



engineering data service

SYLVANIA
SC-3507
SC-3800
SC-3876

DESCRIPTION

The Sylvania Types SC-3507, SC-3800 and SC-3876 are Cathode Ray Tubes with fiber optic strips inserted into the faceplate. They are intended for application of high resolution photographic recording. The fiber optics strip has an approximate active area $8\frac{11}{16}$ inches long by $\frac{1}{2}$ inch wide. The electron-optical system and fine grain screen achieve a very fine trace width with conventional focusing and deflection units and a simple beam centering magnet.

CHARACTERISTICS

GENERAL DATA

	SC-3507	SC-3876	SC-3800
Focusing Method	Magnetic	Magnetic	Electrostatic
Deflection Method	Magnetic	Magnetic	Magnetic
Deflection Angle (Approx.)	55	55	55 Degrees
Phosphor (Fine Grain Aluminized)	P11	P11	P11
Fluorescence	Blue	Blue	Blue
Persistence	Short	Short	Short
Faceplate	Fiber Optics	Fiber Optics	Fiber Optics

MECHANICAL DATA

Overall Length	See Drawing
Neck Diameter	$1\frac{7}{16}$ Inches
Face Dimensions	$3\frac{1}{2} \times 10$ Inches
Bulb Contact	J1-21
Base	See Drawing

FIBER OPTICS DATA

Useful Screen Size	$\frac{1}{2} \times 8\frac{11}{16}$ Inches
Fiber Size (Single Clad)	8-20 Microns
Numerical Aperture	0.8

RATINGS

MAXIMUM RATINGS (Absolute Values)

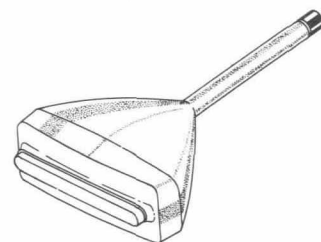
	SC-3507	SC-3800	SC-3876
Anode Voltage	25,000	10,500	10,500 Volts
Focus Electrode Voltage	—	2500	— Volts
Grid No. 2 Voltage	2500	770	2500 Volts
Grid No. 1 Voltage	0 to -150	0 to -150	0 to -150 Volts
Peak Heater Cathode Voltage			
Heater Negative with Respect to Cathode			
During Warm-up Period Not to Exceed 15 Secs.	450	400	400 Volts
After Equipment Warm-up	165	165	165 Volts
Heater Positive with Respect to Cathode	165	165	165 Volts

TYPICAL OPERATING CONDITIONS

Heater Voltage	6.3	6.3	6.3 Volts
Heater Current	$0.6 \pm 10\%$	$0.6 \pm 10\%$	$0.6 \pm 10\%$ Amp
Anode Voltage ⁴	20,000	10,000	10,000 Volts
Focus Voltage	—	1500-2500	— Volts
Focus Electrode Current			
at $I_b = 5 \mu a$	—	50	— μa Max.
Grid No. 2 Voltage	2000	500	2000 Volts
Grid No. 1 Voltage			
for Cutoff ¹	-33 to -77	-33 to -77	-33 to -77 Volts
Focusing Coil Current			
(Approx.) ²	100	—	80 Ma
Line Width ³	0.002	0.005	0.004 Inch Max.

QUICK REFERENCE DATA

Fiber Optics Tubes
High Resolution
Active Area $8\frac{1}{2}'' \times \frac{1}{2}''$
Very Fine Trace
Focusing
SC-3507 and SC-3876—
Magnetic
SC-3800—Electrostatic
Deflection—Magnetic



BASING

	SC-3507	SC-3876	SC-3800
	Pin No.	Pin No.	Pin No.
Heater	1	1	1
Grid No. 1	2	2	2
Focus	—	6	6
Grid No. 2	10	10	10
Cathode	11	11	11
Heater	12	12	12

SYLVANIA ELECTRIC PRODUCTS INC.

Electronic Components Group
ELECTRONIC TUBE DIVISION
SENECA FALLS, NEW YORK

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File Under
SPECIAL AND GENERAL
PURPOSE CATHODE RAY TUBES

CIRCUIT VALUES

Grid No. 1 Circuit Resistance

SC-3507

1.5

SC-3800

1.5

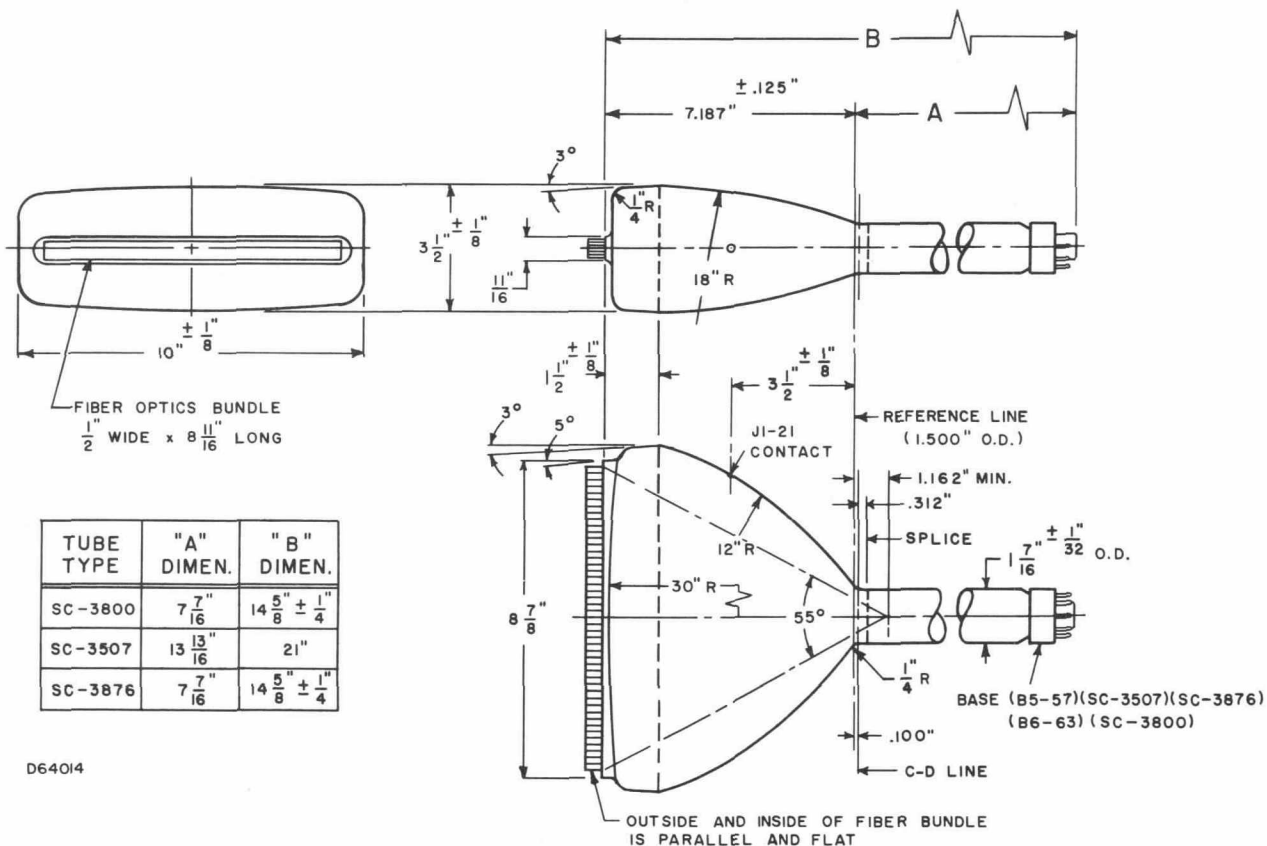
SC-3876

1.5 Megohms Max.

NOTES:

1. Visual extinction of undeflected focused spot.
2. For JEDEC focusing coil 106 or equivalent, $2\frac{1}{2}$ inches from reference line.
3. Line width measured at $5\text{ }\mu\text{a}$ by the shrinking raster method. Variable strength (0-10 gauss) beam centering magnet must be used for optimum line width.
4. SC-3507 must be operated with A2 or screen grounded and cathode at -20 KV. SC-3800 and SC-3876 must be operated only with anode grounded and cathode at -10 KV.

OUTLINE



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