



16KP4-A/16RP4-A

CATHODE-RAY TUBE

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ET-T1146A
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16-INCH RECTANGULAR, GLASS
FOCUS—MAGNETIC
DEFLECTION—MAGNETIC
70-DEGREE DEFLECTION ANGLE

13½- BY 10⅛-INCH PICTURE SIZE
FACEPLATE—SPHERICAL, GRAY
ION-TRAP GUN
EXTERNAL CONDUCTIVE COATING

ALUMINIZED SCREEN

DESCRIPTION AND RATING

The 16KP4-A/16RP4-A is a magnetic-focus and deflection direct-view all-glass picture tube which provides a 13½- by 10⅛-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, and a space-saving rectangular face shape. An external conductive coating serves as a filter capacitor when grounded.

The tube also features a reflective aluminized screen which increases light output.

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	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 72 Percent

GENERAL  ELECTRIC

Supersedes ET-T1146 dated 10-54

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MECHANICAL

Over-all Length $18\frac{3}{4} \pm \frac{3}{8}$ Inches

Greatest Bulb Dimensions

Diagonal $16\frac{1}{8} \pm \frac{1}{8}$ Inches

Width $14\frac{3}{4} \pm \frac{1}{8}$ Inches

Height $11\frac{1}{2} \pm \frac{1}{8}$ Inches

Minimum Useful Screen Dimensions

Diagonal $14\frac{7}{8}$ Inches

Width $13\frac{1}{2}$ Inches

Height $10\frac{1}{8}$ Inches

Neck Length $7\frac{1}{2}$ Inches

Bulb Number, ASA Designation—J129B

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 16 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 108 Milliampers DC

Ion-Trap Field Intensity◆, approximate 35 Gauss

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.

§ Brightness and focus quality decrease with decreasing anode voltage. In general, the anode voltage should not be less than 12,000 volts.

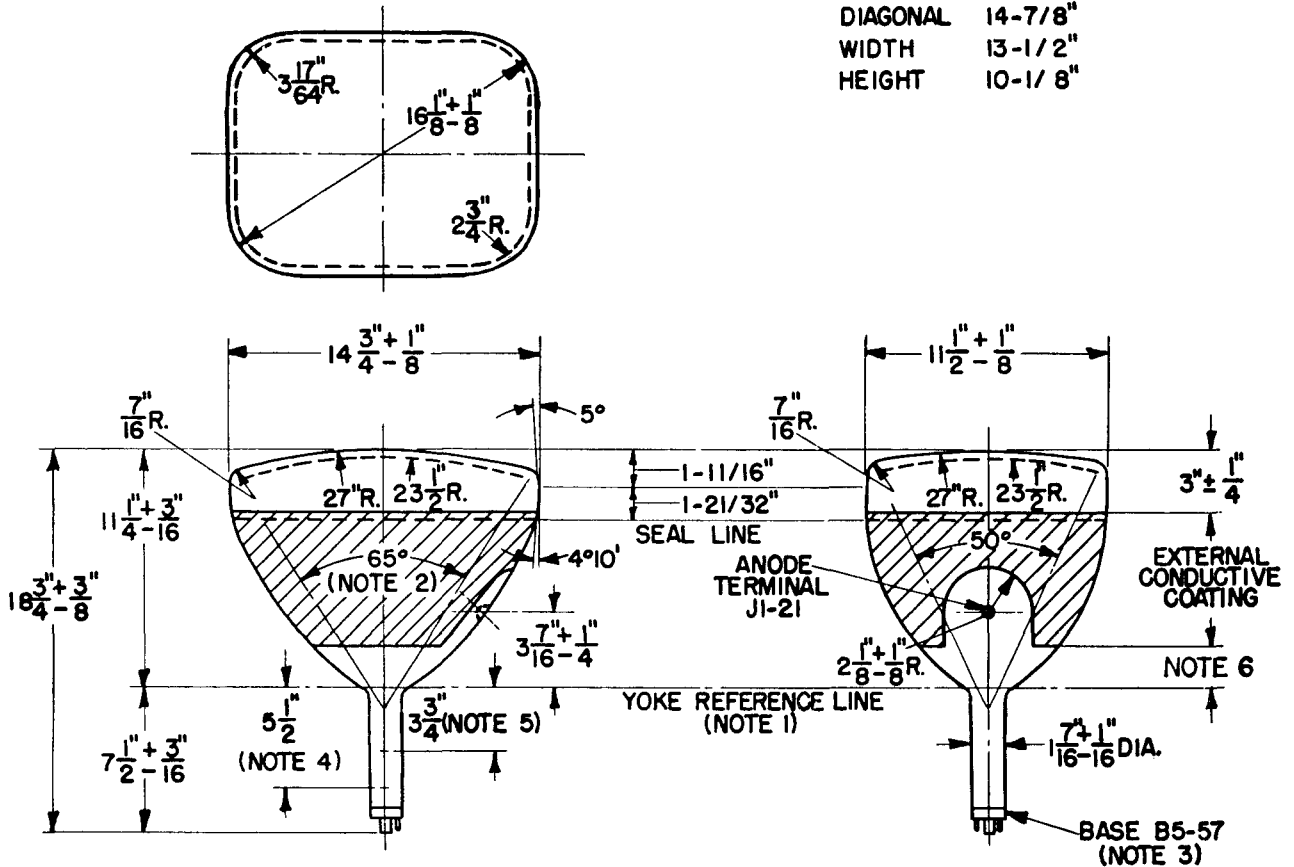
π For visual extinction of focused raster.

▲ For RETMA focusing coil No. 109 with distance from the yoke-reference-line to center-of-air-gap equal to 3¾ inches.

◆ Single-field ion-trap magnet adjusted to optimum position, equivalent to 35 milliamperes through RETMA ion-trap magnet No. 117.

SCREEN DIMENSIONS

DIAGONAL	14-7/8"
WIDTH	13-1/2"
HEIGHT	10-1/8"


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.
6. REFERENCE LINE TO BOTTOM OF EXTERNAL CONDUCTIVE COATING - 9/16" MIN. TO 2-1/4" MAX.

