

## engineering data service

### CHARACTERISTICS

#### GENERAL DATA

Focusing Method . . . . .	Electrostatic
Deflection Method . . . . .	Magnetic
Deflection Angles (Approx.)	
Horizontal . . . . .	101 Degrees
Diagonal . . . . .	114 Degrees
Vertical . . . . .	86 Degrees
Phosphor . . . . .	Aluminized P4
Fluorescence . . . . .	White
Persistence . . . . .	Short to Medium
Faceplate . . . . .	Gray Filter Glass
Light Transmittance (Approx.) . . . . .	78 Percent

#### ELECTRICAL DATA

	19AYP4	19XP4	
	19AXP4	19AVP4	
Heater Voltage . . . . .	6.3	6.3	Volts
Heater Current $\pm 5\%$ . . . . .	0.45	0.60	Ampere
Heater Warm-up Time <sup>1</sup> . . . . .	11	11	Seconds
Direct Interelectrode Capacitances (Approx.)			
Cathode to All Other Electrodes . . . . .		5 $\mu\text{mf}$	
Grid No. 1 to All Other Electrodes . . . . .		6 $\mu\text{mf}$	
External Conductive Coating to Anode <sup>2</sup> . . . . .		1500 $\mu\text{mf}$	Max.
		1000 $\mu\text{mf}$	Min.

#### MECHANICAL DATA

Minimum Useful Screen Dimensions (Maximum Assured)			
Height . . . . .		12	Inches
Width . . . . .		15 $\frac{1}{8}$	Inches
Diagonal . . . . .		17 $\frac{9}{16}$	Inches
Minimum Useful Screen Area . . . . .		172	Sq. Inches
Neck Length . . . . .		4 $\frac{1}{8} \pm \frac{1}{8}$	Inches
Overall Length . . . . .		11 $\frac{3}{8} \pm \frac{1}{4}$	Inches
Bulb . . . . .		J149A	
Bulb Contact (Recessed Small Cavity Cap) . . . . .		J1-21	
Base . . . . .		B7-208	
Basing . . . . .		8HR	
Weight (Approx.) . . . . .		13 $\frac{1}{2}$	Pounds

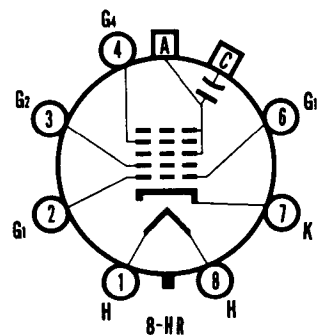
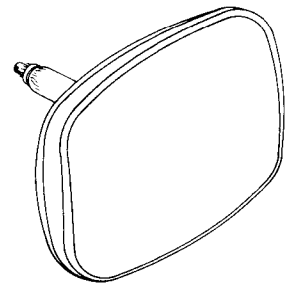
### RATINGS

#### MAXIMUM RATINGS (Design Maximum Values)

	19AYP4	19AXP4	19XP4	
	19AVP4			
Grid Drive Service <sup>3</sup> . . . . .				
Maximum Anode Voltage . . . . .	23,000	20,000	20,000	Volts dc
Minimum Anode Voltage . . . . .	15,000	10,000	11,000	Volts dc
Grid No. 4 Voltage (Focusing Electrode) . . . . .		-550 to	+1100	Volts dc
Maximum Grid No. 2 Voltage . . . . .			550	Volts dc
Minimum Grid No. 2 Voltage . . . . .			200	Volts dc
Grid No. 1 Voltage				
Negative Bias Value . . . . .			154	Volts dc
Negative Peak Value . . . . .			220	Volts dc
Positive Bias Value . . . . .			0	Volts dc
Positive Peak Value . . . . .			2	Volts dc
Peak Heater-Cathode Voltage				
Heater Negative with Respect to Cathode				
During Warm-up Period not to				
Exceed 15 Seconds . . . . .			450	Volts
After Equipment Warm-up Period . . . . .			200	Volts
Heater Positive with Respect to Cathode . . . . .			200	Volts

