

## CHARACTERISTICS

## GENERAL DATA

|                   |                   |        |        |         |
|-------------------|-------------------|--------|--------|---------|
| Focusing Method   | Electrostatic     |        |        |         |
| Deflection Method | Electrostatic     |        |        |         |
| Types*            | 5AQP1             | 5AQP2  | 5AQP7  | 5AQP11  |
|                   | 5AQP1A            | 5AQP2A | 5AQP7A | 5AQP11A |
|                   | 5AQP1B            | 5AQP2B | 5AQP7B | 5AQP11B |
| Fluorescence      | Green             | Green  | Blue   | Blue    |
| Phosphorescence   | —                 | Green  | Yellow | —       |
| Persistence       | Medium            | Medium | Long   | Short   |
| Faceplate         |                   |        |        |         |
| 5AQP-, 5AQP-A     |                   |        |        | Clear   |
| 5AQP-B            | Clear, Aluminized |        |        |         |

\*In addition to the types shown, the 5AQP- 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 . . . . .                   | 2.7  | 5.0 $\mu\mu\text{f}$ |
| Grid No. 1 to All Other Electrodes . . . . .                | 3.7  | 6.9 $\mu\mu\text{f}$ |
| Between Deflecting Plates 1-2 <sup>1</sup> . . . . .        | 2.4  | 4.5 $\mu\mu\text{f}$ |
| Between Deflecting Plates 3-4 <sup>1</sup> . . . . .        | 0.8  | 1.6 $\mu\mu\text{f}$ |
| Deflecting Plate 1 <sup>1</sup> to All Other Electrodes . . | 5.0  | 9.3 $\mu\mu\text{f}$ |
| Deflecting Plate 2 <sup>1</sup> to All Other Electrodes . . | 5.0  | 9.3 $\mu\mu\text{f}$ |
| Deflecting Plate 3 <sup>1</sup> to All Other Electrodes . . | 3.3  | 6.3 $\mu\mu\text{f}$ |
| Deflecting Plate 4 <sup>1</sup> to All Other Electrodes . . | 3.3  | 6.3 $\mu\mu\text{f}$ |

## MECHANICAL DATA

|                                                                                 |                 |
|---------------------------------------------------------------------------------|-----------------|
| Minimum Useful Screen Diameter . . . . .                                        | 4½ Inches       |
| Bulb . . . . .                                                                  | J42P            |
| Base (Medium Shell Diheptal 12-Pin) . . . . .                                   | B12-37          |
| Basing . . . . .                                                                | 14G             |
| Base Alignment                                                                  |                 |
| D1-D2 Trace Aligns With Pin No. 5 and Tube Axis <sup>4</sup> . . . . .          | ±10 Degrees     |
| Angle Between D1-D2 and D3-D4 Traces (5AQP-) <sup>4</sup> . . . . .             | 90 ± 1 Degree   |
| Angle Between D1-D2 and D3-D4 Traces<br>(5AQP-A, 5AQP-B) <sup>4</sup> . . . . . | 90 ± 0.8 Degree |
| Weight (Approx.) . . . . .                                                      | 2 Pounds        |

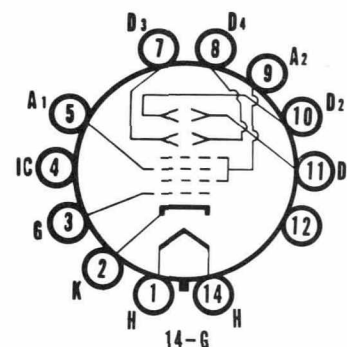
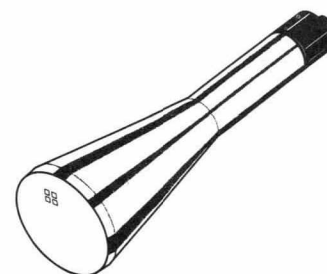
## RATINGS

### MAXIMUM RATINGS (Absolute Maximum Values)

|                                           |            |    |
|-------------------------------------------|------------|----|
| Maximum Anode No. 2 Voltage <sup>2</sup>  | 4400 Volts | dc |
| Minimum Anode No. 2 Voltage (5AQP-B Only) | 1500 Volts | dc |
| Anode No. 1 Voltage                       | 1650 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                      | 400 Volts  |    |

## QUICK REFERENCE DATA

Oscilloscope Tube  
5" Direct Viewed  
Round Glass Type  
Electrostatic Deflection  
Electrostatic Focus  
Flat Face  
Clear Faceplate  
5AQP-A Closer Tolerances  
5AQP-B Closer Tolerances,  
Aluminized



