



IP37

## GAS PHOTOTUBE

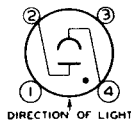
BLUE SENSITIVE

IP37

DATA**General:**

|                                                    |                         |
|----------------------------------------------------|-------------------------|
| Spectral Response. . . . .                         | S-4                     |
| Wavelength of Maximum Response . . . . .           | 4200 Angstroms          |
| Cathode:                                           |                         |
| Shape. . . . .                                     | Semi-Cylindrical        |
| Minimum Projected Width * . . . . .                | 5/8"                    |
| Minimum Projected Length * . . . . .               | 1-1/4"                  |
| Center Length (from bottom edge of base) . . . . . | 2-1/8" $\pm$ 3/32"      |
| Direct Interelectrode Capacitance. . . . .         | 3 $\mu$ f               |
| Mounting Position. . . . .                         | Any                     |
| Maximum Overall Length . . . . .                   | 4-1/8"                  |
| Maximum Seated Length . . . . .                    | 3-1/2"                  |
| Maximum Diameter . . . . .                         | 1-1/8"                  |
| Bulb . . . . .                                     | T-8                     |
| Base . . . . .                                     | Dwarf Shell Small 4-Pin |
| Basing Designation for BOTTOM VIEW . . . . .       | 2K                      |

Pin 1—No Connection  
Pin 2—Anode (+)



Pin 3—No Connection  
Pin 4—Cathode (-)

**Maximum Ratings, Absolute Values:**

|                                               |                                    |              |
|-----------------------------------------------|------------------------------------|--------------|
| ANODE-SUPPLY VOLTAGE (DC or Peak AC). . . . . | 100 max. . . . .                   | volts        |
| CATHODE CURRENT DENSITY. . . . .              | 15 max. $\mu$ amp./sq. in. . . . . |              |
| AVERAGE CATHODE CURRENT. . . . .              | 5 max. . . . .                     | $\mu$ amp    |
| AMBIENT TEMPERATURE. . . . .                  | 75 max. . . . .                    | $^{\circ}$ C |

**Characteristics:**

|                                            |                 |                        |
|--------------------------------------------|-----------------|------------------------|
| Maximum Dark Current at 90 volts . . . . . | 0.1 . . . . .   | $\mu$ amp              |
| Sensitivity:                               |                 |                        |
| At 4200 Angstroms. . . . .                 | 0.099 . . . . . | $\mu$ amp./ $\mu$ watt |
| Luminous:                                  |                 |                        |
| At 0 Cycles. . . . .                       | 120 . . . . .   | $\mu$ amp./lumen       |
| At 5000 Cycles . . . . .                   | 110 . . . . .   | $\mu$ amp./lumen       |
| At 10000 Cycles. . . . .                   | 95 . . . . .    | $\mu$ amp./lumen       |
| Max. Gas Amplification Factor. . . . .     | 5.5 . . . . .   |                        |

**Minimum Circuit Values:****Minimum DC Load Resistance:**

*With anode-supply voltage of 75 volts or less:*

|                                              |               |        |
|----------------------------------------------|---------------|--------|
| For dc currents { above 3 $\mu$ amp. . . . . | 0.1 . . . . . | megohm |
| { below 3 $\mu$ amp. . . . .                 | No Minimum    |        |

*With anode-supply voltage of 90 volts:*

|                                              |               |        |
|----------------------------------------------|---------------|--------|
| For dc currents { above 3 $\mu$ amp. . . . . | 2.5 . . . . . | megohm |
| { below 3 $\mu$ amp. . . . .                 | 0.1 . . . . . | megohm |

\* On plane perpendicular to indicated direction of incident light.

APRIL 1, 1946

RCA VICTOR DIVISION  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

TENTATIVE DATA

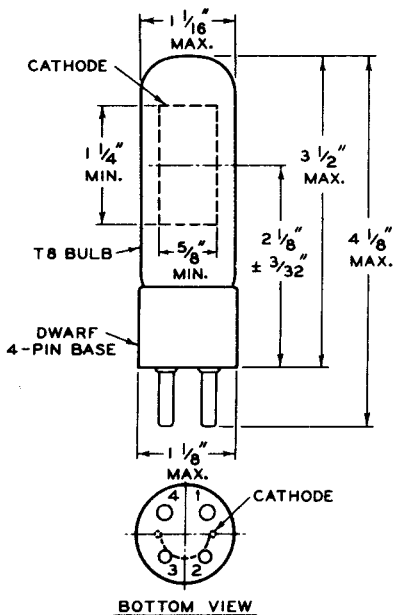
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## GAS PHOTOTUBE

Spectral Sensitivity Characteristic of Phototube having S-4 Response is shown at beginning of this section.



