

## LDS5 - May 2, 2024

Item # LDS5 was discontinued on May 2, 2024. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

### POWER SUPPLIES

- Output Voltages Ranging from 5 VDC to 24 VDC
- Location-Specific Power Cord or Adapter Included

**CPS1**  
5 VDC Battery Pack for  
CPS Laser Diodes



**KCH601**

USB Controller Hub and  
Power Supply for Six K-  
Cubes™ or T-Cubes™



**LDS9**  
9 VDC Regulated Power  
Supply



**EC5PS**  
OEM-Style Power Supply



**DS5**  
5 VDC, 2 A Power Supply with USB  
2.0 Type-A Port

#### OVERVIEW

Thorlabs offers a variety of power supplies with output voltages ranging from 5 VDC to 24 VDC. Our OEM-style power modules are available in 15 W and 100 W units with three voltage outputs: +5 VDC, ±12 VDC, and ±15 VDC.

Power Supplies				
Item #	Output Voltage	Output Current	Connector Type	Compatible Products
LDS5 LDS5-EC	5 VDC	330 mA	2.5 mm Phono Plug	CPS Laser Modules
CPS1	5 VDC	2 A	2.5 mm Phono Plug & USB	
DS5	5 VDC	2 A	USB Type-A Female	DXM20AF, LCC2415-VIS(/M), Any Product Requiring 5 V Power via USB
LDS9 LDS9-EC	9 VDC	220 mA	2.5 mm Phono Plug	OEM Laser Diode Drivers
DS12	12 VDC	4 A	M8 Connector	PTC1 (PTC1/M)
LDS12B	±12 VDC	250 mA	LUMBERG RSMV3 Male Connector (3 Pins)	PDA and PDB Amplified Photodetectors, PDA Series Silicon Photomultipliers, DET Biased Detectors, PMM Photomultiplier Modules, APD Avalanche Photodetectors, and FSAC

<b>DS15</b>	15 VDC	1.3 A	Mini-XLR	Nanosecond Pulsed Laser Systems
<b>KPS201</b>	15 VDC	2.66 A	Female DC, 3.5 mm OD	KBD101, KDC101, KIM101, KLS635, KLS1550, KSC101, KST201, LEDD1B, and TIA60
<b>TPS002</b>	±15 VDC / 5 VDC	2.5 A @ 5 VDC 0.5 A @ +15 VDC 0.3 A @ -15 VDC	8-Pin Mini Din Plug (2 Places)	KPZ101, KNA-VIS, KNA-IR, KPA101, and KSG101
<b>KCH301</b> <b>KCH601</b>	15 VDC	10 A	26 Way 1.27 Pitch, ERNI Connector (6 Places)	All K-Cubes™ and T-Cubes™
<b>EC2PS<sup>a</sup></b>	±12 VDC / 5 VDC	2 A @ 5 VDC 0.2 A @ ±12 VDC	5 Available Output Connector Pins (Please Refer to the Manufacturing Spec Sheet for Pinout Table)	For use in Custom Electronic Assemblies
<b>EC3PS<sup>a</sup></b>	±15 VDC / 5 VDC	2 A @ 5 VDC 0.15 A @ ±15 VDC		
<b>EC4PS<sup>a</sup></b>	±12 VDC / 5 VDC	10 A @ 5 VDC 3 A @ +12 VDC 0.8 A @ -12 VDC	12 Available Output Connector Pins (Please Refer to the Manufacturing Spec Sheet for Pinout Table)	
<b>EC5PS<sup>a</sup></b>	±15 VDC / 5 VDC	10 A @ 5 VDC 3 A @ +15 VDC 0.8 A @ -15 VDC		
<b>DS24</b>	24 VDC	6.67 A	KPPX-3P, 3-Pin Male	

a. This power supply is designed to operate in a grounded enclosure which is protected against electrical and fire hazards. It is not intended for stand-alone or hands-on use under any circumstance.

## 5 VDC Regulated Power Supply



- ▶ Compatible with CPS Laser Modules
- ▶ 5 VDC Power Output
- ▶ 6 ft (183 cm) Cable with 2.5 mm Phono Plug

The LDS5 is a 5 VDC power supply that is ideal for use with our CPS laser diode modules. A 6 ft (183 cm) cable with a 2.5 mm phono plug extends from the body of the power supply for connection to a CPS module.

The power supply has a selectable line voltage of 115 or 230 VAC, which is controlled by a switch near the power switch. A 120 VAC power cable is included with the LDS5, while the LDS5-EC comes with a 230 VAC power cable. To order this item with a different power cable, please contact Tech Support.

