27M13
SEVEN STAGE PHOTO-MULTIPLIER

GENERAL
The 27M13 is a seven stage Photo-multiplier having a blue sensitive cathode and twin anodes. Its sensitivity in typical operation is 2.5 amps/lumen. The cathode surface is of Caesium Antimony.

RATING
Supply Voltage, Secondary
Cathode k8 to photo-cathode
k1 (DC or Peak AC) (max) (volts) \( V_{k8-k1(\text{max})} \) 900
Supply Voltage, Anodes to Secondary Cathode k8 (max) (volts) \( V_{a-k8(\text{max})} \) 125
Maximum Anode Current (mA) \( I_{a(\text{max})} \) 1.0
Photo Cathode Sensitivity
(average) (\( \mu \text{A/lumen} \)) \( S_{k1(\text{av})} \) 20.0* ←

* All secondary cathodes and anodes joined, and at a potential of 100 volts to photo-cathode, measured with a light area 5.0 mm \( \times \) 20 mm and a tungsten filament lamp having a colour temperature of 2,700°K.

All Maximum ratings are Absolute values not Design Centres.

DIMENSIONS
Maximum Overall Length (mm) 94
Maximum Seated Height (mm) 80
Light Centre to Seat (mm) 49.2 ± 2.4
Maximum Bulb Diameter (mm) 29.5
Maximum Base Diameter (mm) 33.4
Cathode Length (mm) 24
Cathode Width (mm) 8
Approximate Nett Weight (ozs) 1.5
Approximate Packed Weight (ozs) 4.5

MOUNTING POSITION—Unrestricted

December, 1961

Associated Electrical Industries Limited
Electronic Components Division
Tel.: GERrard 9797
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TYPICAL OPERATION

Voltage between Anodes and Secondary Cathode k8 (volts) \( V_{a-k8} \) 50
Voltage per Stage (volts) \( V_{\text{stage}} \) 125
Maximum Anode Dark Current (per Anode) (\( \mu \)A) 0.25*
Luminous Sensitivity (per Anode) (A/lumen) 2.5† ↔
Average Current Amplification (per Anode) 125,000‡† ↔

* With 125 volts between Anode and Secondary Cathode k8
† With a colour temperature of 2,700°K and a light area of 5.0 mm × 20 mm.
‡ Ratio of anode to photo-cathode sensitivities.

NOTE.—The Secondary Cathode voltage potentiometer should have a bleed current of at least ten times the maximum output current.

BASE—B11A (11 pin sub-Magnal)

Viewed from free end of pins

Direction of Light
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<table>
<thead>
<tr>
<th>Pin</th>
<th>Connection</th>
<th>Code</th>
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<tbody>
<tr>
<td>Pin 1</td>
<td>Secondary Cathode 2</td>
<td>k2</td>
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<td>k3</td>
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<tr>
<td>Pin 11</td>
<td>Photo-cathode</td>
<td>k1</td>
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</tbody>
</table>
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All dimensions in mm.
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AVERAGE CHARACTERISTIC CURVE: S/λ
Spectral Response of Photo-Cathode for equal values of Radiant Flux at all Wavelengths.
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CHARACTERISTIC CURVES (D.C. OPERATION)
Sensitivity and current amplification for each anode