

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 k ₈ to photo-cathode k ₁ (DC or Peak AC) (max)	(volts)	$V_{k8-k1(max)}$	900
Supply Voltage, Anodes to Secondary Cathode k ₈ (max)	(volts)	$V_{a-k8(max)}$	125
Maximum Anode Current	(mA)	$I_a(max)$	1.0
Photo Cathode Sensitivity (average)	($\mu A/lumen$)	$S_{k1(av)}$	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)	$1\frac{3}{4}$
Approximate Packed Weight	(ozs)	$4\frac{3}{4}$

MOUNTING POSITION—Unrestricted

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TYPICAL OPERATION

Voltage between Anodes and Secondary Cathode k_8 (volts)	V_{a-k_8}	50
Voltage per Stage (volts)	V_{stage}	125
Maximum Anode Dark Current (per Anode) (μA)		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 k_8

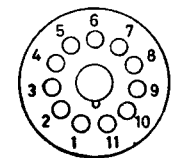
† With a colour temperature of 2,700°K and a light area of 5.0 mm × 20 mm.

‡ 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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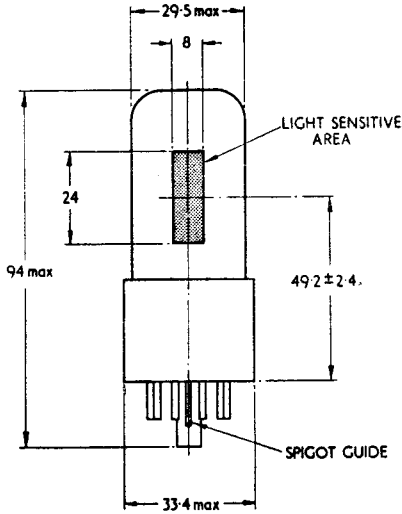
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CONNECTIONS

Pin 1	Secondary Cathode 2	k2	
Pin 2	Secondary Cathode 3	k3	
Pin 3	Secondary Cathode 4	k4	
Pin 4	Secondary Cathode 5	k5	
Pin 5	Secondary Cathode 6	k6	
Pin 6	Secondary Cathode 7	k7	
Pin 7	Secondary Cathode 8	k8	
Pin 8	Anode 1	a1	
Pin 9	Anode 2	a2	
Pin 10	Internal Connection	IC	←
Pin 11	Photo-cathode	k1	

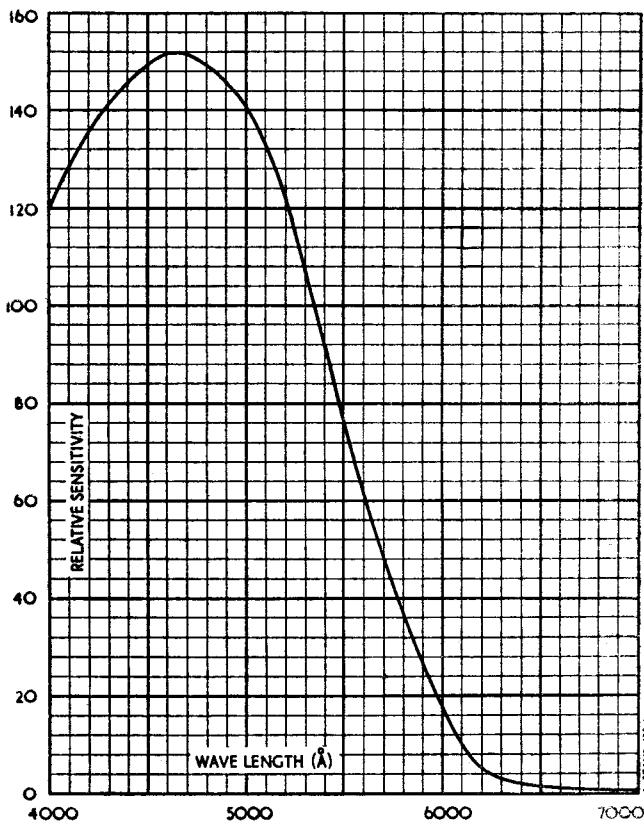
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All dimensions in mm.

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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

