FEATURE:

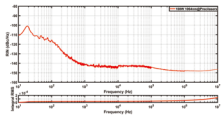
- Very low intensity noise
- High power with single frequency
- Active power stabilization
- Robust, hot plug for seed laser

YDFA (Ytterbium-Doped Fiber Amplifiers)

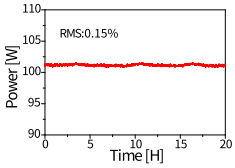
Power: >50W
Size: 240mm*78mm*300mm

Power: ⩽ 50W
Size: 82mm*50mm*275mm

Range	976-1134nm	
Input power	>10mW	
Output power@1064nm	2-80W	80-200W
Power stability	<0.75%, rms, 3hrs	
RIN	<-140dBc/Hz@10kHz	
Beam quality	M^2<1.1	
PER	>23dB	



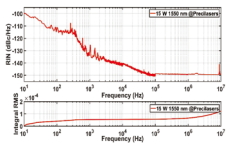
RIN @ 1064nm, 180W



EDFA (Erbium-Doped Fiber Amplifiers)

Size: 62mm*74mm*120mm

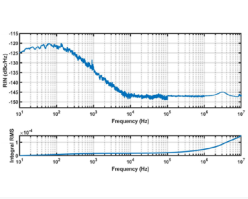
Range	1525-1625nm
Input power	>10mW
Output power@1560nm	>50W
Power stability	<0.75%, rms, 3hrs
RIN	<-135dBc/Hz@10kHz
Beam quality	M^2<1.1
PER	>23dB



TDFA (Thulium-Doped Fiber Amplifiers)

Controller size: 200mm*144mm*334mm
Laser head size: 85mm*94mm*300mm

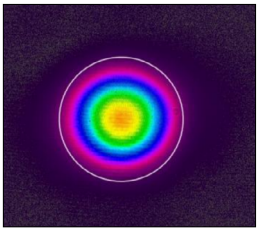
Range	1695-2100nm
Input power	>10mW
Output power@1940nm	>40W
Power stability	<0.75%, rms, 3hrs
RIN	<-135dBc/Hz@10kHz
Beam quality	M^2<1.1
PER	>23dB

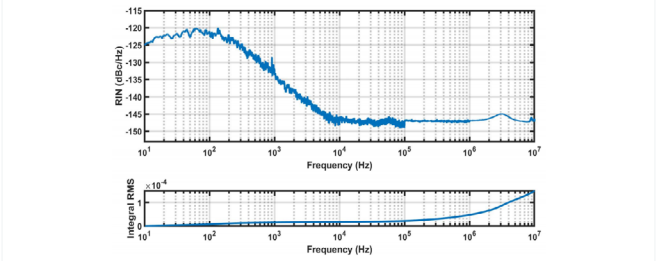


HIGH POWER LASERS FOR TWEEZER

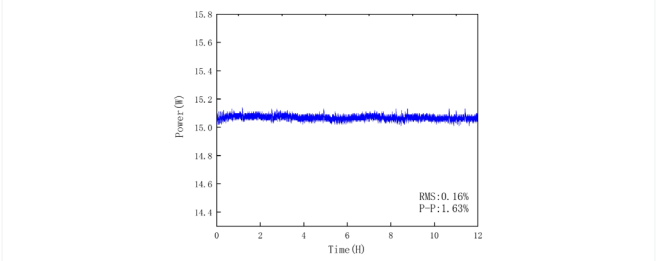
813-840-852nm 30W lasers

Range	811-880nm	
Power	>30W	
Linewidth(100us)	20kHz	10kHz
Power stability	<0.3%, rms, 3hrs	
RIN	<0.05%(10Hz-10MHz)	
Current tuningbandwidth	>1MHz	
Current tuning range	>500MHz	
PER	>23dB	
Beam quality	M^2<1.1	





RIN, 813nm, 30W

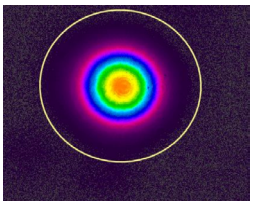


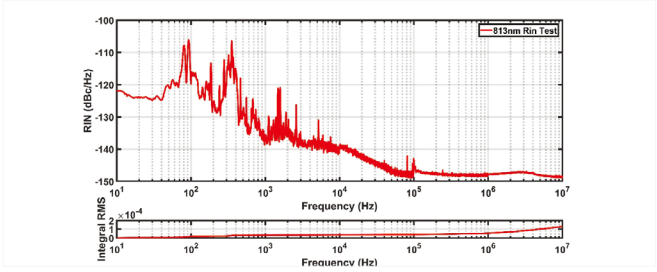
Power stability, 813nm, 30W

759nm 20W lasers

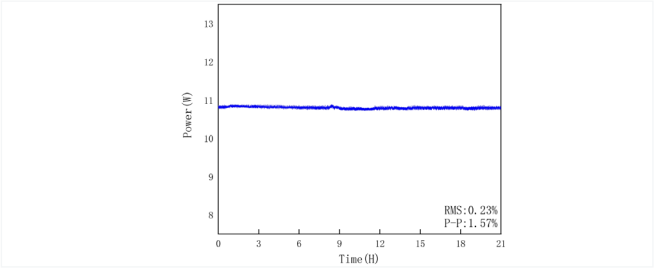
Size: 62mm*74mm*120mm

Range	759nm
Power	>20W
Linewidth(100us)	20kHz
Power stability	<0.5%, rms, 3hrs
RIN	<0.07%(10Hz-10MHz)
Current tuning bandwidth	>1MHz
Current tuning range	>500MHz
PER	>23dB
Beam quality	M^2<1.1





