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THORLABS

LED4D193 - February 25, 2015

Item # LED4D193 was discontinued February 25, 2015. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

4-WAVELENGTH HIGH-POWER LED SOURCE

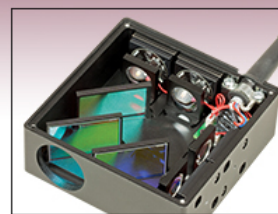
- ▶ 4-Wavelength LED Source with Stable and Repeatable Emission
- ▶ LED Switching Controlled via Current
- ▶ Choose from 14 LEDs
- ▶ Liquid Light Guide and Microscope Adapters Available



LED4D067
4-Wavelength High-Power LED Source



Ideally Operated by
DC4100 or DC4104 Drivers



Internal View of a 4-Wavelength Source



LED4B1
Adapter to Couple
Liquid Light Guides to
the 4-Wavelength Source

Overview

Features

- User-Configurable 4-Wavelength Source
- Precisely Defined Spectral Range (See the *LED Specs* Tab for Details)
- Switching and Intensity Adjustments via LED Current Settings
- Better Stability and Longer Life than Gas Discharge and Halogen Lamps
- No Moving Parts for Vibration-Free Operation
- Cooling Fins Provide Efficient Thermal Management
- Long Lifetime Light Source (See the *LED Specs* Tab for Details)
- Optional Adapters for Olympus, Nikon, Zeiss, and Leica Microscope Lightports
- Optional Adapter for Coupling to Liquid Light Guides (LLGs)

The LED4D 4-Wavelength High-Power LED Sources are ideal for applications requiring up to four wavelengths of light. These user-configurable light sources efficiently combine the output of all four LEDs into a single collimated beam. Together with a [DC4100 or DC4104 4-Channel LED Driver](#), the LED4D provides a reliable, versatile light source with LED switching and accurate intensity modulation of each individual LED. The source is vibration free, easy to operate, and has a long lifetime (see the Specs tab for details).

Compared to conventional non-LED sources such as halogen and gas discharge lamps, these 4-wavelength sources offer many advantages such as higher signal-to-noise ratios (due to narrow bandwidth emission), better stability, longer life, lower replacement costs, simple operation without maintenance cycles, and no active cooling requirements or thermal filtering due to minimal thermal loads. The LED current can be adjusted to quickly set the intensity via the DC4100 or DC4104 driver (sold separately) front panel or USB connection, making this source an ideal choice for microscopy applications where multiple wavelengths are required. The source can also be modulated using an external trigger connection on the DC4100 or DC4104 (see the [full web presentation](#) of these drivers for details).

The LEDs incorporated into these sources are characterized by high divergence. The light is guided through the system using mirrors, and the output is collimated with an aspheric condenser lens. This setup inherently leads to a reduction in the measured output power (as seen in the table to the right) compared to that of the bare LEDs. Thorlabs also offers [single-channel collimated LEDs](#), which have higher power outputs since wavelength-combining optics are not needed.

Adapters

Optional adapters are available for using the 4-wavelength LED source with liquid light guides or microscopes. The output aperture of these LED sources is internally SM2 (2.035"-40) threaded. For Olympus, Nikon, Zeiss, and Leica microscopes, SM2-threaded adapters are available that directly mount the 4-wavelength sources onto the microscope lightport (see [SM2-Threaded Microscope Adapters](#)). See below for a video that demonstrates how to install the source on an Olympus microscope.

Alternatively, the LED4B1 Adapter for Liquid Light Guides (LLGs) is used to couple light exiting the LED source into a LLG. It replaces the SM2-threaded output port with an aperture that is internally SM1 (1.035"-40) threaded. The adapter contains a collimating optic designed to focus light into the aperture of a LLG held by the appropriate LLG-to-SM1 adapter ([AD3LLG](#) for Ø3 mm core LLGs or [AD5LLG](#) for Ø5 mm core LLGs). More information on these adapters and Thorlabs' selection of liquid light guides can be found [here](#).

LED Options		
Nominal Wavelength	Color (Click for Spectrum)	Min LED Output Power ^a
365 nm	UV	85 mW
385 nm	UV	95 mW
405 nm	UV	290 mW
420 nm	Violet	30 mW
455 nm	Royal Blue	310 mW
470 nm	Blue	250 mW
490 nm	Blue	50 mW
505 nm	Cyan	170 mW
530 nm	Green	100 mW
565 nm	Green Yellow	106 mW
590 nm	Amber	65 mW
617 nm	Orange	210 mW
625 nm	Red	240 mW
660 nm	Deep Red	210 mW

a. Power output from 4-wavelength source using this LED.

