

January 15, 1963

TELEVISION PICTURE TUBE TYPE 23DCP4

94° Magnetic Deflection	6.3 Volt, 450 Ma. Heater	External Conductive Coating
Rectangular Glass	Electrostatic Focus	Spherical Faceplate
Aluminized Screen	5" Neck Length	No Ion Trap
Gray Filter Glass	Low G ₂ Voltage (30 Volts)	15-1/16" × 19-1/8" Screen Size

ELECTRICAL

Focusing Method	Low Voltage Electrostatic
Deflection Method	Magnetic
Deflection Angles (Approx.):	
Horizontal	83 Degrees
Vertical	68 Degrees
Diagonal	94 Degrees
Direct Interelectrode Capacitances:	
Cathode to all other electrodes, (Approx.)	5 μμf
Grid 1 to all other electrodes, (Approx.)	6 μμf
External Conductive Coating to Anode:	
Maximum	2500 μμf
Minimum	1700 μμf
Heater Current at 6.3 Volts	450 ± 5% Ma.
Heater warm-up Time (Note 1)	11 Seconds

OPTICAL

Phosphor Number	Aluminized P 4
Light Transmittance at Center, Approximate	78 Percent

MECHANICAL

Overall Length	17-5/64 ± 5/16	Inches
Greatest Dimensions of Tube:		
Diagonal	23-3/8 ± 1/8	Inches
Width	20-1/2 ± 1/8	Inches
Height	16-1/2 ± 1/8	Inches
Minimum Useful Screen Dimensions (Projected):		
Diagonal	22-1/4	Inches
Horizontal	19-1/8	Inches
Vertical	15-1/16	Inches
Area	282	Sq. Inches
Neck Length	5 ± 1/8	Inches
Bulb	J187H1	
Bulb Contact	J1-21	
Base	B7-208	
Basing	8HR	
Weight (Approx.)	27-1/2	Pounds

RATINGS

Design Maximum System

Unless Otherwise Specified, Voltage Values are Positive with Respect to Grid 1.

Maximum Anode Voltage	23500	Volts
Minimum Anode Voltage (Note 2)	11000	Volts
Maximum Grid 4 Voltage (Focusing Electrode)	+1100, -400	Volts
Maximum Grid 2 Voltage	.70	Volts
Minimum Grid 2 Voltage	.20	Volts

Cathode Voltage:

Maximum Negative Bias Value	0	Volts DC
Maximum Negative Peak Value	2	Volts
Maximum Positive Bias Value	154	Volts DC
Maximum Positive Peak Value	220	Volts

Maximum Heater-Cathode Voltage

Heater Negative with Respect to Cathode

During Warm-Up Period not to Exceed

15 Seconds	450	Volts
After Equipment Warm-Up Period	200	Volts
Heater Positive with Respect to Cathode	200	Volts

TYPICAL OPERATING CONDITIONS

CATHODE DRIVE SERVICE

Unless Otherwise Specified, All Voltage Values are Positive with Respect to Grid 1.

Anode Voltage	18000	Volts DC
Grid 4 Voltage (Focusing Electrode)	0 to 400	Volts DC
Grid 2 Voltage	.50	Volts DC
Cathode Voltage for Raster Cutoff	35 to 55	Volts DC

