

DESCRIPTION

Sylvania Type SC-3502 is a compact, 2" round cathode ray tube designed for portable oscilloscope applications. It features a high efficiency 1.5 V, 140 ma heater for battery economy and lightweight design; and an electron gun of high deflection sensitivity. This low heater power design requires only 1/16 of the power necessary to operate a conventional 6.3 V, 600 ma heater.

GENERAL DATA

Focusing Method	Electrostatic
Deflection Method	Electrostatic
Phosphor*	P1
Fluorescent Color	Green
Phosphorescent Color	None
Persistence	Medium

*In addition to the phosphor shown, the SC-3502 can be supplied with several other screen phosphors.

ELECTRICAL DATA

Heater Voltage	1.5 Volts
Heater Current	0.140 ± 10 % Amperes
Direct Interelectrode Capacitances (Approx.) (Magnetic Shield Grounded)	
Grid No. 1 to All Other Electrodes	4.5 pf
D1 to D2	2.0 pf
D3 to D4	2.5 pf
D1 to All Other Electrodes	6.5 pf
D2 to All Other Electrodes	6.0 pf
D3 to All Other Electrodes	5.5 pf
D4 to All Other Electrodes	5.5 pf

MECHANICAL DATA

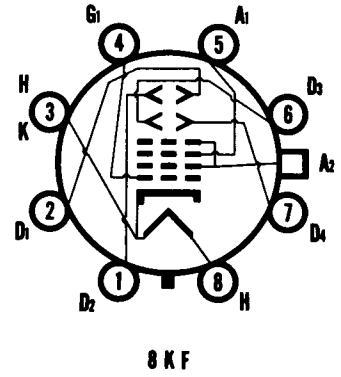
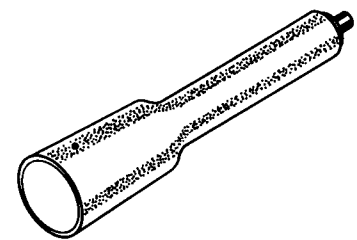
Overall Length	7 ⁵ / ₈ ± 3 ¹ / ₁₆ Inches
Greatest Bulb Diameter	2 ¹ / ₁₆ Inches
Minimum Useful Screen Diameter	1 ³ / ₄ Inches
Base Neo-eightar	B8-218
Basing	8KF
Base Alignment	
D1-D2 Trace Aligns with Pin No. 3 and Tube Axis	0 ± 10 Degrees
Positive Voltage on D1 Deflects Beam Approximately Toward Pin No. 3	
Positive Voltage on D3 Deflects Beam Approximately Toward Pin No. 5	
Trace Alignment	
Angle Between D3-D4 and D1-D2 Traces	90 ± 1 Degrees
Anode Contact	J1-21
Anode Contact is on same side as Pin No. 3	
Deflection Plates	
D1-D2 are nearest to the Screen	
D3-D4 are nearest to the Base	

MAXIMUM RATINGS (Design Center Values)

Anode Voltage (A2)	3000 Volts	dc
Anode (A2) Input	6 Watts	
Anode No. 1 (Focusing Electrode) Voltage	1200 Volts	
Grid No. 1 (G1) Voltage		
Negative Bias Value	140 Volts	dc
Positive Bias Value	0 Volts	dc
Positive Peak Value	2 Volts	
Peak Voltage Between Anode No. 2 and Any Deflecting Plate	550 Volts	
Altitude	35,000 Feet	

QUICK REFERENCE DATA

Oscilloscope Tube
 2" Direct Viewed
 Round Glass Type
 Electrostatic Deflection
 Electrostatic Focus
 Low Heater Power



SYLVANIA ELECTRIC PRODUCTS INC.

Electronic Components Group
ELECTRONIC TUBE DIVISION
 SENECA FALLS, NEW YORK

A Technical Publication
 JULY, 1965
 PAGE 1 OF 2
 File Under

SPECIAL AND GENERAL PURPOSE CATHODE RAY TUBES

TUBE RATINGS

Focusing Electrode (A1) Current for Any Operating Conditions	-15 to $\pm 10 \mu$ Amp	
Spot Position, Undelected	10 mm	Max.
A1 Voltage 20 % to 35 % of A2 Voltage		
G1 Voltage 3.5 % Max. of A2 Voltage		
Deflection Factors		
D1-D2	51 to 69 Volts DC/Inch/A2 Kilovolts	
D3-D4	29 to 39 Volts DC/Inch/A2 Kilovolts	

OPERATING CONDITIONS

	Typical	Typical	
Anode Voltage (A2)	1200	2000 Volts	
Focusing Electrode Volts (A1)	240 to 420	400 to 700 Volts	
G1 Voltage ²	-24 to -42	-40 to -70 Volts	
Deflection Factor D1-D2	61 to 83	102 to 138 Volts	DC/In.
Deflection Factor D3-D4	34 to 47	58 to 78 Volts	DC/In.
Light Output ⁴	3 FTL Min.		

MAXIMUM CIRCUIT VALUES

Grid No. 1 Resistance	1.5 Megohms
Resistance in Any Deflecting Electrode Circuit ³	1.0 Megohms

NOTES:

1. With tube shielded and deflecting electrodes connected to anode (A2).
2. Visual extinction of undeflected focused spot.
3. The resistance in each deflecting electrode circuit should be approximately equal.
4. Light Output shall be measured under the following conditions:
E_{b2} = 1200 V
Grid Drive = 20 Volts above spot cutoff
Raster = 1" x 1" written with no retrace blanking at a vertical frequency of 60 cps and a horizontal frequency of 4500 cps.
Light Meter = Weston Model 759 recalibrated with a 3/4" active acceptance aperture.

OUTLINE

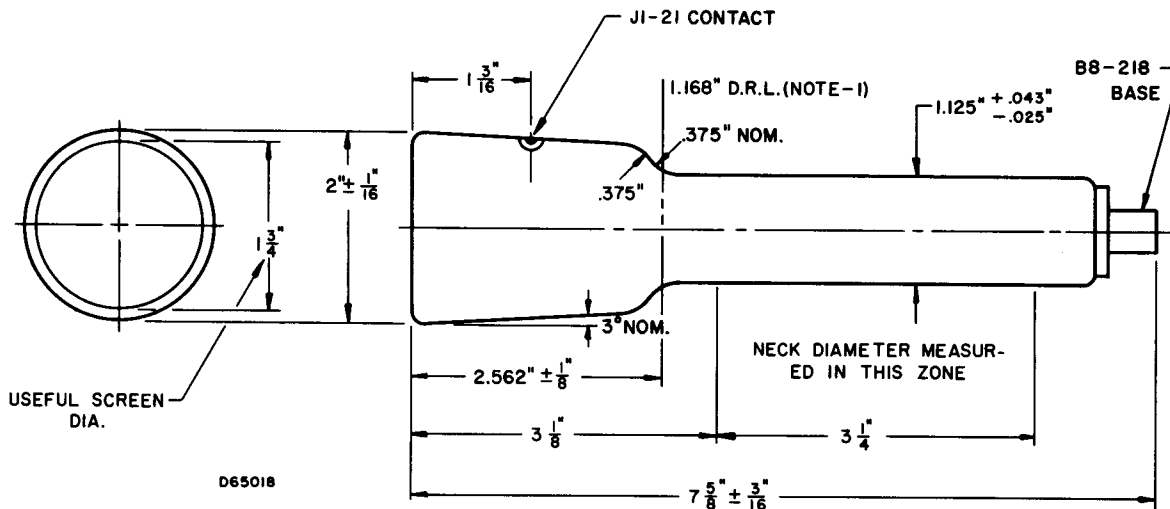


DIAGRAM NOTE:

1. The leading edge of a 1.168" I.D. cylinder resting against the bulb cone will be $2.562'' \pm \frac{1}{8}''$ from the face.