

**CHARACTERISTICS**

**GENERAL DATA**

Focusing Method . . . . .	Electrostatic
Deflecting Method . . . . .	Magnetic
Deflection Angle (approx.) . . . . .	
Horizontal . . . . .	65 Degrees
Diagonal . . . . .	70 Degrees
Phosphor . . . . .	P4
Fluorescence . . . . .	White
Persistence . . . . .	Medium
Faceplate . . . . .	Gray Filter Glass
Light Transmittance (approx.) . . . . .	72 Percent

**ELECTRICAL DATA**

Heater Voltage . . . . .	6.3 Volts
Heater Current (approx.) . . . . .	0.6 Ampere
Direct Interelectrode Capacitances (approx.) . . . . .	
Cathode to All Other Electrodes . . . . .	5 $\mu\mu\text{f}$
Grid No. 1 to All Other Electrodes . . . . .	6 $\mu\mu\text{f}$
Ion Trap Magnet . . . . .	External, Single Field Type

**MECHANICAL DATA**

Minimum Useful Screen Dimensions . . . . .	19 $\frac{1}{8}$ x 14 $\frac{3}{16}$ Inches
Bulb Contact (Recessed Small Cavity Cap) . . . . .	J1-21
Base (Small Shell Duodecal 6-Pin) . . . . .	B6-63
Basing . . . . .	12M

**RATINGS**

**MAXIMUM RATINGS (Design Center Values)**

Anode Voltage . . . . .	18,000 Volts dc
Grid No. 4 (Focusing Electrode) Voltage . . . . .	-500 to +1000 Volts dc
Grid No. 2 Voltage . . . . .	500 Volts dc
Grid No. 1 Voltage . . . . .	
Negative Bias Value . . . . .	125 Volts dc
Positive Bias Value . . . . .	0 Volts dc
Positive Peak Value . . . . .	2 Volts
Peak Heater-Cathode Voltage . . . . .	
Heater Negative with Respect to Cathode . . . . .	
During Warm-up Period Not to Exceed 15 Seconds . . . . .	410 Volts
After Equipment Warm-up Period . . . . .	180 Volts
Heater Positive with Respect to Cathode . . . . .	180 Volts

**RECOMMENDED OPERATING CONDITIONS**

Anode Voltage . . . . .	16,000 Volts dc
Grid No. 4 Voltage . . . . .	-64 to +350 Volts dc
Grid No. 2 Voltage . . . . .	300 Volts dc
Grid No. 1 Voltage <sup>1</sup> Required for Cutoff . . . . .	-28 to -72 Volts dc
Ion Trap Magnet Strength (approx.) . . . . .	35 Gauss

**CIRCUIT VALUES**

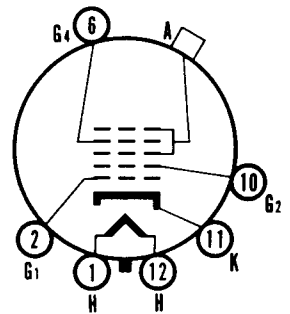
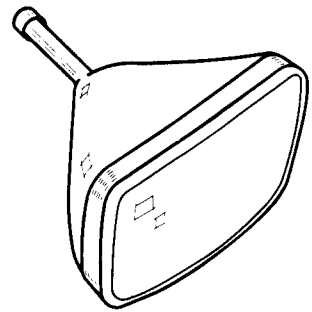
Grid No. 1 Circuit Resistance . . . . .	1.5 Megohms Max.
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**NOTES:**

1. Visual extinction of focused raster. Extinction of the stationary focused spot will require that these values be about 5 volts more negative.

