

February 1, 1964

TELEVISION PICTURE TUBE TYPE 23CGP4

92° Magnetic Deflection
Rectangular Glass
Aluminized Screen
Gray Filter Glass

6.3 Volt, 450 Ma. Heater
Electrostatic Focus
5½" Neck Length

External Conductive Coating
Spherical Faceplate
No Ion Trap
15-1/8" × 19-1/4" Screen Size

ELECTRICAL

Focusing Method	Electrostatic
Deflection Angles (Approx.)	
Horizontal	80 Degrees
Vertical	65 Degrees
Diagonal	92 Degrees
Direct Interelectrode Capacitances:	
Cathode to all other Electrodes, approximate	5 μft
Grid #1 to all other Electrodes, approximate	6 μft
External Conductive Coating to Anode	2500 max. μft 1700 min. μft
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, (Approx.)	78 Percent

MECHANICAL

Overall Length	18 ± 3/8	Inches
Greatest Dimensions of Tube:		
Diagonal	23-25/64 ± 1/8	Inches
Width	20-1/2 ± 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	15-1/8	Inches
Area	282 Sq. Inches	
Neck Length	5-1/2 ± 3/16	Inches
Bulb	J187C1	
Bulb Contact	J1-21	
Base	B6-203	
Basing	12L	
Weight	27 Pounds	

RATINGS

Design Maximum System
Unless Otherwise Specified, Voltage Values are Positive
and Measured with Respect to Grid 1.

Maximum Anode Voltage (Note 2)	22000 Volts
Minimum Anode Voltage (Note 2)	11000 Volts
Maximum Grid 4 Voltage	+1200 ~400 Volts
Maximum Grid 2 Voltage	700 Volts
Cathode Voltage:	
Maximum Negative Bias Value	0 Volts
Maximum Negative Peak Value	2 Volts
Maximum Positive Bias Value	154 Volts
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.

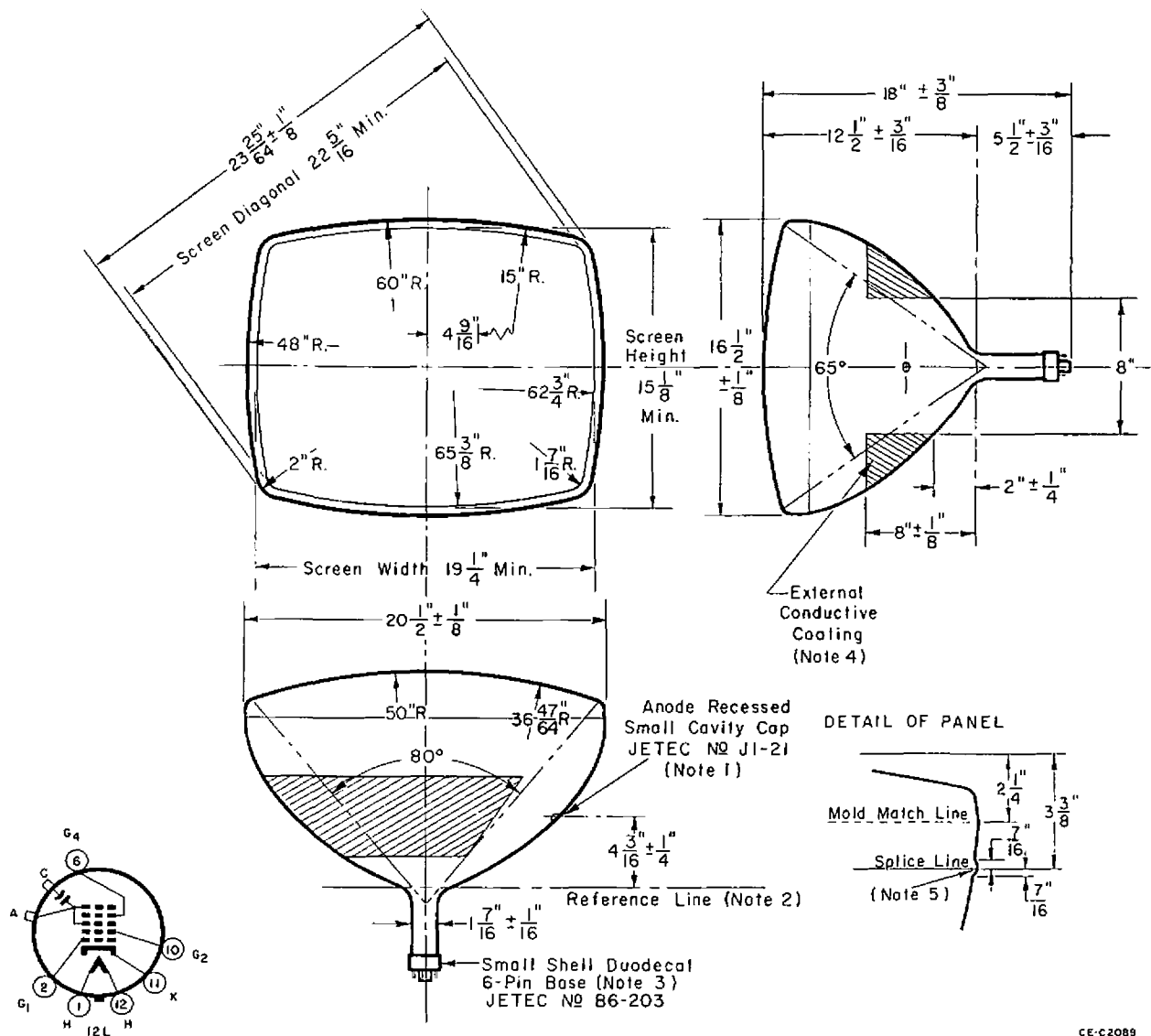
Anode Voltage	16000 Volts DC
Grid 4 Voltage (Focusing Electrode)	0 to 400 Volts DC
Grid 2 Voltage (Note 3)	.500 Volts DC
Cathode Voltage for Raster Cutoff	45 to 95 Volts DC

LIMITING CIRCUIT VALUES

Maximum Grid #1 Circuit Resistance	1.5 Megohms
Minimum Grids 2 & 4 Circuit Resistance (Note 4)	.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. Operation with voltages in excess of 16KV may require shielding to limit radiation of very soft x-rays. Brilliance and definition decrease with decreasing anode voltage. Operation with anode voltage less than 11000 volts is not recommended.
3. It is recommended that not less than 300 volts on grid 2 be used as resolution is affected at lower voltages.
4. Protective resistance in the grid 2 and grid 4 (focus electrode) circuit is advisable to prevent damage.



CE-C2089

- Anode terminal alignment with pin 6 has angular tolerance about tube axis of $\pm 30^\circ$.
- Yoke Reference Line is determined by plane surface of flared end of JEDEC Reference-Line Gauge No. 116 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 $2\frac{3}{4}$ " from Yoke Reference Line.
- 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 $2\frac{3}{4}$ " diameter circle concentric with tube axis.
- External conductive coating forms supplementary filter capacitor and must be grounded.
- Splice-line seal bulge may protrude a maximum of $1/16$ " from dimension surface at any point around the seal.