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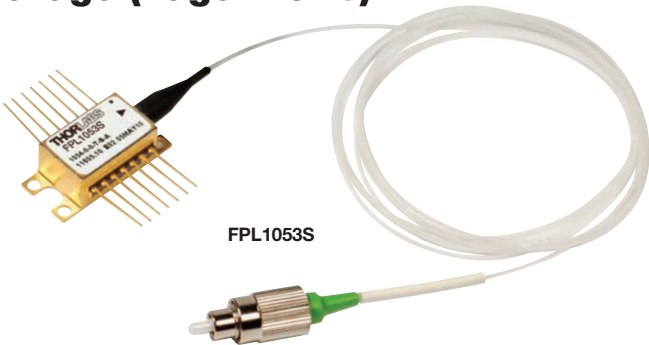
Fabry-Perot Lasers, Butterfly Package (Page 1 of 3)

- Center Wavelengths from 1310 to 2000 nm
- 14-Pin Butterfly Package with Integrated TEC and Thermistor
- Pigtailed with 1.5 m of SM or PM Fiber
- FC/APC Connectorized

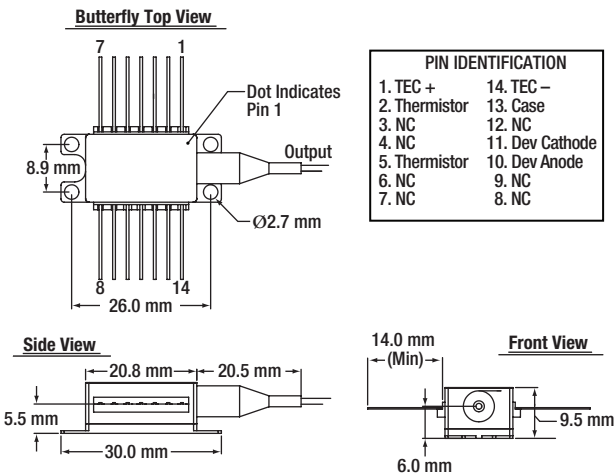
The FPL Series of Lasers are high-power, fiber-coupled Fabry-Perot Lasers based on state-of-the-art, quantum-well epitaxial layer growth and reliable ridge waveguide structure. Each butterfly-packaged laser is coupled to 1.5 m of FC/APC-connectorized SM or PM fiber. An integrated thermistor allows these lasers to be temperature controlled, thus stabilizing the lasing wavelength and power. The XL versions are premium-grade, hand-picked devices offering the highest power (see the specification tables on the following pages for details).

Driver Options

The LDC1300B butterfly LD/TEC controller and mount (featured on page 1483) is one possible way to operate these lasers. This LD/TEC controller and mount combination offers full PC control via RS232. Thorlabs also offers the LM14S2 mount (see page 1482) and ITC4000 series LD/TEC controller (see pages 1457 - 1459) for applications where PC control is not required.



FPL1053S

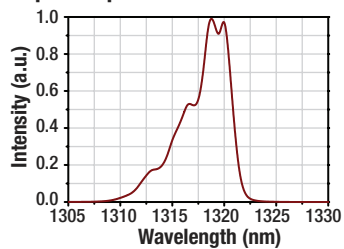


O-Band (1310 nm) Fabry-Perot Lasers

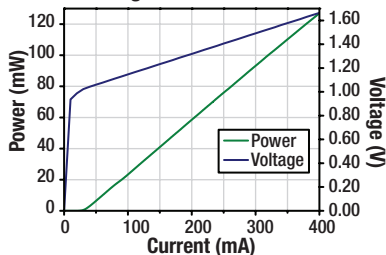
The FPL1053S and FPL1053P are 1310 nm, high-power, butterfly-packaged lasers coupled to 1.5 m of FC/APC-connectorized SM or PM fiber, respectively.

