

LDN Series Laser Diode Drivers



The New LDN series laser diode drivers are the second generation of precision CW/Pulsed diode drivers offered by Lumina Power. Building on more than a decade of experience in laser diode driver technology the new LDN family incorporates the features of the LDD and LDY models. New upgrades include increased energy storage for better pulsed performance, newly designed magnetics for cooler operation, lower inrush current at start-up and availability of an optional Performance Level "E" laser safety feature.

Offered in 4 power levels from 600 to 2000 watts the LDN family of laser diode drivers offer laser designers the most advanced and proven power supply technology available.

Features

- **600 to 2000 Watts Output**
- **Output Currents to 100amps**
- **Compliance Voltages to 150V**
- **Performance Level E Safety**
- **Power Factor Correction**
- **Universal Input Voltage**
- **Auxiliary +15/-15, +5V**
- **Low Conducted Emissions**
- **RoHS Compliant**



© 2014 Lumina Power, Inc. All Rights Reserved 1/30/14



光技術をサポートする
株式会社オプトサイエンス

<http://www.optoscience.com>

東京本社 〒160-0014 東京都新宿区内藤町1番地内藤町ビルディング TEL:03-3356-1064
大阪支店 〒532-0011 大阪市淀川区西中島7-7-2 新大阪ビル西館 TEL:06-6305-2064
名古屋営業所 〒450-0002 名古屋市中村区名駅2-37-21 東海ソフトビル TEL:052-569-6064

E-mail: info@optoscience.com

LDN Series Laser Diode Drivers

Available Models

Model	Poutmax	Ioutmax	Input Voltage	Size (L x W x H)
LDN-600-XX-YY	600 Watts	100 amps	100-240VAC ± 10%	9.9" x 7.3" x 2.6" 25.1 x 18.5 x 6.6 cm
LDN-1000-XX-YY	1000 Watts			
LDN-1500-XX-YY	1500 Watts		200-240VAC ± 10%	
LDN-2000-XX-YY	2000 watts			
Maximum compliance voltage: 150V (higher compliance voltages to 200V available, consult customer service)				

Specifications

NOTE: Lumina Power reserves the right to change the specifications of this product without notice.

INPUT

Voltage: See table above
 Power Factor: >.98
 Inrush current: Equal to $V_{in}/20$ ohms

INTERFACE

Connector: 15 Pin "D" Sub Female
 Current Program: 0-10V for 0-Max Current
 Current Monitor: 0-10V for 0-Max Current
 Voltage Monitor: 0-10V for 0-Max Voltage
 (Optional RS232 interface available)

PERFORMANCE

Rise/Fall Time: >10msec using Pin 1 Enable
 Current Regulation: <0.5% of Maximum output current
 Current Ripple: <0.5% of maximum output current
 Current Overshoot: <1% of maximum output current
 Power Limit: 16 Levels of Current Limit via dip switches

ENVIRONMENT

Operating Temp: 0 to 40°C
 Storage: -20 to 85°C
 Humidity: 0 to 90% non-condensing
 Cooling: Forced air

REGULATORY

UL60601-1 (medical) Emissions/Immunity: FCC 47 CFR Class A Emissions, EN55011:1998 Group 1 Class A Emissions, EN61000-3-2, EN61000-3-3, EN60601-1-2:2001
 NOTE: Testing to be done March 2014.

AUXILIARY OUTPUTS

+5V @ 200mA
 +15V @ 200mA
 -15V @ 200mA

LASER SAFETY (optional)

Performance Level "E"
 Compliance to ISO DIN 13849-1-2008 Standard

Note: Use pulse pin 8 for fast rise times (see page 3)



www.luminapower.com
sales@luminapower.com

LDN Series Laser Diode Drivers

Standard Interface (15 pin D-sub, Female)