Power stability, 759nm, 20W

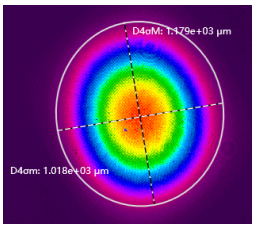


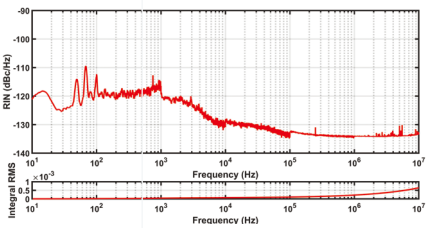
Power stability, 759nm, 20W

HIGH POWER DUAL OUTPUT LASERS

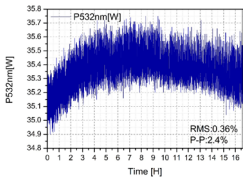
532nm-1064nm lasers

Wavelength	532nm/1064nm
Power@532nm	>80W
Power@1064nm	>180W
Linewidth(100us)@532nm	20kHz 10kHz
Power stability	<0.75%, rms, 3hrs
RIN	<0.05%(10Hz-10MHz)
Current tuning bandwidth	>1MHz
Current tuning range	>500MHz
PER	>23dB
Beam quality	M^2<1.1





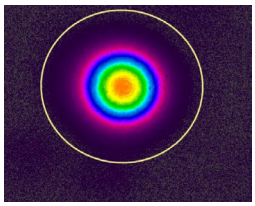
RIN, 532nm, 80W

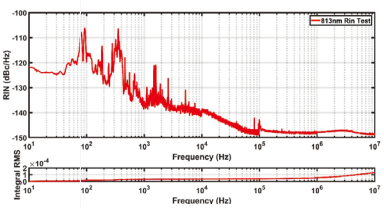


Power stability, 532nm, 80W

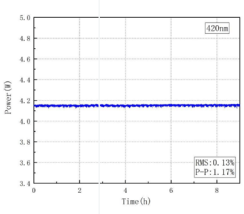
420nm-840nm lasers

Wavelength	420nm/840nm
Power@420nm	>8W
Power@840nm	>30W
Linewidth(100us)@420nm	40kHz 20kHz
Power stability	<0.75%, rms, 3hrs
RIN	<0.05%(10Hz-10MHz)
Current tuning bandwidth	>1MHz
Current tuning range	>500MHz
PER	>23dB
Beam quality	M^2<1.1





RIN, 420nm, 8W

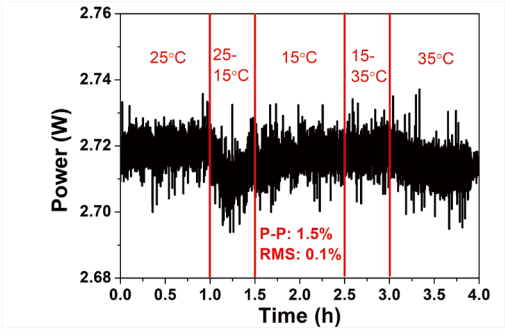


Power stability, 420nm, 8W

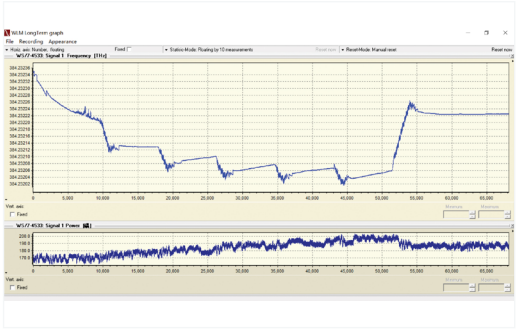
767-770-780-795NM NARROW LINEWIDTH LASERS

Narrow linewidth lasers

Wavelength	767nm	770nm	780nm	795nm
Power	6W	15W	20W	6W
Linewidth	5kHz/20kHz			
Power stability	<0.75%, rms, 3hrs			
Beam qiality	M^2<1.1			
PER	>20dB			
Output mdoe	PM fiber / Free space			
Temperature	-20°C ~ 50°C			
Vibration	<0.5g			



0-50°C Power stability, 780nm, 20W

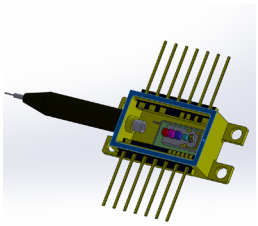


0-50°C Frequency drift <340MHz

Dual Channel 780nm laser system

Wavelength	780nm
Power	2W per channel
Linewidth	5kHz/20kHz
Configuration	user define EOM/AOM options

