

May 15, 1965

## QUICK REFERENCE DATA

110° MAGNETIC DEFLECTION  
10.125" × 7.625" SCREEN SIZE  
4.375" NECK LENGTH  
SPHERICAL GRAY FILTER GLASS

BANDED  
IMPLOSION PROTECTION

6.3 VOLT, 450 MA HEATER  
LOW G2 VOLTAGE (50 VOLTS)  
NO ION TRAP  
ELECTROSTATIC FOCUS

## DETAILED DATA

### ELECTRICAL

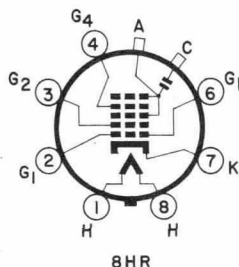
|                                                                                            |                           |
|--------------------------------------------------------------------------------------------|---------------------------|
| Focusing Method                                                                            | Low Voltage Electrostatic |
| Deflection Method                                                                          | Magnetic                  |
| Deflection Angles (Approx.):                                                               |                           |
| Diagonal                                                                                   | 110 Degrees               |
| Horizontal                                                                                 | 99 Degrees                |
| Vertical                                                                                   | 80 Degrees                |
| Direct Interelectrode Capacitances:                                                        |                           |
| Cathode to All other Electrodes (Approx.)                                                  | 5 pF                      |
| Grid No. 1 to All other Electrodes (Approx.)                                               | 6 pF                      |
| External Conductive Coating to Anode:                                                      |                           |
| Minimum                                                                                    | 500 pF                    |
| Maximum                                                                                    | 800 pF                    |
| Resistance Between External Conductive Coating and Implosion Protection Hardware (minimum) | 5 Megohms                 |
| Heater Current at 6.3 Volts                                                                | 450 ± 5% mA               |
| Heater Warm-up Time (Note 1)                                                               | 11 Seconds                |

### OPTICAL

|                                         |               |
|-----------------------------------------|---------------|
| Phosphor Number                         | Aluminized P4 |
| Light Transmittance at Center (Approx.) | 48%           |

### MECHANICAL

|                                               |                  |
|-----------------------------------------------|------------------|
| Over-all Length                               | 9.348" ± 0.250"  |
| Neck Length                                   | 4.375" ± 0.125"  |
| Greatest Dimensions of Tube:                  |                  |
| Diagonal                                      | 12.425" ± 0.100" |
| Width                                         | 10.987" ± 0.100" |
| Height                                        | 8.589" ± 0.100"  |
| Minimum Useful Screen Dimensions (Projected): |                  |
| Diagonal                                      | 11.625"          |
| Horizontal Axis                               | 10.125"          |
| Vertical Axis                                 | 7.625"           |
| Area                                          | 74 Sq. Inches    |
| Implosion Protection                          | Banded           |
| Bulb Contact                                  | J1-21            |
| Base                                          | B7-208           |
| Basing                                        | 8HR              |
| Net Weight                                    | 6 Pounds         |
| Bulb                                          | J 99 C1          |



### RATINGS

Design Maximum System

Unless Otherwise Specified, Voltage Values are Positive and Measured with Respect to Grid 1.

|                                                |                   |
|------------------------------------------------|-------------------|
| Maximum Anode Voltage                          | 15000 Volts       |
| Minimum Anode Voltage                          | 9000 Volts        |
| Maximum Grid 4 (Focusing Electrode) Voltage    | +1100, -550 Volts |
| Maximum Grid 2 Voltage                         | 70 Volts          |
| Minimum Grid 2 Voltage                         | 20 Volts          |
| Voltage:                                       |                   |
| Maximum Negative Bias Value                    | 0 Volts           |
| Maximum Negative Peak Value                    | 2 Volts           |
| Maximum Positive Bias Value                    | 154 Volts         |
| Maximum Positive Peak Value                    | 220 Volts         |
| Maximum Heater Voltage                         | 6.93 Volts        |
| Minimum Heater Voltage                         | 5.67 Volts        |
| Maximum Heater-Cathode Voltage:                |                   |
| Heater Negative with Respect to Cathode:       |                   |
| During Warm-up Period not to Exceed 15 Seconds | 450 Volts         |
| After Equipment Warm-up Period                 | 200 Volts         |
| Heater Positive with Respect to Cathode        | 200 Volts         |

### LIMITING CIRCUIT VALUES

|                                                 |             |
|-------------------------------------------------|-------------|
| Maximum Grid 1 Circuit Resistance               | 1.5 Megohms |
| Minimum Grids 2 & 4 Circuit Resistance (Note 2) | 10000 Ohms  |

