IEPI

OSCILLOGRAPH TUBE

ELECTROSTATIC FOCUS ELECTROSTATIC DEFLECTION

DATA

General:

Heater, for Unipotential Cathode:		
Voltage	6.3	ac or dc volts
Current	0.6 ± 10%	amp
Direct Interelectrode Capacitances (Approx.):		
Grid No.1 to all other electrodes	6.5	μμf
Deflecting electrode DJ_1 to deflecting electrode DJ_2	1.7	μμf
Deflecting electrode DJ_3 to deflecting electrode DJ_4	0.6	μμf
DJ_1 to all other electrodes	5	μμf
DJ_2 to all other electrodes	5	μμf
DJ_3 to all other electrodes	3.8	μμf
DJ_4 to all other electrodes	3.8	μμf
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
Maximum Overall Length		4-1/16"
Maximum Diameter		1-1/4" ± 1/16"
Minimum Useful Screen Diameter		1-1/16"
Mounting Position		Any
Weight (Approx.)		2 oz
Bulb		T-10
Base	Small-Button Unidekar 11-Pin (JETEC No.E11-22)	
Basing Designation for BOTTOM VIEW		11V

Pin 1 - Heater
Pin 2 - Heater
Pin 3 - Grid No.1
Pin 4 - Cathode
Pin 5 - Grid No.3
Pin 6 - Deflecting Electrode DJ_4
Pin 7 - Deflecting Electrode DJ_3

Pin 8 - Ultor (Grid No.2, Grid No.4, Collector)
Pin 9 - Deflecting Electrode DJ_2
Pin 10 - Deflecting Electrode DJ_1
Pin 11 - Internal Connection-Do Not Use

DJ_1 and DJ_2 are nearer the screen
DJ_3 and DJ_4 are nearer the base

1EP1

RCA

1EP1

OSCILLOGRAPH TUBE

With DJ_2 positive with respect to DJ_1, the spot is deflected toward the midpoint between pins 6 and 7. With DJ_3 positive with respect to DJ_4, the spot is deflected toward the midpoint between pins 9 and 10.

The angle between the trace produced by DJ_3 and DJ_4 and its intersection with the plane through the tube axis and the midpoint between pins 9 and 10 does not exceed ±10°.

The angle between the trace produced by DJ_3 and DJ_4 and the trace produced by DJ_1 and DJ_2 is 90° ± 3°.

Maximum Ratings, *Design-Center Values:*

ULTOR VOLTAGE	1500 max.	volts
GRID-No.3 VOLTAGE	1200 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	125 max.	volts
Heater positive with respect to cathode	125 max.	volts

Equipment Design Ranges:

For any ultor voltage (E_{c4}) between recommended minimum and 1500 volts*		
Grid-No.3 Voltage for Focus	10% to 30% of E_{c4}	volts
Grid-No.1 Voltage for Visual Extinction of Undeflected Focused Spot	-1.4% to -4.2% of E_{c4}	volts
Grid-No.3 Current for Any Operating Condition	-15 to +10	μamp
Deflection Factors:		
DJ_1 & DJ_2	210 to 310 v dc/in./kv of E_{c4}	
DJ_3 & DJ_4	240 to 350 v dc/in./kv of E_{c4}	
Spot Position	##	

Examples of Use of Design Ranges:

For ultor voltage of	*500*	*1000*	*volts*
Grid-No.3 Voltage for Focus	50 to 150	100 to 300	volts

* Brilliance and definition decrease with decreasing ultor voltage. Recommended minimum for the 1EP1 in general service is 500 volts, but a value as low as 300 volts may be used under conditions of low-velocity deflection and low ambient light levels. For operation between 300 and 500 volts, it is essential that the ultor voltage be applied before beam-current flow. Otherwise, a screen charge may develop to block off or distort the scanning pattern.

##: See next page.

