



5AUP24

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COLOR FLYING-SPOT CATHODE-RAY TUBE

ELECTROSTATIC FOCUS

MAGNETIC DEFLECTION

For use in Flying-Spot Color Video-Signal Generators

DATA

General:

Heater, for Unipotential Cathode:

Voltage. 6.3 ac or dc volts

Current. 0.6 amp

Direct Interelectrode Capacitances:

Grid No.1 to all other electrodes. 8 μf

Cathode to all other electrodes. 5 μf

External conductive neck coating to ultor* { 500 max. μf
100 min. μf

Faceplate, Flat. Clear Glass

Phosphor, Metal-Backed (For Curves,
see front of this section) P24

Fluorescence Light Green

Phosphorescence. Light Green

Persistence. Extremely Short

Focusing Method. Electrostatic

Deflection Method. Magnetic

Deflection Angle (Approx.) 40°

Overall Length 12-1/2" $\pm$ 3/8"

Greatest Diameter. 5" $\pm$ 1/8"

Minimum Useful Screen Diameter 4-1/4"

Mounting Position. Any

Weight (Approx.) 1.4 lbs

Cap. Recessed Small Cavity (JETEC No.J1-21)

Base Small-Shell Duodecal 7-Pin (JETEC No.B7-51)

BOTTOM VIEW

Pin 1-Heater

Pin 2-Grid No.1

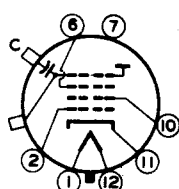
Pin 6-Grid No.3

Pin 7-Internal

Connection---

Do Not Use

Pin 10-Grid No.2



Pin 11-Cathode

Pin 12-Heater

Cap-Ultor

(Grid No.4,

Collector)

C-External

Conductive

Neck Coating

SOCKET CONTACTS CORRESPONDING TO VACANT

PIN POSITIONS 3, 4, 5, 8, AND 9 SHOULD

BE REMOVED

Maximum Ratings, Design-Center Values:

ULTOR* VOLTAGE 27000 max. volts

GRID-No.3 VOLTAGE. 6000 max. volts

GRID-No.2 VOLTAGE. 350 max. volts

* The "ultor" in a cathode-ray tube is the electrode to which is applied the highest dc voltage for accelerating the electrons in the beam prior to its deflection. In the 5AUP24, the ultor function is performed by grid No.4. Since grid No.4 and collector are connected together within the 5AUP24, they are collectively referred to simply as "ultor" for convenience in presenting data and curves.



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GRID-No.1 VOLTAGE:

Negative bias value.	150 max.	volts
Positive bias value.	0 max.	volts
Positive peak value.	2 max.	volts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode:

During equipment warm-up period

not exceeding 15 seconds. . . 410 max. volts

After equipment warm-up period 125 max. volts

Heater positive with respect to cathode. . 125 max. volts

Characteristics Range Values for Equipment Design:

For any ultor voltage (E_{c4}) between 20000 and 27000 volts*

Grid-No.3 Voltage for Focus with
Ultor Current of 200 μ amp. . . 17% to 21.5% of E_{c4} volts

Grid-No.2 Voltage when circuit
design utilizes fixed grid-No.1
voltage (E_{c1}) for visual extinc-
tion of undeflected focused spot 2 to 5 times E_{c1} volts

Grid-No.1 Voltage for Visual Ex-
tinction of Undeflected Focused
Spot when circuit design utili-
zes grid-No.2 voltage (E_{c2}) at
fixed value. -20% to -50% of E_{c2} volts

Maximum Grid-No.3 Current for
ultor current of 200 μ amp. . . 170 μ amp

Grid-No.2 Current. -15 to +15 μ amp

Examples of Use of Design Ranges:

For ultor voltage of 27000 volts

Grid-No.3 Voltage for Focus with
Ultor Current of 200 μ amp. . . 4600 to 5800 volts

Grid-No.2 Voltage when circuit
design utilizes fixed grid-No.1
voltage of -70 volts for visual
extinction of undeflected fo-
cused spot 140 to 350 volts

Grid-No.1 Voltage for Visual Ex-
tinction of Undeflected Focused
Spot when circuit design utili-
zes grid-No.2 voltage of
200 volts. -40 to -100 volts

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 20000 volts.



