

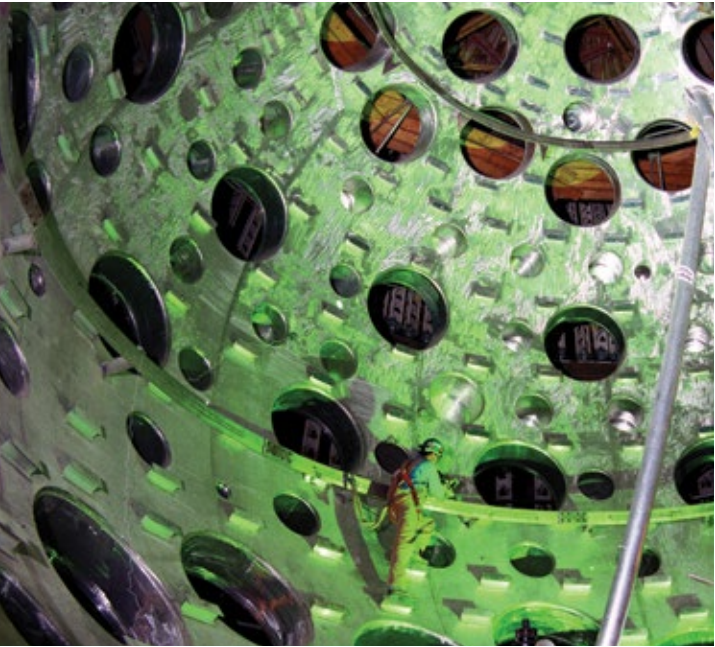
arroyo instruments



Precision
Instrumentation
for Lasers
and LEDs

Do More for Less

PERFORMANCE Arroyo Instruments offers high precision, low noise, low drift instruments that meet the demanding needs of laser diode and LED applications.



EASE OF USE Our benchtop instruments feature a high contrast VFD display capable of displaying real text, and an intuitive interface, making them incredibly easy to operate.

VALUE Our instruments feature everything you have come to expect in a world-class instrument, but at a price that is much lower than comparable products, giving you the highest value instruments on the market.

AVAILABILITY We know that when you need an instrument, you don't have time to wait weeks or even months because of availability. Most of our products are available for shipment within days.

Knowing that any instrument is only as good as the engineering put into it, all our products go through extensive design, testing and verification. We will not release a product until it exceeds our high standards for precision and performance.

Innovation

We are passionate about our products, and know that once you try one of our instruments, you'll never go back. We invite you to use this catalog to find the Arroyo Instruments product that best fits your needs, then call or visit our website. There you'll find complete specifications, user's manuals, and more that fully detail the capabilities of our instruments.

Ordering Information:



800 Village Walk #316
Guilford, CT 06437
Ph: 203-401-8093

Email orders to: sales@xsoptix.com
Fax orders to: 800-878-7282

Laser Diode Controllers

6300 SERIES COMBOSOURCE LASER DIODE CONTROLLERS

The **6300 Series ComboSource** Laser Diode Controller offers the best of both worlds: a high accuracy, low noise laser driver and a powerful 60W temperature controller, all in one compact instrument.



The **6300 ComboSource** was born from the proven technology of our LaserSource and TECSource products, and includes several improvements making it our flagship product, providing outstanding performance at a price that does not kill your budget.

Quick Specifications

	6301	6305	6310	6340	6310-QCL	6340-QCL
Laser Specifications						
Current (mA)	<i>Low Range</i>	50	250	500	2,000	2,000
	<i>High Range</i>	100	500	1,000	4,000	4,000
Compliance Voltage (V)	10	10	10	5	18	15
Enhanced QCL Functionality	No	No	No	No	Yes	Yes
TEC Specifications						
Current (A)	5					
Voltage (V)	12					
Sensor Support	Thermistor, RTD AD590, LM335					
RTD 4-wire Sense	Yes					
General Specifications						
Size (H x W x D) [in (mm)]	3.5 (90) x 8.5 (215) x 12 (305)					
Output Connector	DB-9 (Laser) and DB15 (TEC)					
Computer Interfaces	USB & RS-232					

