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Find the *ThorLabs MCLS1* at our website: *Click HERE*

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4-Channel, Fiber-Coupled Laser Source (Page 1 of 2)



MCLS1



Features

- Four Laser Output Channels with FC/PC Connectors
- 24 Available Source Wavelengths from 405 to 1550 nm
- Independent Temperature Control Leads to High Temperature Stability
- Low Noise Output
- USB Interface
- Low-Profile Package

Thorlabs' 4-Channel, Fiber-Coupled, Customizable Laser Source consists of four independently controlled laser diodes, which can be chosen from the chart on the facing page. The laser source is configured to accept a wide range of fiber-pigtailed laser diodes. There are 24 different power/wavelength combinations currently available (see the next page). As new wavelength/power combinations become available, they will be posted on our website.

Each laser diode is operated from an independent, high-precision, low-noise, constant-current source and temperature control unit. An intuitive LCD interface allows the user to view and set the laser current and temperature control independently for each laser. The display indicates the channel number selected, the output wavelength of the source, the operating power calculated from the laser diode monitor diode, and the actual temperature to which the laser is set.

This device includes a microcontroller to fully control the laser's optical power, its temperature, and to monitor the system for fault conditions. The laser source includes a USB connection that allows remote adjustment of power, temperature, and enabling. On the rear panel, analog inputs are available to modulate the lasers with an external signal. To prevent damage, the microcontroller will disable the output if the analog input plus the internal setpoint exceeds the laser limits.

View of Back Panel



SPECIFICATIONS	MCLS1
Connections and Controls	
Interface Control	Optical Encoder with Push Button
Enable and Laser Select	Keypad Switch Enable with LED Indication
Power On	Key Switch
Fiber Ports	FC / PC
Display	LCD, 16 x 2 Alphanumeric Characters
Input Power Connection	IEC Connector
Modulation Input Connector	BNC (Referenced to Chassis)
Interlock	2.5 mm Mono Phono Jack
Communications	
Communications Port	USB 2.0
COM Connection	USB Type B Connector
USB Cable Included	2 m USB Type A to Type B Cable (Replacement Part Number USB-A-79)
General Specifications	
AC Input	100 - 240 VAC, 50 - 60 Hz
Input Power	35 W (Max)
Fuse Ratings	250 mA
Fuse Type	IEC60127 - 2/III, (250 V, Slow Blow Type 'T')
Fuse Size	5 mm x 20 mm
Dimensions (W x H x D)	12.6" x 2.5" x 10.6" (320 mm x 64 mm x 269 mm)
Weight	8.5 lbs (3.9 kg)
Operating Temperature	15 to 35 °C
Storage Temperature	0 to 50 °C

FC Fiber Patch Cables

Thorlabs' extensive line of patch cables and connectors includes standard and custom lengths with FC/PC or FC/APC terminations.



Single Mode and Polarization-Maintaining Fiber

See pages 1006 – 1009

Off-Axis Parabolic Collimators

Thorlabs offers a line of collimators that use an off-axis parabolic mirror to provide diffraction-limited performance across the entire 0.4 to 20 µm wavelength range without needing to adjust the collimator.



SM05 Threading

See page 1105

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4-Channel, Fiber-Coupled Laser Source (Page 2 of 2)

Safety

While most output sources fall within the class 3R laser rating, this system has been fully designed to meet 3B laser class requirements. There is an interlock located on the rear panel that must be shorted in order for any laser output to be enabled. This can easily be configured to be triggered by doors to disable the laser in unsafe conditions. The power switch is a keylock system to prevent accidental or unwanted use. Each source has its own enable button, allowing the user to choose the light source or sources activated, as well as a master enable, which must also be set. Each channel includes a green LED indicator to easily determine its current state. There is a 3 second delay before the lasers turns on, and the user is warned by the LED rapidly blinking.

PERFORMANCE SPECIFICATIONS	
Display Power Accuracy	±10%
Current Setpoint Resolution	0.01 mA
Temperature Adjust Range	20.00 to 30.00 °C
Temp Setpoint Resolution	±0.01 °C
Noise	<0.5% Typical (Source Dependent)
Rise/Fall Time	<5 µs
Modulation Input	0 - 5 V = 0 - Full Power
Modulation Bandwidth	80 kHz Full Depth of Modulation



In the Box

The MCLS includes a universal power supply allowing operation over 100 to 240 VAC without the need for selecting the line voltage. The fuse access is conveniently located on the rear panel. This unit is supplied with a US line cord as well as a standard European line cord, the pre-configured MCLS1 with all selected lasers installed, a USB cable, and the manual.

