

Vue DPSS System Controllers



Applications:

- Diode-pumped solid state lasers
- Spectroscopy
- Bioinstrumentation
- Sensing

Benefits:

- Integrated solution
- Improve time to market
- Reduce BOM
- Automate production

DPSS Overview

Today, Diode Pumped Solid State (DPSS) lasers are being used in a growing number of industrial OEM and research applications ranging from biomedical to materials and spectroscopy to laser pumping.

Ongoing advances in Diode Pumped Solid State (DPSS) optical cavity designs are driving the need for highly optimized diode controllers. In addition to driving the diode and crystal TECs, today's controllers are required to optimize the relationships between system output, laser diode current, laser diode temperature and crystal temperature. In the past, this optimization was done manually and it required significant production time to measure the parameters and adjust numerous variables.

VueMetrix microprocessor-based controllers are designed to support optimization routines that automate and manage multi-variable systems. Optional memory is available and allows for a wide variety of routines that greatly improve DPSS laser system manufacture and operation. The result is reduced manufacturing time, improved reliability and higher quality end products.

This offers you the potential for significant cost savings during manufacturing and better long-term stability of the DPSS laser. Field upgradeable firmware gives you the flexibility to add new features for your customers. VueMetrix specializes in developing OEM controllers with single or multiple TECs and a variety of diode currents. These fully integrated controllers are available as an embeddable PC board, a minimally packaged OEM unit, or as a CDRH compatible stand-alone unit with a laser system key switch.

VueMetrix has an extensive library of hardware and software designs available for all types of laser diode control. With our modular design system, we can help you to develop your controller quickly and cost effectively, yet customize it for your exact needs.

Features:

- 0.8A, 3A, or 4A diode current
- Dual TEC controllers
- Microprocessor controlled
- WinVue user interface
- OEM packaging options



Vue-DPSS Controller Board
0.8 A laser diode/dual TEC controller
board dimensions: 4.25 x 2.5

VueMetrix specializes in laser diode control systems – allowing us to design the electronics and freeing you to do what you do best, design the optical system. Our experienced team of hardware and software designers can supply you with cost effective, state of the art controllers. Talk to us about how VueMetrix controllers can give your product a significant edge.



WinVue Control Software

Specifications:

	DPSS-0.8	DPSS-3.0	DPSS-4.0	Notes
Laser Diode				
Diode Drive Current	100-800 mA	0.08-3 A	0.1-4 A	
Diode Current Set Point Resolution	0.61 mA	1 mA	1.5 mA	
Diode Current Set Point Accuracy	1% ± 2mA	1% ± 3mA	1% ± 3mA	
Compliance Voltage at Max. Current	3.5 V	3.4 V	3.4 V	
RMS Noise/Ripple (2MHz Bandwidth)	5 µA RMS	20 µA RMS	25 µA RMS	Typical
Light Loop Input Requirements	1.5 to 4.5 V	20 µA – 2 mA	20 µA – 2 mA	Full scale with automatic gain adjustment
TEC				
Number of TEC Controllers	2	2	2	
Laser TEC Controller Current Range	±4.0 A	±2.5 A	±4.0 A	
Laser TEC Controller Voltage Range	±4.0 V	±4.0 V	±4.0 V	
Crystal TEC Controller Current Range	±2.0 A	±2.5 A	±2.5 A	
Crystal TEC Controller Voltage Range	±2.2 V	±4.0 V	±4.0 V	
TEC Controller Temperature Accuracy	±0.3 °C	±0.3 °C	±0.3 °C	With recommended thermistor
Temperature Stability (24hr)	±0.02 °C	±0.01 °C	±0.02 °C	
Temperature Range	15–45 °C	15–45 °C	15–45 °C	Operation outside this range at reduced accuracy
Thermistor	NTC 10KΩ	NTC 10KΩ	NTC 10KΩ	
General				
Laser Output Connector	HD DB15	HD DB15	HD DB26	Pinout differs between models
Data Connector (OEM version)	Molex 43045-1002	Molex 43045-1002	Molex 43045-1002	CDRH version uses DB9
Power Connector (OEM version)	Molex 39-30-3035	Molex 39-30-3035	Molex 39-30-3035	3A CDRH version uses DIN8
Interlock Connector ¹ (OEM version)	Included in data connector	Molex “C-Grid” 2-pin	Molex “C-Grid” 2-pin	0.8A CDRH version uses mini-phone jack
Operating Temperature	+10 to +40 °C			Mounting surface temperature not to exceed 60 °C
Storage Temperature	-30 to +60 °C			
User Interface	WinVue Graphical User Interface			
Computer Requirements	PC with Windows XP or greater, RS-232 serial port			
Input Power Requirements	5.0 ± 0.25 V , 6.0A peak	5.0 ± 0.25 V , 7.5A peak	5.0 ± 0.25 V , 10.0A peak	
OEM Version Dimensions (H x W x D)	1.0” x 2.7” x 5.5”	1.0” x 2.7” x 6.0”	1.0” x 2.7” x 7.5”	
CDRH Version Dimensions (H x W x D)	2.0” x 2.7” x 5.5”	2.0” x 2.7” x 6.7”	2.0” x 2.7” x 7.5”	

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Specifications are subject to change without notice.

¹ In addition to the interlock connector, the CDRH versions are also equipped with a key switch.

