

4400-10-56 LaserSource, 10A/56V/560W, 13W3



- 10A / 56V range
- Both CW and QCW operation
- 0.5mA resolution
- USB and RS-232 interfaces

The **4400-10-56 LaserSource** provides up to 10A of current at up to 56V compliance, with excellent noise and accuracy specs. The 4400-10-56 is an excellent choice for applications that demand high compliance voltages, such as laser modules with many diodes in series. It supports both CW and Quasi-CW (QCW) mode.

Pilot Laser

In addition to the primary laser output, the 4400 includes control of a secondary pilot (or pointing) laser that is often integrated into high power laser modules.

Simple User Interface

The 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 4400 instead presents information on a high contrast VFD display in an easy-to-read format., and displays current, voltage, and photodiode current simultaneously... no need to toggle through the readings as you would on most instruments. Settings and error messages are in clear English, not cryptic codes and flashing status lights.

Quasi-CW (QCW) Mode

The 4400 includes QCW mode, as many applications require the low duty cycle, high current pulses that QCW offers to manage thermal loading on the device.

Standard Computer Interfaces

The 4400 includes both USB and RS232 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 4400 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 4400 supports analog modulation via a front panel BNC for arbitrary control of the current output using an external function generator or other voltage source.

Specifications

CW Mode Specifications

LASER CURRENT

| | |
|-------------------------------|---------------|
| Range (A) | 0 – 10 |
| Resolution (A) | 0.0005 |
| Accuracy (\pm % set+A) | 0.05% + 0.005 |
| Stability (ppm, time) | < 10, 1 hour |
| Temperature Coeff (ppm/°C) | 50 |
| Noise/Ripple (mA rms, low BW) | < 5 |
| Transients (mA) | < 20 |
| Compliance Voltage (V) | 56 |

PHOTODIODE CURRENT

| | |
|----------------------------------|---------------------------------|
| Range (μ A) | 25 – 20000 |
| Resolution (μ A) | 1 |
| Accuracy (\pm % set+ μ A) | 0.05% + 2 |
| Stability (ppm, time) | < 200, 24 hours |
| Temperature Coeff (ppm/°C) | < 200 |
| PD Bias (V) | 0 to -5V, software programmable |

LASER VOLTAGE

| | |
|----------------------------|---------------|
| Range (V) | 0 – 56 |
| Resolution (V) | 0.001 |
| Accuracy (\pm % set+V) | 0.05% + 0.028 |
| Stability (ppm, time) | < 50, 1 hour |
| Temperature Coeff (ppm/°C) | < 100 |

EXTERNAL MODULATION

| | |
|----------------------------|-----------------------|
| Modulation Input Range | 0 – 10V, 10k Ω |
| Modulation Bandwidth (kHz) | 40 |

QCW Mode Specifications

LASER CURRENT (ACC)

| | |
|---|--------------|
| Range (A) | 0.75 – 10 |
| Resolution (A) | 0.0005 |
| Setpoint Accuracy (\pm % set+A) | 0.1% + 0.010 |
| Measurement Accuracy (\pm % reading+A) | 2.5% + 0.025 |
| Compliance Voltage (V) | 56 |

LASER VOLTAGE

| | |
|---|-----------|
| Resolution (V) | 0.01 |
| Measurement Accuracy (\pm % reading+V) | 2% + 0.04 |

PHOTODIODE CURRENT

| | |
|--|----------|
| Resolution (μ A) | 10 |
| Measurement Accuracy (\pm % reading+ μ A) | 2% + 100 |

PULSE WIDTH

| | |
|-----------------|-----------|
| Range (ms) | 0.1 – 600 |
| Resolution (ms) | 0.001 |
| Accuracy (ms) | 0.015 |

FREQUENCY

| | |
|-----------------|----------|
| Range (Hz) | 1 – 1000 |
| Resolution (Hz) | 0.1 |
| Accuracy (Hz) | 0.5 |

DUTY CYCLE

| | |
|----------------------------|-------------|
| Range (%) | 0.1 – 90 |
| Resolution (%) | 0.1 |
| Rise/Fall Times (μ s) | < 50 / < 10 |
| Overshoot (%) | < 7 |
| Zero Current (A) | < 0.020 |

LIMITS

| | |
|---|-----------|
| Current Limit Accuracy (\pm % set+A) | 1% + 0.05 |
| Voltage Limit Accuracy (\pm % set+V) | 1% + 0.2 |

GENERAL

| | |
|--------------------------------|---|
| Display Type | 4x20 VFD |
| Laser Connector | 13W3, female |
| Computer Interface | USB 2.0 Full Speed (Type B), RS-232 (DB-9, male) |
| Input Power | 90 - 240V, 50 / 60Hz |
| Size (H x W x D) [inches (mm)] | 3.5 (90) x 12 (305) x 14 (356) |
| Weight (lbs [kg]) | 13 [5.9] |
| Operating Temperature | +10°C to +40°C |
| Storage Temperature | -20°C to +60°C |