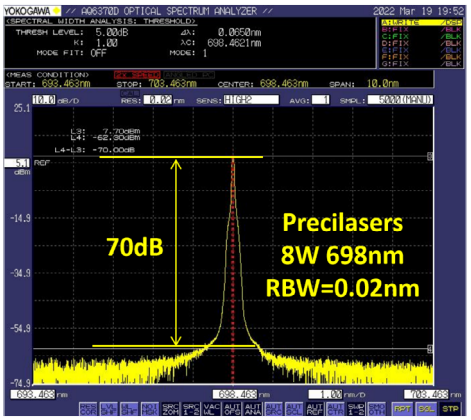
Fixed cavity diode lasers

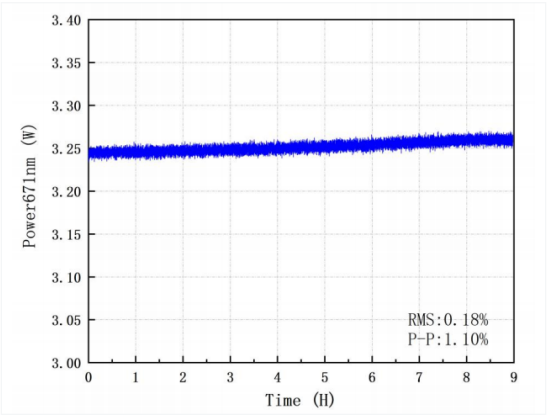


Wavelength	780nm	
Power	10mW	40mW
Output mode	PM fiber	Free space
Linewidth	50kHz	
Size	140mm*83mm*25mm	

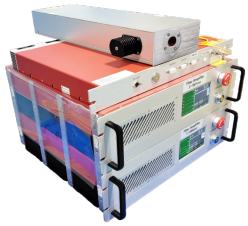
RED AND IR LASERS

Wavelength	626nm-633nm	671nm-689-698nm	729nm	935nm
Power	10W	10W	8W	9W
Application	I2	Li/Sr	Ca+	Yb+
Linewidth(100us)	20kHz			
Power stability	0.75%, 3hrs			
PER	>23dB			
Beam quality	M^2<1.1			

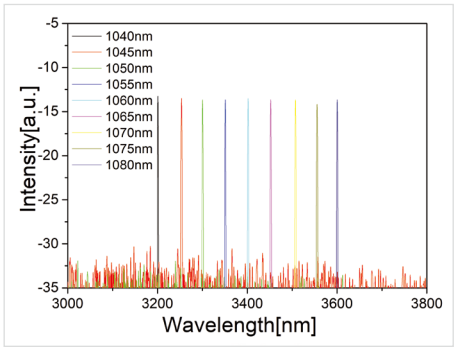


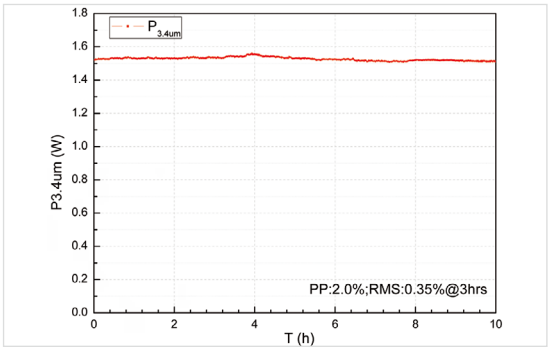


DFG IR LASERS 2923-3432NM



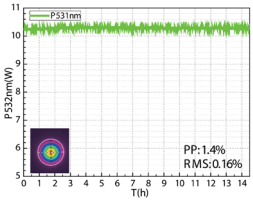
Range	2200-4800nm	
Technique	Difference-Frequency Generation	
Frequently used Wavelength	2923nm	3432nm
Application	Sr atom	Yb+
Power	2W	
Linewidth	20kHz	



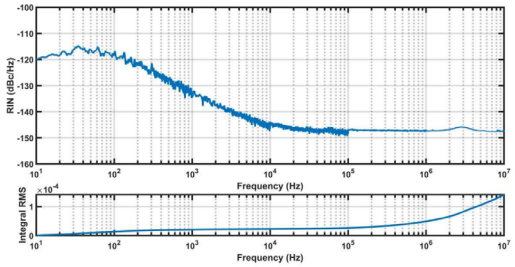


GREEN LASERS

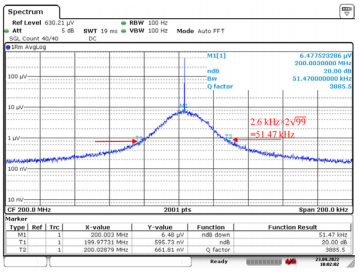
Wavelength	626nm-633nm	671nm-689-698nm	729nm	935nm
Power	10W	10W	10W	9W
Application	I2	Li/Sr	Ca+	Yb+
Linewidth(100us)	20kHz			
Power stability	0.75%, 3hrs			
PER	>23dB			
Beam quality	M^2<1.1			



