



HITEK POWER® EG353 SERIES
HIGH-STABILITY 35 KV HIGH VOLTAGE POWER SUPPLIES
FOR PRECISION SEM E-BEAM APPLICATIONS





High-stability
35 kV high
voltage power
supplies
**for precision
SEM e-beam
applications**



The high stability and reliability of EG353 high voltage power supplies elevate the performance and quality of your entire system. This series meets the demanding requirements of SEM (scanning electron microscope) applications, including inspection, material and biological sciences, and forensics. Based on proven design techniques and power-conversion technologies, EG353 power supplies deliver a dependable performance that helps maximize image quality and repeatability.

FEATURES

- › Low ripple (< 1.6 ppm, accelerator) and high stability (< 10 ppm, accelerator)
- › Small-volume or 19" rack-mounted versions
- › -35 kV accelerator, 200 μ A, 50 mV ripple
- › +10 kV extractor, 400 μ A, 20 mV ripple (floating)
- › -1 kV suppressor, 100 μ A, 30 mV ripple (floating)
- › 5 V at 3 A current-controlled low-ripple (LF < 1 mA, peak to peak) heater (floating)
- › Optional grounded outputs using expansion interface
- › Full digital control and monitoring (fiber-isolated RS-232)
- › RoHS compliant to EU Directive 2011/65/EU
- › CE marked for EU LV Directive 2006/95/EC

ASK US ABOUT DERIVATIVES AND SPECIAL PRODUCTS BUILT TO YOUR REQUIREMENTS.



SPECIFICATIONS

ELECTRICAL INPUT				
Voltage	23 to 25 VDC, 24 VDC nominal			
Current	2.3 ADC max at 23 VDC input			
Protection	5 A time delay internal PCB-mounted fuse			
Electrical Output	Accelerator	Suppressor	Extractor	Filament
Line Regulation	< 0.3 V for a 1 VDC input voltage change	< 0.1 V for a 1 VDC input voltage change	< 0.5 V for a 1 VDC input voltage change	1 mA max for a 10% change in input voltage
Load Regulation	< 0.3 V for a 100 μ A load change	< 0.1 V for a 10 μ A load change	< 0.5 V for a 400 μ A load change	2 mA max from 0.4 to 1 Ω load change at 3 A
Output	-30 kV, 200 μ A, -35 kV for conditioning only (ground referenced)	-1 kV, 100 μ A (accelerator referenced)	+10 kV, 400 μ A (accelerator referenced)	3 A at 5 V max (accelerator referenced)
Accuracy	\pm 20 V	\pm 5 V	\pm 15 V	--
Voltage Ripple	LF: 50 mV peak to peak max under specified conditions	LF: 30 mV peak to peak max under specified conditions	LF: 20 mV peak to peak max under all conditions	LF: 1 mA peak to peak max under all conditions*
	HF: 25 mV peak to peak max under specified conditions	HF: 20 mV peak to peak max under specified conditions	HF: 15 mV peak to peak max under all conditions	HF: 5 mV peak to peak max under all conditions*
Voltage Monitor	0 to -35 kV, accuracy \pm 0.5%	0 to -1 kV, accuracy \pm 0.5%	0 to +10 kV, accuracy \pm 0.5%	0 to +6 V, 16 bit resolution, accuracy \pm 1%
Current Monitor	0 to 250 μ A 16-bit resolution \pm 0.5% accuracy	0 to 150 μ A 16-bit resolution \pm 0.5% accuracy	0 to 500 μ A 16-bit resolution \pm 0.5% accuracy	0 to 3 A 16-bit resolution \pm 2 mA accuracy for 2 to 3A \pm 20 mA accuracy for all other values
Stability	< 0.3 V over a 15 min period (after warmup period)	< 0.2 V over a 15 min period (after warmup period)	< 0.3 V over a 15 min period (after warmup period)	0.5 mA over a 1 hour period (after warmup period)
Thermal Drift	25 ppm max per $^{\circ}$ C over operating temperature	25 ppm max per $^{\circ}$ C over operating temperature	25 ppm max per $^{\circ}$ C over operating temperature	100 ppm max per $^{\circ}$ C over operating temperature
Environmental				
Operational Temperature	10 to 45 $^{\circ}$ C (50 to 113 $^{\circ}$ F)			
Storage/Transport temperature	-20 to +70 $^{\circ}$ C (-4 to 158 $^{\circ}$ F)			
Altitude	Sea level to 2000 m (6562')			
Humidity	80% max relative humidity up to 31 $^{\circ}$ C, reducing linearly to 50% at 40 $^{\circ}$ C (140 $^{\circ}$ F), non-condensing (ref. EN61010-1)			
Cooling	Free convection			
Physical	Module	19" Rack		
Dimensions (W x H x D)	See mechanical drawings, on page 5.			
Weight (Approx.)	10.2 kg (22.5 lb)		12 kg (26.5 lb)	
Construction	Steel and aluminum with protective treatment			
Remote Interface	RS-232; supplied by fully isolated fiber optics			
Remote Interface Connector	Hewlett Packard* versatile optical link: HP T-1521/HP R-2521			
Input Connector	2-way PTR/Phoenix STLZ950/2-G-5.08-H-green (pin 1 positive, pin 2 negative)			
RS-232 Fiber Connector	9-way, female, D-type			
Interlock Connector	Hewlett Packard* versatile optical link: HP T-1521/HP R-2521 (rear-panel mounted)			
HV Output Connectors	Heater: 2 wires of custom 4-way HV connector Suppressor: 1 wire of custom 4-way HV connector Extractor: 1 wire of custom 4-way HV connector			

