

## TUNG-SOL

## CATHODE RAY

THE 21MP4 IS A DIRECT-VIEW PICTURE TUBE DESIGNED FOR USE IN TELEVISION APPLICATIONS. ITS FEATURES INCLUDE:

|                                 |                                |
|---------------------------------|--------------------------------|
| MAGNETIC DEFLECTION             | UNIPOTENTIAL CATHODE           |
| RECTANGULAR METAL CONSTRUCTION  | FROSTED FILTERGLASS FACEPLATE  |
| LOW VOLTAGE ELECTROSTATIC FOCUS | EXTERNAL SINGLE FIELD ION TRAP |
| 18 3/8" X 14" RASTER SIZE       |                                |

## ELECTRICAL DATA

|                                               |    |                |
|-----------------------------------------------|----|----------------|
| FOCUSING METHOD                               |    | ELECTROSTATIC  |
| DEFLECTING METHOD                             |    | MAGNETIC       |
| DEFLECTION ANGLE (APPROX.):                   |    |                |
| HORIZONTAL                                    | 66 | DEGREES        |
| VERTICAL                                      | 50 | DEGREES        |
| DIAGONAL                                      | 70 | DEGREES        |
| DIRECT INTERELECTRODE CAPACITANCES (APPROX.): |    |                |
| CATHODE TO ALL OTHER ELECTRODES               | 5  | $\mu\text{lf}$ |
| GRID #1 TO ALL OTHER ELECTRODES               | 6  | $\mu\text{lf}$ |

## OPTICAL DATA

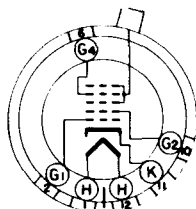
|                                                  |              |         |
|--------------------------------------------------|--------------|---------|
| PHOSPHOR NUMBER                                  | SULFIDE TYPE | NO. 4   |
| FLUORESCENT COLOR                                |              | WHITE   |
| PHOSPHORESCENT COLOR                             |              | WHITE   |
| PERSISTENCE                                      |              | SHORT   |
| FACEPLATE LIGHT TRANSMISSION AT CENTER (APPROX.) | 66           | PERCENT |

## MECHANICAL DATA

|                                                             |                            |        |
|-------------------------------------------------------------|----------------------------|--------|
| OVERALL LENGTH                                              | 22 5/8                     | INCHES |
| GREATEST DIMENSIONS OF BULB:                                |                            |        |
| DIAGONAL                                                    | 20 3/4 $\pm$ 1/4           | INCHES |
| WIDTH                                                       | 19 23/32 $\pm$ 1/8         | INCHES |
| HEIGHT                                                      | 15 5/16 $\pm$ 1/8          | INCHES |
| MINIMUM USEFUL SCREEN DIMENSIONS:                           |                            |        |
| DIAGONAL                                                    | 19 3/8                     | INCHES |
| WIDTH                                                       | 18 3/8                     | INCHES |
| HEIGHT                                                      | 14                         | INCHES |
| BULB CONTACT                                                | METAL SHELL LIP            |        |
| BASE                                                        | SMALL SHELL DUODECAL 6 PIN | B6-63  |
| BASING                                                      |                            | 12M    |
| BASE ALIGNMENT                                              |                            |        |
| PIN #6 ALIGNS WITH HORIZONTAL PICTURE AXIS $\pm$ 10 DEGREES |                            |        |

## PIN CONNECTIONS

PIN 1 - HEATER  
 PIN 2 - GRID NO. 1  
 PIN 6 - GRID NO. 4  
 PIN 10 - GRID NO. 2  
 PIN 11 - CATHODE



PIN 12 - HEATER  
 METAL SHELL LIP:  
 GRID NO. 3,  
 GRID NO. 5,  
 COLLECTOR

BOTTOM VIEW

CONTINUED ON FOLLOWING PAGE

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## RATINGS

DESIGN CENTER VALUES

|                                                |                            |       |
|------------------------------------------------|----------------------------|-------|
| HEATER VOLTAGE                                 | 6.3                        | VOLTS |
| HEATER CURRENT                                 | 0.6                        | AMP.  |
| MAXIMUM DC GRID #3, GRID #5, COLLECTOR VOLTAGE | 16 000                     | 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 GRID #4 VOLTAGE                     | -500 <sup>A</sup> TO +1000 | 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 |

<sup>A</sup> THIS VALUE HAS BEEN SPECIFIED TO TAKE CARE OF THE CONDITION WHERE AN AC VOLTAGE IS PROVIDED FOR DYNAMIC FOCUSING.

## TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

|                                                      |             |          |
|------------------------------------------------------|-------------|----------|
| DC GRID #3, GRID #5, COLLECTOR VOLTAGE               | 14 000      | VOLTS    |
| DC GRID #4 VOLTAGE (FOCUSING ELECTRODE) <sup>B</sup> | -55 TO +300 | VOLTS    |
| DC GRID #2 VOLTAGE                                   | 300         | VOLTS    |
| DC GRID #1 VOLTAGE <sup>C</sup>                      | -33 TO -77  | VOLTS    |
| ION TRAP MAGNET (RATED STRENGTH)                     | 45          | GAUSSSES |

<sup>B</sup> WITH GRID #3, GRID #5, COLLECTOR CURRENT OF 100 UAMP.

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

## CIRCUIT VALUES

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

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