17QP4

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RECTANGULAR GLASS TYPE

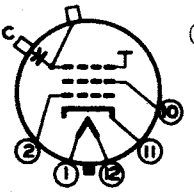
MAGNETIC FOCUS — MAGNETIC DEFLECTION

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	6	μμf
Cathode to All Other Electrodes	5	μμf
External Conductive Coating to Ultor●	1500 max. 750 min.	μμf μμf
Faceplate, Cylindrical With Toric Inner Surface†		Filterglass
Light Transmission (Approx.)		66%
Phosphor (For Curves, see front of this Section)		P4—Sulfide Type
Fluorescence and Phosphorescence		White
Persistence of Phosphorescence		Short
Focusing Method		Magnetic
Deflection Method		Magnetic
Deflection Angles (Approx.):		
Diagonal		70°
Horizontal		65°
Vertical		50°
Ion-Trap Gun	Requires External, Single-Field Magnet	
Tube Dimensions:		
Overall Length		19-3/16" ± 3/8"
Greatest Diagonal		16-5/8" ± 1/8"
Greatest Width		15-3/8" ± 1/8"
Greatest Height		12-1/4" ± 1/8"
Minimum Screen Dimensions:		
Greatest Width		14-1/4"
Greatest Height		10-3/4"
Diagonal		15-5/16"
Weight (Approx.)		19 lbs
Mounting Position		Any
Cap	Recessed Small Cavity (JETEC No. J1-21)	
Base	Small-Shell Duodecal 5-Pin (JETEC No.B5-57)	

Pin 1 - Heater
Pin 2 - Grid No.1
Pin 10 - Grid No.2
Pin 11 - Cathode
Pin 12 - Heater



Cap - Ultor (Grid No.3, Collector)
C - External Conductive Coating

† The toric surface in the 17QP4 is described by a segment of a circle having a radius of about 60" rotated about a straight line which is (1) parallel to the axis of the outer cylindrical surface, (2) positioned in a plane passing through the axis of the cylindrical surface and the center element thereof, and (3) spaced approximately 25" from the cylindrical surface.

●: See next page.

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Maximum Ratings, *Design-Center Values:*

ULTOR• VOLTAGE	16000 max.	volts
GRID-No.2 VOLTAGE	410 max.	volts
GRID-No.1 VOLTAGE:		
Negative bias value	125 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	150 max.	volts
Heater positive with respect to cathode	150 max.	volts

Equipment Design Ranges:

For any ultor voltage (E_u) between 12000# and 16000 volts and grid-No.2 voltage (E_{c_2}) between 150 and 410 volts

Grid-No.1 Voltage for Visual Extinction of Undeflected Focused Spot	11% to 25.7% of E_{c_2}	volts
Grid-No.2 Current	-15 to +15	μamp
Focusing-Coil Current (DC)^{oo}	$\left[\sqrt{\frac{E_u}{12000}} \times 96\right]$ ±6%	ma
Field Strength of Single-Field Ion-Trap Magnet (Approx.)**	$\sqrt{\frac{E_u}{12000}} \times 42$	gausses
Field Strength of Adjustable Centering Magnet	0 to 8	gausses

Examples of Use of Design Ranges:

For ultor voltage of	*12000*	*14000*	*volts*
and grid-No.2 voltage of	*300*	*300*	*volts*
Grid-No.1 Voltage for Visual Extinction of Undeflected Focused Spot	-33 to -77	-33 to -77	volts
Focusing-Coil Current (DC)	96 ± 6%	104 ± 6%	ma
Ion-Trap Magnet (Rated Strength)	40	45	gausses

Maximum Circuit Values:

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

• In the 17QP4, grid No.3 which has the ultor function and collector are connected together within the tube and are conveniently referred to collectively as "ultor." The "ultor" in a cathode-ray tube is the electrode, or the electrode in combination with one or more additional electrodes connected within the tube to it, to which is applied the highest dc voltage for accelerating the electrons in the beam prior to its deflection.

Brilliance and definition decrease with decreasing ultor voltage. In general, the ultor voltage should not be less than 12000 volts.

oo,**: See next page.

