

## Picture Tube

### PAN-O-PLY — INTEGRAL IMPLOSION PROTECTION

(Provided by Formed Rim and Welded Tension Bands around Periphery of Tube Panel—No Separate Safety-Glass or Integral Protective Window Required)

RECTANGULAR GLASS TYPE ALUMINIZED SCREEN  
LOW-VOLTAGE ELECTROSTATIC FOCUS 92° MAGNETIC DEFLECTION  
NO ION-TRAP MAGNET REQUIRED

Low-Grid-No.2-Voltage—for Cathode-Drive Operation

#### Electrical:

Direct Interelectrode Capacitances:

|                                                             |                                   |            |
|-------------------------------------------------------------|-----------------------------------|------------|
| Cathode to all other electrodes. . . . .                    | 5                                 | pf         |
| Grid No.1 to all other electrodes. . . . .                  | 6                                 | pf         |
| External conductive coating to anode <sup>a</sup> . . . . . | { 2500 max.<br>1700 min.          | { pf<br>pf |
| Heater Current at 6.3 volts. . . . .                        | 600 ± 30                          | ma         |
| Heater Warm-up Time (Average). . . . .                      | 11                                | seconds    |
| Electron Gun. . . . .                                       | Type Requiring No Ion-Trap Magnet |            |

#### Optical:

|                                                            |                                 |
|------------------------------------------------------------|---------------------------------|
| Phosphor (For curves, see front of this section) . . . . . | .P4-Sulfide Type,<br>Aluminized |
| Faceplate . . . . .                                        | Filterglass                     |
| Light transmission at center (Approx.). . . . .            | 42%                             |

#### Mechanical:

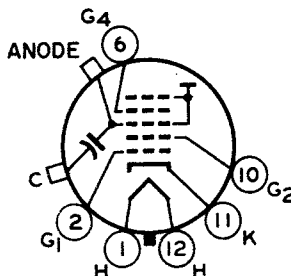
|                                   |                 |
|-----------------------------------|-----------------|
| Weight (Approx.). . . . .         | 29 lbs          |
| Overall Length. . . . .           | 18.125" ± .375" |
| Neck Length . . . . .             | 5.625" ± .125"  |
| Projected Area of Screen. . . . . | 282 sq. in.     |
| External Conductive Coating:      |                 |

Type. . . . . Regular-Band  
Contact area for grounding. . . . . Near Reference Line  
For Additional Information on Coatings, Dimensions, and Deflection Angles:

See *Picture-Tube Dimensional-Outlines and Bulb J187 J* sheets at the front of this section.

|                                             |                                                                  |
|---------------------------------------------|------------------------------------------------------------------|
| Cap . . . . .                               | Recessed Small Cavity (JEDEC No. J1-21)                          |
| Base. . . . .                               | Short Small-Shell Duodecal 6-Pin,<br>(JEDEC Group 4, No. B6-203) |
| Basing Designation for BOTTOM VIEW. . . . . | 12L                                                              |

- Pin 1—Heater
- Pin 2—Grid No.1
- Pin 6—Grid No.4
- Pin 10—Grid No.2
- Pin 11—Cathode
- Pin 12—Heater



Cap — Anode  
(Grid No.3,  
Grid No.5,  
Screen,  
Collector)  
C — External  
Conductive  
Coating



# 23ENP4

## Maximum and Minimum Ratings, Design-Maximum Values:

*Unless otherwise specified, voltage values are positive with respect to grid No.1*

|                                          |                           |                |
|------------------------------------------|---------------------------|----------------|
| Anode Voltage. . . . .                   | {25000 max.<br>11000 min. | volts<br>volts |
| Grid-No.4 Voltage:                       |                           |                |
| Positive value . . . . .                 | 1250 max.                 | volts          |
| Negative value . . . . .                 | 400 max.                  | volts          |
| Grid-No.2 Voltage. . . . .               | {70 max.<br>40 min.       | volts<br>volts |
| Cathode Voltage:                         |                           |                |
| Negative peak value. . . . .             | 2 max.                    | volts          |
| Negative bias value. . . . .             | 0 max.                    | volts          |
| Positive bias value. . . . .             | 100 max.                  | volts          |
| Positive peak value. . . . .             | 150 max.                  | volts          |
| Heater Voltage . . . . .                 | {6.9 max.<br>5.7 min.     | volts<br>volts |
| Peak Heater-Cathode Voltage:             |                           |                |
| Heater negative with respect to cathode: |                           |                |
| During equipment warm-up period          |                           |                |
| not exceeding 15 seconds . . . . .       | 450 max.                  | volts          |
| After equipment warm-up period . . . . . | 300 max.                  | volts          |
| Heater positive with respect to cathode: |                           |                |
| Combined AC & DC voltage . . . . .       | 200 max.                  | volts          |
| DC Component . . . . .                   | 100 max.                  | volts          |

## Typical Operating Conditions for Cathode-Drive Service:

*Unless otherwise specified, voltage values are positive with respect to grid No.1*

|                                          |          |       |
|------------------------------------------|----------|-------|
| Anode Voltage. . . . .                   | 20000    | volts |
| Grid-No.4 Voltage <sup>b</sup> . . . . . | 200      | volts |
| Grid-No.2 Voltage. . . . .               | 50       | volts |
| Cathode Voltage for visual               |          |       |
| extinction of focused raster . . . . .   | 36 to 54 | volts |
| Field Strength of required               |          |       |
| adjustable Centering Magnet. . . . .     | 0 to 12  | gauss |

## Maximum Circuit Value:

|                                        |          |         |
|----------------------------------------|----------|---------|
| Grid-No.1 Circuit Resistance . . . . . | 1.5 max. | megohms |
|----------------------------------------|----------|---------|

<sup>a</sup> Includes implosion protection hardware.

<sup>b</sup> The grid-No.4 voltage required for optimum focus of any individual tube will have a value anywhere between 0 and +400 volts with the combined grid-No.1 voltage and video-signal voltage adjusted to give an anode current of 200 microamperes on a 13-1/2-inch by 18-inch pattern from an RCA-2F21 monoscope, or equivalent.

For X-radiation shielding considerations, see sheet  
*X-RADIATION PRECAUTIONS FOR CATHODE-RAY TUBES*  
at front of this Section

