17QP4
CATHODE-RAY TUBE

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

14 ¼- BY 10 ¾-INCH PICTURE SIZE
FACEPLATE—CYLINDRICAL, GRAY
ION-TRAP GUN
EXTERNAL CONDUCTIVE COATING

DESCRIPTION AND RATING

The 17QP4 is a magnetic-focus and deflection, direct-view all-glass picture tube which provides a 14 ¼- by 10 ¾-inch picture for television applications. The electron gun 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 space-saving rectangular face shape, and a cylindrical front surface which materially reduces the effects of specular reflection. 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
  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 .................................................. 1500 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 7/8 ± 3/8 Inches
Greatest Bulb Dimensions
  Diagonal ................................................................. 16 13/32 ± 1/3 Inches
  Width ........................................................................ 15 5/8 ± 1/6 Inches
  Height ....................................................................... 12 7/4 ± 1/8 Inches

Minimum Useful Screen Dimensions
  Diagonal ..................................................................... 15 1/2 Inches
  Width .......................................................................... 14 1/4 Inches
  Height ...................................................................... 10 3/4 Inches
Neck Length .................................................................. 7 1/2 Inches

Bulb Number, ASA Designation—J133-C1
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. 6 position ± 30 Degrees

Mounting Position—Any
Net Weight, approximate ..................................................... 18 Pounds

MAXIMUM RATINGS

DESIGN-CENTER VALUES*

Anode Voltage† ................................................................. 16,000 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 .............................. 150 Max Volts
  Heater Positive with Respect to Cathode .................... 150 Max Volts

TYPICAL OPERATING CONDITIONS

Anode Voltage§ ................................................................. 14,000 Volts DC
Grid-No. 2 Voltage ........................................................... 300 Volts DC
Grid-No. 1 Voltageπ ......................................................... -28 to -72 Volts DC
Focusing-Coil Current▲, approximate ................................ 110 Milliamperes DC
Ion-Trap Field Intensity▼, approximate ............................ 37 Gausses

MAXIMUM CIRCUIT VALUES

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

*The maximum ratings provide a ten-percent safety factor in accordance with 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 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 12,000 volts.
πFor visual extinction of focused raster.
▲For JETEC focusing coil No. 109 with distance from the yoke-reference-line to center-of-air-gap equal to 3 3/4 inches.
▼Single-field ion-trap magnet adjusted to optimum position, equivalent to 37 milliamperes through JETEC ion-trap 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 POSITION ± 30 DEGREES.
4. APPROXIMATE POSITION OF ION-TRAP MAGNET.
5. RECOMMENDED POSITION FOR CENTER OF FOCUSING FIELD.