



14CP4

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ET-T1128
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CATHODE-RAY TUBE

14-INCH RECTANGULAR, GLASS
FOCUS—MAGNETIC
DEFLECTION—MAGNETIC
70-DEGREE DEFLECTION ANGLE

11 $\frac{3}{8}$ - BY 8 $\frac{1}{2}$ -INCH PICTURE SIZE
FACEPLATE—SPHERICAL, GRAY
ION-TRAP GUN
EXTERNAL CONDUCTIVE COATING

DESCRIPTION AND RATING

The 14CP4 is a magnetic-focus and deflection, direct-view all-glass picture tube which provides a 11 $\frac{3}{8}$ - by 8 $\frac{1}{2}$ -inch picture for television applications. The electron gun is used 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.

GENERAL

ELECTRICAL

Heater Voltage 6.3 Volts
Heater Current 0.6 $\pm$ 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 μ f
Grid-No. 1 to All Other Electrodes 6 μ f
External Conductive Coating to Anode
Maximum 2000 μ f
Minimum 750 μ f

OPTICAL

Phosphor Number—P4, Sulfide Type

Fluorescent Color—White

Phosphorescent Color—White

Persistence—Short

Faceplate—Gray

Light Transmission at Center, approximate 74 Percent

GENERAL  ELECTRIC

MECHANICAL

Over-all Length	16¾ ± ⅜	Inches
Greatest Bulb Dimensions		
Diagonal	13⅜ ± ⅜	Inches
Width	12⅞ ± ⅛	Inches
Height	9¾ ± ⅛	Inches

Minimum Useful Screen Dimensions		
Diagonal	12½	Inches
Width	11⅜	Inches
Height	8½	Inches
Neck Length	7½	Inches

Bulb Number, ASA Designation—J109½-C1
 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	10¼	Pounds

MAXIMUM RATINGS

DESIGN-CENTER VALUES*

Anode Voltage†	14,000 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

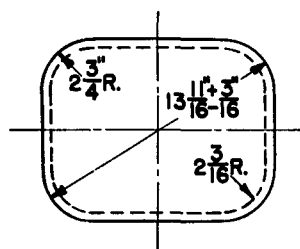
Anode Voltage§	12,000	Volts DC
Grid-No. 2 Voltage	300	Volts DC
Grid-No. 1 Voltageπ	—28 to —72	Volts DC
Focusing-Coil Current▲, approximate	105	Milliamperes DC
Ion-Trap Field Intensity◆, approximate	32	Gausses

MAXIMUM CIRCUIT VALUES

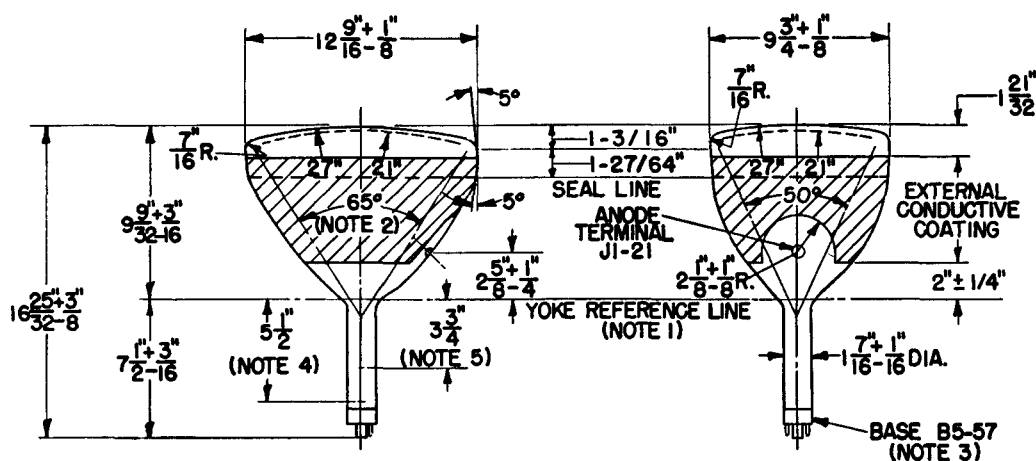
Grid-No. 1 Circuit Resistance	1.5 Max	Megohms
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* The maximum ratings provide a ten-percent safety factor in accordance with the standard design-center system of rating cathode-ray tubes. The tube will withstand the combined effects of variations in 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.

◆ Single-field ion-trap magnet adjusted to optimum position, equivalent to 32 milliamperes through JETEC ion-trap magnet No. 117.



DIAGONAL 12-1/2"
WIDTH 11-3/8"
HEIGHT 8-1/2"



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.

