



5600 WEST JARVIS AVENUE

CHICAGO 48, ILLINOIS

TELEPHONE MULBERRY 5-5000

TELETYPE 312-265-1293

## DESCRIPTION

|                            |                                 |
|----------------------------|---------------------------------|
| 23" Direct View            | Filled Rim Implosion Protection |
| Rectangular Glass Envelope | 92° Magnetic Deflection         |
| Gray Filter Glass          | Electrostatic Focus             |
| Aluminized Screen          | External Conductive Coating     |
| 6.3 Volts, 600 Ma. Heater  | No Ion Trap                     |
| 450                        | Rim Provides Mounting Holes     |

## ELECTRICAL DATA

|                                           |                |
|-------------------------------------------|----------------|
| Focusing Method                           | Electrostatic  |
| Deflection Angles (approx.)               |                |
| Horizontal                                | 81 Degrees     |
| Vertical                                  | 66 Degrees     |
| Diagonal                                  | 92 Degrees     |
| Direct Interelectrode Capacitances        |                |
| Cathode to all other electrodes (approx.) | 5 uuf          |
| Grid #1 to all other electrodes (approx.) | 6 uuf          |
| External Conductive Coating to Anode      | 2,500 max. uuf |
| (Including implosion protection hardware) | 2,000 min. uuf |
| Heater Current at 6.3 Volts               | 600 ± 10% Ma.  |
| Heater Warm-up time                       | 11 Seconds     |

## OPTICAL DATA

|                                         |               |
|-----------------------------------------|---------------|
| Phosphor Number                         | P4 Aluminized |
| Light Transmittance at Center (approx.) | 42 1/2%       |

## MECHANICAL DATA

|                                                        |                 |
|--------------------------------------------------------|-----------------|
| Overall Length                                         | 18 ± 3/8"       |
| Greatest Dimensions of Tube (Metal Rim)                |                 |
| Width                                                  | 21 5/8 ± 1/16"  |
| Height                                                 | 18 9/16 ± 1/16" |
| Minimum Useful Screen Dimensions (Projected)           |                 |
| Diagonal                                               | 22 5/16"        |
| Horizontal Axis.                                       | 19 1/4"         |
| Vertical Axis                                          | 15 1/8"         |
| Area                                                   | 282 Sq. in.     |
| Neck Length                                            | 5 1/2 ± 3/16"   |
| Bulb                                                   | J187-J1         |
| Bulb Contact                                           | J1-21           |
| Base                                                   | B6-203          |
| Basing                                                 | 12L             |
| Bulb Contact Alignment                                 |                 |
| J1-21 contact aligns with pin position #6 ± 30 degrees |                 |

# 23FNP4

## RATINGS (Design Maximum System)

Unless otherwise specified, voltage values are positive and measured with respect to cathode.

|                                              |              |
|----------------------------------------------|--------------|
| Maximum Anode Voltage                        | 25,000 Volts |
| Minimum Anode Voltage                        | 16,000 Volts |
| Maximum Grid #4 (Focusing Electrode) voltage | +1100 -550   |
| Maximum Grid #2 Voltage                      | 550 Volts    |
| Minimum Grid #2 Voltage                      | 200 Volts    |
| Grid #1 Voltage                              |              |
| Maximum Negative Value                       | 155 Volts DC |
| Maximum Negative Peak Value                  | 200 Volts    |
| Maximum Positive Value                       | 0 Volts      |
| Maximum Positive Peak Value                  | 2 Volts      |
| Maximum Heater Voltage                       | 7 Volts      |
| Minimum Heater Voltage                       | 5.8 Volts    |
| Maximum Heater-Cathode Voltage               |              |
| Heater negative with respect to cathode      |              |
| During warm-up time not to exceed 15 sec.    | 450 Volts    |
| After equipment warm-up period               | 200 Volts    |
| Heater positive with respect to cathode      | 200 Volts    |

## TYPICAL OPERATING CONDITIONS

### GRID DRIVE SERVICE

Unless otherwise specified, all voltage values are positive with respect to cathode.

|                                                         |                     |
|---------------------------------------------------------|---------------------|
| Anode Voltage                                           | 20,000 Volts DC     |
| Grid #4 (Focusing Electrode) voltage<br>(Notes 2 and 3) | 250 Volts DC        |
| Grid #2 Voltage                                         | 300 Volts DC        |
| Grid #1 Voltage (Note 1)                                | -35 to -72 Volts DC |

### MAXIMUM CIRCUIT VALUES

|                                    |             |
|------------------------------------|-------------|
| Maximum Grid #1 circuit resistance | 1.5 Megohms |
|------------------------------------|-------------|

### NOTES

1. Visual extinction of focused raster.
2. With the combined Grid #1 bias voltage and video-signal voltage adjusted to give an anode current of 200 micro-amperes on a 19 1/4" X 15 1/8" pattern from RCA 2F21 Monoscope or equivalent.
3. Individual tubes will have satisfactory focus at some value between 0 and 500 volts.