Pin #	Pin Name	Functional Voltage Level	Description
1	Enable (input) (note1)	High = RUN = +5V to +15V Low = OFF = 0V	The Enable function turns the output section of the power supply ON and OFF. When the power supply is enabled, current is delivered to load as programmed via Iprogram(+), Pin 7. Rise times resulting from Enable are approximately 25msec.
3	Interlock (Input)	Open = OFF Connect to GND = RUN	The Interlock function can be connected to external interlock switches such as door or over-temp switches.
4,9, 15	GND		Interface Return
5	Vout Monitor (output)	0-10V = 0-Voutmax (note 2)	The output voltage monitor.
6	Iout Monitor (output)	0-10V = 0-Ioutmax	The output current monitor.
7	Iprogram (input)	0-10V = 0-Ioutmax	The power supply output current is set by applying a 0-10V analog signal to Iprogram(+).
8	Pulse Control (input)	TTL High = On TTL Low = Off Default = On	The output may be pulsed by applying a TTL signal to Pulse Control, pin 8. The amplitude of the output current pulse is determined by the current level programmed via Pin 7, Iprogram(+). Rise/fall times of <600µs are typical. Contact Lumina Power for faster rise and fall times.
10,11	+5V (output)		Auxiliary 200mA
12	-15V (output)		Auxiliary 200mA
13,14	+15V (output)		Auxiliary 200mA

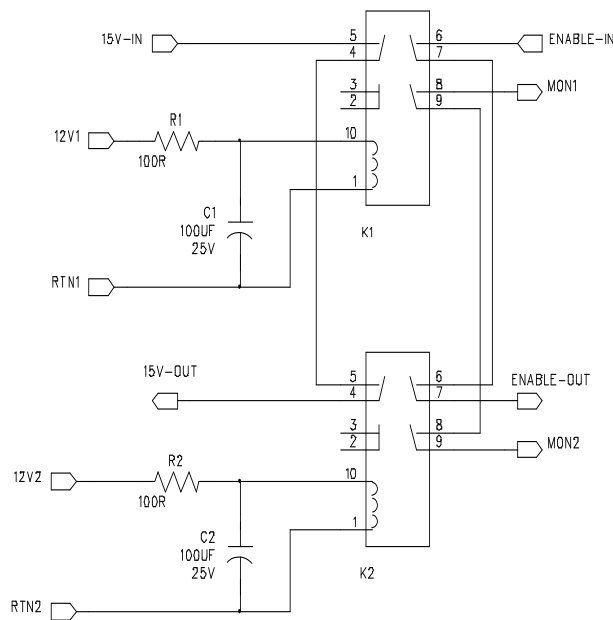
1. Always disable power supply (pin 1 low) prior to applying the mains voltage.
2. Pin 5 If maximum compliance voltage is less than 10V, Vout Monitor will read output voltage directly. If maximum compliance voltage is greater than 10V, then Vout Monitor will be scaled such that 0-10V = 0-Voutmax. Applying a program voltage greater than 10.5 volts will latch power supply. Output current will not exceed 105% of rating.



LDN Series Laser Diode Drivers

Performance Level “E” Safety Standard

The new LDN series Laser Diode Drivers can be specified to include the optional Dual Relay board and interface that allows the laser designer the ability to monitor the power supplies performance and signal the user if a fault occurs. This redundant safety feature complies with the ISO-DIN 13849-1-2008 safety standard at the highest level E and can be used to eliminate the costly safety shutter in many laser systems. When ordering or inquiring about this feature please refer to the “SR” option.

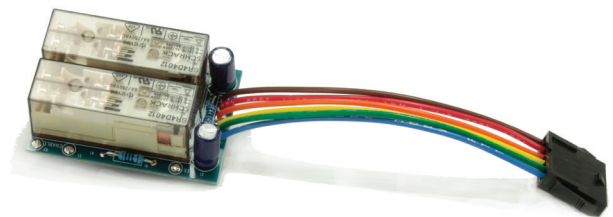


Pin Assignments

Connector: Molex 6 pin
Part # 43645-0600

Pin 1	Relay-1
Pin 2	Relay-1 RTN
Pin 3	Relay-2
Pin 4	Relay-2 RTN
Pin 5	Monitor +
Pin 6	Monitor -

Pins 5 & 6 closed during normal operation.
Open in fault mode.
Optional +12, 15 or 24V operation.



Optional Dual Safety Relay board
(factory installed)



www.luminapower.com
sales@luminapower.com

