

**CHARACTERISTICS**

**GENERAL DATA**

Focusing Method . . . . .	Electrostatic	
Deflection Method . . . . .	Magnetic	
Deflection Angles (Approx.)		
Horizontal . . . . .	100 Degrees	
Diagonal . . . . .	114 Degrees	
Vertical . . . . .	83 Degrees	
Phosphor . . . . .	Aluminized P4	
Fluorescence . . . . .	White	
Persistence . . . . .	Medium Short	
Faceplate . . . . .	Gray Filter Glass	
Light Transmittance (Approx.) . . . . .	42 Percent	

**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 and Rim Band to Anode <sup>2</sup> . . . . .	2500 pf	Max.
	1700 pf	Min.
Resistance Between External Conductive Coating and Metal Band . . . . .	50 Megohms	Min.

**MECHANICAL DATA**

Minimum Useful Screen Dimensions (Maximum Assured)		
Height . . . . .	15 1/8 Inches	
Width . . . . .	19 1/4 Inches	
Diagonal . . . . .	22 5/16 Inches	
Minimum Useful Screen Area . . . . .	282 Sq. Inches	
Neck Length . . . . .	5 1/8 ± 1/8 Inches	
Overall Length . . . . .	14 17/32 ± 9/32 Inches	
Bulb Contact (Recessed Small Cavity Cap) . . . . .	J1-21	
Bulb . . . . .	J187L	
Base . . . . .	B7-208	
Basing . . . . .	8HR	
Weight (Approx.) . . . . .	28 Pounds	

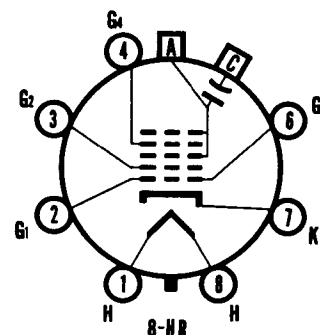
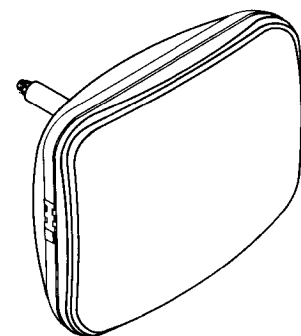
**RATINGS**

**MAXIMUM RATINGS (Design Maximum Values)**

<b>Grid Drive Service<sup>3</sup></b>		
Maximum Anode Voltage . . . . .	22,000 Volts	dc
Minimum Anode Voltage . . . . .	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 . . . . .	155 Volts	dc
Negative Peak Value . . . . .	220 Volts	
Positive Bias Value . . . . .	0 Volt	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 . . . . .	450 Volts	
After Equipment Warm-up Period . . . . .	300 Volts	
Heater Positive with Respect to Cathode	200 Volts	
DC Component . . . . .	100 Volts	

**QUICK REFERENCE DATA**

Television Picture Tube  
 23" Direct Viewed  
 Rectangular Glass Type  
 Gray Filter Glass  
 Aluminized Screen  
 Electrostatic Focus  
 114° Magnetic Deflection  
 1 1/8" Neck Diameter  
 No Ion Trap  
 External Conductive Coating  
 Banded Tube Integral  
 Implosion Protection



**SYLVANIA ELECTRIC PRODUCTS INC.**

Electronic Components Group  
**ELECTRONIC TUBE DIVISION**  
 SENECA FALLS, NEW YORK

*A Technical Publication*

JULY, 1965

PAGE 1 OF 3

*File Under*

TELEVISION PICTURE TUBES

**MAXIMUM RATINGS (Design Maximum Values) (Continued)**

<b>Cathode Drive Service<sup>4</sup></b>		
Maximum Anode Voltage . . . . .	22,000 Volts	dc
Minimum Anode Voltage . . . . .	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
<b>Cathode Voltage</b>		
Positive Bias Value . . . . .	155 Volts	dc
Positive Peak Value . . . . .	220 Volts	
Negative Bias Value . . . . .	0 Volt	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 . . . . .	300 Volts	
Heater Positive with Respect to Cathode		
DC Component . . . . .	200 Volts	
	100 Volts	

