

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

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

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

27M12A

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)	$I_a(\text{dark})_{\text{max}}$	0.1**	μA
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 $5 \times 20\text{mm}$.

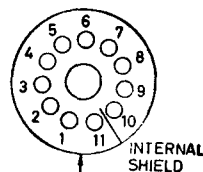
† Ratio of k10 sensitivity to Cathode sensitivity.

†† 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
NINE STAGE PHOTOMULTIPLIER

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	Secondary Cathode 9	k9
Pin 9	Secondary Cathode 10	k10
Pin 10	Anode	a
Pin 11	Photo Cathode, Shield	k1,s