Configuring a 4-Channel Source

The table below lists the 24 available output wavelengths for our 4-Channel Source. Choose any combination and add the individual source cost to the MCLS1 base unit price.

EXAMPLE MCLS1 with fiber-pigtailed laser diodes providing output at 635 nm, 670 nm, 850 nm, and 1004 nm costs $410.00 + $342.00 + $385.00 + $1,090.00 = $2,227.00.

ITEM #	λ	MINIMUM POWER	LASER TYPE	FIBER	$	£	€	RMB
MCLS1-405-30*	405 nm	24 mW	Fabry-Perot	S405-HP	CALL	CALL	CALL	CALL
MCLS1-406	406 nm	4.0 mW	Fabry-Perot	S405-HP	CALL	CALL	CALL	CALL
MCLS1-473	473 nm	5.5 mW	Fabry-Perot	S460-HP	CALL	CALL	CALL	CALL
MCLS1-488	488 nm	18 mW	Fabry-Perot	S460-HP	CALL	CALL	CALL	CALL
MCLS1-635	635 nm	2.5 mW	Fabry-Perot	SM600	$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70
MCLS1-638	638 nm	10 mW	Fabry-Perot	SM600	$ 460.00	£ 331.20	€ 400,20	¥ 3,666.20
MCLS1-642	642 nm	15 mW	Fabry-Perot	SM600	$ 650.00	£ 468.00	€ 565,50	¥ 5,180.50
MCLS1-658	658 nm	9.5 mW	Fabry-Perot	SM600	$ 306.00	£ 220.32	€ 266,22	¥ 2,438.82
MCLS1-670	670 nm	1.5 mW	Fabry-Perot	SM600	$ 342.00	£ 246.24	€ 297,54	¥ 2,725.74
MCLS1-705	705 nm	10 mW	Fabry-Perot	SM800-5.6-125	$ 760.00	£ 547.20	€ 661,20	¥ 6,057.20
MCLS1-785	785 nm	6 mW	Fabry-Perot	SM800-5.6-125	$ 320.00	£ 230.40	€ 278,40	¥ 2,550.40
MCLS1-785-25	785 nm	20 mW	Fabry-Perot	SM800-5.6-125	$ 575.00	£ 414.00	€ 500,25	¥ 4,582.75
MCLS1-808	808 nm	5 mW	Fabry-Perot	SM800-5.6-125	$ 360.00	£ 259.20	€ 313,20	¥ 2,869.20
MCLS1-808-20	808 nm	20 mW	Fabry-Perot	SM800-5.6-125	$ 450.00	£ 324.00	€ 391,50	¥ 3,586.50
MCLS1-850	850 nm	7.5 mW	Fabry-Perot	SM800-5.6-125	$ 385.00	£ 277.20	€ 334,95	¥ 3,068.45
MCLS1-852	852 nm	20 mW	Fabry-Perot	SM800-5.6-125	$ 470.00	£ 338.40	€ 408,90	¥ 3,745.90
MCLS1-904	904 nm	6 mW	Fabry-Perot	SM800-5.6-125	$ 369.00	£ 265.68	€ 321,03	¥ 2,940.93
MCLS1-980	980 nm	6 mW	Fabry-Perot	980HP	$ 380.00	£ 273.60	€ 330,60	¥ 3,028.60
MCLS1-980-20	980 nm	20 mW	Fabry-Perot	980HP	$ 495.00	£ 356.40	€ 430,65	¥ 3,945.15
MCLS1-1064	1064 nm	20 mW	Fabry-Perot	HI1060	$ 1,090.00	£ 784.80	€ 948,30	¥ 8,687.30
MCLS1-1310	1310 nm	2.5 mW	Fabry-Perot	SMF-28e+	$ 305.00	£ 219.60	€ 265,35	¥ 2,430.85
MCLS1-1310DFB	1310 nm	1.5 mW	DFB	SMF-28e+	$ 770.00	£ 554.40	€ 669,90	¥ 6,136.90
MCLS1-1550	1550 nm	1.5 mW	Fabry-Perot	SMF-28e+	$ 320.00	£ 230.40	€ 278,40	¥ 2,550.40
MCLS1-1550DFB	1550 nm	1.5 mW	DFB	SMF-28e+	$ 908.00	£ 653.76	€ 789,96	¥ 7,236.76

*Due to the variation in pricing for these laser diodes, which changes frequently, please see www.thorlabs.com or call for current pricing.

Order the MCLS1 and Lasers Separately

ITEM #	$*	£*	€*	RMB*	DESCRIPTION
MCLS1	$ 3,600.00	£ 2,592.00	€ 3.132,00	¥ 28,692.00	4-Channel Laser Source, TEC Stabilized, USB, Controller Only

* Price listed is for base system, excluding sources

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