OZ Optics
shop.ozoptics.com
www.ozoptics.com

ULTRA NARROW LINE WIDTH STABLE LASER SOURCE

Ultra Narrow Line Width Stable Laser Source

Features:

- Single longitudinal mode
- Narrow linewidth
- High SMSR (side mode suppression ratio)
- Selectable peak wavelength on C-band: ITU-T channels, DWDM 100GHz or custom
- Excellent wavelength stability, long life time
- Low RIN (Relative Intensity Noise)
- Wavelength tunability
- High power versions available
- Power modulation available
- Polarization maintaining or singlemode fiber output available

Applications:

- Sensor: Brillion Distributed Temperature and Strain Sensor
- Oil and gas: monitoring, testing, leak detection, exploration systems
- LIDAR
- Fiber Laser seeding
- Metrology
- Test & Measurement

Product Description:

OZ Optics' Ultra Narrow Line Width Stable Laser Source is produced using a high performance external cavity laser (ECL) design. The compact and robust design offers very low sensitivity to vibration, and acoustic noise. This ensures an excellent wavelength stability during device lifetime.

The narrow linewidth bench top module is the ideal candidate for applications such as: LIDAR, Sensing, Injection Seeding, Spectroscopy, Coherent communication, Oil and Gas exploration.

The source offers an ultra low RIN (<-140dB/Hz @>1KHz) noise, as well as low phase and frequency noise. Fast wavelength tuning and power modulation are offered upon request.

Sources are available with either polarization maintaining or singlemode fiber, with a minimum output power of 10mw (higher power available upon request).

Please contact OZ Optics for details.

Ordering Information For Standard Parts:

Bar Code	Part Number	Description
New	NLFOSS-01-3A-8/125-1550-P-10-W-0	Ultra Narrow Line Width Stable Laser Source with 1550 nm ± 10 nm wavelength, 10 mW output, for 8/125 core/cladding PM fiber, with angled FC/PC receptacle.
New	NLFOSS-01-3A-9/125-1550-S-10-W-0	Ultra Narrow Line Width Stable Laser Source with 1550 nm ± 10 nm wavelength, 10 mW output, for 9/125 core/cladding singlemode fiber, with angled FC/PC receptacle.
2737	POWER CORD - EUROPE	Power cord for operation in Europe
2736	POWER CORD - UK	Power cord for operation in the United Kingdom

Standard Product Specifications:

Parameter		Specifications		
Available wavelengths[1]		1550 nm, ITU-T Channels		
Peak Wavelength accuracy [2]		±10 nm (nominal)	±2 nm	±40 pm ITU C-Band
Linewidth[3]		<= 15 kHz Line Width		
Optical power[4]		10 mW – standard (20 mW, 50 mW & 100 mW available upon request)		
Optical Power Stability (Typical) [5]		±5%		
Frequency Stability		<±5 MHz, Free Running Over 1 hour		
		<±30 MHz, Free Running Over 8 Hours		
Side Mode Suppression Ratio (SMSR)		> 40 dB		
Relative Intensity Noise (RIN)		<140 db/Hz @ >1 KHz		
Turning Range (Optional)		200 MHz typical (Sinusoidal Modulation at 10 kHz; Input Voltage 4V P-P)		
Optical Isolator		> 40 dB		
Polarization Extinction Ratio		> 20 dB (PM Version Only)		
Available receptacles		FC/APC, Angled SC		
Power supply[6]		100/240 V AC 50/60 Hz		
Dimensions (W x L x H)		260 x 209 x 90 mm		
Temperature range	Operating	15 to + 50 °C; <85% RH non condensing		
	Storage	-20 to + 80°C; <90% RH non condensing		

Note:
[1] Typical wavelengths specific wavelength can be offered over C-Band.
[2] Customer to specify. ITU Channels can be offered upon request. Refer to order using parameter for customer part.
[3] Line Width will have a Lorentzian profile.
[4] Higher powers are available on request. Please contact OZ Optics for further information
[5] Tested at 1550 nm wavelength, 10 mW output, with FC/APC receptacle, 9/125 singlemode fiber, at 23°C, after 30 minutes warm up.
[6] North American power cord supplied as standard. For Europe and the UK, please refer to the standard parts list for other power cords.

Ordering Examples For Standard Parts:

A customer from the US needs a 1550 nm laser source with 10 mW output power for 9/125 µm core/cladding singlemode fiber, and an angled FC/APC receptacle.

Bar Code	Part Number	Description
New	NLFOSS-01-3A-9/125-1550-S-10-W-0	Ultra Narrow Line Width Stable Laser Source with 1550 nm ±10 nm wavelength, 10 mW output, for 9/125 core/cladding singlemode fiber, with angled FC/APC receptacles.

