

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

56 Sparta Avenue • Newton, New Jersey 07860
(973) 300-3000 Sales • (973) 300-3600 Fax
www.thorlabs.com

THORLABS

LD3000 - May 10, 2016

Item # LD3000 was discontinued on May 10, 2016. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

PRECISION CONSTANT CURRENT LASER DRIVERS

- Zener & Schottky Diode Protection
- 250 mA and 2.5 A Versions
- RoHS Compliant Drivers Available



LD3000R



LD1255R

Application Idea

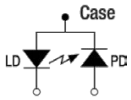


LD1255R
Mounted on an LD1255P
(Power Supply Not Included)

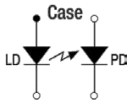
Hide Overview

OVERVIEW

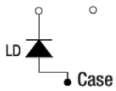
The LD1255R (250 mA) is a low-noise, highly-stable, constant-current laser diode driver. The LD3000 is a higher-power (2.5 A) version of the LD1255R. The RoHS-compliant version, LD3000R, is also available. These laser drivers are also recommended for driving LEDs. Both laser current drivers fully support the A, D, and E pin configurations (shown below).



Style A



Style D



Style E

Item #	LD1255R	LD3000(R)
Operating Current	0.2 to 250 mA	0.02 to 2.5 A
Operating Mode	Constant Current	
Internal Current Control	12 Turn Potentiometer (on board)	
External Current Control	0 to 5 Volt Analog Input Voltage	
Operating Voltage	±8 to 12 Volts	
Monitor Photodiode Transimpedance Gain	1000 µV/µA	1 V/A

Note: The photodiode monitor circuits of the LD1255R and LD3000(R) only support lasers that have an isolated photodiode anode (i.e. the photodiode cathode connected to the laser anode). They will not work with common cathode lasers. CONNECTING THE PHOTODIODE OF THESE LASERS TO THE LD1255R or LD3000(R) WILL DESTROY THE LASER. The LD1255R and LD3000(R) will operate the laser portion of all common cathode lasers without any problems as long as the photodiode anode is not connected to the driver.

Hide Specs

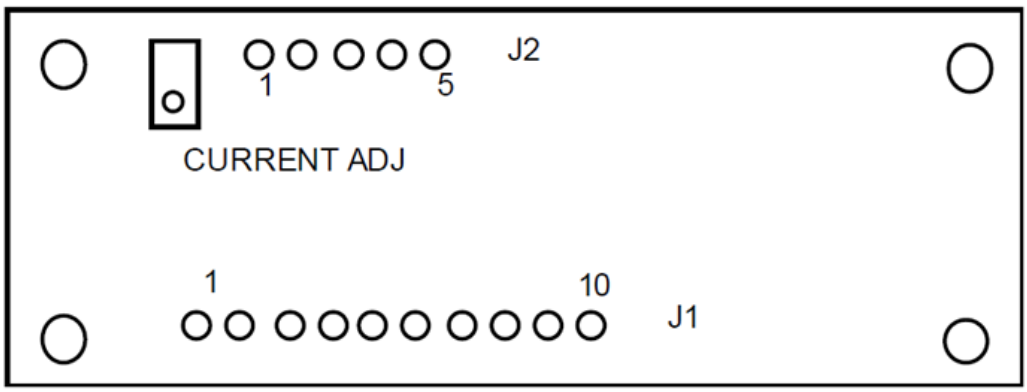
SPECS

Item #	LD1255R
Operating Current	0.2 to 250 mA
Operating Mode	Constant Current
Internal Current Control	12 Turn Potentiometer (On Board)
External Current Control	0 to 5 V Analog Input Voltage
Output Current Drift	2 µA/°C (Typical)
Current Noise	<1 μA_{RMS}
Operating Voltage	±8 to 12 V
Dimensions	2.45" x 1.03" (62.2 mm x 25.4 mm)
LD ESD Protection	**Forward Voltage:** 160 ms Slow Start Circuit, 3.3 V Zener Diode, **Reverse Voltage:** Schottky Diode, LD DISABLE pin
Signal Bandwidth	1.2 kHz
Monitor Photodiode	
Transimpedance Gain	1000 µV /µA
Max LD Forward Voltage	3.3 V
Operating Temperature	10 to 30 °C
Storage Temperature	-20 to 50 °C
Warm-up Time	30 minutes

