from JETEC release
#1702, July 30, 1956

**40P1 and 40P11.**

9 cm. electrostatic focus and deflection instrument cathode ray tube having a flat screen and one stage of post deflection acceleration suitable for use in high precision instruments.

**Dimensions.**

<table>
<thead>
<tr>
<th>Overall length:</th>
<th>355 ± 5 mm.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall diameter:</td>
<td>90 ± 2 mm.</td>
</tr>
</tbody>
</table>

**Base Connectors (BL4A Base) Medium shell diheptal.**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>h</td>
<td>k</td>
<td>g</td>
<td>a₁</td>
<td>a₂</td>
<td>N.P.</td>
<td>Y1</td>
</tr>
<tr>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>Y2</td>
<td>a₃</td>
<td>X2</td>
<td>X1</td>
<td>N.C.</td>
<td>N.P.</td>
<td>h</td>
</tr>
</tbody>
</table>

Side contact CT8 a₄

**Heater**

Vₜₕ 6.3 V
Iₜₕ 0.5 A

The heater is suitable for parallel operation only.

**Maximum Ratings.**

<table>
<thead>
<tr>
<th>Vₐ₄</th>
<th>8 kv 2 min.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vₐ₃</td>
<td>4 kv 1 min.</td>
</tr>
<tr>
<td>Vₐ₂</td>
<td>2 kv</td>
</tr>
<tr>
<td>Vₐ₁</td>
<td>2.5 kv 1 min.</td>
</tr>
<tr>
<td>Vₑ (cathode col)</td>
<td>200 V</td>
</tr>
<tr>
<td>Vₑ (cathode hot)</td>
<td>0 min. 200</td>
</tr>
<tr>
<td>Vₜₕ-k</td>
<td>150 V</td>
</tr>
<tr>
<td>Vₓ₁ₓ₂</td>
<td>1 kV</td>
</tr>
<tr>
<td>Rₓₐ₃</td>
<td>5 Mohms.</td>
</tr>
</tbody>
</table>

Cont'd.
Maximum Ratings (Cont'd).

\[ \begin{align*}
\times \quad S_x & \quad \frac{800}{V_{a3}} \quad \text{mm/V.} \\
\times \quad S_y & \quad \frac{520}{V_{a3}} \quad \text{mm/V.} \\
\beta \quad S_x & \quad \frac{620}{V_{a3}} \quad \text{mm/V.} \\
\beta \quad S_y & \quad \frac{400}{V_{a3}} \quad \text{mm/V.} \\
\times \quad V_{a3} & = V_{a4} \\
\beta \quad V_{a4} & = 2V_{a3} \\
R_{y-a3} & = 5 \quad \text{Mohms} \\
R_{g-k} & = 2 \quad \text{Mohms}
\end{align*} \]

The maximum ratio between \( V_{a4} \) and \( V_{a3} \) is two.

Typical Operation.

\[ \begin{align*}
V_{a4} & = 4.0 \quad \text{kV} \\
V_{a3} & = 2.0 \quad \text{kV} \\
V_{a2} & = 333 \quad \text{V} \\
V_{a1} & = 2.0 \quad \text{kV} \\
V_g \ (\text{for cut-off}) & = -67 \quad \text{V} \\
I_{a3} & = 1 \quad \text{microamp.} \\
I_{\text{screen}} & = 5 \quad \text{microamps.} \\
\times \quad S_x & = 0.32 \quad \text{mm/V.} \\
\times \quad S_y & = 0.2 \quad \text{mm/V.} \\
\text{line width} & = 0.3 \quad \text{mm/V.}
\end{align*} \]

Capacitance

\[ \begin{align*}
C_{k-\text{all}} & = 8 \quad \text{pF} \\
C_{g-\text{all}} & = 17 \quad \text{pF} \\
C_{x1-x2} & = 2.5 \ \text{approx.} \quad \text{pF} \\
C_{y1-y2} & = 3 \ \text{approx.} \quad \text{pF} \\
C_{x1-\text{all}} & \quad 8 \ \text{approx.} \quad \text{pF} \\
C_{x2-\text{all}} & \quad \text{pF} \\
C_{y1-\text{all}} & \quad 7.5 \ \text{approx.} \quad \text{pF} \\
C_{y2-\text{all}} & \quad \text{pF}
\end{align*} \]

Cont'd.
Capacitance (Cont'd).

\[ C_{y1-x1 \text{ or } x2} = 0.1 \text{ approx. pF} \]
\[ C_{y2-x1 \text{ or } x2} = 0.2 \text{ approx. pF} \]

Screen Phosphor.

The 4GP1 has a green screen having an afterglow of 100 milliseconds.

The 4GP11 has a photographic blue screen having an afterglow of 1 millisecond.

Spot Centring.

The undeflected spot will fall within a radius of 5 mms. concentric with the tube face.

Screen Area.

The minimum useful screen area is a circle radius 3.7 cms from the centre of the screen.

General.

The plate sensitivity for a deflection of less than 75% of the useful scan will not differ from the plate sensitivity for a deflection of 25% of the useful scan by more than 2%.

Orthogonality of deflection axis ± 1°.

Viewed from the screen end with the spigot upwards and a positive voltage on deflector plate X1 the spot will move to the left. Viewed from the screen end with the spigot up a positive voltage on the deflector plate Y1 the spot will move upwards.