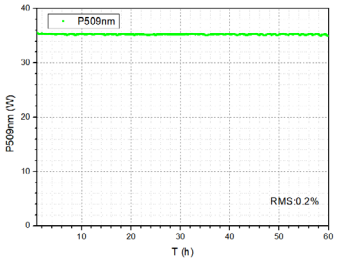
Power stability 626nm 10W



RIN, 689nm, 8W



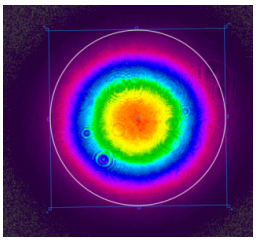
Linewidth 698nm 2.6kHz



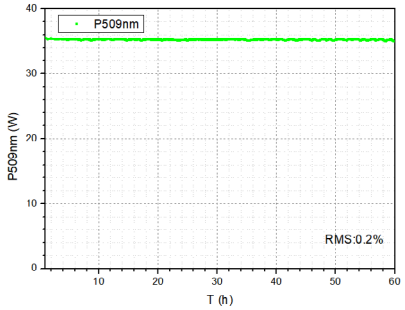
Power stability 729nm 10W

Resonance SHG laser 509nm-532nm-556nm

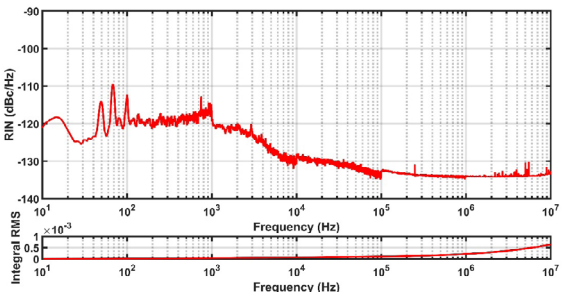
Wavelength	509nm-532nm-556nm	
Power	>40W@509nm >40W@532nm >20W@556nm	
Linewidth(100us)	20kHz	10kHz
Tuning range	0.35nm	5nm
Power stability	<0.75%, rms, 3hrs	
RIN	<0.1%(10Hz-10MHz)	
PER	>23dB	
Beam quality	M^2 <1.1	



Beam 509nm 40W



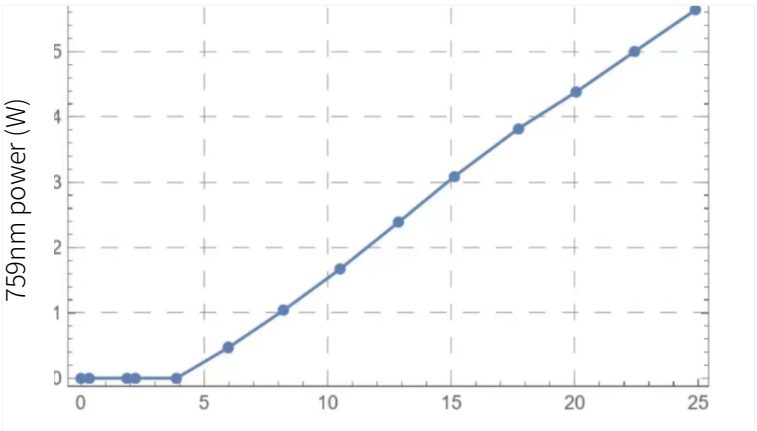
Power stability 509nm 35W



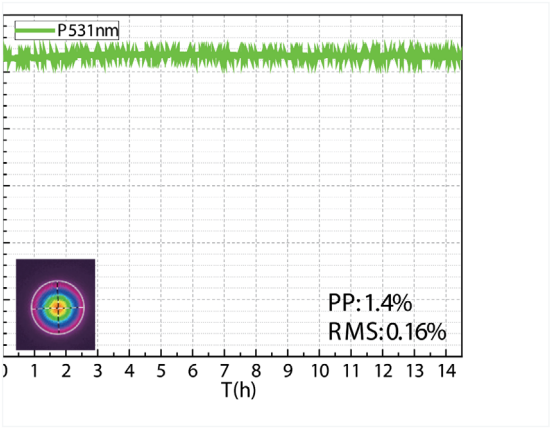
RIN, 532nm, 30W

GREEN LASER FOR PUMPING TI:SAPPHIRE

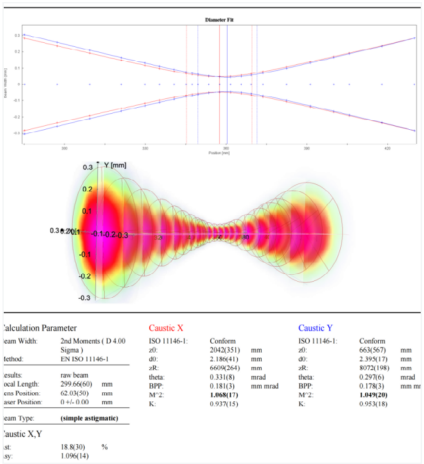
Wavelength	532nm
Power	>80W
Linewidth(100us)	<50kHz
Spectral Purity	>99.9%
Power stability	<0.5%, rms, 3hrs
RIN	<0.1%(10Hz-10MHz)
PER	>20dB
Beam quality	TEM_{00}, M^2<1.1
Ellipcity	0.9-1.1
Diameter	2.25mm±10%
Divergence	<0.4mrad
Pointing stability	<2urad/K