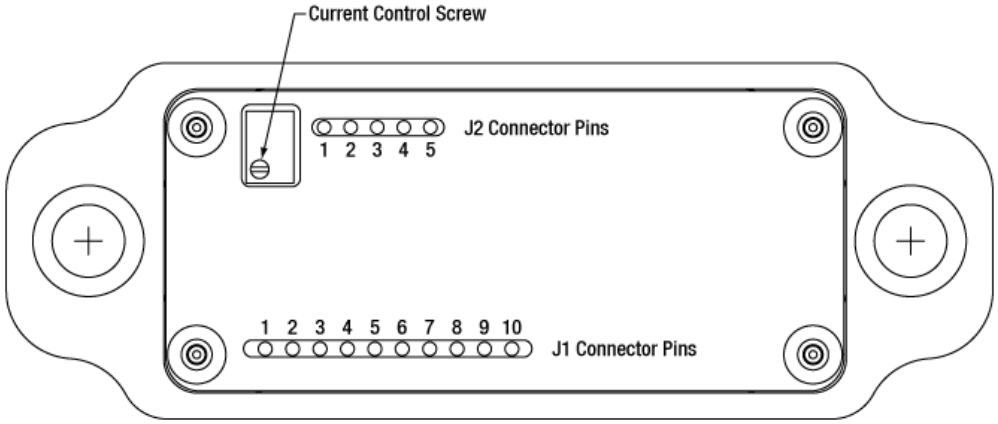
Item #	LD3000(R)
Operating Current	0.02 to 2.5 A
Operating Mode	Constant Current
Internal Current Control	12 Turn Potentiometer (on board)
External Current Control	0 to 5 V Analog Input Voltage
Operating Voltage	±8 to 12 V
Dimensions	3.6" x 1.3" (91.4 mm x 33.0 mm)
Monitor Photodiode	
Transimpedance Gain	1 V/A
Operating Temperature	10 to 30 °C
Storage Temperature	-20 to 50 °C
Warm-up Time	30 min.

PIN DIAGRAMS

LD1255R Top View



LD3000 Top View



LD1255R Pin Designations

Pin	Function
J1-1	+V (+8 to +12 VDC, 10 mA)
J1-2	Common
J1-3	-V (-8 to -12 VDC, 0.3A) provides power to laser
J1-4	External Current Control (0 to +5 V, or -V to (-V + 5))
J1-5	Disable
J1-6	Laser Diode Anode (Internally Connected to Pin 2 Ground on LD1255)
J1-7	Laser Diode Cathode
J1-8	Monitor Photo Diode Anode (from laser)*
J1-9	Photodiode Monitor Output (-1 V/mA)
J1-10	Laser Current Monitor Output (10 mV/mA)

*The LD1255R photodiode monitor circuit only supports lasers that have a photodiode with an isolated anode. It will not support common cathode lasers such as the CQL7825/D and CQL7840/D.

J2 Pins to Jumper	Operating Mode
1 to 2	Mode 1. COMMON referenced External Current Control
2 to 3	Mode 2. Disable External Current Control

LD3000 Pin Designations

Pin	Function
J1-1	+V (+5 to +12 VDC, 50 mA)
J1-2	Ground
J1-3	-V (-4 to -12 VDC, 2.5A) provides power to laser
J1-4	External Current Control (0 to +5 V)
J1-5	No Contact (Polarization Key)
J1-6	Laser Diode Anode (Internally Connected to Pin 2 Ground)
J1-7	Laser Diode Cathode
J1-8	Monitor Photo Diode Anode (from laser)**
J1-9	Photodiode Monitor Output (-1 V/mA)
J1-10	Laser Current Monitor Output (1 V/A)

**The photodiode monitor circuit of the LD3000 only supports lasers that have an isolated photodiode anode (i.e. the photodiode cathode connected to the laser anode). It will not work with common cathode lasers. CONNECTING THE PHOTODIODE OF THESE LASERS TO THE LD3000 WILL DESTROY THE LASER. The LD3000 will operate the laser portion of all common cathode lasers without any problems as long as the photodiode anode is not connected to the driver.

J2 Pins to Jumper	Operating Mode
2 to 3	Mode 1. COMMON referenced External Current Control
4 to 5	Mode 2. Disable External Current Control

IMPORTANT! Do not operate the LD3000 without a jumper installed on J2. Your laser may be overdriven and permanently damaged.

