17FP4-A
CATHODE-RAY TUBE

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

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

DESCRIPTION AND RATING

The 17FP4-A 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 19.1 to 25.9 percent of the anode voltage and is used 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 and a space-saving rectangular face shape. An external conductive coating serves as a filter capacitor when grounded.

GENERAL

ELECTRICAL
Heater Voltage .................................................. 6.3 Volts
Heater Current ................................................ 0.6 ± 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 uuf
Grid-No. 1 to All Other Electrodes ............................ 6 uuf
External Conductive Coating to Anode
Maximum .................................................. 2000 uuf
Minimum ............................................... 750 uuf

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\(\frac{1}{2}\) ± \(\frac{3}{8}\) Inches

Greatest Bulb Dimensions

Diagonal .................................................. 16\(\frac{1}{2}\) ± \(\frac{3}{4}\) Inches
Width .................................................. 15\(\frac{2}{8}\) ± \(\frac{1}{6}\) Inches
Height .................................................. 12\(\frac{1}{4}\) ± \(\frac{1}{6}\) Inches

Minimum Useful Screen Dimensions

Diagonal .................................................. 15\(\frac{1}{2}\) Inches
Width .................................................. 14\(\frac{3}{4}\) Inches
Height .................................................. 10\(\frac{3}{4}\) Inches
Neck Length .................................................. 7\(\frac{1}{2}\) 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 ± 30 Degrees

Mounting Position—Any
Net Weight, approximate ........................................... 16 Pounds

MAXIMUM RATINGS

DESIGN-CENTER VALUES*

Anode Voltage† .................................................. 18,000 Max Volts DC
Focusing-Electrode Voltage .................................. 5000 Max Volts DC
Focusing-Electrode Current‡ .................................. -15 to +25 Microamperes DC
Grid-No. 2 Voltage ............................................. 500 Max Volts DC
Grid-No. 1 Voltage
Negative-Bias Value ........................................... 125 Max Volts DC
Positive-Bias Value ............................................... 0 Max Volts DC
Positive-Peak Value ............................................. 2 Max Volts

Peak Heater-Cathode Voltage§
Heater Negative with Respect to Cathode
During Warm-up Period not to Exceed 15 Seconds ..................... 410 Max Volts
After Equipment Warm-up Period .................................. 180 Max Volts
Heater Positive with Respect to Cathode ................................ 180 Max Volts

TYPICAL OPERATING CONDITIONS

Anode Voltageπ .................................................. 14,000 Volts DC
Focusing-Electrode Voltage for Focus▲ ................................ 2650 to 3650 Volts DC
Grid-No. 2 Voltage ............................................... 300 Volts DC
Grid-No. 1 Voltage▲ ............................................. -28 to -72 Volts DC
Ion-Trap Field Intensityφ, approximate ................................ 35 Gausses

MAXIMUM CIRCUIT VALUES

Grid-No. 1 Circuit Resistance ...................................... 1.5 Max Meghoms

*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 voltage 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.

If this tube is operated at voltages in excess of 16,000 volts, x-ray radiation shielding may be necessary to avert possible danger of personal injury from prolonged exposure at close range. The protective face-viewing window of apparatus using tubes of this type may provide such a safeguard. If the radiation measured in contact with this window does not exceed 6.25 miliroentgens per hour, the window will normally provide adequate protection.

‡At design-center maximum anode voltage plus ten percent.

§Cathode should be returned to one side or to the midtap of the heater transformer winding.

πBrightness 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.

◦Single-field ion-trap magnet adjusted to optimum position, equivalent to 35 milliamperes through JETEC ion-trap magnet No. 117.

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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.