



- **Triode Supply for Electron Beam Columns**
- **High Precision, Low Noise, Ultra Stable**
- **Over Current/Voltage Protection**
- **Arc and Short Circuit Protection**
- **OEM Customization Available**
- **UL, CE and RoHS Compliant**

The EBM powers E-Beam Columns in Scanning Electron Microscopes providing acceleration, bias and filament sources in a single compact package. Spellman's proprietary HV packaging and encapsulation technology gives dramatic improvements in size, cost and performance compared to other SEM power supply offerings. The EBM provides a highly regulated, low noise, ultra stable accelerator supply programmable from 0 to -30kV at 170uA. The EBM has floating bias and filament supplies referenced to the accelerator. Programming signals utilize differential analog inputs to minimize external noise and offset voltages effects. A ground referenced accelerator current monitor is provided. The EBM is arc and short circuit immune, along with over voltage and over current protection.

TYPICAL APPLICATIONS

Scanning Electron Microscope

SPECIFICATIONS

Input Voltage:

+24Vdc, ±5%

High Voltage Outputs:

ACCELERATOR:

Voltage:

0V to -30kV full load with respect to ground

Current:

170µA maximum, continuous from -300V to -3kV

Accuracy:

±2% or ±15V (whichever is greater)

Load Regulation:

<±100ppm

Line Regulation:

<±100ppm for 22.8V to 26.4V line change

Ripple:

<15ppm p-p at -30kV, 170µA, maximum bias and filament output

Temperature Coefficient:

<100ppm/°C

Stability:

8ppm/3 minutes at 150µA load current after 1 hour warm up

BIAS:

(Referenced to Accelerator)

Voltage:

0 to +3.5kV (max allowable output limited to 2kV)

Current:

150µA maximum

Accuracy:

±5% of full scale

Line Regulation:

<±0.1% for 10% line change

Ripple:

<150mVp-p at 30kV, 150µA, max. bias and filament output

Temperature Coefficient:

<1000ppm/°C

Stability:

6V/10 minutes

FILAMENT:

(Referenced to Accelerator)

Power:

0 to 15W

Load Resistance:

1 ±5%

Accuracy:

±3% of FS or 0.1V, which ever is greater

Load Regulation:

<2% for 10% change in load resistance

Line Regulation:

<1% for 10% line change

Ripple:

<0.1% p-p max

Temperature Coefficient:

<300ppm/°C

Stability:

100ppm/10 minutes

INTERFACE:

Input:

Analog control for beam energy, filament and bias

Output:

Mini75 receptacle (Claymount CA11 or similar)

Temperature:

Operating: 0°C to +45°C

Storage: -20°C to +75°C

Humidity:

0 to 85% RH, non-condensing

Dimensions:

4.13" H x 9.85" W x 7.48" D (105mm x 250mm x 190mm) excluding any mounting brackets

Weight:

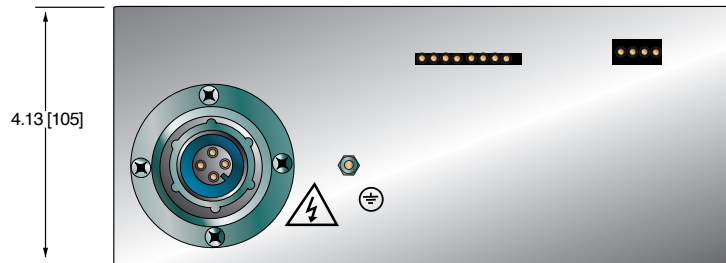
<22 lbs. (10kg)

Regulatory Approvals:

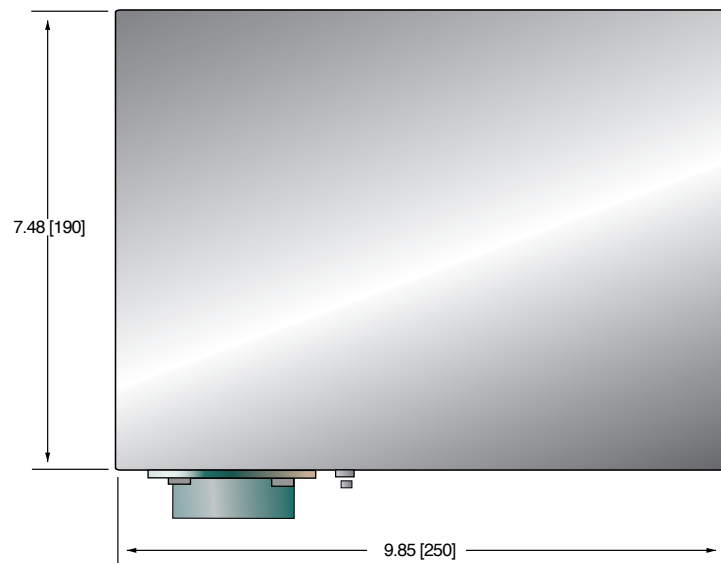
Compliant to EEC EMC Directive. Compliant to EEC Low Voltage Directive. UL/CUL recognized, File E227588. (EBM30N6/582, /615, /636, /833, DPL72130/24). RoHS compliant.

DIMENSIONS: in.[mm]

FRONT VIEW



TOP VIEW



SIDE VIEW

