

FIBER LASERS & Solutions

IR - Up to 50W

1064

1030

976

ALS IR CW series

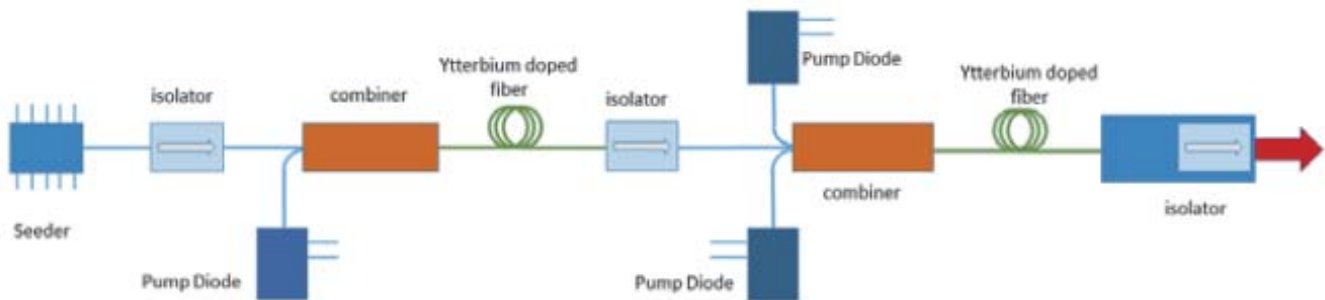
- Atom trapping
- Atom cooling
- Bose-Einstein Condensate
- Laser pumping
- Nonlinear frequency conversion
- Control - measurement
- Spectroscopy IR



When specifications & actual performances matter

ALS IR CW series

ALL Fiber based MOPA Technology



ALS Superior laser technology key features

TEM₀₀ mode

Long coherence length

$M^2 < 1.1$

Single frequency version

Single mode

Ultra-low noise

Excellent pointing stability

Ultra stable output power

High polarization ratio and stability

Coolerless laser head

Compact design

Maintenance free - long life

Low power consumption

OEM versions available

Versatility & Modularity

200W 1064nm CW setup: Azur Light Systems has designed a 4x50W channel mutually coherent laser system.

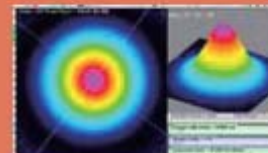
Based on a single seeder, this unique modular setup is used to reach advanced experimental conditions in **Atom Cooling research**. Power scaling to higher powers is possible.

Power stability, low noise, frequency locking as well as pointing stability and beam profile performances were the key features.

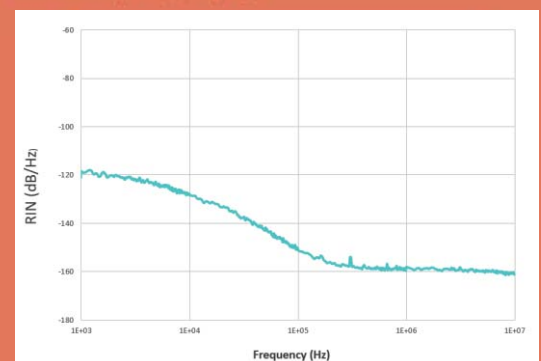
Azur Light Systems (ALS)

develops, manufactures and sells worldwide fiber laser technology at new wavelengths for scientific, industrial and bio-medical applications. Representing a veritable breakthrough in the laser market, and offering many advantages in terms of stability, robustness and ease of integration, this innovative technology offers significant performance advantages over other solid state laser technologies.

Our single frequency single mode infrared lasers offer unique performance in terms of low noise and high power, combined with the inherent efficiency and stability of fiber lasers.



With a RIN of less than -120 dBc/Hz (100Hz - 10MHz) at 50W output power, ALS infrared lasers are perfectly suited for many applications requiring very low noise sources such as metrology, optical trapping, cooling of atoms or optical pumping.



