

4220-DR LaserSource, 1A/2A



- User selectable 1000mA or 2000mA range
- 0.05mA resolution (1,000mA range)
- <15uA noise
- USB interface

The 4220-DR LaserSource is our most powerful laser driver in the 4200-DR Series, providing 2,000mA of laser driver current. Like the other drivers in the series, the 4220-DR offers an excellent combination of low noise, accuracy, and resolution, and works well with higher power LEDs and lasers.

Dual Range

One of the key new features of the 4220-DR is the dual range capability, which allows operation in either a 1,000mA range or 2,000mA range. For applications that need less than 1,000mA, the lower range offers higher accuracy, lower noise, and improved stability, while still maintaining the 2,000mA range for higher power devices.

Simple User Interface

The 4220-DR's user interface is remarkably simple... so easy to use, you'll have it up and running in no time. Unlike other instruments which rely on 7-segment LED displays and a confusing array of indicators and buttons, the 4220-DR instead presents the information on a high contrast VFD display in an easy-to-read format. The 4220-DR displays current, voltage, and photodiode current simultaneously... no need to toggle through the readings like on most instruments. Settings and error messages are in clear English, not cryptic codes and flashing status lights.

Programmable PD Bias Voltage

Unlike other laser drivers, the 4220-DR includes a software programmable PD bias voltage, from 0 to -5V, so selecting your bias voltage has never been easier. Simply adjust the voltage in the user menu or via a software command... no more fumbling around with a DMM and screwdriver to adjust the trim pot.

USB Interface Standard

The 4220-DR includes a USB computer interfaces, allowing for quick and easy connection to a PC for remote operation. In addition, the LaserSource's command set is compatible with ILX and Newport controllers, allowing you to leverage any existing software you may have already developed.

Ground Loops Eliminated

Like all LaserSources, the 4220-DR includes isolated inputs and outputs. In technical terms, this means that every input and output signal is electrically isolated, so that offset voltages, ground connections, and AC noise will not "bleed" into other parts of the electronics. Even the photodiode input is fully isolated from the laser output, ensuring full isolation of the laser output. In practical terms, this means it's impossible to create a ground loop through the LaserSource, a common problem in laboratory setups where several different instruments are used in the same test. No other driver on the market has this capability.

Analog Modulation

The 4220-DR's analog interface supports modulation via the rear BNC jack.



Specifications

CW Mode Specifications

LASER CURRENT (Low / High)

Range (mA)	0 – 1000 / 0 – 2000
Resolution (mA)	0.05 / 0.1
Setpoint Accuracy (\pm [% set+mA])	0.025% + 0.3 / 0.025% + 0.5
Measurement Accuracy (\pm [% reading+mA])	0.025% + 0.3 / 0.025% + 0.5
Stability (ppm, time)	< 10, 1 hour
Temperature Coeff (ppm/°C)	50
Noise/Ripple (μ A rms)	< 12 / < 15
Transients (μ A)	< 200
Compliance Voltage (V)	5
Modulation Bandwidth (kHz)	250
Modulation Input Range	0 – 10V, 10k Ω

PHOTODIODE CURRENT

Range (μ A)	5 – 5,000
Resolution (μ A)	0.1
Setpoint Accuracy (\pm [% set+ μ A])	0.05% + 1
Measurement Accuracy (\pm [% reading+ μ A])	0.05% + 1
Stability (ppm, time)	< 200, 24 hours
Temperature Coeff (ppm/°C)	< 200
PD Bias (V)	0 to -5V, software programmable

LASER VOLTAGE

Range (V)	0 – 5
Resolution (V)	0.001
Setpoint Accuracy (\pm [% set+V])	0.05% + 0.005
Measurement Accuracy (\pm [% reading+V])	0.05% + 0.005
Stability (ppm, time)	< 50, 1 hour
Temperature Coeff (ppm/°C)	< 100

LIMITS

Current Limit Accuracy (mA)	5
Voltage Limit Accuracy (\pm % FS)	2.5%

GENERAL

Display Type	2x20 VFD
Laser Connector	DB-9, female
Computer Interface	USB 2.0 Full Speed (Type B)
Input Power	100V / 120V / 230V 50 / 60Hz
Size (H x W x D) [inches (mm)]	1.82 (47) x 8.5 (215) x 11.13 (283)
Operating Temperature	+10°C to +40°C
Storage Temperature	-20°C to +60°C