

LDD High Power CW Laser Diode Drivers



The LDD series is a new family of OEM laser diode drivers designed for the emerging high power laser diode industry. The LDD series is ideal for high power applications where economy is important and performance cannot be compromised. Compact size is possible due to the low-loss Zero Voltage Switching inverter and incorporation of planar magnetics. The LDD is virtually wire free.

Power factor is greater than 0.99 and conducted emissions meet stringent European regulations. No additional line filters required to meet EN 55011 emission requirements.

The LDD family has been designed with the knowledge that a high power laser diode is an expensive device. Rise and fall times are strictly controlled to reduce high voltage transients which could damage the laser diode.

ADVANTAGES

- Ideal for OEM applications
- Safe turn-on/turn-off
- Compact design
- Power factor correction
- Auxiliary +15V/-15V/+5V
- Low conducted emissions, low leakage
- ROHS Compliant

Configurations:

- Output current up to 300A
- Maximum output voltage to 200V
- Analog or RS232 interface
- Universal input for all world voltages
- CE and safety agency approved
- Available handheld controller



26 Ward Hill Avenue, Bradford, MA 01835
Ph: 978-241-8260 / Fx: 978-241-8262
www.luminapower.com / sales@luminapower.com



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Model	Poutmax	Ioutmax	Input Voltage	Size (L x W x H)	
LDD-50-XX-YY	50 Watts	15 amps	100-240VAC ± 10%	6.75" x 3.63" x 3.25" 17.1 x 9.2 x 8.26 cm	
LDD-100-XX-YY	100 Watts	50 amps		7.5" x 5.8" x 2.6" 19 x 14.7 x 6.6 cm	
LDD-150-XX-YY	150 Watts	60 amps			
LDD-250-XX-YY	250 Watts	80 amps		100 amps	9.9" x 7.3" x 2.6" 25.1 x 18.5 x 6.6 cm
LDD-600-XX-YY	600 Watts	100 amps			
LDD-1000-XX-YY	1000 Watts				
LDD-1500-XX-YY	1500 Watts	150 amps		200-240VAC ± 10%	13" x 8.5" x 3.4" 33.2 x 21.6 x 8.6 cm
LDD-2500-XX-YY	2500 Watts				
LDD-3000-XX-YY	3000 Watts		200 amps		
LDD-6000-XX-YY	6000 Watts	250 amps	200-440VAC ± 10% 3Ø	17.3" x 16.6" x 4.25" 43.9 x 42.2 x 10.8 cm	

NOTE: XX = maximum required output current, YY= maximum required compliance voltage

Specifications

INPUT

Voltage: See table above
Power Factor: >.98 (LDD-6000:~t80%)

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: <1msec standard (faster rise times available)
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: Limited to maximum power with power fold-back circuit

ENVIRONMENT

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

REGULATORY

Safety: LDD-150/250: UL60950
LDD-600/1000/1500/2500/3000: UL60950 (Industrial),
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

AUXILIARY OUTPUTS

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

Note: No auxiliary outputs on LDD-50, No +5V output on LDD-100/150

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LDD-INTERFACE CONNECTOR TYPE: 15 PIN D-SUB FEMALE

Pin #	Pin Name	Functional Voltage Level	Description
1	Enable (input) (Note: 1)	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 overtemp-switches.
4,9, 15	GND		Interface Return
5	Vout Monitor (output)	0-10V = 0-Voutmax (note:2)	The output voltage of the supply can be monitored by Vout Monitor. See note below
6	Iout Monitor (output)	0-10V = 0-Ioutmax	The output current of the supply can be monitored by Iout 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) (pulsed function is also available on LDY series drivers)	TTL High = On TTL Low = Off Default = On (LDD-2500/3000/6000 only)	The output of the LDD-2500/3000/6000 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 <1msec are typical. Contact Lumina Power for faster rise and fall times.
10,11	+5V (output)		Auxiliary 200mA Not available on LDD-50/100/150
12	-15V (output)		Auxiliary 200mA Not available on LDD-50/100/150
13,14	+15V (output)		Auxiliary 200mA Not available on LDD-50

1. Upon application of AC input voltage output current will be 0 regardless of Pin 1 setting. Enable (or toggle) pin 1 to output current.

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.

LDD Outline Drawings