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OPERATING CONSIDERATIONS

Resolution of better than 800 lines at the center of the reproduced picture can be produced by the 5AUP24 when it is operated with 27000 volts on the ultor. At lower ultor voltages, the resolution capability decreases. To obtain high resolution in the horizontal direction, it is necessary to use a video amplifier having a bandwidth of about 20 megacycles.

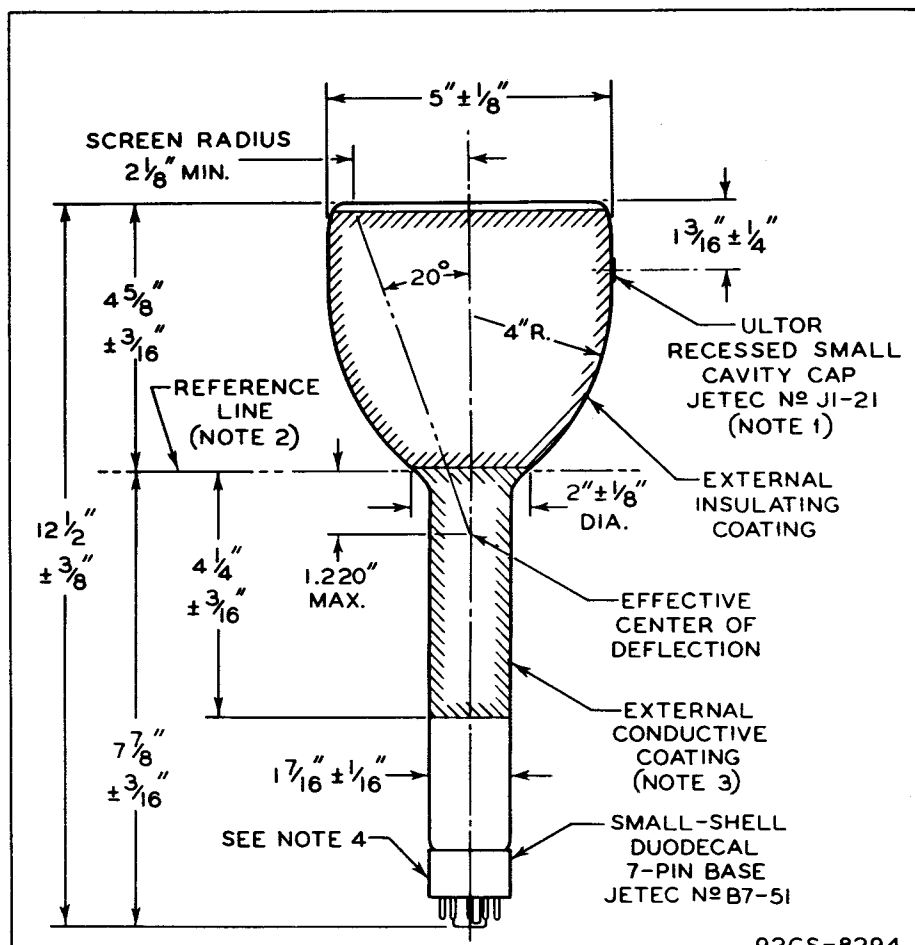
*For x-ray shielding considerations, see sheet
X-RAY PRECAUTIONS FOR CATHODE-RAY TUBES
at front of this Section.*

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NOTE 1: THE PLANE THROUGH THE TUBE AXIS AND VACANT PIN POSITION No.3 MAY VARY FROM THE PLANE THROUGH THE TUBE AXIS AND ULTROR TERMINAL BY AN ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF $\pm 10^\circ$. ULTROR TERMINAL IS ON SAME SIDE AS VACANT PIN POSITION No.3.

NOTE 2: WITH TUBE NECK INSERTED THROUGH FLARED END OF REFERENCE-LINE GAUGE JETEC No. 110 (SHOWN AT FRONT OF THIS SECTION) AND WITH TUBE SEATED IN GAUGE, THE REFERENCE LINE IS DETERMINED BY INTERSECTION OF PLANE CC' OF THE GAUGE WITH THE GLASS FUNNEL.

NOTE 3: EXTERNAL CONDUCTIVE COATING MUST BE GROUNDED.