General Specifications	
Operating Temperature Range ^a	0 °C to 40 °C (32 °F to 104 °F)
Storage Temperature Range	-40 °C to 70 °C (-49 °F to 158 °F)
Dimensions (W x H x D)	164 mm x 150 mm x 57 mm (Without Cable) (6.46" x 5.91" x 2.24")
Front Aperture Thread	Internal SM2 (2.035"-40)
Weight	1.6 kg (3.5 lbs)

a. Non-Condensing



[Click to Enlarge](#)

Wavelength Combinations

Each LED4D source contains four individual high-power bare LEDs. Use the configurator below to build your LED4D 4-wavelength source by choosing from the 14 available LEDs listed in the table to the right. Due to the optical configuration, certain wavelengths cannot be combined within the same source. As you select each wavelength in the configurator, unavailable wavelength pairs will be excluded from each consecutive drop down menu.

Additional limitations imposed by the full configuration are outlined in the table to the right. Each combination of two wavelengths that cannot be included in the same 4-wavelength source is marked in grey, while available combinations are indicated by a green- or orange-shaded cell. The latter denotes a wavelength pair where the selection of the final two LEDs is further limited: LEDs with wavelengths below 455 nm cannot be included in an LED4D source with 660 nm, 617 nm, and 590 nm or 565 nm as the other three wavelengths. The configurator below is designed so that you cannot order a source with an unavailable wavelength configuration.

Wavelength Combinations	
	365 nm 385 nm 405 nm 420 nm 455 nm 470 nm 490 nm 505 nm 530 nm 565 nm 590 nm 617 nm 625 nm 660 nm
365 nm	X X X X
385 nm	X X X X
405 nm	X X X X
420 nm	X X X X
455 nm	X X X
470 nm	X X X
490 nm	X X X X
505 nm	X X X X
530 nm	X X X
565 nm	X X X X
590 nm	X X
617 nm	X X
625 nm	X X X
660 nm	X X

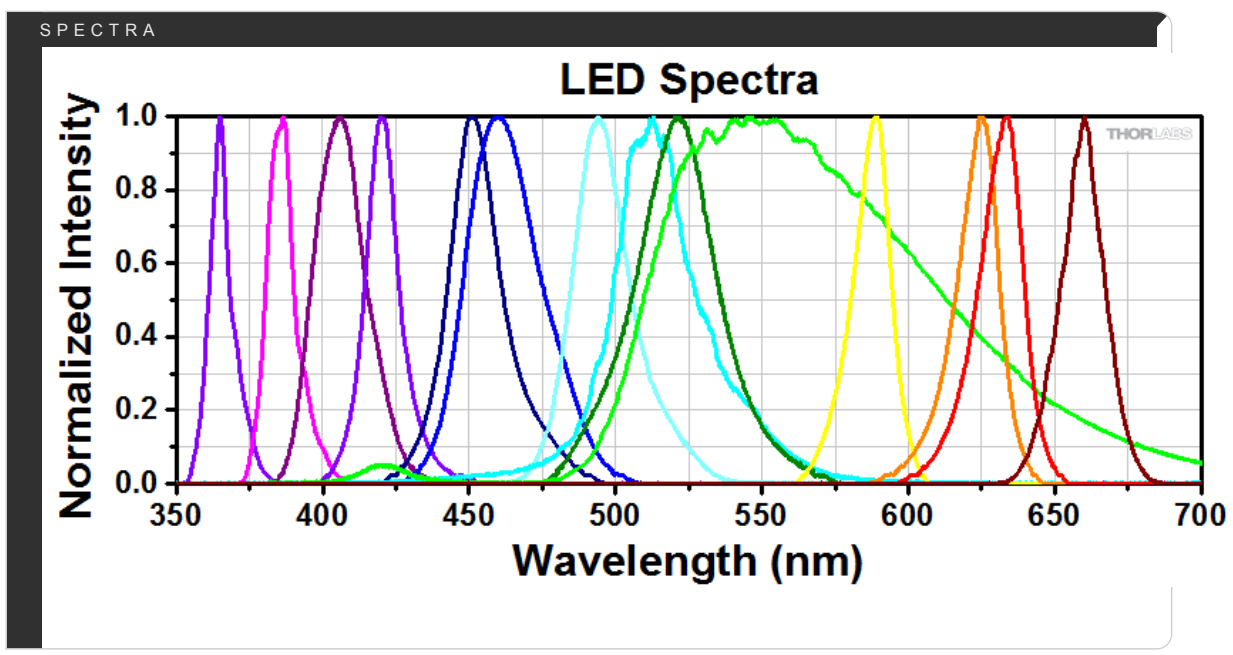
Legend	
X	Unavailable Wavelength Combination
	Available Wavelength Combination
	Limited Combinations Available ^a

a. LED4D sources with wavelength combinations of 565 nm, 617 nm, and 660 nm or 590 nm, 617 nm, and 660 nm are only available with a fourth wavelength of 455 nm or higher.

