



20MP4

20MP4 KINESCOPE

RECTANGULAR GLASS TYPE

LOW-VOLTAGE 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 μf Cathode to All Other Electrodes. 5 μf External Conductive Coating to Ultor[•]. $\begin{cases} 750 \text{ max.} & \mu\text{f} \\ 500 \text{ min.} & \mu\text{f} \end{cases}$

Faceplate, Spherical Filterglass

Light Transmission (Approx.) 66%

Phosphor (For Curves, see front of this Section). . P4—Sulfide Type

Fluorescence White

Phosphorescence. White

Persistence. Short

Focusing Method. Electrostatic

Deflection Method. Magnetic

Deflection Angles (Approx.):

Diagonal 70°

Horizontal 66°

Vertical 50°

Ion-Trap Gun Requires External, Single-Field Magnet

Tube Dimensions:

Overall Length 21-3/4" $\pm$ 3/8"Greatest Diagonal. 20-3/32" $\pm$ 3/16"Greatest Width 18-11/16" $\pm$ 3/16"Greatest Height. 14-15/16" $\pm$ 3/16"

Screen Dimensions:

Greatest Width 17-1/4"

Greatest Height. 13-1/4"

Diagonal 18-5/8"

Weight (Approx.) 27 lbs

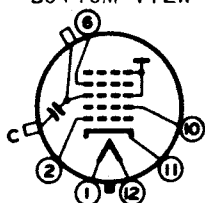
Mounting Position. Any

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

Base Small-Shell Duodecal 6-Pin (JETEC No.B6-63)

BOTTOM VIEW

Pin 1—Heater
Pin 2—Grid No.1
Pin 6—Grid No.4
Pin 10—Grid No.2
Pin 11—Cathode
Pin 12—Heater



Cap—Grid No.3,
Grid No.5,
Collector
C—External
Conductive
Coating

Maximum Ratings, Design-Center Values:

ULTOR[•] VOLTAGE 16000 max. volts

[•] In the 20MP4, grid No.5 which has the ultor function, grid No.3, 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.

MAY 1, 1952

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TENTATIVE DATA

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GRID-No.4 VOLTAGE:		
Positive value	1000 max.	volts
Negative value [▲]	500 max.	volts
GRID-No.2 VOLTAGE.		
	500 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	180 max.	volts
Heater positive with respect to cathode.		
	180 max.	volts

Equipment Design Ranges:

For any ultor voltage (E_u) between 14000 and 16000 volts
and grid-No.2 voltage (E_{c2}) between 150 and 500 volts*

Grid-No.4 Voltage for Focus		
with Ultor Current of		
100 μ amp	-0.4% to +2.2% of E_u	volts
Grid-No.1 Voltage for Visual		
Extinction of Undelected		
Focused Spot	11% to 25.7% of E_{c2}	volts
Grid-No.4 Current.	-25 to +25	μ amp
Grid-No.2 Current.	-15 to +15	μ amp
Field Strength of Single-Field	$\sqrt{\frac{E_u}{14000}} \times 45$	gausses
Ion-Trap Magnet (Approx.).		
Field Strength of Adjustable	0 to 8	gausses
Centering Magnet		

Examples of Use of Design Ranges:

<i>For ultor voltage of</i>	<i>14000</i>	<i>16000</i>	<i>volts</i>
<i>and grid-No.2 voltage of</i>	<i>300</i>	<i>300</i>	<i>volts</i>

Grid-No.4 Voltage for Focus		
with Ultor Current of		
100 μ amp	-55 to +300	-65 to +350 volts
Grid-No.1 Voltage†	-33 to -77	-33 to -77 volts
Ion-Trap Magnet		
(Rated Strength)	45	50 gaussess

Maximum Circuit Values:

