



5ADPI

OSCILLOGRAPH TUBE

POST-DEFLECTION ACCELERATOR

ELECTROSTATIC FOCUS

ELECTROSTATIC DEFLECTION

DATA

General:

Heater, for Unipotential Cathode:

Voltage. 6.3 ac or dc volts

Current. $0.6 \pm 10\%$ amp

Direct Interelectrode Capacitances:

Grid No.1 to all other electrodes. 4.2 to 7.9 $\mu\mu\text{f}$ Cathode to all other electrodes. 3.1 to 5.8 $\mu\mu\text{f}$ Deflecting electrode DJ_1 to
deflecting electrode DJ_2 1.7 to 3.1 $\mu\mu\text{f}$ Deflecting electrode DJ_3 to
deflecting electrode DJ_4 0.7 to 1.3 $\mu\mu\text{f}$ DJ_1 to all other electrodes. 4.4 to 9.2 $\mu\mu\text{f}$ DJ_2 to all other electrodes. 4.4 to 9.2 $\mu\mu\text{f}$ DJ_3 to all other electrodes. 2.8 to 5.3 $\mu\mu\text{f}$ DJ_4 to all other electrodes. 2.8 to 6.3 $\mu\mu\text{f}$

Faceplate, Flat. Clear Glass

Phosphor (For Curves, see front of this Section) P1

Fluorescence Green

Phosphorescence. Green

Persistence. Medium

Focusing Method. Electrostatic

Deflection Method. Electrostatic

Deflecting-electrode
arrangement. *See Dimensional Outline*Overall Length $16\frac{3}{4}'' \pm \frac{3}{16}''$ Greatest Diameter of Bulb. $5\frac{1}{4}'' \pm \frac{3}{32}''$ Minimum Useful Screen Diameter $4\frac{1}{2}''$ Weight (Approx.) $2\frac{1}{2}$ lbs

Mounting Position. Any

Cap. Recessed Small Ball (JETEC No.J1-22)

Bulb J42

Base Medium-Shell Diheptal 12-Pin (JETEC No.B12-37)

Basing Designation for BOTTOM VIEW 14J

Pin 1-Heater

Pin 2-Cathode

Pin 3-Grid No.1

Pin 4-No Connec-

tion-Do

Not Use

Pin 5-Grid No.3

Pin 7-Deflecting

Electrode

 DJ_3

Pin 8-Deflecting

Electrode

 DJ_4

Pin 9-Ultor

(Grid No.2,

Grid No.4)

Pin 10-Deflecting

Electrode

 DJ_2

Pin 11-Deflecting

Electrode

 DJ_1

Pin 12-No Connec-

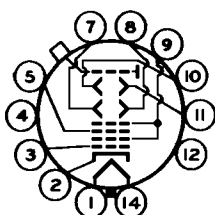
tion

Pin 14-Heater

Cap-Post-Ultor

(Grid No.5,

Collector)





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Maximum Ratings, Design-Center Values:

POST-ULTOR VOLTAGE	6000 max.	volts
ULTOR VOLTAGE.	2600 max.	volts
RATIO OF POST-ULTOR VOLTAGE TO ULTOR VOLTAGE.	2.3:1 max.	
GRID-No.3 VOLTAGE.	1000 max.	volts
GRID-No.1 VOLTAGE:		
Negative bias value.	200 max.	volts
Positive bias value.	0 max.	volts
Positive peak value.	2 max.	volts
PEAK VOLTAGE BETWEEN ULTOR AND ANY DEFLECTING ELECTRODE	500 max.	volts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	180 max.	volts
Heater positive with respect to cathode	180 max.	volts

Equipment Design Ranges:

With any post-ultor voltage (E_{c5}) between 2000 and 6000 volts
and any ultor voltage (E_{c4}) between 1500** and 2600 volts*

Grid-No.3 Voltage for Focus.	20% to 34.5% of E_{c4}	volts
Grid-No.1 Voltage for Visual Ex- tinction of Unde- flected Focused Spot	-2.25% to -3.75% of E_{c4}	volts
Grid-No.3 Current for Any Operating Condition.	-15 to +10	μ amp
Deflection Factors:#		
<i>When $E_{c5} = 2 \times E_{c4}$:</i>		
DJ ₁ & DJ ₂	26.7 to 33.3	v dc/in./kv of E_{c4}
DJ ₃ & DJ ₄	20.3 to 25	v dc/in./kv of E_{c4}
<i>When $E_{c5} = E_{c4}$:</i>		
DJ ₁ & DJ ₂	21.5 to 26.5	v dc/in./kv of E_{c4}
DJ ₃ & DJ ₄	16 to 20	v dc/in./kv of E_{c4}
Spot Position.	##	

• At or near this rating, the effective resistance of the ultor supply should be adequate to limit the ultor input power to 6 watts.

