

Photomultiplier Tube

9-STAGE, SIDE-ON TYPE HAVING S-4 RESPONSE

*For AC-Operated Control Applications Such
as Automobile-Headlight Control*

GENERAL

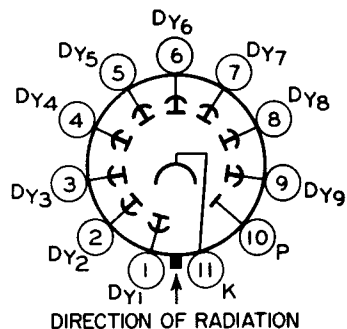
Spectral Response.	S-4
Wavelength of Maximum Response	4000 $\pm$ 500 angstroms
Cathode, Opaque.	Cs-Sb ←
Minimum projected length ^a	0.93 in
Minimum projected width.	0.31 in
Window	Lime Glass, (Corning ^b No.0080), or equivalent ←
Dynode Material.	Cs-Sb
Direct Interelectrode Capacitances (Approx.)	
Anode to dynode No.9	4.2 pF
Anode to all other electrodes.	5.5 pF
Maximum Overall Length	3.12 in
Maximum Seated Length.	2.69 in
Length	1.56 $\pm$ 0.09 in
From base seat to center of useful cathode area	
Maximum Diameter	1.31 in
Operating Position	Any
Weight (Approx.)	1.6 oz
Envelope	JEDEC T9
Base	Small-Shell Neosubmagnal 11-Pin (JEDEC No.B11-104), Non-hygroscopic
Socket.	Amphenol ^c No.78S11T, or equivalent ←
Magnetic Shield	Millen ^d No.80801B, or equivalent ←

ABSOLUTE-MAXIMUM RATINGS

Peak AC Supply Voltage		
Between anode and cathode.	1400	V ←
Between dynode No.9 and anode.	250	V ←
Between consecutive dynodes	250	V ←
Between dynode No.1 and cathode.	250	V ←
Average Anode Current ^e	0.1	mA
Ambient-Temperature.	75	°C

TERMINAL DIAGRAM (Bottom View)

- Pin 1 - Dynode No.1
- Pin 2 - Dynode No.2
- Pin 3 - Dynode No.3
- Pin 4 - Dynode No.4
- Pin 5 - Dynode No.5
- Pin 6 - Dynode No.6
- Pin 7 - Dynode No.7
- Pin 8 - Dynode No.8
- Pin 9 - Dynode No.9
- Pin 10 - Anode
- Pin 11 - Photocathode



CHARACTERISTICS RANGE VALUES

Under conditions with dc supply voltage (E) across a voltage divider providing 1/10 of E between cathode and dynode No.1; 1/10 of E for each succeeding dynode stage; and 1/10 of E between dynode No.9 and anode

With E = 1000 V dc

	Min	Typ	Max	
Sensitivity				
→ Radiant, at 4000 angstroms	-	3.4×10^4	-	A/W
Luminous, at 0 c/s ^f . . .	-	35	-	A/lm
Dark Current to Any Electrode	-	-	7.5×10^{-7}	A
At 25°C				

→ With E = Adjustable 60 c/s ac Voltage

	Min	Typ	Max	
Anode-to-Cathode Voltage^g	525	750	990	V
RMS values				
Anode Dark Current^h	-	-	1×10^{-7}	A
At 25°C				

^a On plane perpendicular to the indicated direction of incident light and passing through the major axis of the tube.

^b Made by Corning Glass Works, Corning, New York.

^c Made by Amphenol Electronics Corporation, 1830 South 54th Avenue, Chicago 54, Illinois.

^d Made by James Millen Manufacturing Company, 150 Exchange Street, Malden 48, Massachusetts.

^e Averaged over any interval of 30 seconds maximum.

^f Under the following conditions: The light source is a tungsten-filament lamp having a lime-glass envelope. It is operated at a color temperature of 2870°K and a light input of 10 microlumens is used.

