

# 4300 SERIES LASERSOURCE LASER DRIVER



The 4300 Series LaserSource is a high-accuracy laser driver capable of supplying up to 20A for low and medium-power laser and LED applications. This laser driver offers features typically found in only more expensive units, such as overlapping laser protection systems and an optional QCW mode.



## OVERLAPPING LASER PROTECTION

Including safety interlock, ESD protection, hardware limits for current & voltage, soft power-on, and intermittent contact safeguards.



## QUASI-CONSTANT WAVE MODE (OPTIONAL)

QCW mode provides low duty cycle, high current pulses to manage thermal loading. Rise times less than 20µs. Pulse widths as narrow as 100 µs.



## ANALOG MODULATION

Bandwidths up to 65 kHz.



## MULTIPLE OPERATING MODES

Choose from: • Constant Current • Constant Power • Constant Voltage



## SIMPLE USER INTERFACE

Easy to Read, High Contrast VFD Display with all messages and settings in plain English. View All 3 At Once:

• Current Set Point • Photodiode Current • Laser Voltage



## PROGRAMMABLE PHOTODIODE BIAS VOLTAGE

Menu-selectable PD bias voltage, from 0 to -5 Volts.

## AT-A-GLANCE

Current Ranges:

- ▷ 2 Amp / 15 Volt
- ▷ 4 Amp / 8 Volt
- ▷ 8 Amp / 4 Volt
- ▷ 20 Amp / 5 Volt
- ▷ Custom configurations

High Accuracy

- ▷ Up to 0.025% of reading + 0.025% of scale

Low Noise

- ▷ As Low as <20 µA

Compliance Voltages

- ▷ Up to 24 Volts available

Remote Operation via PC

- ▷ Use your existing control code. Our command set is compatible with other manufacturers.
- ▷ USB / RS-232 Connections



## GROUND LOOPS: ELIMINATED. YOUR LASER IS PROTECTED.

A ground loop can destroy your laser in an instant.

Every input and control circuit on the LaserSource is electrically isolated. Offset voltages, ground connections, and AC noise will never act on your system.

***No other laser driver on the market has this capability.***

# 4300 CW MODE SPECIFICATIONS

	4302	4304	4308	4320
<b>Laser Current</b>				
Range (mA)	0 – 2000	0 – 4000	0 – 8000	0 - 20,000
Resolution (mA)	0.1	0.1	0.5	1
Accuracy ( $\pm$ [% set+mA])	0.05% + 0.4	0.05% + 0.8	0.05% + 1.6	0.05% + 4
Stability (ppm, time)	< 10, 1 hour			
Temperature Coeff (ppm/ $^{\circ}$ C)	50			
Noise/Ripple ( $\mu$ A rms)	< 20	< 30	< 60	< 5000
Transients ( $\mu$ A)	< 300	< 400	< 600	< 50mA
Compliance Voltage (V)	15	8	4	5
<b>Photodiode Current</b>				
Range ( $\mu$ A)	25 – 20000			
Resolution ( $\mu$ A)	1			
Accuracy ( $\pm$ [% set+ $\mu$ A])	0.05% + 2			
Stability (ppm, time)	< 200, 24 hours			
Temperature Coeff (ppm/ $^{\circ}$ C)	< 200			
PD Bias (V)	0 to -5V, programmable			
<b>Laser Voltage</b>				
Range (V)	0 – 15	0 – 8	0 – 4	0 – 5
Resolution (V)	0.001			
Accuracy ( $\pm$ [% set+V])	0.05% + 0.005			
Stability (ppm, time)	< 50, 1 hour			
Temperature Coeff (ppm/ $^{\circ}$ C)	< 100			
<b>External Modulation</b>				
Input Range	0 – 10V, 10k $\Omega$			
Modulation Bandwidth (kHz)	65	50	40	10
<b>Laser Current</b>				
Resolution (mA)	0.1	0.1	0.5	1
Accuracy ( $\pm$ [% reading+mA])	0.05% + 0.4	0.05% + 0.8	0.05% + 1.6	0.05% + 4
<b>Laser Voltage</b>				
Resolution (V)	0.001			
Accuracy ( $\pm$ [% reading+V])	0.05% + 0.004			
<b>Photodiode Current</b>				
Resolution ( $\mu$ A)	1			
Accuracy ( $\pm$ [% reading+ $\mu$ A])	0.05% + 2			

**CW Mode** Specifications

**Setpoint**

**Measurement**

[www.arroyo instruments.com](http://www.arroyo instruments.com)