Typical RIN of ALS IR Fiber Laser in constant current Mode

SPECIFICATIONS

IR High Power Fiber Lasers with internal seeder			Unit
Wavelengths ⁽¹⁾	976	1030 or 1064	nm
Output power	5, 10, ...	5, 10, ..., 50*	W
Output power Tunability	1 to 100 (10 to 100 recommended)		%
Beam quality	M2 < 1.1		-
Beam diameter « free space »	1 ± 0,1 (other upon request)		mm
Beam divergence ½ ang.	< 0.85		mrad (FW@1/e ²)
Spatial mode	TEM ₀₀		-
Spectral width			
- single frequency ⁽²⁾	< 50		kHz
- narrow bandwidth ⁽⁵⁾	< 60		pm
Power stability			
short term	< ± 0.3		%
over 8 hrs.	< ± 0.5		%
Noise [100Hz - 10MHz]:			
- single frequency	< 0.05		% rms
- narrow bandwidth ⁽³⁾	< 0.2		
Frequency stability ⁽³⁾	< 0.1		pm
Output polarisation	Polarized > 100:1		-
Pointing stability	< ± 0.5		µrad/°C
Output ⁽⁴⁾	Free space laser head		-
Laser control	Multi-turn potentiometer, Touch screen, Analog voltage		-
Supply requirements	90-240V/50-60Hz		-
Electrical power consumption	200<...<300		W
Cooling	Air cooled		-

*For 50W version as we include a high power 35dB isolator the actual output power from the head is >45W

(1): Other wavelengths available on request.

(2): Linewidth reduction down to 3kHz available as an option with an external seeder rack.

(3): For single frequency version only. Measured over 8 hours and temperature variation < 3°C.

(4): Optional output: PM980 / HI1060 / LMA / Collimated fiber / Multiple output beam splitting depending on the fiber laser power.

(5): narrow bandwidth only available for the 976nm series.

Options: external ALS seeder (FC/APC) or external tunable (thermal & piezo) seeder (FC/APC)

Dimensions	
Laser Rack	480 x 460 x 130mm
Laser Heads	up to 10W 150 x 95 x 40mm or >10W 330 x 116 x 80mm



About 1,5 meters cable length between rack and the beam output from the laser head
Coolerless laser head
19" 3U air cooled power unit



Customized optical beam output on demand

- Beam splitting: 1:3 or more, free space or fibered
- Beam shaping
- Advanced optical setup

SPECIFICATIONS

	High Power Standard optical Amplifiers for FC/APC external seeder			Unit
Wavelengths ⁽¹⁾	977	1035_1052	1053_1080	nm
Output power	5, 10, ...	5, 10, ..., 50*		W
Output power Tunability	1 to 100 (10 to 100 recommended)			%
Beam quality	M ² < 1.1			-
Beam diameter « free space »	1 ± 0,1 (other upon request)			mm
Beam divergence ½ ang.	< 0.85			mrاد (FW@1/e ²)
Spatial mode	TEM ₀₀			-
Input optical power	10 to 100 (1 to 50 on demand)			mW
Power stability	< ± 0.3 (short term) < ± 0.5 (over 8 hours)			% %
Noise [100Hz - 10MHz]:	Seeder dependent (< 0.05 with ALS seeder)			% rms
Frequency stability	Seeder dependent (< 0.1 with ALS seeder)			pm
Output polarization	Polarized > 100:1			-
Pointing stability	< ± 0.5			μrad/°C
Output ⁽²⁾	Free space laser head			-
Laser control	Multi-turn potentiometer, Touch screen, Analog voltage			-
Supply requirements	90-240V/50-60Hz			-
Electrical power consumption	200<...<300			W
Cooling	Air cooled			-

*For 50W version as we include a high power 35dB isolator the actual output power from the head is >45W

(1): the effective standard spectral domain is define at ± 4nm from the selected central wavelength except at 977nm ± 2nm. Extended wavelength ranges are available on demand.

(2): other on demand

For specific wavelengths, higher output powers or OEM designs, contact us.



Azur Light Systems company is continuously investing in advanced fiber laser technology development. We are proud of our products and the customer satisfaction endorsed by the most recognized research labs and companies throughout the world. Our Exclusive partners in North America, Japan, China and Germany are locally providing the most efficient support to our customers

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