



927

927 GAS PHOTOTUBE

WITH S-1 RESPONSE

DATA

General:

Spectral Response	S-1
Wavelength of Maximum Response.	8000 $\pm$ 1000 angstroms
Cathode:	
Shape	Semi-Cylindrical
Minimum Projected Length*	11/16"
Minimum Projected Width*	7/16"
Direct Interelectrode Capacitance	2 μ mf
Maximum Overall Length.	2-13/32" ←
Maximum Seated Length	1-15/16" ←
Seated Length to Center of Cathode.	1-1/4" $\pm$ 3/32"
Maximum Diameter.	0.669" ←
Bulb.	T-5-1/4" ←
Mounting Position	Any
Base.	Small-Shell Peewee 3-Pin
Basing Designation for BOTTOM VIEW.	2F

DIRECTION OF LIGHT

Pin 1—No
ConnectionPin 2—Anode
Pin 3—Cathode

Maximum Ratings, Absolute Values:

ANODE-SUPPLY VOLTAGE (DC or Peak AC)	90 max. . . . volts
PEAK CATHODE CURRENT.	6 max. . . . μ amp
PEAK CATHODE-CURRENT DENSITY.	100 max. μ amp/sq. in.
AVERAGE CATHODE CURRENT ^o	2 max. . . . μ amp
AMBIENT TEMPERATURE	100 max. . . . °C

Characteristics:

	<u>Min.</u>	<u>Av.</u>	<u>Max.</u>	
DC Dark Current [■]	—	—	0.1	μ amp
Sensitivity:				
At 8000 angstroms	—	0.0125	—	μ amp/ μ watt
Luminous:				
At 0 cps.	75	125	185	μ amp/lumen
At 5000 cps.	—	110	—	μ amp/lumen
At 10000 cps.	—	100	—	μ amp/lumen
Gas Amplification Factor.	—	—	10	

* On plane perpendicular to indicated direction of incident light.

^o Averaged over any interval of 30 seconds maximum. Average current may be doubled when anode-supply voltage is limited to 70 volts.[■] At 25°C and 90 volts.

← Indicates a change.



927 GAS PHOTOTUBE

Minimum Circuit Values:

DC Load Resistance:

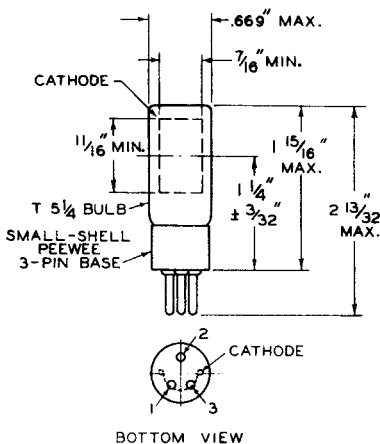
With anode-supply voltage of 70 volts or less:

For dc currents { above $2 \mu\text{amp}$. . . 0.1 . . . megohm
below $2 \mu\text{amp}$. . . No Minimum

With anode-supply voltage of 90 volts:

For dc currents { above $1.0 \mu\text{amp}$. . . 2.5 . . . megohms
below $1.0 \mu\text{amp}$. . . 0.1 . . . megohm

SPECTRAL-SENSITIVITY CHARACTERISTIC
of Phototube having S-1 Response
and
FREQUENCY-RESPONSE CHARACTERISTICS
of Gas Phototubes
are shown at the front of this Section



