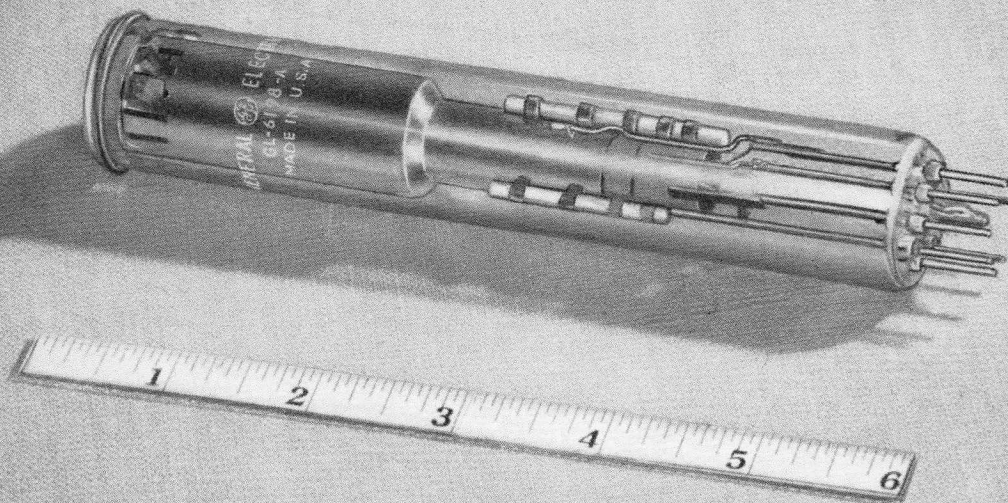




TELEVISION CAMERA TUBE—VIDICON

**FOCUS—MAGNETIC
DEFLECTION—MAGNETIC**

The GL-6198-A is designed for service in closed-circuit television applications. Small in size it has a resolution capability of about 600 lines and a spectral response approaching that of the eye.

Because of its sensitivity, an incident illumination on the scene of only 100 to 200 foot-candles is sufficient for satisfactory operation.

A notable advantage in the design of this tube is the complete absence of any side-tip structure. In addition to the resulting extra mechanical

**HIGH SENSITIVITY
LINE RESOLUTION—600**

strength of the bulb, this tipless structure permits the use of a longer deflection yoke with the consequent advantages of reduced deflection distortion and improved center-to-edge focus of the beam.

The small size of the GL-6198-A adapts it for use in compact lightweight cameras and combines with its simplicity to facilitate camera and associated equipment design.

The GL-6198-A is an improved version of the 6198 and is unilaterally interchangeable with it.

TECHNICAL INFORMATION

GENERAL

Electrical

Cathode—Unipotential

Heater Voltage, AC or DC.....

Heater Current.....

Focusing Method—Magnetic

Deflection Method—Magnetic

Direct Interelectrode Capacitance.....

Signal Electrode to All Other Electrodes.....

6.3 $\pm$ 10% Volts
0.6 Amperes

4.5 μ f

GENERAL ELECTRIC

▲Supersedes pages 1 and 2 dated 3-58

TECHNICAL INFORMATION (CONT'D)

GENERAL (CONT'D)

Photoconductive Layer

Maximum Useful Diagonal of Rectangular

Image, 4 by 3 aspect ratio.....0.62 Inches

Orientation of Quality Rectangle—Horizontal Scan Essentially Parallel to the Straight Sides of the Masked Portions of the Faceplate. The Mask is for Orientation Only and Does Not Define the Proper Scanned Area of the Photoconductive Layer.

Mechanical

Over-all Length..... $6\frac{1}{4} \pm \frac{1}{4}$ InchesGreatest Diameter..... 1.125 ± 0.010 Inches

Base—Small-button Ditetrar 8-Pin, E8-11

Mounting Position—Any

Weight, approximate.....2.0 Ounces

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

Maximum Ratings, Absolute Values

Signal-Electrode Voltage.....100 Max Volts

Grid-No. 3 and 4 Voltage.....350 Max Volts

Grid-No. 2 Voltage.....350 Max Volts

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

⊕Faceplate Temperature.....70 Max C

Faceplate Illumination.....1000 Max Foot-Candles

Typical Operation

For Scanned Area of $\frac{1}{2}$ " by $\frac{3}{8}$ "