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At a Glance

100mA to 4 Amps
60 Watt TEC
Low noise, dual range
Advanced laser protection
Computer Interface



Easy to Use, Easy to Configure

Like all our products, you'll find the user interface is easy to setup and use. A dot-pixel character display allows for human-readable status, readings, and errors. No longer do you need to get out the manual to figure out how to set the current limit, or to understand what error 114 is; you can read it directly on the display in plain English. Want to see big numbers from across the room? No problem. Want to see actual versus set point, voltage, and current...all at once? You can do that, too. With a configurable display you can make the instrument work the way you want it to. Its compact form factor means the **ComboSource** takes up less room on your test bench, and the USB and RS232 computer interfaces make it easy to integrate into your existing test systems.

User Function Keys

The user function keys can be used to quickly select different configuration states or execute a predefined set of commands. Switch between two different experiments or script repetitive actions...anything you can do manually with the instrument can be programmed to the function key.

High Performance Temperature Control

In addition to being an excellent laser driver, the **ComboSource** also functions as a high performance temperature controller. Sixty watts of output power and fully adjustable PID control make it suitable for a wide range of applications.

Enhanced QCL Capabilities

The **6310-QCL** and **6340-QCL** Controllers provide a few key capabilities that optimize the controller for QCL application. Most importantly, the driver offers the higher compliance voltages typical of QCL lasers. In addition, wave number tables can be created and downloaded to the controller, allowing simple operation by wave number and letting the controller manage the necessary current and voltage.

Dual Range Operation & 4-Wire Sense

The **ComboSource** features dual current operating ranges for improved noise and accuracy for lower current applications without sacrificing headroom for your more power powerful devices. The **ComboSource** also has 4-wire sensor for accurate device voltage measurements. This eliminates voltage errors caused by cable and connector resistances.

Full Isolation Means No Ground Loops

Beyond the expected laser protection features, the **ComboSource** adds something unique to the Arroyo family of products: optical isolation of the modulation and photo diode inputs (the computer interfaces are also isolated). This protects against unwanted ground loops and other electrical disturbances that can plague traditional instruments and damage lasers. No other driver on the market has this capability.

Independent, Isolated Outputs

With multiple, independent power supplies, the **ComboSource** operates the laser and temperature controller outputs fully independent of each other, with full electrical isolation.

Laser Diode Drivers

4200-DR & 4300 SERIES LASERSOURCE LASER DIODE DRIVERS

The Arroyo Instruments **LaserSource** represents the culmination of 23 years of experience developing current sources for laser diode test and measurement. By incorporating industry standard features with important improvements in instrument design, the **LaserSource** series of products are the most advanced laser diode drivers in the market today.



Quick Specifications

	4201 -DR	4205 -DR	4220 -DR	4302	4304	4308	4320
Primary Specifications							
Current Range (mA)	50	250	1,000	2,000	4,000	8,000	20,000
<i>Low Range</i>							
<i>High Range</i>	100	500	2,000				
Photodiode Input Range (mA)	5	5	5	20	20	20	20
Compliance Voltage (V)	10	10	5	15	8	5	5
QCW Parameters							
Minimum Pulse Width (μs)				100	100	100	100
Rise Time (μs)				< 20	< 20	< 20	< 40
Duty Cycle (%)				0.1–60	0.1–60	0.1–60	0.1–60
General Specifications							
Size (H x W x D) [in (mm)]	1.82 (47) x 8.5 (215) x 11 (280)			3.5 (90) x 8.5 (215) x 12 (305)			
Output Connector	DB-9			DB-9		9W4	
Computer Interfaces	USB			USB & RS-232			

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At a Glance

Dual Range (4200-DR)

Low Noise

100mA to 20 Amps

Computer Interface

QCW Options



Dual Range & 4-Wire Sense on the New 4200-DR

The new **4200-DR** drivers feature a dual range operation, giving you the flexibility to drive high current devices, while also having a low current, higher precision, lower noise mode, further expanding on the flexibility of our low current drivers. In addition to dual range, the **4200-DR** adds four-wire voltage sense for more accurate device voltage measurements.

