### OSCILLOGRAM TUBE

**DATA**

**Electrostatic Focus**

**Electrostatic Deflection**

**General:**

Heater, for Unipotential Cathode:

- Voltage: 6.3 ac or dc volts
- Current: 0.6 amp

Direct Inter-electrode Capacitances (Approx.):

<table>
<thead>
<tr>
<th>Electrode</th>
<th>Capacitance (μF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cathode to All Other Electrodes</td>
<td>2.2</td>
</tr>
<tr>
<td>Grid No.1 to All Other Electrodes</td>
<td>10.3</td>
</tr>
<tr>
<td>DJ₁ to DJ₂</td>
<td>1.3</td>
</tr>
<tr>
<td>DJ₃ to DJ₄</td>
<td>1.2</td>
</tr>
<tr>
<td>DJ₁ to All Other Electrodes Except DJ₂</td>
<td>4.4</td>
</tr>
<tr>
<td>DJ₂ to All Other Electrodes Except DJ₁</td>
<td>5.6</td>
</tr>
<tr>
<td>DJ₃ to All Other Electrodes Except DJ₄</td>
<td>5.0</td>
</tr>
<tr>
<td>DJ₄ to All Other Electrodes Except DJ₃</td>
<td>4.5</td>
</tr>
</tbody>
</table>

Phosphor (For Curves, see front of this Section) | No.1
- Fluorescence: Green
- Persistence: Medium

Focusing Method: Electrostatic

Deflection Method: Electrostatic

Overall Length: 8\" ± 1/4\"

Greatest Diameter of Bulb: 3\" ± 1/16\"

Minimum Useful Screen Diameter: 2-3/4\"

Mounting Position: Any

Base: Small-Shield Duodecal 12-Pin

Basing Designation for Bottom View: 12F

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Heater</td>
</tr>
<tr>
<td>2</td>
<td>Grid No.1</td>
</tr>
<tr>
<td>3</td>
<td>Anode No.1</td>
</tr>
<tr>
<td>4</td>
<td>Deflecting Electrode</td>
</tr>
<tr>
<td>5</td>
<td>Deflecting Electrode</td>
</tr>
<tr>
<td>6</td>
<td>Deflecting Electrode</td>
</tr>
<tr>
<td>7</td>
<td>Deflecting Electrode</td>
</tr>
<tr>
<td>8</td>
<td>Deflecting Electrode</td>
</tr>
<tr>
<td>9</td>
<td>Deflecting Electrode</td>
</tr>
<tr>
<td>10</td>
<td>No.2 Anode</td>
</tr>
<tr>
<td>11</td>
<td>Cathode</td>
</tr>
<tr>
<td>12</td>
<td>Heater</td>
</tr>
</tbody>
</table>

**DJ₁ and DJ₂ are nearer the screen.**

**DJ₃ and DJ₄ are nearer the base.**

With DJ₁ positive with respect to DJ₂, the spot is deflected toward pin 4. With DJ₃ positive with respect to DJ₄, the spot is deflected toward pin 1.

The plane through the tube axis and pin 4 may vary from the trace produced by DJ₁ and DJ₂ by an angular tolerance (measured about the tube axis) of 10°.

**Maximum Ratings, Design-Center Values:**

<table>
<thead>
<tr>
<th>ANODE-No.2 VOLTAGE#</th>
<th>2500 max. volts</th>
</tr>
</thead>
</table>

* Anode No.2 and grid No.2, which are connected together within the tube, are referred to herein as anode No.2.

# The product of anode-No.2 voltage and average anode-No.2 current should be limited to 6 watts.
OSCILLOGRAPH TUBE

**ANODE—No.1 VOLTAGE** ............................................. 1000 max. volts
**GRID—No.1 VOLTAGE:**
- Negative bias value ........................................... 200 max. volts
- Positive bias value ........................................... 0 max. volts
- Positive peak value ........................................... 2 max. volts
**PEAK VOLTAGE BETWEEN ANODE No.2 AND ANY DEFLECTING ELECTRODE** ........................................... 500 max. volts
**PEAK HEATER—CATHODE VOLTAGE:**
- Heater negative with respect to cathode ........................ 125 max. volts
- Heater positive with respect to cathode ........................ 125 max. volts

**Equipment Design Ranges:**

*Recommended minimum* and 2500 volts

- **Anode—No.1 Voltage** ............................................. 20% to 35% of Eb₂ ........................................... volts
- **Max. Grid—No.1 Voltage** for Visual Cutoff .................. 6.3% of Eb₂ ........................................... volts
- **Anode—No.1 Cur. for any Operating Condition** ............ −15 to +10 microamperes
- **Deflection Factors:**
  - DJ₁ & DJ₂ ........................................... 115 to 145 vdc/in./kv of Eb₂
  - DJ₃ & DJ₄ ........................................... 110 to 140 vdc/in./kv of Eb₂

**Examples of Use of Design Ranges:**

- **For anode—No.2 voltage** ............................................. volts
  - **Anode—No.1 Voltage** ........................................... 200–350 400–700 volts
  - **Max. Grid—No.1 Voltage** for Visual Cutoff ................ −63 −126 volts
  - **Deflection Factors:**
    - DJ₃ & DJ₄ ........................................... 110–140 220–280 volts dc/in.

**Maximum Circuit Values:**

- **Grid—No.1—Circuit Resistance** .................................. 1.5 max. megohms
- **Resistance in Any Deflecting—Electrode Circuit** ........ 5.0 max. megohms

*Brilliance and definition decrease with decreasing anode—No.2 voltage. Recommended minimum for the 3MPI in general service is 1000 volts but a value as low as 500 volts may be used under conditions of low-velocity deflection and low ambient-light levels.

It is recommended that the deflecting-electrode-circuit resistances be approximately equal.

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TENTATIVE DATA