

**TUNG-SOL****CATHODE RAY**

THE 19JP4 IS A DIRECT VIEW PICTURE TUBE DESIGNED FOR USE IN TELEVISION APPLICATIONS. ITS FEATURES INCLUDE:

**GREY FILTER FACEPLATE**  
**MAGNETIC FOCUS AND DEFLECTION**  
**RECTANGULAR GLASS CONSTRUCTION**

**UNIPOTENTIAL CATHODE**  
**12" X 16" RASTER SIZE**  
**EXTERNAL SINGLE FIELD ION TRAP**

**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  | $\mu\text{mf}$ |
| GRID #1 TO ALL OTHER ELECTRODES              | 6  | $\mu\text{mf}$ |

**OPTICAL DATA**

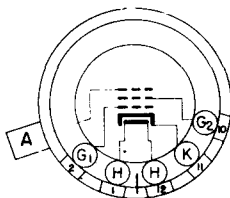
|                                                  |    |         |
|--------------------------------------------------|----|---------|
| PHOSPHOR NUMBER                                  |    | NO. 4   |
| FLUORESCENT COLOR                                |    | WHITE   |
| PHOSPHORESCENT COLOR      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

**MECHANICAL DATA**

|                                                            |                            |        |
|------------------------------------------------------------|----------------------------|--------|
| OVERALL LENGTH                                             | 20 13/16 $\pm$ 3/8         | INCHES |
| GREATEST DIMENSIONS OF BULB                                |                            |        |
| DIAGONAL                                                   | 18 5/8 $\pm$ 1/8           | INCHES |
| WIDTH                                                      | 17 1/16 $\pm$ 1/8          | INCHES |
| MINIMUM USEFUL SCREEN DIMENSIONS                           |                            |        |
| DIAGONAL                                                   | 17 21/32                   | INCHES |
| WIDTH                                                      | 16                         | INCHES |
| HEIGHT                                                     | 12                         | INCHES |
| BULB CONTACT                                               | RECESSED SMALL CAVITY CAP  | J1-21  |
| BASE                                                       | SMALL SHELL DUODECAL 5 PIN | B5-57  |
| BASING                                                     |                            | 120    |
| 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

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 VOLTAGE                       | 18 000 | 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         |        |       |
| 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 |

**TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS**

|                                                 |              |       |
|-------------------------------------------------|--------------|-------|
| DC ANODE VOLTAGE                                | 12 000       | VOLTS |
| DC GRID #2 VOLTAGE                              | 300          | VOLTS |
| DC GRID #1 VOLTAGE <sup>A</sup>                 | -33 TO -77   | VOLTS |
| DC FOCUSING COIL CURRENT <sup>B</sup> (APPROX.) | 95 $\pm$ 20% | MA.   |
| DC ION TRAP CURRENT STANDARD COIL #111          | 75 $\pm$ 50% | MA.   |

<sup>A</sup>VISUAL EXTINCTION OF UNDEFLECTED FOCUSED SPOT.<sup>B</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 30 FOOT LAMBERTS ON A 12" X 16" 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 |
|------------------------------------|-----|---------|

## TUNG-SOL