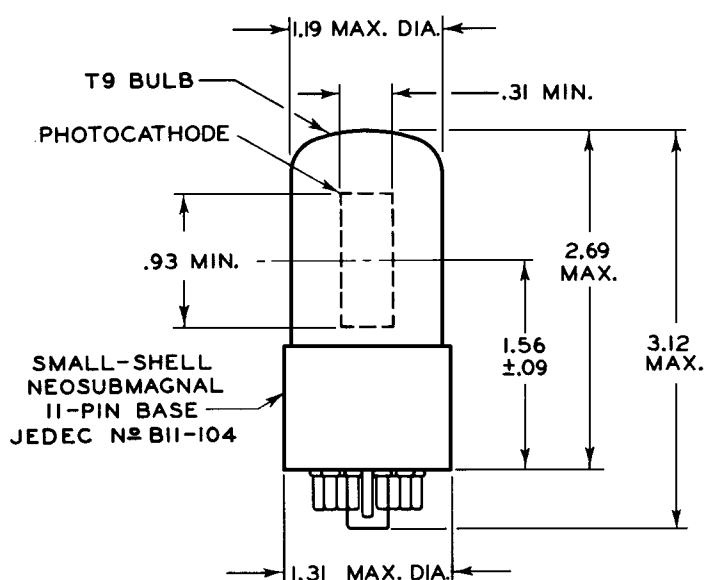
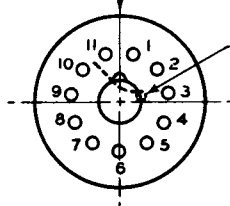
^g Under the following conditions: Light incident on the cathode is transmitted through a filter (Corning C.S. No.2-62, Glass Code No.2418 which has an effective transmission of luminous flux of 5%—Manufactured by the Corning Glass Works, Corning, New York) from a tungsten-filament lamp operated at a color temperature of 2870°K. The value of light flux incident on the filter is 10 microlumens. Supply voltage (E) is adjusted to give an anode current of 8 microamperes.

^h For conditions same as (g) except no radiant flux on photocathode.

→ Indicates a change.



DIMENSIONAL OUTLINE

DIRECTION
OF LIGHT

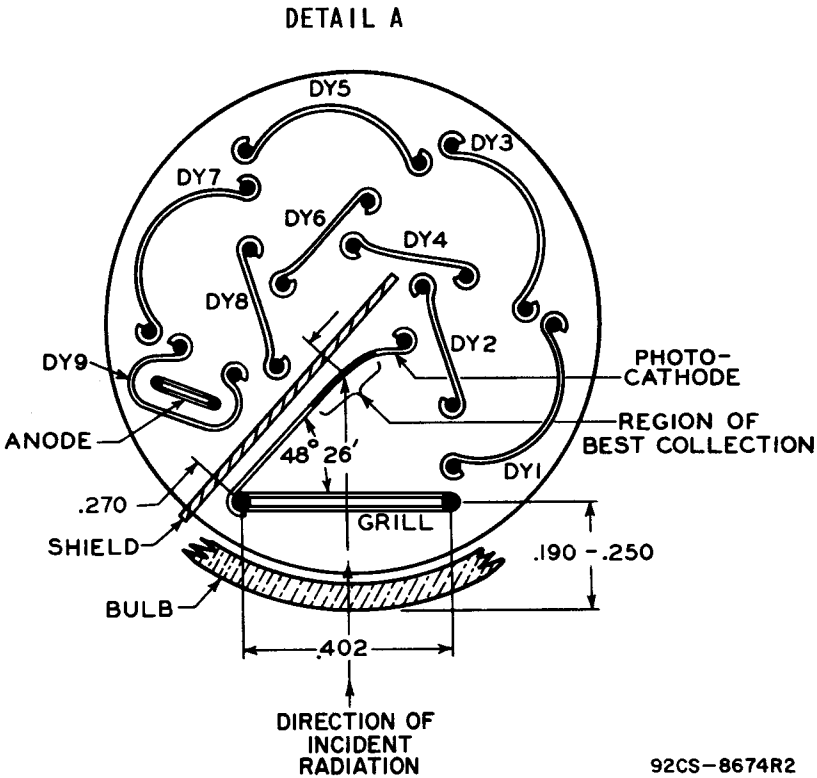
92CS-8028R1

Center line of bulb will not deviate more than 2° in any direction from the perpendicular erected at the center of bottom of the base.

