TELEVISION PICTURE TUBE TYPE 24ATP4

90° Deflection
Rectangular Glass
Magnetic Deflection
Cathode Drive Design

Electrostatic Focus
No Ion Trap
Aluminized

21-1/2" x 16-31/32" Picture
Spherical Faceplate
External Conductive Coating
Low G2 (50 Volts)

ELECTRICAL:
Cathode: .................................. Coated Unipotential
Heater: ................................. 6.3 Volts
Voltage (ac or dc) .................. 6.3 Volts
Current: .......................... 0.6 Ampere
Warming Time: .................. 11.0 Seconds
Direct Interelectrode Capacitance:
Grid 1 to all other Electrodes .......... 6 uuf
Cathode to all other Electrodes .......... 5 uuf
External Conductive Coating to Anode:
Maximum: .................. 2500 uuf
Minimum: ................ 2000 uuf
Screen: ........................................ Aluminized P4
Phosphor: .................................... White
Fluorescence: ............................ Short
Persistence: .............................. Short
Focusing Method: ............. Electrostatic
Deflection Method: ........... Magnetic
Horizontal Angle, approx. .... 85°
Vertical Angle, approx. ........... 68°
Diagonal Angle, approx. .............. 90°
No Ion Trap Gun: ................... No Magnet Required

MAXIMUM RATINGS, Cathode Drive Service:
Design Center Values:
Anode Voltage ................................ 20000 max. Volts
Grid 4 to Grid 1 Voltage:
Positive Value: ............................. 1000 max. Volts
Negative Value: ......................... 500 max. Volts
Grid 2 to Grid 1 Voltage ................. 68 max. Volts
Cathode to Grid 1:
Negative Bias Value .................. 140 max. Volts
Positive Bias Value .................. 0 max. Volts
Positive Peak Value .................. 0 max. Volts
Peak Heater-Cathode Voltage:
Heater Positive with Respect to Cathode .... 180 max. Volts
Heater Negative with Respect to Cathode ...... 180 max. Volts

TYPICAL OPERATING CONDITIONS, Cathode Drive Service:
Anode Voltage ..................... 14000 18000 Volts
Grid 2 to Grid 1 Voltage ................. 50 50 Volts
Grid 4 to Grid 1 Voltage for Focus with anode
Current of 200 amperes ........... +50 to 350 0 to 400 Volts
Cathode to Grid 1 Voltage for Visual Extension of Focused Raster* ....... +32 to +47 +34 to +49 Volts

LIMITING CIRCUIT VALUES:
Grid 1 Circuit Resistance .......... 1.5 max. Megohms
Grid 2 Circuit Resistance** ........... 0.1 min. Megohms
Grid 4 Circuit Resistance** ........... 0.1 min. Megohms

* A peak value of 410 volts design center maximum may be applied for not more than 15 seconds during equipment warm-up periods.
† Brilliance and definition decrease with decreasing anode voltage. In general, anode voltage should not be less than 12000 volts.

** Protective resistance in the G2 and G4 circuits is advisable to prevent damage to the tube.

Inasmuch as the tube rating permits operation at voltages as high as 22 kilovolts (absolute value), shielding of the tube for x-ray radiation may be needed whenever the operating conditions involve voltage in excess of 16 kilovolts.

WESTINGHOUSE ELECTRIC CORPORATION, ELECTRONIC TUBE DIVISION, ELMIRA, NEW YORK
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OUTLINE DRAWING

NOTE 1: The plane through the tube axis and the base pin No. 6 may vary from the plane through the tube axis and the bulb terminal by an angular tolerance of ±30° measured about the tube axis. The bulb terminal is on the same side of the tube as pin No. 6.

NOTE 2: With the tube neck inserted through the flared end of REFERENCE-Line Gauge (JETEC No. 116) and with the tube seated in the gauge, the reference line is determined by the intersection of the plane c° (face of the flared end) of the gauge with the glass funnel.

NOTE 3: The socket should not be mounted rigidly but it should be allowed to move freely and it should have flexible leads. The bottom circumference of the base shell will lie within a circle concentric with the bulb axis and having a diameter of 2 3/4".

NOTE 4: External conductive coating must be grounded.

NOTE 5: Contact area of external conductive coating 2" min. x 2" min. located 2" ± 1/4" from Reference Line 90° counterclockwise from anode button as viewed from base end of tube.

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