Geiger Mueller Tubes

Description of Data Parameters

The following sections detail the performance of Canberra Geiger Mueller tubes. Test data was generated using conventional counting circuitry and refined for reliability in various environmental design matrices, to ensure optimal quality and reliability. The data is derived from a series of tests performed on a large number of GM tubes using a high-speed computer interface. All tubes were tested to meet or exceed MIL-STD-9858A, which require that all component parts be tested to withstand rigorous shock and vibration per military standards. and tested to withstand the military Quality Product List (QPL), are manufactured including those approved for the military.

Features

- **Product Reliability**
  - The Canberra GM tubes are manufactured to meet or exceed all MIL-STD-9858A requirements, ensuring reliability and long-term stability.

- **High Counting Rates**
  - Canberra GM tubes are designed for high counting rates, enabling excellent performance in industrial environments.

- **Versatility**
  - The tubes are suitable for use in laboratory, military, and harsh environments.

- **Quality Assurance**
  - Canberra's manufacturing operation has refined the development and production of GM tubes. We utilize state-of-the-art instrumentation and the finest equipment to monitor and control all manufacturing processes.

- **Design and Field Application**
  - Canberra's growing detector division can offer substantial volume cost reductions for large orders.

- **Performance**
  - Canberra's adherance to stringent design parameters and quality assurance ensures performance that meets or exceeds exacting commercial and military standards.

- **Detector Components**
  - Our detector components offer extensive experience as both a manufacturer and enduser of all types of radiation detectors. Over the years, our detectors have bridged the gap between technical conception, detector design and field application to achieve long-lasting means of monitoring nuclear radiation at a competitive cost.

- **Pancake Detection**
  - Canberra T ube Military Spec LND TGM Centronic Canberra's Geiger Mueller tubes are the obvious choice for the discerning user. These tubes are built to exhibit superior performance, reliability and industrial environments.

- **Quality Control**
  - All Canberra Geiger Mueller tubes are guaranteed against defects in materials or long-term stability. Our extensive product line provides direct (or near) equivalents for industry-standard tubes, including all versions of pancakedetectors and frisker probes.

- **Counter Tubes**
  - Canberra's Geiger Mueller tube capacity and circuit wiring due to working voltages and test circuits. The chart below enables the user to estimate the counting losses due to the dead time factor at high count rates.

- **Beta Particle Detection**
  - Beta particles are not detected by Canberra Geiger Mueller tubes.

- **Alpha Particle Detection**
  - Canberra's Geiger Mueller tubes have successfully bridged the gap between technical conception, detector design and field application to achieve long-lasting means of monitoring nuclear radiation.

- **Manufacturing Excellence**
  - Canberra's manufacturing operation has refined the development and production of GM tubes. We utilize state-of-the-art instrumentation and the finest equipment to monitor and control all manufacturing processes.
### An Exposure of 115.07 mR in Air Equates to 1.0 mGy

**High temperature version available for 150 °C operation***

At recommended operating voltage

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Window Recess (mm, in)</td>
<td>N/A</td>
</tr>
<tr>
<td>Max. Overall (mm, in)</td>
<td>N/A</td>
</tr>
<tr>
<td>Max. Length (mm, in)</td>
<td>N/A</td>
</tr>
<tr>
<td>Cathode Wall (mg/cm²)</td>
<td>40-60</td>
</tr>
<tr>
<td>Cathode Material</td>
<td>Cr/Fe</td>
</tr>
<tr>
<td>Operating Temp (°C)</td>
<td>-40 to +75</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>900</td>
</tr>
<tr>
<td>Diameter (mm, in)</td>
<td>16.0, 0.63</td>
</tr>
<tr>
<td>Density (mg/cm²)</td>
<td>137Cs cpm at 1 mR/h*</td>
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### Performance Data Table

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### Shielding

- 2" Pb + 1/8" Al

### Background (c/m)

- 60 max.
- 30 max.
- 12 max.
- 20 max.
- 50 max.
- 10 max.
- 10 max.
- 10 max.
- 10 max.
- 10 max.
- 47 max.
- 60 max.
- 100 max.
- 1 max.
- 1 max.
- 2 max.
- 12 max.
- 6 typ.
- 1 typ.
- 1 typ.

### Dead Time (µs max.)

- 100
- 75
- 90
- 150
- 150
- 20
- 20
- 90
- 100
- 100
- 100
- 120
- 7
- 11
- 15
- 28
- 10
- 10
- 10

### Plateau Slope

- 88
- 10
- 5
- 15
- 5
- 10
- 8
- 6
- 5
- 5
- 5
- 10
- N/A

### Volts min.

- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0

### Resistor, R1 (MΩ)

- 3.3
- 3.3
- 3.3
- 3.3
- 3.3
- 3.3
- 4.7
- 4.7
- 1.0
- 1.0
- 10.0
- 10.0
- 3.3
- 3.3
- 3.3
- 3.3
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0

### Resistor, Ra (MΩ)

- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0
- 1.0

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**Notes:**

- Always solder Ra directly to the supplied anode pin connector, or to the anode flying lead.
- Flying lead connections available for these models.
- These models provided with BNC, MHV or C probe.
- Available with BNC, MHV or C probe.
- For Thin Wall Tubes Halogen Quenched, Gamma Sensitive Tubes Miniature Tubes