LED SPECS

Nominal Wavelength	Color (Click for Spectrum)	Minimum LED Output Power ^a	Maximum Current (CW)	Forward Voltage	Bandwidth (FWHM)	Typical Lifetime
365 nm	UV	85 mW	700 mA	4.4 V	7.5 nm	>10,000 h
385 nm	UV	95 mW	700 mA	4.3 V	10 nm	>10,000 h
405 nm	UV	290 mW	1000 mA	3.8 V	13 nm	100,000 h
420 nm	Violet	30 mW	500 mA	3.6 V	12 nm	>10,000 h
455 nm	Royal Blue	310 mW	1000 mA	3.2 V	18 nm	100,000 h
470 nm	Blue	250 mW	1000 mA	3.2 V	25 nm	100,000 h
490 nm	Blue	50 mW	350 mA	3.5 V	27 nm	>10,000 h
505 nm	Cyan	170 mW	1000 mA	3.3 V	30 nm	100,000 h
530 nm	Green	100 mW	1000 mA	3.2 V	33 nm	100,000 h
565 nm	Green Yellow	106 mW	1000 mA	3.1 V	104 nm	50,000 h
590 nm	Amber	65 mW	1000 mA	2.2 V	18 nm	100,000 h
617 nm	Orange	210 mW	1000 mA	2.2 V	18 nm	100,000 h
625 nm	Red	240 mW	1000 mA	2.2 V	18 nm	100,000 h
660 nm	Deep Red	210 mW	1200 mA	2.5 V	25 nm	>65,000 h

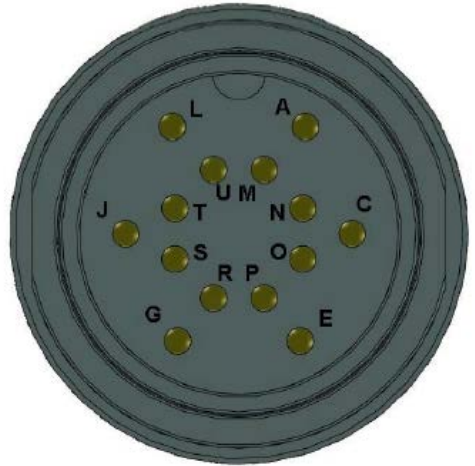
a. Power output from a 4-wavelength source using this LED.



- 365 nm
- 385 nm
- 405 nm
- 420 nm
- 455 nm
- 470 nm
- 490 nm
- 505 nm
- 530 nm
- 565 nm
- 590 nm
- 617 nm
- 625 nm
- 660 nm

PIN DIAGRAM

The LED4D has a flying lead terminated in a 14-pin M18 plug that is compatible with the DC4100 and DC4104 4-channel LED drivers. In the table below, LED A, LED B, LED C, and LED D denote each LED included in the source, ordered from shortest to longest wavelength.



Pin	Description	Comment
A	LED A Anode	-
C	LED A Cathode	-
E	LED B Anode	-
G	LED C Anode	-
J	LED C Cathode	-
L	LED D Anode	-
M	LED A 1 Wire EEPROM I/O	Do Not Use
N	DGND	Do Not Use
O	Not Connected	-
P	LED B Cathode	-
R	Not Connected	-
S	Not Connected	-
T	Not Connected	-
U	LED D Cathode	-

LLG INSTALLATION

Thorlabs' 4-Wavelength LED Source can be made compatible with Liquid Light Guide Adapter Installation our Liquid Light Guides (LLGs) with the addition of the LED4B1 adapter. The animation to the right and the text below detail the installation process.

Remove the SM2-threaded (2.035"-40) output port that comes installed on the 4-wavelength source by unscrewing the four M2.5 screws. Position the LED4B1 over the output of the 4-wavelength source so that the M2.5 counterbores line up with the tapped holes on the LED source housing. Use the M2.5 screws that came with the LED source to fasten the adapter in place.

Screw an SM1-to-LLG adapter (either the AD3LLG or AD5LLG, not included) into the SM1-threaded (1.035"-40) exit port of the LED4D1, and plug your LLG into the adapter. Tighten the setscrew on the side of the SM1-to-LLG adapter using a 0.05" hex key to secure the LLG in place.

[Hide 4-Wavelength LED Source](#)

4-Wavelength LED Source

To access the part number, documentation, and pricing for a 4-wavelength source, select four wavelengths in the configurator below. Pricing is identical regardless of the combination chosen, but part number will vary.