THE



CORPORATION

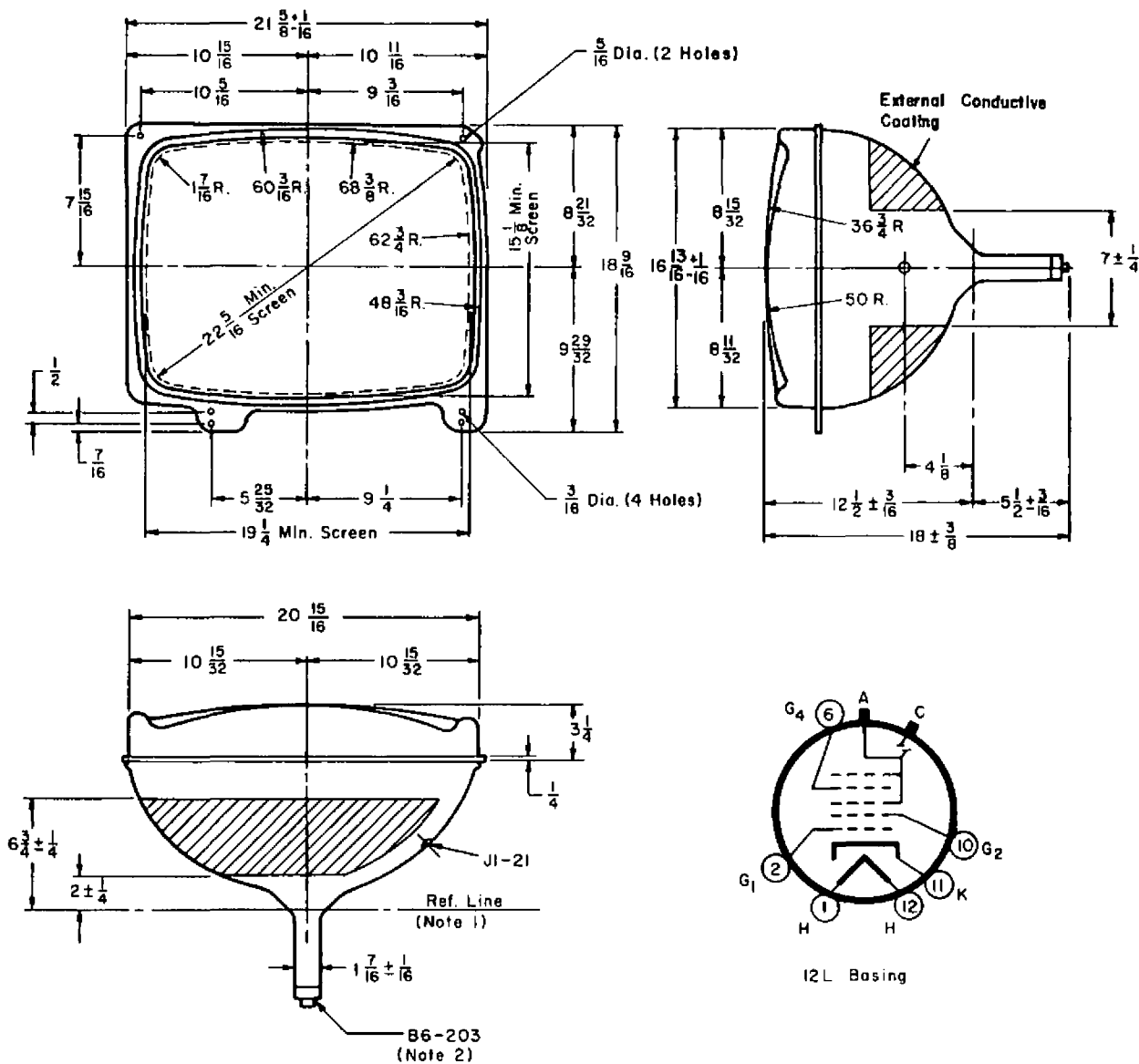
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## NOTE:-

1. Reference line determined by plane C-C' of J.E.D.E.C reference line gauge No. 116.
2. Base pin No. 6 aligned with anode contact within  $30^\circ$