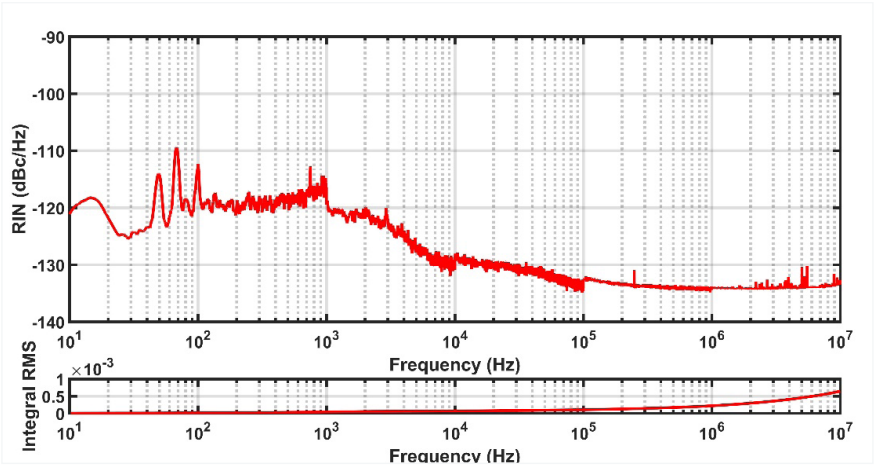
532nm pump laser power (W)



532nm power stability



Beam quality, 532nm 80W

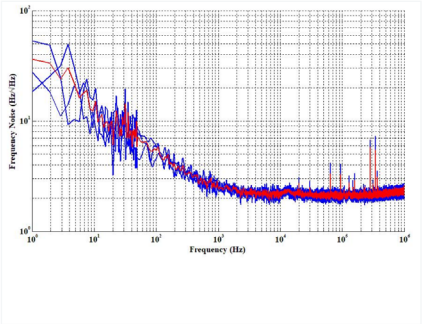


RIN, 532nm, 80W

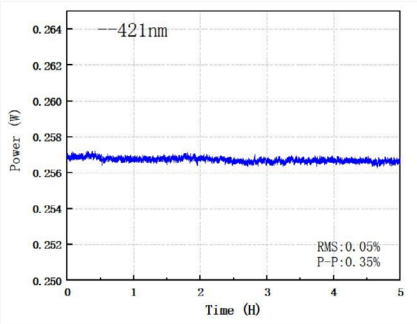
BLUE LASERS

Single pass laser 405-420-435-461-480nm

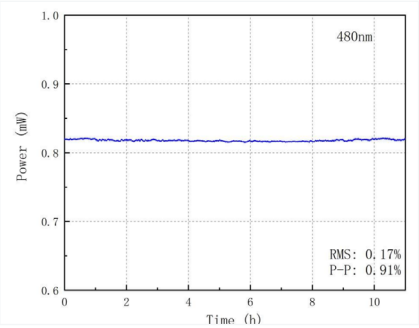
Wavelength	405nm	420nm	435nm	461nm	480nm
Power	2W				
Linewidth(100us)	40kHz				
Tuning range	0.25nm			5nm	
Power stability	<0.75%, rms, 3hrs				
PER	>23dB				
Beam quality	M^2<1.1				



Frequency noise at 480nm

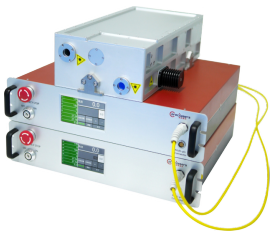


Laser power at 421nm

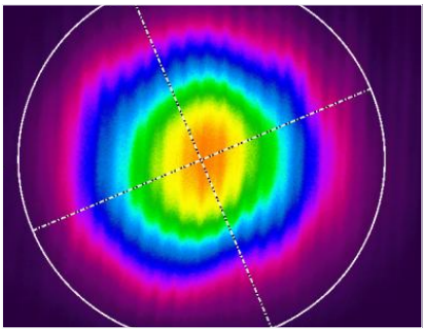


Laser power at 479-484nm

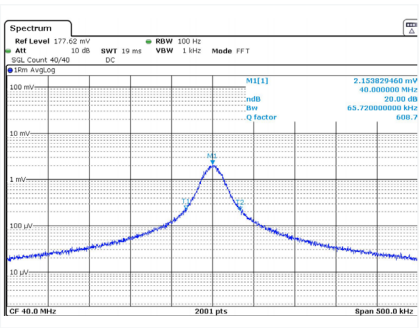
Resonance FHG laser 411-420-461-480nm



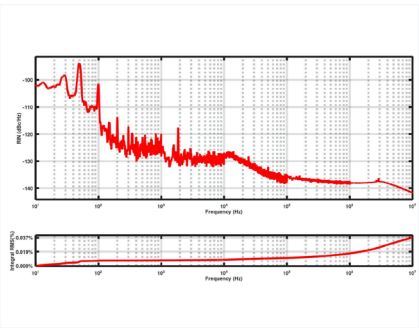
Wavelength	405nm	420nm	461nm	480nm	480nm
Power	8W				
Linewidth(100us)	40kHz				
Tuning range	0.25nm			5nm	
Power stability	<0.75%, rms, 3hrs				
PER	>23dB				
Beam quality	M^2<1.2				