 arroyo instruments  
1201 Prospect Street, San Luis Obispo, CA 93401

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# 4300

## QCW MODE SPECIFICATIONS

	4302	4304	4308	4320				
<b>Setpoint</b>								
<b>Laser Current (ACC)</b>								
Range (mA)	15 – 2000	25 – 4000	50 – 8000	150 – 20000				
Resolution (mA)	1	1	1	1				
Accuracy ( $\pm$ [% set+mA])	0.5% + 2	0.5% + 4	0.5% + 10	0.5% + 25				
Compliance Voltage (V)	15	8	4	5				
<b>Laser Current</b>								
Resolution (mA)	1	1	1	1				
Accuracy ( $\pm$ [% reading+mA])	3% + 4	3% + 8	3% + 16	3% + 30				
<b>Laser Voltage</b>								
Resolution (V)	0.01							
Accuracy ( $\pm$ [% reading+V])	2% + 0.04							
<b>Photodiode Current</b>								
Resolution ( $\mu$ A)	10							
Accuracy ( $\pm$ [% reading+ $\mu$ A])	2% + 100							
<b>Pulse Width</b>								
Range (ms)	0.1 – 600							
Resolution (ms)	0.001							
Accuracy (ms)	0.015							
<b>Frequency</b>								
Range (Hz)	1 – 1000							
Resolution (Hz)	0.1							
Accuracy (Hz)	0.5							
<b>Duty Cycle</b>								
Range (%)	0.1 – 90							
Resolution (%)	0.1							
Rise/Fall Times ( $\mu$ s)	< 20 / < 10	< 20 / < 10	< 20 / < 10	< 50 / < 10				
Overshoot (%)	< 7							
Zero Current (% of set)	7.5							
<b>Limits</b>								
<b>Laser Current</b>								
Resolution (mA)	1	1	1	100				
Accuracy ( $\pm$ [% reading+mA])	20	40	80	200				
<b>Laser Voltage</b>								
Resolution (V)	0.1							
Accuracy ( $\pm$ % FS)	2.5%							
<b>General</b>								
Display Type	2x20 VFD							
Laser Connector	DB-9, female	DB-9, female	DB-9, female	9W4, female				
Computer Interface	USB 2.0 Full Speed (Type B), RS-232 (DB-9, male)							
Power	100V / 120V / 230V, 50/60 Hz							
Size (H x W x D) [inches (mm)]	3.47 (89) x 8.5 (215) x 12 (305)							
Weight [lbs (kg)]	6.4 (2.9)	6.4 (2.9)	6.4 (2.9)	7.8 (3.5)				
Operating Temperature	+10°C to +40°C							
Storage Temperature	-20°C to +60°C							

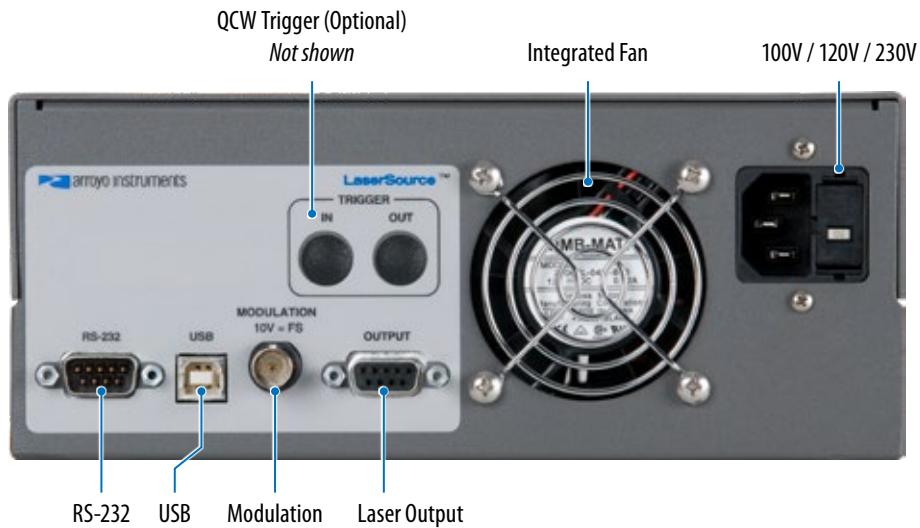
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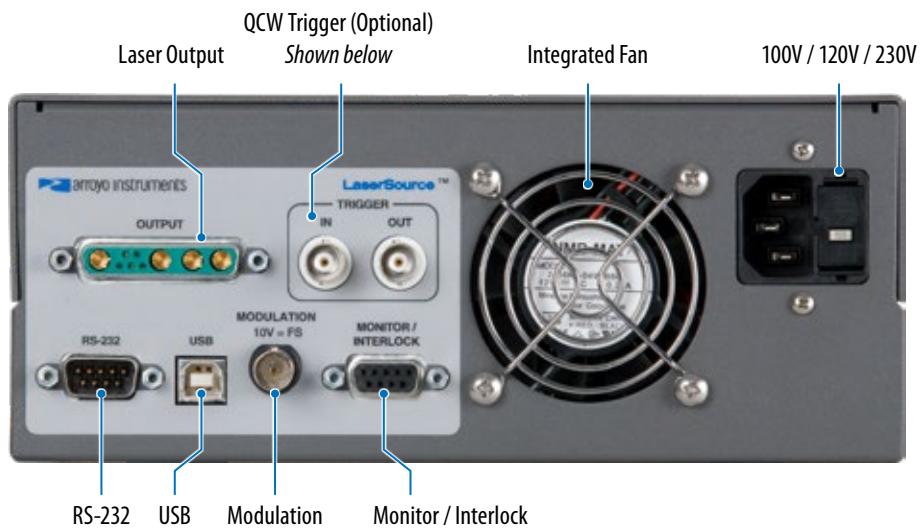
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## 4300 REAR VIEW



## 4320 REAR VIEW



## ARROYO CONTROL



Control any Arroyo laser driver or temperature controller directly from your PC. Simply connect to your Arroyo device via USB or RS-232 and gain direct access to settings, device limits, and adjustments from an easy-to-use Windows interface. You can even connect to multiple instruments at the same time.

Download ArroyoControl for free from [www.arroyoinstruments.com](http://www.arroyoinstruments.com).

*LabView drivers available.*



## ACCESSORIES



### 1401-RM-1

#### 4300 SERIES 2U RACK MOUNT KIT, 1 UNIT

This rack mount kit will mount any 4300 Series LaserSource, 5300 Series TECSource, or 6300 ComboSource in 2U of rack space. The unit can be positioned to the left or right side of the rack space, depending on how you mount the hardware.



### 1401-RM-2

#### 4300 SERIES 2U RACK MOUNT KIT, 2 UNITS

This rack mount kit will mount any 4300 Series LaserSource, 5300 Series TECSource, or 6300 ComboSource side-by-side in 2U of rack space.