RCA-6198-A is a small, television camera tube intended primarily for use in industrial applications. Its resolution capability is about 600 lines.

Utilizing a photoconductive layer as its light-sensitive element, the 6198-A has a sensitivity which permits televising scenes with 100 to 200 foot-candles of incident illumination on the scene. The photoconductive layer is characterized by a spectral response approaching that of the eye.

**DATA**

**General:**
- Heater, for unipotential cathode:
  - Voltage (AC or DC)........... 6.3 ± 10% volts
  - Current..................... 6.6 ma
- Direct Interelectrode Capacitance:
  - Signal Electrode to All Other Electrodes............. 0.5 μF
- Spectral Response............. See Curve
- Photoconductive Layer:
  - Maximum Useful Diagonal of Rectangular Image (4 x 3)........ 0.62 inch
  - Aspect Ratio.............. 1:1
- Orientation of quality rectangle—Proper orientation is obtained when the horizontal scan is essentially parallel to the straight sides of the masked portions of the faceplate. The straight sides are parallel to the plane passing through the tube axis and short index pin. The masking is for orientation only and does not define the proper scanned area of the photoconductive layer.
- Focusing Method................ Magnetic
- Magnetic Deflection Method........... Magnetic
- Overall Length.................. 6-1/2" ± 1/8"
- Greatest Diameter (Excluding Side Tip)........ 1.125 ± 0.010"
- Maximum Radius (Including Side Tip)........ 0.005"
- Bulb................................ T-8
- Base.................................. Small-Socket Diletral 8-Pin (JETEC No.E8-11)
- Operating Position.............. Any

**Maximum Ratings, Absolute Values:**
- SIGNAL-ELECTRODE VOLTAGE........ 125 max. volts
- GRID-No.4 & GRID-No.3 VOLTAGE........ 350 max. volts
- GRID-No.2 VOLTAGE................. 350 max. volts
- GRID-No.1 VOLTAGE:
  - Negative bias voltage........... 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.............. 60 max. °C

**Typical Operation and Characteristics:**
- For scanned area of 1/2" x 3/8"
- Signal-Electrode Voltage for Dark Current of 0.02 μamp........ 10 to 125 volts
- Grid-No.4 (accelerator) & Grid-No.3 (Beam Focus) Voltage........ 200 to 300 volts
- Grid-No.2 (accelerator) Voltage........ 300 volts
- Grid-No.1 Voltage:
  - For picture cutout................... -45 to -100 volts
- Signal-Output Current:
  - Normal Operating Range........... 0.1 to 0.2 μamp
  - Minimum, with 0.6 foot-candle of uniform 2670K tungsten illumination on tube face........ 0.035 μamp

**Uniform 2670K Tungsten Illumination on Tube Face to Produce Signal-Output Current of 0.1 to 0.2 μamp........... 3 to 10 ft-c**

**Ratio (Approx.) of Tube-Formed Illumination Required to Produce Signal-Output Current of 0.2 μamp to that Required to Produce 0.02 μamp........... 30**

**Minimum Peak-to-Peak Blanking Voltage:**
- When applied to grid no.1........ 30 volts
- When applied to cathode........... 10 volts

**Field Strength of Adjustable Alignment Coil:**
- 40 gauss
- 0 to 4 gauss

With no blanking voltage on grid no.1.
*Defined as the component of the signal-electrode current after the dark-current component has been subtracted.*
DIMENSIONAL OUTLINE

BASE DRAWING

SMALL-BUTTON DITETRARM
6-PIN BASE
JETEC NRE8-11

92CS-9144

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

BASE-PIN POSITIONS ARE HELD WITH TOLERANCES SUCH THAT PINS WILL FIT A FLAT-PLATE GAUGE HAVING THICKNESS OF 1/8" AND 9 HOLES .0700\pm .0005" SO LOCATED ON A 0.6000± 0.0005" DIAMETER CIRCLE THAT THE DISTANCE ALONG THE CHORD BETWEEN ANY TWO ADJACENT HOLE CENTERS IS 0.2052± 0.0005" GAUGE IS PROVIDED WITH CENTRE HOLE HAVING DIAMETER OF 0.3000± 0.001" AND SAME CENTER AS THE PIN CIRCLE.

SHORT INDEX PIN
B PINS

0.050" - 0.002" DIA.
0.040" - 0.004" DIA.

600" DIA.
40°
40°
40°
40°
40°
40°

SHORT INDEX PIN
B PINS

0.050" - 0.002" DIA.
0.040" - 0.004" DIA.

