

# LDDHC High Current Diode Drivers



The LDDHC series is a new family of OEM laser diode drivers designed for the emerging high power laser diode industry. With output currents to 200amps the LDDHC series is available in 3 power levels and a wide range of compliance voltages.

Compact size is possible due to the low-loss Zero Voltage Switching inverter and incorporation of planar magnetics. The LDDHC is virtually wire free. Power factor is greater than 0.99 and conducted emissions meet stringent European regulations. No additional line filter is required to meet emission requirements.

The LDDHC 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.



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## Advantages

- Output Currents to 200A
- Ideal for OEM applications
- Safe turn-on/turn-off
- Compact design
- Power factor correction
- Low conducted emissions
- Auxiliary +15V/-15V/+5V
- Low leakage
- RoHS Compliant

## Models

|            |            |
|------------|------------|
| LDDHC-600  | 600 watts  |
| LDDHC-1000 | 1000 watts |
| LDDHC-1500 | 1500 watts |

# LDDHC Series Laser Diode Drivers

## Specifications:

### Input Voltage

|                |                                 |
|----------------|---------------------------------|
| LDDHC-600/1000 | 100 to 240VAC $\pm$ 10% 50/60Hz |
| LDDHC-1500     | 200 to 240VAC $\pm$ 10% 50/60Hz |
| Power Factor:  | >.98                            |
| Efficiency:    | >80%                            |

### Interface

|                  |                         |  |
|------------------|-------------------------|--|
| Connector:       | 15 Pin "D" Sub Female   |  |
| Enable:          | +5V to +15V (High=run)  | For more information contact us at: 978-241-8260 |
| Current Program: | 0-10V for 0-Max Current | sales@luminapower.com                            |
| Current Monitor: | 0-10V for 0-Max Current | www.luminapower.com                              |
| Voltage Monitor: | 0-10V for 0-Max Voltage |  |

### Performance

|                     |   |
|---------------------|---|
| Rise/Fall Time:     | <1 ms. Standard (10% to 90% full Current) (<600us. Available) |
| Line Regulation:    | <0.5% of maximum output 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         |

### Dimensions

10.2"L x 8.0"W x 2.6"H (25.9 x 20.3 x 6.6 cm)  
Weight: 8 pounds  
(Contact customer Service for outline drawings)

### Environment

|                 |                         |
|-----------------|-------------------------|
| Operating Temp: | 0 to 40°C               |
| Storage:        | -25 to 85°C             |
| Humidity:       | 0 to 95% non-condensing |
| Cooling:        | Forced air              |

### Regulatory

Safety:  
ANSI/UL 60950-1, CSA C22.2 No 60950-1, CENELEC EN 60950-1, IEC 60950-1, UL 60601-1, CAN/CSA C22.2No 601.1-M90

### Emissions/Immunity:

FCC 47CFR Class A, CISPR 11 Group 1 Class A, IEC 61000-3-2, IEC 61000-3-3, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-11

# LDDHC Series Laser Diode Drivers

## LDDHC-INTERFACE CONNECTOR TYPE: 15 PIN D-SUB FEMALE

| Pin #   | Pin Name                    | Functional Voltage Level                       | Description   |
|---------|-----------------------------|--|---|
| 1       | Enable (input)<br>(Note: 1) | High = RUN = +5V to +15V<br>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<br>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(+).<br><b>Note: Accuracy will be compromised when operating below 30% of the maximum value</b>   |
| 8       | Pulse Control (input)       | TTL High = On<br>TTL Low = Off<br>Default = On | The output of the LDDHC 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   |
| 12      | -15V (output)               |  | Auxiliary 200mA   |
| 13,14   | +15V (output)               |  | Auxiliary 200mA   |

1. Upon application of AC input voltage output current will be 0 regardless of Pin 1 setting. Enable 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. Voltage readings greater than 10.5 volts will latch power supply. Output voltage will not exceed 105% of rating.