



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 \ddagger	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

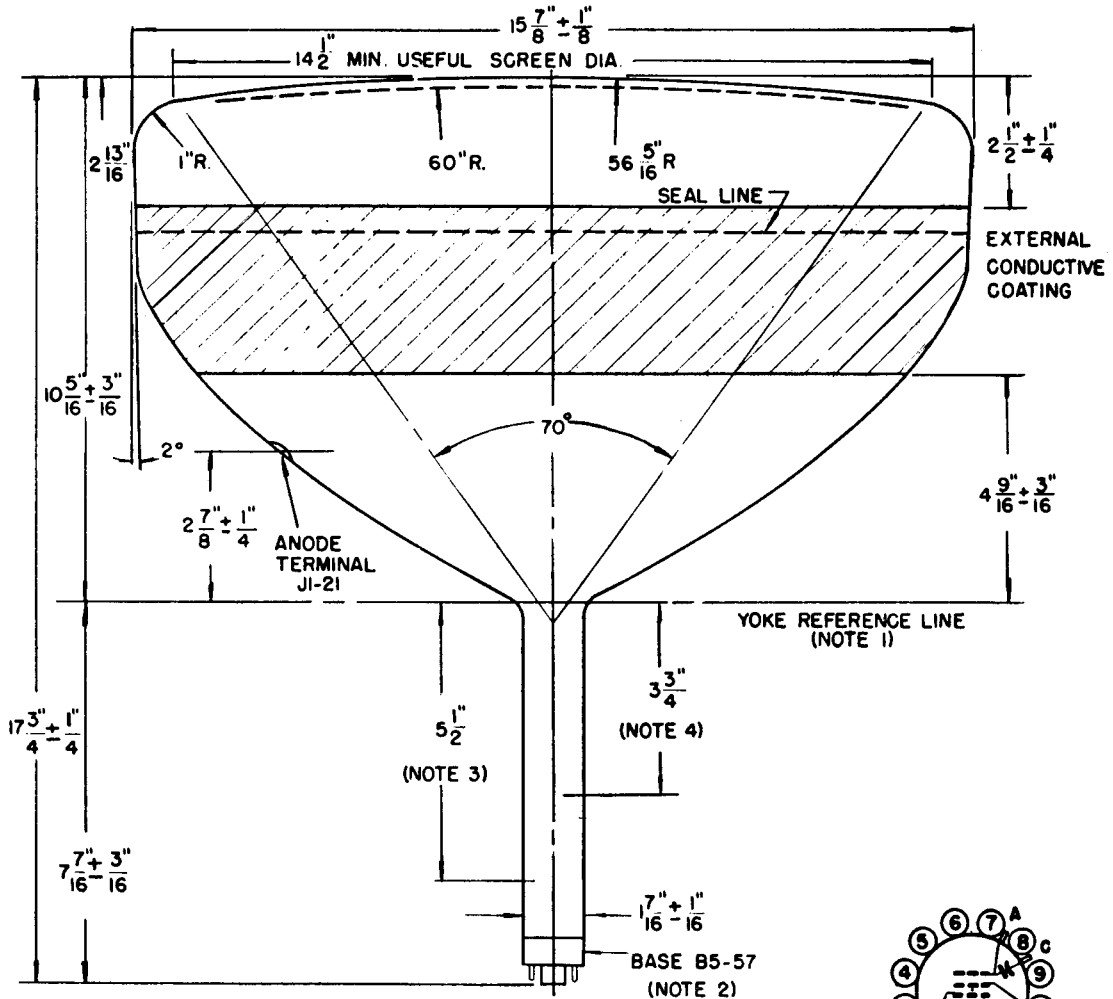
Grid-No. 1 Circuit Resistance	1.5	Max Megohms
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\diamond All voltages are measured with respect to cathode.

* 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.

\ddagger 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 3¾ 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.