Part Number	Description	Price	Availability
LDS5-EC	5 VDC Regulated Power Supply, 2.5 mm Phono Plug, 230 VAC	\$101.29	Today
LDS5	5 VDC Regulated Power Supply, 2.5 mm Phono Plug, 120 VAC	\$101.29	Lead Time

## 5 VDC External Battery Pack

- ▶ Portable USB Battery Pack with 5 VDC and up to 2 A Output
- ▶ Compatible with CPS Laser Modules and USB-Powered Devices
- ▶ 10 000 mAh Capacity



Thorlabs offers the CPS1 Battery Pack for powering our CPS laser modules and other USB-powered devices. The CPS1 battery pack outputs 5 VDC at up to 2 A, and offers 10 000 mAh capacity. A fully charged CPS1 battery pack can power any CPS laser module for at least 36 hours of continuous operation. The pack includes a USB-to-Micro-USB cable for charging and a custom USB-to-Phono cable for powering the CPS laser module. To activate the battery, simply push the power button once. The pack may be charged using

standard 5 V USB chargers for portable devices or using a computer USB port. While the battery pack is charging, it can still supply power to an attached laser module.

The CPS1 Battery Pack also includes an LED flashlight adjacent to the micro-USB port. The flashlight is activated and deactivated by holding the power for two seconds.

When connecting the CPS Diode Module, the module and adapter should be connected first. Then the adapter cable should be plugged into the isolated power supply to avoid a short circuit in the phono jack. Please note that the USB adapter included with this battery pack is not intended to be used with power supplies that are not current-limited or isolated from ground, such as some computers or laptops.

**Please note:** Due to shipping restrictions for lithium ion cells, the CPS1 battery pack is not available for purchase in certain countries. In countries where it is available, the battery pack must be shipped separately using specifically regulated shipping methods and may require special shipping and handling charges. Our sales team is available to answer additional questions concerning the shipment of this battery pack.

Close

Albania	Ecuador	Macedonia	Rwanda
Algeria	Egypt	Madagascar	Saint Martin
American Samoa	Equatorial Guinea	Malawi	Samoa
Angola	Eritrea	Maldives, Republic of	Saudi Arabia
Argentina	Estonia	Mali	Senegal
Armenia	Ethiopia	Malta	Serbia
Azerbaijan	Faeroe Islands	Marshall Islands	Serbia-Montenegro
Bangladesh	Fiji	Martinique	Serbia-Montenegro Old
Belarus	French Guiana	Mauritania	Seychelles
Belize	French Polynesia	Mauritius	Sierra Leone
Benin	Gabon	Micronesia	Solomon Islands
Bermuda	Gambia	Moldova	Somalia
Bhutan	Georgia, Republic of	Mongolia	South Africa, Republic of
Bolivia	Ghana	Montenegro	Sri Lanka
Bonaire, Sint Eustatius and Saba	Gibraltar	Montserrat	Sudan
Bosnia-Herzegovina	Greenland	Morocco	Suriname
Botswana	Guinea	Mozambique	Swaziland
British Virgin Islands	Guinea Bissau	Myanmar	Tanzania
Brunei	Honduras	Namibia	Togo
Bulgaria	Iceland	Nepal	Tonga
Burkina Faso	India	New Caledonia	Tunisia
Burundi	Iran	New Zealand	Turkey
Cambodia	Iraq	Nicaragua	Turkmenistan, Republic of
Cameroon	Ivory Coast	Niger	Uganda
Cape Verde	Jordan	Nigeria	Ukraine
Central African Republic	Kazakhstan	Northern Mariana Islands	Uruguay
Chad	Kenya	Oman	Uzbekistan
Chile	Kyrgystan	Pakistan	Vanuatu
Congo	Laos	Palau	Venezuela
Congo, Dem Rep of	Latvia	Palestine Autonomous	Wallis & Futuna Islands
Cook Islands	Lebanon	Papua New Guinea	Zambia
Curacao	Lesotho	Paraguay	Zimbabwe
Cyprus	Liberia	Peru	
Djibouti	Libya Reunion	Romania	
East Timor	Macau	Russia	

This battery cannot be shipped to certain postal codes in and around Perth, Australia.

