

Television Picture Tube

Westinghouse



Type: 19GEP4

19" Black & White
 Banded with Mounting Lugs Implosion Protection
 114° Diagonal Magnetic Deflection
 172 Square Inch Screen
 6.3 Volt, 0.45 Ampere Heater
 400 Volt Grid 2

Electrical

Focusing Method . . . Low Voltage Electrostatic
 Deflection Method Magnetic
 Deflection Angles (Approx.):

Diagonal 114 Degrees
 Horizontal 102 Degrees
 Vertical 86 Degrees

Direct Interelectrode Capacitances:

Cathode to All Other Electrodes
 (Approx.) 5 pF

Grid No. 1 to All Other Electrodes
 (Approx.) 6 pF

External Conductive Coating to Anode:
 (Note 1)

Minimum 1250 pF
 Maximum 1750 pF

Resistance Between External Conductive Coating and Implosion Protection

Hardware (minimum) 5 Megohms
 Heater Current at 6.3 Volts . . . 450 ± 5% mA
 Heater Warm-up Time (Note 2) . . 11 Seconds

Optical

Phosphor Number Aluminized P4
 Light Transmittance at Center
 (Approx.) 49%

Mechanical

Over-all Length 11.625" ± 0.250"
 Neck Length 4.375" ± 0.125"

Greatest Dimensions of Tube: (Excluding

Mounting Lugs)

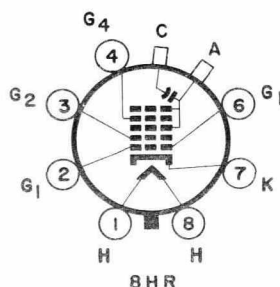
Diagonal 18.733" ± 0.125"
 Width 16.552" ± 0.125"
 Height 13.446" ± 0.125"

Minimum Useful Screen Dimensions (projected):

Diagonal 17.562"
 Horizontal Axis 15.188"
 Vertical Axis 12.000"
 Area 172 Sq. Inches

Implosion Protection Tension Band with Mounting Lugs

Bulb Contact EIA J1-21
 Base EIA B7-208
 Basing EIA 8HR
 Net Weight 15 Pounds
 Bulb EIA J149-F1A

**Ratings**

Unless Otherwise Specified, Voltage Values are Positive and Measured with respect to Grid 1.

Maximum Anode Voltage (Note 3) 23000 Volts
 Minimum Anode Voltage 11000 Volts
 Maximum Grid 4 (Focusing Electrode) Voltage +1100, -550 Volts
 Maximum Grid 2 Voltage 550 Volts
 Minimum Grid 2 Voltage 200 Volts

Cathode Voltage:

Maximum Negative Bias Value 0 Volts
 Maximum Negative Peak Value 2 Volts
 Maximum Positive Bias Value 154 Volts
 Maximum Positive Peak Value 220 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 300 Volts

Heater Positive with respect to Cathode 200 Volts

Limiting Circuit Values

Maximum Grid 1 Circuit Resistance 1.5 Megohms
 Minimum Grids 2 & 4 Circuit Resistance (Note 4) 10000 Ohms

Typical Cathode Drive Operation

Unless Otherwise Specified, Voltage Values are Positive with respect to Grid 1.

Anode Voltage (Note 3) 18000 Volts
 Grid 4 Voltage (Focusing Electrode) 0 to 400 Volts
 Grid 2 Voltage 400 Volts
 Cathode Voltage for Raster Cut-off 36 to 78 Volts

Notes

1. Includes implosion protection hardware.
2. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times rated heater voltage divided by rated heater current.
3. Operation with voltage in excess of 16KV may require shielding to limit radiation of very soft X-rays.
4. Protective resistance in the grids 2 & 4 circuits is advisable to prevent damage.

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