

TUNG-SOL

CATHODE RAY

THE 21AQP4 AND 21AQP4A ARE DIRECT VIEW PICTURE TUBES DESIGNED FOR USE IN TELEVISION APPLICATIONS. THEY ARE IDENTICAL EXCEPT FOR THE METAL-BACKED SCREEN ON THE 21AQP4A. THEIR COMMON FEATURES INCLUDE:

UNIPOTENTIAL CATHODE	15" X 19 1/8" RASTER SIZE
RECTANGULAR GLASS CONSTRUCTION	MAGNETIC FOCUS AND DEFLECTION
SPHERICAL GREY FILTER FACEPLATE	EXTERNAL SINGLE FIELD ION TRAP

ELECTRICAL DATA

FOCUSING METHOD		MAGNETIC
DEFLECTING METHOD		MAGNETIC
DEFLECTION ANGLE (APPROX.):		
HORIZONTAL	85	DEGREES
VERTICAL	68	DEGREES
DIAGONAL	90	DEGREES
DIRECT INTERELECTRODE CAPACITANCES (APPROX.):		
CATHODE TO ALL OTHER ELECTRODES	5	$\mu\mu\text{f}$
GRID #1 TO ALL OTHER ELECTRODES	6	$\mu\mu\text{f}$

OPTICAL DATA

PHOSPHOR NUMBER	SULFIDE TYPE	NO. 4
FLUORESCENT COLOR		WHITE
PHOSPHORESCENT COLOR		WHITE
PERSISTENCE		SHORT
FACEPLATE LIGHT TRANSMISSION AT CENTER (APPROX.)	75	PERCENT

MECHANICAL DATA

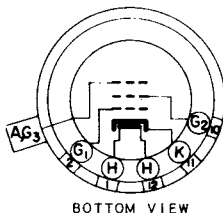
OVERALL LENGTH	20 7/16	INCHES
GREATEST DIMENSIONS OF BULB:		
DIAGONAL	21 3/8 \pm 3/16	INCHES
WIDTH	20 1/4 \pm 3/16	INCHES
HEIGHT	16 3/8 \pm 3/16	INCHES
MINIMUM USEFUL SCREEN DIMENSIONS:		
DIAGONAL	20 1/4	INCHES
WIDTH	19 1/8	INCHES
HEIGHT	15	INCHES
BULB CONTACT	RECESSED SMALL CAVITY CAP	J1-21
BASE	SMALL SHELL DUODECAL 5 PIN	85-57
BASING		12D
BULB CONTACT ALIGNMENT		

J1-21 CONTACT ALIGNS WITH VACANT PIN POSITION #6 \pm 30 DEGREES

PIN CONNECTIONS

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

PIN 12 - HEATER
 ANODE CAP:
 GRID NO. 3



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 VOLTAGE ^{AB}	18 000	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 DC 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 VOLTAGE ^{AB}	16 000	VOLTS
DC GRID #2 VOLTAGE	300	VOLTS
DC GRID #1 VOLTAGE ^C	-28 TO -72	VOLTS
DC FOCUSING COIL CURRENT (APPROX.) ^D	102 ± 20%	MA.
DC ION TRAP MAGNET FIELD INTENSITY (APPROX.)		
STANDARD COIL #111	95 ± 50%	MA.
ION TRAP MAGNET (RATED STRENGTH)	45	GAUSSSES

CIRCUIT VALUES

MAXIMUM GRID #1 CIRCUIT RESISTANCE	1.5	MEG OHMS
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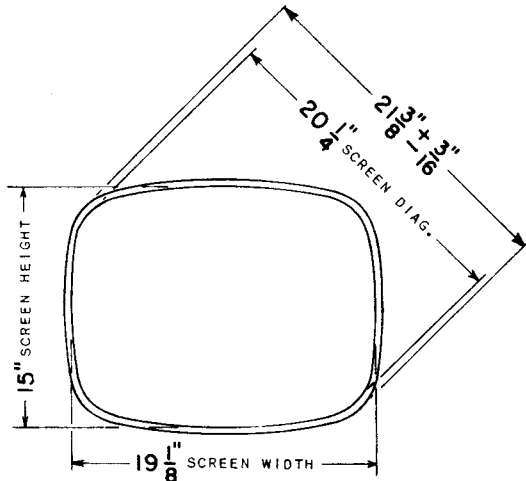
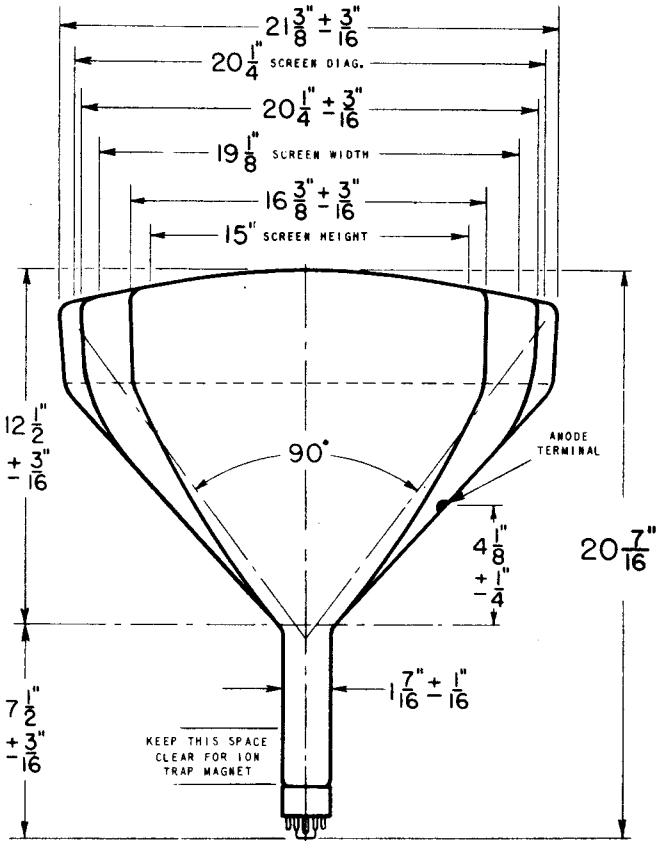
^A BRILLIANCE AND DEFINITION DECREASE WITH DECREASING ANODE VOLTAGE. IN GENERAL, ANODE VOLTAGE SHOULD NOT BE LESS THAN 14,000 VOLTS

^B INASMUCH AS THE TUBE RATING PERMITS OPERATION AT VOLTAGES AS HIGH AS 19.8 KILOVOLTS (ABSOLUTE VALUE), SHIELDING OF THE TUBE FOR X-RAY RADIATION MAY BE NEEDED WHEREVER THE OPERATING CONDITIONS INVOLVE VOLTAGES IN EXCESS OF 16 KILOVOLTS.

^C VISUAL EXTINCTION OF UNDEFLECTED FOCUSED SPOT.

^D FOR STANDARD FOCUS COIL #109, OR EQUIVALENT, WITH THE COMBINED GRID #1 BIAS VOLTAGE AND VIDEO SIGNAL VOLTAGE ADJUSTED TO PRODUCE A HIGHLIGHT BRIGHTNESS OF 30 FOOT LAMBERTS ON A 15" BY 19 1/8" PICTURE SIZE. DISTANCE FROM REFERENCE LINE TO CENTER OF AIR GAP ON FOCUS COIL SHALL BE 3 INCHES.

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