TUNG-SOL

CATHODE RAY

THE 21AMP4 AND 21AMP4A ARE DIRECT-VIEW PICTURE TUBES DESIGNED FOR USE IN TELEVISION APPLICATIONS. THEY ARE IDENTICAL *EXCEPT* FOR THE METAL-BACKED SCREEN ON THE 21AMP4A. THEIR COMMON FEATURES INCLUDE:

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

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	μμf
GRID #1 TO ALL OTHER ELECTRODES	6	μμf
MAXIMUM EXTERNAL CONDUCTIVE COATING	750	μμf
MINIMUM EXTERNAL CONDUCTIVE COATING	500	μμf

OPTICAL DATA

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

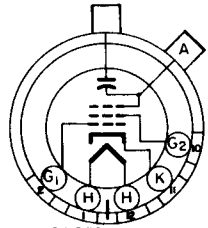
MECHANICAL DATA

OVERALL LENGTH	20 7/16	INCHES
GREATEST DIMENSIONS OF BULB:		
DIAGONAL	21 3/8 ± 3/16	INCHES
WIDTH	20 1/4 ± 3/16	INCHES
HEIGHT	16 3/8 ± 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	B5-57
BASING		12N

BULB CONTACT ALIGNMENT
J1-21 CONTACT ALIGNS WITH VACANT PIN POSITION #6 ± 30 DEGREES

PIN CONNECTIONS

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



BOTTOM VIEW

PIN 12 – HEATER
ANODE CAP:
GRID NO. 3
COLLECTOR

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RATINGS
DESIGN CENTER VALUES

HEATER VOLTAGE	6.3	VOLTS
HEATER CURRENT	0.6	AMP.
MAXIMUM DC ANODE, GRID #3, COLLECTOR VOLTAGE[A]	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, COLLECTOR VOLTAGE[A]	16 000	VOLTS
DC GRID #2 VOLTAGE	300	VOLTS
DC GRID #1 VOLTAGE[B]	-28 TO -72	VOLTS
DC FOCUSING COIL CURRENT (APPROX.)[C]	102 ± 20%	MA.
DC ION TRAP MAGNET FIELD INTENSITY (APPROX.) STANDARD COIL #111	95 ± 50%	MA.
ION TRAP MAGNET (RATED STRENGTH)	45	GAUSSES

CIRCUIT VALUES

MAXIMUM GRID #1 CIRCUIT RESISTANCE	1.5	VOLTS

[A] BRILLIANCE AND DEFINITION DECREASE WITH DECREASING ANODE VOLTAGE. IN GENERAL, ANODE VOLTAGE SHOULD NOT BE LESS THAN 14,000 VOLTS.

[B] VISUAL EXTINCTION OF UNDEFLECTED FOCUSED SPOT.

[C] 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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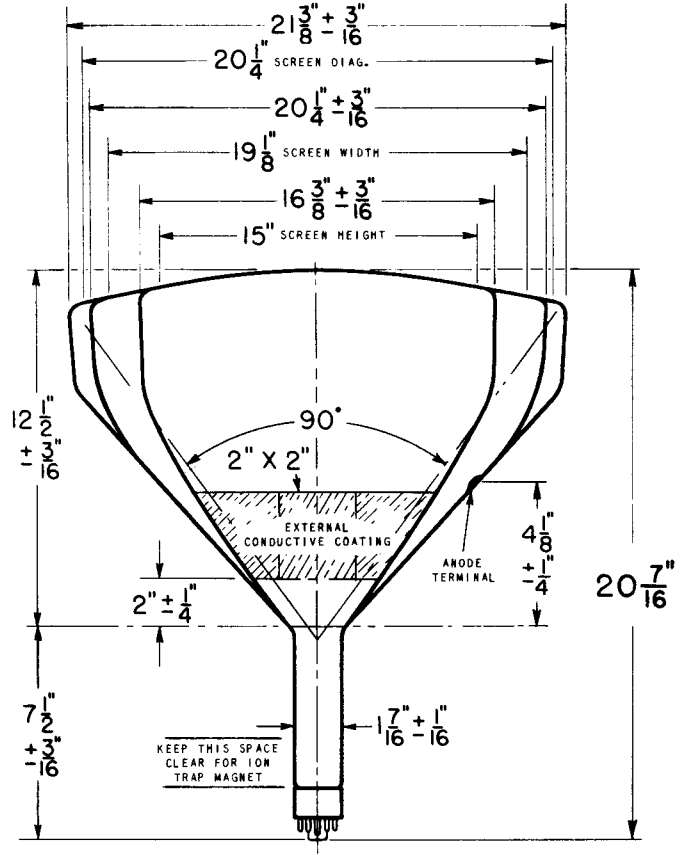
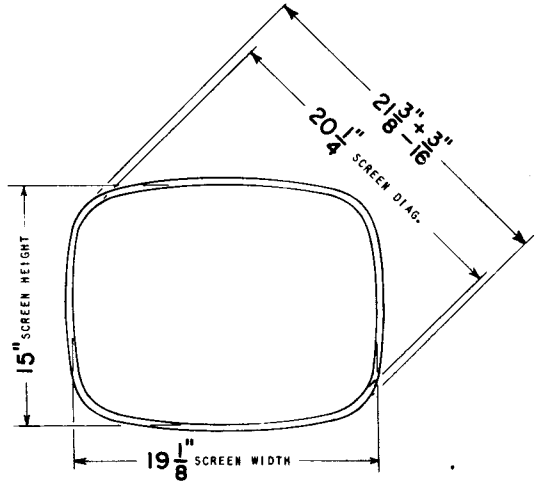

21 3/8" + 3/16 - 3/16
20 1/4" SCREEN DIAG.
20 1/4" + 3/16 - 3/16
19 1/8" SCREEN WIDTH
16 3/8" + 3/16 - 3/16
15" SCREEN HEIGHT
12 1/2" + 3/16 - 3/16
90°
2" X 2"
EXTERNAL CONDUCTIVE COATING
ANODE TERMINAL
4 1/8" + 1/4 - 1/4
20 7/16"
2" ± 1/4
7 1/2" + 3/16 - 3/16
1 7/16" + 1/16 - 1/16
KEEP THIS SPACE CLEAR FOR ION TRAP MAGNET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