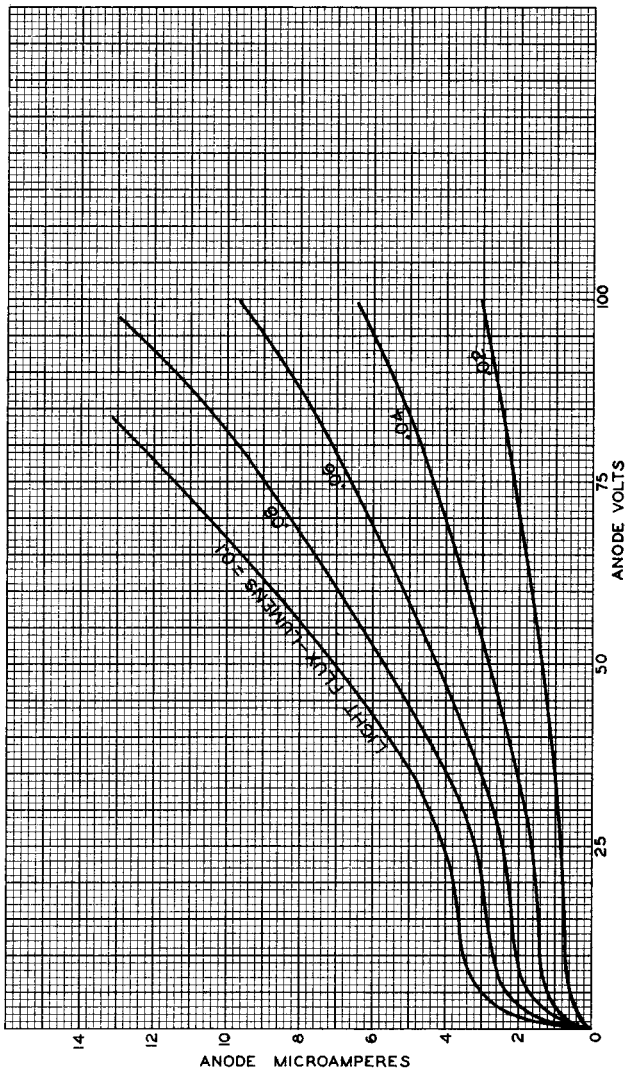
92CM-470R4



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# AVERAGE ANODE CHARACTERISTICS



DEC. 6, 1945

RCA VICTOR DIVISION  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

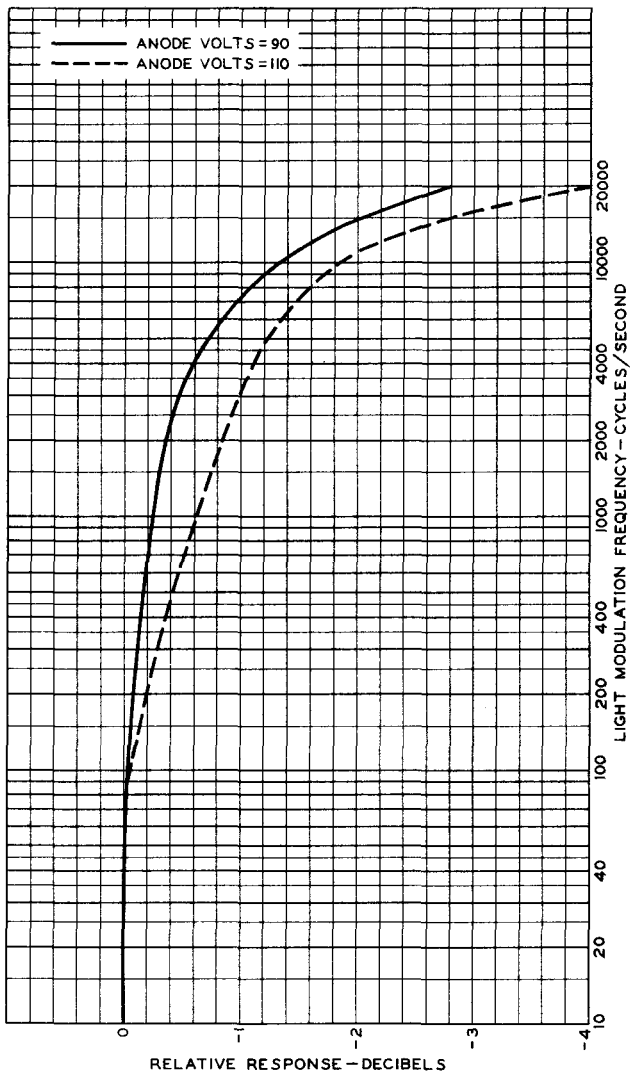
92CM - 6649

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## FREQUENCY-RESPONSE CHARACTERISTICS



