



16WP4-A

CATHODE-RAY TUBE

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

14½ BY 10⅞-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 10⅞-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	6.3 Volts
Heater Current	0.6 ±10% Amperes
Focusing Method—Magnetic	
Deflecting Method—Magnetic	
Deflection Angle, approximate	70 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	1500 μμf
Minimum	750 μμf

OPTICAL

Phosphor Number—P4, Sulfide Type	
Fluorescent Color—White	
Phosphorescent Color—White	
Persistence—Short	
Faceplate—Gray	
Light Transmission at Center, approximate	73 Percent

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MECHANICAL

Over-all Length	17 $\frac{3}{4}$ $\pm$ $\frac{3}{8}$	Inches
Greatest Bulb Diameter	15 $\frac{7}{8}$ $\pm$ $\frac{1}{8}$	Inches
Minimum Useful Screen Diameter	14 $\frac{1}{2}$	Inches
Neck Length	7 $\frac{7}{16}$	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 $\pm$ 30 Degrees

Mounting Position—Any

Net Weight, approximate	15 $\frac{1}{2}$	Pounds
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MAXIMUM RATINGS $\diamond$

DESIGN-CENTER VALUES*

Anode Voltage $\dagger$	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 $\diamond$

Anode Voltage $\ddagger$	12,000	Volts DC
Grid-No. 2 Voltage	300	Volts DC
Grid-No. 1 Voltage $\S$	—28 to —72	Volts DC
Focusing-Coil Current π , approximate	104	Milliamperes DC
Ion-Trap Field Intensity Δ , approximate	35	Gausses

CIRCUIT VALUES

Grid-No. 1 Circuit Resistance	1.5	Max Megohms
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$\diamond$ 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.

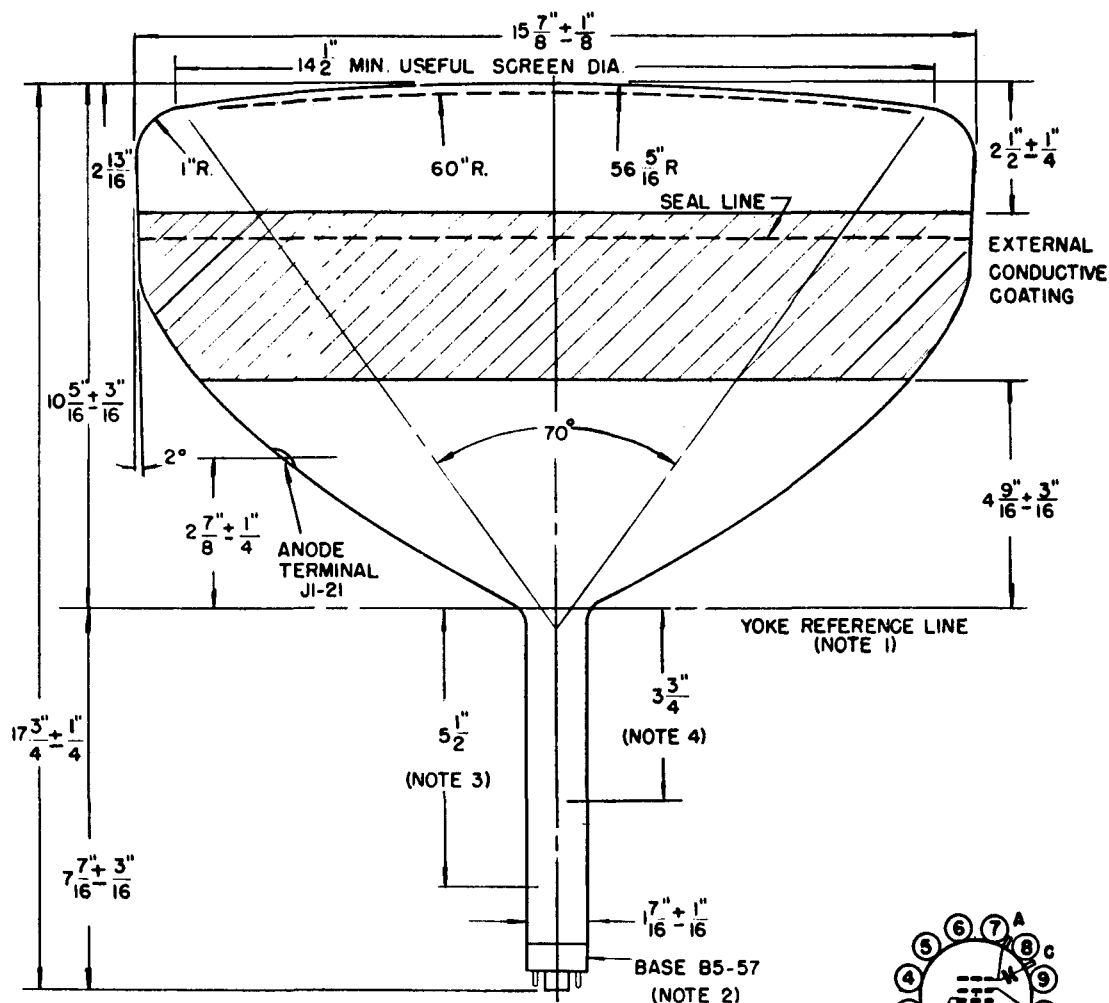
$\dagger$ Anode and grid-No. 3 which are connected together within the tube are referred to herein as anode.

‡ 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 $3\frac{3}{4}$ inches.

△ 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.