Grid-No.1-Circuit Resistance	1.5 max.	megohms
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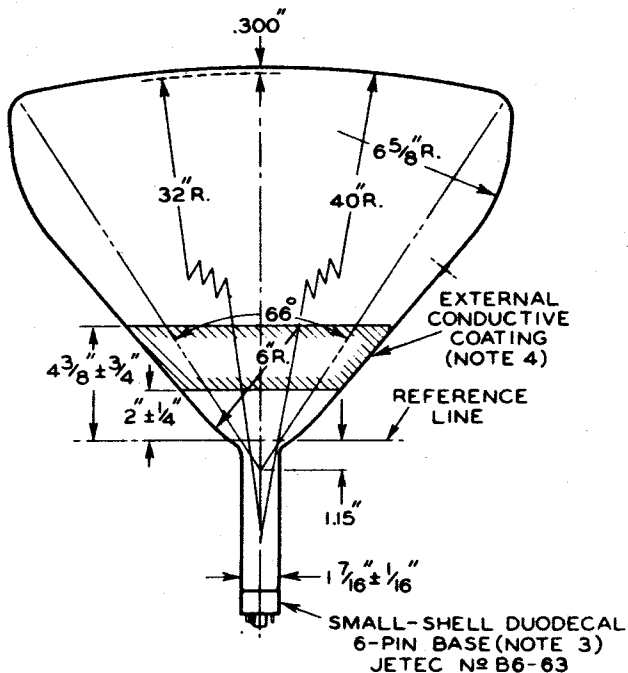
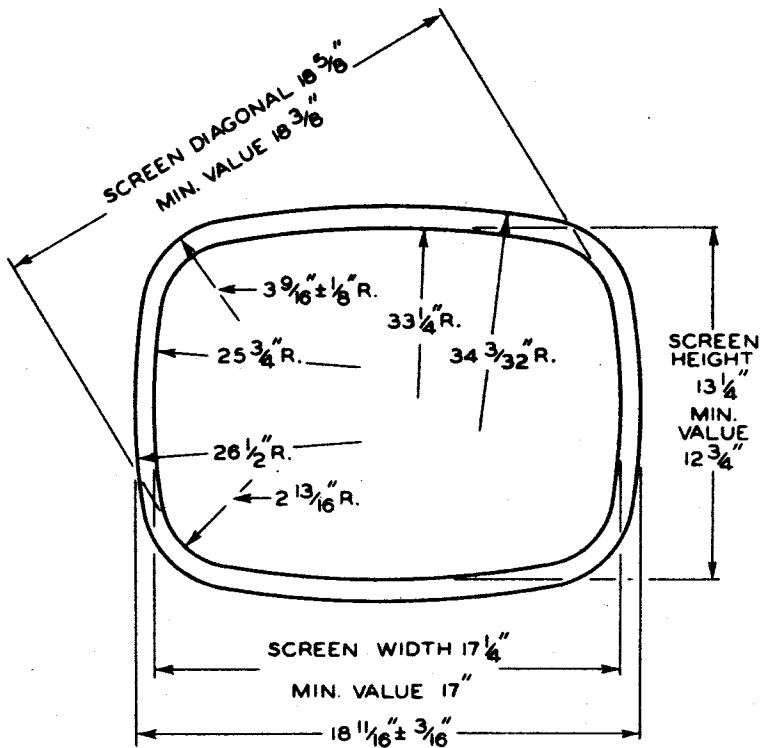
* Brilliance and definition decrease with decreasing ultor voltage. In general, the ultor voltage should not be less than 14000 volts.
 † For visual extinction of undeflected focused spot.
 ▲ This value has been specified to take care of the condition where an ac voltage is provided for dynamic focusing.

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

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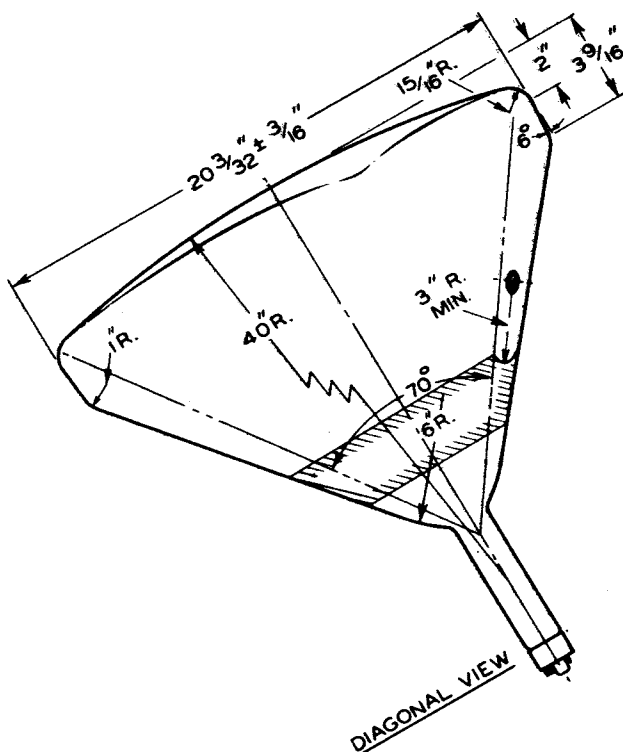
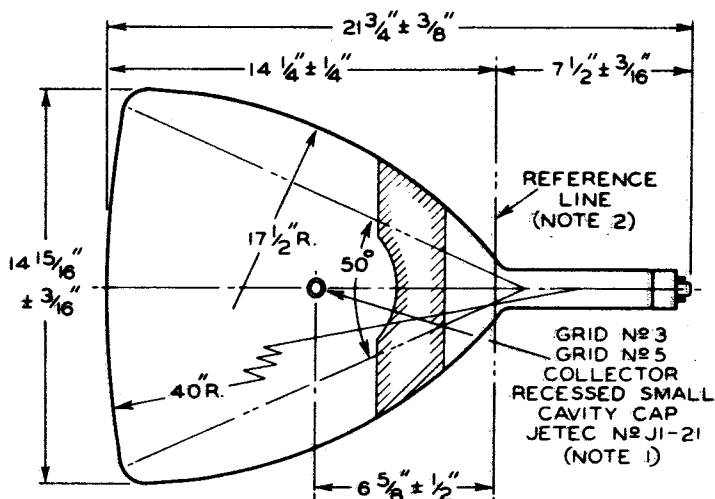
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CE-7722A