92CM-6053R4

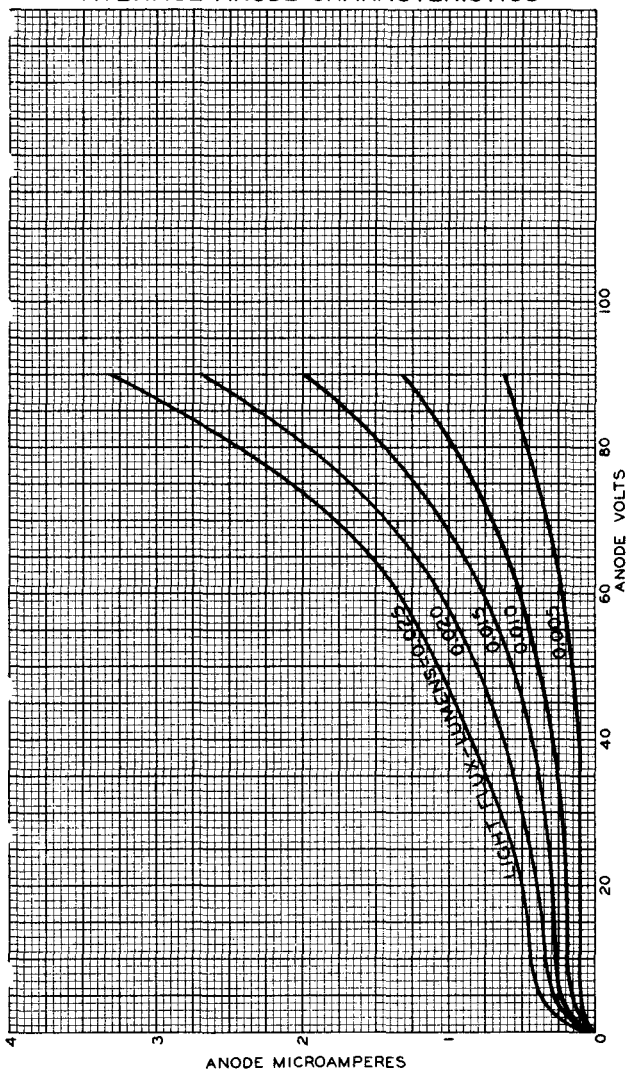
→ Indicates a change.



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AVERAGE ANODE CHARACTERISTICS



APRIL 5, 1950

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-6258R2

Gas Phototube

SIDE-ON TYPE HAVING S-1 RESPONSE

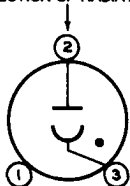
DATA

General:

Spectral Response	S-1
Wavelength of Maximum Response.	8000 $\pm$ 1000 angstroms
Cathode:	
Shape	Semicylindrical
Minimum projected length ^a	11/16"
Minimum projected width ^a	7/16"
Direct Interelectrode Capacitance (Approx.)	2 μ f
Maximum Overall Length.	2-13/32"
Maximum Seated Length	1-15/16"
Seated Length to Center of Cathode.	1-1/4" $\pm$ 3/32"
Maximum Diameter.	0.669"
Operating Position.	Any
Weight (Approx.)	0.3 oz
Bulb.	T5-1/4
Socket.	Amphenol No. 78S3S-T, or equivalent
Base.	Small-Shell Peewee 3-Pin (JEDEC No. A3-1)
Basing Designation for BOTTOM VIEW.	2F

DIRECTION OF RADIATION

Pin 1 - No Internal
Connection



Pin 2 - Anode
Pin 3 - Photocathode

Maximum Ratings, Absolute-Maximum Values:

	Rating I	Rating II	
ANODE-SUPPLY VOLTAGE (DC or Peak AC)	70 max.	90 max.	volts
AVERAGE CATHODE-CURRENT DENSITY ^b	60 max.	30 max.	μ a/sq.in.
AVERAGE CATHODE CURRENT ^b	4 max.	2 max.	μ a
AMBIENT TEMPERATURE	100 max.	100 max.	$^{\circ}$ C

Characteristics:

With an anode-supply voltage of 90
volts unless otherwise specified

Min. Median Max.

Sensitivity:

Radiant, at 8000 angstroms	-	0.012	-	amp/watt
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← Indicates a change.



Min. Median Max.

Luminous:^c

At 0 cps. 75 125 185 $\mu\text{a/lumen}$

At 5000 cps. - 110 - $\mu\text{a/lumen}$

At 10000 cps. - 100 - $\mu\text{a/lumen}$

Gas Amplification Factor^d - - 10

Anode Dark Current at 25° C - - 0.1 μa

Minimum Circuit Values:

With an anode-supply voltage of 70 or less 90 volts

DC Load Resistance:

For dc currents above 2 μa . 0.1 min. - megohm

For dc currents below 2 μa . 0 min. - megohm

For dc currents above 1 μa . - 2.5 min. megohms

For dc currents below 1 μa . - 0.1 min. megohm

^a On plane perpendicular to indicated direction of radiation.