Beam 480nm 8W



Linewidth 7kHz@461nm

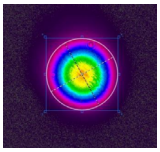


RIN 480nm 8W

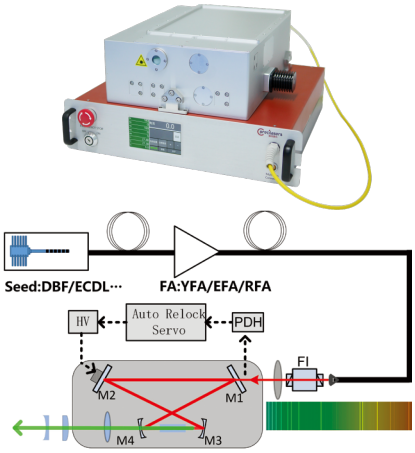
UV LASERS

Single pass UV laser 369nm-399nm

Wavelength	369nm	399nm
Power	6W	8W
Linewidth(100us)	30kHz	10kHz
Tuning range	0.33nm	0.25nm
Power stability	<0.75%, rms, 3hrs	
PER	>20dB	
Beam quality	M2<1.1	

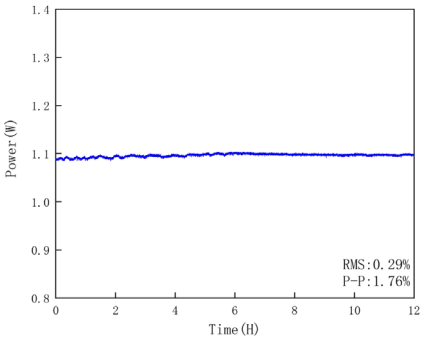


High power UV laser

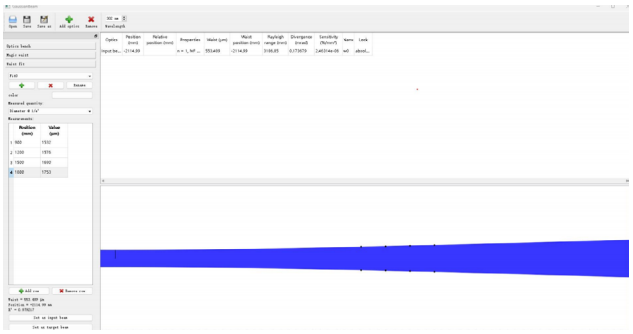


Wavelength	193nm	235-248-257-266nm	297-302nm	308-313-323nm
Power	30mW	1W	2W	2W
Linewidth(100us)	40kHz			
Tuning range	>0.15nm		>1nm	
Power stability	<0.75%, rms, 3hrs			
PER	>20dB			
Beam quality	M^2<1.3			
Lifetime	>10000hrs*			

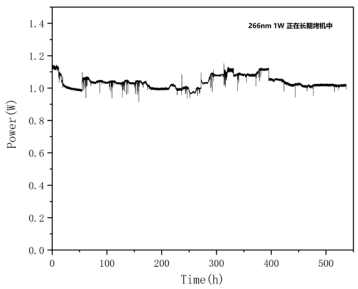
*Life time depend on the wavelength and power



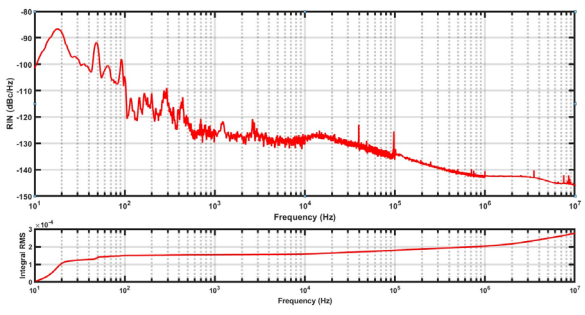
Power stability 302nm 1W



Beam quality, M^2<1.1 302nm 1W



Lifetime test@266nm



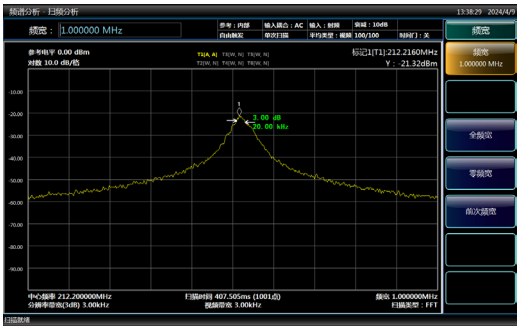
RIN 313nm 2W

DUAL-FREQUENCY LASER

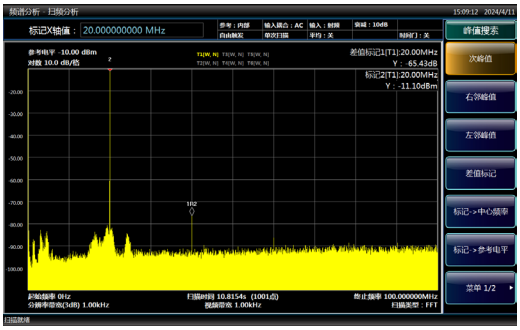
780nm dual-frequency laser

633nm dual-frequency laser

Wavelength	633nm	780nm
Power	>20mW	>20mW
Linewidth(100us)	<20kHz	
Delta-Frequency	2-30MHz, tunable	
Frequency stability	<1ppm@1hrs	
SNR	>60dBc((SPAN 0.1MHz, RBW 50Hz)	
Power stability	<0.75%, rms, 3hrs	
PER	>20dB	
Beam quality	TEM_{00}, M^2<1.1	
Output	Two PM fibers	