Part Number	Description	Price	Availability
LED4D001	4-Wavelength High-Power LED Head (365/455/505/590 nm)	\$2,570.00	Lead Time
LED4D002	4-Wavelength High-Power LED Head (365/455/505/617 nm)	\$2,570.00	Lead Time
LED4D003	4-Wavelength High-Power LED Head (365/455/505/625 nm)	\$2,570.00	Lead Time
LED4D004	4-Wavelength High-Power LED Head (365/455/505/660 nm)	\$2,570.00	Lead Time
LED4D005	4-Wavelength High-Power LED Head (365/455/530/590 nm)	\$2,570.00	Lead Time
LED4D006	4-Wavelength High-Power LED Head (365/455/530/617 nm)	\$2,570.00	Lead Time
LED4D007	4-Wavelength High-Power LED Head (365/455/530/625 nm)	\$2,570.00	Lead Time
LED4D008	4-Wavelength High-Power LED Head (365/455/530/660 nm)	\$2,570.00	Lead Time
LED4D012	4-Wavelength High-Power LED Head (365/455/590/617 nm)	\$2,570.00	Lead Time
LED4D013	4-Wavelength High-Power LED Head (365/455/590/625 nm)	\$2,570.00	Lead Time
LED4D014	4-Wavelength High-Power LED Head (365/455/590/660 nm)	\$2,570.00	Lead Time
LED4D015	4-Wavelength High-Power LED Head (365/455/617/660 nm)	\$2,570.00	Lead Time
LED4D016	4-Wavelength High-Power LED Head (365/470/505/590 nm)	\$2,570.00	Lead Time
LED4D017	4-Wavelength High-Power LED Head (365/470/505/617 nm)	\$2,570.00	Lead Time
LED4D018	4-Wavelength High-Power LED Head (365/470/505/625 nm)	\$2,570.00	Lead Time
LED4D019	4-Wavelength High-Power LED Head (365/470/505/660 nm)	\$2,570.00	Lead Time
LED4D020	4-Wavelength High-Power LED Head (365/470/530/590 nm)	\$2,570.00	Lead Time
LED4D021	4-Wavelength High-Power LED Head (365/470/530/617 nm)	\$2,570.00	Lead Time
LED4D022	4-Wavelength High-Power LED Head (365/470/530/625 nm)	\$2,570.00	Lead Time
LED4D023	4-Wavelength High-Power LED Head (365/470/530/660 nm)	\$2,570.00	Lead Time
LED4D027	4-Wavelength High-Power LED Head (365/470/590/617 nm)	\$2,570.00	Lead Time
LED4D028	4-Wavelength High-Power LED Head (365/470/590/625 nm)	\$2,570.00	Lead Time
LED4D029	4-Wavelength High-Power LED Head (365/470/590/660 nm)	\$2,570.00	Lead Time
LED4D030	4-Wavelength High-Power LED Head (365/470/617/660 nm)	\$2,570.00	Lead Time
LED4D031	4-Wavelength High-Power LED Head (365/490/530/590 nm)	\$2,570.00	Lead Time
LED4D032	4-Wavelength High-Power LED Head (365/490/530/617 nm)	\$2,570.00	Lead Time
LED4D033	4-Wavelength High-Power LED Head (365/490/530/625 nm)	\$2,570.00	Lead Time
LED4D034	4-Wavelength High-Power LED Head (365/490/530/660 nm)	\$2,570.00	Lead Time
LED4D038	4-Wavelength High-Power LED Head (365/490/590/617 nm)	\$2,570.00	Lead Time
LED4D039	4-Wavelength High-Power LED Head (365/490/590/625 nm)	\$2,570.00	Lead Time
LED4D040	4-Wavelength High-Power LED Head (365/490/590/660 nm)	\$2,570.00	Lead Time
LED4D041	4-Wavelength High-Power LED Head (365/490/617/660 nm)	\$2,570.00	Lead Time
LED4D042	4-Wavelength High-Power LED Head (365/505/590/617 nm)	\$2,570.00	Lead Time
LED4D043	4-Wavelength High-Power LED Head (365/505/590/625 nm)	\$2,570.00	Lead Time
LED4D044	4-Wavelength High-Power LED Head (365/505/590/660 nm)	\$2,570.00	Lead Time
LED4D045	4-Wavelength High-Power LED Head (365/505/617/660 nm)	\$2,570.00	Lead Time
LED4D046	4-Wavelength High-Power LED Head (365/530/590/617 nm)	\$2,570.00	Lead Time
LED4D047	4-Wavelength High-Power LED Head (365/530/590/625 nm)	\$2,570.00	Lead Time
LED4D048	4-Wavelength High-Power LED Head (365/530/590/660 nm)	\$2,570.00	Lead Time
LED4D049	4-Wavelength High-Power LED Head (365/530/617/660 nm)	\$2,570.00	Lead Time
LED4D050	4-Wavelength High-Power LED Head (385/455/505/590 nm)	\$2,570.00	Lead Time
LED4D051	4-Wavelength High-Power LED Head (385/455/505/617 nm)	\$2,570.00	Lead Time
LED4D052	4-Wavelength High-Power LED Head (385/455/505/625 nm)	\$2,570.00	Lead Time
LED4D053	4-Wavelength High-Power LED Head (385/455/505/660 nm)	\$2,570.00	Lead Time
LED4D054	4-Wavelength High-Power LED Head (385/455/530/590 nm)	\$2,570.00	Today
LED4D055	4-Wavelength High-Power LED Head (385/455/530/617 nm)	\$2,570.00	Lead Time

