LDQCW Quasi-CW Diode Laser Drivers

The LDQCW series is a new family of OEM diode laser pulsars designed for the emerging high power diode laser industry. Lumina Power LDQCW diode drivers can be configured for compliance voltage requirements up to 100V.

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.

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.

Advantages

- **<25uSec rise/fall times**
- **200A pulsing capability**
- **Power factor correction**
- **Auxiliary +/-15V outputs**
- **Compliance voltage capability up to 100V**
- **Ideal for OEM applications**
- **ROHS Compliant**

Available power outputs are:

- **LDQCW-50: 50Wavg**
- **LDQCW-250: 250Wavg**
- **LDQCW-600: 600Wavg**
- **Pulsed output current up to 200A**

Lumina Power

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

LDQCW Quasi-CW Diode Laser Drivers

Model	$Pout_{max}$	$Iout_{max}$	Input Voltage	Size (L x W x H)
LDQCW-50-XX-YY-ZZ	50W	120Amax	90-264VAC	9.9" x 7.3" x 2.6" 25.2 x 18.6 x 6.6 cm
LDQCW-250-XX-YY-ZZ	250W	200Amax	90-264VAC	10.9" x 7.3" x 4.81" 27.2 x 18.5 x 12.2 cm
LDQCW-600-XX-YY-ZZ	600W	200Amax	90-264VAC	

XX = Maximum pulsed output current
YY = Required compliance voltage (unit will drive a load between 75% and 100% of this voltage)
ZZ = Maximum pulse width at maximum pulsed output current - specified by customer

Note 1: Average power must not exceed Poutavg
Note 2: Output current and voltage compliance can be configured for individual requirements
Auxiliary Outputs: +/-15V @0.5A (Auxiliary output on LDQCW-50: +12V @50mA)
Other configurations available upon request

Input

Voltage:	See table above
Power Factor:	>.98

Output

$Pout_{avg}$	See table above
$Ipulse_{max}$	200Apeak
$Iavg_{max}$	80A
$Vcompliance_{max}$	Configurable up to 100V

Interface

Interface Connector:	15 Pin "D" Sub Female
Pulse Enable:	+5V TTL to +15V CMOS
Current Program:	0-10V for 0-$Iout_{max}$
Current Monitor:	0-10V for 0-$Iout_{max}$
Voltage Monitor:	0-10V for 0-$Vout_{max}$

Performance

Pulse Width Range:	50usec to 2msec
Max Rep Rate:	10kHz
Rise/Fall Time:	<25uSec
Current Regulation:	1.0% of Maximum output current
Current Ripple:	<0.5% of maximum output current
Current Overshoot:	<5% of maximum output current
Power Limit:	Limited to maximum average power with power fold-back circuit

Environment

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

Regulatory

Safety:	Compliant with UL60950

Mechanical

Dimensions:	See table above
Input Power Connector:	Phoenix DMKDS 2,5 Terminal Block
Output Connector:	Ampower Wavecrimp Connector #765608-1 (Strip Line system)

