19 INCH, RECTANGULAR, GLASS
FACE PLATE -- SPHERICAL GRAY
FOCUS -- ELECTROSTATIC
NON ION TRAP GUN
DEFLECTION -- MAGNETIC
ALUMINIZED SCREEN
114 DEGREE DEFLECTION
EXTERNAL CONDUCTIVE COATING

LOW GRID NO. 2 VOLTAGE TYPE
FOR CATHODE-DRIVE OPERATION

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DESCRIPTION AND RATING------------------

The 19CKP4 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 for operation at a low Grid No. 2 voltage for use in cathode-drive circuits. 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

Focusing Method .................. Electrostatic
Deflection Angle, Approximate
    Horizontal .................. 102 degrees
    Vertical .................. 87 degrees
    Diagonal .................. 114 degrees
Direct Interelectrode Capacitance
    Cathode to all other electrodes, approximate ... 5 \mu f
    Grid #1 to all other electrodes, approximate ... 6 \mu f
    External Conductive Coating to Anode .......... 1500 max. \mu f
    ................................................. 1000 min. \mu f
Heater Current at 6.3 volts .......... 600 ± 30 ma.
Heater Warm Up Time .............. 11 sec.

OPTICAL DATA

Phosphor Number .................. P4 Aluminized
Light Transmittance at Center (Approx.) .... 78 Percent

CATHODE RAY TUBE DEPARTMENT
GENERAL ELECTRIC
Syracuse, N. Y.

from JEDEC release #3653, March 26, 1962
MECHANICAL DATA

Overall Length: 11 3/4 ± 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 1/2 ± 1/8 inches
Bulb: J149-A1
Bulb Contact: JEDEC No. J1-21
Base: JEDEC No. B7-237 or B7-208
Basing: 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: 22,000 volts
Minimum Anode Voltage: 15,000 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: 300 volts
  Heater positive with respect to cathode: 180 volts

TYPICAL OPERATING CONDITIONS (Cathode Drive Service)

Anode Voltage: 18,000 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 2F21 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.