LED4D056	4-Wavelength High-Power LED Head (385/455/530/625 nm)	\$2,570.00	Lead Time
LED4D057	4-Wavelength High-Power LED Head (385/455/530/660 nm)	\$2,570.00	Lead Time
LED4D061	4-Wavelength High-Power LED Head (385/455/590/617 nm)	\$2,570.00	Lead Time
LED4D062	4-Wavelength High-Power LED Head (385/455/590/625 nm)	\$2,570.00	Lead Time
LED4D063	4-Wavelength High-Power LED Head (385/455/590/660 nm)	\$2,570.00	Lead Time
LED4D064	4-Wavelength High-Power LED Head (385/455/617/660 nm)	\$2,570.00	Lead Time
LED4D065	4-Wavelength High-Power LED Head (385/470/505/590 nm)	\$2,570.00	Lead Time
LED4D066	4-Wavelength High-Power LED Head (385/470/505/617 nm)	\$2,570.00	Lead Time
LED4D067	4-Wavelength High-Power LED Head (385/470/505/625 nm)	\$2,570.00	Lead Time
LED4D068	4-Wavelength High-Power LED Head (385/470/505/660 nm)	\$2,570.00	Lead Time
LED4D069	4-Wavelength High-Power LED Head (385/470/530/590 nm)	\$2,570.00	Today
LED4D070	4-Wavelength High-Power LED Head (385/470/530/617 nm)	\$2,570.00	Lead Time
LED4D071	4-Wavelength High-Power LED Head (385/470/530/625 nm)	\$2,570.00	Today
LED4D072	4-Wavelength High-Power LED Head (385/470/530/660 nm)	\$2,570.00	Lead Time
LED4D076	4-Wavelength High-Power LED Head (385/470/590/617 nm)	\$2,570.00	Lead Time
LED4D077	4-Wavelength High-Power LED Head (385/470/590/625 nm)	\$2,570.00	Lead Time
LED4D078	4-Wavelength High-Power LED Head (385/470/590/660 nm)	\$2,570.00	Today
LED4D079	4-Wavelength High-Power LED Head (385/470/617/660 nm)	\$2,570.00	Lead Time
LED4D080	4-Wavelength High-Power LED Head (385/490/530/590 nm)	\$2,570.00	Lead Time
LED4D081	4-Wavelength High-Power LED Head (385/490/530/617 nm)	\$2,570.00	Lead Time
LED4D082	4-Wavelength High-Power LED Head (385/490/530/625 nm)	\$2,570.00	Lead Time
LED4D083	4-Wavelength High-Power LED Head (385/490/530/660 nm)	\$2,570.00	Lead Time
LED4D087	4-Wavelength High-Power LED Head (385/490/590/617 nm)	\$2,570.00	Lead Time
LED4D088	4-Wavelength High-Power LED Head (385/490/590/625 nm)	\$2,570.00	Lead Time
LED4D089	4-Wavelength High-Power LED Head (385/490/590/660 nm)	\$2,570.00	Lead Time
LED4D090	4-Wavelength High-Power LED Head (385/490/617/660 nm)	\$2,570.00	Lead Time
LED4D091	4-Wavelength High-Power LED Head (385/505/590/617 nm)	\$2,570.00	Lead Time
LED4D092	4-Wavelength High-Power LED Head (385/505/590/625 nm)	\$2,570.00	Today
LED4D093	4-Wavelength High-Power LED Head (385/505/590/660 nm)	\$2,570.00	Lead Time
LED4D094	4-Wavelength High-Power LED Head (385/505/617/660 nm)	\$2,570.00	Lead Time
LED4D095	4-Wavelength High-Power LED Head (385/530/590/617 nm)	\$2,570.00	Lead Time
LED4D096	4-Wavelength High-Power LED Head (385/530/590/625 nm)	\$2,570.00	Lead Time