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FOR NOTES, SEE NEXT PAGE

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NOTE 1: THE PLANE THROUGH THE TUBE AXIS AND PIN NO. 6 MAY VARY FROM THE PLANE THROUGH THE TUBE AXIS AND CAP BY ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF $\pm 30^\circ$. CAP IS ON SAME SIDE AS PIN 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 3".

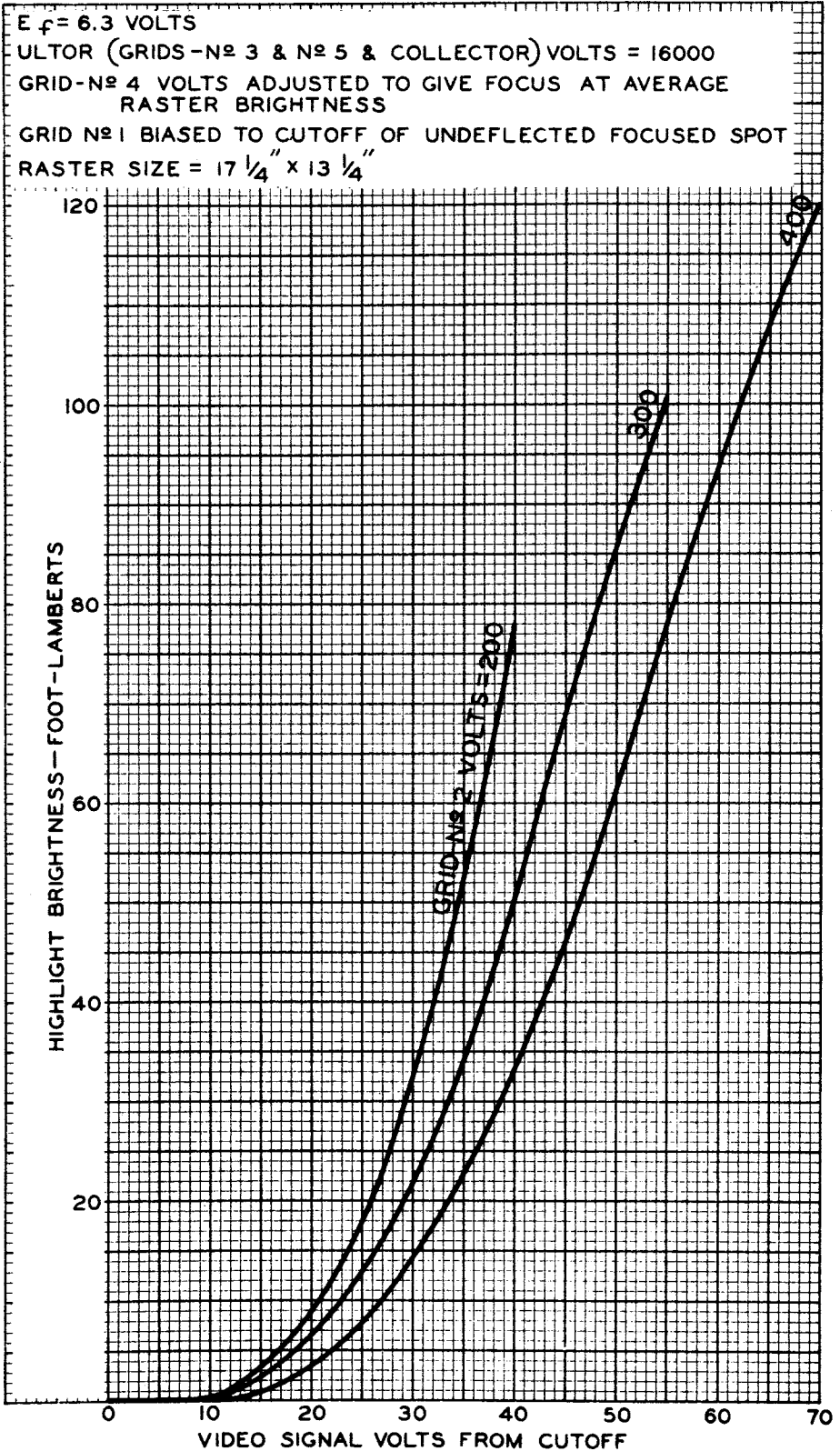
NOTE 4: EXTERNAL CONDUCTIVE COATING MUST BE GROUNDED.



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AVERAGE GRID-DRIVE CHARACTERISTICS





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