Typical Laser Performance

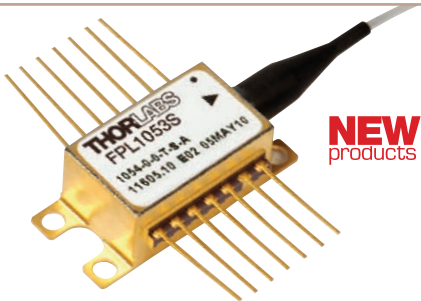
Optical Spectrum: FPL1053 Series



Optical Power and Forward Voltage: FPL1053 Series



FPL1053S



NEW
products

ITEM #	FPL1053S / FPL1053P			
Characteristic	Symbol	Min	Typical	Max
Center Wavelength	λ_c	1290 nm	1310 nm	1330 nm
Spectral Bandwidth (RMS)	$\Delta\lambda$	—	5 nm	15 nm
Output Power @ I_{OP}	P_O	100 mW	130 mW	—
Operating Current	I_{OP}	—	400 mA	500 mA
Threshold Current	I_{TH}	—	35 mA	55 mA
Forward Voltage	V_F	—	1.7 V	2.5 V
Slope Efficiency	$\Delta P/\Delta I$	0.25 W/A	0.35 W/A	—
Operation Chip Temperature	T_{CHIP}	—	25 °C	—
Operation Case Temperature	T_{CASE}	0 °C	—	70 °C
TEC Current	I_{TEC}	—	0.25 A	1.5 A
TEC Voltage	V_{TEC}	—	0.35 V	3.5 V
Thermistor Resistance	R_{TH}	—	10 k Ω	—

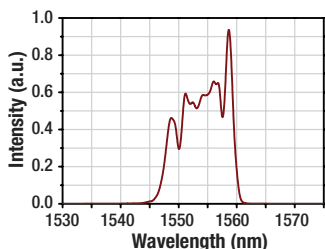
ITEM #	\$	£	€	RMB	DESCRIPTION
FPL1053S	\$ 1,270.00	£ 914.40	€ 1,104.90	¥ 10,121.90	Fabry-Perot Laser, 1310 nm, 130 mW, SM Fiber, Butterfly Package
FPL1053P	\$ 1,402.50	£ 1,009.80	€ 1,220.18	¥ 11,177.93	Fabry-Perot Laser, 1310 nm, 130 mW, PM Fiber, Butterfly Package

Fabry-Perot Lasers, Butterfly Package (Page 2 of 3)

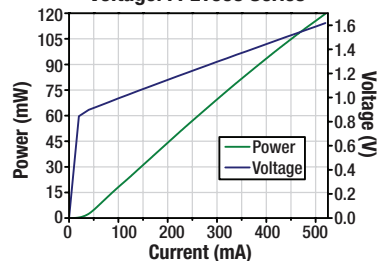
C-Band (1550 nm) Series Fabry-Perot Lasers

Typical Laser Performance

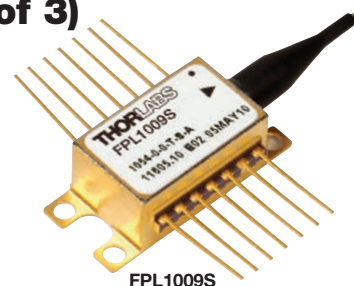
Optical Spectrum: FPL1009 Series



Optical Power and Forward Voltage: FPL1009 Series



The FPL1009S and FPL1009P are high-power, 1550 nm, Fabry-Perot Lasers that are coupled to 1.5 m of FC/APC-connectorized SM and PM fiber, respectively. The XL versions are premium-grade, hand-picked devices offering higher output power (see the table below for details).



