



1850-A

ICONOSCOPE

RCA-1850-A is a television camera tube recommended particularly for pickup from motion-picture film or slides. It requires a steady highlight illumination of 4 to 6 foot-candles on the mosaic for slides and an average value of pulsed highlight illumination of 10 to 20 foot-candles for motion-picture film.

The photosensitive mosaic of the 1850-A is characterized by a spectral response having good sensitivity over the entire visible spectrum. Maximum sensitivity occurs in the blue region as shown by the spectral-response curve in Fig. 1.

The 1850-A has a very high ratio of signal to noise but relatively low sensitivity. In applications where higher sensitivity is desired, as in outdoor and studio live pickups, the use of an image orthicon is recommended.

DATA

General:

Heater, for Unipotential Cathode:

Voltage (AC or DC)	6.3 ± 10%	volts
Current	0.6	ampere

Direct Interelectrode Capacitances (Approx.):

Grid No. 1 to All Other Electrodes	6.5	μμf
Signal Electrode to Grid No. 4 (With external shield)	10	μμf

Mosaic, Photosensitive:

Response	See Fig. 1
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Useful Size of Rectangular Image

(4 x 3 Aspect Ratio)	5.75" max. diagonal
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Focusing Method	Electrostatic
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Deflection Method	Magnetic
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Deflection Angle (Approx.)	55°
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Max. Width of Mounted Tube	8-1/8"
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Height of Mounted Tube	10-3/16" ± 3/4"
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Depth of Mounted Tube	12-13/16" ± 3/4"
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Caps (Two)	Medium (JETEC No. C1-5)
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Base	Long Medium-Shell Small 6-Pin
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Mounting Position	Mosaic in vertical plane
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Minimum Deflecting-Coil Inside Diameter	1-1/2"
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Maximum Deflecting-Coil Length	2-1/4"
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Maximum Ratings, Absolute Values:

AVERAGE MOSAIC ILLUMINATION [•]	50 max.	ft-c
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OPERATING TEMPERATURE OF BULB AT LARGE END OF TUBE	40 max.	°C
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SIGNAL-ELECTRODE VOLTAGE	1200 max.	volts
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GRID-No. 4 (COLLECTOR) VOLTAGE	1200 max.	volts
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GRID-No. 3 VOLTAGE	450 max.	volts
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GRID-No. 2 VOLTAGE	1200 max.	volts
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Maximum Ratings, Absolute Values (Cont'd):

GRID-No.1 VOLTAGE:

Negative bias value.	125 max.	volts
Positive bias value.	0 max.	volts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode.	125 max.	volts
Heater positive with respect to cathode.	10 max.	volts

GRID-No.4 CURRENT.	0.5 max.	μ amp
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Typical Operation and Characteristics:

Signal-Electrode Voltage	1000	volts
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Grid-No.4 Voltage.	1000	volts
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Grid-No.3 Voltage (Beam Focus)—

24% to 36% of Grid-No.4 Voltage.	240 to 360	volts
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Grid-No.2 Voltage.	1000	volts
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Max. Grid-No.1 Voltage for Pattern Cutoff—

7% of Grid-No.4 Voltage.	-70	volts
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Grid-No.4 Current (With no illumination on mosaic)*.	0.1 to 0.2	μ amp
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External Load Resistance	0.1	megohm
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Illumination on Mosaic:

Steady Highlight Value for Slides.	4 to 6	ft-c
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Average Pulsed Highlight Value for Motion—

Picture Film	10 to 20	ft-c
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Ratio of Peak-to-Peak Highlight Video-Signal

Current to RMS Noise Current (Approx.)	100	
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Minimum Peak-to-Peak Blanking Voltage.	20	volts
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Deflecting-Coil Current (Approx.):**

Horizontal (Peak to peak).	600	ma
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Vertical (Peak to peak).	140	ma
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Maximum Circuit Values:

Grid-No.1-Circuit Resistance	1.0 max.	megohm
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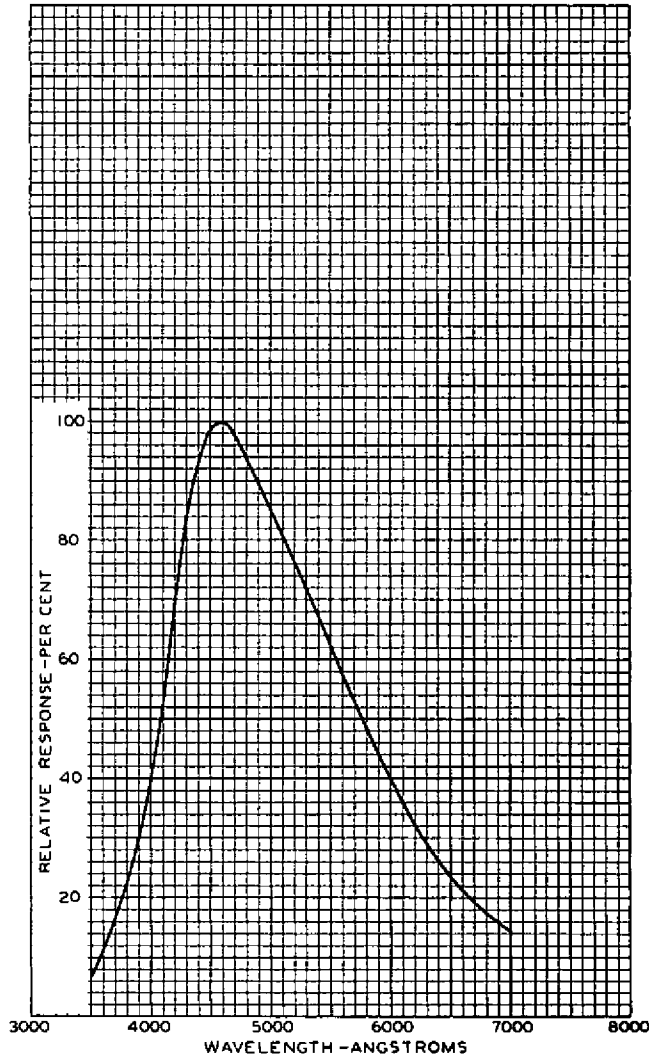
• Averaged over any interval of 1 sec. max.

* Allowance should be made for leakage currents.

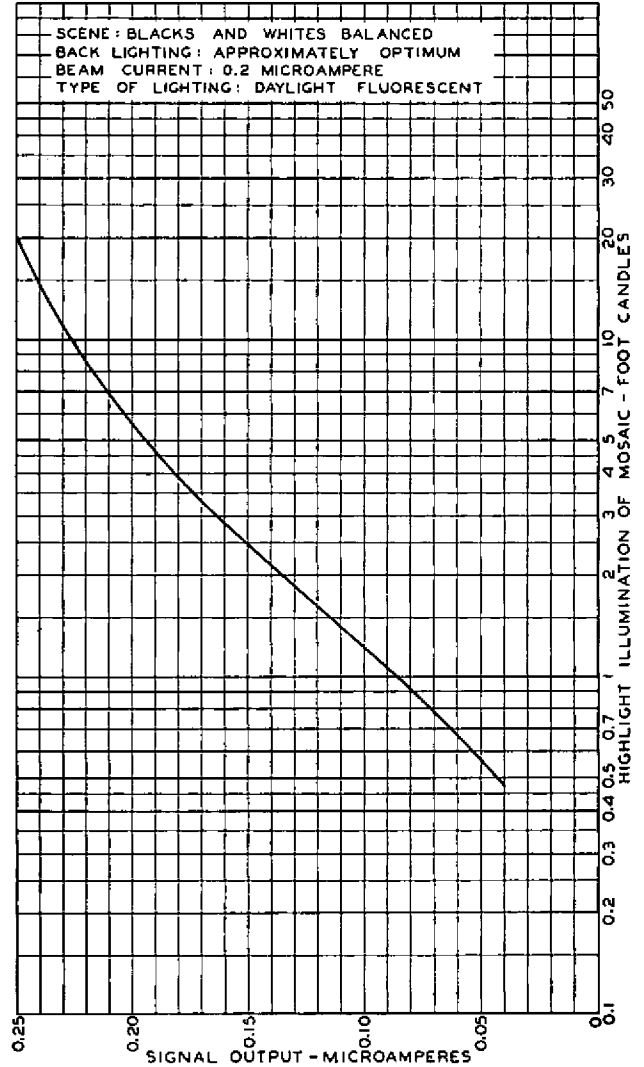
** For RCA Deflecting Yoke Type No.201D76.



1850-A



92CM-6404



92CM-658IRI

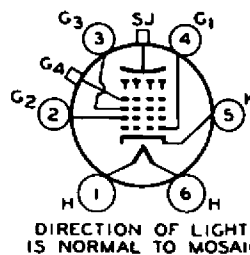
Fig. 1 - Spectral Sensitivity Characteristic of Type 1850-A Mosaic. Curve is taken for Equal Values of Radiant Flux at All Wavelengths.