* It is recommended that the post-ultor voltage be not less than 3000 volts for high-speed scanning.

** Recommended minimum value of ultor voltage.

With heater voltage of 6.3 volts, post-ultor voltage of 4000 volts, ultor voltage of 2000 volts, grid-No.3 voltage adjusted to give focus, grid-No.1 voltage adjusted to give spot that is just visible, each deflecting electrode connected through a 1-megohm resistor to ultor, and the tube shielded from all extraneous fields, the center of the undeflected, focused spot will fall within a circle having an 8-mm radius concentric with the center of the tube face.

#. See next page.



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Examples of Use of Design Ranges:

With post-ultor voltage of	2000	3000	4000	volts
and ultor voltage of	2000	1500	2000	volts

Grid-No.3

Voltage for

Focus 400 to 690 300 to 515 400 to 690 volts

Grid-No.1

Voltage for

Visual Ex-

tinction of

Undelected

Focused Spot. . -45 to -75 -34 to -56 -45 to -75 volts

Deflection

Factors:#

DJ₁ & DJ₂ . . . 43 to 53 40 to 50 53.4 to 66.6 v dc/in.DJ₃ & DJ₄ . . . 32 to 40 30.5 to 37.5 40.6 to 50 v dc/in.

Maximum Circuit Values:

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

Resistance in Any Deflecting-

Electrode Circuit[‡]. 5.0 max. megohms

SPECIAL PERFORMANCE DATA

With post-ultor voltage of	3000 volts
and ultor voltage of	1500 volts

Line Width[†]. 0.030 max. inch

Peak Grid-No.1 Drive from

Spot Cutoff[†]. 45 max. volts

Raster Shape. §

The deflecting electrodes in the 5ADPI are designed to have extra-high deflection sensitivity and consequently produce less than full-screen deflection. With post-deflection acceleration, the length of deflection in either horizontal or vertical direction may be limited to 4-1/4 inches; without post-deflection acceleration, deflection to full screen diameter will ordinarily be obtained.

‡ It is recommended that the deflecting-electrode-circuit resistances be approximately equal.

† Under the following conditions: heater voltage of 6.3 volts, brightness of 15 foot-lamberts measured on a 2" x 2", 49-line raster with high-frequency scanning applied to deflecting electrodes DJ₁ and DJ₂. For line-width measurement, the high-frequency scanning is adjusted to give a raster width of 12 cm with the grid-No.3 voltage adjusted to give sharpest focus at center of tube face. Raster height is contracted until individual scanning lines are just barely distinguishable. Line width is expressed as the quotient of the contracted raster height measured at the center line of the tube face divided by the number of scanning lines (49).

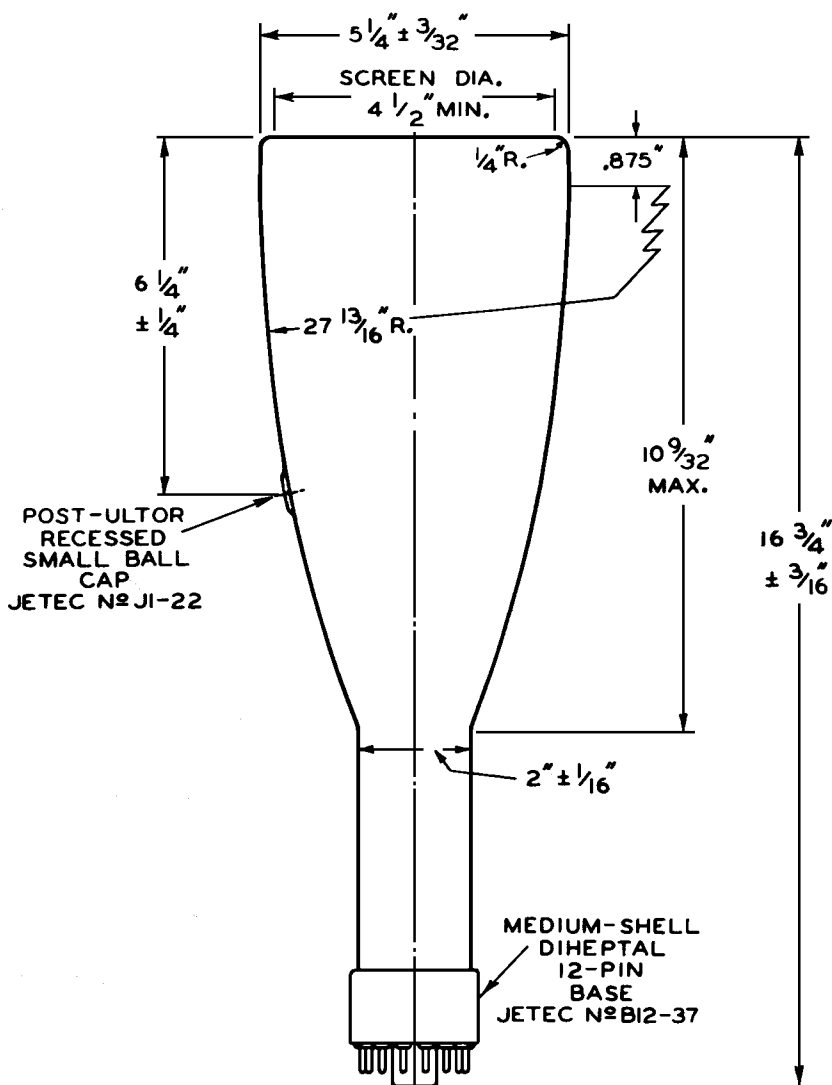
§ Under the following conditions: heater voltage of 6.3 volts, grid-No.3 voltage adjusted for focus, and grid-No.1 voltage adjusted to give visible raster. With 49-line raster, the size of which is adjusted so that the widest points on the raster just touch the sides of a square 3.075" on a side, no point on the raster sides will lie within an inscribed square 2.925" on a side having its sides parallel to the sides of the 3.075" square and its center at the center of the 3.075" square.

