



20MP4

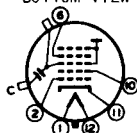
20MP4 KINESCOPE

RECTANGULAR GLASS TYPE
LOW-VOLTAGE FOCUS MAGNETIC DEFLECTION

General:		DATA
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.	{ 750 max. 500 min.	μf μf
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

TUBE DEPARTMENT

TENTATIVE DATA

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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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

Ion-Trap Magnet (Approx.). $\sqrt{\frac{E_u}{14000}} \times 45$ gauss

Field Strength of Adjustable

Centering Magnet 0 to 8 gauss

Examples of Use of Design Ranges:

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

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 gauss

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 14000 volts.

† For visual extinction of undelected 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

MAY 1, 1952

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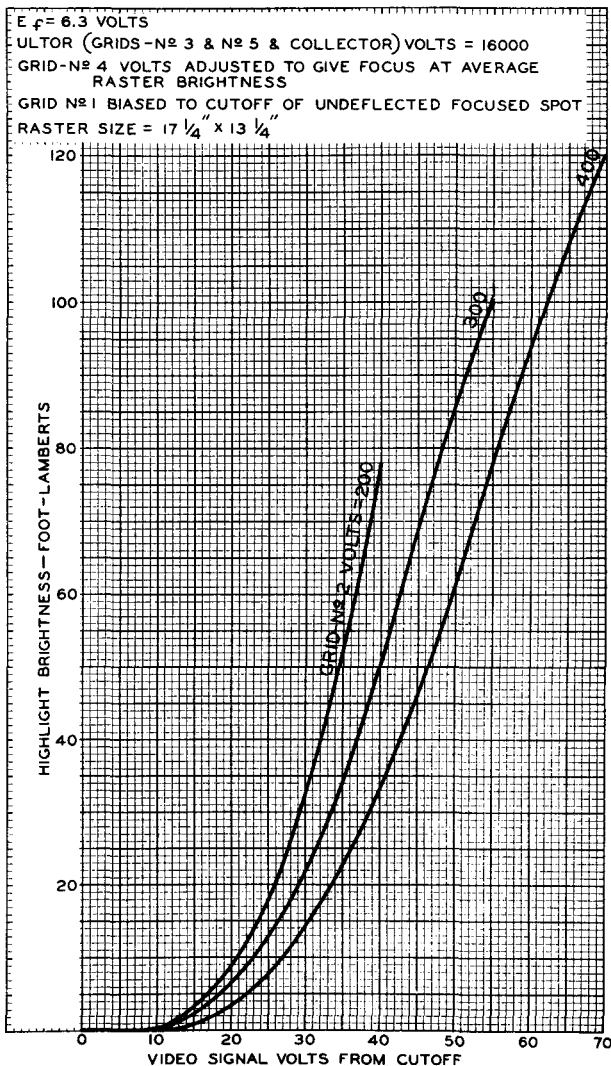
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AVERAGE GRID-DRIVE CHARACTERISTICS



DEC. 17, 1951

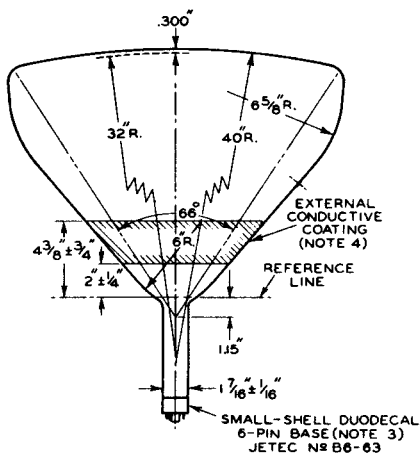
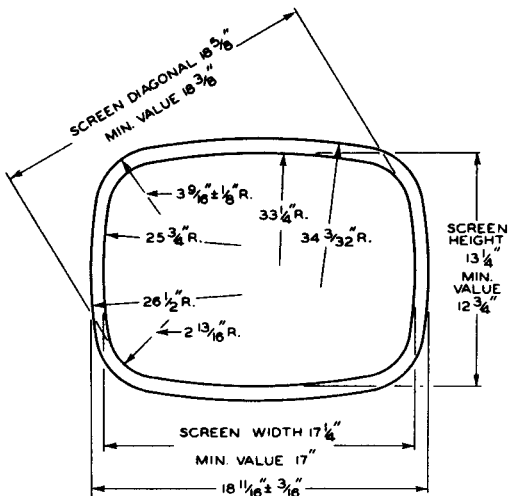
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92CM-7724

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MAY 1, 1952

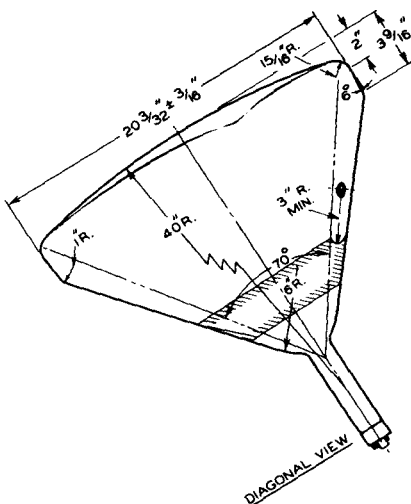
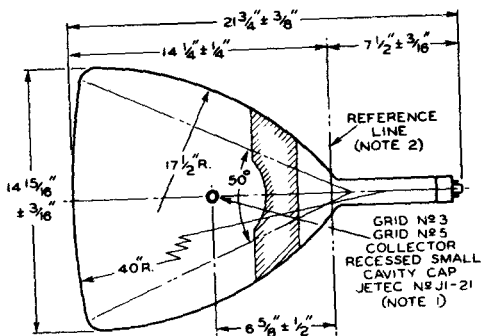
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CE-7722A



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92CL-7722

FOR NOTES. SEE NEXT PAGE

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CE-7722B

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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