LED4D097	4-Wavelength High-Power LED Head (385/530/590/660 nm)	\$2,570.00	Lead Time
LED4D098	4-Wavelength High-Power LED Head (385/530/617/660 nm)	\$2,570.00	Lead Time
LED4D099	4-Wavelength High-Power LED Head (405/455/505/590 nm)	\$2,570.00	Lead Time
LED4D100	4-Wavelength High-Power LED Head (405/455/505/617 nm)	\$2,570.00	Lead Time
LED4D101	4-Wavelength High-Power LED Head (405/455/505/625 nm)	\$2,570.00	Lead Time
LED4D102	4-Wavelength High-Power LED Head (405/455/505/660 nm)	\$2,570.00	Lead Time
LED4D103	4-Wavelength High-Power LED Head (405/455/530/590 nm)	\$2,570.00	Today
LED4D104	4-Wavelength High-Power LED Head (405/455/530/617 nm)	\$2,570.00	Lead Time
LED4D105	4-Wavelength High-Power LED Head (405/455/530/625 nm)	\$2,570.00	Lead Time
LED4D106	4-Wavelength High-Power LED Head (405/455/530/660 nm)	\$2,570.00	Lead Time
LED4D110	4-Wavelength High-Power LED Head (405/455/590/617 nm)	\$2,570.00	Lead Time
LED4D111	4-Wavelength High-Power LED Head (405/455/590/625 nm)	\$2,570.00	Lead Time
LED4D112	4-Wavelength High-Power LED Head (405/455/590/660 nm)	\$2,570.00	Lead Time
LED4D113	4-Wavelength High-Power LED Head (405/455/617/660 nm)	\$2,570.00	Lead Time
LED4D114	4-Wavelength High-Power LED Head (405/470/505/590 nm)	\$2,570.00	Lead Time
LED4D115	4-Wavelength High-Power LED Head (405/470/505/617 nm)	\$2,570.00	Lead Time
LED4D116	4-Wavelength High-Power LED Head (405/470/505/625 nm)	\$2,570.00	Lead Time
LED4D117	4-Wavelength High-Power LED Head (405/470/505/660 nm)	\$2,570.00	Lead Time
LED4D118	4-Wavelength High-Power LED Head (405/470/530/590 nm)	\$2,570.00	Today
LED4D119	4-Wavelength High-Power LED Head (405/470/530/617 nm)	\$2,570.00	Today
LED4D120	4-Wavelength High-Power LED Head (405/470/530/625 nm)	\$2,570.00	Today
LED4D121	4-Wavelength High-Power LED Head (405/470/530/660 nm)	\$2,570.00	Lead Time
LED4D125	4-Wavelength High-Power LED Head (405/470/590/617 nm)	\$2,570.00	Lead Time
LED4D126	4-Wavelength High-Power LED Head (405/470/590/625 nm)	\$2,570.00	Today
LED4D127	4-Wavelength High-Power LED Head (405/470/590/660 nm)	\$2,570.00	Today
LED4D128	4-Wavelength High-Power LED Head (405/470/617/660 nm)	\$2,570.00	Lead Time
LED4D129	4-Wavelength High-Power LED Head (405/490/530/590 nm)	\$2,570.00	Lead Time
LED4D130	4-Wavelength High-Power LED Head (405/490/530/617 nm)	\$2,570.00	Lead Time
LED4D131	4-Wavelength High-Power LED Head (405/490/530/625 nm)	\$2,570.00	Lead Time
LED4D132	4-Wavelength High-Power LED Head (405/490/530/660 nm)	\$2,570.00	Lead Time
LED4D136	4-Wavelength High-Power LED Head (405/490/590/617 nm)	\$2,570.00	Lead Time
LED4D137	4-Wavelength High-Power LED Head (405/490/590/625 nm)	\$2,570.00	Lead Time
LED4D138	4-Wavelength High-Power LED Head (405/490/590/660 nm)	\$2,570.00	Lead Time