### QUICK REFERENCE DATA

- Television Picture Tube
- 19" Direct Viewed
- Rectangular Glass Type
- Spherical Faceplate
- Gray Filter Glass
- Aluminized Screen
- Electrostatic Focus
- 114° Magnetic Deflection
- 1  $\frac{1}{8}$ " Neck Diameter
- No Ion Trap
- External Conductive Coating



### SYLVANIA ELECTRONIC TUBES

A Division of  
Sylvania Electric Products Inc.

#### PICTURE TUBE OPERATIONS SENECA FALLS, NEW YORK

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File Under  
TELEVISION PICTURE TUBES

**MAXIMUM RATINGS (Design Maximum Values) Con't.**

	19AYP4	19AVP4	19AXP4	19XP4	
Cathode Drive Service <sup>4</sup>	19AYP4	19AVP4	19AXP4	19XP4	
Maximum Anode Voltage . . . . .	23,000	20,000	20,000	20,000	Volts dc
Minimum Anode Voltage . . . . .	15,000	10,000	11,000	11,000	Volts dc
Grid No. 4 Voltage (Focusing Electrode) . . . . .			-400 to +1250		Volts dc
Maximum Grid No. 2 Voltage . . . . .			700		Volts dc
Minimum Grid No. 2 Voltage . . . . .			350		Volts dc
Cathode Voltage					
Positive Bias Value . . . . .				154	Volts dc
Positive Peak Value . . . . .				220	Volts
Negative Bias Value . . . . .				0	Volts dc
Negative Peak Value . . . . .				2	Volts
Peak Heater-Cathode Voltage					
Heater Negative with Respect to Cathode					
During Warm-up Period not to Exceed 15 Seconds . . . . .				450	Volts
After Equipment Warm-up Period . . . . .				200	Volts
Heater Positive with Respect to Cathode . . . . .				200	Volts

**TYPICAL OPERATING CONDITIONS**

	19AYP4	19AVP4	19AXP4	19XP4	
Grid Drive Service <sup>3</sup>	19AYP4	19AVP4	19AXP4	19XP4	
Anode Voltage . . . . .	20,000		16,000	16,000	Volts dc
Grid No. 4 Voltage for Focus . . . . .			0 to 400	0 to 400	Volts dc
Grid No. 2 Voltage . . . . .			400	400	Volts dc
Grid No. 1 Voltage Required for Cutoff <sup>5</sup> . . . . .			-46 to -94	-46 to -94	Volts dc
Cathode Drive Service <sup>4</sup>	19AYP4	19AVP4	19AXP4	19XP4	
Anode Voltage . . . . .	20,000		16,000	16,000	Volts dc
Grid No. 4 Voltage for Focus . . . . .			0 to 400	0 to 400	Volts dc
Grid No. 2 Voltage . . . . .			400	400	Volts dc
Cathode Voltage Required for Cutoff <sup>5</sup> . . . . .			42 to 78	42 to 78	Volts dc

