19 INCH, RECTANGULAR, GLASS  
FACE PLATE -- SPHERICAL GRAY  

FOCUS -- ELECTROSTATIC  
NON ION TRAP GUN  

DEFLECTION -- MAGNETIC  
ALUMINIZED SCREEN  

114 DEGREE DEFLECTION ANGLE  
EXTERNAL CONDUCTIVE COATING  

---DESCRIPTION AND RATING---

The 19CFP4 is a 19 inch electrostatic-focus and magnetic deflection glass picture tube. Outstanding features include a short over-all length, a small neck diameter and a non ion trap gun designed to be operated at a low Grid No. 2 voltage for cathode drive. The fluorescent screen is aluminized to increase light output and reduce undesirable screen charging. An external conductive coating is provided to serve as a filter capacitor when grounded.

ELECTRICAL DATA

<table>
<thead>
<tr>
<th>Focusing Method</th>
<th>Electrostatic</th>
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<tbody>
<tr>
<td>Deflection Angle, Approximate</td>
<td></td>
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<tr>
<td>Horizontal</td>
<td>102 degrees</td>
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<tr>
<td>Vertical</td>
<td>87 degrees</td>
</tr>
<tr>
<td>Diagonal</td>
<td>114 degrees</td>
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Direct Interelectrode Capacitance

| Cathode to all other electrodes, approximate | 5 μf |
| Grid #1 to all other electrodes, approximate | 6 μf |
| External Conductive Coating to Anode | 1500 max. μf |
|                                           | 1000 min. μf |

Heater Current at 6.3 volts | 600 ± 30 ma. |
Heater Warm Up Time | 11 sec. |

OPTICAL DATA

<table>
<thead>
<tr>
<th>Phosphor Number</th>
<th>P4 Aluminized</th>
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<tbody>
<tr>
<td>Light Transmittance at Center Approx.</td>
<td>76 percent</td>
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CATHODE RAY TUBE DEPARTMENT

GENERAL ELECTRIC

Syracuse, N. Y.

from JEDEC release #3594, Feb. 12, 1962
MECHANICAL DATA

Overall Length: 11 1/2 ± 1/4 inches
Greatest Dimensions of Tube
  Diagonal: 18 5/8 ± 1/8 inches
  Width: 16 13/32 ± 1/8 inches
  Height: 13 11/32 ± 1/8 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
Neck Length: 4 1/4 ± 1/4 inches
Bulb: J149-A1
Bulb Contact: JETEC No. J1-21 or JETEC No. B7-237 or B7-208
Base: 8HR
Bulb Contact Alignment
  Anode Contact Aligns with Pin No. 4 ± 30 degrees

RATINGS (Design Maximum System)

Unless otherwise specified, voltage values are positive and measured with respect to cathode.

Maximum Anode Voltage: 17,500 volts
Minimum Anode Voltage: 10,000 volts
Maximum Grid 4 (Focusing Electrode) Voltage: -500 to +1000 volts
Minimum Grid 2 Voltage: 40 volts
Maximum Grid 2 Voltage: 100 volts
Grid 1 Voltage
  Maximum Negative Value: 140 volts DC
  Maximum Negative Peak Value: 200 volts
  Maximum Positive Value: 0 volts DC
  Maximum Positive Peak Value: 2 volts
Maximum Heater Voltage: 6.9 volts
Minimum Heater Voltage: 5.7 volts
Maximum Heater-Cathode Voltage
  Heater negative with respect to cathode
  During warm-up period not to exceed 15 sec: 410 volts
  After equipment warm-up period: 180 volts
  Heater positive with respect to cathode: 180 volts

TYPICAL OPERATING CONDITIONS (Cathode Drive Service)

Anode Voltage: 13,000 volts DC
Grid #4 Voltage (Focusing Electrode, Notes 2 & 3): 250 volts DC
Grid #2 Voltage: 50 volts DC
Cathode to Grid #1 Voltage (Note 1): 31 to 49 volts DC
MAXIMUM CIRCUIT VALUES

Maximum Grid #1 Circuit Resistance . . . . . . . . 1.5 max. megohm
Grid #2 Circuit Resistance . . . . . . . . . . . . . 0.1 min. megohm
Focusing Electrode Circuit Resistance . . . . . . . 0.1 min. megohm

Protective resistance in Grid No. 2 and focusing electrical circuits is advisable to prevent damage to tube. If applicable, one resistor common to both circuits may be used.

NOTES:

1. Visual extinction of focused raster.

2. With the combined Grid #1 bias voltage and video-signal voltage adjusted to give an anode current of 150 microamperes on a 15 1/8 x 11 15/16" pattern from RCA 2P21 monoscope or equivalent.

3. Individual tubes will have satisfactory focus at some value between 0 and 500 volts.
Diagram Notes

1. The reference line is determined by the intersection of the plane C-C of gage (EIA No. 126) with the glass funnel.

2. Deflection angle on the diagonal is 114°.

3. Anode terminal aligns with pin No. 4 ± 30 degrees.

4. Use a non-rigidly mounted socket with flexible leads. Bottom circumference of base wafer will fall within 1-3/4 inch diameter circle concentric with the bulb axis.

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