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oo For specimen focusing coil similar to JETEC Focusing Coil No. 109 positioned with air gap toward kinescope screen, and center line of air gap 3 inches from Reference Line (see *Outline Drawing*). The indicated current is for condition with combined grid-No.1 bias voltage and video-signal voltage adjusted to produce a highlight brightness of 30 foot-lamberts on a 14-1/4" x 10-3/4" picture area sharply focused at center of screen.

** With a specimen ion-trap magnet similar to JETEC Ion-Trap Magnet No.111 located in optimum position and rotated to give maximum brightness, the ion-trap magnet current is 70 milliamperes dc when the ultor voltage is 12000 volts and grid-No.2 voltage of 300 volts.

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

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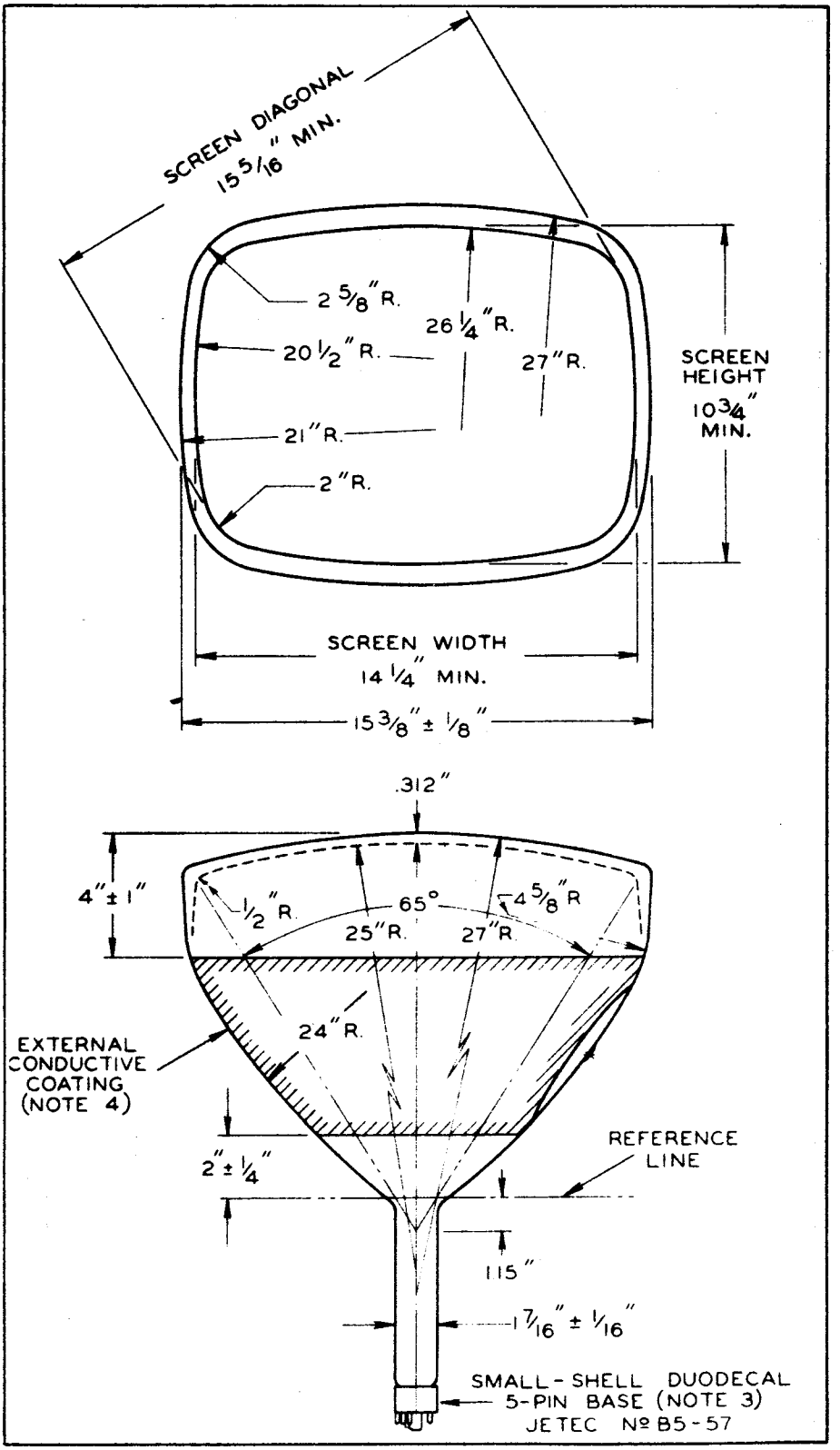