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

MARCH, 1962

PAGE 1 OF 2

*File Under*

SPECIAL AND GENERAL  
PURPOSE CATHODE RAY TUBES

## TYPICAL OPERATING CONDITIONS

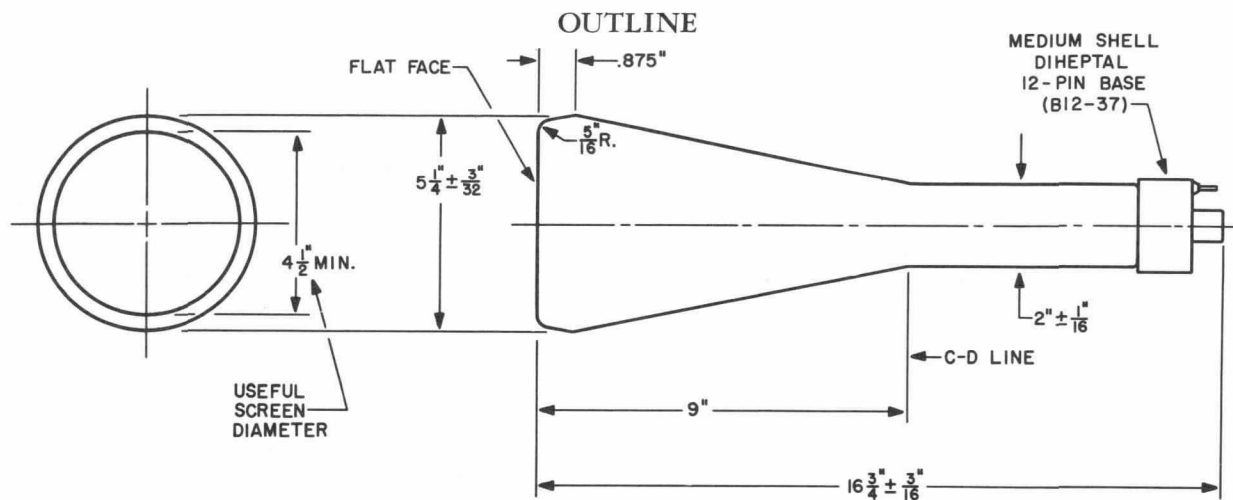
|                                                                          |                                            |         |
|--------------------------------------------------------------------------|--------------------------------------------|---------|
| Anode No. 2 Voltage                                                      | 2500 Volts                                 | dc      |
| Anode No. 1 Voltage for Focus                                            | 0 to 300 Volts                             | dc      |
| Grid No. 1 Voltage Required for Cutoff <sup>3</sup>                      | -34 to -56 Volts                           | dc      |
| Deflection Factor <sup>4</sup>                                           |                                            |         |
| Deflecting Plates 1-2                                                    | 40 to 50 Volts                             | dc/Inch |
| Deflecting Plates 3-4                                                    | 31.5 to 38.5 Volts                         | dc/Inch |
| P1 Light Output <sup>5</sup>                                             | 15 Ft. L.                                  | Min.    |
| Modulation <sup>5</sup>                                                  | 40 Volts                                   | dc Max. |
| Line Width A <sup>5</sup>                                                | .030 Inches                                | Max.    |
| Anode No. 2 Current <sup>5</sup>                                         | 400 $\mu$ a                                | dc Max. |
| Deflection Factor Uniformity <sup>6</sup>                                | 1 Percent                                  | Max.    |
| Pattern Distortion at 75 % of Useful Scan <sup>7</sup> (5AQP-)           | 2 Percent                                  | Max.    |
| Pattern Distortion at 100 % of Useful Scan <sup>8</sup> (5AQP-A, 5AQP-B) | 1 Percent                                  | Max.    |
| Spot Position <sup>9</sup>                                               | Within a $\frac{5}{16}$ Inch Radius Circle |         |
| Useful Scan (Centered on Tube Face)                                      | 4 x 4 Inches                               | Min.    |

### CIRCUIT VALUES

|                                                       |                  |
|-------------------------------------------------------|------------------|
| Grid No. 1 Circuit Resistance . . . . .               | 1.5 Megohms Max. |
| Deflection Circuit Resistance <sup>10</sup> . . . . . | 1.0 Megohms Max. |

NOTES:

1. Deflecting Plate 1 is Pin No. 11  
Deflecting Plate 2 is Pin No. 10  
Deflecting Plate 3 is Pin No. 7  
Deflecting Plate 4 is Pin No. 8
2. The product of Anode No. 2 voltage and average Anode No. 2 current should be limited to 6.0 watts.
3. Visual extinction of undeflected focused spot.
4. Positive voltage on D1 deflects beam approximately toward Pin No. 5.  
Positive voltage on D3 deflects beam approximately toward Pin No. 2.
5. Measured in accordance with MIL-E-1 specification on a P1 screen at a brightness of 15 Ft. L. on a raster size of 2 x 2 inches.
6. The deflection factors at 75 % of useful scan and at 25 % of useful scan shall not differ by more than the indicated value.
7. All edges of a raster pattern, adjusted so its widest points just touch the sides of a 3.075 inch square, will fall within the area bounded by the 3.075 inch square and an inscribed 2.925 inch square.
8. The edges of a raster pattern, adjusted so its widest points just touch the sides of a 4.000 inch square, will fall within the area bounded by the 4.000 inch square and an inscribed 3.916 inch square, except at the corners where the geometry of the tube makes this impossible.
9. Centered on the tube face with the tube shielded and with all deflection plates connected to Anode No. 2.
10. It is recommended that the deflecting electrode circuit resistances be approximately equal.



D61033