Full Isolation Means No Ground Loops

Ground loops can plague instrument setups. In a major design improvement over traditional laser drivers, *every* input & output are optically and electrically isolated from each other, creating a versatile instrument that is unaffected by the electrical configuration of your diode or other test equipment. Even the photodiode input is fully isolated from the laser output, ensuring full isolation of the laser output from unwanted ground loops and other electrical disturbances. No other driver on the market has this capability.

Computer Interfaces

All **LaserSources** come standard with a USB interface, and **4300 LaserSources** also include RS-232. They are command set compatible with other manufacturers' drivers, allowing you to leverage any existing software you may have already developed.

Quasi-CW (QCW) Capable

The **4300 Series LaserSource** can be optionally equipped for quasi-CW (QCW) measurements, and feature both a trigger in and trigger out BNC for synchronization with other instruments. Pulses can be generated using the internal function generator, or triggered externally. Adding QCW mode does not mean you lose CW operation: QCW-equipped instruments retain all the capabilities of their CW-only cousins.

Analog Modulation

All **LaserSources** support analog modulation, and hardware protection is active during modulation, protecting the laser diode regardless of the modulation input signal.

Powerful User Interface

Unlike other instruments, the **LaserSource** employs a dot-pixel character display that allows for human-readable status, readings, and errors. No longer do you need to get out the manual to figure out how to set the current limit, or to understand what error 114 is; you can read it directly on the display in plain English.

Need More Current or Voltage? Call Us...

While we offer several standard current ranges, many applications require higher voltages or higher currents. Call us to discuss your high voltage or high current application, and we'll see if we have a solution for you.

Temperature Controllers

5240, 5300 & 5400 SERIES TECSOURCE

TEMPERATURE CONTROLLERS

The **TECSOURCE Series** of temperature controllers provide a range of capable temperature controllers with very stable control and an easy-to-use interface. With powers ranging from 28W to 960W, a **TECSOURCE** temperature controller is sure to fit your test and measurement needs.



Quick Specifications

Primary Specifications	5240	5305	5310	5300-08-24	5300-10-18	5400-15-28	5400-30-28	5400-20-56
Current (A)	4	5	10	8	10	15	30	20
Voltage (V)	7	12	12	24	18	28	28	56
Maximum Power (W)	28	60	120	192	180	420	840	960

Inputs / Outputs

Thermistor	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RTD, LM335, and AD590	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RTD 4-wire sense	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Sensor Inputs	1	1	1	1	1	7	7	7
Digital I/O	No	No	No	No	No	Yes	Yes	Yes
Analog Output Monitor	No	No	No	No	No	Yes	Yes	Yes

General Specifications

Size [in (mm)]	Height	1.82 (47)	3.5 (90)			3.5 (90)		
	Width	8.5 (215)	8.5 (215)			12 (305)		
	Depth	11 (280)	12 (305)			14 (356)		
Output Connector		DB-15				17W2		
Computer Interfaces	USB	USB & RS-232						

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At a Glance

Automatic PID Calculation
0.004°C Stability
28W to 960W of TEC Power
Built-in Fan Controller



Power to spare

With up to 960W versions available, buying temperature control power has never been less expensive. The extra power allows you to push your test setup farther without the typical costly upgrades normally associated with that amount of TEC power.

Built-In Fan Controller

All controllers include a built-in adjustable DC power supply which can be used to power external fans often found in test fixtures.

Measure Everything

Unlike many temperature controllers, the **TECSources** measures current, temperature, and voltage. Voltage measurement is often omitted in low cost temperature controllers. The **TECSources** is low cost, but not low performance.

Fully Adjustable PID Control

All **TECSources** offer factory defined gain settings for temperature control. Need more control? Switch to PID gain and you have individual adjustment of each value in the PID circuit, providing fine adjustment of the control loop.

Simple User Interface

Unlike other instruments in their class, the **TECSources** employs a dot-pixel character display that allows for human-readable status, readings, and errors. No longer do you need to get out the manual to figure out how to set the current limit, or to understand what error 114 is; you can read it directly on the display in plain English. This allows the user interface to be greatly simplified and at the same time easier to use.



Computer Interfaces

All **TECSources** come standard with a USB interface, and **5300 TECSources** also include RS-232. They are command set compatible with other manufacturers' drivers, allowing you to leverage any existing software you may have already developed.

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