

## TUNG-SOL

## CATHODE RAY

THE 17ATP4 AND 17ATP4A ARE DIRECT VIEW PICTURE TUBES DESIGNED FOR TELEVISION APPLICATIONS. THEY ARE IDENTICAL *EXCEPT* FOR THE METAL-BACKED SCREEN ON THE 17ATP4A. THEIR COMMON FEATURES INCLUDE:

|                                 |                                |
|---------------------------------|--------------------------------|
| MAGNETIC DEFLECTION             | SPHERICAL FACEPLATE            |
| UNIPOTENTIAL CATHODE            | GREY FILTER FACEPLATE          |
| RECTANGULAR GLASS CONSTRUCTION  | EXTERNAL CONDUCTIVE COATING    |
| LOW VOLTAGE ELECTROSTATIC FOCUS | EXTERNAL SINGLE FIELD ION TRAP |
| 10 3/4" X 14 1/4" RASTER SIZE   |                                |

## ELECTRICAL DATA

| FOCUSING METHOD                                           | LOW VOLTAGE ELECTROSTATIC |                |
|-----------------------------------------------------------|---------------------------|----------------|
| DEFLECTING METHOD                                         | MAGNETIC                  |                |
| DEFLECTION ANGLE (APPROX.):                               |                           |                |
| HORIZONTAL                                                | 80                        | DEGREES        |
| VERTICAL                                                  | 65                        | DEGREES        |
| DIAGONAL                                                  | 90                        | DEGREES        |
| DIRECT INTERELECTRODE CAPACITANCES (APPROX.):             |                           |                |
| CATHODE TO ALL OTHER ELECTRODES                           | 5                         | $\mu\text{uf}$ |
| GRID #1 TO ALL OTHER ELECTRODES                           | 6                         | $\mu\text{uf}$ |
| MAXIMUM EXTERNAL CONDUCTIVE COATING TO ANODE <sup>A</sup> | 1 500                     | $\mu\text{uf}$ |
| MINIMUM EXTERNAL CONDUCTIVE COATING TO ANODE <sup>A</sup> | 750                       | $\mu\text{uf}$ |

## OPTICAL DATA

| PHOSPHOR NUMBER                            | SULFIDE TYPE | P-4     |
|--------------------------------------------|--------------|---------|
| FLUORESCENT COLOR                          |              | WHITE   |
| PHOSPHORESCENT COLOR                       |              | WHITE   |
| PERSISTENCE                                |              | SHORT   |
| FACEPLATE TRANSMISSION AT CENTER (APPROX.) | 66           | PERCENT |

## RATINGS

|                                                         | DESIGN CENTER VALUES |         |
|---------------------------------------------------------|----------------------|---------|
| HEATER VOLTAGE                                          | 6.3                  | VOLTS   |
| HEATER CURRENT                                          | 0.6                  | AMP.    |
| MAXIMUM DC ANODE, GRID #3, GRID #5 VOLTAGE <sup>B</sup> | 16 000               | VOLTS   |
| MAXIMUM DC GRID #4 VOLTAGE:                             |                      |         |
| POSITIVE                                                | 1 000                | VOLTS   |
| NEGATIVE <sup>C</sup>                                   | 500 <sup>C</sup>     | VOLTS   |
| MAXIMUM DC GRID #2 VOLTAGE                              | 500                  | VOLTS   |
| MAXIMUM GRID #1 VOLTAGE:                                |                      |         |
| DC NEGATIVE-BIAS VALUE                                  | 125                  | 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 NOT TO EXCEED 15 SECONDS          | 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, GRID #3, GRID #5 VOLTAGE                               | 14 000      | VOLTS    |
| DC GRID #4 VOLTAGE (WITH ANODE CURRENT OF 100 $\mu\text{AMP.}$ ) | -55 TO +300 | VOLTS    |
| DC GRID #2 VOLTAGE                                               | 300         | VOLTS    |
| DC GRID #1 VOLTAGE <sup>D</sup>                                  | -33 TO -77  | VOLTS    |
| DC ION TRAP MAGNET                                               | 37          | GAUSSSES |

<sup>A</sup> EXTERNAL CONDUCTIVE COATING MUST BE GROUNDED.

