17HP4-B
CATHODE-RAY TUBE

17-INCH RECTANGULAR, GLASS
FOCUS—LOW VOLTAGE ELECTROSTATIC
DEFLECTION—MAGNETIC
70-DEGREE DEFLECTION ANGLE

14¼- BY 10¾-INCH PICTURE SIZE
FACEPLATE—SPHERICAL, GRAY
ION-TRAP GUN
EXTERNAL CONDUCTIVE COATING
ALUMINIZED SCREEN

DESCRIPTION AND RATING

The 17HP4-B is an electrostatic-focus and magnetic-deflection, direct-view all-glass picture tube which provides a 14¼- by 10¾-inch picture for television applications. The electron gun has a focusing voltage range of $-0.4$ to $+2.2$ percent of the anode voltage and is designed for use with an external single-field ion-trap magnet. Other features of this tube include a high-quality gray faceplate which increases picture contrast and detail under high-ambient-light conditions, a reflective aluminized screen to increase light output, and a space-saving rectangular face shape. An external conductive coating serves as a filter capacitor when grounded.

GENERAL

ELECTRICAL
Heater Voltage ................................................................. .63 Volts
Heater Current ................................................................. $0.6 \pm 10\%$ Amperes

Focusing Method—Electrostatic
Deflecting Method—Magnetic
Deflection Angle, approximate
  Diagonal ........................................................................... 70 Degrees
  Horizontal ......................................................................... 65 Degrees
  Vertical ............................................................................ 50 Degrees

Direct Interelectrode Capacitances, approximate
  Cathode to All Other Electrodes ............................................ .5 $\mu\mu f$
  Grid-No. 1 to All Other Electrodes ........................................ .6 $\mu\mu f$
  External Conductive Coating to Anode
    Maximum ......................................................................... 1500 $\mu\mu f$
    Minimum ......................................................................... .750 $\mu\mu f$

OPTICAL
Phosphor Number—P4, Sulfide Type
  Fluorescent Color—White
  Phosphorescent Color—White
  Persistence—Short

Faceplate—Gray
  Light Transmission at Center, approximate .......................... .72 Percent
MECHANICAL

Over-all Length ........................................ 19\frac{3}{4} \pm \frac{3}{8} \text{ inches}

Greatest Bulb Dimensions

Diagonal ........................................ 16\frac{3}{8} \pm \frac{3}{32} \text{ inches}
Width ........................................ 15\frac{3}{8} \pm \frac{3}{32} \text{ inches}
Height ........................................ 12\frac{3}{4} \pm \frac{3}{8} \text{ inches}

Minimum Useful Screen Dimensions

Diagonal ........................................ 15\frac{1}{2} \text{ inches}
Width ........................................ 14\frac{1}{4} \text{ inches}
Height ........................................ 10\frac{3}{4} \text{ inches}
Neck Length ...................................... 7\frac{1}{2} \text{ inches}

Bulb Number, ASA Designation—J133-A1 or -B1
Bulb Contact—Recessed Small-cavity Cap, JETEC No. J1-21
Base—Small-shell Duodecal 6-Pin, JETEC No. B6-63
Basing, JETEC Designation—12L
Bulb Contact Alignment

Anode Contact Aligns with Pin No. 6 \pm 30 Degrees

Mounting Position—Any
Net Weight, approximate ................................ 16 \text{ pounds}

MAXIMUM RATINGS

DESIGN-CENTER VALUES *

Anode Voltage† ........................................ 16,000 \text{ Max Volts DC}
Focusing-Electrode Voltage ................................ -500 to +1000 \text{ Max Volts DC}
Grid-No. 2 Voltage .................................... 500 \text{ Max Volts DC}
Grid-No. 1 Voltage
Negative-Bias Value .................................... 125 \text{ Max Volts DC}
Positive-Bias Value .................................... 0 \text{ Max Volts DC}
Positive-Peak Value .................................... 2 \text{ Max Volts}

Peak Heater-Cathode Voltage §

Heater Negative with Respect to Cathode
During Warm-up Period not to Exceed 15 Seconds ................................ 410 \text{ Max Volts}
After Equipment Warm-up Period ................................ 180 \text{ Max Volts}
Heater Positive with Respect to Cathode ................................ 180 \text{ Max Volts}

TYPICAL OPERATING CONDITIONS

Anode Voltage\pi .................................... 14,000 \text{ Volts DC}
Focusing-Electrode Voltage for Focus\▲ ................................ -56 to +308 \text{ Volts DC}
Focusing-Electrode Current ................................ -15 to +25 \text{ Microamperes DC}
Grid-No. 2 Voltage .................................... 300 \text{ Volts DC}
Grid-No. 1 Voltage\ dagger ................................ -28 to -72 \text{ Volts DC}
Ion-Trap Field Intensity$\phi, \text{ approximate} ................................ 37 \text{ Gausses}

MAXIMUM CIRCUIT VALUES

Grid-No. 1 Circuit Resistance ................................ 1.5 \text{ Max Megohms}

*The maximum ratings provide a ten-percent safety factor in accordance with the standard design-center system of rating cathode-ray tubes. The tube will withstand the combined effects of variations in line voltages and components provided the maximum design-center values are not exceeded by more than ten percent.
†Anode, grid-No. 3, and grid-No. 5 which are connected together within the tube are referred to herein as anode.
§Cathode should be returned to one side or to the midtap of the heater transformer winding.
γBrightness and focus quality decrease with decreasing anode voltage. In general, the anode voltage should not be less than 12,000 volts.
▲The focusing electrode may be modulated within the stipulated maximum range without damage to the tube.
✦For visual extinction of focused raster.
ϕSingle-field ion-trap magnet adjusted to optimum position, equivalent to 37 milliamperes through JETEC ion-trap magnet No. 117.

SCREEN DIMENSIONS:
DIAGONAL 15-1/2"
WIDTH 14-1/4"
HEIGHT 10-3/4"

NOTES:
1. REFERENCE LINE IS DETERMINED BY THE PLANE OF THE UPPER EDGE OF THE REFERENCE-LINE GAGE (RETMA NO. 110) WHEN THE GAGE IS RESTING ON THE CONE.
2. DEFLECTION ANGLE ON DIAGONAL IS 70 DEGREES
3. ANODE TERMINAL ALIGNS WITH PIN-NO. 6 ± 30 DEGREES.
4. APPROXIMATE POSITION OF ION-TRAP MAGNET.
5. APPROXIMATE POSITION OF CENTERING MAGNET, IF USED.