Moxtek® manufactures low-power, miniature X-ray sources for a variety of applications including handheld and benchtop instruments. Moxtek sources are small, lightweight, and can be packaged into custom enclosures. The MAGNUM® X-ray source produces high output with a small spot size.

### Features vs. Benefits

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small, compact design</td>
<td>Close coupling of source to detector</td>
</tr>
<tr>
<td>Lightweight</td>
<td>Portable, versatile, easy to integrate</td>
</tr>
<tr>
<td>Stable output</td>
<td>Enables precise calibrated measurements</td>
</tr>
<tr>
<td>Low power consumption</td>
<td>Long battery life</td>
</tr>
<tr>
<td>Low spectral contamination</td>
<td>High precision of analysis</td>
</tr>
<tr>
<td>High x-ray output</td>
<td>Short sampling time</td>
</tr>
<tr>
<td>Customized configurations</td>
<td>Flexible form factor</td>
</tr>
</tbody>
</table>

*See reverse side for customizable options

### Mechanical Specifications

- **Tube Type:** Metal-ceramic
- **Cathode Type:** Tungsten filament
- **Operating Temperature:** -10 to +50 °C
- **Storage Temperature:** -25 to +85 °C
- **Cooling:** Conduction
- **Weight:** 450g (Typical)
- **Available Targets:** Ag, W, Pd, Rh

### Source Characteristics

- **HV Polarity:** Grounded anode
- **High Voltage:** -4 to -40kV
- **Beam Current:** 0.005 to 0.10mA
- **Total Power:** 4.0 watts (maximum)
- **Stability:** <1.0% RSD
- **Window:** Beryllium, 0.125mm or 0.250 thick
- **Battery Input Power:** 7-12 VDC
- **Focal Spot:** FWHM
- **RoHS Compliant:** RoHS3
- **Standard Warranty:** 1 year or 2000 operating hours

### Applications

**Materials Characterization and Identification (XRF)**
- Metal and alloy sorting
- Mining and geology
- Environmental analysis
- Lead in paint
- Regulatory (RoHS/WEEE)
- Art and archeometry
- R&D

**X-ray Imaging**
- Medical R&D, small animal imaging
- Security
- Radiographic inspection
Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Anode Type</th>
<th>Be Foil Thickness (µm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUB00045-AG1</td>
<td>Ag</td>
<td>250</td>
</tr>
<tr>
<td>TUB00045-AG2</td>
<td>Ag</td>
<td>125</td>
</tr>
<tr>
<td>TUB00045-W01</td>
<td>W</td>
<td>250</td>
</tr>
<tr>
<td>TUB00045-PD1</td>
<td>Pd</td>
<td>250</td>
</tr>
<tr>
<td>TUB00045-RH2</td>
<td>Rh</td>
<td>125</td>
</tr>
<tr>
<td>TUB00045-RH3</td>
<td>Rh</td>
<td>125</td>
</tr>
</tbody>
</table>

Standard Package

- MAGNUM® tube potted in a brass shield
- High voltage power supply potted on an aluminum shell
- Standard high voltage wiring length of 292mm, (11.5 inches)
- High voltage insulation- silicone potting

Source Controller Options

- FTC-200 Controller. Source can also operate using analog DC voltage signals

*Customizable Options- Customer to Specify

- Variable high voltage wiring length 100-292mm, (4.0 to 11.5 inches)
- Additional target materials available

40kV MAGNUM® Mechanical Drawing

WARNING

X-rays are emitted from the sides and ends of this product when energized. Moxtek takes actions to reduce the exposure rate from X-rays emitted from the sides through the use of various shielding agents inherent to this product design. It is the buyer’s responsibility to ensure adequate protection is provided in the testing and manufacturing of the final product and that users are adequately shielded from incidental exposure.

This product contains a beryllium window. The inhalation of fumes or dust from beryllium metal (or its compounds) are hazardous. Corrosion may occur on the beryllium window during use, these should not be scraped off, machined, or removed. Disposal of the tube unit should conform to federal, state, and local regulations governing beryllium.

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