Faceplate Illumination

Highlight.....10 to 20 Foot-Candles

Signal-Electrode Voltage.....10 to 70 Volts

Grid-No. 4 (Decelerator) and No. 3 (Beam Focus) Voltage.....250 to 300† Volts

Grid-No. 2 (Accelerator) Voltage.....300 Volts

Grid-No. 1 Voltage, for picture cutoff, without blanking voltage.....-45 to -100 Volts

Highlight Signal-Output Current‡.....0.1 to 0.2 Microamperes

Dark Current, maximum.....0.02 Microamperes

Uniform 2870 K Tungsten Illumination on Tube Face to Produce Signal-Output

Current of 0.1 to 0.2 Microamperes.....3 to 10 Foot-Candles

Average "Gamma" of Transfer Characteristic for Signal-Output Current between

0.02 and 0.2 Microampere.....0.65

Minimum Peak-to-Peak Blanking Voltage

When Applied to Grid-No. 1.....40 Volts

When Applied to Cathode.....10 Volts

Field Strength at Center of Focusing Coil.....40 Gauss

Field Strength of Adjustable Alignment Coil.....0 to 4 Gauss

Visual Equivalent Signal-to-Noise Ratio, approximate§.....300:1

† Definition, focus uniformity, and picture quality decrease with decreasing grid-No.3 and grid-No. 4 voltage. In general, grid-No. 3 and grid-No. 4 should not be operated below 250 volts.

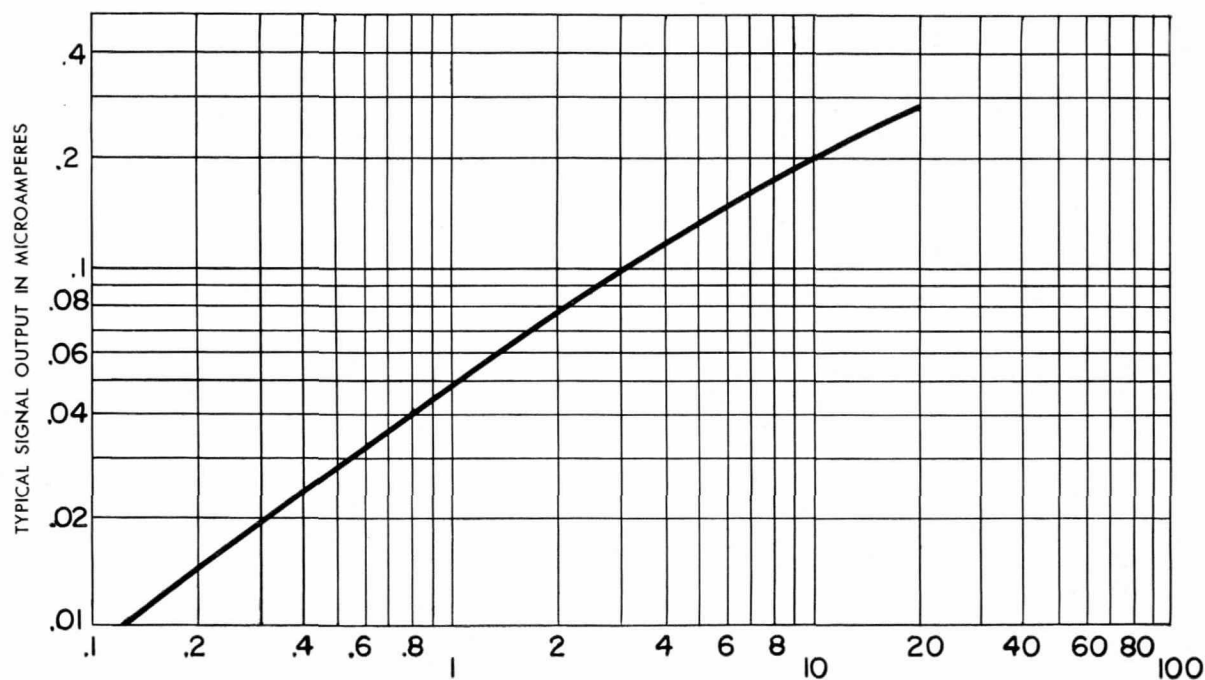
‡ The component of signal-electrode current after subtracting dark-current component.