Part Number	Description	Price	Availability
CPS1	Customer Inspired! 5 VDC Battery Pack for CPS Laser Diodes, 10 000 mAh	\$41.29	Today

### 5 VDC Regulated Power Supply



- ▶ Compatible with Our Ultrafast Detectors
- ▶ 5 VDC Regulated Power Supply
- ▶ USB Type-A Port

The DS5 is a 5 V, 2 A regulated power supply with a USB 2.0 Type-A female port that can be used with any USB-compatible device that accepts a 5 VDC output. It is directly compatible with our ultrafast fiber optic detectors when used with the USB-AB-72 USB cable and with our PM101, PM102, and PM103 series of power meters when used with the USB-ABL-60 USB cable with an M2.5 locking screw (each cable sold separately). We also offer other USB 2.0 cables. A region-specific adapter plug is shipped with the DS5 power supply unit based on your location.



Click for Details  
Region-Specific  
Adapters for DS5

Part Number	Description	Price	Availability
DS5	5 VDC, 2 A Regulated Power Supply with USB Type-A Port, 100/240 VAC	\$23.56	Today
USB-AB-72	USB 2.0 Type-A to Mini-B Cable, 72" (1.83 m) Long	\$9.73	Today
USB-ABL-60	USB 2.0 Type-A to Mini-B Cable with Locking Screw, 60" (1.5 m) Long	\$10.76	Today

### 9 VDC Regulated Power Supply



- ▶ Compatible with Our OEM Laser Diode Drivers
- ▶ 9 VDC Power Output
- ▶ 6 ft (183 cm) Cable with 2.5 mm Phono Plug

The LDS9 is a 9 VDC power supply that is ideal for use with our OEM Laser Diode Drivers. A 6 ft (183 cm) cable with a 2.5 mm phono plug extends from the body of the power supply for connection to a 2.5 mm phono power socket.

The LDS9 power supply has a line voltage of 115 VAC, while the LDS9-EC has a line voltage of 230 VAC. A 120 VAC power cable is included with the LDS9 and the LDS9-EC comes with a 230 VAC power cable. To order this item with a different power cable, please contact Tech Support.

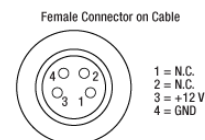
Part Number	Description	Price	Availability
LDS9-EC	9 VDC Regulated Power Supply, 2.5 mm Phono Plug, 230 VAC	\$100.09	Today
LDS9	9 VDC Regulated Power Supply, 2.5 mm Phono Plug, 120 VAC	\$100.09	Today

### 12 VDC Power Supply



- ▶ Compatible with Our Temperature-Controlled Mini-Series Breadboard
- ▶ 12 VDC Power Output
- ▶ 4.1 ft (123 cm) Cable with M8, 4-Pin Female Connector

The DS12 is a 12 VDC power supply with a 1.23 m long cable and an M8, 4-pin female connector, and operates at an input voltage of 100 - 240 VAC. It is compatible with any male M8, 4-pin device that accepts a 12 VDC output. The DS12 ships with a region-specific AC cable.



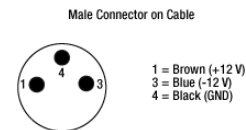
Part Number	Description	Price	Availability
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DS12	12 VDC, 4 A Regulated Power Supply with M8 Connector, 100 - 240 VAC	\$62.19	Today
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### ±12 VDC Regulated Linear Power Supply



- ▶ Compatible with PDA, PDB, DET, PMM, and APD Photodetectors, and the FSAC Autocorrelator for Femtosecond Lasers
- ▶ ±12 VDC Power Output
- ▶ 6.6 ft (2 m) Cable with LUMBERG RSMV3 Male Connector



The LDS12B is a ±12 VDC regulated linear power supply specifically for use with our PDA and PDB amplified photodetectors, PMM photomultiplier modules, APD avalanche photodetectors, and the FSAC autocorrelator for femtosecond lasers. In addition, it can be used with our DET biased photodetectors in conjunction with a DET2A power adapter. Note that we offer a bundle of the LDS12B and DET2A (Item # DET2B). Additionally, the LDS12B power supply can be purchased bundled with a cable for connecting to the LD1255R Laser Diode Driver or PDAPC Series Photodetectors (Bundle Item # LD1255-SUPPLY).

The LDS12B regulated power supply incorporates a current limit, enabling short circuit and overload protection; an on/off switch with LED indicator; and a switchable AC input voltage (100, 120, or 230 VAC). The 2 m (6.6 ft) long cord has three pins: one for ground, one for +12 V and one for -12 V (see diagram to the right). A region-specific power cord is shipped with the LDS12B power supply based on your location.

