

CHAPTERS

Coherent Sources

Incoherent Sources

Quantum Electronics

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Accessories

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Pigtailed Diodes

Fiber-Coupled Laser Sources

WDM Laser Sources

HeNe Lasers

Laser Diode Modules

Tunable Lasers

Femtosecond Lasers

Optical Amplifiers

High-Power, Single-Frequency Lasers (Page 1 of 2)

- Output Centered at 1310, 1550, or 1620 nm
- <100 kHz Linewidth
- 1.5 m of SM or PM Fiber
- FC/APC Connector
- Industry-Standard, 14-Pin Butterfly Package
- Integrated Thermistor, TEC, and Optical Isolator



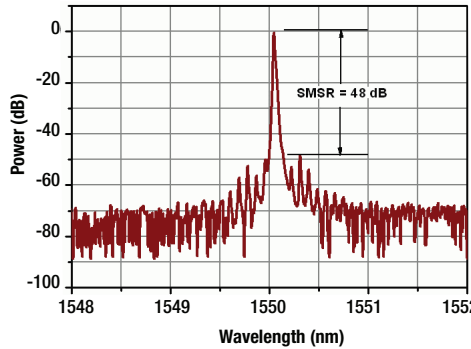
NEW
products

Customer-Specified Wavelengths Available (Call Technical Support for Details)

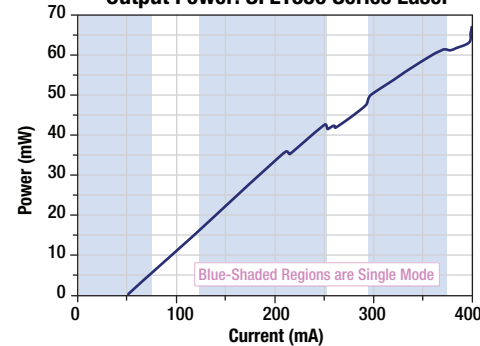
These single-frequency laser sources have spectral properties comparable to a DFB laser but with narrower linewidth and higher output power. Applying proprietary stabilization techniques, a single-frequency, external cavity semiconductor laser is provided in a compact, 14-pin butterfly package. These lasers are compatible with any standard, 14-pin laser diode mount, including Thorlabs' LM14S2 14-pin butterfly mount (see page XXX).

The single-frequency laser contains an integrated thermoelectric cooler, thermistor, and optical isolator with a single mode or polarization-maintaining output fiber. For current and temperature control, the SFL series is compatible with standard laser diode drivers and temperature controllers, including the ITC4001 (pages XXX - XXX) and LDC1300B (page XXX), the latter of which includes a 14-pin butterfly laser diode mount.

Typical Single Mode Lasing Spectrum: SFL1550 Series Laser



Output Power: SFL1550 Series Laser



Note: Unlike a DFB laser, these lasers are not unconditionally single frequency. While they are designed to provide high-power, single-frequency operation over a range of operating currents and temperatures, there are certain combinations where these lasers exhibit multimode operation. To assist the user in selecting the proper operating conditions, a datasheet, which provides the operating characteristics and single-frequency regimes of that particular laser, is provided with each unit.

ITEM #	SYMBOL	SFL1310S / SFL1310P			SFL1550S / SFL1		
		MIN	TYPICAL	MAX	MIN	TYPICAL	MAX
Center Wavelength	λ_p	1309.5 nm	1310 nm	1310.5 nm	1549.5 nm	1550 nm	1550.5 nm
Operating Current	I_{OP}	–	300 mA*	–	–	300 mA*	–
Output Power @ I_{OP}	P_o	25 mW	40 mW	–	25 mW	40 mW	–
Side Mode Suppression Ratio	SMSR	40 dB	45 dB	–	40 dB	45 dB	–
Linewidth	$\Delta\nu$	–	50 kHz	100 kHz	–	50 kHz	100 kHz
Threshold Current	I_{TH}	–	50 mA	–	–	50 mA	–
Slope Efficiency	$\Delta P/\Delta I$	–	0.2 mW/mA	–	–	0.2 mW/mA	–
Relative Intensity Noise	R_{IN}	–	-150 dB/Hz	–	–	-150 dB/Hz	–
Forward Voltage @ I_{OP}	V_F	–	1.5 V	1.8 V	–	1.5 V	1.8 V
Single-Frequency Continuous Tuning Range (1 kHz Rate)	Δf	–	3 GHz	–	–	3 GHz	–
Operation Chip Temperature	T_{CHIP}	–	25 °C**	–	–	25 °C**	–
Operation Case Temperature	T_{CASE}	10 °C	–	60 °C	10 °C	–	60 °C
TEC Current @ $T_{CASE} = 25$ °C	I_{TEC}	–	0.3 A	–	–	0.3 A	–
TEC Voltage @ $T_{CASE} = 25$ °C	V_{TEC}	–	0.6 V	–	–	0.6 V	–

*Device-specific operation current given on the data sheet supplied with the laser.
**Device-specific operation temperature given on the data sheet supplied with the laser.

