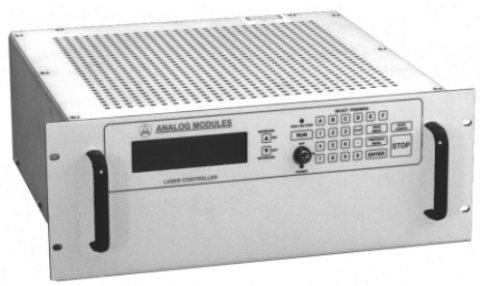
VARIABLE PULSEWIDTH LASER CONTROLLER

- **MICROPROCESSOR CONTROL**
- **VARIABLE PULSEWIDTH 100μS TO >2mS**
- **UP TO 2500 WATTS**
- **MULTIPLE CONFIGURATION STORAGE**
- **PROGRAMMABLE DUTY CYCLE**
- **RS232 PORT FOR REMOTE CONTROL**
- **MULTIPLE VPFN/POWER SUPPLY CONTROL**



DESCRIPTION:

The ***Model 8800V*** laser flashlamp controller provides variable pulsewidth pulses for pumping solid-state lasers. The microprocessor provides the flexibility and convenience of software control. The system status is presented on an easy-to-read LCD graphics display. The *Model 8800V* can be configured to include software, simmer supply and a capacitor charging power supply to form a complete turn-key laser flashlamp controller in a 19" rack mounted assembly. The *8800V* can also control two independent PFN/power supply outputs for Osc/Amp laser applications.

SPECIFICATIONS:

Input	198 to 253VAC, 1∅, 50/60Hz
Output	
Power	Up to 2500W
Pulsewidth	100μs to >2ms
Simmer Trigger	-350V spike for external/parallel trigger transformer. Cannot be used with series trigger transformer.
Status Indicators	Systems status displayed on LCD Power on LED High Voltage LED
Size	
Front Panel	7" x 19"
Chassis	6.5" x 17" x 17"
Weight	<45 lbs.

Standard Features	Microprocessor/RS232 Menu driven interface One HV switch One capacitor module 1750W supply 28W simmer supply 8' HV lamp output cable 230VAC input cable with plug Operating Manual
Options	Custom software Additional HV switch Additional power module for up to 2500W of average power External capacitor box 60W simmer supply 115VAC input

ISO 9001 CERTIFIED

Specifications subject to change without notice. *Contact our applications staff for detailed information.*

APPLICATIONS:

Solid-State Laser Control where Variable Pumping Pulsewidths are required.

126 BAYWOOD AVENUE ♦ LONGWOOD, FLORIDA 32750-3426 ♦ USA
(407) 339-4355 ♦ FAX (407) 834-3806 ♦ E-mail: ami@analogmodules.com
www.analogmodules.com

OPTIONS	8800V
No. of HV switches One switch Two switches	 **-1** **-2**
Power Supply 1750W 2500W	 **-5** **-10**
Charge Voltage (up to1000V) Add "C" to end of number if external capacitor box is used.	**-(value) (C)**
Simmer Output 28W 60W	 **-S** **-SZ**
HV Output Cable $30A_{RMS}$ $50A_{RMS}$ $100A_{RMS}$	 **-1** **-2** **-3**
Input Voltage 198 - 253VAC, 50/60Hz, 1Ø	**-D**

To select the correct 8800V model for your application, use the two graphs at the bottom of the page. Knowing the lamp impedance parameter, K_O, and the Joules per millisecond desired in the application, determine the graph which best fits the requirement. Once the selection is complete, the Y axis will determine the number (one or two) of HV switches required and the corresponding area under the desired charge-voltage curve (400V, 800V or 1000V) will determine the maximum charge voltage required. The average power required is determined by the product of the Joules per pulse and the pulse repetition frequency. Please refer to the 8800V applications note for additional information on pulsewidth, PRF, and droop limitations of electronic PFNs. For custom configurations, contact our application staff for details.

For example:

1. Lamp impedance parameter (K_O) = $28\Omega\text{-}A^{½}$.
2. 350J per pulse, 1mS pulsewidth at 3Hz is desired for the application.
3. Calculate the Joules/mS by dividing the Joules per pulse by pulsewidth required.
4. Find the lamp K_O on horizontal axis of graphs at bottom of page. Find the required J/ms on the vertical axis. Select the graph labeled "Joules/mS using Two HV Switches". This graph will accommodate the required 350J/mS with K_O of 28. Also note that the intersection of K_O and desired J/mS falls just below the 800V curve on this graph.
5. Calculate the average power required from the power supply with the product of Joules per pulse and pulse repetition frequency. P=350J x 3Hz = 1050J/S or watts.

Therefore, the application requires an 8800V with two HV switches, charge voltage of up to 800VDC and 1050W minimum power supply.

AMI's complete model number is: 8800V-2-5-800C-S-2-D

Note: The graphs below represent typical performance and do not account for lamp risetime and droop over pulsewidth. For narrow pulse applications (~100-200µS), the energy "calculated" and energy "measured" by the microprocessor will differ due to lamp risetime delay. This delay is due to the dynamic properties of each lamp and will vary from lamp to lamp. For long pulsewidth applications, allowable droop should be considered on a case by case basis.

Typical Part Number: ***8800V-2-5-800C-S-2-D*** **=**

No. of High Voltage Switches:	2
Power Supply:	1750W
Charge Voltage:	800V with provisions for use with external capacitor box
Simmer Power:	28W
HV Output Cable:	50A
Input:	198 - 253VAC, 50/60Hz, 1∅