

January 15, 1963

TELEVISION PICTURE TUBE TYPE 23DCP4

94° Magnetic Deflection
 Rectangular Glass
 Aluminized Screen
 Gray Filter Glass

6.3 Volt, 450 Ma. Heater
 Electrostatic Focus
 5" Neck Length
 Low G₂ Voltage (30 Volts)

External Conductive Coating
 Spherical Faceplate
 No Ion Trap
 15-1/16" x 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 P4
 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 |

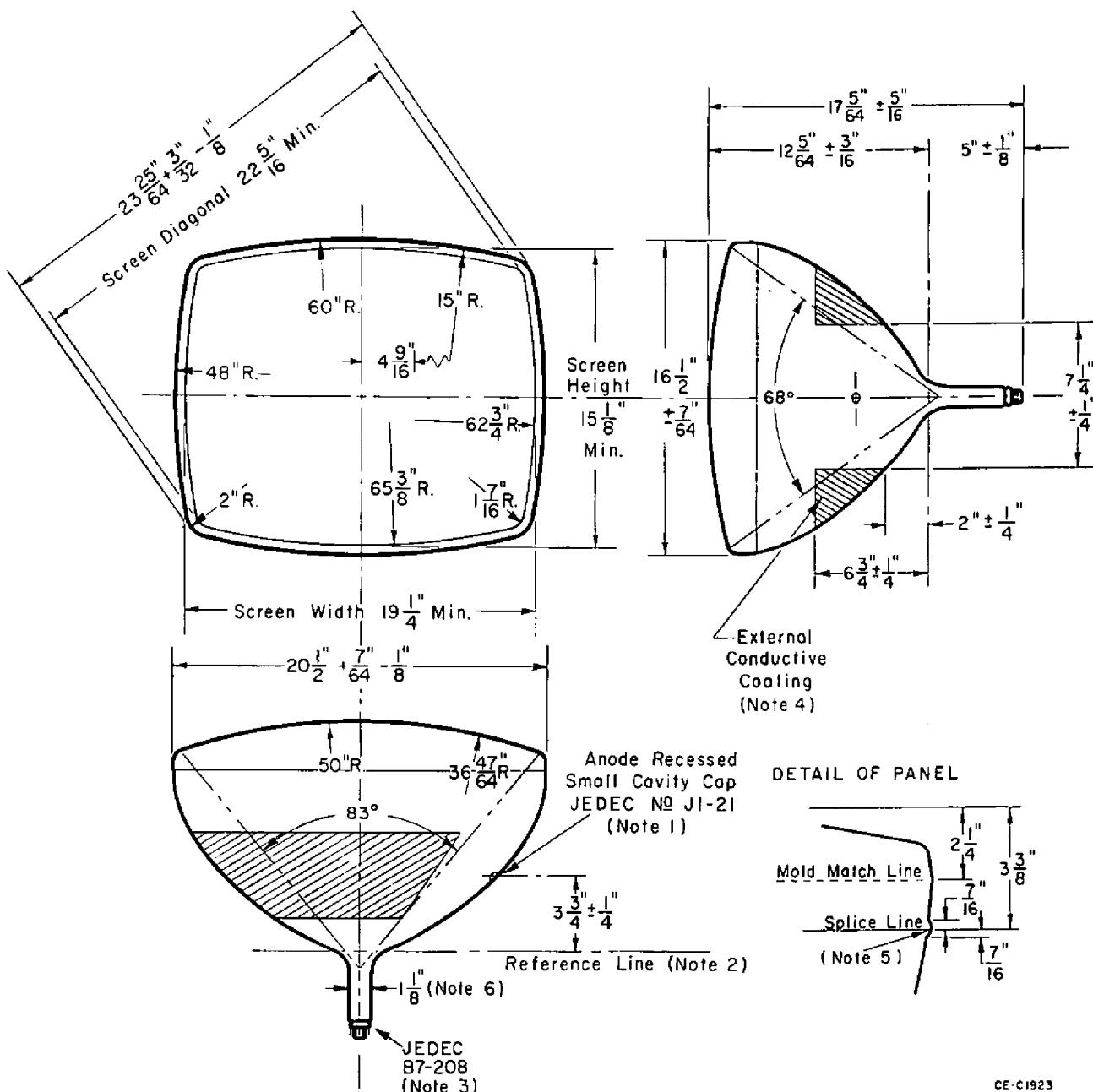
LIMITING CIRCUIT VALUES

| | | |
|---|-------|---------|
| 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 $2\frac{1}{8}$ " 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 $1\frac{3}{4}$ ".

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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