## Gas Phototube

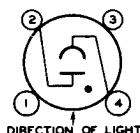
## SIDE-ON TYPE HAVING S-4 RESPONSE

## DATA

## General:

|                                                       |                                                       |
|-------------------------------------------------------|-------------------------------------------------------|
| Spectral Response . . . . .                           | S-4                                                   |
| Wavelength of Maximum Response. . . . .               | 4000 $\pm$ 500 angstroms                              |
| Cathode:                                              |                                                       |
| Shape . . . . .                                       | Semicylindrical                                       |
| Minimum projected length <sup>a</sup> . . . . .       | 1-1/4"                                                |
| Minimum projected width <sup>a</sup> . . . . .        | 5/8"                                                  |
| Direct Interelectrode Capacitance (Approx.) . . . . . | 3 $\mu$ f                                             |
| Maximum Overall Length. . . . .                       | 4-1/8"                                                |
| Maximum Seated Length . . . . .                       | 3-1/2"                                                |
| Seated Length to Center of Cathode. . . . .           | 2-1/8" $\pm$ 3/32"                                    |
| Maximum Diameter. . . . .                             | 1-1/8"                                                |
| Operating Position. . . . .                           | Any                                                   |
| Weight (Approx.) . . . . .                            | 1.1 oz $\leftarrow$                                   |
| Bulb. . . . .                                         | T8                                                    |
| Socket. . . . .                                       | Amphenol No.77-MIP-4-T, or equivalent $\leftarrow$    |
| Base. . . . .                                         | Dwarf-Shell Small 4-Pin (JEDEC No.A4-26) $\leftarrow$ |
| Basing Designation for BOTTOM VIEW. . . . .           | 2K                                                    |

Pin 1 - No Connection  
Pin 2 - Anode



Pin 3 - No Connection  
Pin 4 - Photocathode

## Maximum Ratings, Absolute-Maximum Values:

|                                                           | Rating I | Rating II |                 |
|-----------------------------------------------------------|----------|-----------|-----------------|
| ANODE-SUPPLY VOLTAGE<br>(DC or Peak AC) . . . . .         | 80 max.  | 100 max.  | volts           |
| AVERAGE CATHODE-CURRENT<br>DENSITY <sup>b</sup> . . . . . | 50 max.  | 25 max.   | $\mu$ a/sq. in. |
| AVERAGE CATHODE CURRENT <sup>b</sup> . . . . .            | 10 max.  | 5 max.    | $\mu$ a         |
| AMBIENT TEMPERATURE . . . . .                             | 75 max.  | 75 max.   | $^{\circ}$ C    |

## Characteristics:

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

|                                                 | Min. | Median | Max. |                  |
|-------------------------------------------------|------|--------|------|------------------|
| Sensitivity:                                    |      |        |      |                  |
| Radiant, at 4000 angstroms. . . . .             | -    | 0.13   | -    | $\mu$ a/ $\mu$ w |
| Luminous: <sup>c</sup>                          |      |        |      |                  |
| At 0 cps. . . . .                               | 75   | 135    | 205  | $\mu$ a/lumen    |
| At 5000 cps . . . . .                           | -    | 124    | -    | $\mu$ a/lumen    |
| At 10000 cps. . . . .                           | -    | 108    | -    | $\mu$ a/lumen    |
| Gas Amplification Factor <sup>d</sup> . . . . . | -    | -      | 5.5  |                  |
| Anode Dark Current at 25 $^{\circ}$ C . . . . . | -    | -      | 0.05 | $\mu$ a          |

$\leftarrow$  Indicates a change.



## Minimum Circuit Values:

With an anode-supply voltage of 80 or less 100 volts

### DC Load Resistance:

|                                           |          |          |         |
|-------------------------------------------|----------|----------|---------|
| For dc currents above $5 \mu\text{a}$ . . | 0.1 min. | -        | megohm  |
| For dc currents below $5 \mu\text{a}$ . . | 0 min.   | -        | megohms |
| For dc currents above $3 \mu\text{a}$ . . | -        | 2.5 min. | megohms |
| For dc currents below $3 \mu\text{a}$ . . | -        | 0.1 min. | megohm  |

- <sup>a</sup> On plane perpendicular to indicated direction of incident light.
- <sup>b</sup> Averaged over any interval of 30 seconds maximum.
- <sup>c</sup> For conditions where the light source is a tungsten-filament lamp operated at a color temperature of  $2870^{\circ}\text{K}$ . A dc anode supply voltage 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 10,000-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.
- <sup>d</sup> 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  $2870^{\circ}\text{K}$ , the light input is 0.1 lumen, and the load resistor has a value of 1 megohm.

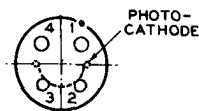
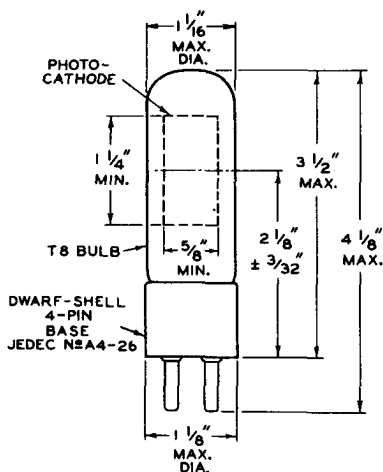
## SPECTRAL-SENSITIVITY CHARACTERISTIC OF PHOTOSENSITIVE DEVICE HAVING S-4 RESPONSE

and

## FREQUENCY-RESPONSE CHARACTERISTICS OF GAS PHOTOTUBES

are shown at the front of this section

AVERAGE-ANODE-CHARACTERISTICS CURVE  
shown under Type 5581 also applies to the 1P37



92CM-470R5

