



868

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**GAS PHOTOTUBE**

Cathode	Semi-cylindrical	
Photosurface		S1
Window Area		1.0 sq. in.
Direct Interelectrode Capacitance		3.0 $\mu$ f
Maximum Overall Length		4-1/8"
Maximum Seated Height		3-1/2"
Maximum Diameter		1-3/16"
Bulb (lime glass)		T-8
Base		Tapered Small 4-Pin
Pin 1 - No Connection		Pin 3 - No Connection
Pin 2 - Anode (+)		Pin 4 - Cathode (-)
Mounting Position		Any



BOTTOM VIEW

*Maximum Ratings Are Absolute Values***MAXIMUM RATINGS and CHARACTERISTICS**

Anode-Supply Voltage (D.C. or Peak A.C.)	90 max.	volts
Anode Current*	20 max.	$\mu$ amp.
Ambient Temperature	100 max.	$^{\circ}$ C
Luminous Sensitivity:*		
At 0 cycles	90	$\mu$ amp./lumen
At 5000 cycles	77	$\mu$ amp./lumen
At 10000 cycles	67	$\mu$ amp./lumen
Sensitivity at 7500 Angstroms	0.0105	$\mu$ amp./ $\mu$ watt
Gas Amplification Factor	Not over 8	
D-C Resistance of Load:		

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

For d-c currents	{ above 3.5 $\mu$ amp.	0.1 min. megohm
	{ below 3.5 $\mu$ amp.	No Minimum

*With anode-supply voltage of 90 volts*

For d-c currents	{ above 2 $\mu$ amp.	2.5 min. megohms
	{ below 2 $\mu$ amp.	0.1 min. megohm

\* On basis of the use of a sensitive cathode area 1/2" in diameter.

\* Subject to variations as explained on sheet PHOTOTUBE SENSITIVITY MEASUREMENTS in the front of this section.

Spectral Sensitivity Characteristic of S1 Photosurface  
in lime-glass bulb is shown at beginning  
of this section.

← Indicates a change.

Mar. 20, 1943

RCA VICTOR DIVISION

DATA

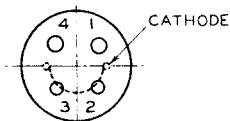
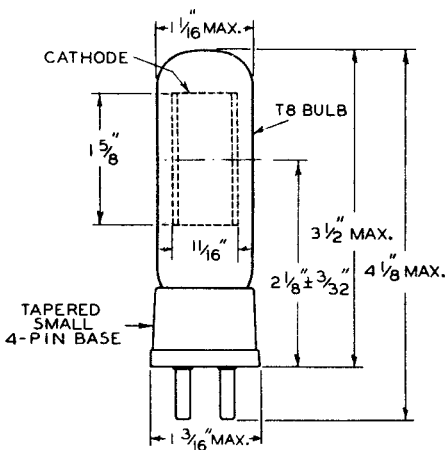
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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## GAS PHOTOTUBE



925-470R3

BOTTOM VIEW

← Indicates a change.

Mar. 20, 1943

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

CE-470R3

## Gas Phototube

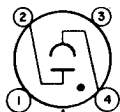
## SIDE-ON TYPE HAVING S-I RESPONSE

## DATA

## General:

Spectral Response . . . . .	S-1
Wavelength of Maximum Response . . . . .	8000 $\pm$ 1000 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



DIRECTION OF RADIATION

Pin 3 - No Connection  
Pin 4 - Photocathode

Maximum Ratings, Absolute-Maximum Values:  $\leftarrow$ 

	Rating 1	Rating 11	
ANODE-SUPPLY VOLTAGE (DC or Peak AC) . . . . .	80 max.	100 max.	volts
AVERAGE CATHODE-CURRENT 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 . . . . .	100 max.	100 max.	$^{\circ}$ C

Characteristics:  $\leftarrow$ 

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

	Min.	Median	Max.	
Sensitivity:				
Radiant, at 8000 angstroms . . . . .	-	0.0084	-	amp/watt
Luminous: <sup>c</sup>				
At 0 cps . . . . .	50	90	145	$\mu$ a/lumen
At 5000 cps . . . . .	-	77	-	$\mu$ a/lumen
At 10000 cps . . . . .	-	67	-	$\mu$ a/lumen
Gas Amplification Factor <sup>d</sup> . . . . .	-	-	8	
Anode Dark Current at 25 $^{\circ}$ C. . . . .	-	-	0.1	$\mu$ a

$\leftarrow$  Indicates a change.



**Minimum Circuit Values:**

<i>With an anode-supply voltage of</i>	<i>80 or less</i>	<i>100</i>	<i>volts</i>
<b>DC Load Resistance:</b>			
For dc currents above			
5 $\mu$ a. . . . .	0.1 min.	-	megohm
For dc currents below			
5 $\mu$ a. . . . .	0 min.	-	megohms
For dc currents above			
3 $\mu$ a. . . . .	-	2.5 min.	megohms
For dc currents below			
3 $\mu$ a. . . . .	-	0.1 min.	megohm

<sup>a</sup> On plane perpendicular to indicated direction of incident radiation.

<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° 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° 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-I RESPONSE**

and

**FREQUENCY-RESPONSE CHARACTERISTICS  
OF GAS PHOTOTUBES**

are shown at the front of this section

**DIMENSIONAL OUTLINE**

shown under Type IP37 also applies to the 868

**AVERAGE-ANODE-CHARACTERISTICS CURVE**

shown under Type IP41 also applies to the 868