**CIRCUIT VALUES**

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

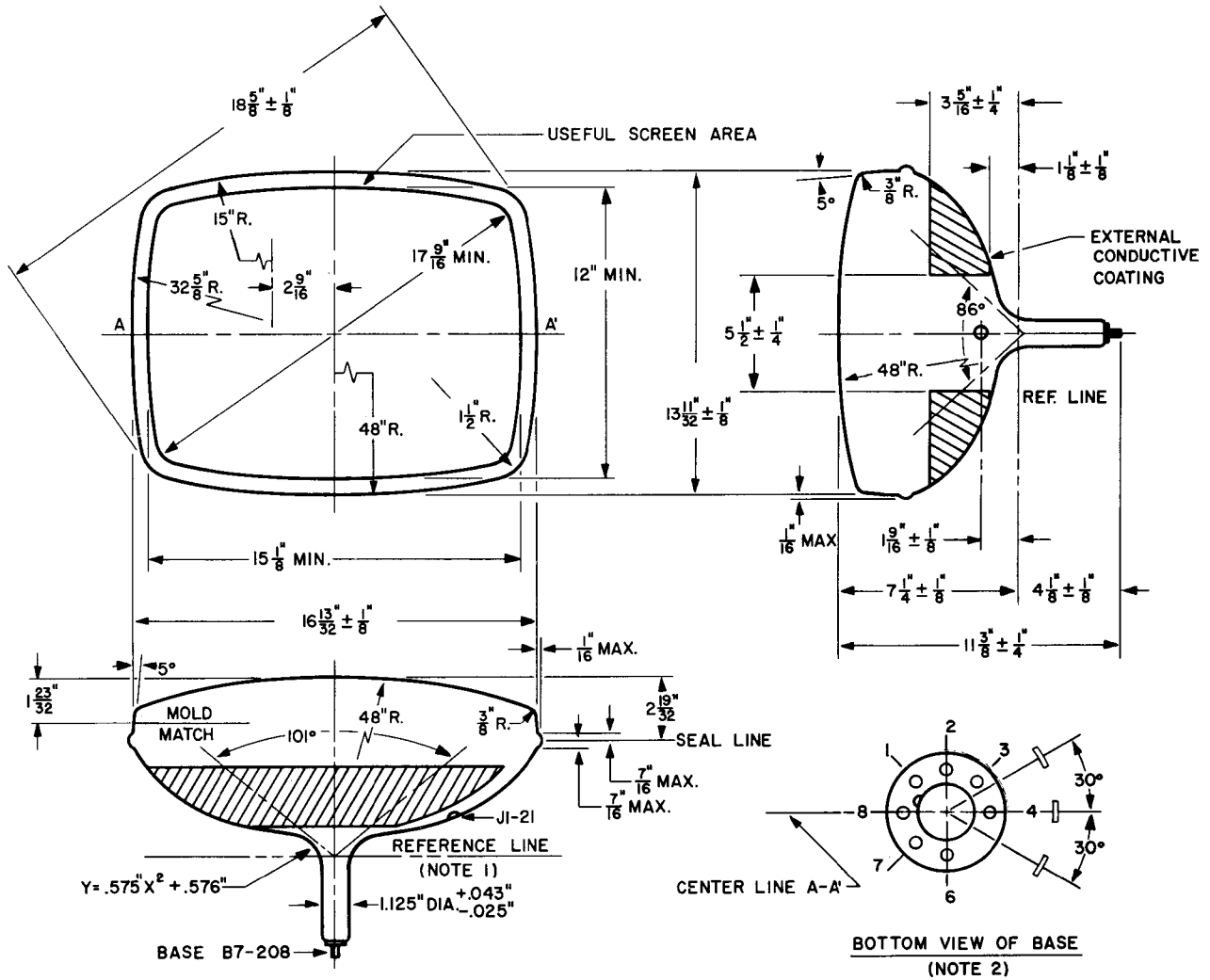
**NOTES:**

1. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of the rated heater voltage after applying four (4) times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times the rated heater voltage divided by the rated heater current.
2. External conductive coating must be grounded.
3. Voltages are positive with respect to cathode unless indicated otherwise.
4. Voltages are positive with respect to Grid No. 1 unless indicated otherwise.
5. Visual extinction of focused raster. For cutoff of the undeflected focused spot, the absolute value of the bias between cathode and grid will increase by about 5 volts.

**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



D60028A

DIAGRAM NOTES:

1. Reference Line is determined by plane C-C' of JEDEC No. 126 Reference Line Gauge, when the gauge is seated against the bulb.
2. Base Pin No. 4 aligns with horizontal centerline (A-A') within  $30^\circ$  and is on same side as anode contact, J1-21.