HIGH-VACUUM CATHODE-RAY TUBE

General:
Heater, for Unipotential Cathode:
Voltage. 2.5 ± 10% ac or dc volts
Current. 2.1 amp.
Direct Interelectrode Capacitances:
Grid to All Other Electrodes. 9.0 μf
DJ1 to All Other Electrodes. 8.5 μf
DJ2 to All Other Electrodes. 6.5 μf
Phosphor. No. 5
Fluorescence. Bluish
Persistence. Brightness negligible in less than 30 microseconds

Focusing Method. Electrostatic
Deflection Method. Electrostatic
Overall Length. 11-1/2" ± 3/8"
Greatest Diameter of Bulb. 3" ± 1/16"
Minimum Useful Screen Diameter. 2-3/4"
Mounting Position. Any
Base. Medium 7-Pin

Basing Designation for BOTTOM VIEW. 7AN
Pin 1-Heater
Pin 2-Grid
Pin 3-Deflecting Electrode DJ3
Pin 4-Anode No.1
Pin 5-Deflecting Electrode DJ1
Pin 6-Anode No.2
Pin 7-Heater

DJ1 and DJ2 are nearer the screen
DJ3 and DJ4 are nearer the base

With DJ4 (pin 6) positive with respect to DJ3 (pin 3), the spot is deflected approximately toward pin 6. With DJ2 (pin 6) positive with respect to DJ1 (pin 5), the spot is deflected approximately toward pin 1.

The angle between the trace produced by DJ3 and DJ4 and its intersection with the plane through the tube axis and pin 5 does not exceed 10°.

The angle between the trace produced by DJ3 and DJ4 and the trace produced by DJ1 and DJ2 is 90° ± 30°.

Maximum Ratings, Absolute Values:
ANODE No.2 VOLTAGE. 1650 max. volts
ANODE No.1 VOLTAGE. 1100 max. volts
GRID (CONTROL ELECTRODE) VOLTAGE RANGE. 0 (never +) to -125 max. volts
PEAK VOLTAGE BETWEEN ANODE No.2 and ANY DEFLECTING ELECTRODE. 660 max. volts
Typical Operation and Characteristics:

Anode No.2 Voltage * ........................................ 1000 1500 ... volts
Anode No.1 Voltage for Focus at
75% of Grid Voltage for Cutoff* .................................. 285 430 approx. volts
Grid Voltage for Visual Cutoff # .................................. -33 -50 ... volts
Max. Anode No.1 Current** ............................................ 1390 microamp.

Deflection Sensitivity:
DJ₁ and DJ₂ ........................................ 0.33 0.22 ... mm/v dc
DJ₃ and DJ₄ ........................................ 0.35 0.23 ... mm/v dc

Deflection Factor: ∆
DJ₁ and DJ₂ .............................................. 76 114 ... v dc/in.
DJ₃ and DJ₄ .............................................. 73 109 ... v dc/in.

* Brilliance and definition decrease with decreasing anode No.2 voltage. In general, anode No.2 voltage should not be less than 1000 volts.
* Individual tubes may require between ±25% and ±30% of the values shown with grid voltages between zero and cutoff.
# Visual extinction of stationary focused spot. For cutoff, supply should be adjustable to ±50% of these values.
∆ Individual tubes may vary from these values by ±20%.
** Under conditions with anode No.2 volts =1500, anode No.1 volts adjusted for focus, and grid volts = 0.

Spot Position:

The undeflected focused spot will fall within a 15-mm square centered at the geometric center of the tube face and having one side parallel to the trace produced by DJ₁ and DJ₂. Suitable test conditions are: anode No.2 voltage, 1500 volts; anode No.1 voltage, adjusted for focus; deflecting electrode resistors, 1 megohm each, connected to anode No.2; the tube shielded from all extraneous fields. To avoid damage to the tube, make the test with the grid voltage near cutoff.

Maximum Circuit Values:

Grid–Circuit Impedance. .......................... 1.5 max. megohms
Impedance of Any Deflecting–Electrode Circuit at Heater–Supply Frequency ........................................ 1.0 max. megohm
Resistance in Any–Deflecting–Electrode Circuit ........................................ 5.0 max. megohms
HIGH-VACUUM CATHODE-RAY TUBE

$3'' \pm \frac{1}{16}''$ SCREEN RADIUS

$1\frac{3}{8}''$ MIN.

$\frac{3}{4}''$ R.

$\frac{5}{8}''$

$11\frac{1}{2}'' \pm \frac{3}{8}''$

$10\frac{7}{8}'' \pm \frac{3}{8}''$

$1\frac{3}{8}'' \\ \pm \frac{1}{16}''$

MEDIUM 7-PIN BASE

$\phi$ OF BULB WILL NOT DEVIATE MORE THAN $2^\circ$ IN ANY DIRECTION FROM PERPENDICULAR ERECTED AT CENTER OF THE BOTTOM OF THE BASE.
AVERAGE CHARACTERISTICS

$E_f = 2.5$ VOLTS

FOCUSING ELECTRODE (ANODE N81) VOLTS
ADJUSTED TO GIVE FOCUS

HIGH-VOLTAGE ELECTRODE (ANODE N22) MICROAMPERES

CONTROL ELECTRODE VOLTS