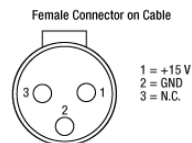
The LDS12B is fully compatible with Thorlabs products that used the previous generation power supply, the LDS1212.

Part Number	Description	Price	Availability
LDS12B	±12 VDC Regulated Linear Power Supply, 6 W, 100/120/230 VAC	\$93.55	Today

### 15 VDC Regulated Power Supply



- ▶ Compatible with Our Nanosecond Pulsed Laser Systems
- ▶ 15 VDC Regulated Power Supply
- ▶ Mini-XLR Connector



Click for Details  
Region-Specific  
Adapters for DS15

The DS15 is a 15 V, 1.2 A regulated power supply with a 1.53 m (60.24") long cable and a Mini-XLR connector. It is suitable for any Mini-XLR-compatible device that requires a 15 VDC output, and is directly compatible with our nanosecond pulsed laser systems. A region-specific adapter plug is shipped with the DS15 power supply based on your location.

Part Number	Description	Price	Availability
DS15	15 VDC, 1.2 A Regulated Power Supply with Mini-XLR Connector, 100/240 VAC	\$52.48	Today

### K-Cube™ and T-Cube™ Power Supplies



- ▶ Individual Power Supplies for One K-Cube or T-Cube
  - ▶ KPS201: For K-Cubes or T-Cubes with 3.5 mm Jacks
- ▶ Power Supply for up to Two K-Cubes or T-Cubes
  - ▶ TPS002: For K-Cubes or T-Cubes with Mini-DIN Input

Input Specifications	
Item #	Mains Voltage Requirements
KPS201	100 - 240 V, 1 A Max, 47 - 63 Hz
TPS002	90 - 264 V, 0.8 A Max, 47 - 63 Hz



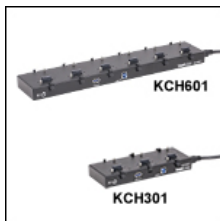
Click for Details  
Region-Specific  
Adapters for KPS201

The KPS201 offers a simple power supply for select individual K-Cubes or T-Cubes, while the TPS002 supplies power for one or two select K-Cubes or T-Cubes. Please refer to the compatibility information in the list or table above. The TPS002 can only support one KNA-VIS or KNA-IR controller and should not be used to power any additional units due to potentially exceeding the current limit.

The cubes need to be hooked up individually to a computer via a USB cable to use them with the motion control software. One region-specific plug adapter, selectable at checkout, is included with each power supply. The adapter plugs for the KPS201 are shown to the right.

Part Number	Description	Price	Availability
KPS201	15 V, 2.66 A Power Supply Unit with 3.5 mm Jack Connector for One K- or T-Cube	\$40.33	Today
TPS002	±15 V/5 V Power Supply Unit with Mini-DIN Connectors for up to Two K- or T-Cubes	\$128.29	Today

### USB Controller Hubs for K-Cubes™ and T-Cubes™



- ▶ USB Controller Hubs for up to Three or Six K-Cubes or T-Cubes
- ▶ Provide Power and Communication with a Single USB Cable and a Single Power Connection
- ▶ Adapter Plate Connects T-Cube to Hub

Input Specifications	
Item #	Mains Voltage Requirements
KCH301	80 - 264 V, 1.8 A Max, 47 - 63 Hz
KCH601	



Click to Enlarge  
KCH301 USB Controller Hub with Installed  
K-Cube and T-Cube Modules  
(T-Cube is Shown on a KAP101 Adapter)



Click to Enlarge

These USB Controller Hubs have been designed specifically with multiple K-Cube and T-Cube operation in mind. The hub vastly reduces the number of USB and power cables required when operating multiple K-Cubes or T-Cubes. Furthermore, a USB output connector can be connected to the USB input on another unit, allowing multiple Controller Hubs to be connected together while still only using a single USB cable from the host control PC.

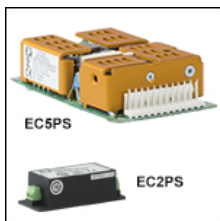
The hub draws a maximum current of 10 A; please verify that the cubes being used do not require a total current of more than 10 A.

The KCH301 and KCH601 Controller Hubs are compatible with all K-Cube and T-Cube modules. A KAP101 or KAP102 Adapter Plate (sold separately) is required for each T-Cube to operate on the controller hub. The KAP101 is designed to adapt 60 mm wide T-Cubes to the hubs, while the KAP102 is designed to adapt 120 mm wide T-Cubes to the hubs.

