

**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 . . . . .	Medium Short
Faceplate . . . . .	Bonded Shield
(Gray Filter Glass Safety Plate Laminated Directly to Face of Tube)	
Light Transmittance (Approx.) . . . . .	60 Percent
Type 19DAP4 has External Surface of Safety Plate Treated to Reduce Specular Reflection	

**ELECTRICAL DATA**

Heater Voltage . . . . .	6.3 Volts	
Heater Current . . . . .	0.45 ± 5 % Ampere	
Heater Warm-up Time <sup>1</sup> . . . . .	11 Seconds	
Direct Interelectrode Capacitances (Approx.)		
Cathode to All Other Electrodes . . . . .	5 pf	
Grid No. 1 to All Other Electrodes . . . . .	6 pf	
External Conductive Coating to Anode <sup>2</sup> . . . . .	1500 pf	Max.
	1000 pf	Min.

**MECHANICAL DATA**

Minimum Useful Screen Dimensions (Maximum Assured)		
Height . . . . .	12 1/16 Inches	
Width . . . . .	15 1/4 Inches	
Diagonal . . . . .	17 5/8 Inches	
Minimum Useful Screen Area . . . . .	172 Sq. Inches	
Neck Length . . . . .	4 1/8 ± 1/8 Inches	
Overall Length . . . . .	11 9/16 ± 5/16 Inches	
Bulb . . . . .	J149C	
Safety Plate . . . . .	19CZP4—1/8" Gray Glass	
	19DAP4—Same, Anti-Reflection Treated	
Bulb Contact (Recessed Small Cavity Cap) . . . . .	J1-21	
Base . . . . .	B7-208	
Basing . . . . .	8HR	
Weight (Approx.) . . . . .	15 1/2 Pounds	

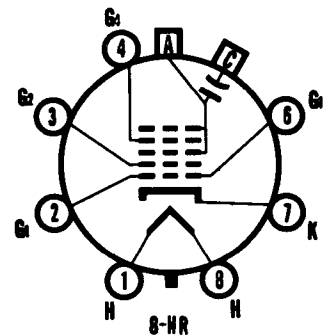
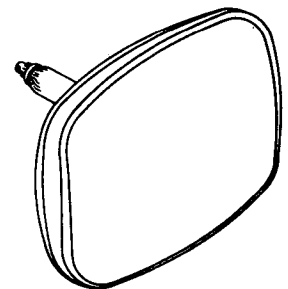
**RATINGS**

**MAXIMUM RATINGS (Design Maximum Values)**

Grid Drive Service <sup>3</sup>		
Maximum Anode Voltage . . . . .	23,000 Volts	dc
Minimum Anode Voltage . . . . .	15,000 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 . . . . .	155 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 Secs. . . . .	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  
 Bonded Shield  
 19DAP4: Anti-Reflection Treated  
 Gray Filter Glass  
 Aluminized Screen  
 Electrostatic Focus  
 114° Magnetic Deflection  
 1 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) (Continued)**

<b>Cathode Drive Service<sup>4</sup></b>		
Maximum Anode Voltage . . . . .	23,000 Volts	dc
Minimum Anode Voltage . . . . .	15,000 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
<b>Cathode Voltage</b>		
Positive Bias Value . . . . .	155 Volts	dc
Positive Peak Value . . . . .	220 Volts	
Negative Bias Value . . . . .	0 Volts	dc
Negative Peak Value . . . . .	2 Volts	
<b>Peak Heater-Cathode Voltage</b>		
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**

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

**CIRCUIT VALUES**

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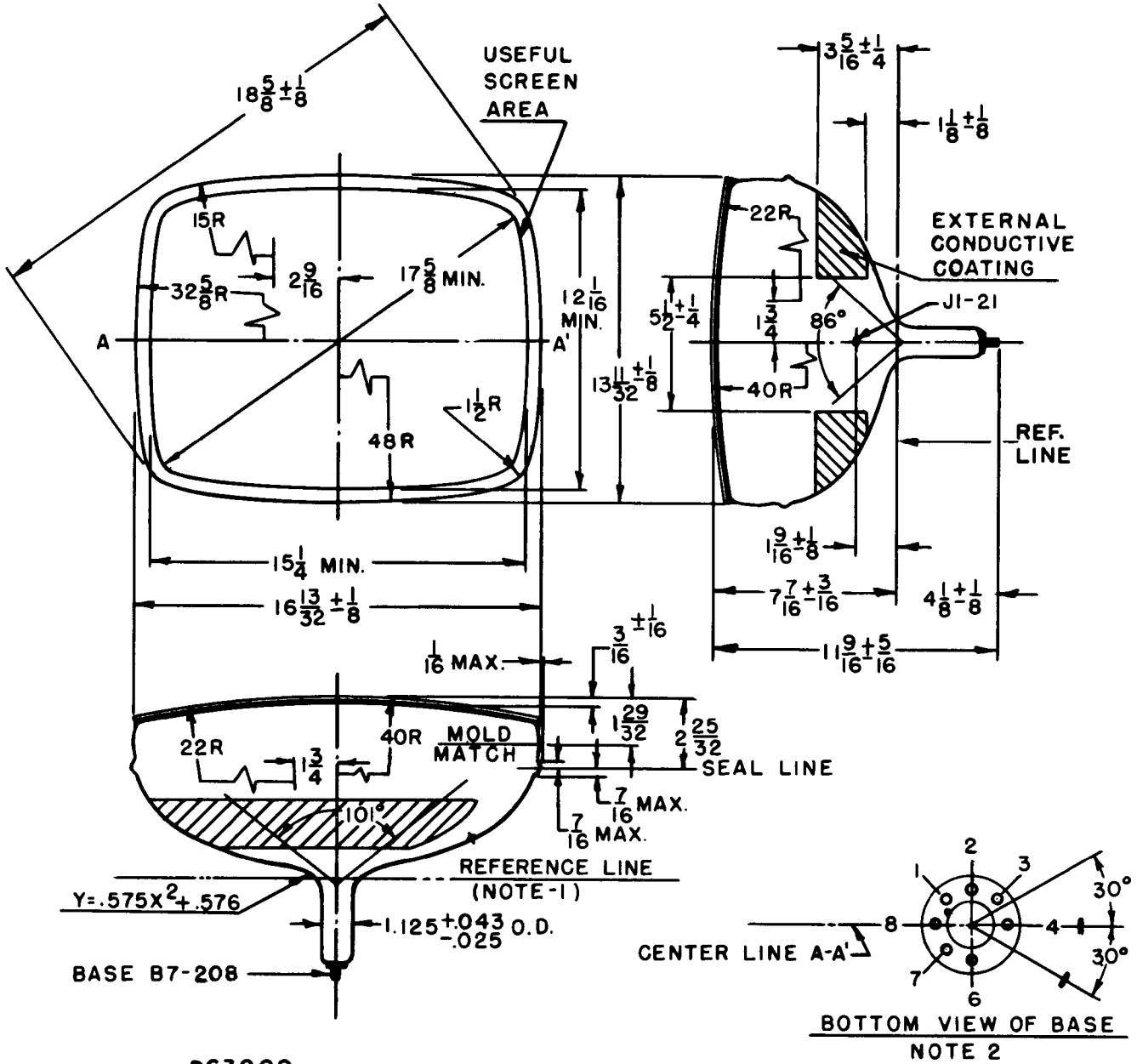
**NOTES:**

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



D63009

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).