



DESCRIPTION

Sylvania Type SC-4009 is an electrostatically focused and deflected cathode ray tube designed for modern oscilloscopes which feature a rectangular shape display. Its electron gun offers high deflection and pattern linearity.

CHARACTERISTICS

GENERAL DATA

Focusing Method	Electrostatic
Deflection Method	Electrostatic
Phosphor*	P31
Fluorescence	Green
Phosphorescence	Green
Persistence	Medium
Faceplate	Clear

*In addition to the phosphor shown the SC-4009 can be supplied with several other screen phosphors.

ELECTRICAL DATA

Heater Voltage	6.3 Volts	
Heater Current	$0.6 \pm 10\%$ Ampere	
Direct Interelectrode Capacitances		
Cathode to All Other Electrodes	5.0 pf	Max.
Grid No. 1 to All Other Electrodes	6.9 pf	Max.
Between Deflecting Plates 1-2	4.5 pf	Max.
Between Deflecting Plates 3-4	1.6 pf	Max.
Deflecting Plate 1 ¹ to All Other Electrodes	9.3 pf	Max.
Deflecting Plate 2 ¹ to All Other Electrodes	9.3 pf	Max.
Deflecting Plate 3 ¹ to All Other Electrodes	6.3 pf	Max.
Deflecting Plate 4 ¹ to All Other Electrodes	6.3 pf	Max.

MECHANICAL DATA

Minimum Useful Screen Dimension	4 x 5 Inches
Base	B12-37, Medium Shell Diheptal 12-Pin
Basing	14G
Base Alignment	
D1-D2 Trace Aligns with Pin No. 5 and Major Tube Axis ⁴	± 10 Degrees
Angle Between D1-D2 and D3-D4 Traces	90 ± 0.8 Degrees
Angle Between D1-D2 Trace and Bulb Wall	± 1.5 Degrees

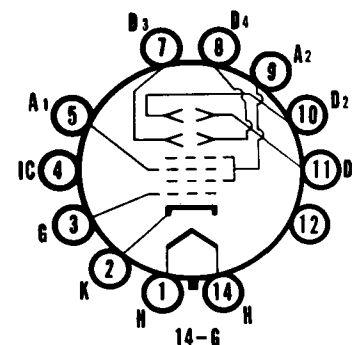
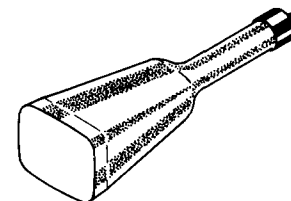
RATINGS

MAXIMUM RATINGS (Absolute Maximum Values)

Maximum Anode No. 2 Voltage ²	4400 Volts dc
Anode No. 1 Voltage	1650 Volts dc
Grid No. 1 Voltage	
Negative Bias Value	220 Volts dc
Positive Bias Value	0 Volt dc
Positive Peak Value	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	200 Volts
Heater Positive with Respect to Cathode	200 Volts
Peak Voltage Between Anode No. 2 and any Deflecting Plate	
	1200 Volts

QUICK REFERENCE DATA

$4\frac{1}{2} \times 5\frac{1}{2}$ Face
Direct Viewed
Electrostatic Deflection
Oscilloscope Tube
Electrostatic Focus
Clear Faceplate



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File Under

SPECIAL AND GENERAL
PURPOSE CATHODE RAY TUBES

TYPICAL OPERATING CONDITIONS

Anode No. 2 Voltage	2500 Volts dc	
Anode No. 1 Voltage for Focus	0 to 300 Volts dc	
Grid No. 1 Voltage Required for Cutoff ³	-34 to -56 Volts dc	
Deflection Factor ⁴		
Deflecting Plates 1-2	40 to 50 Volts dc/In.	
Deflecting Plates 3-4	31.5 to 38.5 Volts dc/In.	
P1 Light Output ⁵	15 Ft. L.	Min.
Modulation ⁵	40 Volts dc	Max.
Line Width A ⁵	0.030 Inch	Max.
Anode No. 2 Current ⁵	400 μ a dc	Max.
Deflection Factor Uniformity ⁶	1 Percent	Max.
Pattern Distortion at 100 % of Useful Scan ⁷	1 Percent	Max.
Spot Position ⁸	Within a $\frac{5}{16}$ Inch Radius Circle	
Useful Scan (Centered on Tube Face)	$3\frac{7}{8} \times 4\frac{1}{2}$ Inches	Min.

CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5 Megohms	Max.
Deflection Circuit Resistance ⁹	1.0 Megohms	Max.

NOTES:

1. Deflecting Plate 1 is Pin No. 11.
Deflecting Plate 2 is Pin No. 10.
Deflecting Plate 3 is Pin No. 7.
Deflecting Plate 4 is Pin No. 8.
2. The product of Anode No. 2 voltage and average Anode No. 2 current should be limited to 6.0 watts.
3. Visual extinction of undeflected focused spot.
4. Positive voltage on D1 deflects beam approximately toward Pin No. 5.
Positive voltage on D3 deflects beam approximately toward Pin No. 2.
5. Measured in accordance with MIL-E-1 specification on a P31 screen at a brightness of 15 Ft. L. on a raster size of 2×2 inches.
6. The deflection factors at 75 % of useful scan and at 25 % of useful scan shall not differ by more than the indicated value.
7. All edges of a raster pattern adjusted so its widest points just touch the sides of a 3.075 inch square, will fall within the area bounded by the 3.075 inch square and an inscribed 2.925 inch square.
8. Centered on the tube face with the tube shielded and with all deflection plates connected to Anode No. 2.
9. It is recommended that the deflecting electrode circuit resistances be approximately equal.

OUTLINE

