

Model : FE503XP



\* controller panel is optional

50kV custom multiple output power supply for “electron beam lithography with TFE-type emitter” .

## Application

- Electron beam lithography

### Product specifications

#### Input voltage

90V~240VAC single phase 1.5A(50,60HZ)

#### Accelerator supply (Referenced to GND)

Output voltage: -1K~-51.2kV  
 Absolute voltage accuracy: Less than 0.1%  
 Set ability: 16bit (0.1V LSB)  
 Output current: 100  $\mu$  A max  
 Ripple noise: Less than 2ppm 100mVp-p@50kV  
 Stability: 5ppm/1hr after 1hr warm up  
 temperature coefficient: 3ppm/°C

#### Filament supply (Referenced to Accelerator)

Output wattage: 15W max  
 Set ability: 16bit (1mA LSB)  
 Output current: 0~3A max  
 Ripple noise: 10mA or less @3A  
 Absolute current accuracy:  $\pm$ 0.01A  
 Stability: 100ppm/1hour @ 3.0A  
 temperature coefficient: 25ppm/°C

#### Suppressor supply (Referenced to Accelerator)

Output voltage: -0.03kV~ -0.6kV  
 Absolute voltage accuracy: Less than 1.0% @300V  
 Set ability: 14bit (0.11V LSB)  
 Output current: 150  $\mu$  A max  
 Ripple noise: Less than 20mVp-p  
 Stability: 50ppm/1hr after 1hr warm up  
 temperature coefficient: 25ppm/°C

#### Extractor supply (Referenced to Accelerator)

Output voltage: +0.3kV~+6.5kV  
 Absolute voltage accuracy: Less than 0.1%  
 Set ability: 16bit (0.125V LSB)  
 Output current: 300  $\mu$  A max  
 Ripple noise: Less than 50mVp-p @6.5kV  
 Stability: 10ppm/1hr after 1hr warm up  
 temperature coefficient: 5ppm/°C

#### Grid electrode supply (Referenced to Accelerator)

Output voltage: +0.2kV~-5.12kV  
 Absolute voltage accuracy: Less than 0.1%  
 Set ability: 16bit (0.125V LSB)  
 Output current: 100  $\mu$  A max  
 Ripple noise: Less than 50mVp-p @5.12kV  
 Stability: 10ppm/1hr after 1hour warm up  
 temperature coefficient: 5ppm/°C

### The other specifications

All the outputs provide with the over voltage protection and the over current protection.

External control: Optical isolated RS232C

Interlock: vacuum, thermo, HV-connection

HV connector: Customer specification

Output monitor: Accelerator ripple, Extractor ripple

Storage temp range: -5°C~ +40°C

Operating temperature

Limit: +10°C~ +40°C

Humidity: 80% or less

Insulation method: Hybrid (Air and silicone rubber )

Externals size: 480mm(W)  $\times$  399(D)  $\times$  745 (H)

Weight: 48kg

The model “FE503XP” is an integrated multiple output high voltage power supply specifically developed for TFE type electron beam lithography.

- \* Please ask details.  
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optional

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