19CUP4

Television Picture Tube

PHILCO - LANSDALE DIVISION

CATHODE RAY TUBE

DATA SHEET

Tentative

Description

The 19CUP4 is a 19" - 114° direct view rectangular glass picture tube having an aluminized screen, spherical faceplate, non ion trap gun, internal shielding and is designed to operate with electrostatic focus and magnetic deflection.

It is a "HiGm" tube designed to operate in cathode drive service under low G2 voltage conditions. The tube base is short and provides straight through leads oriented by an indexing lug.

Electrical Data

Focusing Method	Electrostatic
Deflection Method	Magnetic
Deflection Angle, approximate	
Horizontal	102 Degrees
Vertical	85 Degrees
Diagonal	114 Degrees
Direct Interelectrode Capacitance, approximate	
Cathode to All	4.0uuf
Grid #1 to All	6.0uuf
External Coating Capacitance	1300 Min. uuf
	1700 Max. uuf
Heater Voltage	6.3 Volts
Heater Current at 6.3 Volts	0.45±5% Amperes
Heater Warm-up Time (Note 1)	11 Seconds

Optical Data

Phosphor Number	Aluminized P4
Fluorescent Color	White
Persistence	Medium Short
Faceplate	
Light Transmission at Center, Approximate	77 Percent

Mechanical Data

Overall Length	11 5/8±1/4-3/16 Inches
Neck Length	4 3/8±1/8-1/16 Inches
Greatest Dimensions of Bulb	
Diagonal	18 5/8±1/8 Inches
Width	16 13/32±1/8 Inches
Height	13 11/32±1/8 Inches
Minimum Useful Screen Dimensions (maximum assured dimensions)	172 Sq. Inches
Diagonal	17 9/16 Inches
Width	15 1/8 Inches
Height	12 Inches
Bulb	J149A2
Base	B7-208
Basing	8HR
Anode Contact	J1-21

Anode Contact Aligns with Pin #4 ±30°

CATHODE DRIVE SERVICE

Voltages are positive with respect to Grid #1 unless indicated otherwise.

Maximum Ratings (Design Maximum Values)

Anode Voltage (Note 2)	22,000 Volts DC
Grid #4 Voltage	-550 Min. to +1100 Max. Volts DC
Grid #2 Voltage	80 Volts DC
Cathode Voltage	
Positive-Bias Value	154 Max. Volts DC
Positive-Peak Value	220 Max. Volts
Negative-Bias Value	0 Max. Volts DC
Negative-Peak Value	2 Max. Volts
Peak-Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
During Warm-up Period not to exceed 15 seconds	450 Max. Volts
After Equipment Warm-up Period	200 Max. Volts
Heater Positive with Respect to Cathode	200 Max. Volts

Typical Operating Conditions

Anode Voltage	16,000 Volts DC
Grid #4 Voltage for Focus	-100 Volts to +300 Volts DC
Grid #2 Voltage	65 Volts DC
Cathode Voltage (Note 3)	+41 to +56 Volts DC

Maximum Circuit Values

Grid #1 Circuit Resistance	1.5 Max. Megs.

