



912

912

HIGH-VACUUM CATHODE-RAY TUBE

HIGH-INTENSITY ELECTROSTATIC-DEFLECTION TYPE

WITH 5" MEDIUM-PERSISTENCE SCREEN FOR OSCILLOGRAPHIC USE

Heater Coated Unipotential Cathode
 Voltage 2.5 a-c or d-c volts
 Current 2.1 amp.

Fluorescent Screen:

Material Phosphor No.1
 Pattern Color Greenish

Direct Interelectrode Capacitances:

Grid to all other electrodes 14 max. μf
 DJ₁ to DJ₂ 3 max. μf
 DJ₃ to DJ₄ 1.5 max. μf

Overall Length

16-1/2" $\pm$ 3/8"

Maximum Diameter

5-1/4" + 1/16" - 3/32"

Bulb

J-42

Caps:

Anode No.2 Medium Metal
 Deflecting Electrodes (Four) Small Metal

Base

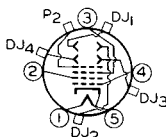
Medium 5-Pin Micanol

BOTTOM VIEW

Pin 1-Heater
 Pin 2-Grid No.2
 Pin 3-Anode No.1
 Pin 4-Grid No.1
 Pin 5-Heater,
 Cathode

Single Medium Cap -
Anode No.2

Cap } Deflecting
 Over } Electrode
 Pin 3 } DJ₁



Cap } Deflecting
 Over } Electrode
 Pins } DJ₂
 1 & 5 }
 Cap } Deflecting
 Over } Electrode
 Pin 2 } DJ₃
 Cap } Deflecting
 Over } Electrode
 Pin 4 } DJ₄

MAXIMUM RATINGS and TYPICAL OPERATING CONDITIONS

Maximum Ratings Are Based on a Line-Voltage Design Center of 117 Volts

High-Voltage Electrode (Anode #2) Voltage 15000 max. volts
 Focusing Electrode (Anode #1) Voltage 4500 max. volts
 Accelerating Electrode (Grid #2) Voltage 250 max. volts
 Control Electrode (Grid #1) Voltage Never positive
 Grid Voltage for Current Cut-off * -125 approx. volts
 Peak Voltage Between Anode #2 and
 any deflecting electrode 7000 max. volts

Typical Operation:

Heater Voltage	2.5	2.5	2.5	volts
Anode #2 Voltage	5000	10000	15000	volts
Anode #1 Voltage	1000	2000	3000	approx. volts
Grid #2 Voltage	250	250	250	volts
Grid #1 Voltage	Adjusted to give suitable luminous spot			

Deflection Sensitivity:

DJ ₁ to DJ ₂	0.083	0.041	0.028 mm/volt d.c.
DJ ₃ to DJ ₄	0.102	0.051	0.034 mm/volt d.c.

* With maximum voltages on Anode #1 and Grid #2.

← Indicates a change.