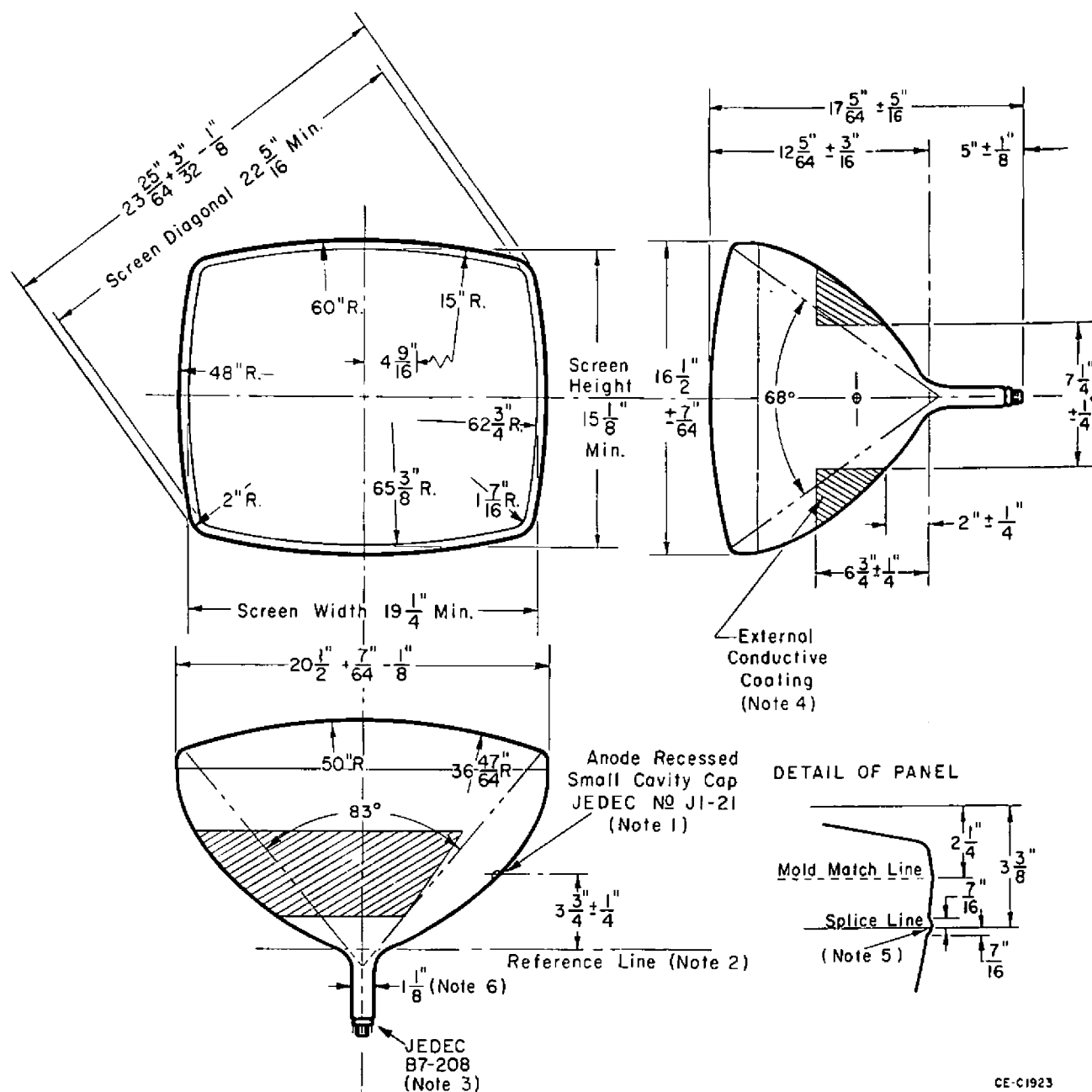
LIMITING CIRCUIT VALUES

Maximum Grid 1 Circuit Resistance	1.5	Megohms
Minimum Grids 2 & 4 Circuit Resistance (Note 3)	10000	Ohms

NOTES

1. 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.
2. Brilliance and definition decrease with decreasing anode voltage. Operation with anode voltage less than 11000 volts is not recommended.
3. Protective resistance in the grid 2 and grid 4 (focus electrode) circuits is advisable to prevent damage to the tube.

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



- NOTE 1: Base pin 4 aligns with major axis and anode terminal within 30° and is on same side as anode terminal.
- NOTE 2: Yoke Reference Line is determined by plane C-C¹ 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 3: The socket should not be mounted rigidly, but should be allowed to move freely and have flexible leads. The associated wiring should not impress lateral strains on the base pins. The bottom circumference of the base wafer will lie within a circle concentric with the tube axis and having diameter of 1-3/4".
- NOTE 4: External conductive coating forms supplementary filter capacitor and must be grounded.
- NOTE 5: Splice-line seal bulge may protrude a maximum of 1/16" from dimension surface at any around the seal.
- NOTE 6: Neck diameter may be a maximum of 1.168" at the splice.

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