JULY 1, 1952

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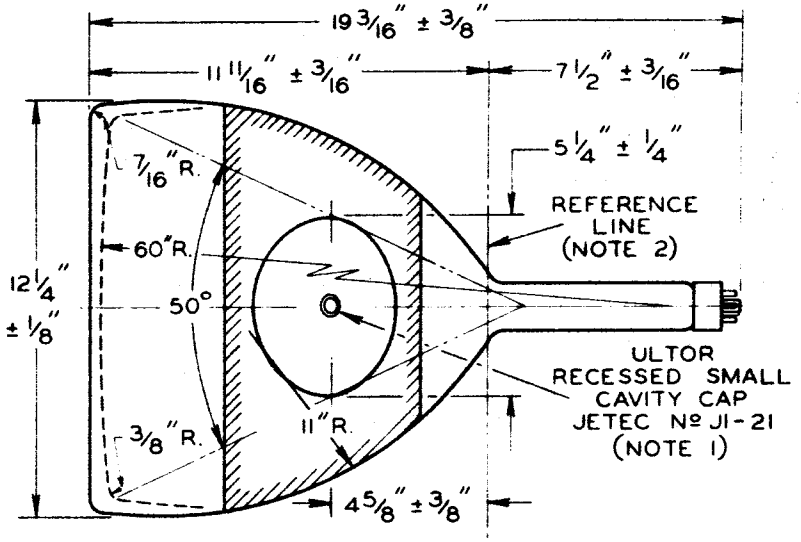

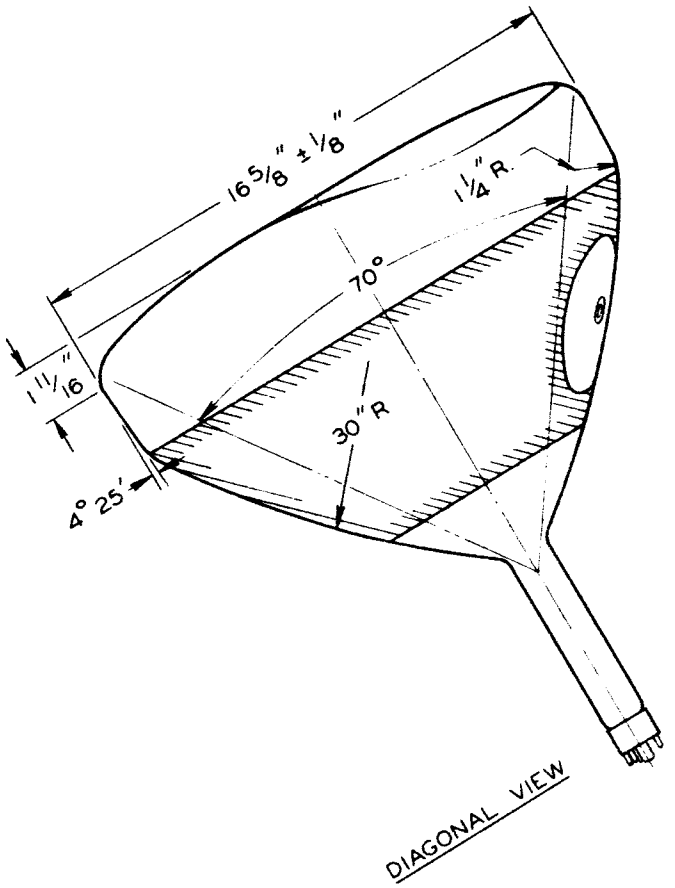

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NOTE 1: THE PLANE THROUGH THE TUBE AXIS AND VACANT PIN POSITION No.6 MAY VARY FROM THE PLANE THROUGH THE TUBE AXIS AND BULB TERMINAL BY ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF ± 30°. BULB TERMINAL IS ON SAME SIDE AS VACANT PIN POSITION No.6.

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 THE INTERSECTION OF THE PLANE CC' OF THE GAUGE WITH THE GLASS FUNNEL.