§ Measured with a high-gain, low-noise, cascode-type amplifier having bandwidth of 5 megacycles and is determined primarily by the signal output level of the vidicon and the noise generated in the input amplifier. Because the noise in such a system is predominantly of the high-frequency type, the visual equivalent signal-to-noise ratio is taken as the ratio of the highlight video-signal current to rms noise current, multiplied by a factor of 3.

⊕Denotes a change.

TYPICAL SIGNAL OUTPUT

ILLUMINATION: UNIFORM OVER PHOTOCONDUCTIVE LAYER
SCANNED AREA OF PHOTOCONDUCTIVE LAYER— $\frac{1}{2}$ " X $\frac{3}{8}$ "



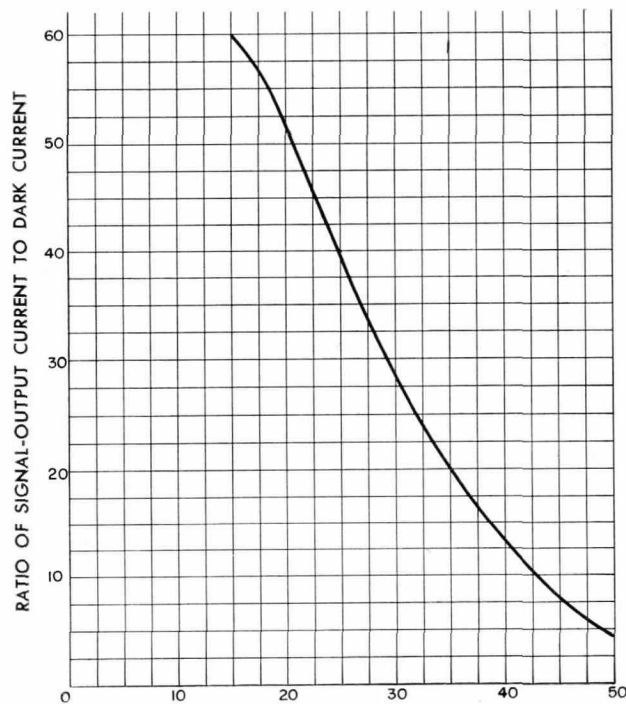
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2870 K TUNGSTEN ILLUMINATION ON TUBE FACE IN FOOT-CANDLES

1-6-58

TYPICAL CHARACTERISTIC

CONSTANT ILLUMINATION

SCANNED AREA OF PHOTOCONDUCTIVE LAYER— $\frac{1}{2}$ " X $\frac{3}{8}$ "

