TUNG-SOL

CATHODE RAY

THE 21ATP4, 21ATP4A AND 21ATP4B ARE DIRECT VIEW PICTURE TUBES DESIGNED FOR USE IN TELEVISION APPLICATIONS. THEY ARE IDENTICAL EXCEPT FOR THE NON ALUMINIZED SCREEN ON THE 21ATP4B. THEIR COMMON FEATURES INCLUDE:

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

ELECTRICAL DATA

FOCUSING METHOD	LOW VOLTAGE ELECTROSTATIC	
DEFLECTING METHOD		MAGNETIC
DEFLECTION ANGLE (APPROX.):		
HORIZONTAL	85	DEGREES
DIAGONAL	90	DEGREES
DIRECT INTERELECTRODE CAPACITANCES (APPROX.):		
CATHODE TO ALL OTHER ELECTRODES	5	$\mu\mu f$
GRID #1 TO ALL OTHER ELECTRODES	6	$\mu\mu f$
MAXIMUM EXTERNAL CONDUCTIVE COATING TO ANODE[A]	1 500	$\mu\mu f$
MINIMUM EXTERNAL CONDUCTIVE COATING TO ANODE[A]	1 200	$\mu\mu f$

[A] EXTERNAL CONDUCTIVE COATING MUST BE GROUNDED.

OPTICAL DATA

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

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 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
MAXIMUM GRID #1 CIRCUIT RESISTANCE	1.5	MEGOHMS

* VALUE FOR 21ATP4A 20,000 VOLTS.

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

DC ANODE, GRID #3, GRID #5 VOLTAGE[B]	16 000	VOLTS
DC GRID #4 VOLTAGE[C]	-64 TO +350	VOLTS
DC GRID #2 VOLTAGE	300	VOLTS
DC GRID #1 VOLTAGE[D]	-28 TO -72	VOLTS
ION TRAP MAGNET FIELD STRENGTH (APPROX.)	35	GAUSSES

[B] BRILLIANCE AND DEFINITION DECREASE WITH DECREASING ANODE VOLTAGE. IN GENERAL, THE ANODE VOLTAGE SHOULD NOT BE LESS THAN THIS VALUE.

[C] WITH THE COMBINED GRID #1 BIAS VOLTAGE AND VIDEO-SIGNAL VOLTAGE ADJUSTED TO GIVE AN ANODE CURRENT OF 100 MICROAMPERES ON A 19 1/8" X 15" PICTURE SIZE.

[D] VISUAL EXTINCTION OF FOCUSED RASTER.

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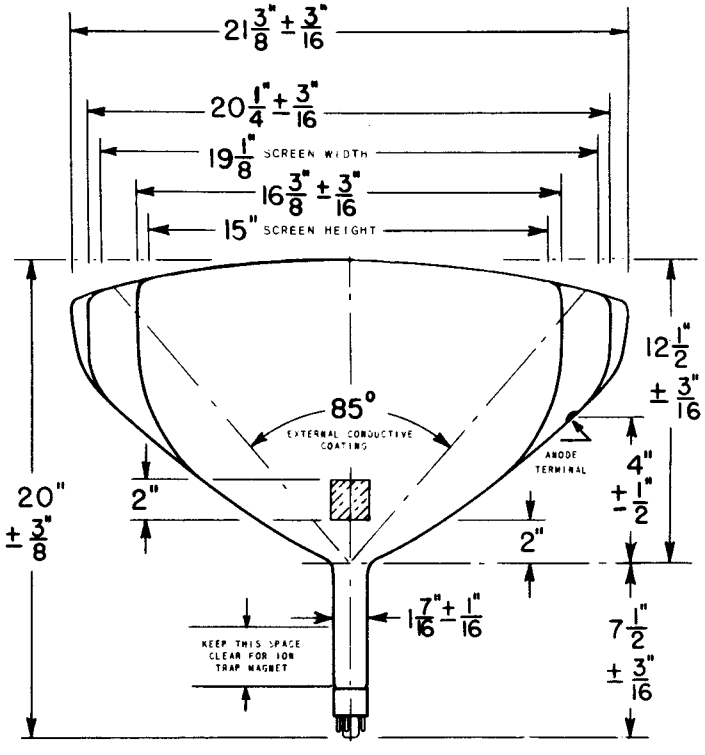
MECHANICAL DATA

OVERALL LENGTH	20 ± 3/8	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:		
WIDTH	19 1/8	INCHES
HEIGHT	15	INCHES
BULB CONTACT	RECESSED SMALL CAVITY CAP	J1-21
BASE	SMALL SHELL DUODECAL 6 PIN	B6-63
BASING		12L

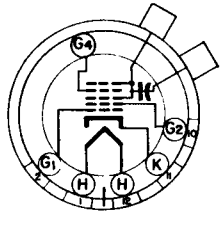
BULB CONTACT ALIGNMENT

J1-21 CONTACT ALIGNS WITH PIN POSITION #6 ± 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



BOTTOM VIEW

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