

Ultra Narrow Line Width Stable Laser

(1550 nm, PM, narrow line, 100mW)



DATASHEET

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Agiltron produce Ultra Narrow Line Width Stable Lasers. It features, single mode, single frequency, single longitudinal mode, polarization maintaining output, high optical power, excellent output stability over a wide temperature range and without mode hopping, high efficiency, low cost, and high reliability. The unit is made based on Er-doped fiber and distributed feedback Bragg grating seed technologies. It incorporates extra-cavity to achieve low phase and low relative intensity noise (RIN). The laser source is covered by a 1-year warranty.

The laser source can be configured as a module or a turn key unit with build-in controller for lab use. Agiltron also provide customers design. We provide output beam collimator, as well as attional wavelength stabilization choices.

Applications

- Coherent LiDAR
- Hydrophone
- Optical Sensing
- Laser Spectroscopy
- Atomic Physics
- Coherent Communication

Features

- Compact
- Ultra-Stable
- Low Cost
- High Reliability
- High Efficiency

Specifications

Parameter	Min	Typical	Max	Unit
Fixed Wavelength	1530		1572	nm
Output Power	5		100	mW
Output Mode	CW, Single Frequency, Single Longitudinal			
Linewidth (FWHM)		150	1	kHz
Polarization Extinction Ratio	20	23		dB
Beam Quality		1.05	1.1	M ²
Output Power Stability (30 m warm-up)		0.5	1	%
Output Isolation	10		100	%
RIN Peak Frequency	300	400	500	kHz
RIN Peak		-105		dBc/Hz
Phaser Noise (1m OPD)		70@100Hz		Urad/√Hz
		7@10kHz		
		0.7@100kHz		
SMSR (50pm resolution)	60		70	dB
Wavelength Thermal Tuning	0.6		1	nm
PZT Wavelength Tuning		Optional		
Output Isolation	50			dB
Modulation Frequency	DC	10	20	kHz
Modulation Wavelength Range	8		10	GHz
Output Fiber Type	Panda	1550		
Operating Temperature	Standard	0	60	°C
	Special version	-30	85	
Storage Temperature	-40		100	°C
Weight			0.5	kg
Dimension	145 x 100 x 25			mm

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Electrical Control

Single Frequency Fiber Laser	Minimum	Typical	Maximum	Unit
Control Interface		RS485		
Digital Signal Level (TTL)	0		5	V
DC Power Supply			12	V
Power Consumption			50	W

1. Wavelength can be thermally tuned via software upon request;



Ordering Information (Part Number)

Prefix	Package	Linewidth	Isolator	Collimator	Monitor Port	Wavelength Tuning	Intensity Modulation	Average Power	Connector ^[1]
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
UNLL-	Turnkey = 1 Module = 2 Special = 0	150kHz = 1 300kHz = 3	Yes = 1 No = 0	No = 0 Yes = 1	Yes = 1 No = 2 Special = 0	No = 1 Yes = 2 Special = 0	No = 1 Yes = 2 Special = 0	10 mW = 01 20 mW = 02 30 mW = 03 50 mW = 05 100 mW = 10	FC/PC = 1 FC/APC = 2 LC/PC = 3 Special = 0

[1]. The connector cannot be installed directly onto bare fiber, as it is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer can remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SM28 fiber and decreases further with smaller core fibers.

