LDX 3412

Low Cost Precision Laser Diode Driver

Product Features

- Low-cost laser diode driver: 0-200 mA output range
- Versatile control: constant current and constant power modes
- Laser diode protection
- Fully independent, precision current limit control
- Easy connection to lasers and LEDs

The LDX-3412 Low Cost Precision Laser Diode Driver is designed for current controlling general-purpose laser diodes. This 0-200 mA driver has the outstanding performance expected from ILX Lightwave, at an attractive price. Our industry-leading laser diode protection circuits are included, along with user-adjustable photodiode feedback capability.

The LDX-3412 is an easy to operate, precision current source optimized for controlling laser diodes and LEDs. An intuitive front panel with a highly visible LED display simplifies operation, and the innovative voltage source/constant current output stage design makes operation dependable. For many applications, the LDX-3412 offers the right features at the right price.

When laser diode applications require stable, low-noise current performance, but are restrained by a limited budget, the LDX-3412 is the ideal solution. This laser diode driver delivers a stable, low-noise current in both constant current and constant light operating modes, and offers ILX Lightwave's proven protection and safety features to safeguard lasers.

A precision current source designed to fit every budget.

ILX Lightwave
Laser Diode Instrumentation & Test Systems

LDX 3412

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Versatile operation modes

The LDX-3412 features three operating/display modes. (1) Constant Current, which delivers a stable, precision current-up to 200 mA at up to 6 V to the laser diode. (2) Constant Power, which uses a photodiode feedback signal to control the current output, ensuring a constant light level, despite varying junction. (3) Limit Display, which conveniently displays the current limit set point level.

Unique laser diode protection

Like other ILX Lightwave laser diode drivers, the LDX-3412 employs our unique output off/on switch technology. When the output switch is enabled, the output is turned on safely by slowly switching the shunt to a high impedance state. When turned off, the output switch returns the semiconductor shunting device to a low impedance state, thereby shorting the output terminals while suppressing potentially damaging current transients. Also a double-shielded transformer reduces AC line noise, and suppresses potentially damaging line transients.

By incorporating our voltage source/constant current output stage design, the 3412 provides a greater level of laser protection than other current sources. The output stage is actually a voltage source, controlled by a slow feedback loop to maintain a constant output current.

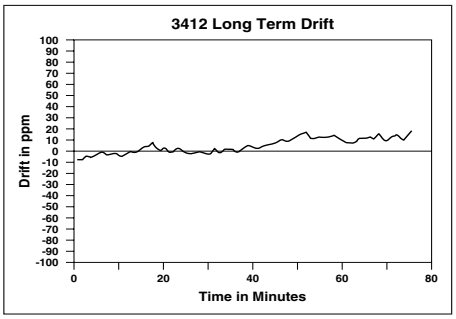
The LDX-3412 also employs our proven current limit circuit, which allows current adjustment without over-driving. This allows the current limit to be safely set, even while the unit is actively driving a laser at a lower current level, which is independent of the output compliance voltage.

Connection easily to any laser or LED package

The output terminals of the LDX-3412 are fully floating, allowing either side to be grounded if necessary. For constant power operation, an instrumentation amplifier is used at the 3412's input from the external monitor photodiode. This allows connection to any laser/LED package pin configuration.

Low noise and high stability

The LDX-3412 output broadband noise is less than 0.01% rms, and temperature coefficient stability is better than 100 ppm/ °C. Under typical laboratory conditions, output current drift is less than 50 ppm over a 30-minute period, in constant current mode.



With a typical drift of less than 20 ppm/°C over a 30 min period, the LDX-3412 out-performs typical low-cost power supplies.

Specifications

OUTPUT

Output Current Range:	0–200 mA, floating
Compliance Voltage:	≥6 V
Temperature Coefficient:	≤100 ppm/°C, ambient
Stability, 10–30 min.:	50 ppm or better
Noise and Ripple (at 100 mA):	<2 µA rms
Transients:[2]	<100 µA

DISPLAY

Type:	3 1/2 digit green LED
Maximum Reading:	199.9 mA
Accuracy at 25°C:	±0.2 mA

CURRENT LIMIT

Range:	1–200 mA
Accuracy:	±3 mA

PHOTODIODE FEEDBACK

Input Type:	Current input from external photodiode
Range:	20 µA to 2 mA
Stability:	±0.1%

GENERAL

Power:	100, 120, 220, or 240 VAC, 50/60 Hz
Size (HxWxD):	66 mm x 140 mm x 267 mm, 2.6" x 5.5" x 10.5"
Weight:	1.8 kg (4.0 lbs)
Operating Temperature:	0°C to 50 °C
Storage Temperature:	–40°C to 70°C
Warm-up:	1 hour, to rated accuracy
Laser Output Connector:	9-pin D-sub
Chassis Ground:	Standard banana jack
Interlock:	System interlock, set by internal jumpers, user adjustable

NOTES

1 All values measured after a one-hour warm-up period.
2 Maximum output current resulting from normal operational situations (i.e. power on-off, current on-off), as well as accidental situations (i.e. powerline plug removal). Tested to ILX Technical Standard #LDC-00196.

ORDERING INFORMATION

LDX-3412	Low Cost Precision Current Source
CC-305S	Current Source/Laser Diode Mount Interconnect Cable
CC-306S	Current Source /Unterminated Interconnect Cable
LNF-320	Low Noise Filter

In keeping with our commitment to continuous improvement, ILXLightwave reserves the right to change specifications without notification and without liability for such changes.

ILX Lightwave
Laser Diode Instrumentation & Test Systems
www.ilxlightwave.com

For information call
1-800-459-9459
International Inquiries: 406-556-2481
email: sales@ilxlightwave.com

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