High-Power, Single-Frequency Lasers (Page 2 of 2)

ITEM #	SFL1620S/SFL1620P			
CHARACTERISTIC	SYMBOL	MIN	TYPICAL	MAX
Center Wavelength	λ_p	1619.5 nm	1620 nm	1620.5 nm
Operating Current	I_{OP}	–	300 mA*	–
Output Power @ I_{OP}	P_o	25 mW	40 mW	–
Side Mode Suppression Ratio	SMSR	40 dB	45 dB	–
Linewidth	$\Delta\nu$	–	50 kHz	100 kHz
Threshold Current		–	50 mA	–
Slope Efficiency	$\Delta P/\Delta I$	–	0.2 mW/mA	–
Relative Intensity Noise	R_{IN}	–	-150 dB/Hz	–
Forward Voltage @ I_{OP}	V_F	–	1.5 V	1.8 V
Single-Frequency Continuous Tuning Range (1 kHz Rate)	Δf	–	3 GHz	–
Operation Chip Temperature	T_{CHIP}	–	25 °C**	–
Operation Case Temperature	T_{CASE}	10 °C	–	60 °C
TEC Current @ $T_{CASE} = 25$ °C	I_{TEC}	–	0.3 A	–
TEC Voltage @ $T_{CASE} = 25$ °C	V_{TEC}	–	0.6 V	–

*Device-specific operation current given on the data sheet supplied with the laser.

**Device-specific operation temperature given on the data sheet supplied with the laser.

ITEM #	\$	£	€	RMB	DESCRIPTION
SFL1310S	\$ 2,500.00	£ 1,800.00	€ 2,175.00	¥ 19,925.00	Single-Frequency Laser, 1310 nm, SM Fiber, FC/APC
SFL1310P	\$ 2,650.00	£ 1,908.00	€ 2,305.50	¥ 21,120.50	Single-Frequency Laser, 1310 nm, PM Fiber, FC/APC
SFL1550S	\$ 2,500.00	£ 1,800.00	€ 2,175.00	¥ 19,925.00	Single-Frequency Laser, 1550 nm, SM Fiber, FC/APC
SFL1550P	\$ 2,650.00	£ 1,908.00	€ 2,305.50	¥ 21,120.50	Single-Frequency Laser, 1550 nm, PM Fiber, FC/APC
SFL1620S	\$ 2,500.00	£ 1,800.00	€ 2,175.00	¥ 19,925.00	Single-Frequency Laser, 1620 nm, SM Fiber, FC/APC
SFL1620P	\$ 2,650.00	£ 1,908.00	€ 2,305.50	¥ 21,120.50	Single-Frequency Laser, 1620 nm, PM Fiber, FC/APC

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HeNe Lasers

Laser Diode Modules

Tunable Lasers

Femtosecond Lasers

Optical Amplifiers

Have you seen our...

Laser Diode Mounts and Drivers



LM14S2
89 mm x 89 mm x 32 mm



SR9A



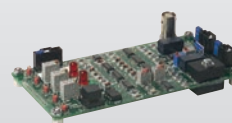
PRO8000



ITC4005



TTC001



IP500

- ◆ Mounts Support Our Ø5.6 mm, Ø9 mm, and 14-pin Butterfly Laser Diode Packages, Including Fiber Pigtailed Versions
- ◆ Integrated TEC Elements, Strain Relief Cables, and Collimation Packages Also Available

- ◆ Current Controllers Supply Up to 8 A of Current or Down to 1.5 μ A Current Resolution
- ◆ Temperature Controllers Support Thermistor Sensors, IC Sensors, and RTD Transducers.
- ◆ Constant Power and Constant Current Control Modes
- ◆ Dual Current/Temperature Controllers Available
- ◆ OEM Level Controllers for Integration into Larger Systems

Section begins
on page XXX

For more details, see pages XXX – XXX