



17CP4

CATHODE-RAY TUBE

17-INCH, RECTANGULAR, METAL
FOCUS—MAGNETIC
DEFLECTION—MAGNETIC

14 $\frac{3}{8}$ BY 10 $\frac{1}{16}$ -INCH PICTURE SIZE
FACEPLATE—SPHERICAL, GRAY, FROSTED
ION-TRAP GUN

70-DEGREE DEFLECTION ANGLE

DESCRIPTION AND RATING

The 17CP4 is a magnetic-focus and -deflection, direct-view picture tube which provides a 14 $\frac{3}{8}$ by 10 $\frac{1}{16}$ -inch picture for television applications. Features of this tube include a lightweight metal-cone envelope, a high-quality frosted gray faceplate to prevent specular reflection and increase picture contrast, a space-saving rectangular face shape, and an electron gun designed for use with an external single-field ion-trap magnet.

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	66	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	$\mu\mu\text{f}$

OPTICAL

Phosphor Number—P4, Sulfide Type		
Fluorescent Color—White		
Phosphorescent Color—White		
Persistence—Short		
Faceplate—Gray		
Light Transmission at Center, approximate	66	Percent
Specular Reflection of Ambient Light, Maximum	1.5	Percent

MECHANICAL

Over-all Length 18½ ± ½ Inches

Greatest Bulb Dimensions

Diagonal 16½ ± ¾ Inches

Width 15½ ± ⅛ Inches

Height 12¼ ± ⅛ Inches

Minimum Useful Screen Dimensions

Diagonal 15¼ Inches

Width 14¾ Inches

Height 10¼ Inches

Neck Length 7¾ Inches

Bulb Contact—Metal Cone Lip

Base—Small-shell Duodecal 5-pin, JETEC No. B5-57

Basing, JETEC Designation—12D

Base Alignment

Pin-No. 3 Position Aligns with Horizontal Picture Axis ±30 Degrees

Mounting Position—Any

Net Weight, approximate 10 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 180 Max Volts

Heater Positive with Respect to Cathode 180 Max Volts

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

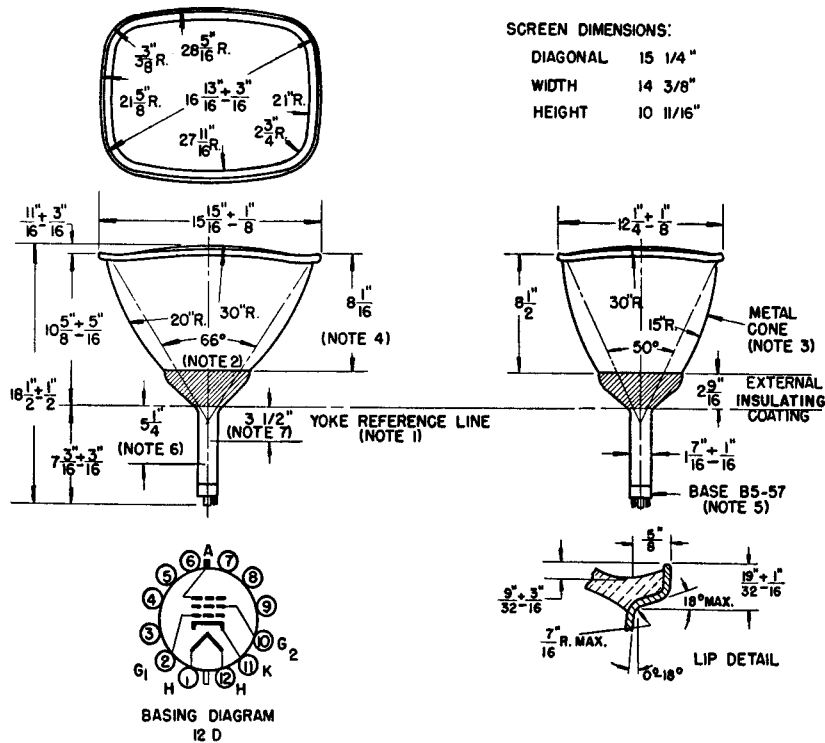
Focusing-Coil Currentπ, approximate 112 Milliamperes DC

Ion-Trap Field IntensityΔ, approximate 37 Gauss

CIRCUIT VALUES

Grid-No. 1 Circuit Resistance 1.5 Max Megohms

- ♦ 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.
- † 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.
- § 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 3½ inches.
- △ Single-field ion-trap magnet adjusted to optimum position, equivalent to 37 milliamperes through RETMA ion-trap magnet No. 117.



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. METAL CONE OPERATES AT HIGH VOLTAGE AND MUST BE INSULATED TO WITHSTAND THE MAXIMUM APPLIED ANODE VOLTAGE.
4. CONE HEIGHT AT DIAGONAL IS 8 INCHES.
5. PIN-NO. 3 POSITION ALIGNS WITH HORIZONTAL PICTURE AXIS ±30 DEGREES.
6. APPROXIMATE POSITION OF ION-TRAP MAGNET.
7. RECOMMENDED POSITION FOR CENTER OF FOCUSING FIELD.