600" DIA.
40°
40°
40°
40°
40°
40°

SOCKET CONNECTIONS

Bottom View

PIN 1: HEATER
PIN 2: GRID NO. 1
PIN 3: INTERNAL CONNECTION—DO NOT USE
PIN 4: INTERNAL CONNECTION—DO NOT USE
PIN 5: GRID NO. 2
PIN 6: GRIDS NO. 3 AND NO. 4
PIN 7: CATHODE
PIN B: HEATER
FLANGE: SIGNAL ELECTRODE (SJ)
SHORT INDEX PIN: INTERNAL CONNECTION—MAKE NO CONNECTION

DIRECTION OF LIGHT: INTO FACE END OF TUBE

Devices and arrangements shown or described herein may use patents of RCA or others. Information contained herein is furnished without responsibility by RCA for its use and without prejudice to RCA's patent rights.
<table>
<thead>
<tr>
<th>ITEM</th>
<th>AS REGISTERED</th>
<th>AS PROPOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under DATA, General:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Position . . . . . .</td>
<td>Any</td>
<td>Approx. Horizontal,</td>
</tr>
<tr>
<td>Greatest Diameter (Excluding Side Tip). . . . .</td>
<td>1.125&quot; ± 0.010&quot;</td>
<td>or faceplate up</td>
</tr>
<tr>
<td>Greatest Diameter. . . . . . .</td>
<td>None</td>
<td>1.125&quot; ± 0.010&quot;</td>
</tr>
<tr>
<td>Maximum Radius (Including Side Tip). . . . . .</td>
<td>0.805&quot;</td>
<td>Delete</td>
</tr>
<tr>
<td>Under Maximum Ratings:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIGNAL-ELECTRODE VOLTAGE . . .</td>
<td>125 max.</td>
<td>100 max.</td>
</tr>
<tr>
<td>FACEPLATE:</td>
<td>None</td>
<td>volts</td>
</tr>
<tr>
<td>Illumination . . . . . . . . .</td>
<td>1000 max.</td>
<td>foot-candles</td>
</tr>
<tr>
<td>Under Typical Operation and Characteristics:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faceplate Illumination:</td>
<td>None</td>
<td>10 to 20 foot-candles</td>
</tr>
<tr>
<td>Highlight . . . . . . . . . .</td>
<td>10 to 20</td>
<td></td>
</tr>
<tr>
<td>Signal-Electrode Voltage</td>
<td>10 to 125</td>
<td></td>
</tr>
<tr>
<td>for Dark Current of 0.02 µamp. . . .</td>
<td>None</td>
<td>20 to 70</td>
</tr>
<tr>
<td>Signal-Electrode Voltage</td>
<td>200 to 300</td>
<td>250 to 300</td>
</tr>
<tr>
<td>Grid-No.4 (Decelerator) &amp; Grid-No.3 (Beam Focus) Voltage . . . . . .</td>
<td>200 to 300</td>
<td></td>
</tr>
<tr>
<td>Signal Output Current:</td>
<td>0.1 to 0.2</td>
<td>µamp</td>
</tr>
<tr>
<td>Normal Operating Range . . . . .</td>
<td>0.035</td>
<td>Delete</td>
</tr>
<tr>
<td>Minimum, with 0.6 foot-candle of uniform 2870°K tungsten illumina-</td>
<td></td>
<td>µamp</td>
</tr>
<tr>
<td>tion on tube face . . . . . . .</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highlight Signal-Output Current . . .</td>
<td>None</td>
<td>0.1 to 0.2</td>
</tr>
<tr>
<td>Maximum Dark Current . . . . . .</td>
<td>None</td>
<td>0.02</td>
</tr>
<tr>
<td>Ratio (Approx.) of Tube-Face Illumination Required to Produce Signal-</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Output Current of 0.2 µamp to that Required to Produce 0.02 µamp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average &quot;Gamma&quot; of Transfer Characteristic for Signal-Output Current</td>
<td>None</td>
<td>0.65</td>
</tr>
<tr>
<td>Between 0.02 and 0.2 µamp . . . .</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum Peak-to-Peak Blanking Voltage:</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>When applied to grid No.1. Visual Equivalent Signal-to-Noise Ratio</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>(Approx.)#:</td>
<td>300:1</td>
<td></td>
</tr>
<tr>
<td>Under Dimensional Outline Distance between the Masked Portions of</td>
<td>0.8&quot;</td>
<td>0.8&quot; ± 031&quot;</td>
</tr>
<tr>
<td>Face . . . . . . . . . . . . . .</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socket Connection Diagram . . . .</td>
<td>No Designation</td>
<td>8HM</td>
</tr>
</tbody>
</table>
Definition, focus uniformity, and picture quality decreases 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.

Measured with a high-gain, low-noise, cascode-type amplifier having bandwidth of 5 Mc 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 predominately 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.