

## CHARACTERISTICS

### GENERAL DATA

|                   |             |             |              |               |
|-------------------|-------------|-------------|--------------|---------------|
| Focusing Method   |             |             |              | Electrostatic |
| Deflection Method |             |             |              | Electrostatic |
| Types*            | <b>3WP1</b> | <b>3WP2</b> | <b>3WP11</b> |               |
| Fluorescence      | Green       | Blue-Green  | Blue         |               |
| Phosphorescence   | .....       | Green       | .....        |               |
| Persistence       | Medium      | Long        | Short        |               |
| Faceplate         |             |             |              | Flat, Clear   |

\*In addition to the types shown, the 3WP- can be supplied with several other screen phosphors.

### ELECTRICAL DATA

|                                    |                       |
|------------------------------------|-----------------------|
| Heater Voltage                     | 6.3 Volts             |
| Heater Current                     | $0.6 \pm 10\%$ Ampere |
| Direct Interelectrode Capacitances |                       |

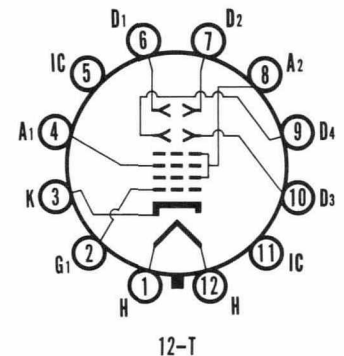
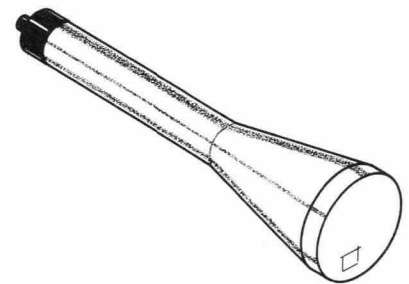
|                                                      | Min. | Max.                 |
|------------------------------------------------------|------|----------------------|
| Cathode to All Other Electrodes                      | 3.0  | 5.7 $\mu\mu\text{f}$ |
| Grid No. 1 to All Other Electrodes                   | 4.6  | 8.7 $\mu\mu\text{f}$ |
| Between Deflecting Plates 1-2                        | 1.7  | 3.3 $\mu\mu\text{f}$ |
| Between Deflecting Plates 3-4                        | 1.0  | 2.0 $\mu\mu\text{f}$ |
| Deflecting Plate 1 to All Other Electrodes except D2 | 3.8  | 7.2 $\mu\mu\text{f}$ |
| Deflecting Plate 2 to All Other Electrodes except D1 | 3.8  | 7.2 $\mu\mu\text{f}$ |
| Deflecting Plate 3 to All Other Electrodes except D4 | 2.5  | 4.8 $\mu\mu\text{f}$ |
| Deflecting Plate 4 to All Other Electrodes except D3 | 2.5  | 4.8 $\mu\mu\text{f}$ |

### MECHANICAL DATA

|                                                                       |                       |
|-----------------------------------------------------------------------|-----------------------|
| Minimum Useful Screen Diameter                                        | $2\frac{3}{4}$ Inches |
| Base (Small Shell Duodecal 12-Pin or Small Shell Duodecal 10-Pin)     | B12-43<br>B10-75      |
| Basing                                                                | 12T                   |
| Base Alignment                                                        |                       |
| D1-D2 trace aligns with Pin No. 3 and Tube Axis                       | $\pm 10$ Degrees      |
| Angle Between D1-D2 and D3-D4 Traces                                  | $90 \pm 1$ Degree     |
| Positive voltage on D1 deflects beam approximately toward Pin No. 3.  |                       |
| Positive voltage on D3 deflects beam approximately toward Pin No. 12. |                       |

## QUICK REFERENCE DATA

3" Direct Viewed  
Round Glass Type  
Electrostatic Deflection  
Electrostatic Focus  
High Deflection Sensitivity  
Flat, Clear Faceplate



SYLVANIA  
ELECTRONIC TUBES  
A Division of  
Sylvania Electric Products Inc.  
PICTURE TUBE OPERATIONS  
SENECA FALLS, NEW YORK

Prepared and Released By The  
TECHNICAL PUBLICATIONS SECTION  
EMPORIUM, PENNSYLVANIA

NOVEMBER, 1959

PAGE 1 OF 3

File Under  
SPECIAL AND GENERAL  
PURPOSE CATHODE RAY TUBES

## RATINGS

### MAXIMUM RATINGS (Absolute Maximum Values)

|                                                           |               |
|-----------------------------------------------------------|---------------|
| Anode No. 2 Voltage <sup>1</sup>                          | 2750 Volts dc |
| Anode No. 1 Voltage (Focusing Electrode)                  | 1100 Volts dc |
| Grid No. 1 Voltage                                        |               |
| Negative Bias Value                                       | 220 Volts dc  |
| Positive Bias Value                                       | 0 Volts dc    |
| Positive Peak Value                                       | 0 Volts       |
| Peak Heater Cathode Voltage                               |               |
| Heater Negative with Respect to Cathode                   | 200 Volts     |
| Heater Positive with Respect to Cathode                   | 200 Volts     |
| Peak Voltage Between Anode No. 2 and Any Deflecting Plate | 550 Volts     |