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92CM-9098

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

THE PLANE THROUGH TUBE AXIS AND EACH OF THE FOLLOWING ITEMS MAY VARY FROM THE TRACE PRODUCED BY DJ_1 AND DJ_2 BY THE FOLLOWING ANGULAR TOLERANCES (MEASURED ABOUT THE TUBE AXIS): PIN 5, $\pm 10^{\circ}$; SIDE TERMINAL (ON SAME SIDE OF TUBE AS PIN 5), $\pm 10^{\circ}$. ANGLE BETWEEN $DJ_1 - DJ_2$ TRACE AND $DJ_3 - DJ_4$ TRACE IS $90^{\circ} \pm 10^{\circ}$.

DJ_1 AND DJ_2 ARE NEARER THE SCREEN. DJ_3 AND DJ_4 ARE NEARER THE BASE. WITH DJ_1 POSITIVE WITH RESPECT TO DJ_2 , THE SPOT WILL BE DEFLECTED TOWARD PIN 5; LIKewise, WITH DJ_3 POSITIVE WITH RESPECT TO DJ_4 , THE SPOT WILL BE DEFLECTED TOWARD PIN 2.



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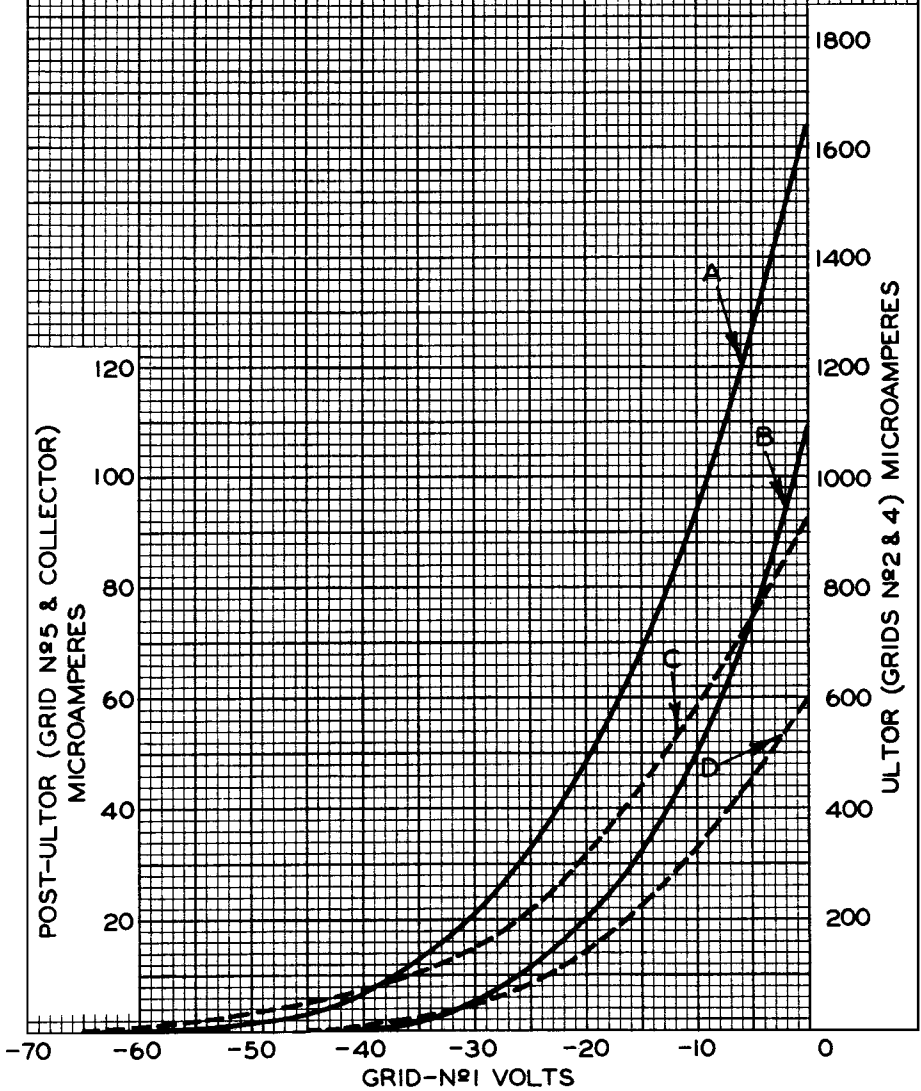
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AVERAGE CHARACTERISTICS

