

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

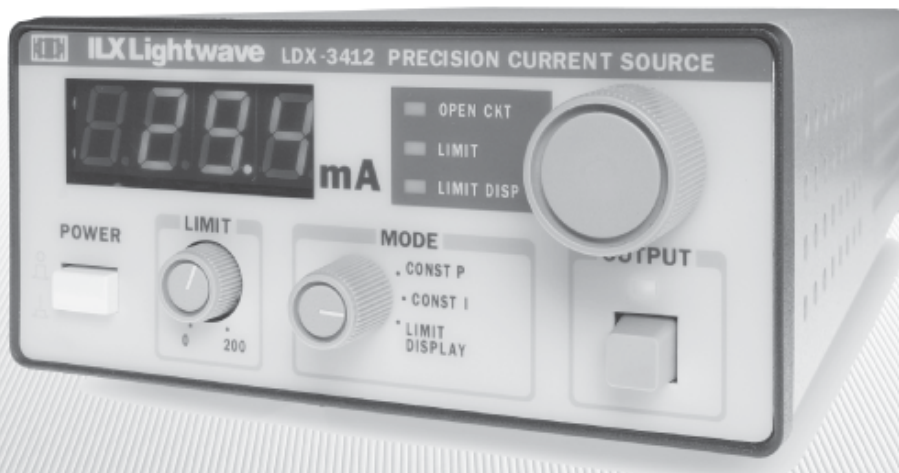
Fully independent, precision current
limit control

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

Low Cost
Precision
Laser Diode
Driver

Versatile Operation Modes

The LDX-3412 features three operation/display modes. (1) Constant Current, which delivers a stable precision current up to 200 mA at up to 6V 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.

Connect 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.

Specifications

OUTPUT

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

DISPLAY

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

CURRENT LIMIT

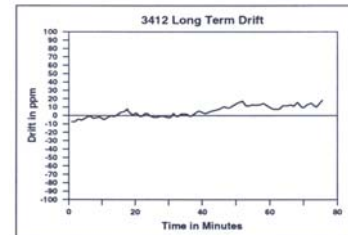
Range:	1-200 mA
Accuracy:	±3 mA

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):	66mm x 140mm x 267mm; 2.6" x 5.5" x 10.5" 1.8 kg (4.0 lbs.)
Weight:	
Operating Temperature:	0°C to 50°C
Storage Temperature:	-40°C to 70°C



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

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. power line plug removal). Tested to ILX Technical Standard #LDC-00196.

ORDERING INFORMATION

LDX-3412	Low Cost Precision Current Source
LDM-4405	Low Cost TO-Can Laser Diode Mount
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 continuing improvement, ILX Lightwave reserves the right to change specifications without notice or liability for such changes.

 **ILX Lightwave**
Laser Diode Instrumentation & Test Systems

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