For more information on the USB Controller Hubs, see the full web presentation.

Part Number	Description	Price	Availability
KCH301	USB Controller Hub and Power Supply for Three K-Cubes or T-Cubes	\$598.63	Today
KCH601	USB Controller Hub and Power Supply for Six K-Cubes or T-Cubes	\$724.52	Today
KAP101	Adapter Plate for KCH Series Hubs and 60 mm Wide T-Cubes	\$69.43	Today
KAP102	Adapter Plate for KCH Series Hubs and 120 mm Wide T-Cubes	\$75.60	Today

### OEM Power Supplies




These power supply modules are intended to be integrated into custom electronics assemblies. The power supplies can deliver 15 W or 100 W of power to the setup. Each module has three possible voltage outputs; see the table below and the spec sheets for details. Mounting taps or through holes on the base of each unit allow it to be mounted to a surface inside an enclosure. See our custom enclosure configurator to design and order an aluminum enclosure to fit the needs of your system.

Please note that these power supplies are designed to operate in grounded enclosures which are protected against electrical and fire hazards. They are not intended for stand-alone or hands-on use under any circumstance.

#### Key Specifications<sup>a</sup>

Item #	EC2PS	EC3PS	EC4PS	EC5PS
Manufacturer Item #	ECL15UT02-S	ECL15UT03-S	ECM100UT31	ECM100UT33
Output Voltage	+5 VDC / ±12 VDC	+5 VDC / ±15 VDC	+5 VDC / ±12 VDC	+5 VDC / ±15 VDC
			10 A @ 5 VDC	10 A @ 5 VDC

<b>Output Current</b>	2 A @ 5 VDC 0.2 A @ ±12 VDC	2 A @ 5 VDC 0.15 A @ ±15 VDC	3 A @ +12 VDC 0.8 A @ -12 VDC	3 A @ +15 VDC 0.8 A @ -15 VDC
<b>Output Power</b>	15 W		100 W <sup>b</sup>	
<b>Input Voltage</b>	85 - 264 VAC (120 - 370 VDC)		90 - 264 VAC (120 - 370 VDC)	
<b>Inrush Current</b>	20 A (at 115 VAC)		40 A (Max at 230 VAC)	
<b>Operating Temperature</b>	-20 to +70 °C		0 to 70 °C	
<b>Mounting Holes</b>	Two Ø0.14" (Ø3.5 mm) Through Holes		Four Ø0.16" (Ø4.0 mm) Through Holes	
<b>Dimensions<sup>c</sup></b>	3.31" x 1.36" x 1.04" (84.0 mm x 34.5 mm x 26.4 mm)		4.50" x 2.50" x 1.20" (114.3 mm x 63.5 mm x 30.5 mm)	

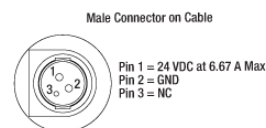
- a. See the spec sheets by clicking on the red Docs icons below (  ) for complete specifications, including pin diagrams.
- b. 100 W output power only available when forced-air cooled at 5 CFM. When convection cooled, the EC4PS can provide 75 W while the EC5PS can provide 80 W.
- c. Including Chassis/Cover

Part Number	Description	Price	Availability
EC2PS	15 W, +5 V / ±12 V Power Supply Module for Custom Electronics Assemblies	\$125.78	Today
EC3PS	15 W, +5 V / ±15 V Power Supply Module for Custom Electronics Assemblies	\$125.78	Today
EC4PS	100 W, +5 V / ±12 V Power Supply Module for Custom Electronics Assemblies	\$246.90	Today
EC5PS	100 W, +5 V / ±15 V Power Supply Module for Custom Electronics Assemblies	\$246.90	Today

## 24 VDC Regulated Power Supply



- ▶ Compatible with Our MCM301 3-Axis Controller for Microscopy
- ▶ 24 VDC Power Output
- ▶ Input Voltage of 85 - 264 VAC
- ▶ 3.9 ft (120 cm) Cable with KPPX-3P, 3-Pin Male Connector



The DS24 24 VDC regulated power supply has a 1.20 m long cable and a KPPX-3P, 3-pin male connector. It accepts input voltages from 85 to 264 VAC. This power supply is compatible with the MCM301 3-axis controller for microscopy. The DS24 ships with a region-specific AC cable.

Part Number	Description	Price	Availability
DS24	24 VDC Regulated Power Supply with KPPX-3P Connector, 85 - 264 VAC	\$159.78	Today