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PHOTOCONDUCTIVE CELL

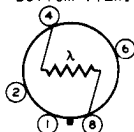
CADMIUM-SULFIDE, HEAD-ON TYPE

DATA

General:

Spectral Response	S-15
Wavelength of Maximum Response	5800 $\pm$ 500 angstroms
Sensitive Surface, Including Metallic Strips:	
Shape	Rectangular
Length (Minimum)	0.650"
Width (Minimum)	0.540"
Area (Minimum)	0.35 sq. in.
Maximum Overall Length	2-7/32"
Maximum Seated Length	1-11/16"
Seated Length to Plane of Sensitive Surface	1" $\pm$ 3/32"
Maximum Diameter	1-9/32"
Operating Position	Any
Weight (Approx.)	0.9 oz
Bulb	T9
Base	Intermediate-Shell Octal 5-Pin (JETEC No. 85-10)
Basing Designation for BOTTOM VIEW	8HV

Pin 1 - No Connection
Pin 2 - No Connection



Pin 4 - Terminal
Pin 6 - No Connection
Pin 8 - Terminal

DIRECTION OF LIGHT:
INTO END OF BULB

Maximum Ratings, Absolute Values:

POLARIZING VOLTAGE	250 max.	volts
POWER DISSIPATION:		
Sensitive surface fully illuminated	0.5 max.	watt
Sensitive surface partially illuminated	1.4 max.	watts/sq. in.
PHOTOCURRENT	50 max.	ma
AMBIENT-TEMPERATURE RANGE	-75 to +60	°C

Characteristics:

Under conditions with polarizing voltage of 50 volts dc
and at ambient temperature of 25° C

Min. Median Max.

Sensitivity:

Radiant*, at			
5800 angstroms	-	300	- $\mu\text{a}/\mu\text{w}$
Luminous*, at 0 cps	-	0.85	- amp/lumen
Illumination*, at 0 cps	2000	4000	8000 $\mu\text{a}/\text{ft-c}$
Photocurrent ^Δ	-	-	20 μa
Rise			See Curves
Decay			See Curves

* For conditions where the incident power is 6.65 microwatts.

* , ^Δ , ^Δ : See next page.



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- * For conditions where the light source is a tungsten-filament lamp operated at a color temperature of 2870° K. A light flux of about 2.5 millilumens is used.
- † For conditions the same as shown under (*) except that an incident illumination of 1.0 foot-candle is used.
- ▲ Measured approximately 10 seconds after removal of incident illumination of 1.0 foot-candle.

DEFINITIONS

Illumination Sensitivity. The quotient of the output current by the incident illumination, at constant electrode voltages.

OPERATING CONSIDERATIONS

The *polarizing voltage* for the 6957 may be applied without regard to polarity.

Exposure of the 6957 to radiation so intense as to cause excessive heating of the cell may permanently damage it.

The *angle of view* of the 6957 may be narrowed by the use of a hood of the desired length placed around the bulb end of the cell.

In some applications where the light source is several feet from the cell, a simple lens arrangement in which a suitable lens at the light source is used to collimate the light beam and another lens is used in front of the cell to converge the beam onto the sensitive area, will serve to utilize the available amount of light most effectively.

For a given illumination, the output current will have its highest value when the incident illumination is normal (angle of incidence is 90°) to the face of the cell. For smaller angles of incidence, the output current decreases. The decrease depends upon several factors including the angle of incidence of the illumination, the amount of illumination, and the area of sensitive surface illuminated.

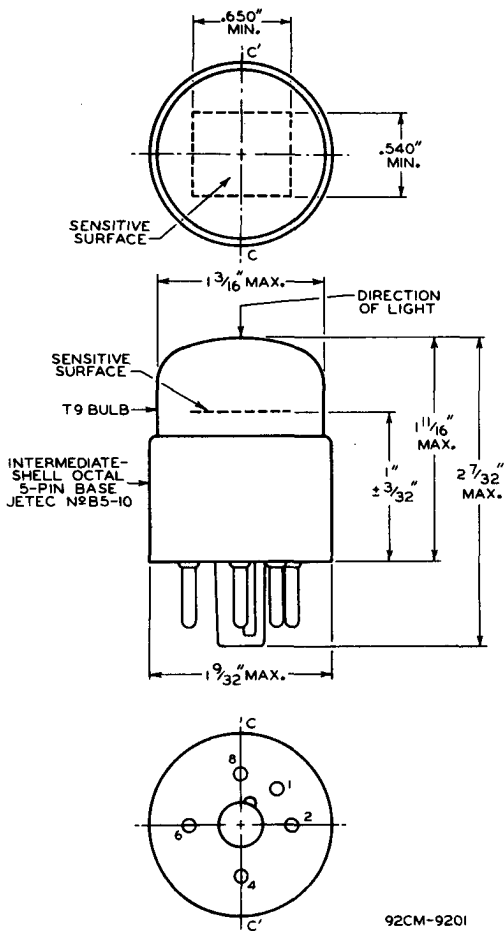
SPECTRAL-SENSITIVITY CHARACTERISTIC
of Photoconductive Cell having S-15 Response
is shown at the front of this Section



