TELEVISION PICTURE TUBE TYPE 23VP4

114° Magnetic Deflection
Rectangular Glass
Aluminized Screen
Gray Filter Glass

6.3 Volt, 300 Ma. Heater
Electrostatic Focus
Short Neck Length

External Conductive Coating
Spherical Faceplate
No Ion Trap
19-1/4" × 15-3/16" Screen Size

ELECTRICAL:

Focusing Method			Electrostatic
Deflection Angles (Approx.):			
Horizontal	102		Degrees
Vertical	84		Degrees
Diagonal	114		Degrees
Direct Interelectrode Capacitances:			
Cathode to all other electrodes, approximate	5		μμf
Grid #1 to all other electrodes, approximate	6		μμf
External Conductive Coating to Anode	2500	max.	μμf
	2000	min.	μμf
Heater Current at 6.3 volts	300 ± 30		Ma.
Heater Warm-up Time⊕	18		Seconds

OPTICAL

Phosphor Number		Aluminized P4
Light Transmittance at Center, (Approx.)	78	Percent

MECHANICAL:

Overall Length	13-3/4 ± 5/16	Inches
Greatest Dimensions of Tube:		
Diagonal	23-25/64 + 3/32 − 1/8	Inches
Width	20-1/2 + 1/16 − 1/8	Inches
Height	16-1/2 ± 1/8	Inches
Minimum Useful Screen Dimensions (Projected):		
Diagonal	22-5/16	Inches
Horizontal axis	19-1/4	Inches
Vertical axis	15-3/16	Inches
Area	278	Sq. Inches
Neck Length	4-1/2 ± 1/8	Inches
Bulb Contact	J1-21	
Base	B7-208	
Basing	8HR	
Bulb Contact Alignment:		
J1-21 contact aligns with pin position #4,	±30	Degrees
Base Alignment:		
Pin #4 aligns with horizontal picture axis	±30	Degrees

⊕ Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times rated heater voltage divided by rated heater current.

RATINGS

Design Maximum System

Unless Otherwise Specified, Voltage Values are Positive and Measured with Respect to Cathode

Maximum Anode Voltage	22000	Volts
Minimum Anode Voltage	11000	Volts
Maximum Grid 4 Voltage	+1100 −550	Volts
Maximum Grid 2 Voltage	550	Volts
Minimum Grid 2 Voltage	200	Volts
Grid 1 Voltage:		
Maximum Negative Bias Value	154	Volts
Maximum Negative Peak Value	220	Volts
Maximum Positive Bias Value	0	Volts
Maximum Positive Peak Value	2	Volts
Maximum Heater Voltage	6.93	Volts
Minimum Heater Voltage	5.67	Volts
Maximum Heater-Cathode Voltage		
Heater negative with respect to cathode		
During warm-up period not to exceed 45 seconds	450	Volts
After equipment warm-up period	200	Volts
Heater positive with respect to cathode	200	Volts

TYPICAL OPERATING CONDITIONS

Grid Drive Service

Unless otherwise specified, all voltage values are positive with respect to cathode.

Anode Voltage	14000	Volts DC
Grid 4 Voltage (Focusing Electrode)□	200	Volts DC
Grid 2 Voltage	450	Volts DC
Grid 1 Voltage for raster cutoff	−45 to −105	Volts DC

Cathode Drive Service:

Unless otherwise specified, all voltage values are positive with respect to Grid 1.

Anode Voltage	14000	Volts DC
Grid 4 Voltage (Focusing Electrode)□	250	Volts DC
Grid 2 Voltage	500	Volts DC
Cathode Voltage for raster cutoff	45 to 95	Volts DC

LIMITING CIRCUIT VALUES

Maximum Grid #1 Circuit Resistance	1.5	Megohms
Minimum Grids 2 & 4 Circuit Resistance■	10000	Ohms

□ With the combined grid 1 bias voltage and video-signal voltage adjusted to give an anode current of 150 microamperes on a 15-3/16" × 19-1/4" pattern from type 2F21 Monoscope or equivalent. Individual tubes will have satisfactory focus at some value between 0 and 400 volts.

■ Protective resistance in the grid 2 and grid 4 (focus electrode) circuit is advisable to prevent damage.

X-RAY WARNING: Operation with voltages in excess of 16KV may require shielding to limit radiation of very soft x-rays.

