

For Flexibility, Choose Newport Laser Diode Control Instrumentation







How do you select the proper [Laser Diode Driver or Laser Diode Mount](#) when you don't know which laser diode will be best for you application, or you need to control several different lasers with unique operating settings. The flexibility of Newport's laser diode control solutions make them the best bet!

Selecting a Laser Diode Driver or Laser Diode Mount

Click [Laser Diode Controllers and Mounts](#) to shop or browse all of our standard models, or select a product family below for more information. Always start with the lasers or the LED that meets your requirements. Based on the product datasheet or your calculation, estimate the operating current, forward voltage, and the amount of heat generated at operating conditions. Choose the laser diode mount that can accommodate the package mechanically and thermally. Choose the laser diode driver that can supply at least 10 – 20 % more voltage and current than required, as the diode will draw more current to generate the same amount of light as it ages. Likewise, give some room for extra heat load when you choose the temperature controller. Keep an eye on the noise specifications, as they tend to increase as the output capacities of the instruments increase.



Laser Diode Drivers

Laser Diode Drivers		Features and Benefits
	Laser Diode Drivers, 500B Series	<ul style="list-style-type: none"> • Low noise current sources with better than 50 ppm long-term stability • Full package of operational features and time-tested laser diode safety features • Laser current levels up to 6 A • Standard USB 2.0 interface for remote control
	High-Power Laser Diode Driver, 5700 Series	<ul style="list-style-type: none"> • CW and pulsed current operation up to 150A • Compliance voltage up to 30V to accommodate a diode stack • Advanced laser diode protection schemes • Simple-to-use and intuitive front panel controls • Analog Control Input for remote current setting and sensing • Analog monitor outputs available for fast LIV characterization • Fully programmable internal oscillator for modulation
Laser Temperature Controllers		Features and Benefits
	Model 350B TEC Controller	<ul style="list-style-type: none"> • Ultra-stable temperature control ($\pm 0.001^\circ\text{C}$) over a broad temperature range • User interface software and drivers are compatible with Windows XP and Windows 7, 32 bit and 64 bit machines • Compatible with the most widely-used temperature sensors: thermistors, and AD590/592 and LM135/335 IC sensors • Wide TEC temperature range from -50 to $+150^\circ\text{C}$ • USB 2.0 interface for remote control
	High-Power Temperature Controller, Model 3700	<ul style="list-style-type: none"> • 14 A/24 V, low noise, bipolar output • Extremely stable, long term drift $< 0.002^\circ\text{C}$ • User interface software and drivers are compatible with Windows XP and Windows 7, 32 bit and 64 bit machines • Multiple sensors supported: thermistors, RTD, AD590/592, and LM335 • Complete characterization of TE cooler (ITE and VTE) versus temperature • Automatic power management and failsafe shutdown
Combination and Modular Drivers and Temperature Controllers		Features and Benefits
	Laser Diode and Temperature Controller, Model 6100	<ul style="list-style-type: none"> • Replacement model for legacy 6000 laser diode driver • Ultra low noise current control, 1.2 μA (rms) ripple • Ultra stable 24 hour temperature drift $< 0.003^\circ\text{C}$ • USB2.0 Plug-and-Play interface • Impressive LIV and temperature tuning software suite included • User interface software and drivers are compatible with Windows XP and Windows 7, 32 bit and 64 bit machines • Configurable shutdown of LD current upon faulty shut-off of temperature controller
	Modular Multi-Channel Laser Diode Controller, Model 8000	<ul style="list-style-type: none"> • Comprehensive laser diode protection features • Large graphics display, allowing full four-channel visibility • Complete laser diode characterization (L, V, I) using 8500 modules • Complete TE cooler characterization (ITE, VTE) using 8350 module • Standard GPIB/IEEE-488.2 and RS-232 interface

Laser Diode Mounts and Accessories

Model	Link	Heat Dissipation Capacity (W)	Laser Type
	700 series TE Cooled TO-CAN LD Mounts		 <p>TO-56, TO-9, and pigtailed laser diodes</p>
	Model 710 TEC Controlled TO-CAN Laser Diode Mount	3	 <p>TO-56, TO-9, and pigtailed laser diodes</p>
	740 Series Telecom Laser Diode Mounts	15	 <p>Designed for a butterfly laser package</p>
	Medium Power Laser Diode Mounts	5	C-Type and TO-3 medium power laser diodes
	High-Power Laser Diode Mounts	25	C-Type and TO-3 medium power laser diodes
	High-Power Laser Diode Mounts	61	Various high power laser diodes
	Cylindrical Laser Mounts		Cylindrical lasers
	Laser Diode Adaptors		 <p>TO-56 and TO-9 laser diodes</p>
	Electrical Cables and Accessories		
	Laser Diode Control Kits		

Cables and Accessories

Cables for Newport's laser diode drivers and temperature controllers are separately available for purchase. Cables with the proper connector on one or both the sides are available. These cables are EMS shielded for maximum protection of the sensitive devices from environment. Also available from Newport are ESD wrist wrap, RoHS compliant USB2.0 and BNC cables.

