

## TUNG-SOL

## HIGH VACUUM CATHODE-RAY TUBE

## ELECTROSTATIC DEFLECTION AND FOCUSING

NO. 1 PHOSPHOR  
GREEN FLUORESCENT SCREEN  
MEDIUM PERSISTENCE

HEATER  
6.3 VOLTS 0.6 AMPERE  
AC OR DC

COATED UNIPOTENTIAL CATHODE

GLASS BULB

MEDIUM SHELL DIHEPTAL 12 PIN BASE

## RATINGS\*

|                                                                       |                |         |
|-----------------------------------------------------------------------|----------------|---------|
| MAXIMUM ANODE NO. 2 VOLTAGE (HIGH-VOLTAGE ELECTRODE)                  | 2200           | VOLTS   |
| MAXIMUM ANODE NO. 1 VOLTAGE (FOCUSING ELECTRODE)                      | 1100           | VOLTS   |
| GRID VOLTAGE (CONTROL ELECTRODE)                                      | NEVER POSITIVE |         |
| MAXIMUM PEAK VOLTAGE BETWEEN ANODE NO. 2 AND ANY DEFLECTOR            | 550            | VOLTS   |
| MAXIMUM DC HEATER CATHODE POTENTIAL <sup>A</sup>                      | 125            | VOLTS   |
| MAXIMUM GRID CIRCUIT RESISTANCE                                       | 1.5            | MEGOHMS |
| MAXIMUM IMPEDANCE OF ANY DEFLECTOR CIRCUIT AT HEATER SUPPLY FREQUENCY | 1.0            | MEGOHM  |

\*MAXIMUM RATINGS ARE ABSOLUTE VALUES

## DIRECT INTERELECTRODE CAPACITANCES (APPROX.)

|                                      |     |                  |
|--------------------------------------|-----|------------------|
| GRID TO ALL OTHER ELECTRODES         | 8.0 | $\mu\mu\text{f}$ |
| CATHODE TO ALL OTHER ELECTRODES      | 7.0 | $\mu\mu\text{f}$ |
| D1 TO D2                             | 2.0 | $\mu\mu\text{f}$ |
| D3 TO D4                             | 2.0 | $\mu\mu\text{f}$ |
| D1 TO ALL OTHER ELECTRODES           | 9.0 | $\mu\mu\text{f}$ |
| D3 TO ALL OTHER ELECTRODES           | 7.0 | $\mu\mu\text{f}$ |
| D1 TO ALL OTHER ELECTRODES EXCEPT D2 | 7.0 | $\mu\mu\text{f}$ |
| D2 TO ALL OTHER ELECTRODES EXCEPT D1 | 7.0 | $\mu\mu\text{f}$ |
| D3 TO ALL OTHER ELECTRODES EXCEPT D4 | 5.0 | $\mu\mu\text{f}$ |
| D4 TO ALL OTHER ELECTRODES EXCEPT D3 | 6.0 | $\mu\mu\text{f}$ |

## TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

|                                                                           |                  |                  |             |
|---------------------------------------------------------------------------|------------------|------------------|-------------|
| ANODE NO. 2 VOLTAGE <sup>B</sup>                                          | 1500             | 2000             | VOLTS       |
| ANODE NO. 1 VOLTAGE FOR FOCUS AT 75% OF GRID VOLTAGE CUT-OFF <sup>C</sup> | 430              | 575              | VOLTS       |
| GRID VOLTAGE FOR CUT-OFF <sup>D</sup>                                     | -45 <sup>E</sup> | -60 <sup>E</sup> | VOLTS       |
| DEFLECTION SENSITIVITY: <sup>F</sup>                                      |                  |                  |             |
| D1 AND D2                                                                 | 0.153            | 0.115            | MM/VOLT DC  |
| D3 AND D4                                                                 | 0.207            | 0.155            | MM/VOLT DC  |
| DEFLECTION FACTOR: <sup>F</sup>                                           |                  |                  |             |
| D1 AND D2                                                                 | 166              | 221              | VOLTS DC/IN |
| D3 AND D4                                                                 | 123              | 164              | VOLTS DC/IN |

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## SPOT POSITION AND TEST CONDITIONS

THE UNDEFLECTED FOCUSED SPOT FALLS WITHIN A 15 MM. SQUARE CENTERED ON THE TUBE FACE.

## TEST CONDITIONS ARE:

|                                                |                    |       |
|------------------------------------------------|--------------------|-------|
| ANODE NO. 2 VOLTAGE                            | 2000               | VOLTS |
| ANODE NO. 1 VOLTAGE                            | ADJUSTED FOR FOCUS |       |
| GRID VOLTAGE                                   | NEAR CUT-OFF       |       |
| DEFLECTOR RESISTORS (CONNECTED TO ANODE NO. 2) | 1 MEGOHM EACH      |       |

NOTE: SHIELD TUBE FROM ALL STRAY FIELDS.

<sup>A</sup> WHEN THE HEATER IS OPERATED AT A NEGATIVE POTENTIAL WITH RESPECT TO THE CATHODE THEN THE CATHODE RETURN SHOULD BE MADE AT THE CENTER TAP OF THE FILAMENT TRANSFORMER.

<sup>B</sup> USE OF LESS THAN 1500 VOLTS RESULTS IN DECREASED BRILLIANCE.

<sup>C</sup> CERTAIN TUBES MAY REQUIRE ADJUSTMENT OF  $\pm 20\%$  TO  $-35\%$  WITH GRID VOLTAGE BETWEEN ZERO AND CUT-OFF.

<sup>D</sup> THE VISUAL EXTINCTION OF A FOCUSED SPOT.

<sup>E</sup> THE GRID SUPPLY SHOULD BE VARIABLE TO  $\pm 50\%$ .

<sup>F</sup> VALUES SUBJECT TO VARIATION OF  $\pm 20\%$ .

## DEFLECTOR LOCATIONS:

D1 AND D2

D3 AND D4

D1

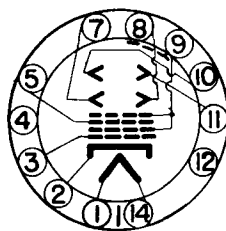
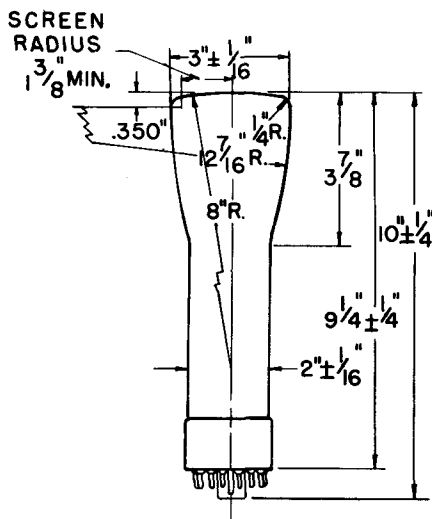
D3

NEAREST TO SCREEN

NEAREST TO BASE

SAME SIDE OF TUBE AS PIN NO. 8

SAME SIDE AS PIN NO. 2



BOTTOM VIEW

1. HEATER
2. CATHODE
3. GRID NO. 1
4. INTERNAL CONNECTION (DO NOT USE)
5. ANODE NO. 1
6. DEFLECTOR NO. 3 (D3)
7. DEFLECTOR NO. 4 (D4)
8. GRID NO. 2
9. ANODE NO. 2
10. DEFLECTOR NO. 2 (D2)
11. DEFLECTOR NO. 1 (D1)
12. NO CONNECTION
14. HEATER

PLATE  
1398  
MARCH 15  
1944