Fig. 2 - Typical Signal-Output Characteristic of Type 1850-A Under Continuous Illumination.

SOCKET CONNECTIONS

Bottom View

- PIN 1 - HEATER
- PIN 2 - GRID No. 2
- PIN 3 - GRID No. 3
- PIN 4 - GRID No. 1
- PIN 5 - CATHODE

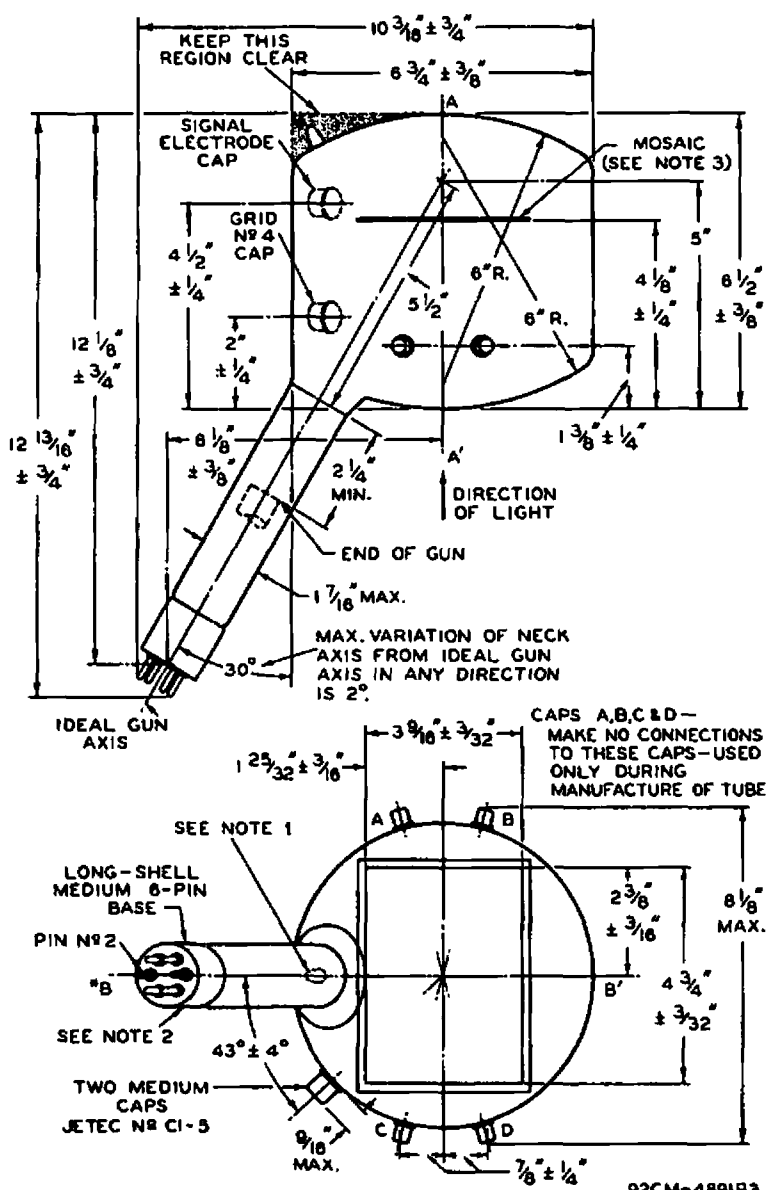


- PIN 6 - HEATER
- CAPS { SEE OUTLINE DRAWING
- S_J - SIGNAL ELECTRODE
- G₄ - GRID No. 4 (COLLECTOR)



1850-A

DIMENSIONAL OUTLINE



* BB' IS THE PLANE THROUGH THE BULB AXIS AA' AND THE IDEAL GUN AXIS.

NOTE 1: VARIATION OF TIP CENTER FROM PLANE BB' IS $\frac{1}{2}$ ".

NOTE 2: MAXIMUM ROTATION OF LINE THROUGH PINS 2 AND 5 ABOUT IDEAL GUN AXIS IS $\pm 10^\circ$, MEASURED FROM PLANE BB'.

NOTE 3: DEVIATION OF PLANE OF MOSAIC FROM PLANE PERPENDICULAR TO THE BULB AXIS AA' IS 2.5° MAX. ROTATION OF MOSAIC ABOUT THE BULB AXIS AA' WITH RESPECT TO A LINE OF INTERSECTION FORMED BY MOSAIC PLANE AND PLANE BB' IS 2.5° MAX.

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