Lumina Power, INC.

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Where performance equals value

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Diode Laser Worksheet

CW SYSTEMS (Essentially DC Operation)

Maximum Output Current Required: _____A Maximum Voltage Compliance:_____ V

Maximum Power to Diode Laser: _____ Watts

Rise/Fall Time Requirements: _____ mSec (.5mSec max for CW drivers)

Maximum Modulation Frequency: _____ Hz (500Hz max for CW drivers)

Current Regulation/Stability Required: _____ % (0.5% max)

QCW SYSTEMS (Pulsed Operation)

Maximum Pulsed Output Current: _____ A

Minimum Number of Bars in Series: _____ Maximum Number of Bars in Series: _____

Minimum Voltage Compliance:_____ V Maximum Voltage Compliance: _____

Minimum Rise/Fall Time: _____ uSec (25uSec max) Maximum Pulse Width: _____ uSec

Duty Cycle: _____

Maximum Average Power Required: _____ Watts

TE COOLER REQUIREMENTS

TE Power: _____ Te Voltage: _____

INPUT POWER

Input AC Voltage Range: _____VAC to _____VAC

Power Factor Required? _____ Yes _____ No

Universal Input Required? _____ Yes _____ No

AGENCY APPROVAL REQUIREMENTS

None _____ UL _____ TUV _____ CSA _____ CE _____ OTHER _____

PACKAGE OPTIONS

Space Available (Dimensions): _____mm x _____mm x _____mm (or) _____" x _____" x _____"

ENVIRONMENTAL

Ambient Temp Range _____ Deg C min _____ Deg C max

OTHER OUTPUTS REQUIRED:

Aux Output 1: _____V @ _____A Aux Output 2: _____V @ _____A Aux Output 3: _____V @ _____A

Comments On Diode Laser Driver Requirements::

CW SYSTEMS (Essentially DC Operation)

Maximum Output Current Required – Customers typically use between 30A and 80A

Maximum Voltage Compliance – The required voltage is typically 2V/diode and customers run any number of diodes in series, depending on their application. But if customers have long lead wires between diodes and the power supply, there will be some voltage dropped on the wires, so the customer has to tell us how much voltage they need. The power supply will deliver the programmed current in any voltage up to the maximum voltage compliance of the unit.

Maximum Power to Diode Laser – This is basically the maximum current * maximum voltage

Rise/Fall Time Requirements – some customers us our LDD models, which are intended for CW operation, for slow pulsing, up to 500hz. The unit has a maximum rise time of .5mSec.

Maximum Modulation Frequency - 500Hz max for CW drivers

Current Regulation/Stability Required: The best we can do is 0.5%, so for a 60A driver, our regulation/accuracy would be 300mA

QCW SYSTEMS (High Current Pulsed Operation)

Maximum Pulsed Output Current Customers typically pulse between 50A and 200A

Bars in series: We need to know this in case a customer has an application and intends to drive different load. If the customer has a fixed number of bars, then we need to know that also.

Minimum Voltage Compliance We need to know what the customer thinks their voltage compliance will be.

Rise Time – The best our systems can do is 25uSec. Some customers need rise/fall times in the nanosecond range. We can't help them.

Maximum Pulse Width: This is an important spec we need to know

Duty Cycle: How often will the maximum pulse width be repeated.

Maximum Average Power Required: The customer should know this

TE COOLER REQUIREMENTS

Sometimes, customers control the temperature of their diode lasers with thermoelectric coolers. We can supply the power and control to do this.

The rest of the info is pretty straight-forward.