<sup>B</sup> BRILLIANCE AND DEFINITION DECREASE WITH DECREASING ANODE VOLTAGE. IN GENERAL, THE ANODE VOLTAGE SHOULD NOT BE LESS THAN 12,000 VOLTS.

<sup>C</sup> THIS VALUE APPLIES WHERE AN AC VOLTAGE IS PROVIDED FOR DYNAMIC FOCUSING.

<sup>D</sup> VISUAL EXTINCTION OF UNDEFLECTED FOCUSED SPOT.

INASMUCH AS THE TUBE RATING PERMITS OPERATION AT VOLTAGES AS HIGH AS 17.6 KILOVOLTS (ABSOLUTE VALUE), SHIELDING OF THE TUBE FOR X-RAY RADIATION MAY BE NEEDED WHEREVER THE OPERATING CONDITIONS INVOLVE VOLTAGES IN EXCESS OF 16 KILOVOLTS.

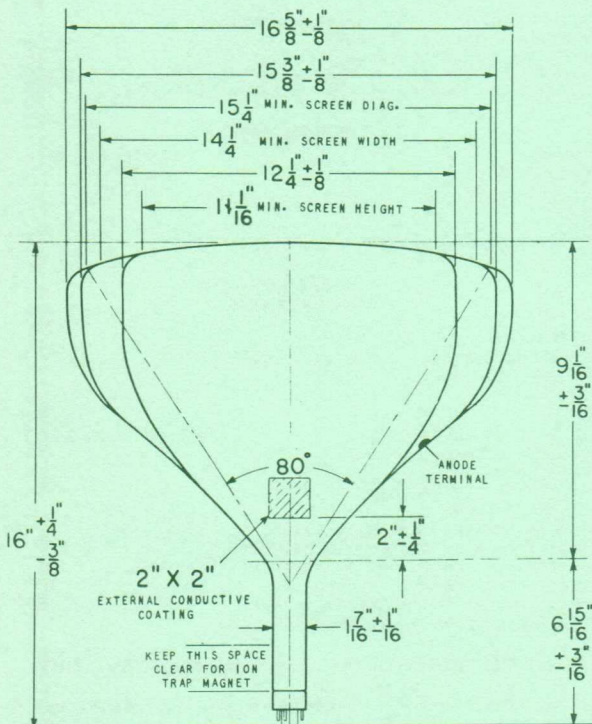
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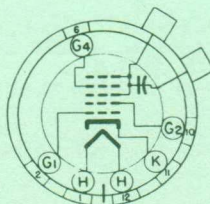
## MECHANICAL DATA

|                                                            |                                      |        |
|------------------------------------------------------------|--------------------------------------|--------|
| OVERALL LENGTH                                             | 16 $\pm \frac{1}{4}$ - $\frac{3}{8}$ | INCHES |
| GREATEST DIMENSIONS OF BULB:                               |                                      |        |
| DIAGONAL                                                   | 16 $\frac{5}{8} \pm \frac{1}{8}$     | INCHES |
| WIDTH                                                      | 15 $\frac{3}{8} \pm \frac{1}{8}$     | INCHES |
| HEIGHT                                                     | 12 $\frac{1}{4} \pm \frac{1}{8}$     | INCHES |
| MINIMUM USEFUL SCREEN DIMENSIONS:                          |                                      |        |
| DIAGONAL                                                   | 15 $\frac{1}{4}$                     | INCHES |
| WIDTH                                                      | 14 $\frac{1}{4}$                     | INCHES |
| HEIGHT                                                     | 11 $\frac{1}{16}$                    | INCHES |
| BULB CONTACT                                               | RECESSED SMALL CAVITY CAP            | J1-21  |
| BASE                                                       | SMALL SHELL DUODECAL 6 PIN           | B6-63  |
| BASING                                                     |                                      | 12L    |
| BULB CONTACT ALIGNMENT                                     |                                      |        |
| J1-21 CONTACT ALIGNS WITH PIN POSITION #6 $\pm 30$ DEGREES |                                      |        |



## PIN CONNECTIONS

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



PIN 12 - HEATER  
 ANODE CAP:  
 GRID #3  
 GRID #5  
 COLLECTOR

## BOTTOM VIEW

SOCKET FOR THIS BASE SHOULD NOT BE RIGIDLY MOUNTED; IT SHOULD HAVE FLEXIBLE LEADS AND BE ALLOWED TO MOVE FREELY.