



16AP4-A

CATHODE-RAY TUBE

16-INCH ROUND, METAL
FOCUS—MAGNETIC
DEFLECTION—MAGNETIC

14 $\frac{3}{8}$ BY 10 $\frac{3}{4}$ -INCH PICTURE SIZE
FACEPLATE—SPHERICAL, GRAY
ION-TRAP GUN

53-DEGREE DEFLECTION ANGLE

DESCRIPTION AND RATING

The 16AP4-A is a magnetic-focus and -deflection direct-view picture tube which provides a 14 $\frac{3}{8}$ by 10 $\frac{3}{4}$ -inch picture with rounded sides for television applications. Features of this tube include a lightweight metal cone envelope, a high-quality gray faceplate to increase picture contrast and detail under high ambient light conditions, and an electron gun which was designed for use with an external double-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 53 Degrees

Direct Interelectrode Capacitances, approximate
Cathode to All Other Electrodes 5 μ f
Grid-No. 1 to All Other Electrodes 6 μ f

OPTICAL

Phosphor Number—P4, Sulfide Type
Fluorescent Color—White
Phosphorescent Color—White
Persistence—Short

Faceplate—Gray
Light Transmission at Center, approximate 66 Percent



MECHANICAL

Over-all Length	21 $\frac{7}{8}$ $\pm$ $\frac{3}{8}$	Inches
Greatest Bulb Diameter	15 $\frac{7}{8}$ $\pm$ $\frac{1}{8}$	Inches
Minimum Useful Screen Diameter	14 $\frac{3}{8}$	Inches
Neck Length	7 $\frac{9}{16}$	Inches

Bulb Contact—Metal Cone Lip

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

Basing, JETEC Designation—12D

Mounting Position—Any

Net Weight, approximate 11 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 ^π , approximate	.99	Milliamperes DC
Ion-Trap Field Intensity ^Δ , approximate	.35	Gausses

CIRCUIT VALUES

Grid-No. 1 Circuit Resistance	1.5	Max Megohms
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[‡] 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 10,000 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 3 $\frac{3}{4}$ inches.^Δ Double-field ion-trap magnet adjusted to optimum position, equivalent to 120 milliamperes through RETMA ion-trap magnet No. 108.