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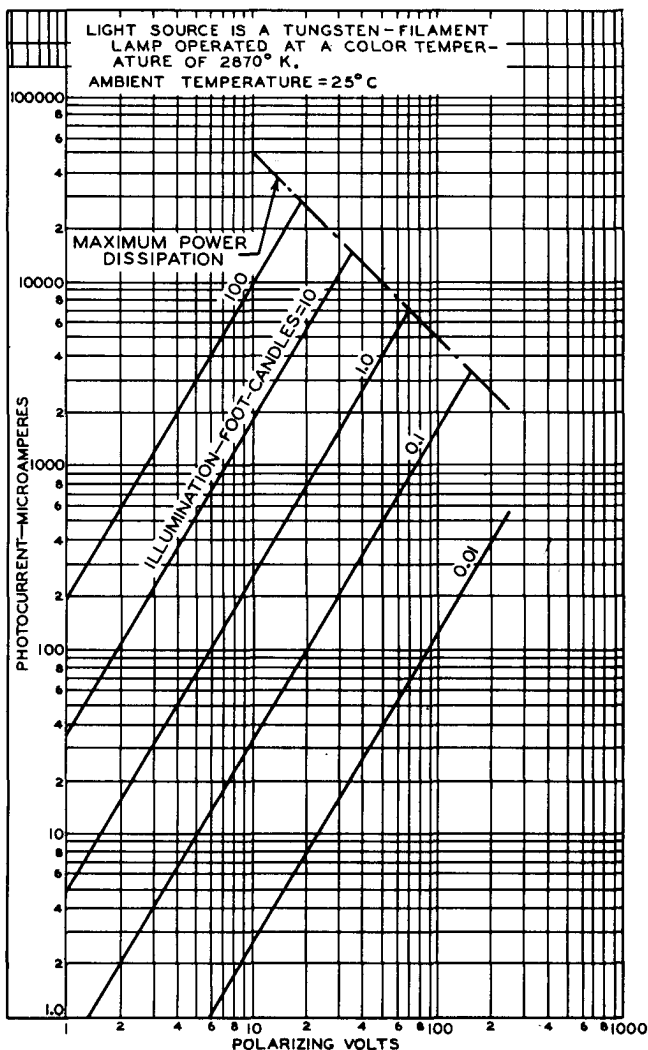
PHOTOCONDUCTIVE CELL



PLANE THROUGH MINOR AXIS (CC') OF SENSITIVE SURFACE AND CELL AXIS MAY VARY FROM PLANE THROUGH THE CELL AXIS AND PINS 4 AND 8 BY ANGULAR TOLERANCE (MEASURED ABOUT THE CELL AXIS) OF $\pm 10^\circ$.



AVERAGE CHARACTERISTICS





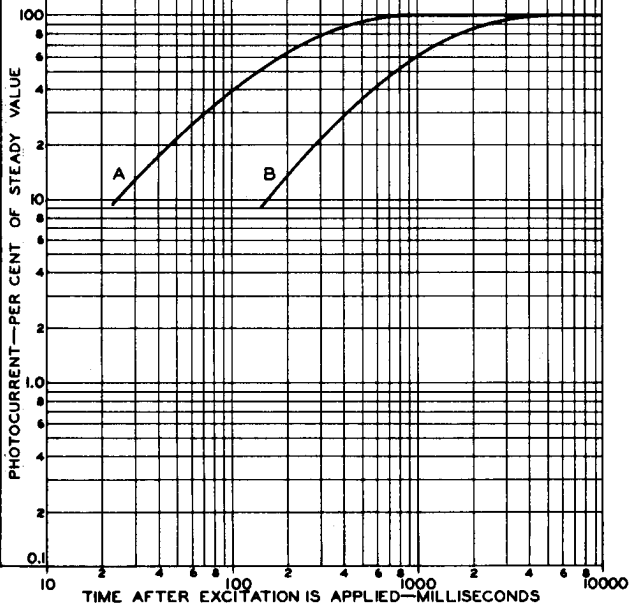
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TYPICAL RISE CHARACTERISTICS

CURVES ARE INDEPENDENT
OF POLARIZING VOLTAGE.
AMBIENT TEMPERATURE = 25° C

CURVE	ILLUMINATION— FOOT-CANDLES
A	1
B	0.1



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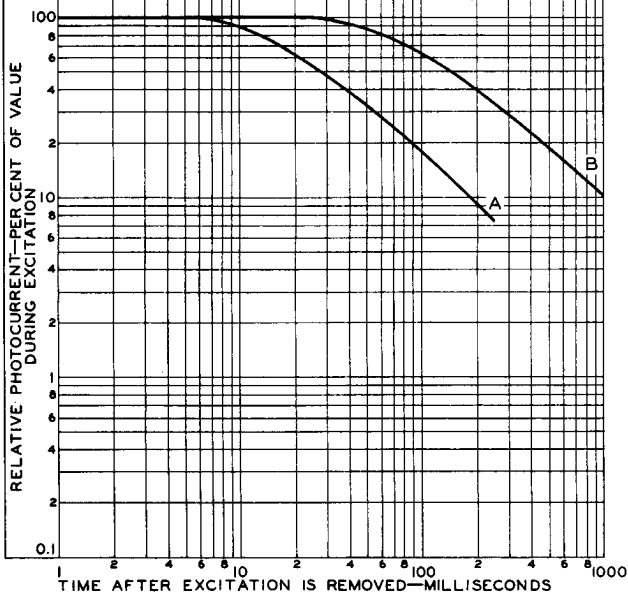


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TYPICAL DECAY CHARACTERISTICS

CURVES ARE INDEPENDENT OF
POLARIZING VOLTAGE.
AMBIENT TEMPERATURE = 25° C

CURVE	ILLUMINATION — FOOT-CANDLES
A	1
B	0.1





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TYPICAL CHARACTERISTICS