NOTE 3: SOCKET FOR THIS BASE SHOULD NOT BE RIGIDLY MOUNTED; IT SHOULD HAVE FLEXIBLE LEADS AND BE ALLOWED TO MOVE FREELY. BOTTOM CIRCUMFERENCE OF BASE SHELL WILL FALL WITHIN A CIRCLE CONCENTRIC WITH BULB AXIS AND HAVING A DIAMETER OF 2-3/4".

NOTE 4: EXTERNAL CONDUCTIVE COATING MUST BE GROUNDED.

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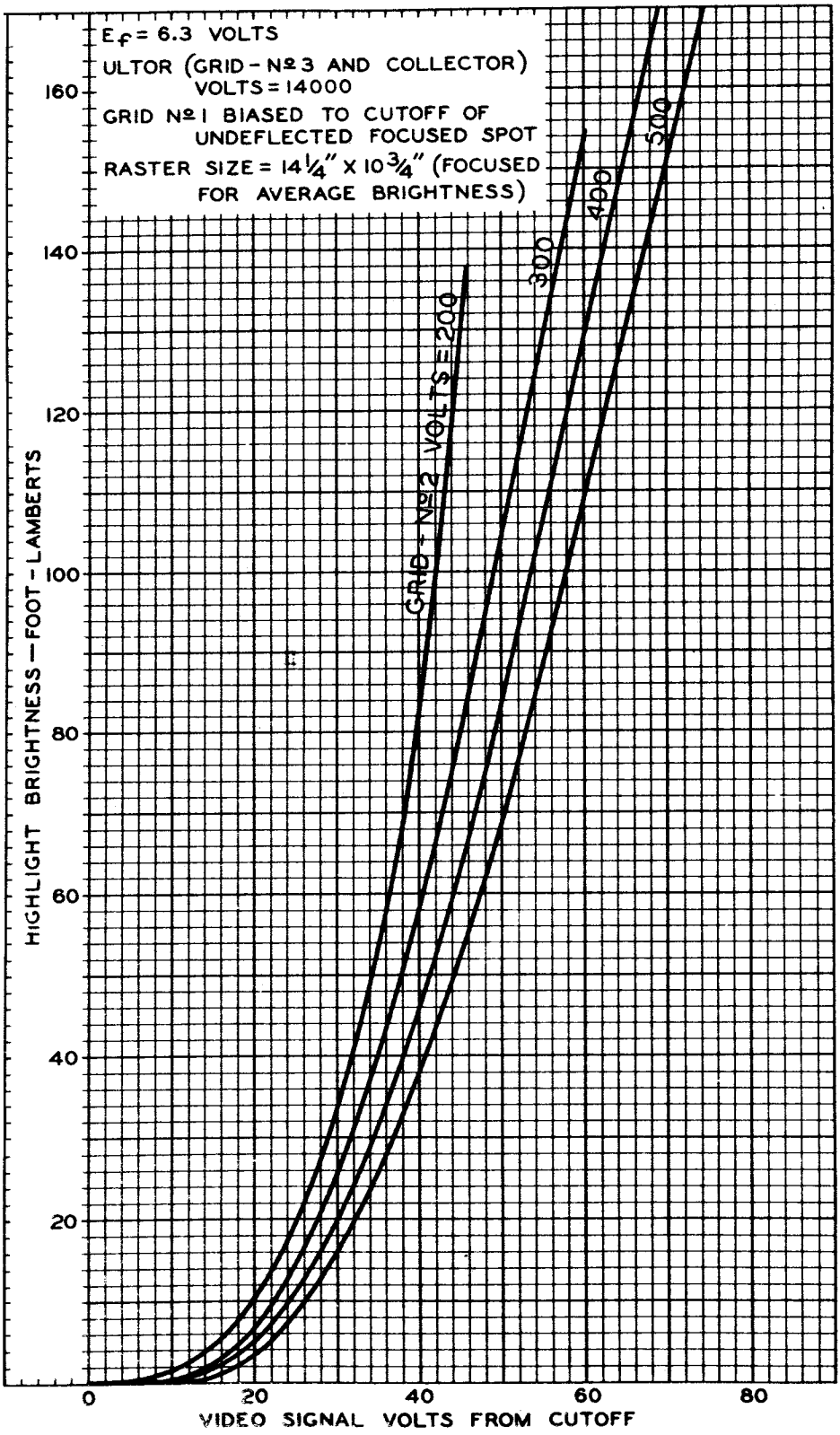
AVERAGE GRID-DRIVE CHARACTERISTICS



