

# SPECIFICATIONS

## ELECTRICAL

### Output Voltage Range (or compliance range in current mode):

Each power module has a single output voltage range. The ranges are as follows:

- a) 0 to 7VDC
- b) 0 to 10VDC
- c) 0 to 20VDC
- d) 0 to 32VDC
- e) 0 to 40VDC
- f) 0 to 80VDC
- g) 0 to 160VDC
- h) 0 to 320VDC

### Output Current Range:

Each power module has a single output current range.

- a) 15.0 amperes maximum from 7VDC to 0VDC for 7VDC modules.
- b) 12.0 amperes maximum from 10VDC to 0VDC for 10VDC modules.
- c) 10.0 amperes maximum from 20VDC to 15VDC and derating linearly to 6 amperes maximum at 0VDC for 20VDC modules.
- d) 6.25 amperes maximum from 32VDC to 24VDC and derating linearly to 3.75 amperes maximum at 0VDC for 32VDC modules.
- e) 5.0 amperes maximum from 40VDC to 30VDC and derating linearly to 3.0 amperes maximum at 0VDC for 40VDC modules.
- f) 2.5 amperes maximum from 80VDC to 60VDC and derating linearly to 1.5 amperes maximum at 0VDC for 80VDC modules.
- g) 1.25 amperes maximum from 160VDC to 120VDC and derating linearly to 0.75 amperes maximum at 0VDC for 160VDC modules.
- h) 0.625 amperes maximum from 320VDC to 240VDC and derating

linearly to 0.375 amperes maximum at 0VDC for 320VDC modules.

### Full Rated Output Power:

- a) 200 watts for 20VDC, 40VDC, 80VDC, 160VDC and 320VDC modules.
- b) 120 watts for 10 VDC modules.
- c) 105 watts for 7VDC modules.

### Configuration:

Up to six output channels per 5.25" drawer. Internal programmer controls up to 16 output channels. A maximum of 15 channels can be in separate drawers and be programmed from the "MASTER" unit at a single GPIB BUS address.

### Accuracy:

$\pm 0.05\%$  of full range voltage  $+0.05\%$  of programmed voltage) at 25°C in constant current mode.

### Load Regulation In Voltage Controlled Mode:

$\pm 0.01\%$  of full range voltage as measured at sense point.

### Load Regulation In Current Controlled Mode:

$\pm 0.01\%$  of rated short circuit current as measured over rated compliance voltage range.

### Line Regulation (voltage or current mode):

$\pm 0.01\%$  of full rated output for a  $\pm 10\%$  line voltage change.

### Maximum Ripple And Noise (voltage mode):

1 Millivolt RMS or 0.01% of rated output voltage whichever is greater as measured from 20Hz to 5MHz.

10 Millivolts peak-to-peak or 0.05% of rated output voltage whichever is greater as measured from 20Hz to 20MHz.

### Maximum Ripple And Noise (current mode):

0.02% RMS of rated short circuit current of module.

0.1% peak-to-peak of rated short circuit current of module.

### Stability (after warm-up):

$\pm 0.01\%$  of rated output for 24 hours at constant temperature, line voltage and load conditions.

### Temperature Coefficient:

$\pm 0.01\%$  per °C of rated output voltage in voltage mode.  $\pm 0.025\%$  per °C of rated output current in current mode.

### Response To Step Load Current:

Recovers to within  $\pm 0.1\%$  of final value in 300 Microseconds with a 10% to 100% step load current.

### Overvoltage Protection:

Autotracking with automatic shutdown at 110% of programmed output voltage for programmed voltages from 10% to 100% of range. In current mode, OVP tracks at 110% of programmed compliance voltage.

### Over Current Protection:

Autotracking with automatic shutdown at 110% of programmed output current for programmed current from 10% to 100% range.

### Nominal Input Line Voltage:

115VAC or 230VAC as selected by rear panel switch.