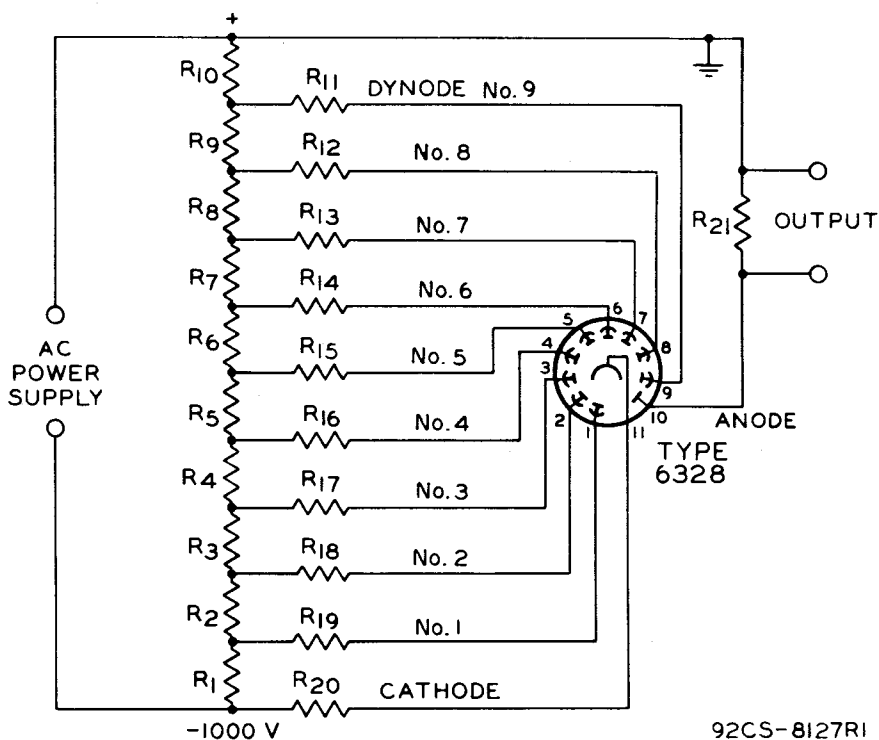
Note: The maximum angular variation between the planes through pins 1 and 11 and the plane of the grill will not exceed 6° .

