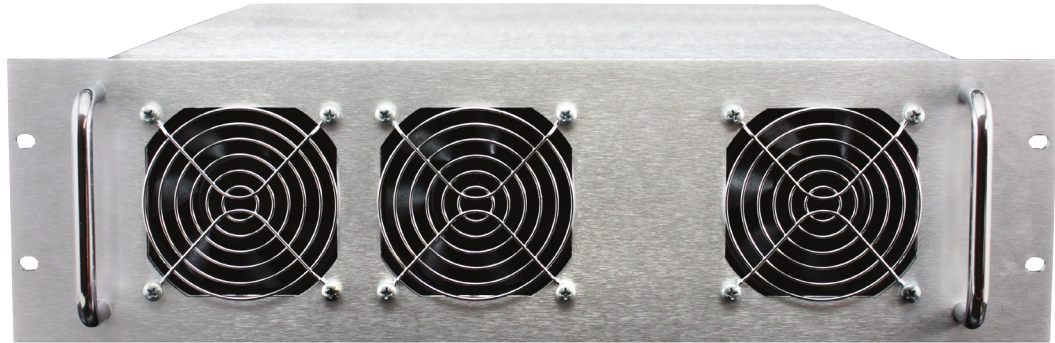


LDQCW-4000 Pulsed Laser Diode Driver



The LDQCW-4000 is a major advancement in laser diode driver technology. Combining the ability to deliver high current pulses from 50 μ sec. through CW with rise times of <10 μ sec. in a compact rack mountable package, this new design is ideal for high power industrial applications.

Building on decades of laser diode driver experience the new LDQCW-4000 is easily controlled using the Analog/TTL interface and incorporates multiple safeguards for complete protection of the laser diode.

Maximum efficiency is realized with circuitry that minimizes losses across the output pulsing circuit. Compact size is possible due to the low-loss Zero Voltage Switching inverter and incorporation of planar magnetics.

Features

- **4000 watts average power**
- **350 amps pulsed/250amps CW**
- **Standard output voltages to 50V**
- **<10 μ sec rise time**
- **0.5% Ripple / Regulation**
- **200 to 240VAC input voltage**
- **Power Factor Correction, PF >.98**
- **RoHS Compliant**
- **Analog/TTL Interface**
- **Optional Opto-Isolated Interface**



LDQCW-4000 Pulsed Laser Diode Driver

Specifications

OUTPUT

Power: 4000 watts Continuous (CW)
4000 watts average (pulsed)
Output Voltage: 50V max. Standard
(higher voltages available)
Current: 350 amps (Pulsed)*
250 amps (CW)

* See derating chart below

INPUT

Voltage: 200 to 240VAC $\pm 10\%$, 50/60 Hz
Frequency: 47 to 63 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: 5 to 10 μ s. (proportional to Vout.)
Fall Time:
Current Regulation: $< 0.5\%$ of Maximum output current

Current Ripple: $< 0.5\%$ of maximum output current
Current Overshoot: $< 1\%$ of max. output current
Power Limit: Limited to max. power with power fold-back circuit

ENVIRONMENT

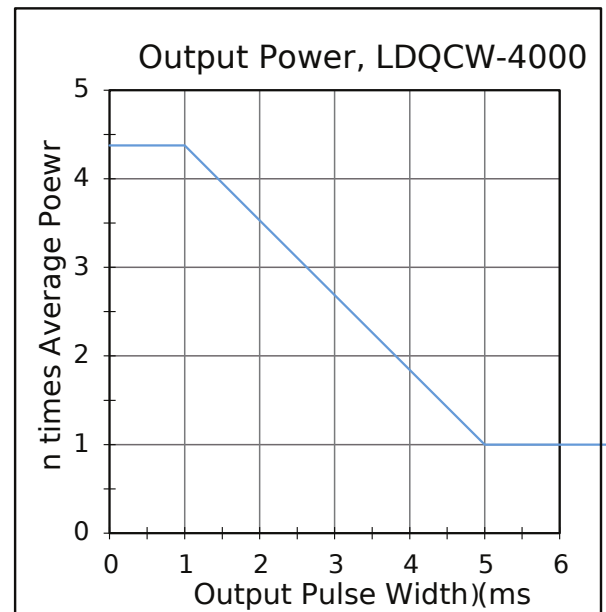
Operating Temp: 0 to 40°C
Storage: -20 to 85°C
Humidity: 0 to 90% non-condensing
Cooling: Forced air

AUXILIARY OUTPUTS

+15V @ 50mA.



AC Input Output 15 Pin Interface
Optional Safety Relay Optional Monitors



Peak Power Derating Chart (Consult factory with exact specifications.)

LDQCW-4000 Pulsed Laser Diode Driver

Interface:

Connector Type: Female 15 pin D-sub.

Input logic level: < 0.4V = Low. 4V – 15V = High

Pin #	Signal Name	Description
1	Pulse. Pin:	High = Run. Default = Low = OFF Parallel with BNC 1. Input impedance: 10k
2,3	Ground	
4	Over Temp:	Active Low. Open collector with 10k pull-up to 15V. Shuts down PS when internal heatsink is hotter than 50 C.. Pulls “ready” signal, pin 12 Low.
5	Current Monitor	0 to 10V = 0 to Full current. Real time output current.
6	I Program	0 To 10V = 0 to Full Current output, Parallel with BNC 2. Note: Accuracy will be compromised when operating below 30% of the maximum value.
7	Simmer (optional)	0 to 10V= 0 to 25 Amp. Simmer is OFF when Pulse, pin 1, is ON.
8	Energy Monitor	Fault indicates load voltage is mismatched. This signal is active only when I-Program is > 5V. Shuts down power supply. Pulls “ready” signal, pin 12, Low. Reset by toggling System Enable, pin 14.
9	Over Voltage	Active=Low. Fault indicates load (laser) voltage is too high. This could be a loose connections between power supply and the diodes.
10	V Monitor	0 to 10V=0 to Maximum rated voltage
11	+ 15 Volts	50mA supply for external use. Do not overload
12	System Ready	Ready= high, Start up= low=OFF Toggle system-enable, pin 14, to clear. Toggle System-Enable, pin 14, to clear. Open Collector with 10k pull-up to 15V.
13	Simmer-On (optional)	High = Run, Default = OFF, 2k input impedance
14	System Enable	High = Run. Default = OFF, 10k input impedance.
15	Interlock	Low = Run. Default = High = OFF > 0.3V = OFF. 5k pull up to 15V

Note:

1. Available Opto Isolated Interface (optional)
2. Over-Temp (pin 4) conditions require a power supply re-start when heat sink temperature falls below 50° C.
3. Maximum pulse repetition rate (pin 1) is 5kHz.



LDQCW-4000 Pulsed Laser Diode Driver

Outline Drawing

