

## CATHODE RAY DISPLAY TUBE TYPE 21EWP4

The 21EWP4 is a magnetically focused, magnetically deflected cathode ray display tube featuring a high resolution gun. The 21EWP4 is primarily useful for high resolution, high brightness monitor display where a large screen is required.

The screen is aluminized for increased brightness and the tube has a gray-glass face for improved contrast.

### ELECTRICAL:

|                                    |                     |
|------------------------------------|---------------------|
| Cathode                            | Coated Unipotential |
| Heater:                            |                     |
| Voltage                            | 6.3 Volts           |
| Current                            | 0.6 Ampere          |
| Direct Interelectrode Capacitance: |                     |
| Grid 1 to All Other Electrodes     | 6 $\mu\mu\text{f}$  |
| Cathode to All Other Electrodes    | 5 $\mu\mu\text{f}$  |
| Screen:                            |                     |
| Phosphor                           | Aluminized P-4      |
| Fluorescence                       | White               |
| Persistence                        | Short               |
| Focusing Method                    | Magnetic            |
| Deflection Method                  | Magnetic            |
| Horizontal Angle (approx.)         | 67°                 |
| Vertical Angle (approx.)           | 53°                 |
| Diagonal Angle (approx.)           | 72°                 |
| No Ion Trap                        | No magnet required  |

### MECHANICAL:

|                           |                     |
|---------------------------|---------------------|
| Mounting Position         | Any                 |
| Useful Screen Dimensions: |                     |
| Height                    | 15-1/16" Min.       |
| Width                     | 19-1/16" Min.       |
| Diagonal                  | 20-1/4" Min.        |
| Faceplate                 | Spherical           |
| Glass                     | Neutral Gray        |
| Transmission              | 74% Approx.         |
| Bulb Dimensions:          |                     |
| Height                    | 16-3/8" $\pm$ 1/8"  |
| Width                     | 20-1/4" $\pm$ 1/8"  |
| Diagonal                  | 21-3/8" $\pm$ 1/8"  |
| Overall Length            | 23-1/32" $\pm$ 3/8" |
| Neck Length               | 7-1/2" $\pm$ 3/16"  |
| Anode Terminal            | J1-21               |
| Base                      | B5-57               |
| Basing                    | 12D                 |

### MAXIMUM RATINGS

|   |                   |
|---|-------------------|
| Design Center Values                    |                   |
| Anode Voltage                           | 20,000 max. Volts |
| Grid 2 Voltage                          | 1,000 max. Volts  |
| Grid 1 Voltage:                         |                   |
| Positive Peak Value                     | 0 max. Volts      |
| Positive Bias Value                     | 0 max. Volts      |
| Negative Peak Value                     | 200 max. Volts    |
| Negative Bias Value                     | 140 max. Volts    |
| Peak Heater Cathode Voltage:            |                   |
| Heater Negative with respect to cathode |                   |
| During warmup not to exceed 15 sec.     | 410 max. Volts    |
| After equipment warmup                  | 180 max. Volts    |
| Heater positive with respect to cathode |                   |
|   | 180 max. Volts    |