FPL1009S

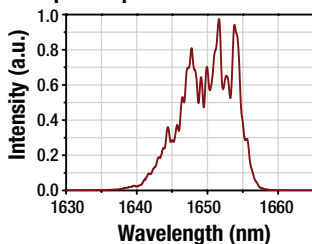
ITEM #		FPL1009S / FPL1009P			FPL1009SXL / FPL1009PXL		
Characteristic	Symbol	Min	Typical	Max	Min	Typical	Max
Center Wavelength	λ_c	1530 nm	1550 nm	1570 nm	1530 nm	1550 nm	1570 nm
Spectral Bandwidth (RMS)	$\Delta\lambda$	—	10 nm	20 nm	—	—	18 nm
Output Power @ I_{OP}	P_O	80 mW	100 mW	—	100 mW	—	—
Operating Current	I_{OP}	—	400 mA	500 mA	—	400 mA	500 mA
Threshold Current	I_{TH}	—	35 mA	55 mA	—	38 mA	45 mA
Forward Voltage	V_F	—	1.4 V	1.8 V	—	1.4 V	1.6 V
Slope Efficiency	$\Delta P/\Delta I$	0.2 W/A	0.3 W/A	—	0.2 W/A	0.3 W/A	—
Operation Chip Temp.	T_{CHIP}	—	25 °C	—	—	25 °C	—
Operation Case Temp.	T_{CASE}	0 °C	—	70 °C	0 °C	—	70 °C
TEC Current	I_{TEC}	—	0.18 A	1.5 A	—	0.25 A	1.5 A
TEC Voltage	V_{TEC}	—	0.5 V	3.5 V	—	0.35 V	3.5 V
Thermistor Resistance	R_{TH}	—	10 k Ω	—	—	10 k Ω	—

ITEM #	\$	£	€	RMB	DESCRIPTION
FPL1009S	\$ 1,270.00	£ 914.40	€ 1,104.90	¥ 10,121.90	Fabry-Perot Laser, 1550 nm, 100 mW, SM Fiber, Butterfly Package
FPL1009P	\$ 1,402.50	£ 1,009.80	€ 1,220.18	¥ 11,177.93	Fabry-Perot Laser, 1550 nm, 100 mW, PM Fiber, Butterfly Package
FPL1009SXL	\$ 2,540.00	£ 1,828.80	€ 2,209.80	¥ 20,243.80	Fabry-Perot Laser, 1550 nm, 100 mW (Min), SM Fiber, Butterfly Package
FPL1009PXL	\$ 2,805.00	£ 2,019.60	€ 2,440.35	¥ 22,355.85	Fabry-Perot Laser, 1550 nm, 100 mW (Min), PM Fiber, Butterfly Package

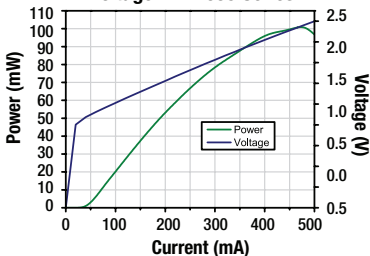
L-Band (1625 nm) and U-Band (1650 nm) Fabry-Perot Lasers

Typical Laser Performance

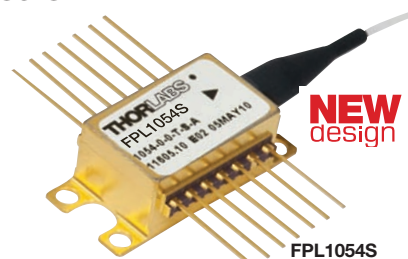
Optical Spectrum: FPL1059 Series



Optical Power and Forward Voltage: FPL1059 Series



The FPL1054 Series and FPL1059 Series Fabry-Perot lasers operate at 1625 nm and 1650 nm, respectively. This radiation is in the eye-safe wavelength range where the cornea and lens absorb the light before it can reach the sensitive retina. These lasers are available coupled to 1.5 m of FC/APC-connectorized SM or PM fiber.



FPL1054S

ITEM #		FPL1054S / FPL1054P			FPL1059S / FPL1059P		
Characteristic	Symbol	Min	Typical	Max	Min	Typical	Max
Center Wavelength	λ_c	1605 nm	1625 nm	1645 nm	1630 nm	1650 nm	1670 nm
Spectral Bandwidth (RMS)	$\Delta\lambda$	—	10 nm	20 nm	—	10 nm	20 nm
Output Power @ I_{OP}	P_O	60 mW	80 mW	—	60 mW	80 mW	—
Operating Current	I_{OP}	—	400 mA	500 mA	—	400 mA	500 mA
Threshold Current	I_{TH}	—	45 mA	65 mA	—	45 mA	65 mA
Forward Voltage	V_F	—	1.7 V	2.5 V	—	1.7 V	2.5 V
Slope Efficiency	$\Delta P/\Delta I$	0.15 W/A	0.25 W/A	—	0.15 W/A	0.25 W/A	—
Operation Chip Temp.	T_{CHIP}	—	25 °C	—	—	25 °C	—
Operation Case Temp.	T_{CASE}	0 °C	—	70 °C	0 °C	—	70 °C
TEC Current	I_{TEC}	—	0.25 A	1.5 A	—	0.25 A	1.5 A
TEC Voltage	V_{TEC}	—	0.35 V	3.5 V	—	0.35 V	3.5 V
Thermistor Resistance	R_{TH}	—	10 k Ω	—	—	10 k Ω	—