LED4D215	4-Wavelength High-Power LED Head (470/590/617/660 nm)	\$2,570.00	Lead Time
LED4D216	4-Wavelength High-Power LED Head (490/530/590/617 nm)	\$2,570.00	Lead Time
LED4D217	4-Wavelength High-Power LED Head (490/530/590/625 nm)	\$2,570.00	Lead Time
LED4D218	4-Wavelength High-Power LED Head (490/530/590/660 nm)	\$2,570.00	Lead Time
LED4D219	4-Wavelength High-Power LED Head (490/530/617/660 nm)	\$2,570.00	Lead Time
LED4D221	4-Wavelength High-Power LED Head (490/590/617/660 nm)	\$2,570.00	Lead Time
LED4D222	4-Wavelength High-Power LED Head (505/590/617/660 nm)	\$2,570.00	Lead Time
LED4D223	4-Wavelength High-Power LED Head (530/590/617/660 nm)	\$2,570.00	Lead Time
LED4D229	4-Wavelength High-Power LED Head (365/455/565/617 nm)	\$2,570.00	Lead Time
LED4D230	4-Wavelength High-Power LED Head (365/455/565/625 nm)	\$2,570.00	Lead Time
LED4D231	4-Wavelength High-Power LED Head (365/455/565/660 nm)	\$2,570.00	Lead Time
LED4D232	4-Wavelength High-Power LED Head (365/470/565/617 nm)	\$2,570.00	Lead Time
LED4D233	4-Wavelength High-Power LED Head (365/470/565/625 nm)	\$2,570.00	Lead Time
LED4D234	4-Wavelength High-Power LED Head (365/470/565/660 nm)	\$2,570.00	Lead Time
LED4D235	4-Wavelength High-Power LED Head (365/490/565/617 nm)	\$2,570.00	Lead Time
LED4D236	4-Wavelength High-Power LED Head (365/490/565/625 nm)	\$2,570.00	Lead Time
LED4D237	4-Wavelength High-Power LED Head (365/490/565/660 nm)	\$2,570.00	Lead Time
LED4D238	4-Wavelength High-Power LED Head (385/455/565/617 nm)	\$2,570.00	Lead Time
LED4D239	4-Wavelength High-Power LED Head (385/455/565/625 nm)	\$2,570.00	Lead Time
LED4D240	4-Wavelength High-Power LED Head (385/455/565/660 nm)	\$2,570.00	Lead Time
LED4D241	4-Wavelength High-Power LED Head (385/470/565/617 nm)	\$2,570.00	Lead Time
LED4D242	4-Wavelength High-Power LED Head (385/470/565/625 nm)	\$2,570.00	Lead Time
LED4D243	4-Wavelength High-Power LED Head (385/470/565/660 nm)	\$2,570.00	Lead Time
LED4D244	4-Wavelength High-Power LED Head (385/490/565/617 nm)	\$2,570.00	Lead Time
LED4D245	4-Wavelength High-Power LED Head (385/490/565/625 nm)	\$2,570.00	Lead Time
LED4D246	4-Wavelength High-Power LED Head (385/490/565/660 nm)	\$2,570.00	Lead Time
LED4D247	4-Wavelength High-Power LED Head (405/455/556/617nm)	\$2,570.00	Lead Time
LED4D248	4-Wavelength High-Power LED Head (405/455/565/625 nm)	\$2,570.00	Lead Time
LED4D249	4-Wavelength High-Power LED Head (405/455/565/660 nm)	\$2,570.00	Lead Time
LED4D250	4-Wavelength High-Power LED Head (405/470/565/617 nm)	\$2,570.00	Lead Time
LED4D251	4-Wavelength High-Power LED Head (405/470/565/625 nm)	\$2,570.00	Lead Time
LED4D252	4-Wavelength High-Power LED Head (405/470/565/660 nm)	\$2,570.00	Lead Time
LED4D253	4-Wavelength High-Power LED Head (405/490/565/617 nm)	\$2,570.00	Lead Time
LED4D254	4-Wavelength High-Power LED Head (405/490/565/625 nm)	\$2,570.00	Lead Time
LED4D255	4-Wavelength High-Power LED Head (405/490/565/660 nm)	\$2,570.00	Lead Time
LED4D256	4-Wavelength High-Power LED Head (420/455/565/617 nm)	\$2,570.00	Lead Time
LED4D257	4-Wavelength High-Power LED Head (420/455/565/625 nm)	\$2,570.00	Lead Time
LED4D258	4-Wavelength High-Power LED Head (420/455/565/660 nm)	\$2,570.00	Lead Time
LED4D259	4-Wavelength High-Power LED Head (420/470/565/617 nm)	\$2,570.00	Lead Time
LED4D260	4-Wavelength High-Power LED Head (420/470/565/625 nm)	\$2,570.00	Lead Time
LED4D261	4-Wavelength High-Power LED Head (420/470/565/660 nm)	\$2,570.00	Lead Time
LED4D262	4-Wavelength High-Power LED Head (420/490/565/617 nm)	\$2,570.00	Lead Time
LED4D263	4-Wavelength High-Power LED Head (420/490/565/625 nm)	\$2,570.00	Lead Time
LED4D264	4-Wavelength High-Power LED Head (420/490/565/660 nm)	\$2,570.00	Lead Time
LED4D265	4-Wavelength High-Power LED Head (470/565/617/660 nm)	\$2,570.00	Lead Time
LED4D266	4-Wavelength High-Power LED Head (490/565/617/660 nm)	\$2,570.00	Lead Time
LED4D268	4-Wavelength High-Power LED Head (455/565/617/660 nm)	\$2,570.00	Lead Time