**TYPICAL OPERATING CONDITIONS**

<b>Grid Drive Service<sup>3</sup></b>		
Anode Voltage . . . . .	18,000 Volts	dc
Grid No. 4 Voltage for Focus . . . . .	-200 to +200 Volts	dc
Grid No. 2 Voltage . . . . .	400 Volts	dc
Grid No. 1 Voltage Required for Cutoff <sup>5</sup> . . . . .	-48 to -96 Volts	dc
<b>Cathode Drive Service<sup>4</sup></b>		
Anode Voltage . . . . .	18,000 Volts	dc
Grid No. 4 Voltage for Focus . . . . .	-200 to +200 Volts	dc
Grid No. 2 Voltage . . . . .	400 Volts	dc
Cathode Voltage Required for Cutoff <sup>5</sup> . . . . .	44 to 80 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 its rated value 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 rated heater voltage divided by rated heater current.
2. External conductive coating and rim band 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 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

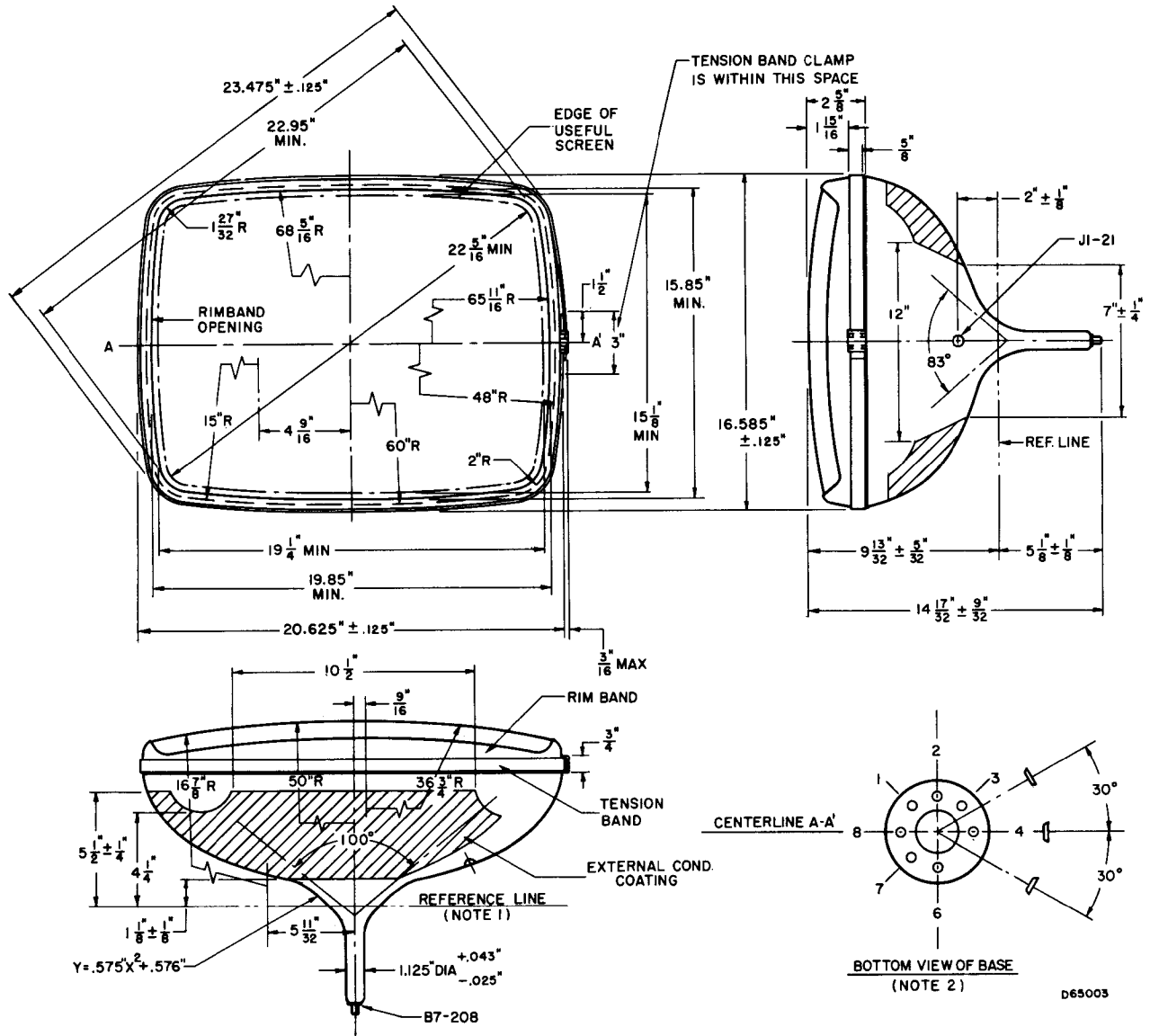


DIAGRAM NOTES:

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.