ITEM #	\$	£	€	RMB	DESCRIPTION
FPL1054S	\$ 1,320.00	£ 950.40	€ 1,148.40	¥ 10,520.40	Fabry-Perot Laser, 1625 nm, 80 mW, SM Fiber, Butterfly Package
FPL1054P	\$ 1,450.00	£ 1,044.00	€ 1,261.50	¥ 11,556.50	Fabry-Perot Laser, 1625 nm, 80 mW, PM Fiber, Butterfly Package
FPL1059S	\$ 1,350.00	£ 972.00	€ 1,174.50	¥ 10,759.50	Fabry-Perot Laser, 1650 nm, 80 mW, SM Fiber, Butterfly Package
FPL1059P	\$ 1,475.00	£ 1,062.00	€ 1,283.25	¥ 11,755.75	Fabry-Perot Laser, 1650 nm, 80 mW, PM Fiber, Butterfly Package

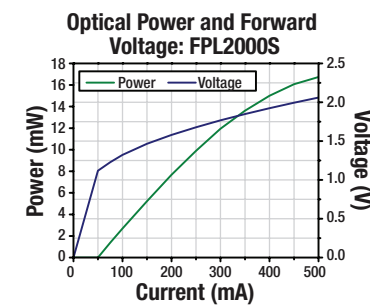
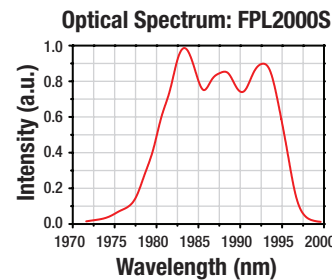
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For current pricing,
please see our website.

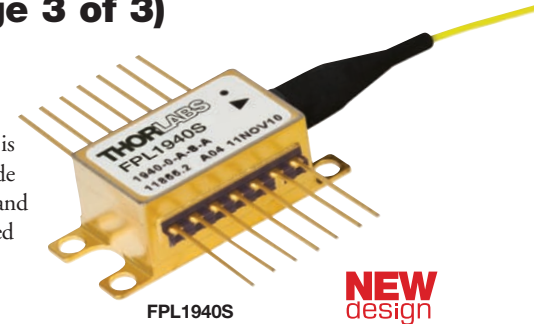
Fabry-Perot Lasers, Butterfly Package (Page 3 of 3)

1940 and 2000 nm Fabry-Perot Lasers

Typical Laser Performance



The FPL1940S and FPL2000S are 1940 and 2000 nm Fabry-Perot lasers whose output fiber is Thorlabs' newly developed 2000 nm single mode fiber (SM2000), which has a large optical core and significantly lower bend-loss sensitivity compared to SMF-28 fiber. These lasers can be custom ordered with SMF-28 fiber. Please contact technical support for a quote.



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ITEM #		FPL1940S			FPL2000S		
Characteristic	Symbol	Min	Typical	Max	Min	Typical	Max
Center Wavelength	λ_c	1920 nm	1940 nm	1960 nm	1980 nm	2000 nm	2020 nm
Spectral Bandwidth (RMS)	$\Delta\lambda$	-	15 nm	-	-	15 nm	-
Output Power @ I_{OP}	P_O	10 mW	15 mW	-	10 mW	15 mW	-
Operating Current	I_{OP}	-	400 mA	500 mA	-	400 mA	500 mA
Threshold Current	I_{TH}	-	55 mA	80 mA	-	55 mA	80 mA
Forward Voltage	V_F	-	2.0 V	2.5 V	-	2.0 V	2.5 V
Slope Efficiency	$\Delta P/\Delta I$	-	0.04 W/A	-	-	0.05 W/A	-
Operation Chip Temp.	T_{CHIP}	-	25 °C	-	-	25 °C	-
Operation Case Temp.	T_{CASE}	0 °C	-	70 °C	0 °C	-	70 °C
TEC Current	I_{TEC}	-	0.25 A	1.5 A	-	0.25 A	1.5 A
TEC Voltage	V_{TEC}	-	0.35 V	3.5 V	-	0.35 V	3.5 V
Thermistor Resistance	R_{TH}	-	10 k Ω	-	-	10 k Ω	-