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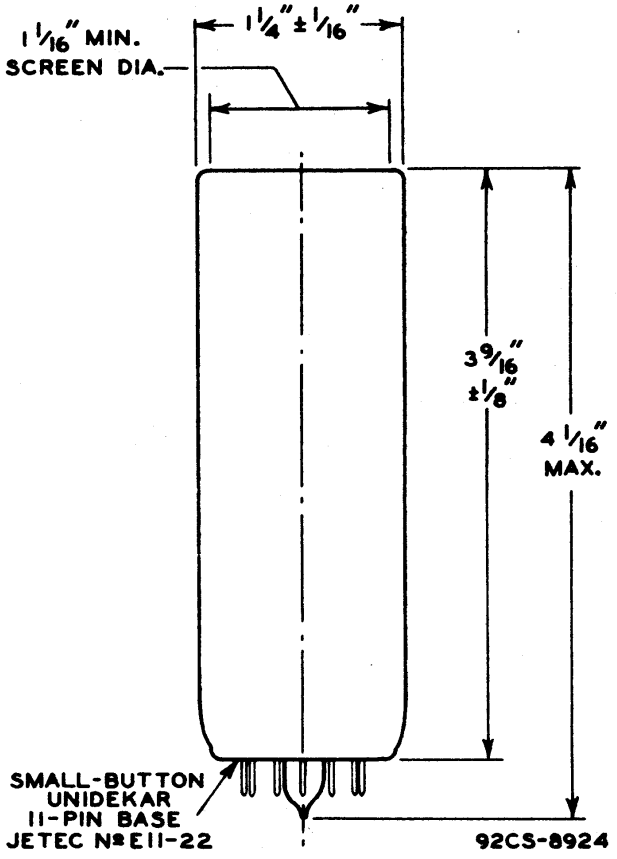
For ultor voltage of	*500*	*1000*	*volts*
Grid-No.1 Voltage for Visual Extinction of Undeflected Focused Spot	-7 to -21	-14 to -42	volts
Deflection Factors:			
DJ_1 & DJ_2.	105 to 155	210 to 310	volts dc/in.
DJ_3 & DJ_4.	120 to 175	240 to 350	volts dc/in.

Maximum Circuit Values:

Grid-No.1-Circuit Resistance	1.5 max.	megohms
Resistance in Any Deflecting-Electrode Circuit■	2.0 max.	megohms

The center of the undeflected focused spot will fall within a circle having 2.5-mm radius concentric with the center of the tube face.

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



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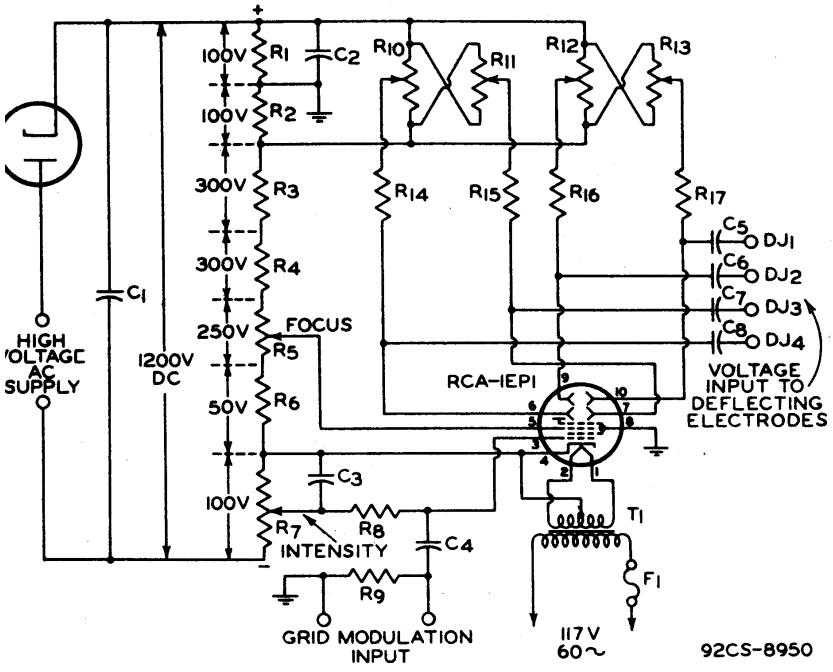
OSCILLOGRAPH TUBE