### TYPICAL OPERATING CONDITIONS

|                                                                              |                                  |
|------------------------------------------------------------------------------|----------------------------------|
| Anode No. 2 Voltage                                                          | 1500 Volts dc                    |
| Anode No. 1 Voltage for Focus                                                | 247 to 465 Volts dc              |
| Grid No. 1 Voltage Required for Cutoff <sup>2</sup>                          | -45 to -75 Volts dc              |
| Deflection Factor                                                            |                                  |
| Deflecting Plates 1-2                                                        | 62 to 76 Volts dc/Inch           |
| Deflecting Plates 3-4                                                        | 43 to 52 Volts dc/Inch           |
| Modulation <sup>3</sup> (3WP1, at 7 Ft. L. Light Output)                     | 50 Volts Max.                    |
| Line Width A <sup>3</sup> (3WP1, at 7 Ft. L. Light Output)                   | .026 Inches Max.                 |
| Deflection Factor Uniformity <sup>4</sup>                                    | 2 Percent Max.                   |
| Pattern Distortion @ 75% of Useful Scan <sup>5</sup>                         | 2 1/2 Percent Max.               |
| Spot Position (Focused, Undelected) <sup>6</sup>                             | Within a 3/16 Inch Radius Circle |
| Useful Scan                                                                  |                                  |
| D1-D2 ± 1.25 Inches from Tube Face Center<br>or a total of 2.50 Inches Min.  |                                  |
| D3-D4 ± 1.125 Inches from Tube Face Center<br>or a total of 2.25 Inches Min. |                                  |

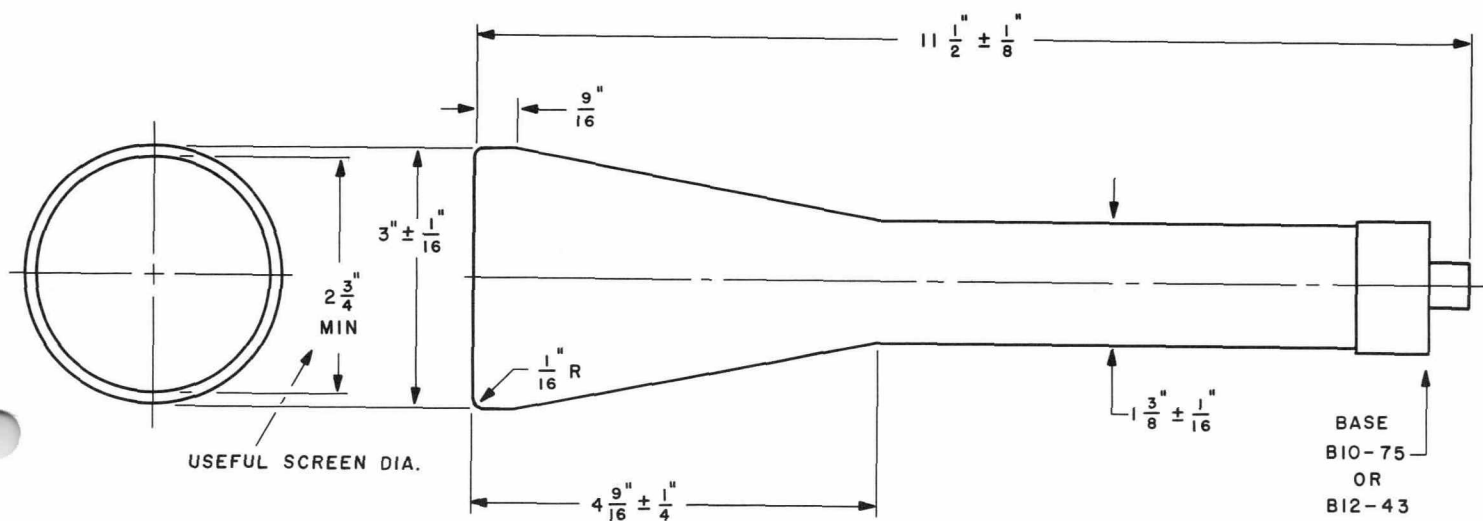
### CIRCUIT VALUES

|                                            |                  |
|--------------------------------------------|------------------|
| Grid No. 1 Circuit Resistance              | 1.5 Megohms Max. |
| Deflection Circuit Resistance <sup>7</sup> | 5.0 Megohms Max. |

### NOTES:

1. The product of acceleration voltage and average acceleration current should be limited to 6.0 watts.
2. Visual extinction of undeflected focused spot.
3. Measured in accordance with MIL-E-1.
4. The deflection factors of 75% of useful scan and at 25% of useful scan shall not differ by more than the indicated value.
5. The edges of a raster pattern, whose mean dimensions are the indicated percentage of useful scan, shall not deviate from the mean dimensional rectangle by more than the specified amount.
6. Centered on the tube face with the tube shielded and with all deflection plates connected to anode No. 2.
7. It is recommended that the deflecting electrode circuit resistances be approximately equal.

OUTLINE



S 58068