The 19EFP4 is a 19"-114° banded cathode ray tube without coated funnel. This tube has a 4 3/8" neck length, a straight gun which requires no ion trap, 600 milliampere 6.3 volt filament, and 50 volt G2 for cathode drive design.

ELECTRICAL DATA

Focusing Method
Deflection Method
Deflection Angles (Approximate)
  Diagonal  114 Degrees
  Horizontal  102 Degrees
  Vertical  86 Degrees

Direct Interelectrode Capacitances
  Cathode to all other electrodes (approx.)  5 uuf
  Grid No. 1 to all other electrodes (approx.)  6 uuf
  External conductive coating to anode (Note 1)  1,500 max. uuf
  1,000 min. uuf

Resistance Between External Conductive Coating and Implosion Protection Hardware  50 min. megohms

Heater Current at 6.3 Volts  600 ±30 ma
Heater Warm-up Time  11 seconds

OPTICAL DATA

Phosphor Number  P4 Aluminized
Light Transmittance at Center (Approximate)  49 Percent

MECHANICAL DATA

Overall Length  11 5/8 ±1/4 Inches
Neck Length  4 3/8 ±1/8 Inches

Greatest Dimensions of Tube
  Diagonal  18 7/8 max. Inches
  Width  16 11/16 max. Inches
  Height  13 39/64 max. Inches

Minimum Useful Screen Dimensions (Projected)
  Diagonal  17 9/16 Inches
  Horizontal Axis  15 1/8 Inches
  Vertical Axis  12 Inches
  Area  172 Sq. Inches
  Implosion Protection  Banded

from JEDEC release #4657, April 6, 1964
MECHANICAL DATA (CONT.)

Bulb JEDEC Designation J-149-F1
Bulb Contact JEDEC Designation J1-21
Base JEDEC Designation B7-208
Basing JEDEC Designation 8HR
Bulb Contact Alignment
J1-21 contact aligns with Pin Position No. 4 ±30°.

RATINGS (Design Maximum System)

Unless otherwise specified, voltage values are positive and measured with respect to Grid No. 1.

Maximum Anode Voltage 20,000 volts
Minimum Anode Voltage 10,000 volts
Maximum Grid No. 4 (Focusing Electrode) Voltage +1,100 -500 volts
Maximum Grid No. 2 Voltage 60 volts
Minimum Grid No. 2 Voltage 25 volts
Cathode Voltage
  Maximum negative value 0 volts dc
  Maximum negative peak value 2 volts
  Maximum positive value 100 volts dc
  Maximum positive peak value 150 volts
Maximum Heater Voltage 6.9 volts
Minimum Heater Voltage 5.8 volts
Maximum Heater-Cathode Voltage
  Heater negative with respect to cathode
    During warm-up period not to exceed 15 seconds 450 volts
    After equipment warm-up period 200 volts
  Heater positive with respect to cathode 200 volts

TYPICAL OPERATING CONDITIONS

CATHODE DRIVE SERVICE

Unless otherwise specified, all voltage values are positive with respect to Grid No. 1.

Anode Voltage 16,000 volts dc
Grid No. 4 Voltage (Focusing Electrode) 250 volts dc (Note 3 & 4)
  Grid No. 2 Voltage 50 volts dc
  Cathode Voltage (Note 2) 35 to 55 volts dc

MAXIMUM CIRCUIT VALUES

Maximum Grid No. 1 Circuit Resistance 1.5 megohms

GRAPH AND DRAWINGS

Tube Outline with Essential Dimensions and Tolerances

Pin Connections

<table>
<thead>
<tr>
<th>Pin 1</th>
<th>Pin 2</th>
<th>Pin 3</th>
<th>Pin 4</th>
<th>Pin 5</th>
<th>Pin 6</th>
<th>Pin 7</th>
<th>Pin 8</th>
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<tbody>
<tr>
<td>Heater</td>
<td>Grid #1</td>
<td>Grid #2</td>
<td>Grid #1</td>
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<td>Grid #1</td>
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<tr>
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<td>Cathode</td>
<td>Heater</td>
<td></td>
<td>Cathode</td>
<td></td>
<td>Heater</td>
<td></td>
</tr>
</tbody>
</table>
NOTES

1. Measured with implosion protection hardware connected to external coating.

2. Visual extinction of focused raster.

3. With the combined Grid No. 1 bias voltage and video-signal voltage adjusted to give an anode current of 100 microamperes on a 15 1/8" by 12" pattern from RCA 2P21 monoscope or equivalent.

4. Individual tubes will have satisfactory focus at some value between 0 and +400 volts.

NOTES FOR DIMENSIONAL OUTLINE

1. With tube neck inserted through flared end of reference-line gauge JEDEC No. G-126 and with tube seated in gauge, the reference-line is determined by the intersection of the Plane CC' of the gauge with the glass funnel.

2. The plane through the tube axis and Pin No. 4 may vary from the plane through the tube axis and ultor terminal by angular tolerance (measured about the tube axis) of ±30°. Ultor terminal is on the same side as Pin No. 4.

3. Socket for this base should not be rigidly mounted; it should have flexible leads and be allowed to move freely. The design of the socket should be such that the circuit wiring cannot impress lateral strains through the socket contacts on the base pins. Bottom circumference of base wafer will fall within a circle concentric with bulb axis and having a diameter of 1 3/4".

4. External conductive coating must be grounded.

5. To clean this area, wipe only with soft dry lint-less cloth.

6. Measured to include rimband and tension strap.