TYPICAL OSCILLOGRAPH CIRCUIT



C1: 0.5 μf, 2000 volts
C2: 1 μf, 200 volts
C3: 1 μf, 200 volts
C4: 0.05 μf, 1600 volts
C5 C6 C7 C8: 0.05 μf, 600 volts
R1 R2: 510,000 ohms, 1/2 watt
R3 R4: 300,000 ohms, 1 watt
R5: 250,000-ohms, 2-watt potentiometer
R6: 51,000 ohms, 1/2 watt
R7: 100,000-ohms, 1/2-watt potentiometer
R8: 510,000 ohms, 1/2 watt
R9: 5 megohms, 1/2 watt
R10 R11: Dual 1-megohm potentiometer
R12 R13: Dual 1-megohm potentiometer
R14 R15 R16 R17: 1.5 megohms, 1/2 watt
T1: Transformer, 6.3 volts at 1 ampere, insulated for 2000 volts, such as Thordarson T21F08
F1: 1-ampere fuse

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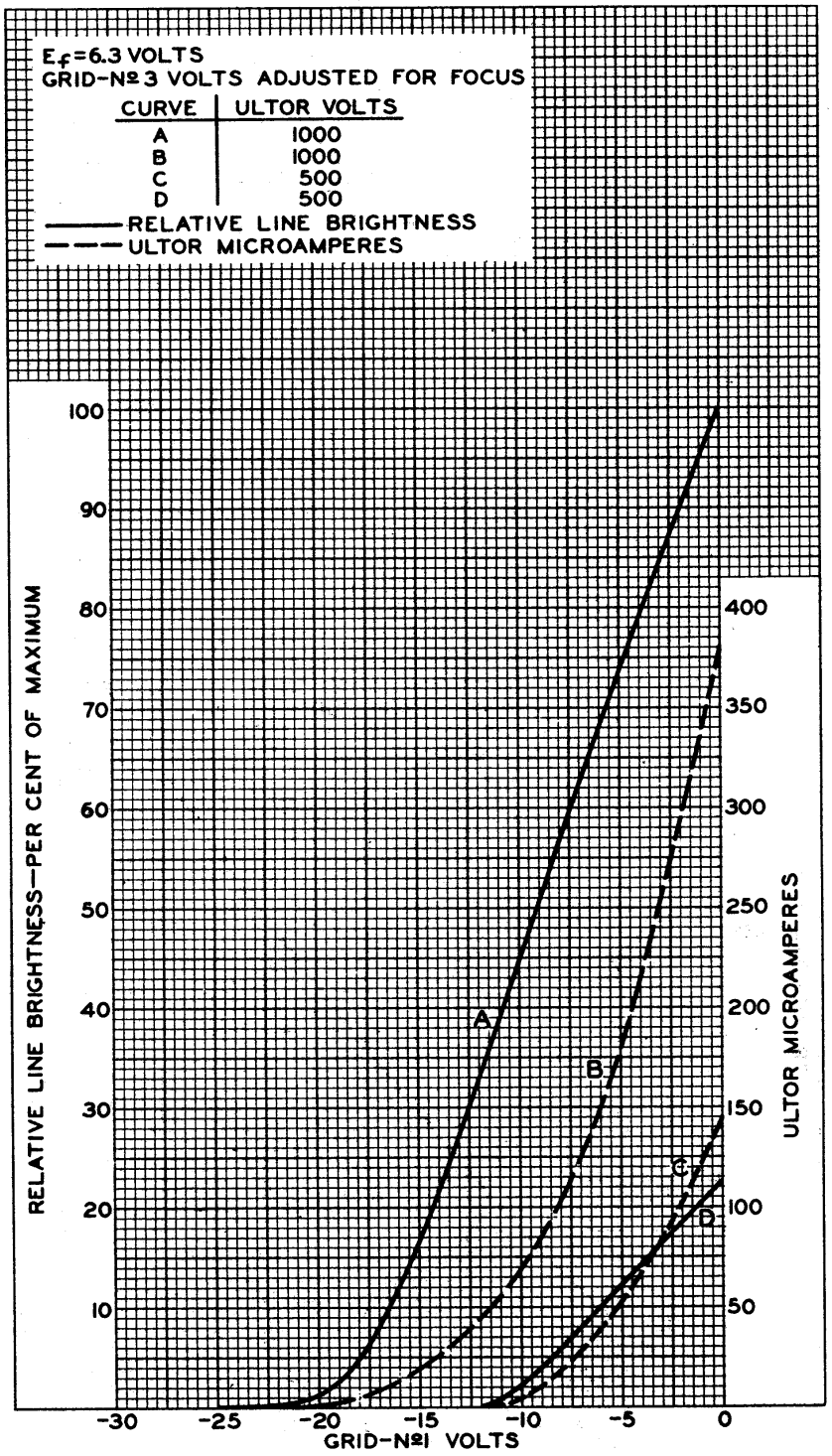
AVERAGE CHARACTERISTICS



