# TUNG-SOL

## CATHODE RAY

The 17BSP4 is a direct view picture tube designed for television applications. Its features include:

- Aluminized screen
- Magnetic deflection
- Gray filter faceplate
- Does not require ion trap
- Electrostatic focus
- Unipotential cathode
- 14 5/16" x 11 1/8" raster size
- Rectangular glass construction

### Electrical Data

<table>
<thead>
<tr>
<th>Focusing Method</th>
<th>Electrostatic Magnetic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deflection Angle (Approx.):</td>
<td></td>
</tr>
<tr>
<td>Horizontal</td>
<td>85 Degrees</td>
</tr>
<tr>
<td>Vertical</td>
<td>68 Degrees</td>
</tr>
<tr>
<td>Diagonal</td>
<td>90 Degrees</td>
</tr>
</tbody>
</table>

### Direct Interelectrode Capacitances (Approx.):

- Cathode to all other electrodes: 5 μf
- Grid #1 to all other electrodes: 6 μf
- Maximum external conductive coating to anode: 1500 μf
- Minimum external conductive coating to anode: 1200 μf

### Optical Data

- Phosphor number: Sulfide Type P-4
- Fluorescent color: White
- Phosphorescent color: White
- Persistence: Medium
- Faceplate transmission at center (Approx.): 74 Percent

### Ratings

Interpreted according to design center system:

- Heater voltage: 6.3 Volts
- Heater current: 0.45 ±10% AMP.
- Maximum dc anode voltage: 16.000 Volts
- Maximum dc grid #4 voltage: -500 to +1000 Volts
- Maximum dc grid #2 voltage: 500 Volts
- Maximum grid #1 voltage:
  - DC negative-bias value: 140 Volts
  - DC positive-bias value: 0 Volts
  - Positive-peak value: 2 Volts
- Maximum dc peak heater-cathode voltage:
  - Heater negative with respect to cathode during warm-up period: 410 Volts
  - After equipment warm-up period: 180 Volts
  - Heater positive with respect to cathode: 180 Volts
- Maximum grid #1 circuit resistance: 1.5 Megohms

### Typical Operating Conditions and Characteristics

- DC anode voltage: 14,000 Volts
- DC grid #4 voltage: -50 to +350 Volts
- DC grid #2 voltage: 300 Volts
- DC grid #1 voltage:
  - -28 to -72 Volts

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*A cathode should be returned to one side or to the midpoint of the heater transformer winding.

*C visual extinction of focused raster.

Continued on following page
MECHANICAL DATA

OVERALL LENGTH 14 5/8 INCHES
GREATEST DIMENSIONS OF BULB:
  DIAGONAL 16 5/8 ± 1/8 INCHES
  WIDTH 15 3/8 ± 1/8 INCHES
  HEIGHT 12 9/32 ± 1/8 INCHES
MIN. USEFUL SCREEN DIMENSIONS:
  WIDTH 14 5/16 INCHES
  HEIGHT 11 1/8 INCHES
BULB CONTACT
RECESSED SMALL CAVITY CAP J4-21
BASE SMALL SHELL DUODECAL 6 PIN B6-63
BASING 12L
BULB CONTACT ALIGNMENT
J4-21 CONTACT ALIGNS WITH PIN POSITION #6 ± 30 DEGREES

PIN 1 - HEATER
PIN 2 - GRID #1
PIN 6 - GRID #4
PIN 10 - GRID #2
PIN 11 - CATHODE

PIN CONNECTIONS
PIN 12 - HEATER
ANODE CAP:
GRID NO. 3
GRID NO. 5

BOTTOM VIEW