

TUNG-SOL**CATHODE RAY**

THE 21JP4 AND 21JP4A ARE DIRECT-VIEW PICTURE TUBES DESIGNED FOR USE IN TELEVISION APPLICATIONS. THEY ARE IDENTICAL *EXCEPT* FOR THE ALUMINIZED SCREEN ON THE 21JP4A. THEIR COMMON FEATURES INCLUDE:

UNIPOTENTIAL CATHODE	GREY FILTER FACEPLATE
CYLINDRICAL FACEPLATE	EXTERNAL CONDUCTIVE COATING
RECTANGULAR GLASS CONSTRUCTION	MAGNETIC FOCUS AND DEFLECTION
BUILT-IN ION TRAP & FOCUSING UNIT	19 1/8" X 13 7/8" RASTER SIZE

ELECTRICAL DATA

FOCUSING METHOD		MAGNETIC
DEFLECTING METHOD		MAGNETIC
DEFLECTION ANGLE (APPROX.):		
HORIZONTAL	65	DEGREES
VERTICAL	50	DEGREES
DIAGONAL	70	DEGREES
DIRECT INTERELECTRODE CAPACITANCES (APPROX.):		
CATHODE TO ALL OTHER ELECTRODES	5	μμf
GRID #1 TO ALL OTHER ELECTRODES	6	μμf
MAXIMUM EXTERNAL CONDUCTIVE COATING TO ANODE	750	μμf
MINIMUM EXTERNAL CONDUCTIVE COATING TO ANODE	500	μμf

OPTICAL DATA

PHOSPHOR NUMBER	SULFIDE TYPE	P-4
FLUORESCENT COLOR		WHITE
PHOSPHORESCENT COLOR		WHITE
PERSISTENCE		SHORT
FACEPLATE LIGHT TRANSMISSION AT CENTER (APPROX.)	71	PERCENT

RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM^A

HEATER VOLTAGE	6.3	VOLTS
HEATER CURRENT	0.6	AMP.
MAXIMUM DC ANODE, GRID #3 VOLTAGE	20 000	VOLTS
MAXIMUM ANODE INPUT ^B	6	WATTS
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 DC PEAK HEATER-CATHODE VOLTAGE: ^C		
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
MAXIMUM GRID #1 CIRCUIT RESISTANCE	1.5	MEG OHMS

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

DC ANODE, GRID #3 VOLTAGE ^D	16 000 ± 3 000	VOLTS
DC GRID #2 VOLTAGE	300	VOLTS
DC GRID #1 VOLTAGE ^E	-28 TO -72	VOLTS

^ATHE MAXIMUM RATINGS PROVIDE A 10% 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 10%.

^BANODE INPUT EQUALS THE PRODUCT OF ANODE VOLTAGE AND AVERAGE CURRENT MEASURED AT THE TERMINAL.

^CCATHODE SHOULD BE RETURNED TO ONE SIDE OR TO THE MID-TAP OF THE HEATER TRANSFORMER WINDING.

^DOPTIMUM FOCUSING CONDITIONS REQUIRE THAT THE TUBE BE OPERATED WITHIN THE SPECIFIED VOLTAGE RANGE.

^EVISUAL EXTINCTION OF FOCUSED RASTER.

IF THIS TUBE IS OPERATED AT VOLTAGES IN EXCESS OF 16,000 VOLTS, X-RAY RADIATION SHIELDING MAY BE NECESSARY TO AVERT POSSIBLE DANGER OF PERSONAL INJURY FROM PROLONGED EXPOSURE AT CLOSE RANGE. THE PROTECTIVE FACE-VIEWING WINDOW OF APPARATUS USING TUBES OF THIS TYPE MAY PROVIDE SUCH A SAFEGUARD. IF THE RADIATION MEASURED IN CONTACT WITH THIS WINDOW DOES NOT EXCEED 6.25 MILLIROENTGENS PER HOUR, THE WINDOW WILL NORMALLY PROVIDE ADEQUATE PROTECTION.

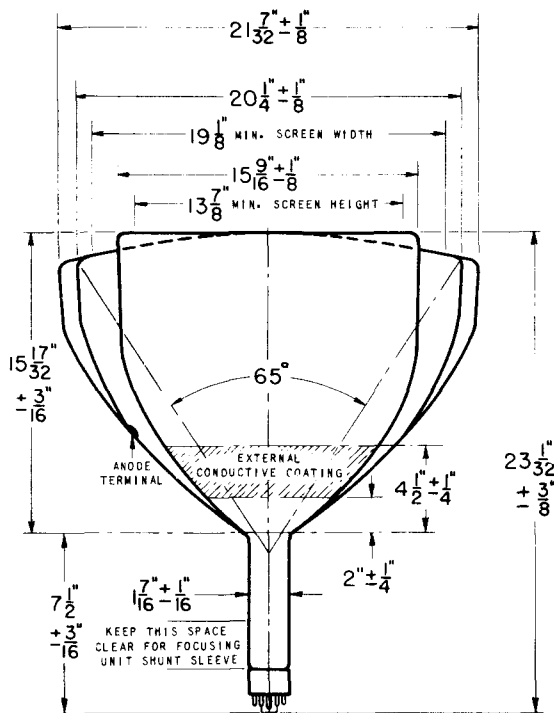
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TUNG-SOL

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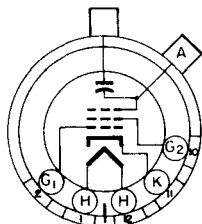
MECHANICAL DATA

OVERALL LENGTH	23 $\frac{1}{32}$ $\pm$ $\frac{3}{8}$	INCHES
GREATEST DIMENSIONS OF BULB:		
DIAGONAL	21 $\frac{7}{32}$ $\pm$ $\frac{1}{8}$	INCHES
WIDTH	20 $\frac{1}{4}$ $\pm$ $\frac{1}{8}$	INCHES
HEIGHT	15 $\frac{9}{16}$ $\pm$ $\frac{1}{8}$	INCHES
MINIMUM USEFUL SCREEN DIMENSIONS:		
DIAGONAL	20 $\frac{1}{8}$	INCHES
WIDTH	19 $\frac{1}{8}$	INCHES
HEIGHT	13 $\frac{7}{8}$	INCHES
BULB CONTACT	RECESSED SMALL CAVITY CAP	J1-21
BASE	SMALL SHELL DUODECAL 5 PIN	B5-57
BASING		12N
BULB CONTACT ALIGNMENT		
J1-21 CONTACT ALIGNS WITH PIN POSITION #6 $\pm$ 30 DEGREES		



PIN CONNECTIONS

PIN 1 - HEATER
 PIN 2 - GRID #1
 PIN 10 - GRID #2
 PIN 11 - CATHODE



BOTTOM VIEW

PIN 12 - HEATER
 ANODE CAP:
 GRID #3