### Input Voltage Range:

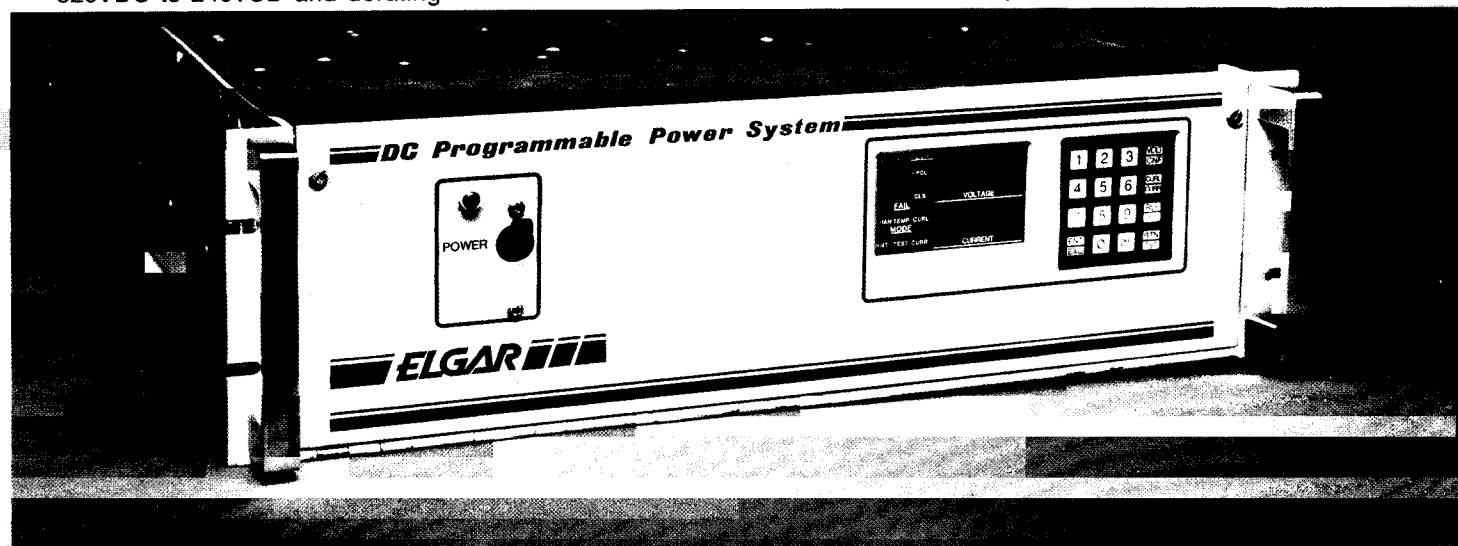
$\pm 10\%$  of nominal value.

### Input Frequency Range:

47 to 440Hz

### Input Circuit Breaker:

Front panel input circuit breaker is provided for protection and as OFF/ON power switch.



## GENERAL

**Operating Temperature Range For Altitude To 2000 Feet:**  
0-50°C

**Storage Temperature Range:**  
-40°C to 75°C

**Storage Altitude:**  
0 to 50,000 feet.

**MTBF:**  
10,000 hours with six modules operating at rated power output and digital interface in 25°C environment.

**Shelf Life:**  
5 years minimum

**Humidity:**  
0 to 95% non-condensing

**Shock Vibration:**  
MIL STD 810 A & B as applicable to shipment of electrical test equipment.

**Efficiency:**  
50-60 percent at full rated output power at nominal AC input voltage depending on module voltage.

**Insulation Resistance And Dielectric Withstanding Voltage:**  
50 Megohms at 500VDC @ 25°C and less than 50% relative humidity.

## MECHANICAL

**Size:**  
19 inches (483 mm) wide by 5¼ inches (133 mm) high by 21 inches (533 mm) deep for mounting in a standard RETMA rack.

**Net Weight:**  
Approximately 80 pounds (36 kg) with six power modules.

**Finish:**  
Light gray, color number 26408, per FED STD 595 with black silkscreen, color number 27038.

**Handles:**  
Front panel mounted lifting handles.

**Material:**  
Steel chassis with aluminum front panel.

**Cooling:**  
Forced air with internal cooling fans.

**Input Power Connection:**  
Three wire input via MS type connector or three-wire plug.

**Output Power Connection:**  
Four-wire output via individual MS3102A connectors per power module or terminal blocks.

**Remote Programming Connector:**  
Via GPIB connector.

## PROGRAMMING

**Interface:**  
IEEE 488-1978 interface standard including subsets SH1, AH1, T6, L4, RL1, PPO, DC1, DT0, C0.

**Number Of Channels:**  
Up to 16 channels at a single GPIB address.

- Modes Of Operation:**
- Programmable in output voltage with programmable upper current limit.
  - Programmable in output current with programmable upper compliance voltage limit.

