LDP Pulsed/CW Laser Diode Drivers

The LDP pulsed laser diode drivers are the second generation of precision pulsed diode drivers offered by Lumina Power. Building on more than a decade of experience in laser diode driver technology the new LDP drivers are capable of outputting up to 400 amps. Pulse widths of 50µs through CW operation are now possible at rep-rates to 5kHz (higher Rep-rates Optional). The LDP incorporates new technology that enhances pulsed performance while reducing circuit complexity, shrinking the size of the package and increases reliability. µ

Features

- **1000/2000 Watts Average Output**
- **Output Currents to 400A**
- **Output Power to 40kW Peak**
- **Compliance Voltages to 100V**
- **Pulse Widths From 50µs to CW**
- **10µs Rise/Fall Time**
- **Repetition Rates to 5kHz.**
- **Universal Input Voltage**
- **Auxiliary ±15 Volt Output**

Lumina Power, INC.

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Models

Model	Poutmax	Ioutmax	Pulse Range	Input Voltage
LDP-1000-XX-YY	1000W CW 1000 W Pulsed	400A Pk 100A CW	50µs. to CW	100 to 240VAC
LDP-2000-XX-YY	2000W CW 1000 W Pulsed			200 to 240VAC

Specifications

OUTPUT

Power:	See Chart: 100V max. (higher voltages available)
Current:	400A (Pulsed)

INPUT

Voltage:	
LDP-1000:	100 to 240VAC ±10%, 50/60 Hz
LDP-2000:	200 to 240VAC ±10%, 50/60 Hz
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

Rise/fall Time:	10µs for Vout <30V
Current Regulation:	<0.5% of Maximum output current
Current Ripple:	<0.5% of maximum output current
Current Overshoot:	<1% of max. output current
Stable Output Range:	20 to 100% of rated of rated current

ENVIRONMENT

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

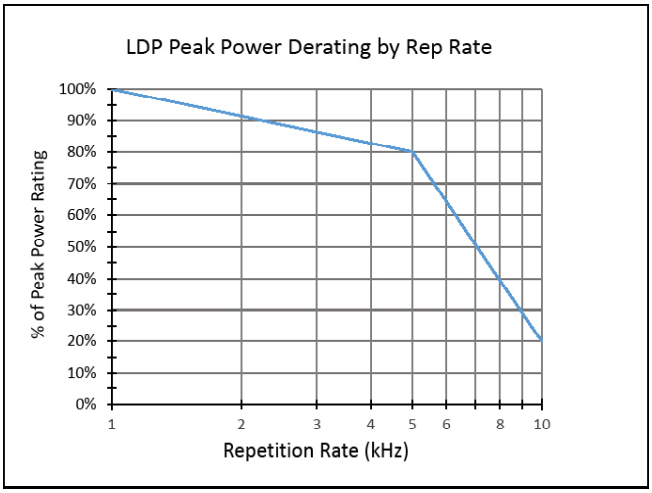
AUXILIARY OUTPUTS

+15V @ 100mA.
-15V @ 100mA

CE/Safety Agency Approvals:

IEC 60601-1-2 4th Edition EMC
IEC 60601-1 3rd Edition Safety
IECEE CB SCHEME

Peak Power Derating Curve



RoHS

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Pin Description

Pin#	Pin Name	Function	Description
1	Enable (Input)	Hi = 5 to 15V = Run Low = < 0.3V = OFF	Enable signal turns the power supply ON/OFF. When Enabled, the power supply allows the output current to deliver to the load as programmed at pin 7 with the pulse with at pin 8.
2	Load-Match Fault	Hi = 15V = Good Low = 0V = Fault	Fault when the load voltage is too low (mismatched) compared to rated or programmed voltage. The system measures the differential voltage between the load and internal buss voltage at the end of each pulse and shuts down if it is more than 5V. If the Fault occurs, the V-Program needs to be re-adjusted downwards and the system needs to re-calibrate again. See operator's manual. Open collector with 10k pull-up.
3	Interlock (Input)	Open = High = OFF. Connect to GND = Run	Used for external safety protection such as doors, shutters. Voltage at pin 3 must be less than 0.3V to run.
4, 9	GND		Interface Return
5	Voltage Monitor (Output)	0-10V = 0-Full output rated voltage	Real time output voltage. Wave shape is similar to Pulse signal. 1k output impedance.
6	Output Current (Output)	0-10V = 0-Full output rated current	Real time output current. Wave shape is similar to Pulse signal. 1k output impedance.
7	I-Program (Input)	0-10V = 0-Full rated output Current	Set desired output current. 20k input impedance. The power supply may not perform well when the I-Program is less than 20% due to noise, linearity and offset.
8	Pulse Control (Input)	Hi = 5V to 15V = On Low = < 0.3V = Off. Default/NC = Off.	Allow the power supply to deliver current, as programmed on pin 7, to the load when applying pulse signal of 5V to 15V amplitude to pin 8. Current Rise time <10us, typically. Voltage*current proportionally dependent.
10	V-Program (Input)	0 – 10V = 0 – Full buss voltage which should be 5-10V higher than expected load voltage.Default = 0V buss voltage.	Set internal buss voltage to match load voltage. Set it 5 to10V above the expected load voltage when in standby (Enabled but not pulsing). In operation, the power supply will regulate the buss voltage automatically for max efficiency. Too high buss voltage will damage the series regulator at high current due to excessive internal dissipation. Buss voltage can be measured from the Positive output terminal to GND of the Interface.
11	Temperature (Output)	Hi = 15V = Good Low = Fault	Shut off power supply. The power supply can be reset after the power supply is cool off and the Enable signal is toggled. Open collector with 5k pull-up.
12	-15V @ 100mA (Output)		
13, 14	+15V @ 100mA (output)		
15	NC		