ITEM #	\$	£	€	RMB	DESCRIPTION
FPL1940S	\$ 3,000.00	£ 2,160.00	€ 2,610.00	¥ 23,910.00	Fabry-Perot Laser, 1940 nm, 15 mW, SM Fiber, Butterfly Package
FPL2000S	\$ 3,500.00	£ 2,520.00	€ 3,045.00	¥ 27,895.00	Fabry-Perot Laser, 2000 nm, 15 mW, SM Fiber, Butterfly Package

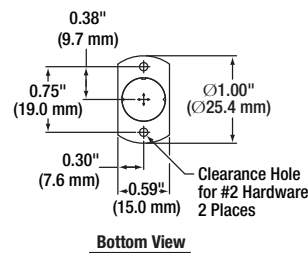
Telecom Pigtailed Fabry-Perot Lasers

The LPSC-1310-FC, LPSC-1550-FC, and LPSC-1625-FC are pigtailed versions of our TO-56 fabry-perot lasers. Designed for telecom wavelengths, these lasers have 1 m of fiber terminated with an FC/PC connector. They do not include a TEC controller and can be integrated into any system that uses TO-56 packaging. To see our entire line of pigtailed Fabry-Perot laser diodes, please see pages 1252 - 1260.

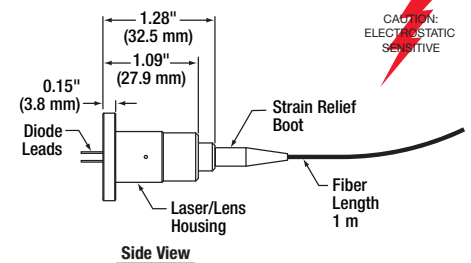


LPSC-1310-FC

FC/PC Connector



Bottom View



Side View

CAUTION:
ELECTROSTATIC
SENSITIVE

ITEM #		LPSC-1310-FC			LPSC-1550-FC			LPSC-1625-FC		
Parameter	Symbol	Min	Typical	Max	Min	Typical	Max	Min	Typical	Max
Center Wavelength	λ_c	1290 nm	1310 nm	1330 nm	1530 nm	1550 nm	1570 nm	1605 nm	1625 nm	1645 nm
Spectral Bandwidth (rms)	BW	-	5 nm	8 nm	-	6 nm	10 nm	-	7 nm	12 nm
Output Power CW @ I_{CW}	P_{CW}	60 mW	80 mW	-	40 mW	50 mW	-	40 mW	50 mW	-
Threshold Current	I_{TH}	-	30 mA	50 mA	-	40 mA	50 mA	-	45 mA	55 mA
Operating Current CW	I_{CW}	-	400 mA	500 mA	-	750 mA	1000 mA	-	750 mA	1000 mA
Forward Voltage	VF	-	2.0 V	3.0 V	-	2.0 V	3.0 V	-	2.0 V	3.0 V

ITEM #	\$	£	€	RMB	DESCRIPTION
LPSC-1310-FC	\$ 621.00	£ 447.12	€ 540.27	¥ 4,949.37	Fabry-Perot Laser, 1310 nm, 60 mW, SM Fiber, Pigtailed TO Package
LPSC-1550-FC	\$ 685.00	£ 493.20	€ 595.95	¥ 5,459.45	Fabry-Perot Laser, 1550 nm, 40 mW, SM Fiber, Pigtailed TO Package
LPSC-1625-FC	\$ 685.00	£ 493.20	€ 595.95	¥ 5,459.45	Fabry-Perot Laser, 1625 nm, 40 mW, SM Fiber, Pigtailed TO Package