

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

THE 21BNP4 IS A DIRECT VIEW PICTURE TUBE DESIGNED FOR TELEVISION APPLICATIONS. ITS FEATURES INCLUDE:

<b>ELECTROSTATIC FOCUS</b>	<b>UNIPOTENTIAL CATHODE</b>
<b>MAGNETIC DEFLECTION</b>	<b>ALUMINIZED SCREEN</b>
<b>19 1/8" X 15" RASTER SIZE</b>	<b>EXTERNAL CONDUCTIVE COATING</b>
<b>GREY FILTERGLASS FACEPLATE</b>	<b>REQUIRES NO ION TRAP MAGNET</b>

**ELECTRICAL DATA**

FOCUSING METHOD		ELECTROSTATIC
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	$\mu\mu\text{f}$
MAXIMUM EXTERNAL CONDUCTIVE COATING TO ANODE	1500	$\mu\mu\text{f}$
MINIMUM EXTERNAL CONDUCTIVE COATING TO ANODE	1200	$\mu\mu\text{f}$

**OPTICAL DATA**

PHOSPHOR NUMBER	SULFIDE TYPE	P-4
FLUCRESCENT 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±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:		
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

**TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS**

DC ANODE VOLTAGE	16 000	VOLTS
DC GRID #4 VOLTAGE	+50 TO +550	VOLTS
DC GRID #2 VOLTAGE	300	VOLTS
DC GRID #1 VOLTAGE <sup>A</sup>	-28 TO -72	VOLTS
DC GRID #4 CURRENT	-15 TO +25	$\mu\text{AMP}$

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

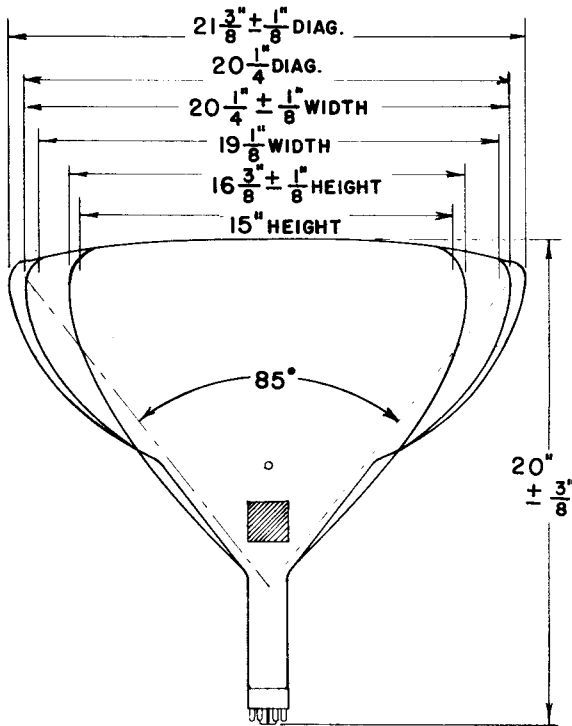
CONTINUED ON FOLLOWING PAGE

**TUNG-SOL**

CONTINUED FROM PRECEDING PAGE

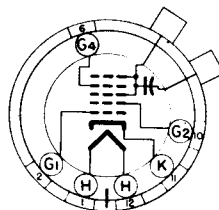
**MECHANICAL DATA**

OVERALL LENGTH	20 ± 3/8	INCHES
GREATEST DIMENSIONS OF BULB:		
DIAGONAL	21 3/8 ± 1/8	INCHES
WIDTH	20 1/4 ± 1/8	INCHES
HEIGHT	20 1/4 ± 1/8	INCHES
MIN. USEFUL SCREEN DIMENSIONS:		
DIAGONAL	16 3/8 ± 1/8	INCHES
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 #1
- PIN 6 - GRID #4
- PIN 10 - GRID #2
- PIN 11 - CATHODE



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

BOTTOM VIEW