Ordering Information For Custom Parts:

OZ Optics welcomes the opportunity to provide custom designed products to meet your application needs. As with most manufacturers, customized products do take additional effort so please expect some differences in the pricing compared to our standard parts list. In particular, we will need additional time to prepare a comprehensive quotation, and lead times will be longer than normal. In most cases non-recurring engineering (NRE) charges will be necessary. These points will be carefully explained in your quotation, so you will be as well-informed as possible when making your decision. We strongly recommend buying our standard products.

Questionnaire For Custom Parts:

1. What is the wavelength required for the laser source?
2. What is required maximum output power of the laser source?
3. What type of optical receptacle is required?
4. What size and type of fiber are you using?
5. What level of stability is required?

Receptacle Style Source:

NLFOSS-01-X-a/b-W- F-P-Y-T

X = Receptacle or connector codes:[1]
3A = Angled NTT- FC/PC
SCA = Angled SC

a/b[1] = Fiber core/cladding size, in µm
9/125 for 1550 singlemode fiber
8/125 for 1550nm PM fiber

W = Wavelength in nm: 1550
DWDM-100GHz ITU-Channels

T = Tunability mode
O = None
F = Wavelength tuning
M = Modulation
FM = Wavelength & Modulation

Y = Peak wavelength accuracy:
W = 1550 nm ±10 nm
N = 1550 nm ±2 nm
C = 100 GHz DWDM channel

P = Output Power, in mw (10 mW standard)
up to 100 mW (Max)

F = Fiber type:
S = Singlemode
P = Polarization Maintaining

Pigtail Style Source:

NLFOSS-11-a/b-W-F-P-X-JD-L-Y-T

a/b[1] = Fiber core/cladding size, in µm
9/125 for 1550 singlemode fiber
8/125 for 1550nm PM fiber

W = Wavelength in nm: 1550
DWDM-100GHz ITU-Channels

F = Fiber type:
S = Singlemode
P = Polarization Maintaining

P = Output Power, in mW (10 mW standard)
up to 100 mW (Max)

T = Tunability mode
O = None
F = Wavelength tuning
M = Modulation
FM = Wavelength & Modulation

Y = Peak wavelength accuracy:
W = 1550 nm ±10 nm
N = 1550 nm ±2 nm
C = 100 GHz DWDM channel

L = Fiber length, in meters

JD = Fiber jacket type:
3 = 3 mm OD Kevlar-reinforced PVC cable
3AS = 3 mm Stainless steel armored cables

X = Receptacle or connector code:[1]
3A = Angled NTT- FC/PC
SCA = Angled SC

Notes:

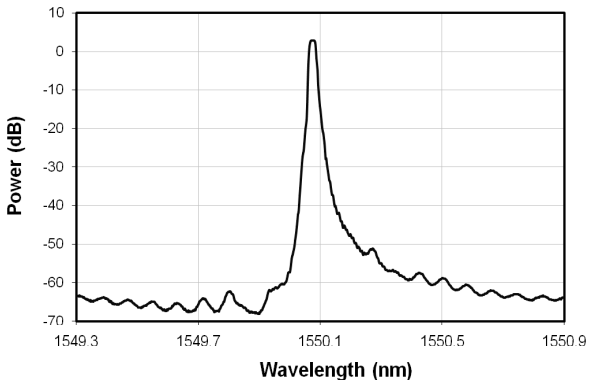
[1] See the OZ Optics Standard Tables data sheet for fiber sizes, jacket sizes and other connectors

Ordering Examples For Custom Parts:

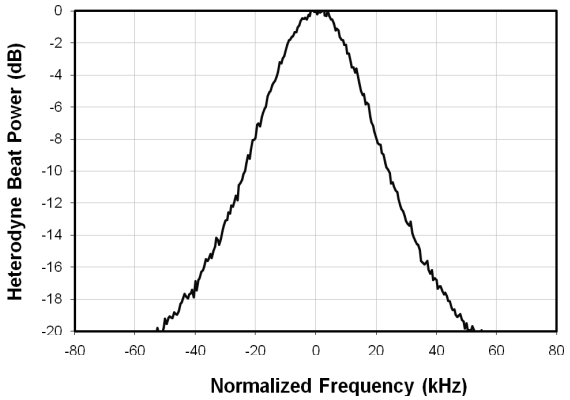
A customer needs a 1550.12 nm laser diode source and 10 mW output power, for singlemode fiber with an angled FC/APC receptacle. He wants the output power to be wavelength tunable.

Bar Code	Part Number	Description
N/A	NLFOSS-01-3A-9/125-1550.12-S-10-C-F	Ultra Narrow Line Width Stable Laser Source with 1550.12 nm wavelength, 10 mW output, for 9/125 core/cladding singlemode fiber, with angled FC/APC receptacles. Wavelength tuning enabled.

Typical Optical Spectrum



Typical Linewidth Spectrum



Typical RIN