Model	Description	Interfacing Instrument
Cables for Laser Control Instruments		
300-02	Temperature Controller Cable, Model 300B Series, DB15 Male to Bare Wire	300/300B Series, 6100, 8000 Series, 710, 742, 744(-TEC)
300-04	Temperature Controller Cable, Model 300B Series, DB15 Male to DB15 Female	300/300B Series, 6100, 8000 Series, 710, 742, 744(-TEC)
500-02	Laser Diode Driver Cable, DB9 Male to Bare Wire	500/500B Series, 6100, 8000 Series, 710, 742, 744(-TEC)
500-04	Laser Diode Driver Cable, DB9 Male to DB9 Female	500/500B Series, 6100, 8000 Series, 710, 742, 744(-TEC)
3150-02	Temperature Controller Cable, Model 3150/3700, D-Sub 7W2 Male to Bare Wire	3150 (obsolete), 3700
3150-04	Temperature Controller Cable, Model 3150/3700, D-Sub 7W2 Male to Female	3150 (obsolete), 3700
5700-06	High-Power LDD Cable, Model 5700, 80 A Max	5700 Series
5700-02	High-Power LDD Cable, Model 5700, 65 A Max	5700 Series, 763H series (obsolete)
Electrical Cable Accessories		
FK-STRAP	Grounding Wriststrap	General use
90019426	BNC Cable, Male to Male, 60in	General use
90017470	USB2.0 Cable, Type A to Type B, 1 m (40 in.), RoHS	General use
90021186	USB 2.0 Cable, Right Angle A Male to Right Angle B Male, 2 ft, RoHS	General use
Thermistors and Temperature Sensors		
300-16	Thermistor, 10.0 kΩ, ±0.2°C	General use
300-22	Temperature Sensor, AD592CN, -45°C to +125°C Range	General use



LDKIT Laser Diode Control Kit

Introducing Newport's completely overhauled laser diode control kits. These kits include a laser diode driver, a temperature controller, a mount, and cables to allow a quick setup for running various types of laser diodes. The new kits are not only built for high power laser diodes but also for the popular TO-can laser and butterfly laser packages.

Model	LDKIT-1.5A-TO	LDKIT-1.5A-BUT	LDKIT-80A-110W	LDKIT-30A-61W	LDKIT-6A-55W
Laser Diode Driver					
Model	6100		5700-80-7	5700-30-5	560B
Output Current Range (mA)	0-500 / 0-1500		0-80	0-30	0-6
Laser Output Compliance Voltage (V)	10		7,5	5	5
Temperature Controller					
Model	6100		3700		350B
TE Current (A)	-4.00 to + 4.00		-14.00 to +14.00		-5.00 to +5.00
Compliance Voltage (V)	8.0		24.0		11.0
Output Power (W)	32		336		55
Laser Diode Mount					
Model	710	744	764H-110	764H-061	
Heat Dissipation Capacity (W)	3	3	61	61	
Cables and Accessories					
Cable LDD-Mount	500-04		5700-06		500-02
Cable TEC-Mount	300-04		Included with Mount		300-02
Grounding Wriststrap	FK-STRAP				
Other Accessories	post, post holder, fork		thermal paste	thermal paste	thermal paste

Laser Diodes

Newport does not fabricate laser diodes but carries a number of TO-56, TO-9, and pigtailed laser diodes with a variety of wavelengths so that the customers do not have to shop around multiple vendors.

Model	Features and Benefits
	<p data-bbox="783 338 1209 360">Laser Diode, TO-56/9, Blue, Visible, Infrared</p> <ul data-bbox="691 360 1305 450" style="list-style-type: none"> • 500 / 1500 mA laser drive current, 10 V compliance voltage <ul data-bbox="794 383 1201 421" style="list-style-type: none"> • 4A / 8V low noise, bipolar output for TEC • Ultra stable 24 hour temperature drift <0.003°C • Impressive LIV and temperature tuning software suite included
	<p data-bbox="863 512 1129 535">Fiber Pigtailed Laser Diodes</p> <ul data-bbox="722 535 1273 624" style="list-style-type: none"> • Center wavelengths ranging from 635–1550 nm <ul data-bbox="826 557 1169 584" style="list-style-type: none"> • Single and multimode light output • Fully compatible with Newport's 700P laser diode mount <ul data-bbox="778 602 1225 624" style="list-style-type: none"> • Fiber pigtailed supplied with FC/PC connectors

Obsolete Product Replacement

For many obsolete products, we have newer replacements available. If you don't see the model number of an obsolete Newport laser diode instrument, please contact Newport at 1-800-222-6440 and ask for technical support. Note that this table is only a suggested recommendation; please contact technical support for your specific requirements.

Obsolete Model	Replacement Model
6000-OPT, 6000-05/-10/-30/ -60	6100
8008-OPT, 8016-OPT	8000-OPT
501B, 501, 505, 5005	505B
525B, 525, 5030, 5060	560B
5600-10, 5600-20	5700-30-5
5600-40, 5600-65	5700-80-7
325B, 325, 350, 3040	350B
3150	3700
FCSE-KIT	LDKIT-6A-55W
FCBAR-KIT-30A, FCSFA-KIT	LDKIT-30A-61W
FCBAR-KIT-80A, ORION-KIT-5700	LDKIT-80A-110W