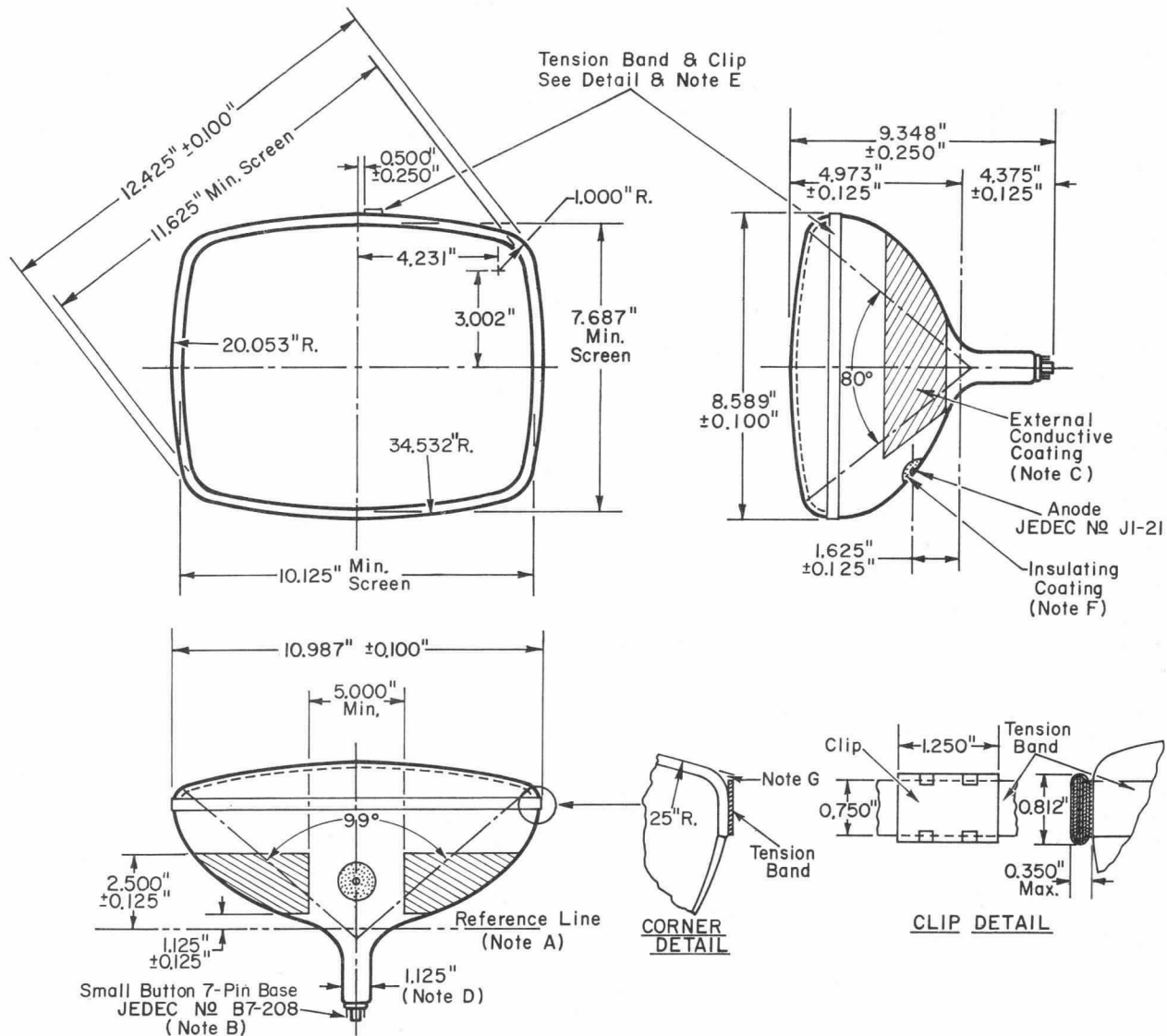
### TYPICAL CATHODE DRIVE OPERATION

Unless Otherwise Specified, All Voltage Values are Positive with Respect to Grid 1.

|                                              |                |
|----------------------------------------------|----------------|
| Anode Voltage                                | 12000 Volts    |
| Grid 4 Voltage (Focusing Electrode) (Note 3) | 0 to 400 Volts |
| Grid 2 Voltage                               | 50 Volts       |
| Cathode Voltage for Raster Cutoff            | 35 to 55 Volts |

### NOTES

1. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times rated heater voltage divided by rated heater current.
2. Protective resistance in the grids 2 & 4 circuits is advisable to prevent damage.
3. With the combined Grid No. 1 bias voltage and video-signal voltage adjusted to give an anode current of 150 microamperes on a 10.125" by 7.625" pattern from type 2F21 monoscope or equivalent. Individual tubes will have satisfactory focus at some value between 0 and 400 volts.



- A. Yoke Reference Line is determined by plane surface of flared end of JEDEC Reference Line Gauge No. 126 when seated on funnel of tube.
- B. Lateral strains on base pins must be avoided. The socket should have flexible leads permitting movement. The perimeter of the base wafer will be inside a 1.750" diameter circle concentric with tube axis. Base pin 2 aligns with major axis within  $30^\circ$  and is on same side as anode terminal.
- C. External conductive coating forms supplementary filter capacitance and must be grounded.
- D. Neck diameter may be a maximum of 1.168" at the splice.
- E. Tension band must be grounded.
- F. Transparent, insulating coating, 4" in diameter. Clean only with soft, dry, lintless cloth.
- G. The tension band will extend towards the faceplate a maximum distance that will not exceed the intersection of the leading edge of the band and the extension of the faceplate radius.

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