

## CHARACTERISTICS

### GENERAL DATA

|                                                                     |                             |
|---------------------------------------------------------------------|-----------------------------|
| Focusing Method                                                     | Tri-Potential Electrostatic |
| Deflection Method                                                   | Magnetic                    |
| Deflection Angles (approx.)                                         |                             |
| Horizontal                                                          | 99 Degrees                  |
| Diagonal                                                            | 110 Degrees                 |
| Vertical                                                            | 82 Degrees                  |
| Phosphor                                                            | Aluminized P4               |
| Fluorescence                                                        | White                       |
| Persistence                                                         | Short to Medium             |
| Faceplate                                                           | Bonded Shield               |
| (Gray Filter Glass Safety Plate Laminated Directly to Face of Tube) |                             |
| Light Transmittance of Faceplate Assembly (approx.)                 | 40 Percent                  |

### ELECTRICAL DATA

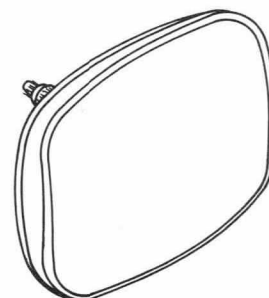
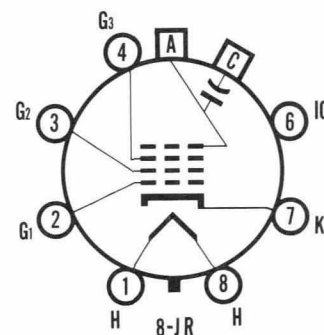
|                                                   |                                                    |
|---------------------------------------------------|----------------------------------------------------|
| Heater Voltage                                    | 6.3 Volts                                          |
| Heater Current                                    | $0.60 \pm 5\%$ Ampere                              |
| Heater Warm-up Time <sup>1</sup>                  | 11 Seconds                                         |
| Direct Interelectrode Capacitances (approx.)      |                                                    |
| Cathode to All Other Electrodes                   | 5 $\mu\text{f}$                                    |
| Grid No. 1 to All Other Electrodes                | 6 $\mu\text{f}$                                    |
| External Conductive Coating to Anode <sup>2</sup> | 2500 $\mu\text{f}$ Max.<br>2000 $\mu\text{f}$ Min. |

### MECHANICAL DATA

|                                                    |                                         |
|----------------------------------------------------|-----------------------------------------|
| Minimum Useful Screen Dimensions (Maximum Assured) |                                         |
| Height                                             | 15 1/4 Inches                           |
| Width                                              | 19 5/16 Inches                          |
| Diagonal                                           | 22 5/16 Inches                          |
| Area                                               | 282 Sq. Inches                          |
| Neck Length                                        | $3 \frac{9}{16} \pm \frac{1}{8}$ Inches |
| Overall Length                                     | $13 \frac{5}{8} \pm \frac{3}{8}$ Inches |
| Bulb                                               | J187A or Equiv.                         |
| Safety Plate                                       | FP198A or Equiv.                        |
| Bulb Contact (Recessed Small Cavity Cap)           | J1-21                                   |
| Base                                               | B7-208                                  |
| Basing                                             | 8JR                                     |
| Weight (approx.)                                   | 32 1/2 Pounds                           |

## QUICK REFERENCE DATA

Television Picture Tube  
23" Direct Viewed  
Rectangular Glass Type  
Spherical Faceplate  
Bonded Shield  
Gray Filter Glass  
Aluminized Screen  
Tri-Potential  
Electrostatic Focus  
110° Magnetic Deflection  
No Ion Trap  
External Conductive Coating  
Short Neck



## SYLVANIA ELECTRONIC TUBES

A Division of  
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PICTURE TUBE OPERATIONS  
SENECA FALLS, NEW YORK

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File Under  
TELEVISION PICTURE TUBES

## RATINGS

### MAXIMUM RATINGS (Design Maximum Values) Grid Drive Service

|                                                          |        |       |    |
|----------------------------------------------------------|--------|-------|----|
| Anode Voltage . . . . .                                  | 22,000 | Volts | dc |
| Grid No. 3 Voltage (Focusing Electrode . . . . .         | 700    | Volts | dc |
| Grid No. 2 Voltage . . . . .                             | 600    | Volts | dc |
| Grid No. 1 Voltage                                       |        |       |    |
| Negative Bias Value . . . . .                            | 154    | Volts | dc |
| Negative Peak Value . . . . .                            | 220    | Volts |    |
| 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 . . . . . | 450    | Volts |    |
| After Equipment Warm-up Period . . . . .                 | 200    | Volts |    |
| Heater Positive with Respect to Cathode . . . . .        | 200    | Volts |    |