[Hide Externally SM2-Threaded Microscope Adapters](#)

Externally SM2-Threaded Microscope Adapters

These SM2-threaded mounting adapters allow the 4-wavelength LED source to be mounted on 4-Wavelength Source Installation on an Olympus Microscope or an Olympus, Leica, Nikon, or Zeiss Microscope. The video to the right demonstrates how to install the source on an Olympus microscope.

Item #	LED4A1	LED4A2	LED4A4	LED4A5
(Click Photo to Enlarge)				
Compatible Microscope	Olympus	Leica	Zeiss	Nikon Eclipse

Part Number	Description	Price	Availability
LED4A1	Olympus BX or IX Microscope Lamphouse Port Adapter, External SM2 Threads, Silver Anodized	\$61.80	Today
LED4A2	Leica DMI Microscope Lamphouse Port Adapter, External SM2 Threads, Silver Anodized	\$61.80	Today
LED4A4	Zeiss Axioskop Microscope Lamphouse Port Adapter, External SM2 Threads, Silver Anodized	\$61.80	Today

LED4A5	Nikon Eclipse Ti Microscope Lamphouse Port Adapter, External SM2 Threads, Silver Anodized	\$104.00	Today
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[Hide Internally SM1-Threaded Adapter for Liquid Light Guides](#)

Internally SM1-Threaded Adapter for Liquid Light Guides



The LED4B1 Adapter for Liquid Light Guides contains a collimating aspheric lens (Item # ACL2520-A) to focus light from the 4-wavelength LED source into a liquid light guide (LLG) held in the appropriate LLG-to-SM1 adapter (not included). We manufacture two of these adapters: the AD3LLG SM1 adapter for Ø3 mm core LLGs and the AD5LLG SM1 adapter for Ø5 mm core LLGs. Thorlabs' selection of liquid light guides can be found here.

The LED4B1 has the same bolt pattern as the the 4-wavelength source's SM2-threaded collimating output port. To install, simply remove the SM2-threaded output port by unscrewing the four M2.5 screws and attach the LED4B1 adapter in its place using the same four screws. Detailed installation instructions may be found on the *LLG Installation* tab above.

Output Power of 4-Wavelength LED Source with Liquid Light Guide Attached					
LED Nominal Wavelength	Power through LLG		LED Nominal Wavelength	Power through LLG	
	Ø3 mm Core, 6' (1.8 m) Long	Ø5 mm Core, 4' (1.2 m) Long		Ø3 mm Core, 6' (1.8 m) Long	Ø5 mm Core, 4' (1.2 m) Long
365 nm	35 mW	110 mW	505 nm	70 mW	150 mW
385 nm	65 mW	120 mW	530 nm	15 mW	55 mW
405 nm	110 mW	330 mW	565 nm	57 mW	93 mW
420 nm	5 mW	20 mW	590 nm	20 mW	45 mW
455 nm	105 mW	250 mW	617 nm	80 mW	150 mW
470 nm	105 mW	275 mW	625 nm	100 mW	200 mW
490 nm	10 mW	30 mW	660 nm	100 mW	190 mW

Part Number	Description	Price	Availability
LED4B1	Customer Inspired!Liquid Light Guide Adapter for the 4-Wavelength LED Source	\$133.00	Today

[Hide Advanced 4-Channel LED Driver](#)

Advanced 4-Channel LED Driver



- 4 Channels with Precise and Individual Current Adjustment
- Modulation Frequency: 0 - 100 kHz (Sine Wave)
- LED Current: 1 A (Max)
- Driving Voltage: 5 V (Max)

The DC4100 Series LED Driver is designed to conveniently control the LED4D Sources. Click here for more details.

Part Number	Description	Price	Availability
DC4100	4-Channel LED Driver, 1 Modulation Input, 1 A, 5 V	\$2,580.00	Today
DC4104	Customer Inspired!4-Channel LED Driver, 4 Modulation Inputs, 1 A, 5 V	\$2,840.00	Today

Visit the *4-Wavelength High-Power LED Source* page for pricing and availability information:
http://www.thorlabs.com/newgrouppage9.cfm?objectgroup_id=3836