 $E_f = 6.3$ VOLTS

GRID-Nº3 VOLTS ADJUSTED FOR FOCUS.

CURVE	ELECTRODE CURRENT	ULTOR VOLTS	POST-ULTOR VOLTS
A	ULTOR	2000	4000
B	ULTOR	1500	3000
C	POST-ULTOR	2000	4000
D	POST-ULTOR	1500	3000



TUBE DIVISION

92CM-9099

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CHARACTERISTICS

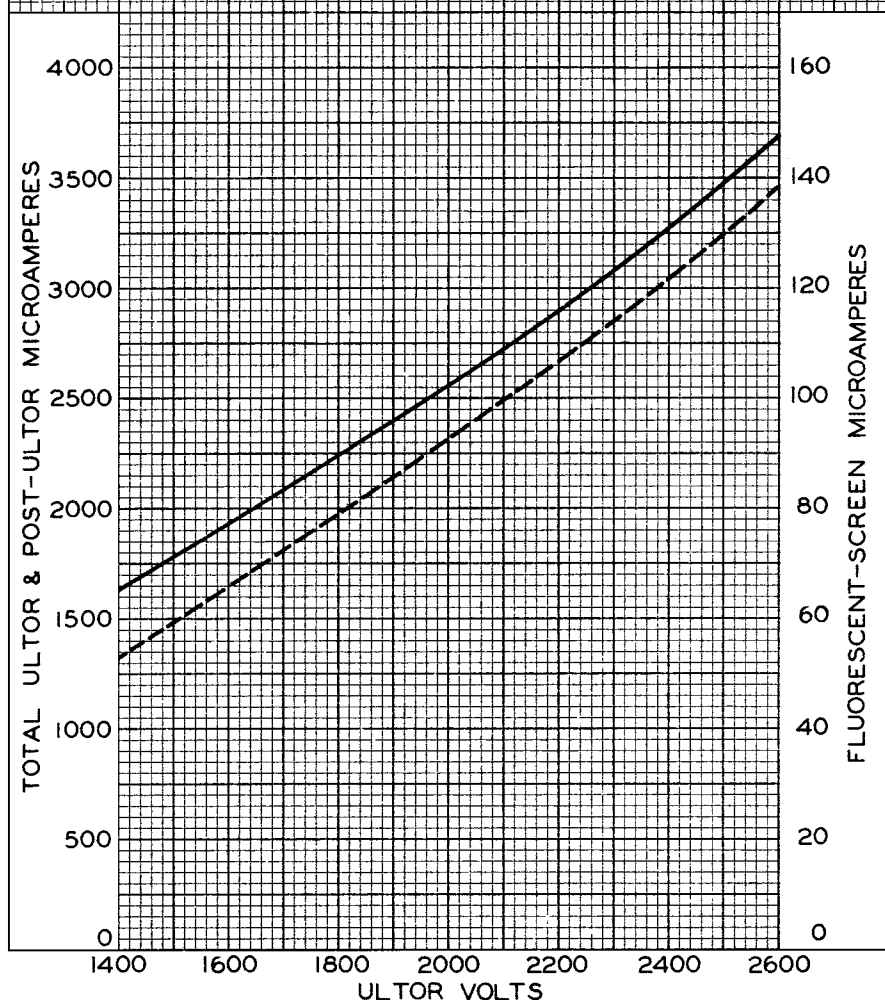
 $E_f = 6.3$ VOLTS

GRID-Nº3 VOLTS ADJUSTED FOR FOCUS.