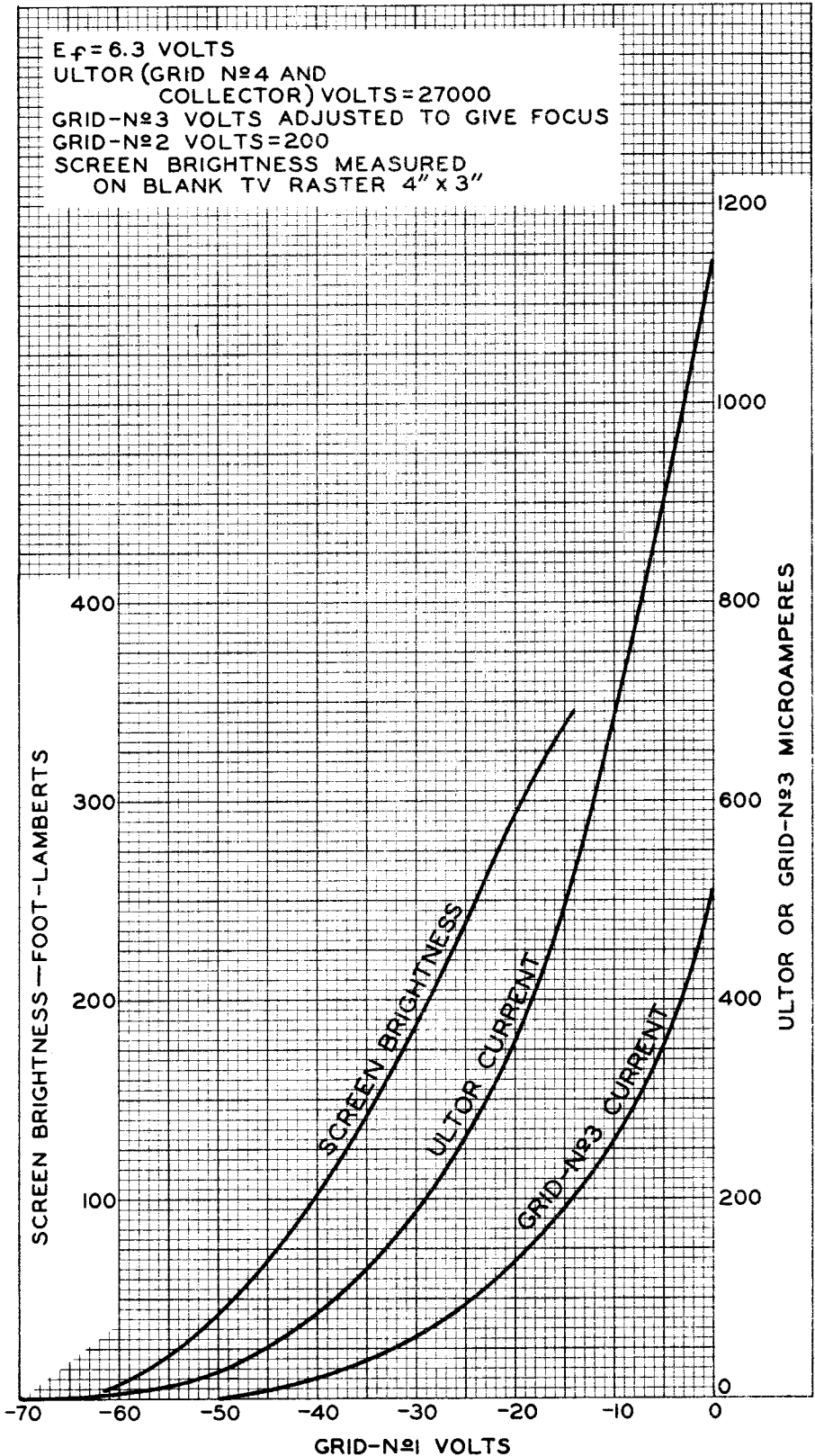
NOTE 4: $\angle$ OF BULB WILL NOT DEVIATE MORE THAN 2° IN ANY DIRECTION FROM THE PERPENDICULAR ERECTED AT THE CENTER OF THE BOTTOM OF THE BASE.



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AVERAGE CHARACTERISTICS



JUNE. 21, 1954

TUBE DIVISION

92CM-8343

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY