27M12A

NINE STAGE PHOTOMULTIPLIER

GENERAL
The 27M12A is an improved version of the 27M12, having improved vibration performance. It is a nine stage photomultiplier for use in Aircraft, being especially resistant to shock and vibration. It has a blue sensitive caesium antimony coated cathode and is fitted with flying leads.

RATING (T_{amb} = 70^\circ\text{C}) max.

- Maximum Dynode k10/Cathode Voltage (DC or peak AC) \( V_{k10-k1}(\text{max}) \) 585 V
- Maximum Anode/Dynode k10 Voltage \( V_{a-k10}(\text{max}) \) 65 V
- Maximum Anode Current \( I_a(\text{max}) \) 1.0 mA
- Average Cathode Sensitivity \( Sk1(\text{av}) \) 20* \( \mu \text{A}/\text{L} \)

* \( V_{k1} = 0 \), all dynodes joined at 100 volts. Colour temperature of tungsten lamp = 2,700\text{K}.

DIMENSIONS

- Maximum Overall Length (excluding leads) 77 mm
- Nominal Seated Height 63 mm
- Light Centre from Top (nominal) 27.8 mm
- Maximum Bulb Diameter 29.5 mm
- Cathode Length 24 mm
- Cathode Width 8 mm
- Approximate Nett Weight 1\frac{1}{2} ozs
- Approximate Packed Weight 4 ozs

MOUNTING POSITION—Unrestricted
NINE STAGE PHOTOMULTIPLIER

TYPICAL OPERATION

Anode/Dynode k10 Voltage \( V_{a-k10} \) 65 V
Voltage per stage 65 V
Anode Dark Current from Dynode k10 (max) \( I_{a(dark)\text{max}} \) 0.1** \( \mu \)A
Luminous Sensitivity from Dynode k10 0.4‡ A/L
Average Current Amplification 20,000†
Luminous Sensitivity from Anode 0.6‡ A/L
Average Current Amplification 30,000††

** With Anode/Dynode k10 and Dynode/Dynode voltages 100 volts per stage.
‡ Measured with a tungsten lamp colour temperature of 2,700°K and a light area of 5 x 20mm.
† Ratio of k10 sensitivity to Cathode sensitivity.
†† Ratio of anode sensitivity to Cathode sensitivity.

NOTES
The bleed current in the potentiometer chain should be at least ten times the maximum output current.

BASE—Flying Leads

Viewed from free end.
## 27M12A

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<table>
<thead>
<tr>
<th>Pin</th>
<th>Secondary Cathode</th>
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<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>k2</td>
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<tr>
<td>2</td>
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<tr>
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<tr>
<td>11</td>
<td>Photo Cathode, Shield</td>
<td>k1,s</td>
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</tbody>
</table>

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**Associated Electrical Industries Limited**

*Electronic Components Division*

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