

## TUNG-SOL

## CATHODE RAY

THE 16KP4 AND 16KP4A ARE DIRECT-VIEW PICTURE TUBES DESIGNED FOR USE IN TELEVISION APPLICATIONS. THEY ARE IDENTICAL *EXCEPT* FOR THE ALUMINIZED SCREEN ON THE 16KP4A.

|                                |                                |
|--------------------------------|--------------------------------|
| UNIPOTENTIAL CATHODE           | GREY FILTER FACEPLATE          |
| MAGNETIC FOCUS & DEFLECTION    | EXTERNAL CONDUCTIVE COATING    |
| EXTERNAL SINGLE FIELD ION TRAP | RECTANGULAR GLASS CONSTRUCTION |
| 13 1/2" X 10 1/8" RASTER SIZE  |                                |

## ELECTRICAL DATA

|                                               |       |                  |
|-----------------------------------------------|-------|------------------|
| FOCUSING METHOD                               |       | MAGNETIC         |
| DEFLECTING METHOD                             |       | MAGNETIC         |
| DEFLECTION ANGLE (APPROX.):                   |       |                  |
| HORIZONTAL                                    | 66    | DEGREES          |
| DIAGONAL                                      | 70    | DEGREES          |
| DIRECT INTERELECTRODE CAPACITANCES (APPROX.): |       |                  |
| CATHODE TO ALL OTHER ELECTRODES               | 5     | $\mu\mu\text{f}$ |
| GRID #1 TO ALL OTHER ELECTRODES               | 6     | $\mu\mu\text{f}$ |
| MAXIMUM EXTERNAL CONDUCTIVE COATING TO ANODE  | 1 500 | $\mu\mu\text{f}$ |
| MINIMUM EXTERNAL CONDUCTIVE COATING TO ANODE  | 750   | $\mu\mu\text{f}$ |

## OPTICAL DATA

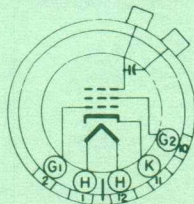
|                                                  |              |         |
|--------------------------------------------------|--------------|---------|
| PHOSPHOR NUMBER                                  | SULFIDE TYPE | NO. 4   |
| FLUORESCENT COLOR                                |              | WHITE   |
| PHOSPHORESCENT COLOR                             |              | WHITE   |
| PERSISTENCE                                      |              | SHORT   |
| FACEPLATE LIGHT TRANSMISSION AT CENTER (APPROX.) | 72           | PERCENT |

## MECHANICAL DATA

|                                                            |                            |        |
|------------------------------------------------------------|----------------------------|--------|
| OVERALL LENGTH                                             | 18 3/4 $\pm$ 3/8           | INCHES |
| GREATEST DIMENSIONS OF BULB:                               |                            |        |
| DIAGONAL                                                   | 16 1/8 $\pm$ 1/8           | INCHES |
| WIDTH                                                      | 14 3/4 $\pm$ 1/8           | INCHES |
| HEIGHT                                                     | 11 1/2 $\pm$ 1/8           | INCHES |
| MINIMUM USEFUL SCREEN DIMENSIONS:                          |                            |        |
| DIAGONAL                                                   | 14 7/8                     | INCHES |
| WIDTH                                                      | 13 1/2                     | INCHES |
| HEIGHT                                                     | 10 1/8                     | INCHES |
| BULB CONTACT                                               | RECESSED SMALL CAVITY CAP  | J1-21  |
| BASE                                                       | SMALL SHELL DUODECAL 5 PIN | B5-57  |
| BASING                                                     |                            | 12N    |
| BULB CONTACT ALIGNMENT                                     |                            |        |
| J1-21 CONTACT ALIGNS WITH PIN POSITION #6 $\pm$ 30 DEGREES |                            |        |

## PIN CONNECTIONS

PIN 1 - HEATER  
 PIN 2 - GRID NO. 1  
 PIN 10 - GRID NO. 2  
 PIN 11 - CATHODE



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

BOTTOM VIEW

CONTINUED ON FOLLOWING PAGE

## TUNG-SOL

CONTINUED FROM PRECEDING PAGE

## RATINGS

DESIGN CENTER VALUES

|                                                     |        |       |
|-----------------------------------------------------|--------|-------|
| HEATER VOLTAGE                                      | 6.3    | VOLTS |
| HEATER CURRENT                                      | 0.6    | AMP.  |
| MAXIMUM DC ANODE, GRID #3 VOLTAGE <sup>A</sup>      | 16 000 | VOLTS |
| MAXIMUM DC GRID #2 VOLTAGE                          | 410    | 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 <sup>B</sup> |        |       |
| HEATER NEGATIVE WITH RESPECT TO CATHODE             |        |       |
| DURING WARM-UP PERIOD NOT TO EXCEED 15 SECONDS      | 410    | VOLTS |
| AFTER EQUIPMENT WARM-UP PERIOD                      | 150    | VOLTS |
| HEATER POSITIVE WITH RESPECT TO CATHODE             | 150    | VOLTS |

<sup>A</sup>IF THIS TUBE IS OPERATED AT VOLTAGES IN EXCESS OF 16,000 VOLTS, X-RAY RADIATION SHIELDING MAY BE NECESSARY TO AVERT POSSIBLE DANGER OF INJURY FROM PROLONGED EXPOSURE AT CLOSE RANGE.

<sup>B</sup>CATHODE SHOULD BE RETURNED TO ONE SIDE OR TO THE MID-TAP OF THE HEATER TRANSFORMER WINDING.

## TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

|                                                  |              |       |
|--------------------------------------------------|--------------|-------|
| DC ANODE, GRID #3 VOLTAGE                        | 12 000       | VOLTS |
| DC GRID #2 VOLTAGE                               | 300          | VOLTS |
| DC GRID #1 VOLTAGE <sup>C</sup>                  | -33 TO -77   | VOLTS |
| DC FOCUSING COIL CURRENT <sup>D</sup> (APPROX.)  | 90 $\pm$ 20% | MA.   |
| DC ION TRAP CURRENT STANDARD COIL #111 (APPROX.) | 75 $\pm$ 50% | MA.   |

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

<sup>D</sup>FOR STANDARD FOCUS COIL #109, OR EQUIVALENT, WITH THE COMBINED GRID #1 BIAS VOLTAGE AND VIDEO SIGNAL VOLTAGE ADJUSTED TO PRODUCE A HIGHLIGHT BRIGHTNESS OF 35 FOOT LAMBERTS ON A 10 1/8" BY 13 1/2" PICTURE SIZE. DISTANCE FROM REFERENCE LINE TO CENTER OF AIR GAP ON FOCUS COIL SHALL BE 3.0 INCHES.

## CIRCUIT VALUES

|                                    |     |         |
|------------------------------------|-----|---------|
| MAXIMUM GRID #1 CIRCUIT RESISTANCE | 1.5 | MEGOHMS |
|------------------------------------|-----|---------|

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