Lumina Power, INC.

NEW SOURCE TECHNOLOGY LLC
Where performance equals value

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High Power CW Diode Laser Drivers

Advantages

*Ideal for OEM applications

*Controlled Turn-On/ Turn-Off

*Compact design

*Power Factor Correction

*Auxiliary +/-15V, +5V outputs

*Low conducted emissions, low leakage

The LDD series is a new family of OEM diode laser drivers designed for the emerging high power diode laser 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.

Leakage current is less than 250uA, power factor is greater than 0.99 and conducted emissions meet stringent European regulations. No additional line filter is required to meet EN 55011 emission requirements.

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

Available power outputs are:

- 150W
- 250W
- 400W
- 600W
- 1000W
- 1500W

Output current up to 80A

LDD CW Diode Laser Drivers

Model	$Pout_{max}$	Output Current	Input Voltage	Size (L x W x H)
LDD-150-XX	150W	10A to 60A Outputs available**	90-264VAC	7.5" x 5.8 x 2.5" 19 x 14.7 x 6.35 cm
LDD-250-XX	250W		90-264VAC	
LDD-400-XX*	400W		**180-264VAC**	
LDD-600-XX	600W	10A to 80A Outputs available**	90-264VAC	9.9" x 7.2" x 2.5" 25.1 x 18.3 x 6.35 cm
LDD-1000-XX	1000W		90-264VAC	
LDD-1500-XX*	1500W		**180-264VAC**	
Auxiliary Outputs: +5V @0.5A +15V @0.5A -15V @0.5A				
* LDD-400 and LDD-1500 input voltage: 180-264VAC ** Maximum compliance voltage determined by maximum rated power				
RS-232 Option available **150W TE cooler power supply option available** **Other outputs available upon request**				

Input

Voltage:	See table above
Power Factor:	>.98

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

Performance

Pulse Width Range:	5msec to CW
Max Rep Rate:	1kHz
Rise/Fall Time:	<0.5msec to 5msec – factory adjustable (10% to 90% Full Current)
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

Leakage Current:	<250uA

LDD Interface

Connector Type: 15 pin D-sub Female

(Refer to Figure 2, LDD Interface Schematic)

Pin #	Pin Name	Functional Voltage Level	Description
1	**Enable** (input)	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	GND		Referred to (-) output of power supply.
5	**Vout Monitor**: (output)	0-10V = 0-Vout max **(see note below)**	The output voltage of the supply can be monitored by **Vout Monitor**.
6	**Iout Monitor** (output)	0-10V = 0-Iout max	The output current of the supply can be monitored by **Iout Monitor**.
7	**Iprogram(+)**: (input)	0-10V = 0-Iout max	The power supply output current is set by applying a 0-10V analog signal to **Iprogram(+)**.
8	N/C		
9	GND		Referred to (-) output of the power supply.
10,11	**+5V @0.5A** (output)		Auxiliary +5V power supply for user. Up to 0.5A output current capability.
12	**-15V @0.5A** (output)		Auxiliary -15V power supply for user. Up to –0.5A output current available.
13,14	**+15V @0.5A** (output)		Auxiliary +15V power supply for user. Up to 0.5A output current available.
15	Gnd		Referred to (-) output of the power supply.

Note: 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-$Vout_{max}$.