The exclusive design for bringing out the performance of an electron gun to the maximum!

Specialized HV power supply for Scanning Electron Microscope

SEM series

Output voltage for accelerating: 0 to -15 kV or -30 kV
Output voltage for biasing: 0 to +3.5 kV
Output power for filament: 15 W max.

- Three power supplies for “Acceleration”, “Biasing” and “Heating filament” are in compact body.
- Available for adding the power supply for a suppressor (optional)
- High reliability design and appropriate protection circuits

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FEATURES

- Three outputs for electron beam of SEM are integrated in one case
- High stability, low ripple noise
- Over current protection
- Short circuit protection

SUMMARY

SEM series is a high voltage power supply for electron gun of Scanning Electron Microscope (SEM), and a floating power supply with accelerator, biasing and filament supply integrated.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model</th>
<th>Output voltage</th>
<th>Output current</th>
<th>Output setting accuracy</th>
<th>Stability (after warm-up of 1hr)</th>
<th>Ripple</th>
<th>Control voltage</th>
<th>Output current monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEM-15</td>
<td>0 to −15 kV</td>
<td>0 to 15 W(CP)</td>
<td>±3 %</td>
<td>±5 ppm / 3 min</td>
<td>10 ppm p-p of F.S.</td>
<td>0 to 10 V (CV)</td>
<td>3 V / 300 µA*1</td>
</tr>
<tr>
<td>SEM-30</td>
<td>0 to −30 kV</td>
<td>0 to 15 W(CP)</td>
<td>±5 %</td>
<td>±1 % / 10 min</td>
<td>0.01 % p-p of F.S.</td>
<td>0 to 10 V (CV)</td>
<td>3 V / 300 µA*1</td>
</tr>
</tbody>
</table>

Common

<table>
<thead>
<tr>
<th>Output voltage</th>
<th>Output current</th>
<th>Output setting accuracy</th>
<th>Stability (after warm-up of 1hr)</th>
<th>Ripple</th>
<th>Control voltage</th>
<th>Output current monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 V max</td>
<td>0 to +6 kV</td>
<td>±5 %</td>
<td>±0.5 % / 10 min</td>
<td>0.01 % p-p of F.S.</td>
<td>0 to 10 V (CV)</td>
<td>0 to 10 V (CV)</td>
</tr>
</tbody>
</table>

Optional*2

<table>
<thead>
<tr>
<th>Biasing power supply B6</th>
<th>Power supply for suppressor S03</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 µA</td>
<td>0 to +6 kV</td>
</tr>
<tr>
<td>100 µA</td>
<td>0 to −300 V</td>
</tr>
</tbody>
</table>

GENERAL SPECIFICATIONS

- Input Voltage: 24 Vdc±5 %
- Input Current: 1.5 Amax
- Remote Switch: Accelerator, Bias and Filament are simultaneously switched ON / OFF by external contact
- Accelerator cuts off together with Bias and Filament when output current for Accelerator exceeds its maximum (including feedback current).
- Short circuit protection
- Over current Protection
- Remote Switch: OPEN / HV OFF
- SHORT / HV ON

ACCESSORY

Output Cable*3
- Output cable with plug (flying lead) 1.5 m
- Model: CN-SEM4P

*1 Including feedback current.
*2 Available for other voltages.
*3 The model number of output cable and output connector will change when -LB6 or -LS03 option is chosen. Please contact our sales office for details.
Options

- **LB6** Changing the bias voltage to “0 to +6 kV”
- **LS03** Adding the power supply for suppressor (When this option is chosen, the dimensions of SEM-15 and SEM-30 will be W11.02×D9.84×H4.92 inches.)
- **LFcv** Constant voltage filament output
- **LFcc** Constant current filament output

Specifications will be as follows.

- LFcv and LFcc cannot be chosen together.

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Control of filament output</th>
<th>Filament output</th>
<th>Control Volt.</th>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>CP (Constant Power)</td>
<td>0 to 15 W (Load1 Ω)</td>
<td>0 to 10 VDC</td>
<td>Max. output volt. : 5 V</td>
</tr>
<tr>
<td>-LFcv optional</td>
<td>CV (Constant Voltage)</td>
<td>0 to 5 V (Load1 Ω)</td>
<td></td>
<td>Max. output power : 15 W</td>
</tr>
<tr>
<td>-LFcc optional</td>
<td>CC (Constant Current)</td>
<td>0 to 5 A (Load1 Ω)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Customer Inquiry Sheet (SEM series)

Please copy this page and above fax number after filling out form below.

- I would like
  - [ ] A quotation
  - [ ] An explanation of product
  - [ ] A demonstration
  - [ ] To purchase
  - [ ] Other ( )

- Give us your requirement / comment

- Please fill in below.

<table>
<thead>
<tr>
<th>Address:</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Company:</td>
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<tr>
<td>Dept.:</td>
<td>Title:</td>
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<tr>
<td>Name:</td>
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<td>Tel:</td>
<td>Fax:</td>
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<tr>
<td>E-mail:</td>
<td></td>
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</tbody>
</table>

## Manufacturer warranty

We warrant the specification, unless otherwise specified, at max. rated output after warm up, and scope of application is between 10% and 100% of max. rated output. We warrant that products contained in this catalog (hereinafter, the "Products") are free from defects in material and workmanship under normal use for a period of one (1) year from the date of shipment thereof. However, the warranty period for X-ray detectors and X-ray source shall be either one (1) year from the date of shipment or 1,000 hours, whichever shorter. The above warranty shall not apply to any Product which, at our sole judgment, has been: i) Repaired or altered by persons unauthorized by us; or ii) Connected, installed, adjusted or used otherwise than in accordance with the instructions furnished by us (including being used in an inappropriate installation environment, such as in corrosive gas, high temperature and humidity). We are not liable for any loss, damage or failure of the Products after the shipment thereof caused by external factors such as disasters. We will not inspect, adjust or repair any of our power supply products in the field or at any customer site. If you suspect that there has been a power supply failure in the field, please inspect your whole unit by yourself in an effort to determine that the problem is, in fact, arising out of our power supply products. If it is found that the problem is arising out of such power supply product after inspection, please contact your local sales office for additional troubleshooting. A "Return Merchandise Authorization" is required in case the power supply must be sent back to the factory in Japan for inspection and repair. We, at our sole discretion repair or replace such defective products at no cost to the purchaser.

Please see the link below for the complete warranty terms:
http://www.matsusada.com/site/warranty.html

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