



12DP7-A

# 12DP7-A OSCILLOGRAPH TUBE

MAGNETIC FOCUS

MAGNETIC DEFLECTION

## DATA

### General:

Heater, for Unipotential Cathode:

Voltage . . . . . 6.3 . . . . . ac or dc volts

Current . . . . .  $0.6 \pm 10\%$  . . . . . amp

Direct Interelectrode Capacitances (Approx.):

Grid No.1 to all other electrodes . . . . . 9  $\mu\mu\text{f}$

Cathode to all other electrodes . . . . . 6  $\mu\mu\text{f}$

Faceplate, Spherical . . . . . Filterglass  $\leftarrow$

Light transmission (Approx.) . . . . . 76%

Phosphor (For Curves, see front of this Section) . . . . . P7

Fluorescence . . . . . Blue

Persistence . . . . . Short

Phosphorescence . . . . . Greenish-Yellow

Persistence . . . . . Long

Focusing Method . . . . . Magnetic

Deflection Method . . . . . Magnetic

Deflection Angle (Approx.) . . . . .  $50^\circ$

Overall Length . . . . .  $19\text{-}5/8" \pm 1/2"$

Greatest Diameter of Bulb . . . . .  $12" \pm 3/16"$

Minimum Useful Screen Diameter . . . . . 10"

Weight (Approx.) . . . . . 8 lbs

Mounting Position . . . . . Any

Cap. . . . . Medium (JETEC No.C1-5)

Bulb . . . . . J96  $\leftarrow$

Base . . . . . Long Medium-Shell Octal 8-Pin (JETEC No.B8-65),

or Long Medium-Shell Octal 5-Pin (JETEC No.B5-80)  $\leftarrow$

Basing Designation for BOTTOM VIEW . . . . . 5AN

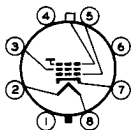
Pin 1 - No Connec-  
tion

Pin 2 - Heater

Pin 3 - Grid No.2

Pin 4 - No Connec-  
tion

Pin 5 - Grid No.1



Pin 6 - No Connec-  
tion

Pin 7 - Cathode

Pin 8 - Heater

Cap - Ultor  
(Grid No.3,  
Collector)

### Maximum Ratings, Design-Center Values:

ULTOR VOLTAGE . . . . . 10000 max. volts

GRID-No.2 VOLTAGE:

Positive value (DC or Peak AC) . . . . . 700 max. volts

Negative value (DC or Peak AC) . . . . . 180 max. volts

GRID-No.1 VOLTAGE:

Negative bias value . . . . . 180 max. volts

Positive bias value<sup>▲</sup> . . . . . 0 max. volts

Positive peak value . . . . . 2 max. volts

<sup>▲</sup> At or near this rating, the effective resistance of the ultor supply should be adequate to limit the ultor input power to 6 watts.

$\leftarrow$  indicates a change.

12DP7-A



12DP7-A

OSCILLOGRAPH TUBE

|                                            |          |       |
|--------------------------------------------|----------|-------|
| PEAK GRID-No.1 DRIVE FROM CUTOFF . . . . . | 65 max.  | volts |
| PEAK HEATER-CATHODE VOLTAGE:               |          |       |
| Heater negative with respect to cathode .  | 125 max. | volts |
| Heater positive with respect to cathode .  | 125 max. | volts |

**Equipment Design Ranges:**

For any ultor voltage ( $E_{c3}$ ) between 4000\* and 10000 volts  
and grid-No.2 voltage ( $E_{c2}$ ) between 150 and 750 volts

|                                                                              |                                                                  |           |
|------------------------------------------------------------------------------|------------------------------------------------------------------|-----------|
| Grid-No.1 Voltage for Visual Extinction of Undelected Focused Spot . . . . . | -10% to -28% of $E_{c2}$                                         | volts     |
| Grid-No.2 Current . . . . .                                                  | -15 to +15                                                       | $\mu$ amp |
| Focusing-Coil Current (DC) <sup>oo</sup> .                                   | $\left[ \sqrt{\frac{E_{c3}}{4000}} \times 88.5 \right] \pm 15\%$ | ma        |
| Spot Position . . . . .                                                      | ##                                                               |           |

**Examples of Use of Design Ranges:**

|                                                                              |            |            |       |
|------------------------------------------------------------------------------|------------|------------|-------|
| For ultor voltage of                                                         | 4000       | 7000       | volts |
| and grid-No.2 voltage of                                                     | 250        | 250        | volts |
| Grid-No.1 Voltage for Visual Extinction of Undelected Focused Spot . . . . . | -25 to -70 | -25 to -70 | volts |
| Focusing-Coil Current (DC) .                                                 | 75 to 102  | 99 to 135  | ma    |

**Maximum Circuit Values:**

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

\* Brilliance and definition decrease with decreasing ultor voltage. In general, the ultor voltage should not be less than 4000 volts.

