10FP4-A
CATHODE-RAY TUBE

10-INCH ROUND, GLASS
FOCUS—MAGNETIC
DEFLECTION—MAGNETIC
50-DEGREE DEFLECTION ANGLE

9½- BY 6¾-INCH PICTURE SIZE
FACEPLATE—SPHERICAL, GRAY
EXTERNAL CONDUCTIVE COATING
ALUMINIZED SCREEN

DESCRIPTION AND RATING

The 10FP4-A is a magnetic-focus and deflection, direct-view all-glass picture tube which provides a 9½- by 6¾-inch picture for television applications. The electron gun does not require an external 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 reflective aluminized screen to increase light output and prevent ion-spot blemish. 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—Magnetic
Deflecting Method—Magnetic
Deflection Angle, approximate .................................. 50 Degrees

Direct Interelectrode Capacitances, approximate
  Cathode to All Other Electrodes ............................ .5 µµf
  Grid-No. 1 to All Other Electrodes ........................ .6 µµf
  External Conductive Coating to Anode
     Maximum ................................................. 2500 µµf
     Minimum ................................................. .500 µµf

OPTICAL

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

Faceplate—Gray
  Light Transmission at Center, approximate .................. 74 Percent
MECHANICAL

Over-all Length .................................................. 17\(\frac{3}{4}\) ± 3\(\frac{1}{6}\) Inches
Greatest Bulb Diameter ........................................... 10\(\frac{1}{2}\) ± 3\(\frac{1}{6}\) Inches
Minimum Useful Screen Diameter ................................. 9\(\frac{3}{4}\) Inches
Neck Length .......................................................... 8\(\frac{1}{4}\) Inches

Bulb Number, ASA Designation—J84C
Bulb Contact—Recessed Small-cavity Cap, Jetec No. J1-21
Base—Small-shell Duodecal 5-Pin, Jetec No. B5-57
Basing, Jetec Designation—12N
Bulb Contact Alignment
  Anode Contact Aligns with Pin No. 3 Position ± 30 Degrees

Mounting Position—Any
Net Weight, approximate ........................................ 10\(\frac{1}{2}\) Pounds

MAXIMUM RATINGS

DESIGN-CENTER VALUES*

Anode Voltage† ...................................................... 12,000 Max Volts DC
Grid-No. 2 Voltage .................................................. 410 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 ....................... 140 Max Volts
  Heater Positive with Respect to Cathode ................ 140 Max Volts

TYPICAL OPERATING CONDITIONS

Anode Voltage§ ..................................................... 11,000 Volts DC
Grid-No. 2 Voltage ................................................ 300 Volts DC
Grid-No. 1 Voltage ................................................ -28 to -72 Volts DC
Focusing-Coil Current\(\uparrow\), approximate .................. 100 Milliamperes DC

MAXIMUM CIRCUIT VALUES

Grid-No. 1 Circuit Resistance .................................... 1.5 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 voltage and components provided the maximum design-center values are not exceeded by more than ten percent.
† Anode and grid-No. 3 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.
§ Brightness and focus quality decrease with decreasing anode voltage. In general, the anode voltage should not be less than 8,000 volts.
π For visual extinction of focused raster.
▲ For RETMA focusing coil No. 109 with distance from the yoke-reference-line to center-of-air-gap equal to 4½-inches.

NOTES:
1. REFERENCE LINE IS DETERMINED BY THE PLANE OF THE UPPER EDGE OF THE REFERENCE-LINE GAGE (RETMA NO. 112) WHEN THE GAGE IS RESTING ON THE CONE.
2. ANODE TERMINAL ALIGNS WITH PIN-NO. 3 POSITION ± 30 DEGREES.
3. APPROXIMATE POSITION OF ION-TRAP MAGNET, APPLIES ONLY TO IOBP4 AND IOBP4-A.
4. RECOMMENDED POSITION FOR CENTER OF FOCUSING FIELD.