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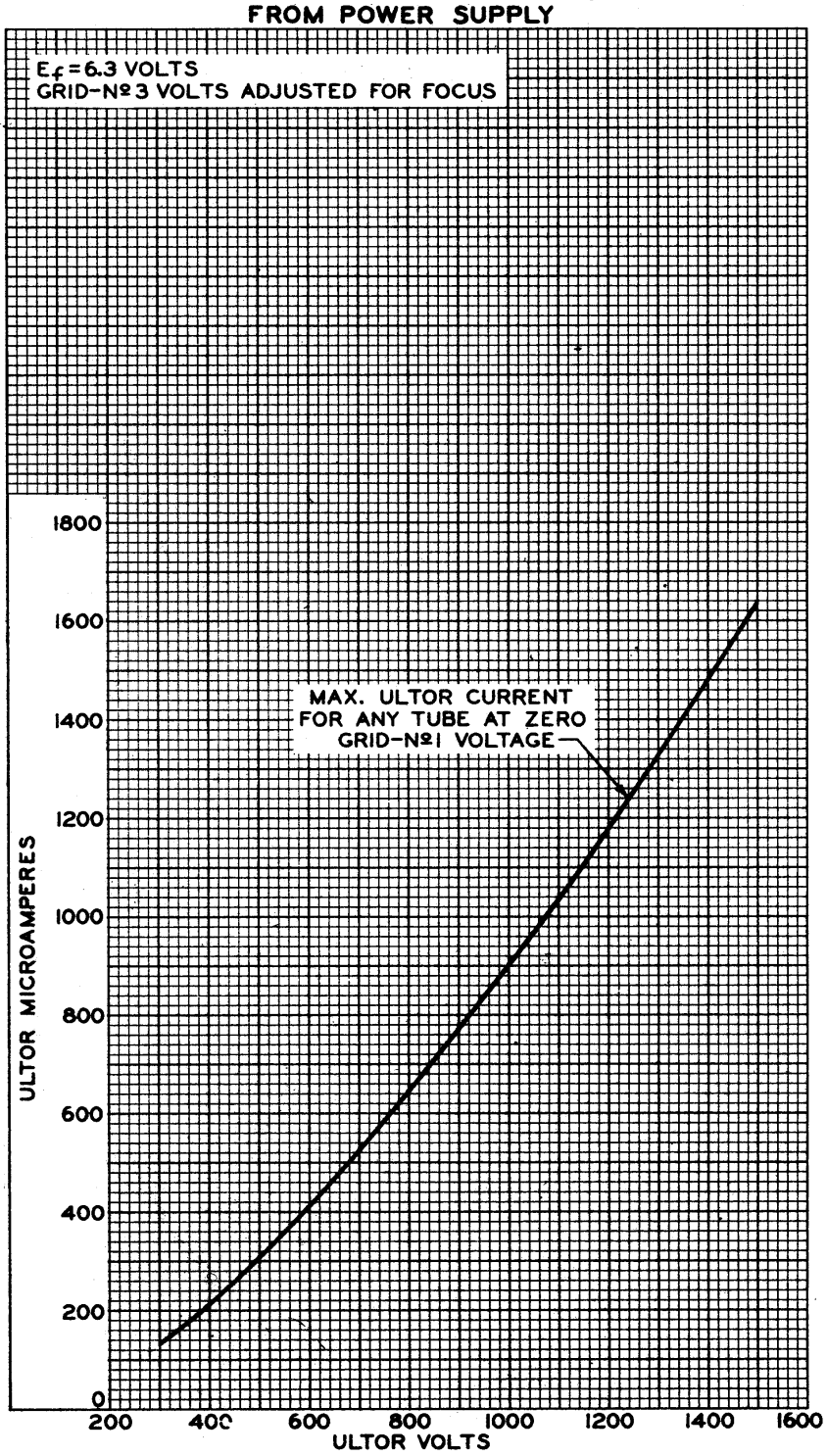
MAXIMUM ULTOR-CURRENT REQUIREMENTS
FROM POWER SUPPLY