LDQCW Interface

LQCW-250/600-XX-YY-ZZ Interface

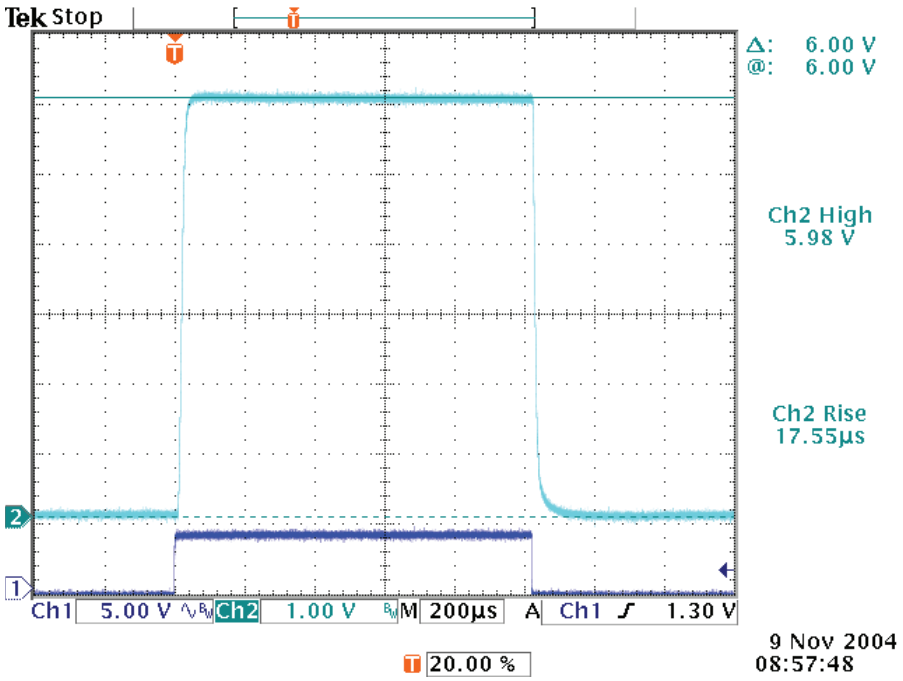
Connector Type: 15 pin D-sub Female

Pin	#Pin Name
1	Pulse Control
2,3,8	GND
4	Temp Fault
5	Iout Monitor
6	Iprogram (+)
7	Poor Load Match
11	+15V @0.25A
12	Ready Status
13	N/C
14	Enable
15	-15V @0.25A

LDQCW-50-XX-YY-ZZ Interface

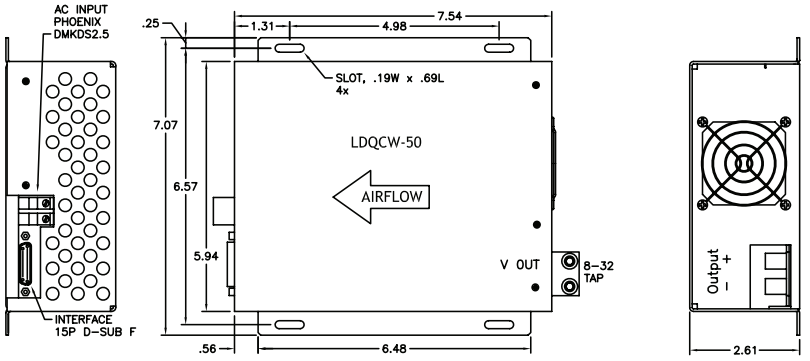
Connector Type: 15 pin D-sub Female

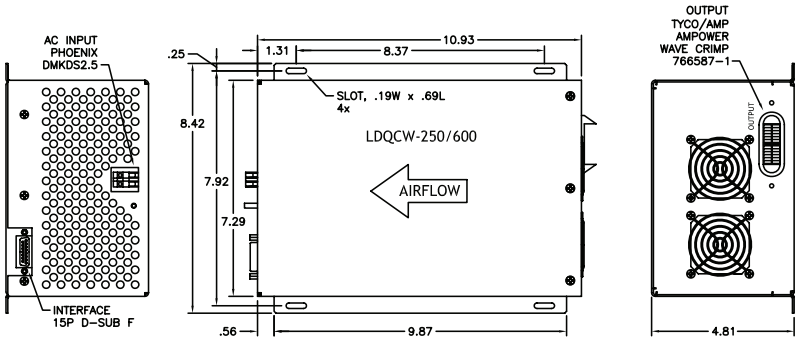
Pin	#Pin Name
1	Enable
3	Interlock
4,9	GND
5	Vout Monitor:
6	Iout Monitor
7	Iprogram(+):
8	Pulse Control
10,11,12	N/C
13,14	+12V @50mA



Typical Pulsing Characteristics
Ch: 1 - Pulse Control
Ch: 2 - Iout 20A/Div

LDQCW Outline Drawings





Lumina Power

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