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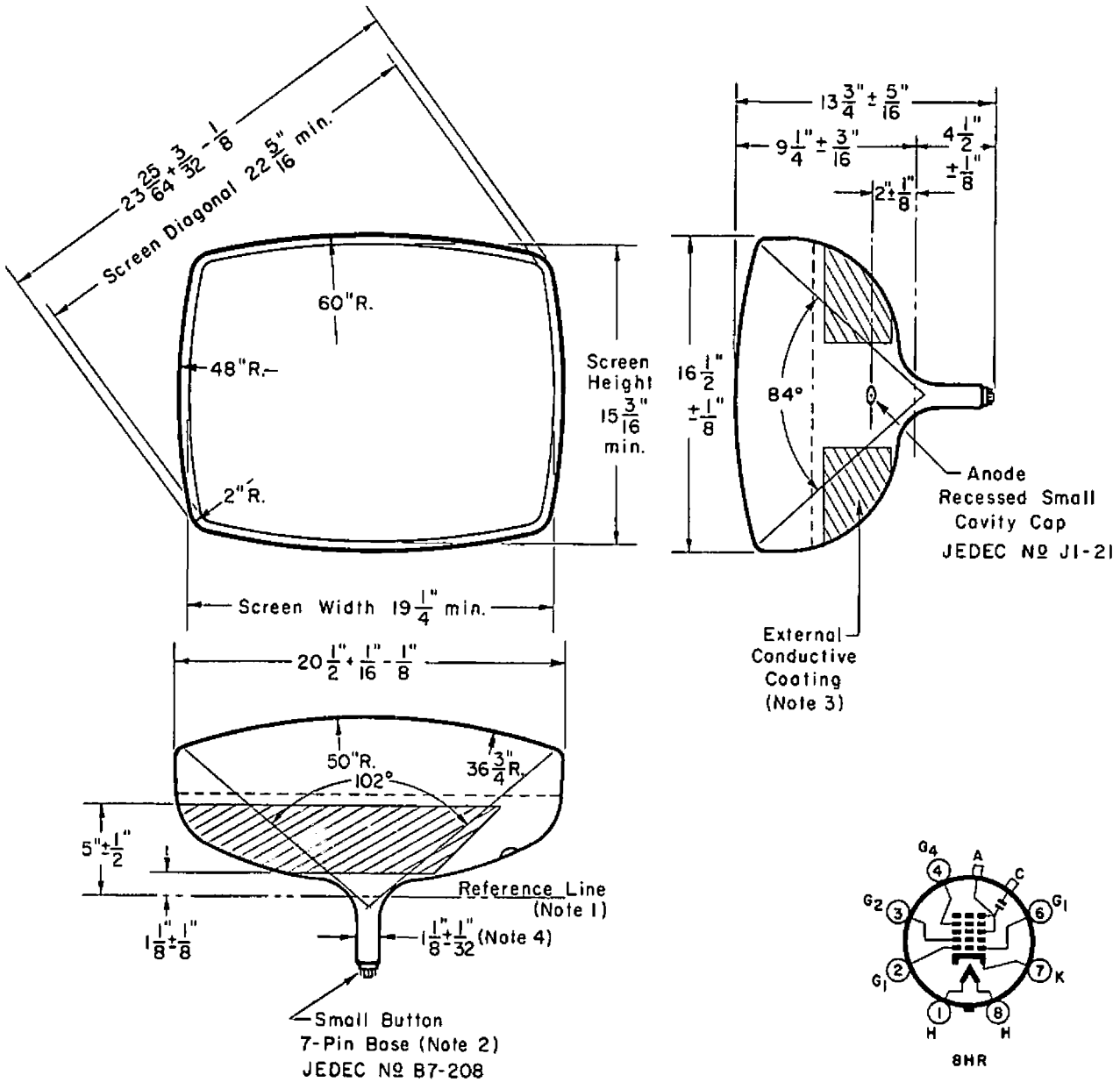

NOTE 1: Yoke Reference Line is determined by plane surface of flared end of JEDEC Reference-Line Gauge No. 126 when seated on funnel of tube. With a minimum neck length tube, the PM centering magnet (0 to 8 gauss) should extend no more than 2-1/8" from Yoke Reference Line.

NOTE 2: Lateral strains on the base pins must be avoided. The socket should have flexible leads permitting free movement. The perimeter of the base wafer will be inside a 1-3/4" diameter circle concentric with tube axis.

NOTE 3: External conductive coating forms supplementary filter capacitor and must be grounded.

NOTE 4: Neck diameter may be a maximum of 1.168" at the splice.