**Programming Range:**  
0 to full scale voltage and 0 to full scale current in amperes.

### Maximum Resolution:

.01 volts or one part in 4000, whichever is less, on modules of 80 volts or below. .1 volts on modules of 160 volts or more. .01 amps on all modules.

### Maximum Resolution:

One part in 4000 from remote or 0.1 volts and 0.01 amperes from front keyboard.

### Primary Address:

Set by internal DIP switch and accessible through rear panel.

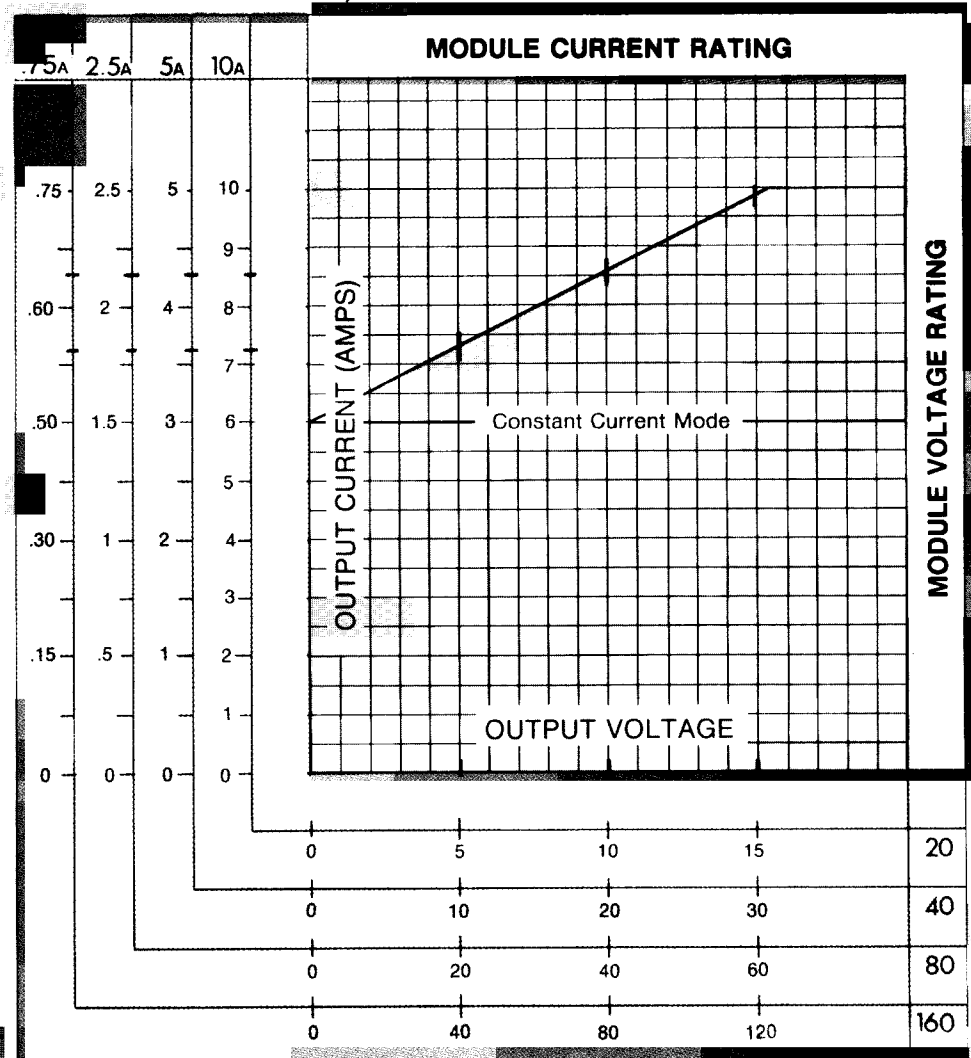
### Identification:

Pre-programmed by PROM to establish absolute values of module voltage and current range.

### Language:

ABLE (Atlas Based Language Extension) or optional CIIL.

**VOLTAGE/CURRENT RATINGS ①②**  
**200W/120W POWER MODULE ①**



① 7V/105W, 10V/120W, 32V/200W, and 320V/120W modules available - consult factory. See "Output Current Range" for specifications.

② Up to six power modules can operate in Master/Slave parallel mode for additional load current.