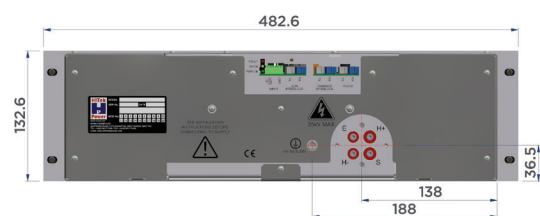
*Ripple measured with a 1 Ω load and 3 A

DIMENSIONAL DRAWINGS

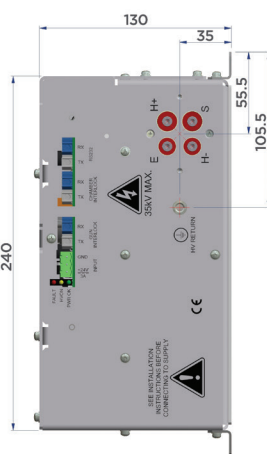
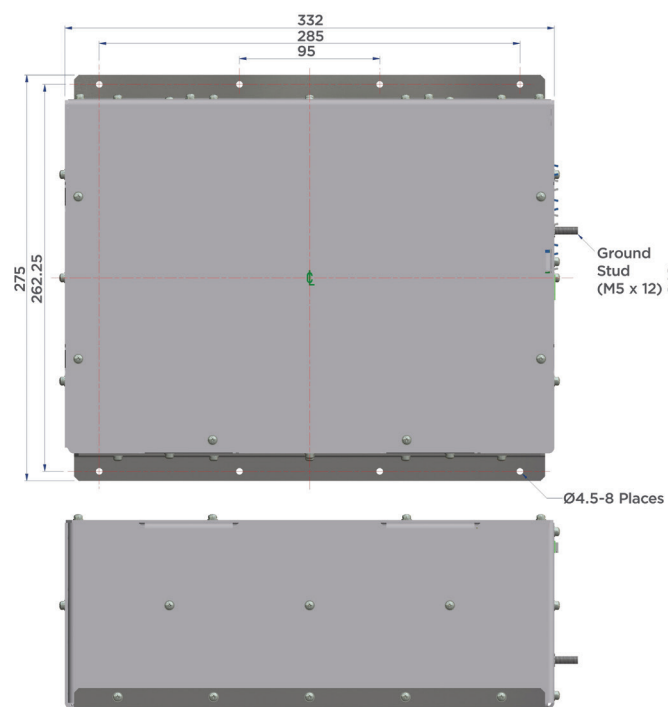


**PROVEN DESIGN TECHNIQUES AND
POWER-CONVERSION TECHNOLOGIES
FOR HIGH STABILITY, REPEATABILITY,
AND RELIABILITY**

All measurements are in millimeters.



Rack Unit



Module



For international contact information, visit
advanced-energy.com.