DIMENSIONS IN INCHES





RECOMMENDED VOLTAGE-DIVIDER NETWORK FOR USE WITH TYPE 6328 IN HEADLIGHT-CONTROL SERVICE



R1 R2 R3 R4 R5

R6 R7 R8 R9 R10: 1 megohm, 1/2 watt

R11: 2 megohms, 1/2 watt

R12: 5.1 megohms, 1/2 watt

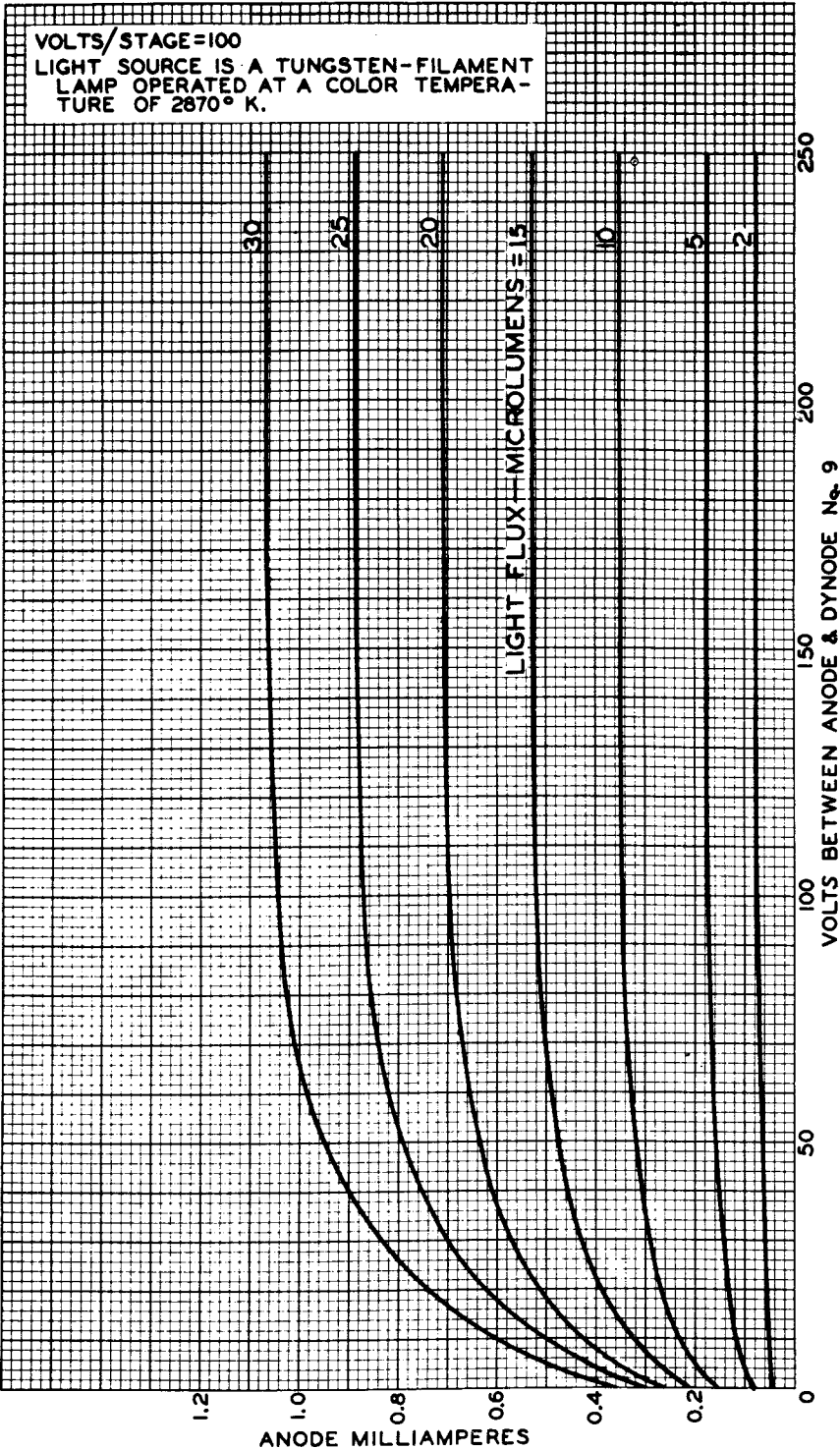
R13 R14 R15 R16

R17 R18 R19 R20: 8.2 megohms, 1/2 watt

R21: 820,000 ohms, 1/2 watt



Typical Anode Characteristics

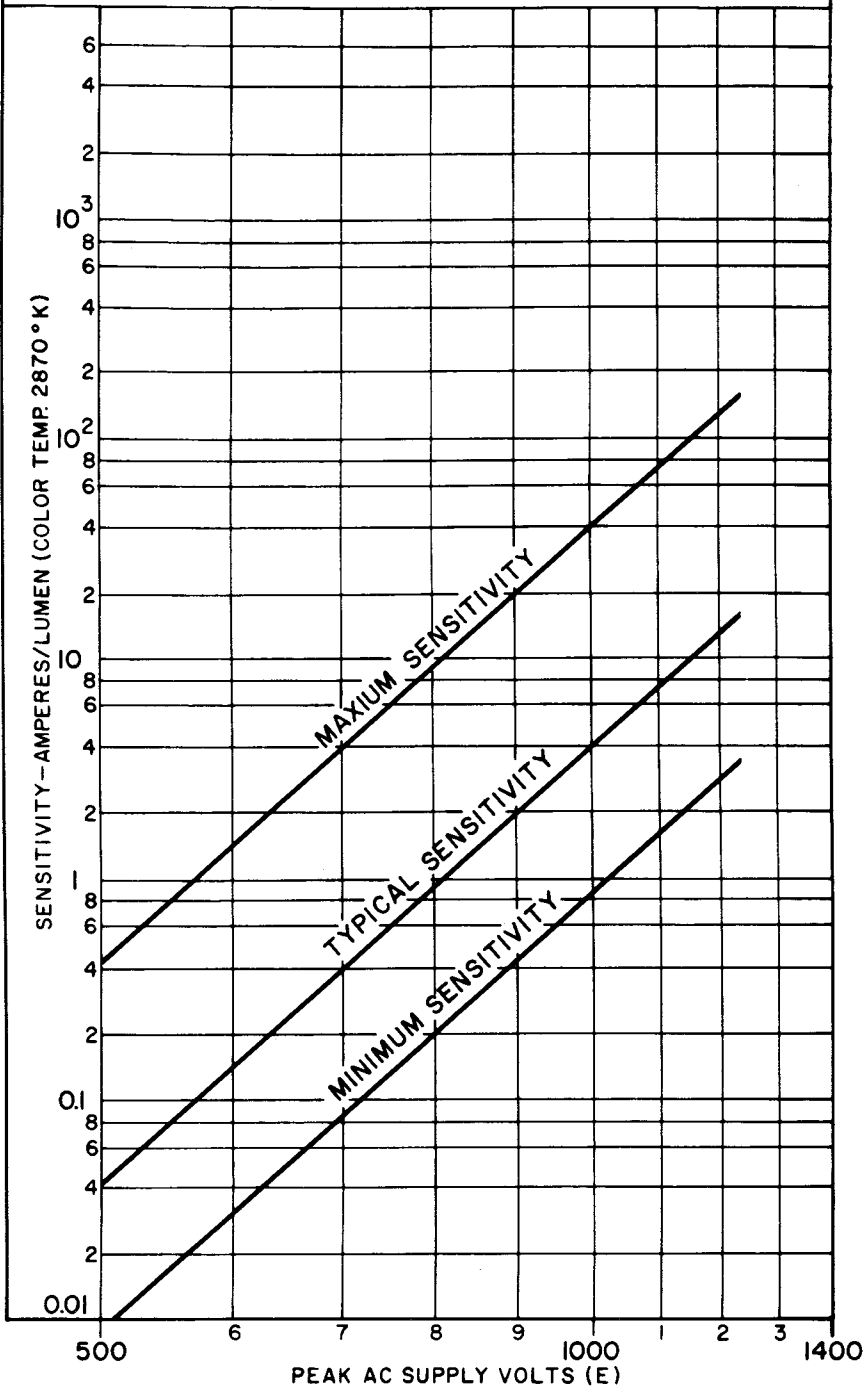


92CM-8029R2