### TYPICAL OPERATING CONDITIONS:

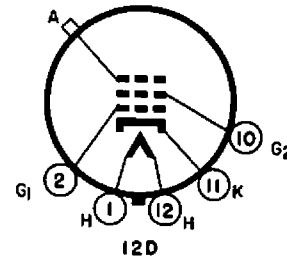
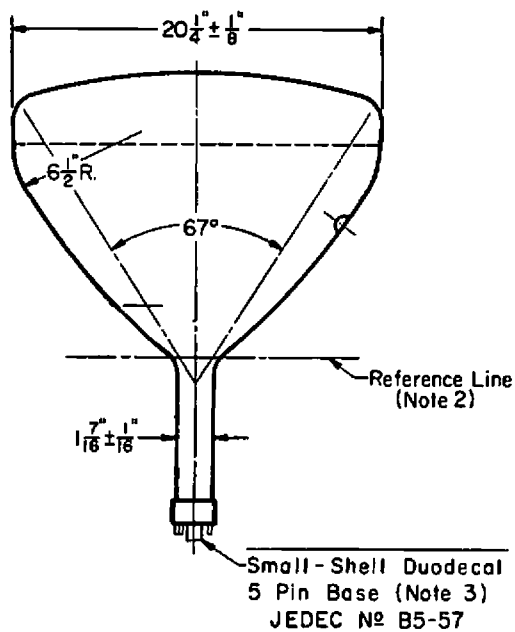
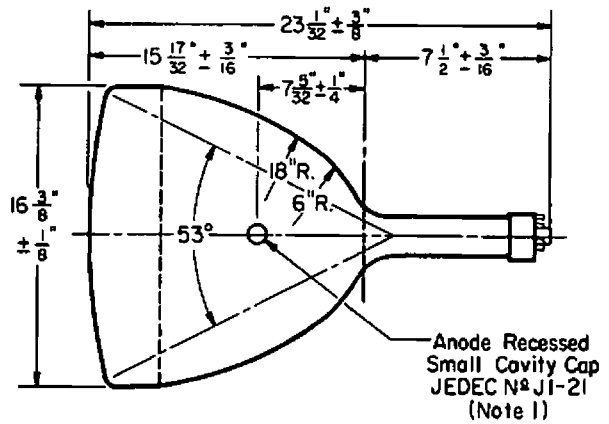
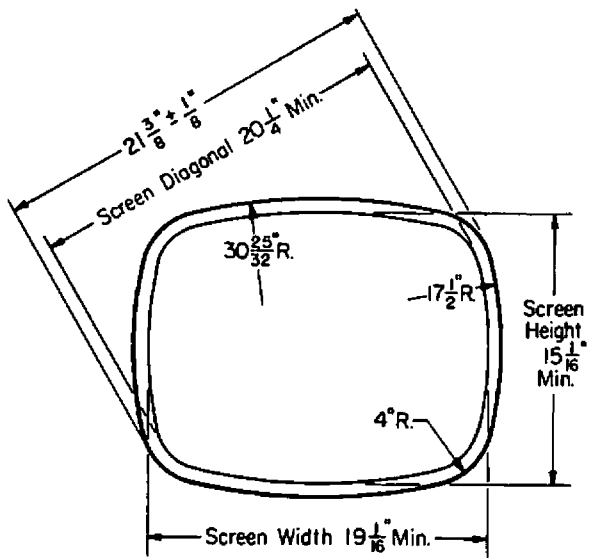
|                     |               |               |       |
|---------------------|---------------|---------------|-------|
| Anode Voltage       | 18,000        | 16,000        | Volts |
| Grid 2 Voltage      | 300           | 300           | Volts |
| Grid 1 Voltage for  |               |               |       |
| Spot Cutoff         | -33 to -75    | -33 to -75    | Volts |
| Focus Coil Current  |               |               |       |
| (approx.) $\Delta$  | 115 $\pm$ 20% | 108 $\pm$ 20% | Ma.   |
| Line Width $\Delta$ | .018          | .018          | Inch  |

### LIMITING CIRCUIT VALUES:

|                           |                  |
|---------------------------|------------------|
| Grid 1 Circuit Resistance | 1.5 max. Megohms |
| Grid 2 Circuit Resistance | 10,000 min. Ohms |

$\Delta$  Using an eye-corrected photocell, the light output level is set to 40 foot-lamberts. Typical line width at center of faceplate, using half-amplitude points of the light energy distribution of a single line, is 0.018".

$\diamond$  For JEDEC focusing coil #109 or equivalent located 3-1/4" from reference line.



CE-C1488

NOTE 1: Anode terminal alignment with vacant base-pin position 3 has angular tolerance about tube axis of  $\pm 30^\circ$ .

NOTE 2: Yoke Reference Line is determined by plane of flared end of JEDEC Reference-Line Gauge No. 110 when seated on funnel of tube.

NOTE 3: The socket should not be mounted rigidly but should be allowed to move freely and have flexible leads.

X-RAY WARNING: Operation with voltages in excess of 16KV may require shielding to limit radiation of very soft x-rays.