<sup>oo</sup> For specimen focusing coil similar to JETEC Focusing Coil No.106 positioned with air gap toward faceplate and center line of air gap 4-1/8" from Reference Line (See Dimensional Outline) and ultor current of 200 microamperes.

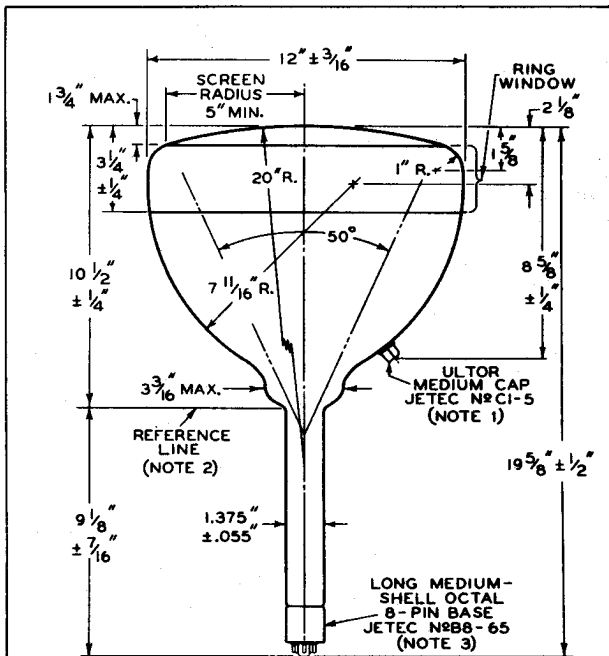
## The center of the undeflected, unfocused spot will fall within a circle having a 20-mm radius concentric with the center of the tube face.



12DP7-A

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12DP7-A



92CM-6375R6

**NOTE 1:** THE PLANE THROUGH THE TUBE AXIS AND PIN No.5 MAY VARY FROM THE PLANE THROUGH THE TUBE AXIS AND ULTOR TERMINAL BY AN ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF  $\pm 10^\circ$ . ULTOR TERMINAL IS ON SAME SIDE OF TUBE AS PIN No.5.

**NOTE 2:** REFERENCE LINE IS DETERMINED BY POSITION WHERE GAUGE 1.430" + .003" - .000" I.D. and 2" LONG WILL REST ON BULB CONE.

**NOTE 3:**  $\angle$  OF BULB WILL NOT DEVIATE MORE THAN  $2^\circ$  IN ANY DIRECTION FROM THE PERPENDICULAR ERECTED AT THE CENTER OF THE BOTTOM OF THE BASE.

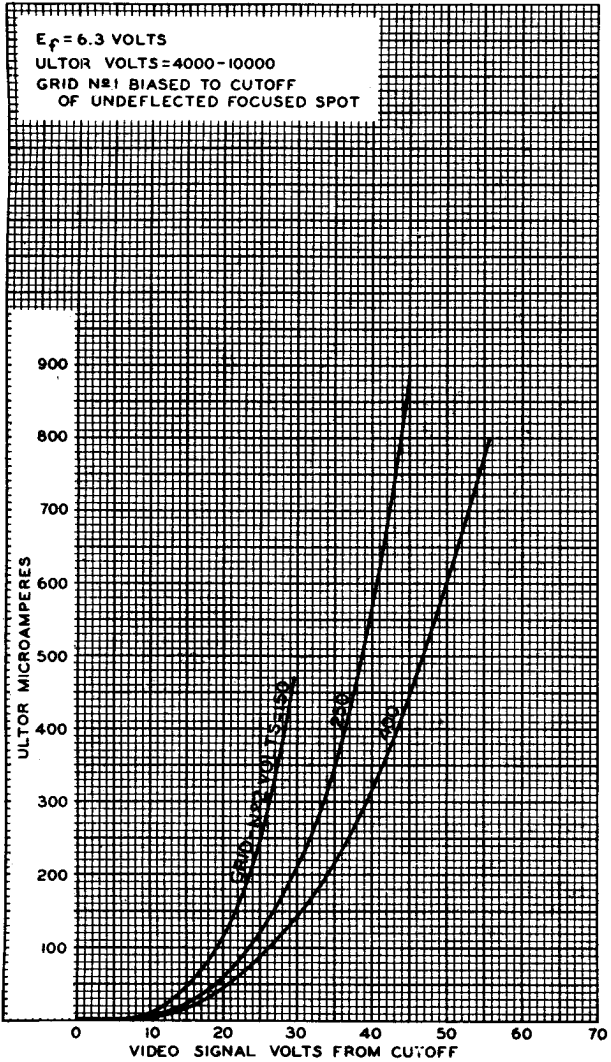
12DP7-A



12DP7-A

### AVERAGE GRID-DRIVE CHARACTERISTICS

$E_f = 6.3$  VOLTS  
ULTOR VOLTS = 4000-10000  
GRID N<sup>o</sup> 1 BIASED TO CUTOFF  
OF UNDEFLECTED FOCUSED SPOT



APRIL 9, 1952

TUBE DIVISION  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-6943RI