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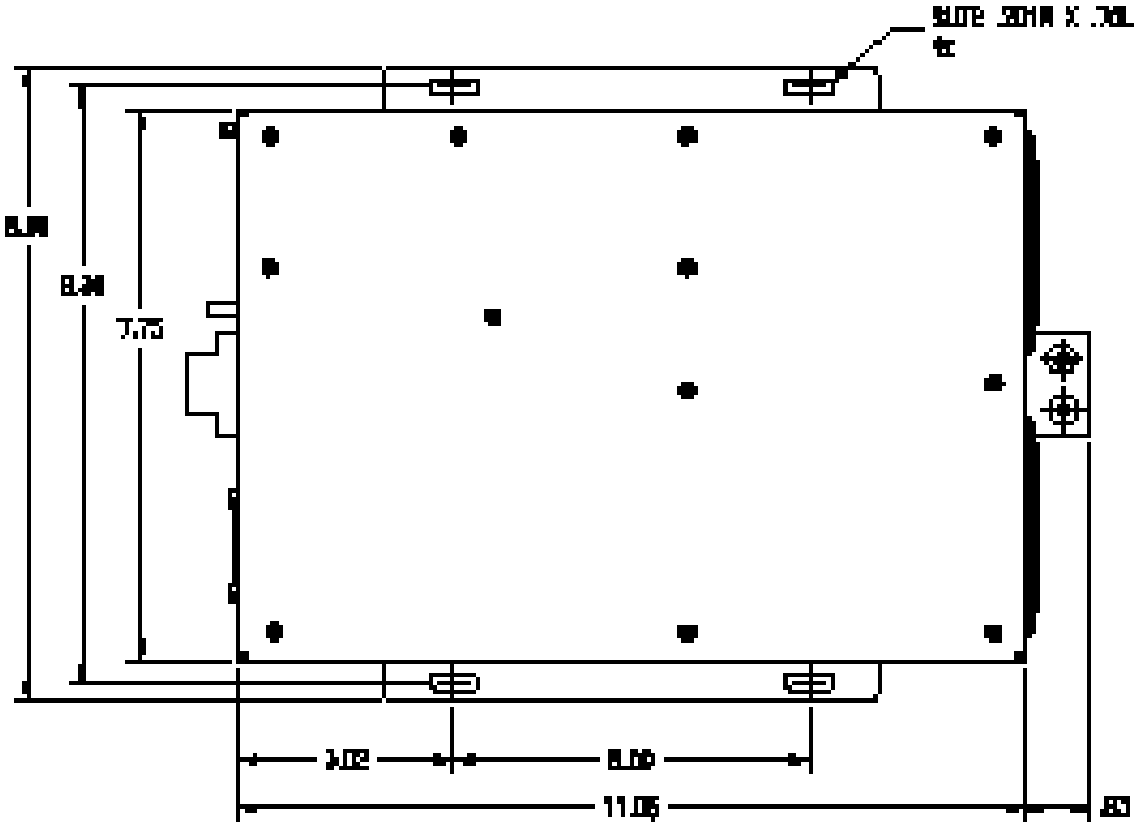
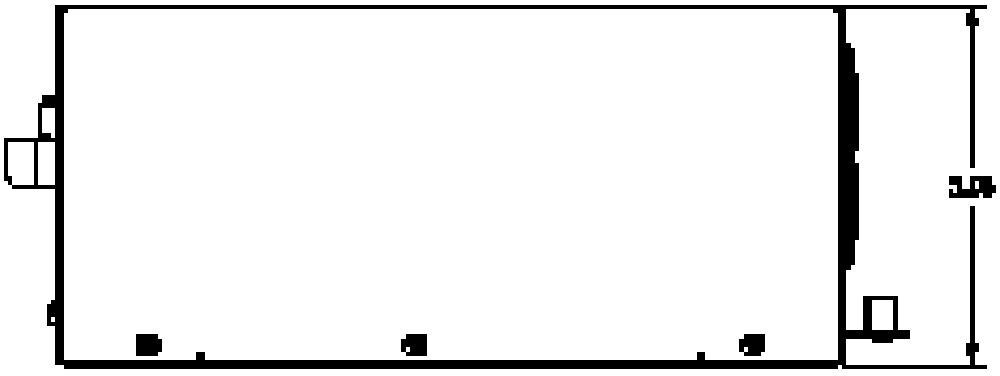
LDP-1000/2000-XX-YY Outline Diagram





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