

May 15, 1962

TELEVISION PICTURE TUBE TYPE 19CMP4

114° Magnetic Deflection

Rectangular Glass

Aluminized Screen

Gray Filter Glass

Electrostatic Focus

4-3/8" Neck Length

Low G₂ Voltage (30 Volts)

External Conductive Coating

Spherical Faceplate

No Ion Trap

12" x 15-1/8" Screen Size

ELECTRICAL

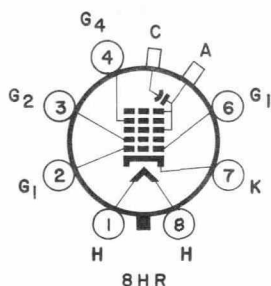
Focusing Method	Low Voltage Electrostatic
Deflection Method	Magnetic
Deflection Angles (Approx.):	
Horizontal	103 Degrees
Vertical	86 Degrees
Diagonal	114 Degrees
Direct Interelectrode Capacitances:	
Cathode to all other electrodes, (Approx.)	5 $\mu\mu\text{f}$
Grid 1 to all other electrodes, (Approx.)	6 $\mu\mu\text{f}$
External Conductive Coating to Anode:	
Maximum	1500 $\mu\mu\text{f}$
Minimum	1000 $\mu\mu\text{f}$
Heater Current at 6.3 Volts	450 $\pm$ 5% Ma.
Heater Warm-up Time $\oplus$	11 Seconds

OPTICAL

Phosphor Number	Aluminized P4
Light Transmittance at Center, approximate	78 Percent

MECHANICAL

Overall Length	11-5/8 $\pm$ 1/4	Inches
Greatest Dimensions of Tube:		
Diagonal	18-5/8 $\pm$ 1/8	Inches
Width	16-13/32 $\pm$ 1/8	Inches
Height	13-11/32 $\pm$ 1/8	Inches
Minimum Useful Screen Dimensions (Projected):		
Diagonal	17-9/16	Inches
Horizontal	15-1/8	Inches
Vertical	12	Inches
Area	172 Sq. Inches	
Neck Length	4-3/8 $\pm$ 1/8	Inches
Bulb	J149	
Bulb Contact	J1-21	
Base	B7-208	
Basing	8HR	
Weight	13-1/2 Lbs.	



RATINGS

Design Maximum System

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

Maximum Anode Voltage	20000	Volts
Minimum Anode Voltage Δ	12000	Volts
Maximum Grid 4 Voltage (Focusing Electrode)	+1100, -550	Volts
Maximum Grid 2 Voltage	60	Volts
Minimum Grid 2 Voltage	20	Volts
Cathode Voltage:		
Maximum Negative Value	0	Volts DC
Maximum Negative Peak Value	2	Volts
Maximum Positive 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	16000	Volts DC
Grid 4 Voltage (Focusing Electrode)	0 to 400	Volts DC
Grid 2 Voltage	30	Volts DC
Cathode Voltage for raster cutoff	30 to 45	Volts DC

LIMITING CIRCUIT VALUES

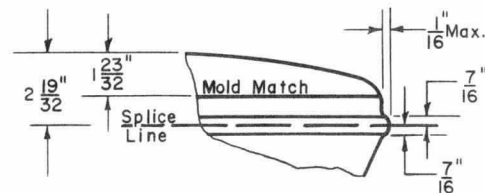
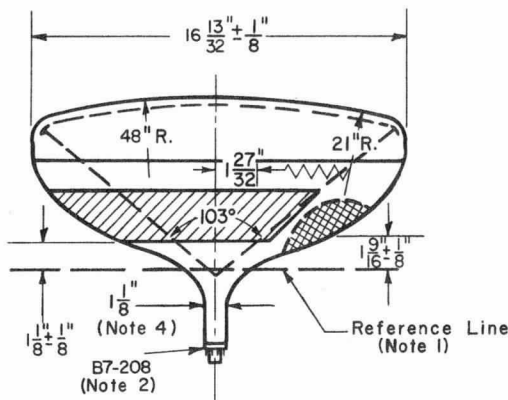
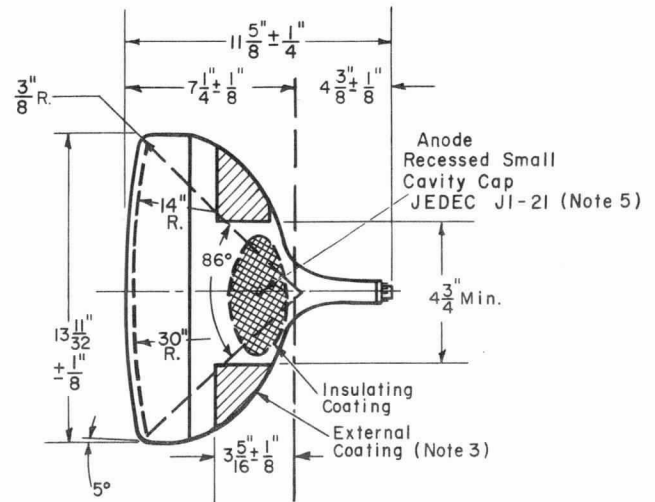
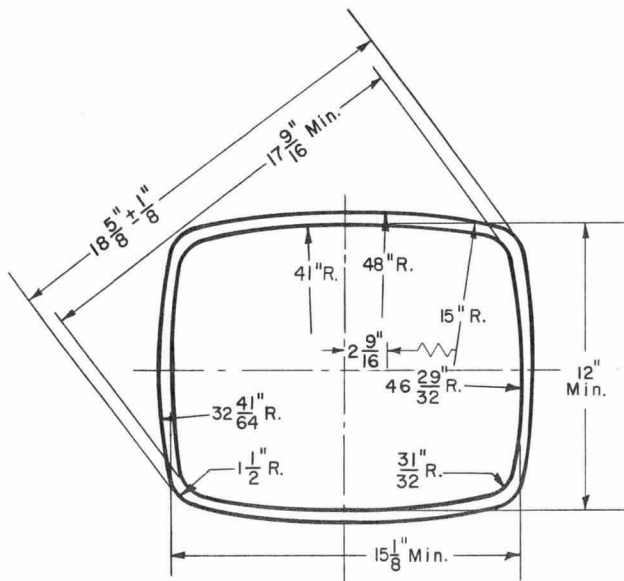
Maximum Grid 1 Circuit Resistance	1.5	Megohms
Minimum Grids 2 & 4 Circuit Resistance $\dagger$	10000	Ohms

 $\oplus$ 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.

 Δ Brilliance and definition decrease with decreasing anode voltage. Operation with anode voltage less than 12000 volts is not recommended.

 $\dagger$ 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.



CE-C1807

NOTE 1: 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 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 $1\frac{3}{4}$ " 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.

NOTE 5: Anode terminal alignment with pin 4 has angular tolerance about tube axis of $\pm 30^\circ$.