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

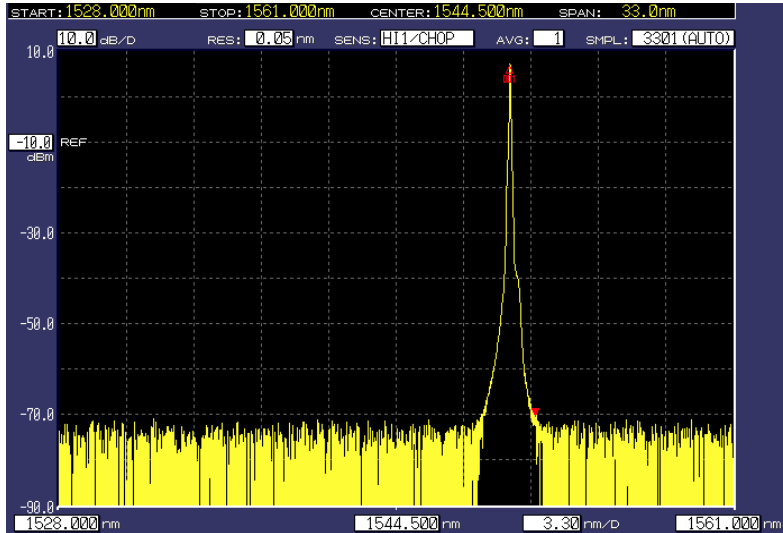
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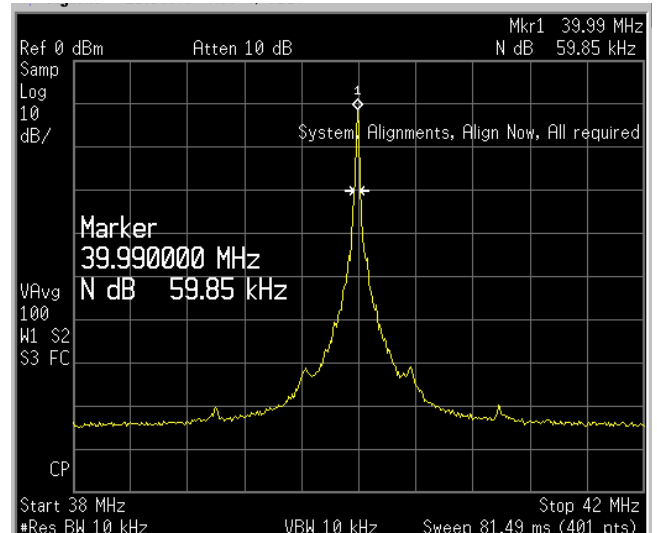


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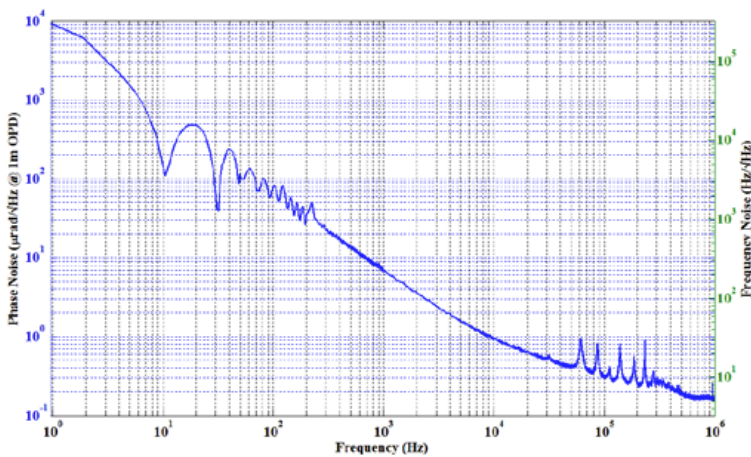
Typical Measured Spectrum



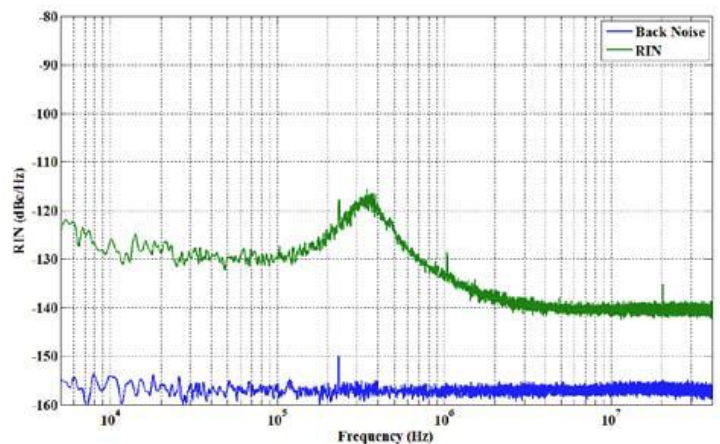
Typical Spectrum



Linewidth



Phase & Frequency Noise



Relative Intensity Noise (RIN)