^b Averaged over any interval of 30 seconds maximum.

^c For conditions where the light source is a tungsten-filament lamp operated at a color temperature of 2870° K. A dc anode supply of 90 volts and a 1-megohm load resistor are used. For the 0-cycle measurement, a light input of 0.1 lumen is used. For the 5000- and 10000-cycle measurements, the light input is varied sinusoidally about a mean value of 0.015 lumen from zero to a maximum of twice the mean value.

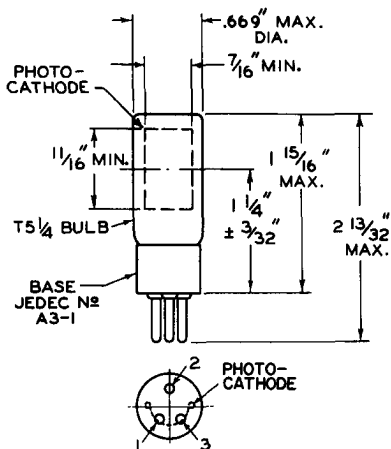
^d The ratio of luminous sensitivity at an anode-supply voltage of 90 volts to luminous sensitivity at an anode-supply voltage of 25 volts. In each case, sensitivity is obtained under conditions where the light source is a tungsten-filament lamp operated at a color temperature of 2870° K, the light input is 0.1 lumen, and the load resistor has a value of 1 megohm.

SPECTRAL-SENSITIVITY CHARACTERISTIC OF PHOTOSENSITIVE DEVICE HAVING S-1 RESPONSE

and

FREQUENCY-RESPONSE CHARACTERISTICS OF GAS PHOTOTUBES

are shown at the front of this section

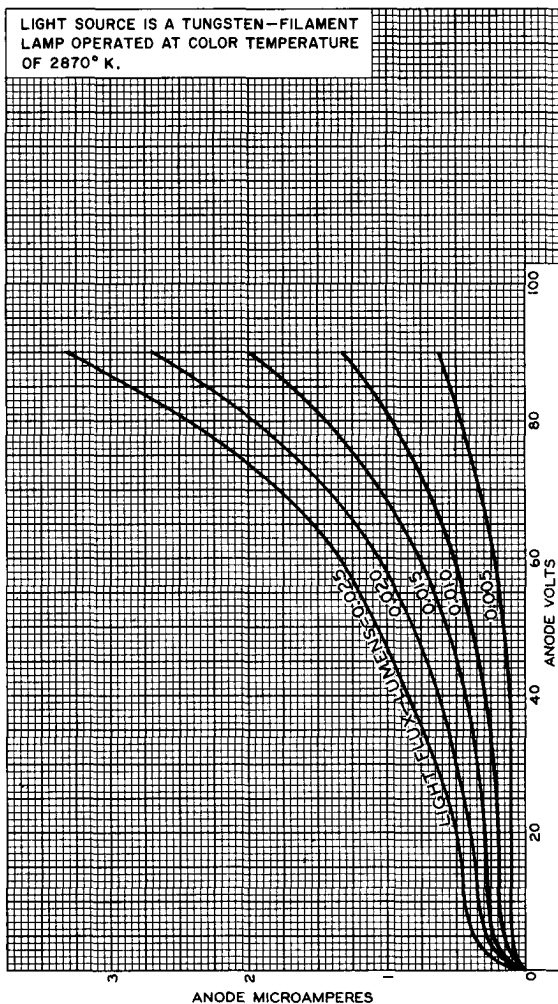


92CM-6053R5



AVERAGE ANODE CHARACTERISTICS

LIGHT SOURCE IS A TUNGSTEN-FILAMENT
LAMP OPERATED AT COLOR TEMPERATURE
OF 2870° K.



92CM-6258R3