### TYPICAL OPERATING CONDITIONS (Grid Drive Service)

|                                                               |            |       |    |
|---------------------------------------------------------------|------------|-------|----|
| Anode Voltage . . . . .                                       | 16,000     | Volts | dc |
| Grid No. 3 Voltage for Focus . . . . .                        | 0 to +400  | Volts | dc |
| Grid No. 2 Voltage <sup>3</sup> . . . . .                     | 500        | Volts | dc |
| Grid No. 1 Voltage Required for Cutoff <sup>4</sup> . . . . . | -43 to -78 | Volts | dc |

### CIRCUIT VALUES

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

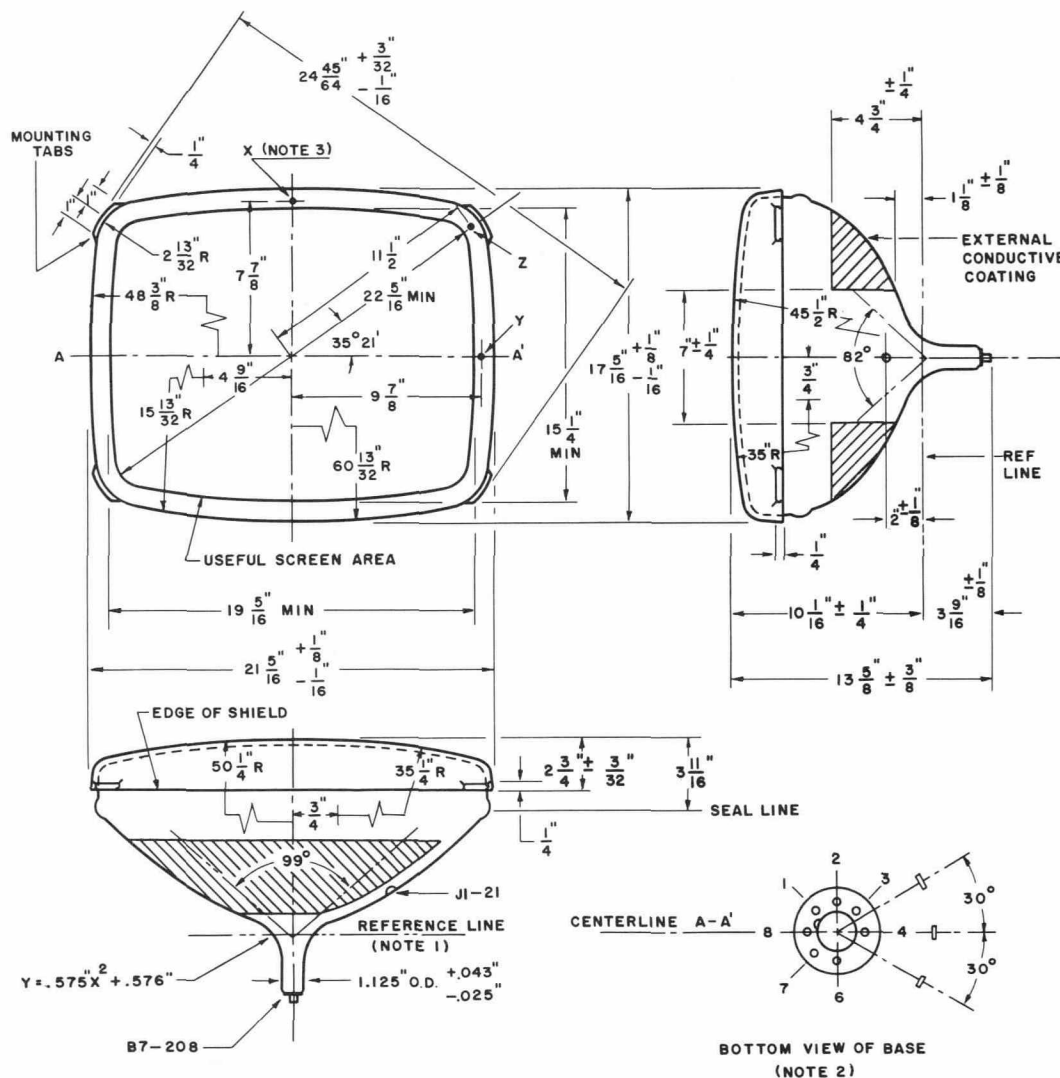
### NOTES:

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. Brightness and resolution improve with increase in Grid No. 2 Voltage. A minimum value of 400 volts is recommended.
4. Visual extinction of focused raster. Extinction of stationary focused spot will require that these values be about 5 volts more negative.

### 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



D59024

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.
3. Planes perpendicular to the tube axis and passing through points X, Y and Z are located as follows:  
 Plane Tangent to crown of face, to plane of X =  $0.758''$  Nom.  
 Plane of X to plane of Y =  $0.463'' \pm .030''$ .  
 Plane of X to plane of Z =  $0.970'' \pm .030''$ .  
 Plane of X to plane of edge of shield =  $1.960''$  Nom.