

ADVANCE DATA

DESCRIPTION

The Sylvania SC-3399 is a 5 gun, electrostatically focused and deflected cathode-ray tube, 10 inches in diameter, for displaying simultaneously, 5 independently controlled traces. It features monoaccelerator design for maximum pattern linearity and deflection factor uniformity. All deflection plate leads are brought through the neck. An independent astigmatism electrode connection is provided, also brought through the neck, so that maximum resolution can be attained by the use of dynamic control of both focus and astigmatism voltages.

CHARACTERISTICS

GENERAL DATA¹

Focusing Method	Electrostatic				
Deflection Method	Electrostatic				
Phosphor*	P1	P2	P7	P11	
Fluorescence	Green	Blue-Green	Blue	Blue	
Phosphorescence	—	Green	Yellow	—	
Persistence	Medium	Long	Long	Short	

*In addition to the types shown, the SC-3399 can be supplied with several other screen phosphors.

ELECTRICAL DATA

Heater Voltage	6.3 Volts
Heater Current	1.5 ± 10 % Amperes
Direct Interelectrode Capacitances (Approx.)	Each Gun
Cathode to All	6.5 pf
Grid No. 1 to All	7.9 pf
D1 to D2	2.6 pf
D3 to D4	2.0 pf
D1 to All Other Electrodes	8.0 pf
D2 to All Other Electrodes	8.0 pf
D3 to All Other Electrodes	5.0 pf
D4 to All Other Electrodes	5.0 pf

MECHANICAL DATA

Overall Length	21 1/4 ± 1/4 Inches
Minimum Useful Screen Diameter	9 Inches
Bulb Contact (Recessed Small Ball Cap)	J1-22
Basing	See Diagram
Base and Contact Alignment	See Diagram
Positive Voltage on D1 Deflects the Beam Toward Base Key	±10 Degrees
Positive Voltage on D3 Deflects the Beam Approximately Toward Pin No. 23	
Bulb Contact (J1-22) Aligned Approximately with Base Key	
For Deflection Plate Lead Alignment with the Base and Bulb Contact—See Diagram	
Trace Alignment	
D1-D2 Trace Aligns with D3-D4 Trace (Each Gun)	90 ± 1 Degree
D1-D2 Traces of all Guns are Parallel	±1 Degree

MAXIMUM RATINGS (Absolute Maximum Values)

Anode Voltage	5500 Volts	dc
Focus Electrode Voltage	3000 Volts	dc
Grid No. 1 Voltage		
Negative Bias Value	220 Volts	dc
Positive Bias Value	0 Volt	dc
Positive Peak Value	2 Volts	dc
Peak Heater to Cathode Voltage		
Heater Negative with Respect to Cathode	200 Volts	
Heater Positive with Respect to Cathode	200 Volts	
Peak Voltage Between Anode and Astigmatism Electrode or any Deflecting Plate	1000 Volts	

QUICK REFERENCE DATA

Five Independent Guns
10" Direct Viewed
Oscilloscope Tube
Round Glass Type
Electrostatic Focus
Electrostatic Deflection
Monoaccelerator Design
All Deflection Plate Leads
Brought Through the Neck Wall



For Basing
Diagram See
Page 3

SYLVANIA ELECTRONIC TUBES

A Division of
Sylvania Electric Products Inc.

PICTURE TUBE OPERATIONS

SENECA FALLS, NEW YORK

Prepared and Released By The
TECHNICAL PUBLICATIONS SECTION
EMPORIUM, PENNSYLVANIA

JULY, 1963

PAGE 1 OF 3

File Under

SPECIAL AND GENERAL
PURPOSE CATHODE RAY TUBES

TYPICAL OPERATING CONDITIONS

Anode Voltage	5000 Volts	dc
Astigmatism Electrode Voltage	5000 Volts	dc
Focus Electrode Voltage	850 to 1500 Volts	dc
Grid No. 1 Voltage ²	-100 to -175 Volts	dc
Line Width "A" ³	.020 Inch	Max.
Deflection Factors		
D1-D2	70 to 100 Volts Per Inch	
D3-D4	60 to 85 Volts Per Inch	
Deflection Factor Uniformity ⁴	1 1/2 Percent	Max.
Undelected Spot Position	Within 1 Inch Square	
Useful Scan		
D1-D2	±4 1/2 Inches	
D3-D4	±3 1/2 Inches	
Interaction Factor ⁵	6 x 10 ⁻⁵ In./Volts	Max.

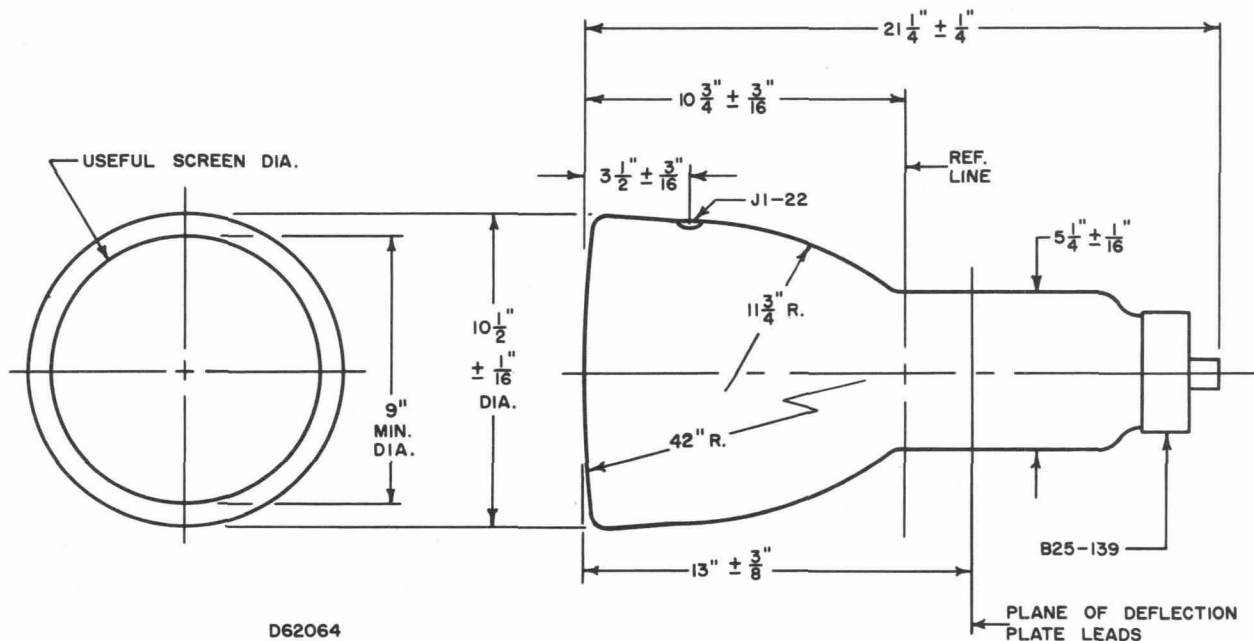
CIRCUIT VALUES

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

NOTES:

1. Values are for each gun unless otherwise specified.
2. Visual extinction of undeflected focused spot.
3. Per MIL-E-1 and at a control grid voltage of 25 volts above spot cutoff.
4. The deflection factor (for both D1-D2 and D3-D4 plate pairs separately) for a deflection of 75 % of the minimum useful scan will not differ from the deflection factor at 25 % of the minimum useful scan by more than the indicated value.
5. The deflection of one beam when balanced dc voltages are applied to the deflection electrodes of either of the other two guns shall be less than the specified value.

OUTLINE



VIEW FROM BASE END OF TUBE