



# 16KP4-A/16RP4-A CATHODE-RAY TUBE

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



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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  $\pm$  30 Degrees

Mounting Position—Any

Net Weight, approximate .....

	16	Pounds
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## 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
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    After Equipment Warm-up Period .....

	150 Max	Volts
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Heater Positive with Respect to Cathode .....

	150 Max	Volts
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## TYPICAL OPERATING CONDITIONS

Anode Voltage § .....	14,000	Volts DC
Grid-No. 2 Voltage .....	300	Volts DC
Grid-No. 1 Voltage ¶ .....	-28 to -72	Volts DC
Focusing-Coil Current ▲, approximate .....	108	Milliamperes DC
Ion-Trap Field Intensity ◆, approximate .....	35	Gausses

## MAXIMUM CIRCUIT VALUES

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

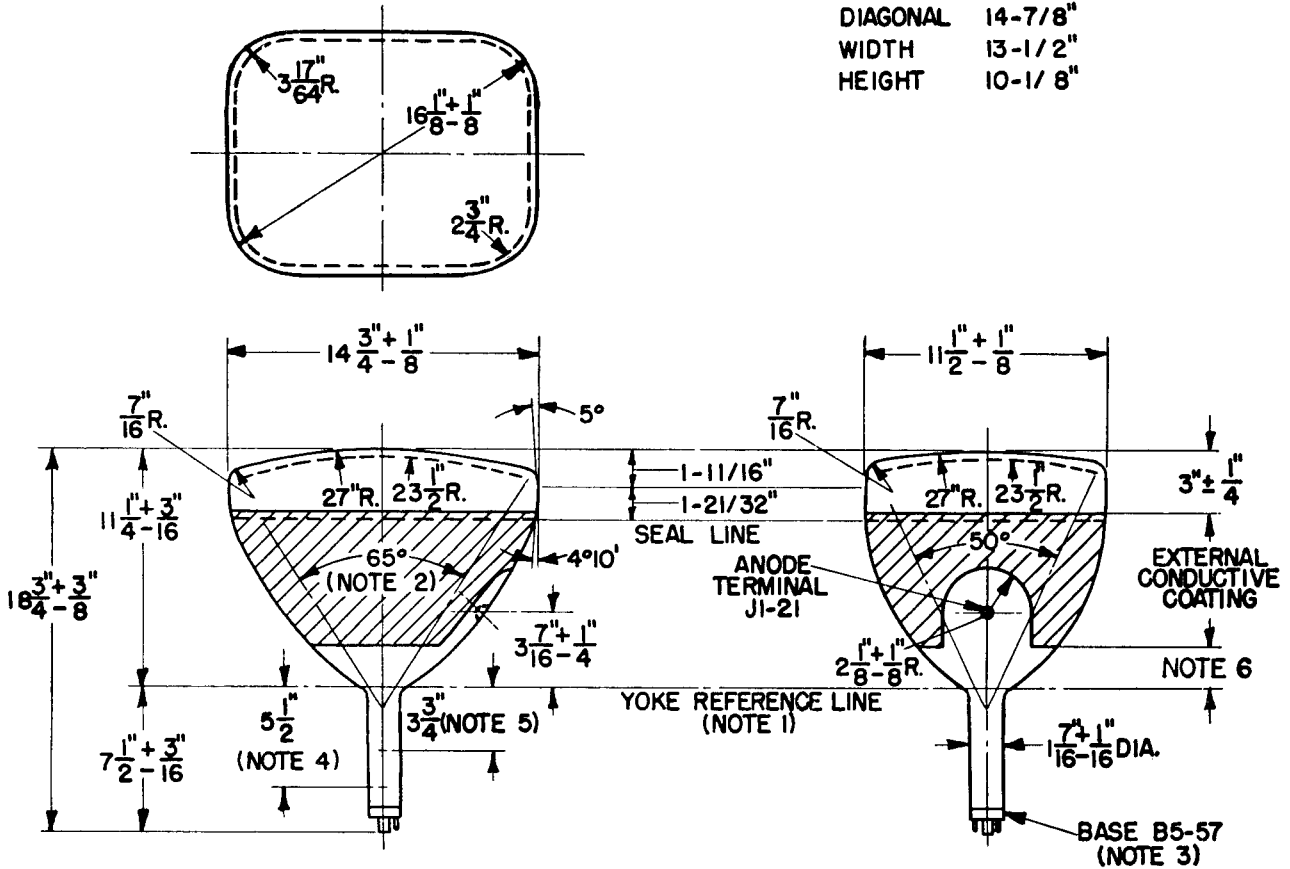
π For visual extinction of focused raster.

▲ 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.