Notes

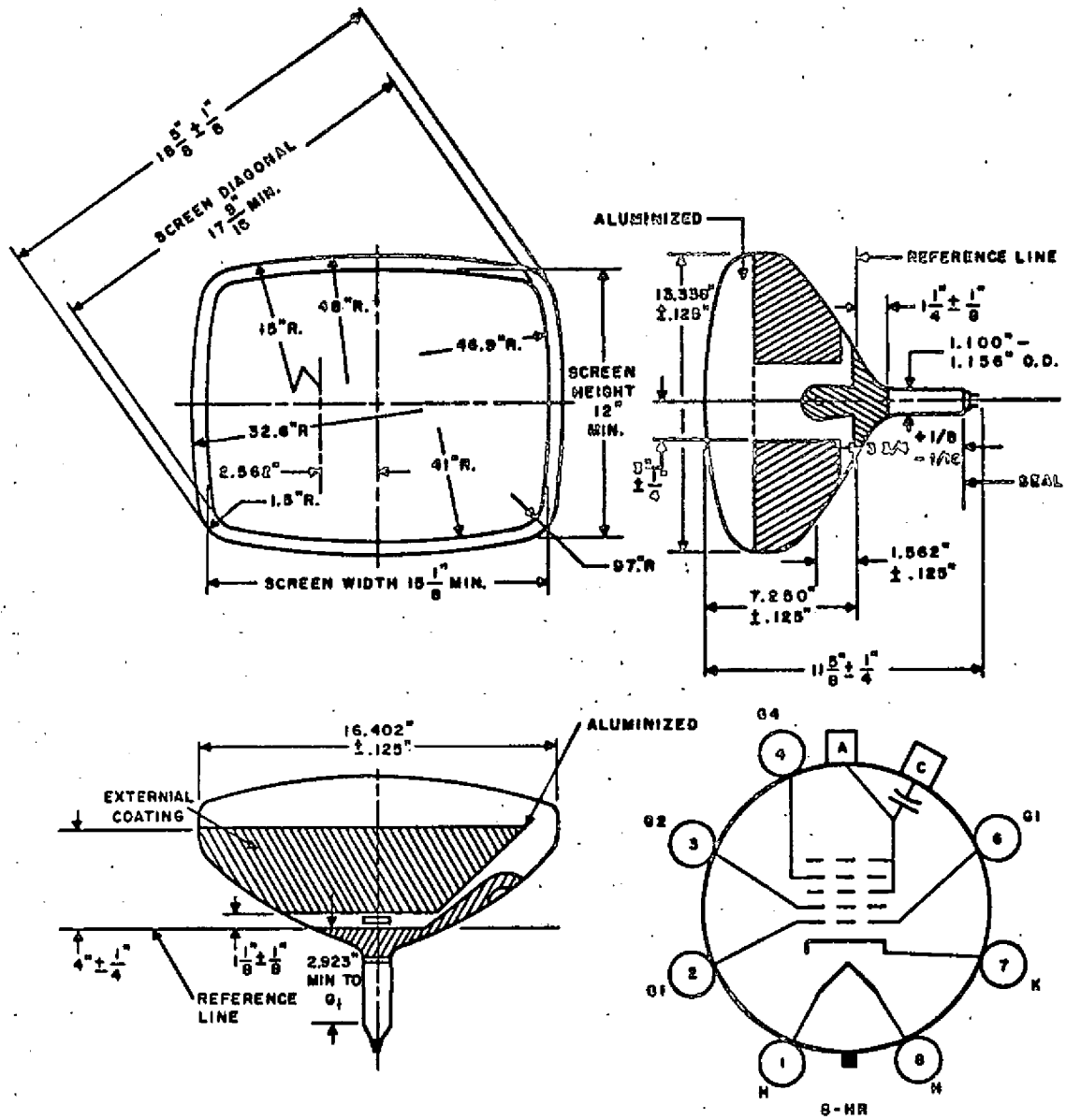
1. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater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

2. Anode, Grid #3, and Grid #5 are connected together within the tube and are referred to herein as anode.

3. For visual extinction of the focused raster. For cutoff of undeflected focus spot, the absolute value of the bias between cathode and grid will increase by about 4 volts.

PHILCO CORPORATION - LANSDALE DIVISION

Outline Drawing
19CUP4
Television Picture Tube



MECHANICAL NOTES

1. The reference line is determined by reference line gauge JEDEC #126.
2. The area around the button is covered with an insulating coating.
3. Socket for this base should not be rigidly mounted; it should have flexible leads and be allowed to move freely. The design of the socket should be such that the circuit wiring cannot impress lateral strains through the socket contacts on the base pins. Bottom circumference of the base wafer will fall within a circle concentric with bulb axis and having a diameter of 1¾".

WARNING

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at anode voltages higher than 18,000 volts.