JUNE 20, 1947

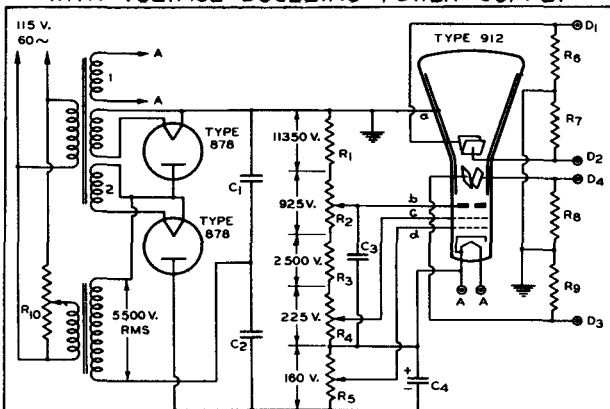
TUBE DEPARTMENT

DATA

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY



TYPICAL OSCILLOGRAPH CIRCUIT USING THE 912 WITH VOLTAGE-DOUBLING POWER SUPPLY



$C_1, C_2 = 0.5 \mu f, 10000 \text{ V.}$

$C_3 = 1.0 \mu f, 5000 \text{ V.}$

$C_4 = 16 \mu f, 200 \text{ V.}$

$R_1 = 2.5 \text{ MEGOHMS, 75-WATT}$

$R_2 = 0.2 \text{ MEGOHM, 10-WATT}$

$R_3 = 0.55 \text{ MEGOHM, 20-WATT}$

$R_4 = 50000 \text{ OHMS, 2-WATT}$

$R_5 = 35000 \text{ OHMS, 2-WATT}$

$R_6, R_7, R_8, R_9 = 2 \text{ TO } 5 \text{ MEGOHMS}$

$R_{10} = 100 \text{ OHMS, 600-WATT}$

a = ANODE N $\circ$ 2

b = ANODE N $\circ$ 1

c = GRID N $\circ$ 2

d = GRID N $\circ$ 1

NOTE: AS THE TOTAL VOLTAGE ACROSS THE BLEEDER IS REDUCED BY MEANS OF R_{10} , THE ELECTRODE VOLTAGES ARE REDUCED IN CORRECT PROPORTION, EXCEPT FOR GRID NO. 2 VOLTAGE; THIS MAY HAVE TO BE READJUSTED BY THE USE OF DIFFERENT VALUES FOR R_3 AND R_4 , THEIR TOTAL RESISTANCE BEING KEPT THE SAME. CONDENSERS C_1 AND C_2 CAN BE OMITTED IF GRID-VOLTAGE SWITCHING (FOR HIGH-SPEED PHOTOGRAPHY) IS NOT CONTEMPLATED. FILAMENT WINDINGS NOS. 1 AND 2 SHOULD BE INSULATED FOR 20000 VOLTS.

The license extended to the purchaser of tubes appears in the License Notice accompanying them. Information contained herein is furnished without assuming any obligations.

92C-4621R1

FLUORESCENT-SCREEN CHARACTERISTICS

CURVES SHOWING THE AVERAGE CHARACTERISTICS, SPECTRAL ENERGY CHARACTERISTIC, AND PERSISTENCE CHARACTERISTIC OF PHOSPHOR No. 1 ARE SHOWN AT THE BEGINNING OF THIS SECTION.

← Indicates a change.



9/2

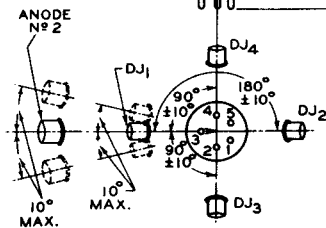
Technical drawing of a vacuum tube envelope showing dimensions and components. The drawing includes the following specifications:

- Top Dimensions:**
 - Top left: .808"
 - Top center: $5\frac{1}{4}" + \frac{1}{16}" - \frac{3}{32}"$
 - Top right: SCREEN RADIUS $2\frac{1}{4}"$ MIN.
- Curvature and Angles:**
 - Top left curve: $\frac{1}{2}"$ R.
 - Internal angle: $22^{\circ}12'$
 - Internal radius: 8" R.
- Vertical Dimensions (Left Side):**
 - From top to ANODE N° 2: $4\frac{9}{16}" \pm \frac{1}{4}"$
 - From ANODE N° 2 to MEDIUM CAP: 11 $\frac{3}{16}"$ MAX.
- Vertical Dimensions (Right Side):**
 - From top to MEDIUM CAP: $7\frac{15}{16}" \pm \frac{1}{4}"$
 - From MEDIUM CAP to DJ₁/DJ₂ level: $15\frac{7}{8}" \pm \frac{3}{8}"$
 - From DJ₁/DJ₂ level to LONG-SHELL MEDIUM: $16\frac{1}{2}" \pm \frac{3}{8}"$
- Horizontal Dimensions (Right Side):**
 - From centerline to DJ₂: $1\frac{11}{16}"$
 - From centerline to LONG-SHELL MEDIUM: $1\frac{3}{8}" \pm \frac{1}{16}"$
- Components and Labels:**
 - ANODE N° 2
 - MEDIUM CAP
 - 4 SMALL CAPS
 - DJ₁, DJ₂, DJ₄
 - LONG-SHELL MEDIUM
 - 5-PIN BASE

Below the drawing, the following text is present:

BULB WILL NOT DEVIATE
 THAN 2° IN ANY DIREC-
 FROM THE PERPENDICULAR
 CTED AT THE CENTER OF
 BOTTOM OF THE BASE.

Q OF BULB WILL NOT DEVIATE MORE THAN 2° IN ANY DIRECTION FROM THE PERPENDICULAR ERECTED AT THE CENTER OF THE BOTTOM OF THE BASE.



BOTTOM VIEW OF TUBE

DJ₁ AND DJ₂ ARE NEARER THE SCREEN; DJ₃ AND DJ₄ ARE NEARER THE BASE. ANGLE BETWEEN DJ₁ - DJ₂ TRACE AND DJ₃ - DJ₄ TRACE IS 90° ± 6°.

92CM-4619R3



AVERAGE CHARACTERISTICS

