



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

Useful Size of Rectangular Image

(4 x 3 Aspect Ratio) 5.75" max. diagonal

Focusing Method Electrostatic

Deflection Method Magnetic

Deflection Angle (Approx.) 55°

Max. Width of Mounted Tube 8-1/8"

Height of Mounted Tube 10-3/16" ± 3/4"

Depth of Mounted Tube 12-13/16" ± 3/4"

Caps (Two) Medium (JETEC No. C1-5)

Base Long Medium-Shell Small 6-Pin

Mounting Position Mosaic in vertical plane

Minimum Deflecting-Coil Inside Diameter 1-1/2"

Maximum Deflecting-Coil Length 2-1/4"

Maximum Ratings, Absolute Values:

AVERAGE MOSAIC ILLUMINATION [•]	50 max.	ft-c
OPERATING TEMPERATURE OF BULB AT LARGE END OF TUBE	40 max.	°C
SIGNAL-ELECTRODE VOLTAGE	1200 max.	volts
GRID-No. 4 (COLLECTOR) VOLTAGE	1200 max.	volts
GRID-No. 3 VOLTAGE	450 max.	volts
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

Typical Operation and Characteristics:

Signal-Electrode Voltage	1000	volts
Grid-No.4 Voltage.	1000	volts
Grid-No.3 Voltage (Beam Focus)--		
24% to 36% of Grid-No.4 Voltage.	240 to 360	volts
Grid-No.2 Voltage.	1000	volts
Max. Grid-No.1 Voltage for Pattern Cutoff--		
7% of Grid-No.4 Voltage.	-70	volts
Grid-No.4 Current (With no illumination on mosaic)*.	0.1 to 0.2	μ amp
External Load Resistance	0.1	megohm
Illumination on Mosaic:		
Steady Highlight Value for Slides.	4 to 6	ft-c
Average Pulsed Highlight Value for Motion-		
Picture Film	10 to 20	ft-c
Ratio of Peak-to-Peak Highlight Video-Signal		
Current to RMS Noise Current (Approx.)	100	
Minimum Peak-to-Peak Blanking Voltage.	20	volts
Deflecting-Coil Current (Approx.):**		
Horizontal (Peak to peak).	600	ma
Vertical (Peak to peak).	140	ma

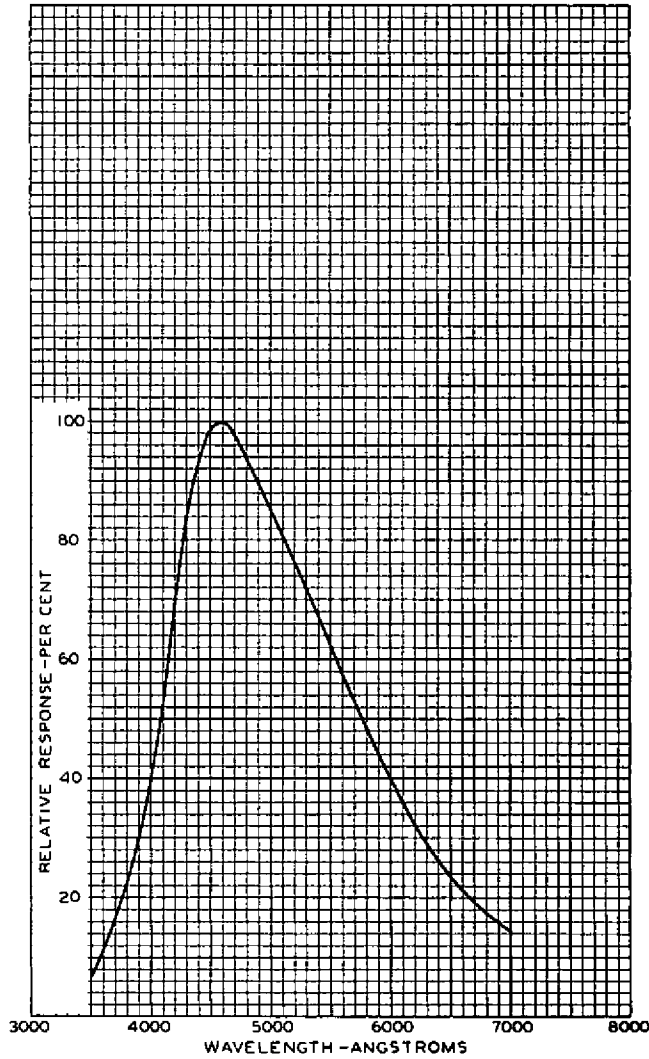
Maximum Circuit Values:

Grid-No.1-Circuit Resistance	1.0 max.	megohm
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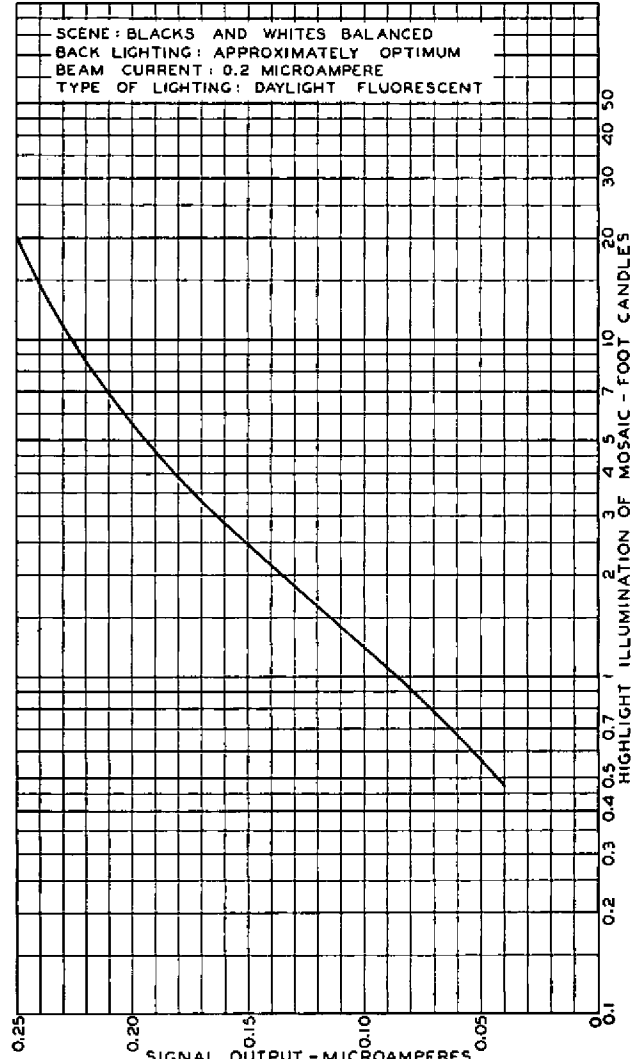
- Averaged over any interval of 1 sec. max.
- * Allowance should be made for leakage currents.
- ** For RCA Deflecting Yoke Type No.201D76.



1850-A



92CM-6404



92CM-658IRI

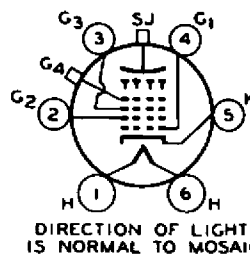
Fig. 1 - Spectral Sensitivity Characteristic of Type 1850-A Mosaic. Curve is taken for Equal Values of Radiant Flux at All Wavelengths.

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
- SJ - SIGNAL ELECTRODE
- G_{II} - GRID No. 4 (COLLECTOR)