Remaining J2 Pins	Function
1	No Connection (Leave this pin floating)
5	-V (May also be used for monitoring signals)

SMART PACK

Smart Pack

- Reduce Weight of Packaging Materials
- Increase Usage of Recyclable Packing Materials
- Improve Packing Integrity
- Decrease Shipping Costs

Thorlabs' Smart Pack Initiative is aimed at waste minimization while still maintaining adequate protection for our products. By eliminating any unnecessary packaging, implementing packaging design changes, and utilizing eco-friendly packaging materials for our customers when possible, this initiative seeks to improve the environmental impact of our product packaging. Products listed above are now shipped in re-engineered packaging that minimizes the weight and the use of non-recyclable materials.[b] As we move through our product line, we will indicate re-engineered packages with our Smart Pack logo.

Item #	% Weight Reduction	CO_2-Equivalent Reduction[a]
LD3000R	15.26%	1.32 kg



Click to Enlarge
LD3000R
Packaging

- Travel-based emissions reduction calculations are estimated based on the total weight reduction of packaging materials used for all of 2013's product sales, traveling 1,000 miles on an airplane, to provide general understanding of the impact of packaging material reduction. Calculations were made using the EPA's shipping emissions values for different modes of transport.
- Some Smart Pack products may show a negative weight reduction percentage as the substitution of greener packaging materials, such as the Greenwrap, at times slightly increases the weight of the product packaging.

SELECTION GUIDE

Laser Diode Controller Selection Guide

The tables below are designed to give a quick overview of the key specifications for our laser diode controllers and dual diode/temperature controllers. For more details and specifications, or to order a specific item, click on the appropriate item number below.

Current Controllers						
Item #	Drive Current	Compliance Voltage	CC[a]	CP[b]	Modulation	Package
LDC200CV	20 mA	6 V	✓	✓	External	Benchtop
VLDC002	25 mA	5 V	✓	-	Int/Ext	OEM
LDC201CU	100 mA	5 V	✓	✓	External	Benchtop
LD2000R	100 mA	3.5 V	-	✓	External	OEM
EK2000	100 mA	3.5 V	-	✓	External	OEM
LDC202C	200 mA	10 V	✓	✓	External	Benchtop
TLD001	200 mA	8 V	✓	✓	External	T-Cube
IP250-BV	250 mA	8 V[c]	✓	✓	External	OEM
LD1100	250 mA	6.5 V[c]	-	✓	--	OEM
LD1101	250 mA	6.5 V[c]	-	✓	--	OEM
EK1101	250 mA	6.5 V[c]	-	✓	--	OEM
EK1102	250 mA	6.5 V[c]	-	✓	--	OEM
LD1255R	250 mA	3.3 V	✓	-	External	OEM
LDC205C	500 mA	10 V	✓	✓	External	Benchtop
IP500	500 mA	3 V	✓	✓	External	OEM
LDC210C	1 A	10 V	✓	✓	External	Benchtop
LDC220C	2 A	4 V	✓	✓	External	Benchtop
LD3000	2.5 A	--	✓	-	External	OEM
LD3000R	2.5 A	--	✓	-	External	OEM
LDC240C	4 A	5 V	✓	✓	External	Benchtop
LDC4005	5 A	12 V	✓	✓	Int/Ext	Benchtop
LDC4020	20 A	11 V	✓	✓	Int/Ext	Benchtop

a. Constant current.
b. Constant power.
c. When using a 12 V power supply.

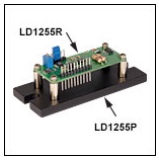
Dual Temperature and Current Controllers							
Item #	Drive Current	Compliance Voltage	TEC Power (Max)	CC[a]	CP[b]	Modulation	Package
VITC002	25 mA	5 V	>2 W	✓	-	Int/Ext	OEM
ITC102	200 mA	>4 V	12 W	✓	✓	Ext	OEM
ITC110	1 A	>4 V	12 W	✓	✓	Ext	OEM
ITC4001	1 A	11 V	>96 W	✓	✓	Int/Ext	Benchtop
CLD1010LP[c]	1.0 A	>7 V	>14.1 W	✓	✓	Ext	Benchtop
CLD1011LP[d]	1.0 A	>8 V	>14.1 W	✓	✓	Ext	Benchtop
CLD1015[e]	1.5 A	>4 V	>14.1 W	✓	✓	Ext	Benchtop
ITC4002QCL[f]	2 A	17 V	>225 W	✓	✓	Int/Ext	Benchtop
ITC133	3 A	>4 V	18 W	✓	✓	Ext	OEM
ITC4005	5 A	12 V	>225 W	✓	✓	Int/Ext	Benchtop
ITC4005QCL[f]	5 A	20 V	>225 W	✓	✓	Int/Ext	Benchtop
ITC4020	20 A	11 V	>225 W	✓	✓	Int/Ext	Benchtop

a. Constant current.
b. Constant power.
c. Combined controller and mount for pigtailed laser diodes in TO can packages with A, D, E, or G pin codes only.
d. Combined controller and mount for pigtailed laser diodes in TO can packages with B, C, or H pin codes only.
e. Combined controller and mount for laser diodes in butterfly packages only.
f. Enhanced compliance voltage for QCL operation.

