BRIEF DATA

The 700E has a 2 in. x 1 in. rectangular face and incorporates electrostatic focus and deflection. Low current flow to both x and y deflector plates enables numbers of tubes to be operated from common time base supplies. This together with the small dimensions of the tube and its high brightness makes the 700E particularly useful when the tube is to be used in banks for the display of digital information.

HEATER

Heater voltage .................................. 6.3 V
Heater current .................................. 0.3 A

SCREEN

Tube normally supplied with 24 phosphor as 724E.

Fluorescence .................................. Green
Phosphorescence ............................... Green
Persistence .................................. 1 - 5 ms
E.I.A. phosphor code ......................... P31
GEC phosphor code ...................... 24
Pro Electron phosphor code .......... GH

Other screens are available to special order (see data sheet 'CRT Screens').

RATINGS (Absolute)

<table>
<thead>
<tr>
<th></th>
<th>Max</th>
<th>Min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus voltage</td>
<td>1.0</td>
<td>-</td>
</tr>
<tr>
<td>First &amp; third anode voltage</td>
<td>2.5</td>
<td>1.5</td>
</tr>
<tr>
<td>*Negative grid voltage</td>
<td>200</td>
<td>0</td>
</tr>
<tr>
<td>X deflector plate to a1, a3 voltage (peak)</td>
<td>500</td>
<td>-</td>
</tr>
<tr>
<td>Y deflector plate to a1, a3 voltage (peak)</td>
<td>500</td>
<td>-</td>
</tr>
<tr>
<td>Heater-cathode voltage</td>
<td>180</td>
<td>-</td>
</tr>
<tr>
<td>X deflector plate to a1, a3 circuit resistance</td>
<td>0.25</td>
<td>-</td>
</tr>
<tr>
<td>Y deflector plate to a1, a3 circuit resistance</td>
<td>1.0</td>
<td>-</td>
</tr>
<tr>
<td>Grid-cathode circuit resistance</td>
<td>1.5</td>
<td>-</td>
</tr>
</tbody>
</table>

*The dc value of the modulator voltage must never become positive with respect to cathode.
CAPACITANCES

Cathode to all ................................................. 4 pF
Grid to all ..................................................... 7 pF
Deflector plates x1 to x2 .................................. 2 pF
Deflector plates y1 to y2 .................................... 3 pF
Deflector plates x1 to all electrodes except x2 ....... 5 pF
Deflector plates y1 to all electrodes except y2 ....... 6 pF
Deflector plates x2 to all electrodes except x1 ....... 5 pF
Deflector plates y2 to all electrodes except y1 ....... 6 pF

TYPICAL OPERATION (for character generation)

First & third anode voltage ................................. $V_{a1,3}$ 2.0 kV
Second anode voltage ........................................ $V_{a2}$ 60 V
Control grid voltage for spot cut-off .................... $-V_g$ 60 - 100 V
Maximum x deflection factor .................. $D_x$ 46.0 V/cm
Maximum y deflection factor .................. $D_y$ 107.2 V/cm
Line width (typical) at $I_k = 500 \mu A$ .................. 1.5 mm

CHARACTERISTICS

Focus voltage ................................................. $V_{a2}$ 10 45 V/$kV_{a1,3}$
Control grid voltage for spot cut-off ................. $-V_g$ 30 50 V/$kV_{a1,3}$
X deflection factor ......................................... $D_x$ 20.4 23.0 V/cm/$kV_{a1,3}$
Y deflection factor ......................................... $D_y$ 44.5 53.6 V/cm/$kV_{a1,3}$
*Heater-cathode resistance ...................... $r_{h-k}$ 1.5 MΩ
Grid-cathode resistance ............................. $r_{g-k}$ 10 MΩ

*With heater ±125V to cathode.

Pattern Distortion
The edges of a test raster will lie between two concentric rectangles of 46.5 mm x 20.75 mm and 43.5 mm x 19.25 mm.

Deflection Linearity
The deflection factor for a deflection of less than 75% of the useful scan will not differ from that for a deflection of 25% by more than 2%.

Orientation
Looking at the screen with the base spigot to the left, a positive potential applied to x1 will deflect the spot to the left and a positive potential applied to y1 will deflect the spot downwards.

Focus Current
The maximum focus electrode (a2) current will be 20 $\mu A$ with the tube blacked out and $V_{a2} = 60$ V.
Deflector Plate Current
The maximum deflector plate current will be 7 $\mu$A with a 4.5 x 2.0 cm raster and $I_k = 500$ $\mu$A.

Minimum Scanned Area
X axis . . . . . . . . . . . . . . . . . . 4.5 cm
Y axis . . . . . . . . . . . . . . . . . . 2.4 cm
Angle between deflection axes: $90^\circ \pm 1^\circ$.

Spot Position
The undeflected spot will lie within a circle of 3.0 mm radius centred on the tube face.

MOUNTING
The tube should not be supported by the base alone, but should preferably be held in a suitable rubber mask at the screen and by a clamp round the magnetic shield near the base.

WEIGHT
The weight of the tube is 170 g (6 oz).

BASE CONNECTIONS
Base: B12A
Pin 1: h
2: g
3: k
4: $a_2$
5: NC
6: $y_1$
Pin 7: $y_2$
8: $a_{1,3}$
9: $x_2$
10: $x_1$
11: NC
12: h

SOCKET
The socket should have sufficient freedom of movement to accommodate the tube overall length and base orientation tolerances.

MAGNETIC SHIELDING
The shield should be of high permeability material, of a thickness determined by the magnetic field at the tube position. The shield should be earthed. A suitable shield is available from Magnetic Shields Ltd., Headcorn Road, Staplehurst, Tonbridge, Kent.

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OUTLINE

Note: The base spigot is in line with the major axis of the tube face to within ±10°

The x-trace is in line with the major axis of the tube face to within ±2°

All dimensions in millimetres