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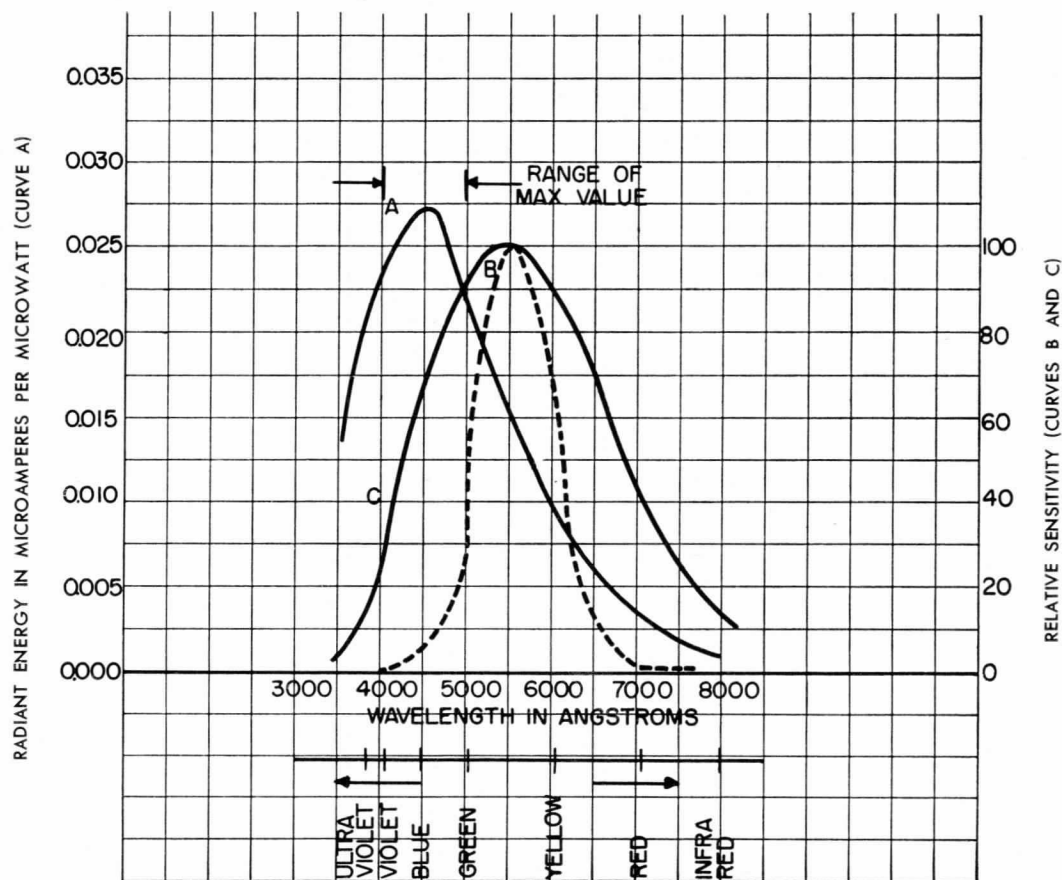
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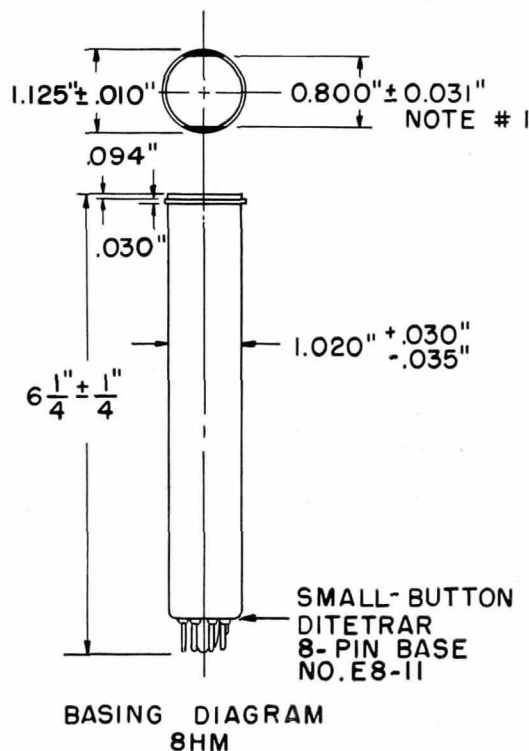
SPECTRAL SENSITIVITY CHARACTERISTIC

CURVE A: FOR EQUAL VALUES OF SIGNAL-OUTPUT CURRENT AT ALL WAVELENGTHS.
SIGNAL-OUTPUT MICROAMPERES FROM SCANNED AREA OF $\frac{1}{2}'' \times \frac{3}{8}'' = 0.02$.

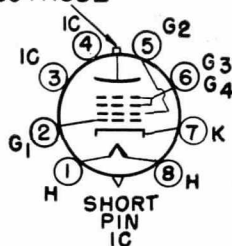
CURVE B: SPECTRAL CHARACTERISTIC OF AVERAGE HUMAN EYE.

CURVE C: FOR EQUAL VALUES OF SIGNAL-OUTPUT CURRENT WITH RADIANT FLUX FROM TUNGSTEN SOURCE AT 2870 K.





SIGNAL ELECTRODE

BOTTOM
VIEW

NOTE 1 : STRAIGHT SIDES OF MASKED PORTIONS ARE PARALLEL TO THE PLANE PASSING THROUGH TUBE AXIS AND SHORT INDEX PIN.

ELECTRONIC COMPONENTS DIVISION
GENERAL ELECTRIC
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