We also offer a variety of OEM and rack-mounted laser diode current & temperature controllers (OEM Modules, TXP Rack Modules, PRO8 Current Control Rack Modules, and PRO8 Current and Temperature Control Rack Modules), as well as a complete laser diode operation starter set.

Hide OEM Precision Constant Current Driver: 250 mA, 3.3 V

OEM Precision Constant Current Driver: 250 mA, 3.3 V



- Low Current Noise (<1 μA_{RMS})
- Low Temperature Drift
- On-Board 12-Turn Laser Current Control
- External Input for Laser Current Control
- Monitor Output for Laser Current and Photodiode Current
- Laser Disable Pin
- Slow-Start Circuit for Laser Protection
- LD1255P Allows Mounting to an Optical Table or Breadboard
- Size: 2.45" x 1.03" (62.2 mm x 25.4 mm)
- RoHS-Compliant

The LD1255R is a low-noise, ultra-stable, constant-current laser diode driver. It supplies up to 250 mA of drive current, supports laser pin configurations A, D, and E, and is ideally suited for demanding diode laser applications such as operating a laser diode in an external cavity tunable laser. This second-generation laser diode driver includes on-board Zener and Schottky diode protection as well as a disable pin. The op-amp and voltage reference design enables more precise laser current control. The LD1255P Mounting Plate, which features 8-32 and M4 taps for post mounting, allows the LD1255R to be secured to a breadboard or optical table.

Part Number	Description	Price	Availability
LD1255R	250 mA Precision Constant Current Laser Driver, RoHS Compliant	$149.00	Today
LD1255P	LD1255R Optical Table Mounting Plate	$24.20	Today

Hide OEM Precision Constant Current Drivers: 2.5 A, 7.7 V

OEM Precision Constant Current Drivers: 2.5 A, 7.7 V



- Low Noise 12 μA_{RMS} at 1.0 A
- On-Board 12-Turn Current Control
- External Input for Current Control
- Monitor Outputs for Diode and Photodiode Current
- Low Noise 2.5 A Drive Current
- Slow-Start Circuit for Laser Protection
- RoHS-Compliant Version Available

The LD3000 and LD3000R drivers are higher-power versions of Thorlabs' popular LD1255R ultra-stable, low-noise laser diode driver featured above. They utilize high-current components and supply 2.5 A and support pin configurations A, D, and E. The aluminum housing allows additional heat sinking, which results in a highly stable laser diode driver in a relatively small package. These devices can operate both LEDs and laser diodes.

Part Number	Description	Price	Availability
LD3000	Laser Diode Driver, 2.5 A Constant Current	$167.00	Lead Time
LD3000R	Laser Diode Driver, 2.5 A Constant Current	$160.00	Today

Hide OEM Board Level Driver Power Supplies & Cables

OEM Board Level Driver Power Supplies & Cables



- Two 12 VDC Power Supply Options: 110/120 VAC and 220/240 VAC
- Cable Connects Driver (LC1255R) and Power Supply (PS-12DC)

The PS-12DC-EU and PS-12DC-US provide a stable ±12 VDC output with up to ~300 mA of current, making these power supplies ideal for the LD1255R and LD1255P current drivers sold above. However, these power supplies are not recommended for use with the LD3000 and LD3000R due to the current requirements of those drivers.

Part Number	Description	Price	Availability
PS-12DC-EU	Power Supply, ±12 VDC, 220-240 VAC	$83.00	Today
LD1255-CAB	LD1255R Power Supply Cable	$16.90	Today
PS-12DC-US	Power Supply, ±12 VDC, 110-120 VAC	$67.20	Today

Visit the *Precision Constant Current Laser Drivers* page for pricing and availability information:
http://www.thorlabs.com/newgrouppage9.cfm?objectgroup_id=1366

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP