



**SYLVANIA**  
**4VP1**  
**4VP\***

**CHARACTERISTICS**

**GENERAL DATA**

Focusing Method	Electrostatic		
Deflection Method	Electrostatic		
Types*	Fluorescence	Phosphorescence	Persistence
4VP1	Green	—	Medium
4VP2	Blue-Green	Green	Long
4VP7	Blue-White	Yellow	Long
4VP11	Blue	—	Short
Faceplate	Spherical, Clear		

*\*In addition to the types shown, the 4VP- can be supplied with several screen phosphors.*

**ELECTRICAL DATA**

Heater Voltage	6.3 Volts
Heater Current	0.6 ± 10 % Amperes
Direct Interelectrode Capacitances (Approx.)	
Cathode to All Other Electrodes	5 μμf
Grid No. 1 to All Other Electrodes	6.5 μμf
Between Deflecting Plates 1-2 <sup>11</sup>	2 μμf
Between Deflecting Plates 3-4 <sup>11</sup>	2 μμf
Deflecting Plate 1 to All Other Electrodes	7.5 μμf
Deflecting Plate 2 to All Other Electrodes	6 μμf
Deflecting Plate 3 to All Other Electrodes	5.5 μμf
Deflecting Plate 4 to All Other Electrodes	6.5 μμf

**MECHANICAL DATA**

Minimum Useful Screen (Rounded Corners)	2 7/8 x 2 7/8 Inches
Bulb Contact (Recessed Small Ball Cap)	J1-22
Bulb	LEA 467 or Equivalent
Weight (Approx.)	1 1/2 Pounds
Base (Small Shell Duodecal 12-Pin)	B12-43
Basing	12EP
Base Alignment	
D1-D2 Trace Aligns with Base Key and Tube Axis <sup>6</sup>	±10 Degrees
Positive Voltage on D1 Deflects Beam Approx. Toward Base Key	
Positive Voltage on D3 Deflects Beam Approx. Toward Pin No. 9	
Bulb Contact Alignment	
J1-22 Contact Aligns with D1-D2 Trace	±10 Degrees
J1-22 Contact on Same Side as Base Key	
Trace Alignment	
Angle between D1-D2 and D3-D4 Trace	90 ± 2 Degrees
D1-D2 Trace Aligns with Bulb Wall	±1.5 Degrees

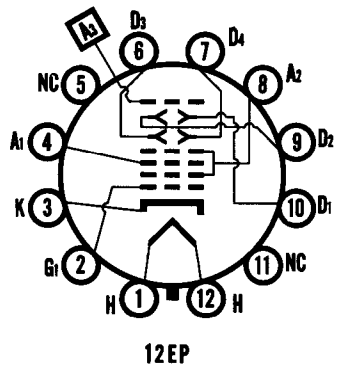
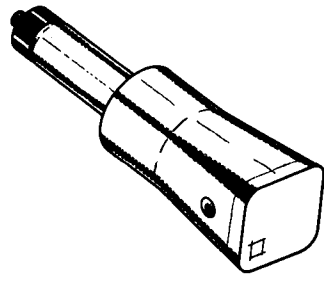
**RATINGS**

**MAXIMUM RATINGS (Absolute Maximum Values)**

Anode No. 2 Input	6 Watts
Anode No. 3 Voltage	5500 Volts dc
Anode No. 2 Voltage	2750 Volts dc
Ratio of Anode No. 3 Voltage to Anode No. 2 Voltage <sup>1</sup>	2:1
Anode No. 1 Voltage (Focusing Electrode)	1100 Volts dc
Grid No. 1 Voltage	
Negative Bias Value	200 Volts dc
Positive Bias Value	0 Volts dc
Positive Peak Value	0 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	180 Volts
Heater Positive with Respect to Cathode	180 Volts
Peak Voltage Between Anode No. 2 and Any Deflecting Plate	600 Volts

**QUICK REFERENCE DATA**

3 1/2" x 3 1/2" Direct Viewed  
Square Glass Type  
Spherical Clear Faceplate  
Electrostatic Focus  
Electrostatic Deflection  
Post Deflection Acceleration



**SYLVANIA**  
**ELECTRONIC TUBES**  
A Division of  
Sylvania Electric Products Inc.  
**PICTURE TUBE**  
**OPERATIONS**  
**SENECA FALLS, NEW YORK**  
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**SPECIAL AND GENERAL**  
**PURPOSE CATHODE RAY TUBES**

**TYPICAL OPERATING CONDITIONS**

Anode No. 3 Voltage . . . . .	4000 Volts	
Anode No. 2 Voltage . . . . .	2000 Volts	
Anode No. 1 Voltage for Focus . . . . .	200 to 500 Volts	
Grid No. 1 Voltage Required for Cutoff <sup>2</sup> . . . . .	-58 to -135 Volts	
Deflection Factor		
Deflecting Plates 1-2 . . . . .	98 to 132 Volts dc/Inch	
Deflecting Plates 3-4 . . . . .	72 to 98 Volts dc/Inch	
Modulation at $I_{b3} = 25 \mu a^3$ . . . . .	30 Volts dc/	Max.
Line Width "A" at $I_{b3} = 25 \mu a^3$ . . . . .	.45 mm	Max.
Line Width "B" at $I_{b3} = 25 \mu a^3$ . . . . .	.55 mm	Max.
Light Output at $I_{b3} = 25 \mu a^3$		
P1 . . . . .	25 Ft. L	Min.
Deflection Factor Uniformity <sup>3</sup> . . . . .	3 Percent	Max.
Undelected Spot Position <sup>4</sup> . . . . .	Within a 10 mm Square	
Useful Scan . . . . .	2 $\frac{7}{8}$ Inches	Min.

**CIRCUIT VALUES**

Grid No. 1 Circuit Resistance . . . . .	1.5 Megohms Max.
Deflection Circuit Resistance <sup>5</sup> . . . . .	1.0 Megohms Max.

**NOTES:**

1. *This tube is designed for optimum performance when operated at an Eb3/Eb2 ratio of 2.0. Operation of other ratios of Eb3/Eb2 may result in changes of deflection uniformity and pattern distortion.*
2. *Visual extinction of undeflected focused spot.*
3. *Measured in accordance with MIL-E-1.*
4. *Centered with respect to the tube face and with the tube shielded. Connect free deflection electrodes to accelerator.*
5. *It is recommended that the deflection electrode circuit resistances be approximately equal.*
6. *Deflecting plates D1 and D2 are nearer the screen while deflecting plates D3 and D4 are nearer the base.*

**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 higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.*

**OUTLINE**