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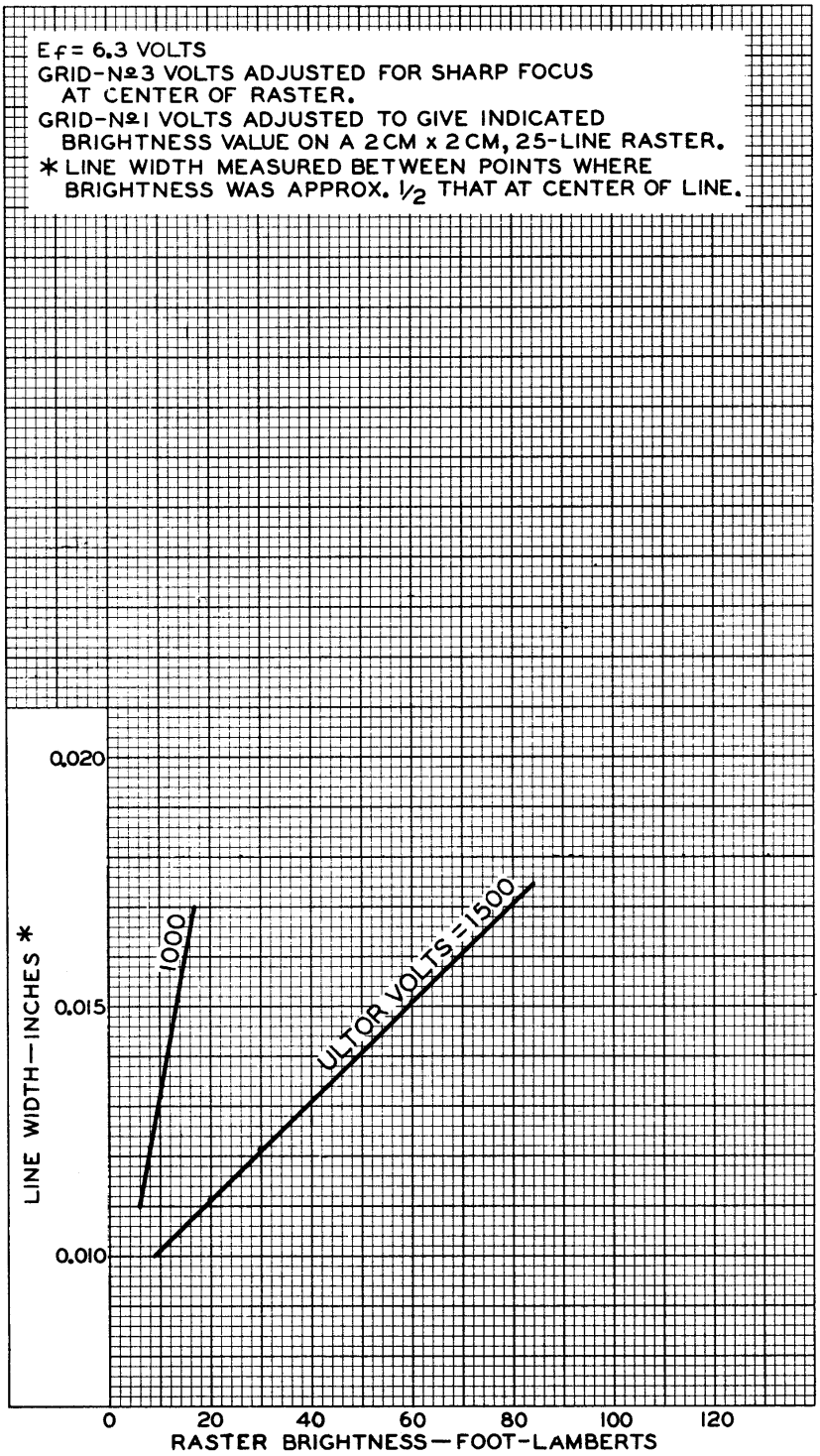
AVERAGE CHARACTERISTICS



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