16WP4-A
CATHODE-RAY TUBE

16-INCH ROUND, GLASS
FOCUS—MAGNETIC
DEFLECTION—MAGNETIC
70-DEGREE DEFLECTION ANGLE

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

DESCRIPTION AND RATING

The 16WP4-A is a magnetic-focus and -deflection, direct-view all-glass picture tube which provides a 14½ by 10¾-inch picture with rounded sides for television applications. Features of this tube include a high-quality gray faceplate to increase picture contrast and detail under high ambient light conditions, and an electron gun which was designed for use with an external double-field ion-trap magnet. An external conductive coating serves as a filter capacitor when grounded.

GENERAL

ELECTRICAL

Heater Voltage ................................................................. .63 Volts
Heater Current ................................................................. 0.6 ± 10% Amperes

Focusing Method—Magnetic
Deflecting Method—Magnetic
Deflection Angle, approximate ............................................. 70 Degrees

Direct Inter-electrode Capacitances, approximate
Cathode to All Other Electrodes ........................................... .5 µF
Grid-No. 1 to All Other Electrodes ........................................ 6 µF
External Conductive Coating to Anode
Maximum ........................................................................... 1500 µF
Minimum ........................................................................... 750 µF

OPTICAL

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

Faceplate—Gray
Light Transmission at Center, approximate ........................... .73 Percent

GENERAL ELECTRIC
MECHANICAL

Over-all Length ................................................. 17\(\frac{3}{4}\) ± \(\frac{3}{6}\) Inches
Greatest Bulb Diameter ........................................ 15\(\frac{3}{6}\) ± \(\frac{3}{8}\) Inches
Minimum Useful Screen Diameter ............................... 14\(\frac{1}{2}\) Inches
Neck Length ...................................................... 7\(\frac{1}{2}\) Inches

Bulb Number, ASA Designation—J127D
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 ...................................... 15\(\frac{1}{2}\) 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 .................. 125 Max Volts
   Heater Positive with Respect to Cathode .................. 125 Max Volts

TYPICAL OPERATING CONDITIONS‡

Anode Voltage‡ ...................................................... 12,000 Volts DC
Grid-No. 2 Voltage ................................................. 300 Volts DC
Grid-No. 1 Voltage§ .............................................. −28 to −72 Volts DC
Focusing-Coil Current\(\pi\), approximate ...................... 104 Milliamperes DC
Ion-Trap Field Intensity \(\Delta\), approximate .................... 35 Gausses

CIRCUIT VALUES

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

* All voltages are measured with respect to cathode.
† 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.
† Brightness and focus quality decrease with decreasing anode voltage. In general, the anode voltage should not be less than 10,000 volts.

§ For visual extinction of focused raster.

π For RETMA focusing coil No. 109 with distance from the yoke reference line to center of air gap equal to 3 3/4 inches.

Δ Double-field ion-trap magnet adjusted to optimum position, equivalent to 120 milliamperes through RETMA ion-trap magnet No. 108.

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. ANODE TERMINAL ALIGNS WITH PIN-NO.3 POSITION ±30 DEGREES.

3. APPROXIMATE POSITION OF ION-TRAP MAGNET.

4. RECOMMENDED POSITION FOR CENTER OF FOCUSING FIELD.