POST-ULTOR (GRID Nº 5 & COLLECTOR) VOLTS
GREATER THAN ULTOR (GRIDS Nº 2 & Nº 4)
VOLTS.

GRID-Nº1 VOLTS=0

— MAX. TOTAL CURRENT FOR ANY TUBE.

--- TYPICAL FLUORESCENT-SCREEN
(POST-ULTOR) CURRENT.

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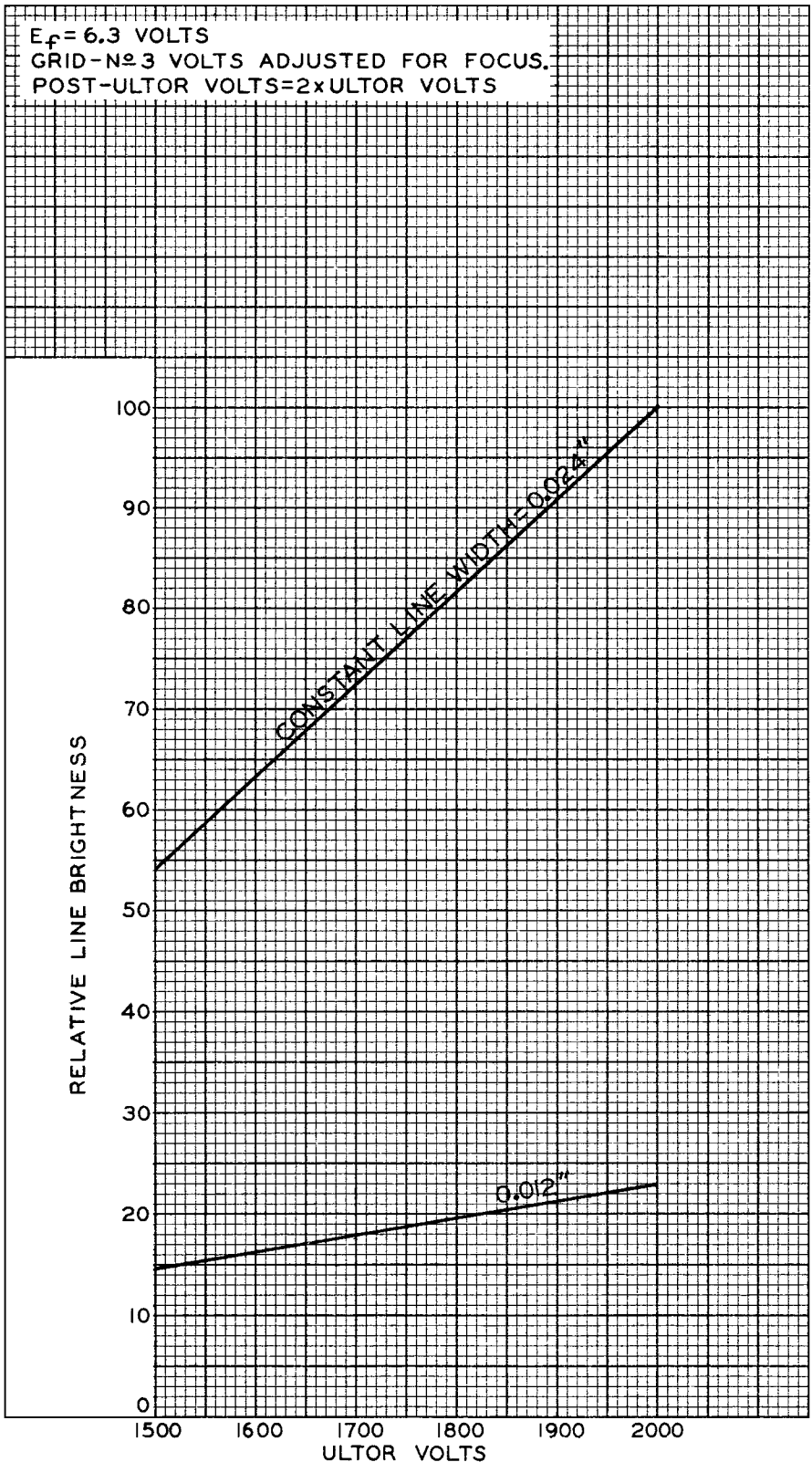
92CM-7910



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TYPICAL CHARACTERISTICS



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92CM-6820R1

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