

Westinghouse



Television Picture Tube

20" Black & White
 Tension Band Implosion Protection
 114° Diagonal Deflection
 184 Square Inch Screen
 6.3 Volt, 0.45 Ampere Heater
 30 Volt Grid 2 - 20AEP4

Electrical

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

Diagonal 114 Degrees
 Horizontal 99 Degrees
 Vertical 82 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:
 Minimum 1500 pF
 Maximum 2200 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 1) . . 11 Seconds

Optical

Phosphor Number Aluminized P4
 Light Transmittance at Center
 (Approx.) 44%

Mechanical

Over-all Length 12.269" ± 0.250"
 Neck Length 4.375" ± 0.125"
 Greatest Dimensions of Tube:
 Diagonal 19.796" ± 0.110"
 Width 16.867" ± 0.100"
 Height 13.562" ± 0.100"
 Minimum Useful Screen Dimensions
 (projected):
 Diagonal 18.625"
 Horizontal Axis 15.500"
 Vertical Axis 12.125"
 Area 184 Sq. Inches
 Implosion Protection Tension Band
 Bulb Contact EIA J1-21
 Base EIA B7-208
 Basing EIA 8HR
 Net Weight 20 Pounds
 Bulb EIA J157½A1

Ratings

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

Maximum Anode Voltage (Note 2) 23500 Volts
 Minimum Anode Voltage 12000 Volts
 Maximum Grid 4 (Focusing Electrode) Voltage +1100, -550 Volts
 Maximum Grid 2 Voltage 60 Volts
 Minimum Grid 2 Voltage 20 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 200 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 3) 10000 Ohms

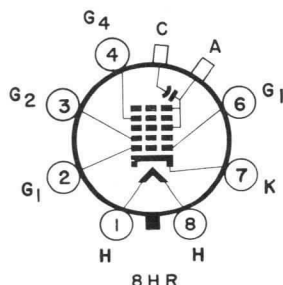
Typical Cathode Drive Operation

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

Anode Voltage (Note 2) 16000 Volts
 Grid 4 Voltage (Focusing Electrode) 0 to 400 Volts
 Grid 2 Voltage 30 Volts
 Cathode Voltage for Raster Cutoff 30 to 45 Volts

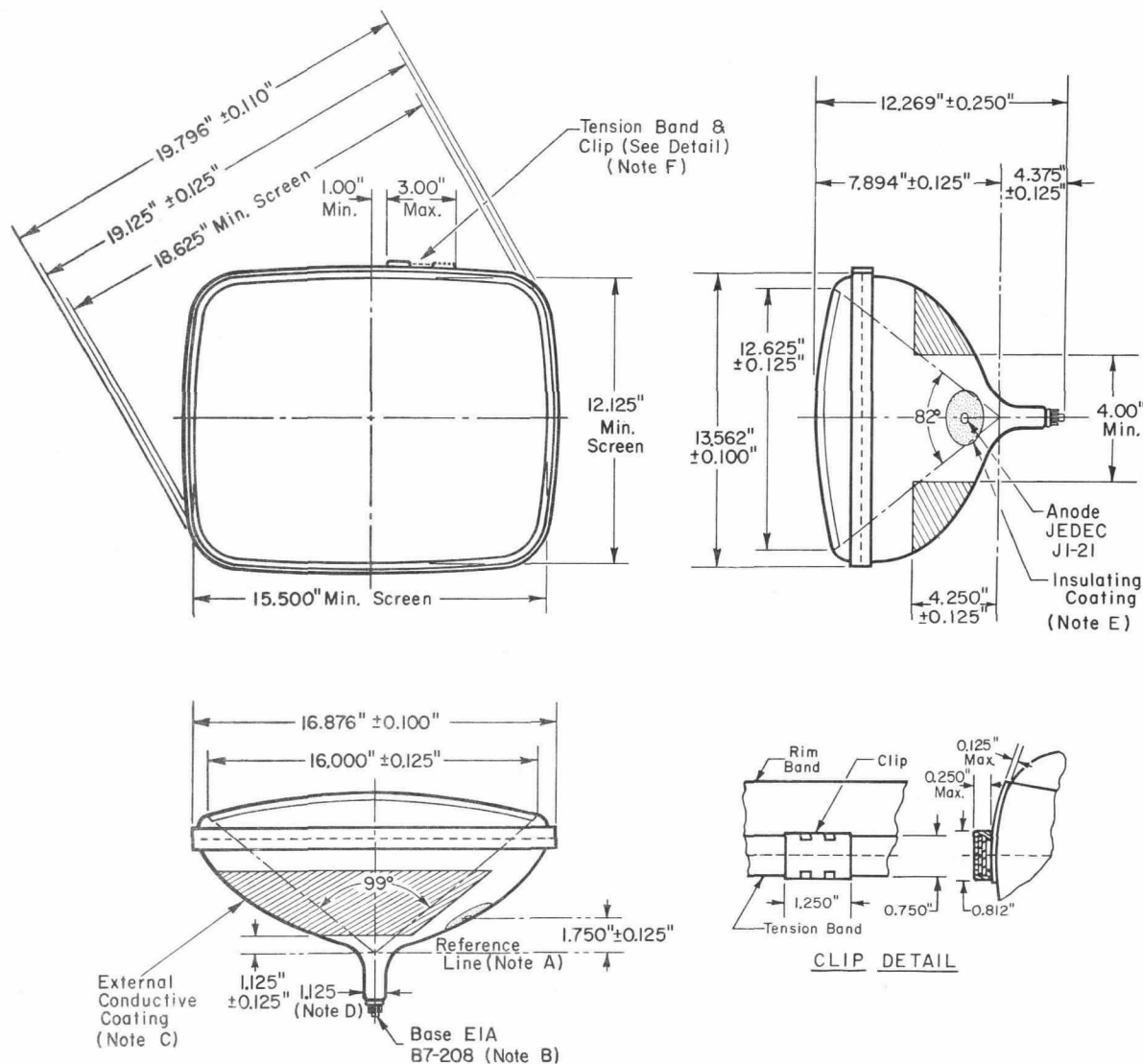
Notes

1. 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.
2. Operation with voltage in excess of 16KV may require shielding to limit radiation of very soft X-rays.
3. Protective resistance in the grids 2 & 4 circuits is advisable to prevent damage.



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Outline Notes

- Yoke Reference Line is determined by plane surface of flared end of JEDEC Reference Line Gauge No. 126 when seated on funnel of tube.
- Lateral strains on base pins must be avoided. The socket should have flexible leads permitting movement. The perimeter of the base wafer will be inside a 1.750" diameter circle concentric with tube axis. Base pin 4 aligns with major axis within 30° and is on same side as anode terminal.
- External conductive coating forms supplementary filter capacitance and must be grounded.
- Neck diameter may be a maximum of 1.168" at the splice.
- Transparent insulating coating, 3" in diameter. Clean only with soft, dry, lintless cloth.
- Tension and rim bands must be grounded. The tension band will not extend in front of the rim band anywhere along the perimeter.
- The maximum dimensions are to the outside of the tension band.