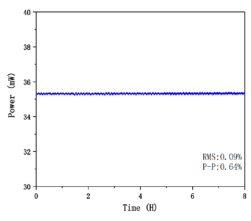
Linewidth 20kHz@633nm



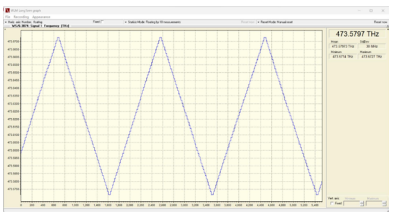
SMSR >60dB

SWEPT-WAVELENGTH LASER

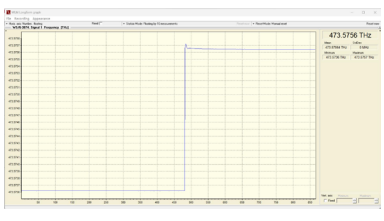
Wavelength	633nm	775nm
Power	>40mW	>40mW
Linewidth(100us)	<200kHz	
Frequency stability	<1ppm@1hrs	
Sweep range	200GHz	350GHz
SNR	>60dBc((SPAN 0.1MHz, RBW 50Hz)	
Power stability	<0.75%, rms, 3hrs	
PER	>20dB	
Beam quality	TEM_{00}, M^2<1.1	
Output	PM fibers	



Power stability



Frequency sweeping 200GHz

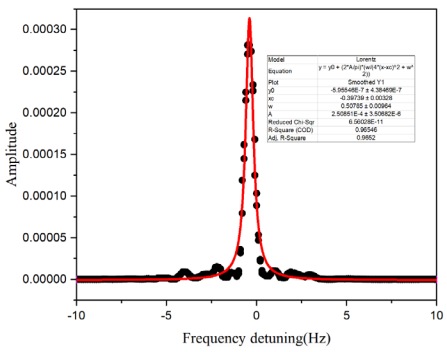


Frequency jumping 2GHz

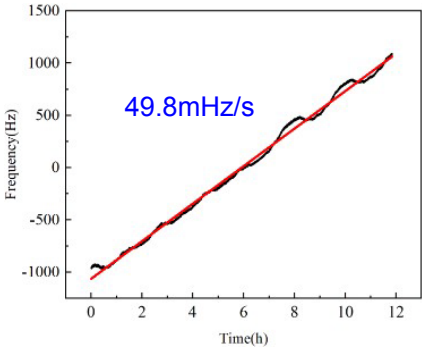
CLOCK LASERS

698nm-578nm-729nm-1762nm-467nm-435nm-

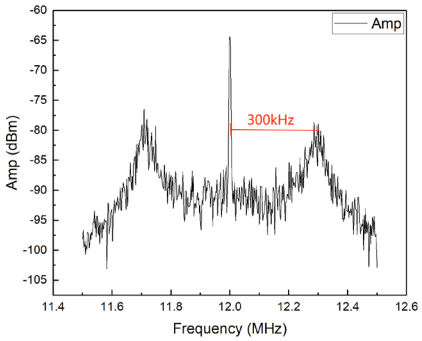
Atoms/Ion	Yb	Sr	Yb+	Ca+	Sr+	Hg+	Al+
Wavelength	578nm	698nm	435nm	729nm	674nm	282nm	267nm
Power	5W	10W	5W	8W	8W	1W	1W
Linewidth (100us)	20kHz	20kHz	40kHz	20kHz	20kHz	60kHz	40kHz
Fast tuning bandwidth	500kHz	500kHz	1MHz	500kHz	500kHz	1MHz	500kHz