**QUICK REFERENCE DATA**

Television Picture Tube  
 21" Direct Viewed  
 Rectangular Glass Type  
 Spherical Faceplate  
 Gray Filter Glass  
 Magnetic Deflection  
 Low Voltage Electrostatic Focus  
 Single Field Ion Trap  
 (21YP4, 21YP4A have an  
 External Conductive Coating)  
 (21YP4A has an Aluminized  
 Screen)



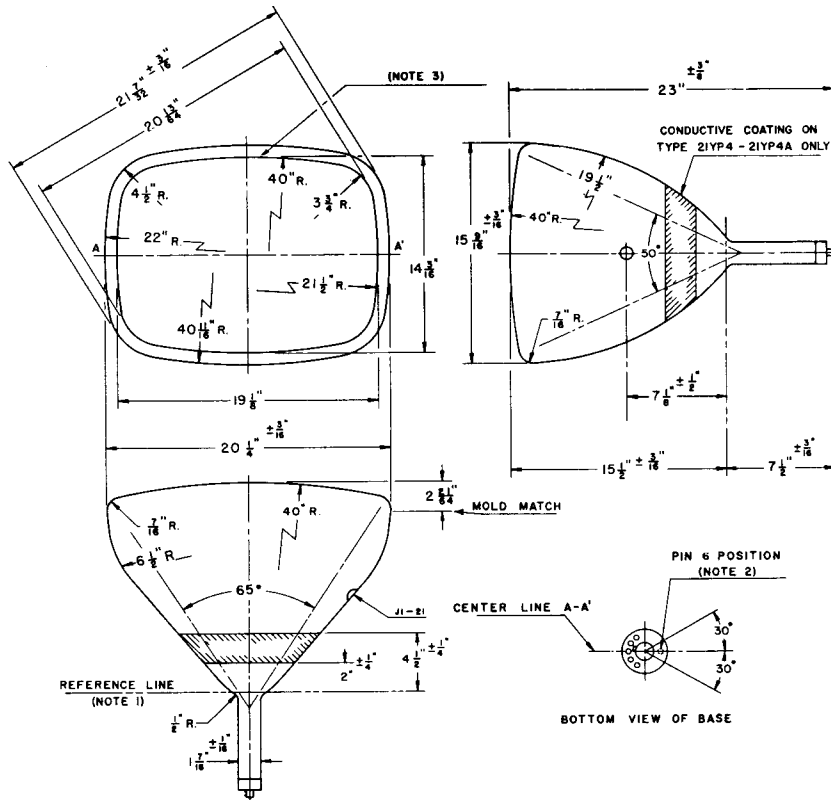
12-M

**SYLVANIA ELECTRIC PRODUCTS INC.**

TELEVISION PICTURE TUBE DIVISION  
 SENECA FALLS, NEW YORK

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**SYLVANIA**  
**21AFP4**  
 21YP4, 21YP4A



**DIAGRAM NOTES:**

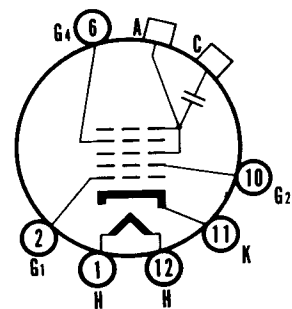
- Reference line is determined by the plane C-C1 of the reference line gauge (JETEC No. 110) when the gauge is resting on the glass cone. The neck diameter near the cone may exceed 1.500" but is limited by the internal contour of the yoke reference line gauge.
- Anode contact aligns with pin position No. 6  $\pm 30$  degrees.
- Suggested mask opening.

**21YP4**

The Sylvania Type 21YP4 is identical to Type 21AFP4 except for having an external conductive coating, which must be grounded.

External Conductive Coating to Anode Capacitance

Maximum . . . . .	750 $\mu\mu\text{f}$
Minimum . . . . .	500 $\mu\mu\text{f}$
Basing . . . . .	12L



12-L

**21YP4A**

The Sylvania Type 21YP4A is identical to Type 21YP4 except that it has an aluminized screen.

The aluminized screen of Type 21YP4A increases its picture brightness and contrast. While the 16 kv operating condition is recommended for optimum picture quality, this type will operate satisfactorily at substantially lower voltages.

**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.