

**TUNG-SOL****CATHODE RAY**

THE 21BDP4 IS A DIRECT VIEW PICTURE TUBE DESIGNED FOR TELEVISION APPLICATIONS. ITS FEATURES INCLUDE:

<b>ALUMINIZED SCREEN</b>	<b>ELECTROSTATIC FOCUS</b>
<b>MAGNETIC DEFLECTION</b>	<b>UNIPOTENTIAL CATHODE</b>
<b>GRAY FILTER FACEPLATE</b>	<b>19 1/8" X 15" MASTER SIZE</b>
<b>EXTERNAL CONDUCTIVE COATING</b>	<b>RECTANGULAR GLASS CONSTRUCTION</b>
<b>DOES NOT REQUIRE ION TRAP</b>	

**ELECTRICAL DATA**

FOCUSING METHOD		ELECTROSTATIC
DEFLECTING METHOD		MAGNETIC
DEFLECTION ANGLE (APPROX.):		
HORIZONTAL	67	DEGREES
VERTICAL	53	DEGREES
DIAGONAL	72	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	SULFIDE TYPE	P-4
FLUORESCENT COLOR		WHITE
PHOSPHORESCENT COLOR		WHITE
PERSISTENCE		SHORT
FACEPLATE TRANSMISSION AT CENTER (APPROX.):	71	PERCENT

**RATINGS**

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

HEATER VOLTAGE	6.3	VOLTS
HEATER CURRENT	0.6 $\pm 10\%$	AMP.
MAXIMUM DC ANODE VOLTAGE	20 000	VOLTS
MAXIMUM DC GRID #4 VOLTAGE	-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: <sup>A</sup>		
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 VOLTAGE <sup>B</sup>	15 000	VOLTS
DC GRID #4 VOLTAGE	+50 TO +550	VOLTS
DC GRID #2 VOLTAGE	300	VOLTS
DC GRID #1 VOLTAGE <sup>C</sup>	-28 TO -72	VOLTS
DC GRID #4 CURRENT	-15 TO +25	$\mu\text{AMP.}$

<sup>A</sup> CATHODE SHOULD BE RETURNED TO ONE SIDE OR TO THE MIDTAP OF THE HEATER TRANSFORMER WINDING.

<sup>B</sup> BRILLIANCE AND DEFINITION DECREASE WITH DECREASING ANODE VOLTAGE. IN GENERAL, THE ANODE VOLTAGE SHOULD NOT BE LESS THAN 14,000 VOLTS.

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

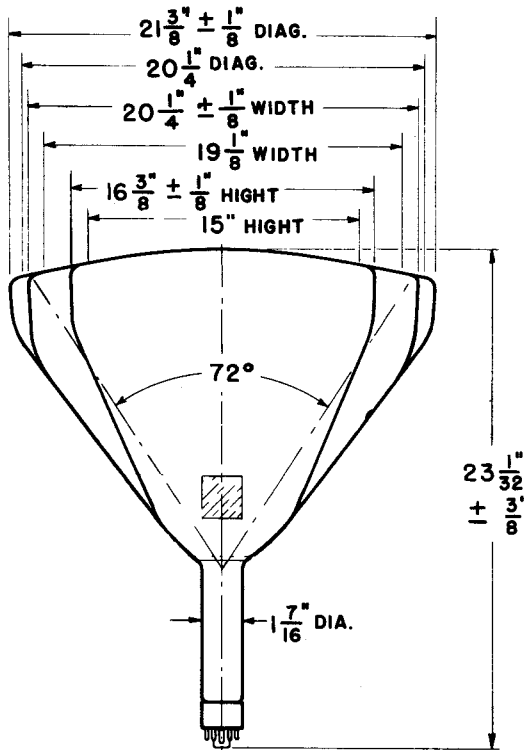
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**TUNG-SOL**

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**MECHANICAL DATA**

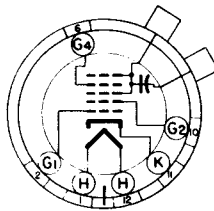
OVERALL LENGTH	23 1/32 ± 3/8	INCHES
GREATEST DIMENSIONS OF BULB:		
DIAGONAL	21 3/8 ± 1/8	INCHES
WIDTH	20 1/4 ± 1/8	INCHES
HEIGHT	16 3/8 ± 1/8	INCHES
MIN. USEFUL SCREEN DIMENSIONS:		
DIAGONAL	20 1/4	INCHES
WIDTH	19 1/8	INCHES
HEIGHT	15	INCHES
BULB CONTACT	RECESSED SMALL CAVITY CAP	J4-21
BASE	SMALL SHELL DUODECAL 6 PIN	B6-63
BASING		12L
BULB CONTACT ALIGNMENT		
J4-21 CONTACT ALIGNS WITH PIN POSITION #6 ± 30 DEGREES		



**PIN CONNECTIONS**

- PIN 1 - HEATER
- PIN 2 - GRID #1
- PIN 6 - GRID #4
- PIN 10 - GRID #2
- PIN 11 - CATHODE

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



BOTTOM VIEW