



21XP4-A CATHODE-RAY TUBE

17- BY 12¾-INCH PICTURE SIZE

21-INCH RECTANGULAR, GLASS
FOCUS—LOW VOLTAGE, ELECTROSTATIC
DEFLECTION—MAGNETIC
70-DEGREE DEFLECTION ANGLE

FACEPLATE—SPHERICAL, GRAY
ION-TRAP GUN
EXTERNAL CONDUCTIVE COATING
ALUMINIZED SCREEN

DESCRIPTION AND RATING

The 21XP4-A is an electrostatic-focus and magnetic-deflection, direct-view all-glass picture tube which provides a 17- by 12¾-inch picture for television applications. The electron gun has a focusing voltage range of -0.4 to $+2.2$ percent of the anode voltage and 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, a reflective aluminized screen to increase light output, 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—Electrostatic		
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	uuf
Grid-No. 1 to All Other Electrodes.....	6	uuf
External Conductive Coating to Anode		
Maximum.....	750	uuf
Minimum.....	500	uuf

OPTICAL

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

Faceplate—Gray
Light Transmission at Center, approximate.....72 Percent

MECHANICAL

Over-all Length	$22\frac{7}{16} \pm \frac{3}{8}$	Inches
Greatest Bulb Dimensions		
Diagonal	$20\frac{5}{8} \pm \frac{3}{16}$	Inches
Width	$18\frac{11}{16} \pm \frac{1}{8}$	Inches
Height	$14\frac{1}{16} \pm \frac{1}{8}$	Inches
Minimum Useful Screen Dimensions		
Diagonal	19 $\frac{1}{8}$	Inches
Width	17	Inches
Height	12 $\frac{3}{4}$	Inches
Neck Length	7 $\frac{1}{2}$	Inches
Bulb Number—C165 Exp. 5		
Bulb Contact—Recessed Small-cavity Cap, JETEC No. J1-21		
Base—Small-shell Duodecal 6-Pin, JETEC No. B6-63		
Basing, JETEC Designation—12L		
Bulb Contact Alignment		
Anode Contact Aligns with Pin No. 6 ± 30 Degrees		
Mounting Position—Any		
Net Weight, approximate	23	Pounds

MAXIMUM RATINGS

DESIGN-CENTER VALUES*

Anode Voltage†	18,000 Max	Volts DC
Focusing-Electrode Voltage	−500 to +1000 Max	Volts DC
Focusing-Electrode Current‡	−15 to +25	Microamperes DC
Grid-No. 2 Voltage	500 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 π	16,000	Volts DC
Focusing-Electrode Voltage for Focus $\blacktriangle$	−64 to +352	Volts DC
Grid-No. 2 Voltage	300	Volts DC
Grid-No. 1 Voltage $\blacklozenge$	−28 to −72	Volts DC
Ion-Trap Field Intensity ϕ , approximate	40	Gausses

MAXIMUM CIRCUIT VALUES

Grid-No. 1 Circuit Resistance	1.5 Max	Megohms
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