Linewidth: 0.5Hz

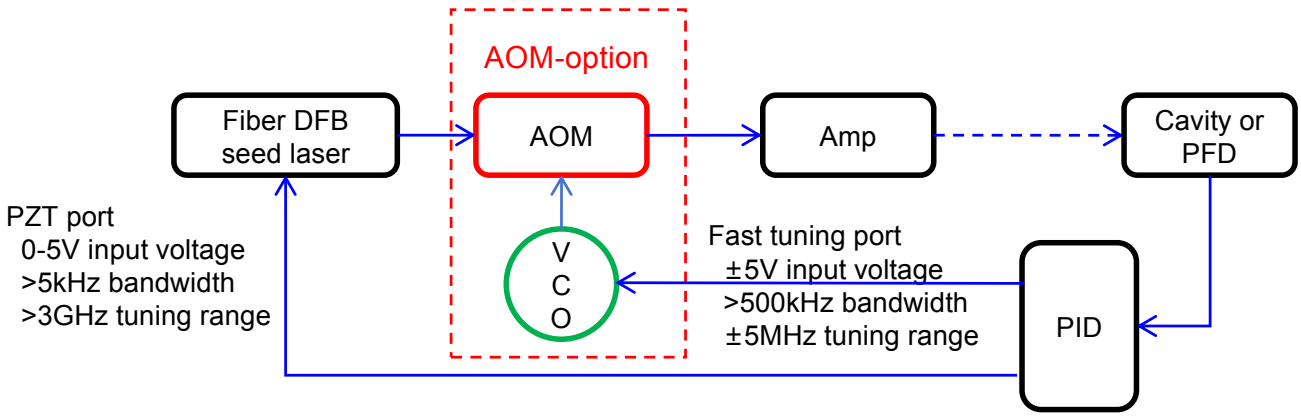


Drift: 50mHz/s



Locking bandwidth >300kHz

- All lasers can be stabilized to <0.5Hz linewidth
- Locking with a 200 000 finesse FP cavity
- PDH servo: Precilock-PDH, with dual output, 3MHz & 8MHz bandwidth
- Never mode hop, keep locking for several months
- Almost linear tuning to temperature, autolocking easily
- With FECL seed laser, Current tuning bandwidth > 1MHz
- With AOM option, AOM tuning bandwidth:>500kHz



FREQUENCY STABILIZATION

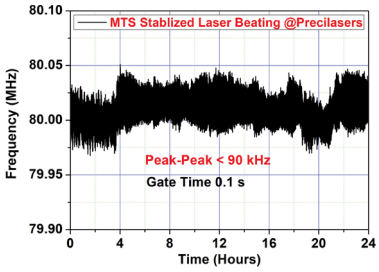
Precilock-PDH: PDH/MTS/SAS locking unit

Modules	Modulation & De-modulation unit Analog PID controller High voltage amplifier(optional)
Modulation frequency	10kHz-100kHz & 3MHz-30MHz
PID channel	2
PID bandwidth	8MHz
Scan	2Hz
High voltage option	0-100V
PDH locking level	<0.5Hz

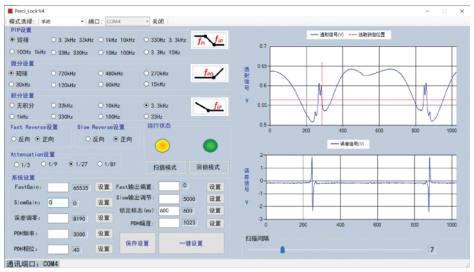
MTS/SAS optical unit

Laser & MTS optical unit & Precilock-PDH

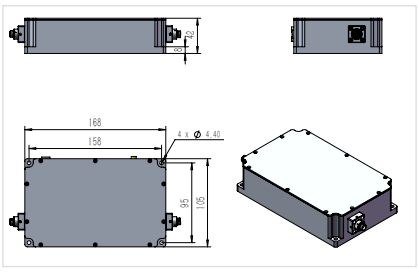
Modules	Fiber coupled Rb/Cs/I2 cell PD, EOM includede
Locking scheme	MTS/SAS/EIT
Stability	<100kHz@24hrs, MTS, Rb
Temperature	-20°C ~ 50°C
Vibration	<0.5g
Connector	PM fiber, FC/APC



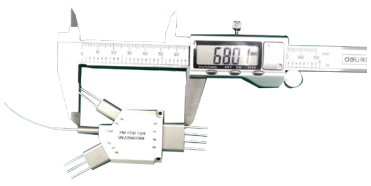
MTS stability <100kHz@24hrs



MTS error signal

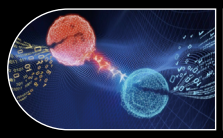


Fiber splitter

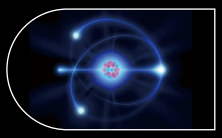


Wavelength	500-2000nm
Extra loss	<1.5dB
PER	>23dB
Channel	user defined 128channels available
Max power	<5W@780nm

precilasers
频准激光

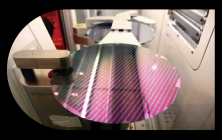


Quantum computation



Quantum precision measurement

lithography



Automated Optical Inspection

• Sr^+

Wavelength	422nm	1092nm	674nm	1033nm
Max power	5W	100W	8W	100W

• Cs

Wavelength	852nm	894nm	509nm	318nm
Max power	30W	10W	30W	1W

• Ca^+

Wavelength	729nm	423nm	397nm	866nm	854nm
Max power	15W	8W	6W	15W	20W

• Yb

Wavelength	399nm	556nm	578nm	759nm	649nm
Max power	2W	20W	15W	20W	8W

• Ba^+

Wavelength	1762nm	650nm	614nm	493nm	455nm
Max power	10W	8W	8W	2.5W	1W

• Yb^+

Wavelength	369nm	935nm	467nm	435nm	638nm	760nm
Max power	0.5W	5W	1.5W	5W	10W	2W

• Na

Wavelength	589nm
Max power	30W

• Be^+

Wavelength	313nm
Max power	2W

• Li

Wavelength	671nm
Max power	8W

• Al^+

Wavelength	266nm
Max power	1W

• Dy

Wavelength	421nm	741nm
Max power	8W	3W

• K

Wavelength	767nm	770nm
Max power	8W	6W

• Sr

Wavelength	461nm	679nm	689nm	698nm	813nm	707nm
Max power	6W	8W	10W	10W	30W	10W

• Rb

Wavelength	780nm	420nm	1013nm	795nm	776nm	480nm	297nm
Max power	20W	8W	100W	4W	20W	5W	1W

Contact

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