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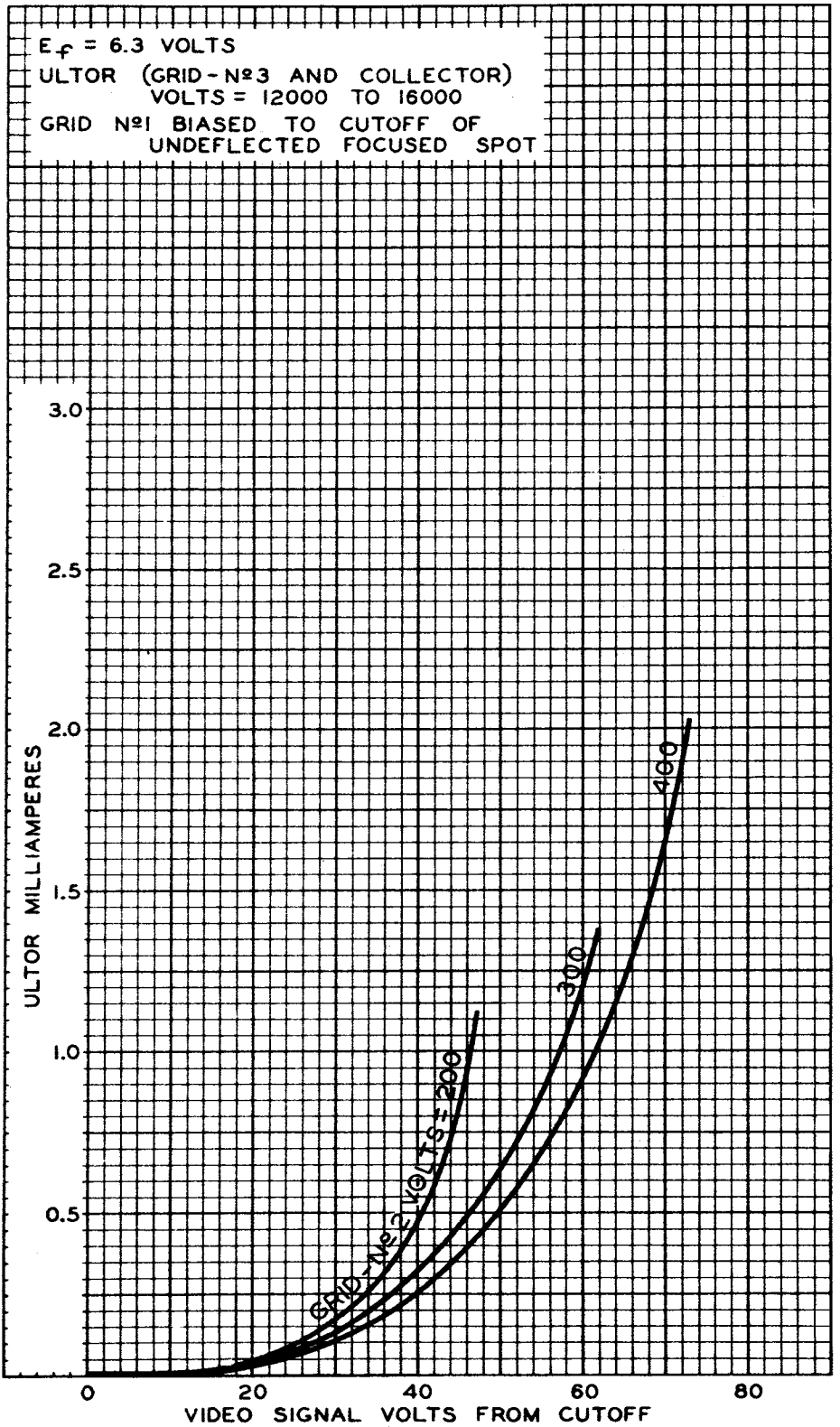

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