Sensitivity Characteristics

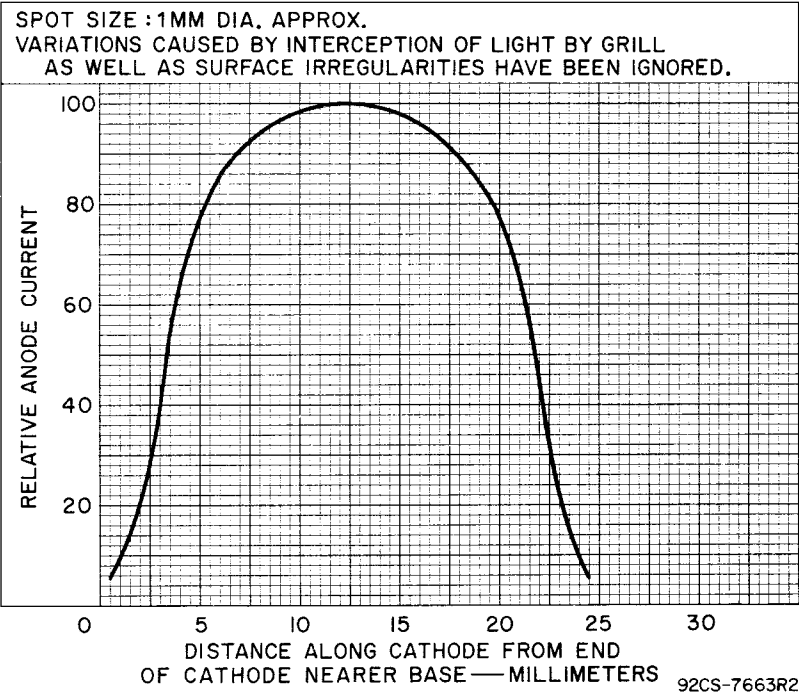
AC SINE - WAVE SUPPLY VOLTAGE (E) ACROSS VOLTAGE DIVIDER PROVIDING 1/10 OF E BETWEEN CATHODE AND DYNODE No.1; 1/10 OF E FOR EACH SUCCEEDING DYNODE STAGE; AND 1/10 OF E BETWEEN DYNODE No.9 AND ANODE



92CM-957IRIT



Variation in Photocathode Sensitivity Along Its Length



Variation in Photocathode Sensitivity Across Its Projected Width in Plane of Grill

