



14CP4

14CP4
ET-T1128
Page 1
5-54

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	$\mu\mu\text{f}$
Grid-No. 1 to All Other Electrodes	6	$\mu\mu\text{f}$
External Conductive Coating to Anode		
Maximum	2000	$\mu\mu\text{f}$
Minimum	750	$\mu\mu\text{f}$

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 $16\frac{3}{4} \pm \frac{3}{8}$ Inches

Greatest Bulb Dimensions

Diagonal $13\frac{11}{16} \pm \frac{3}{16}$ Inches

Width $12\frac{9}{16} \pm \frac{1}{8}$ Inches

Height $9\frac{3}{4} \pm \frac{1}{8}$ Inches

Minimum Useful Screen Dimensions

Diagonal $12\frac{1}{2}$ Inches

Width $11\frac{3}{8}$ Inches

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

Neck Length $7\frac{1}{2}$ 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 $10\frac{1}{4}$ 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 Voltage¶ -28 to -72 Volts DC

Focusing-Coil Current▲, approximate 105 Milliampères DC

Ion-Trap Field Intensity◆, approximate 32 Gauss

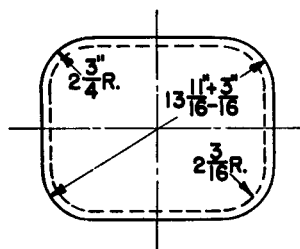
MAXIMUM CIRCUIT VALUES

Grid-No. 1 Circuit Resistance 1.5 Max Megohms

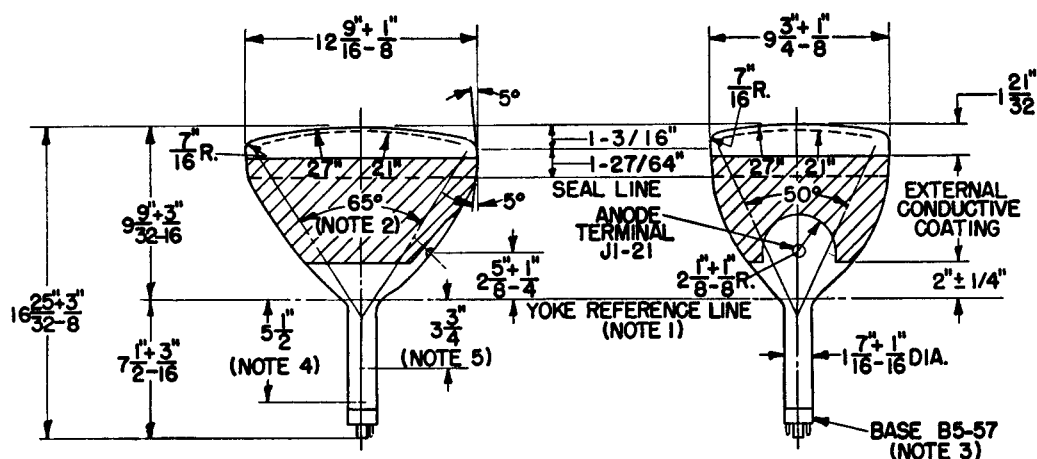
* The maximum ratings provide a ten-percent safety factor in accordance with the standard design-center system of rating cathode-ray tubes. The tube will withstand the combined effects of variations in line voltage and components provided the maximum design-center values are not exceeded by more than ten percent.

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

◆ 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.

