

**TUNG-SOL**

**CATHODE RAY**

THE 21XP4 AND 21XP4A ARE DIRECT-VIEW PICTURE TUBES INTENDED FOR TELEVISION APPLICATIONS. THEY ARE IDENTICAL *EXCEPT* FOR THE ALUMINIZED SCREEN ON THE 21XP4A. THEIR COMMON FEATURES INCLUDE:

- |  |                                       |
|--|---------------------------------------|
| <b>MAGNETIC DEFLECTION</b>             | <b>SPHERICAL FACEPLATE</b>            |
| <b>UNIPOENTIAL CATHODE</b>             | <b>GREY FILTER FACEPLATE</b>          |
| <b>RECTANGULAR GLASS CONSTRUCTION</b>  | <b>EXTERNAL CONDUCTIVE COATING</b>    |
| <b>LOW VOLTAGE ELECTROSTATIC FOCUS</b> | <b>EXTERNAL SINGLE FIELD ION TRAP</b> |
- 12 3/4" X 17" RASTER SIZE**

**ELECTRICAL DATA**

FOCUSING METHOD	LOW VOLTAGE ELECTROSTATIC
DEFLECTING METHOD	MAGNETIC
DEFLECTION ANGLE (APPROX.):	
HORIZONTAL	66 DEGREES
VERTICAL	50 DEGREES
DIAGONAL	70 DEGREES
DIRECT INTERELECTRODE CAPACITANCES (APPROX.):	
CATHODE TO ALL OTHER ELECTRODES	5 $\mu\mu\text{f}$
GRID #1 TO ALL OTHER ELECTRODES	6 $\mu\mu\text{f}$
MAXIMUM EXTERNAL CONDUCTIVE COATING TO ANODE	750 $\mu\mu\text{f}$
MINIMUM EXTERNAL CONDUCTIVE COATING TO ANODE	500 $\mu\mu\text{f}$

**OPTICAL DATA**

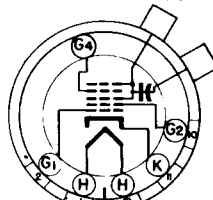
PHOSPHOR NUMBER	P-4
FLUORESCENT COLOR	WHITE
PHOSPHORESCENT COLOR	WHITE
PERSISTENCE	MEDIUM
FACEPLATE LIGHT TRANSMISSION AT CENTER (APPROX.)	72 PERCENT

**MECHANICAL DATA**

OVERALL LENGTH	22 7/16 $\pm$ 3/8	INCHES
GREATEST DIMENSIONS OF BULB:		
DIAGONAL	20 5/8 $\pm$ 3/16	INCHES
WIDTH	18 11/16 $\pm$ 1/8	INCHES
HEIGHT	14 15/16 $\pm$ 1/8	INCHES
MINIMUM USEFUL SCREEN DIMENSIONS:		
WIDTH	17	INCHES
HEIGHT	12 3/4	INCHES
BULB CONTACT	RECESSED SMALL CAVITY CAP	J1-21
BASE	SMALL SHELL DUODECAL 6 PIN	B6-63
BASING		12L
BULB CONTACT ALIGNMENT		
J1-21 CONTACT ALIGNS WITH PIN POSITION #6 $\pm$ 30 DEGREES		

**PIN CONNECTIONS**

- PIN 1 - HEATER
- PIN 2 - GRID NO. 1
- PIN 6 - GRID NO. 4
- PIN 10 - GRID NO. 2
- PIN 11 - CATHODE



- PIN 12 - HEATER
- ANODE CAP:
- GRID NO. 3
- GRID NO. 5

BOTTOM VIEW

CONTINUED ON FOLLOWING PAGE

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**RATINGS**  
 DESIGN CENTER VALUES

HEATER VOLTAGE	6.3	VOLTS
HEATER CURRENT	0.6	AMP.
MAXIMUM DC ANODE, GRID #3 GRID #5 VOLTAGE	18 000	VOLTS
MAXIMUM DC GRID #4 VOLTAGE (FOCUSING ELECTRODE)	-500 TO +1000	VOLTS
MAXIMUM DC GRID #2 VOLTAGE	500	VOLTS
MAXIMUM GRID #1 VOLTAGE:		
DC NEGATIVE-BIAS VALUE	125	VOLTS
DC POSITIVE-BIAS VALUE	0	VOLTS
POSITIVE-PEAK VALUE	2	VOLTS
MAXIMUM PEAK HEATER-CATHODE VOLTAGE:		
HEATER NEGATIVE WITH RESPECT TO CATHODE		
DURING WARM-UP PERIOD NOT TO EXCEED 15 SECONDS	410	VOLTS
AFTER EQUIPMENT WARM-UP PERIOD	180	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE	180	VOLTS

**TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS**

DC ANODE, GRID #3, GRID #5 VOLTAGE	16 000	VOLTS
DC GRID #4 VOLTAGE (FOCUSING ELECTRODE) <sup>A</sup>	-64 TO +352	VOLTS
DC GRID #2 VOLTAGE	300	VOLTS
DC GRID #1 VOLTAGE <sup>B</sup>	-28 TO -72	VOLTS
DC ION TRAP CURRENT STANDARD COIL #117 (APPROX.)	30 ± 40%	MA.
ION TRAP MAGNET FIELD STRENGTH (APPROX.)	35	GAUSSSES

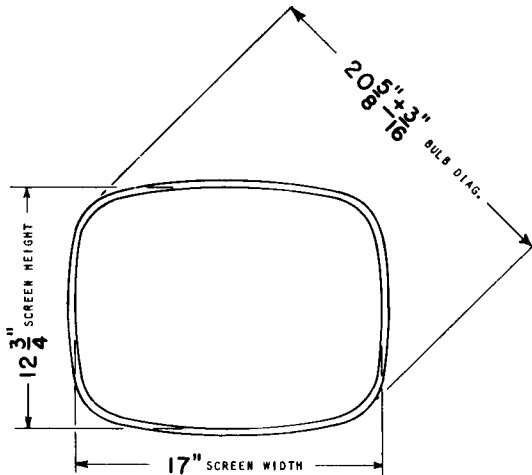
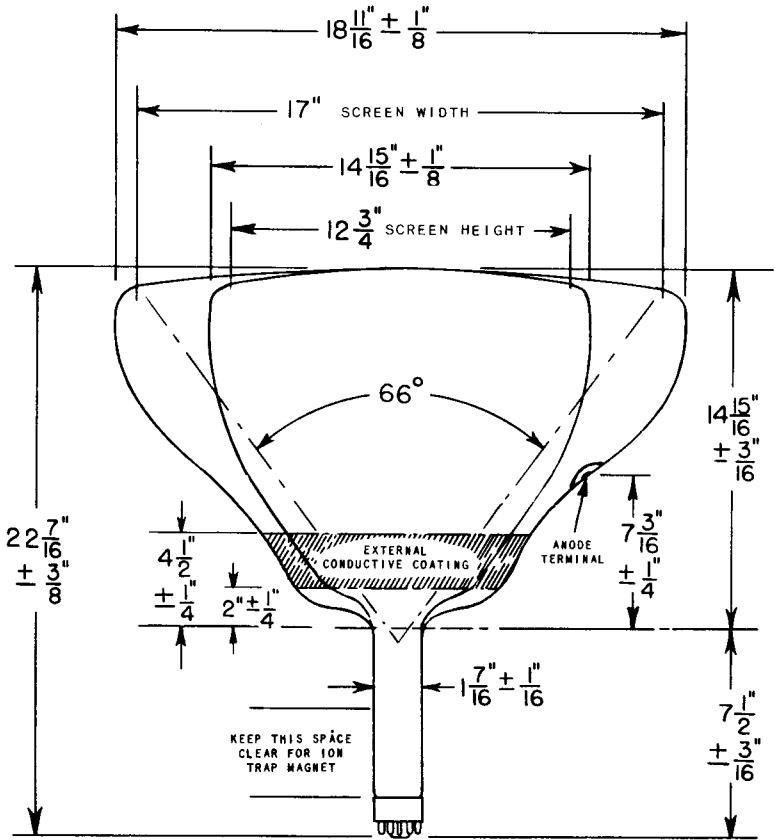
<sup>A</sup> WITH THE COMBINED GRID #1 BIAS VOLTAGE AND VIDEO-SIGNAL VOLTAGE ADJUSTED TO GIVE AN ANODE CURRENT OF 100 MICROAMPERES ON A 12 3/4" X 17" PICTURE SIZE.

<sup>B</sup> VISUAL EXTINCTION OF FOCUSED RASTER.

**CIRCUIT VALUES**

MAXIMUM GRID #1 CIRCUIT RESISTANCE	1.5	MEGOHMS
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