



17GP4

KINESCOPE

RECTANGULAR METAL-SHELL TYPE

ELECTROSTATIC 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

Face Plate (With about 66% light transmission) Frosted Filterglass

Phosphor No.4-Sulfide Type

Fluorescence and Phosphorescence White

Persistence of Phosphorescence Short

Focusing Method Electrostatic

Deflection Method Magnetic

Deflection Angles (Approx.):

Diagonal 70°

Horizontal 66°

Vertical 50°

Ion-Trap Gun Requires External, Single-Field Magnet

Maximum Overall Length 19-5/16"

Greatest Diagonal of Tube at Lip 16-13/16" $\pm$ 3/16"Greatest Width of Tube at Lip 15-15/16" $\pm$ 1/8"Greatest Height of Tube at Lip 12-1/4" $\pm$ 1/8"

Screen Size 14-5/8" x 11"

Mounting Position Any

Ultor® Terminal Metal-Shell Lip

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

BOTTOM VIEW

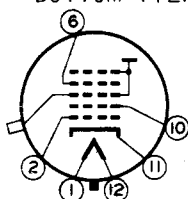
Pin 1-Heater

Pin 2-Grid No.1

Pin 6-Grid No.4

Pin 10-Grid No.2

Pin 11-Cathode



Pin 12-Heater

Metal-Shell Lip -
Grid No.3,
Grid No.5,
Collector

Maximum Ratings, Design-Center Values:

ULTOR® VOLTAGE 16000 max. volts

GRID-No.4 VOLTAGE 5000 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

• See next page.

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Equipment Design Ranges:

For any ultor voltage (E_u) between 12000* and 16000 volts
and grid-No.2 voltage (E_{c2}) between 150 and 500 volts

Grid-No.4 Voltage for Ultor

Current of 100 μ amp. 19.1% to 25.9% 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.

-15 to +25 μ amp

Grid-No.2 Current.

-15 to +15 μ amp

Field Strength of Single-Field

Ion-Trap Magnet (Approx.). . . $\sqrt{\frac{E_u}{12000}} \times 35$ gauss

Field Strength of Adjustable

Centering Magnet 0 to 8 gauss

Examples of Use of Design Ranges:

For ultor voltage of. . . 12000 14000 volts

and grid-No.2 voltage of. 300 300 volts

Grid-No.4 Voltage for

Ultor Current of

100 μ amp 2290 to 3100 2670 to 3620 volts

Grid-No.1 Voltage† -33 to -77 -33 to -77 volts

Ion-Trap Magnet

(Rated Strength) 35 40 gauss

Maximum Circuit Values:

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

- In the 17GP4, 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.

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

- † For visual extinction of undeflected focused spot.

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OPERATING NOTES

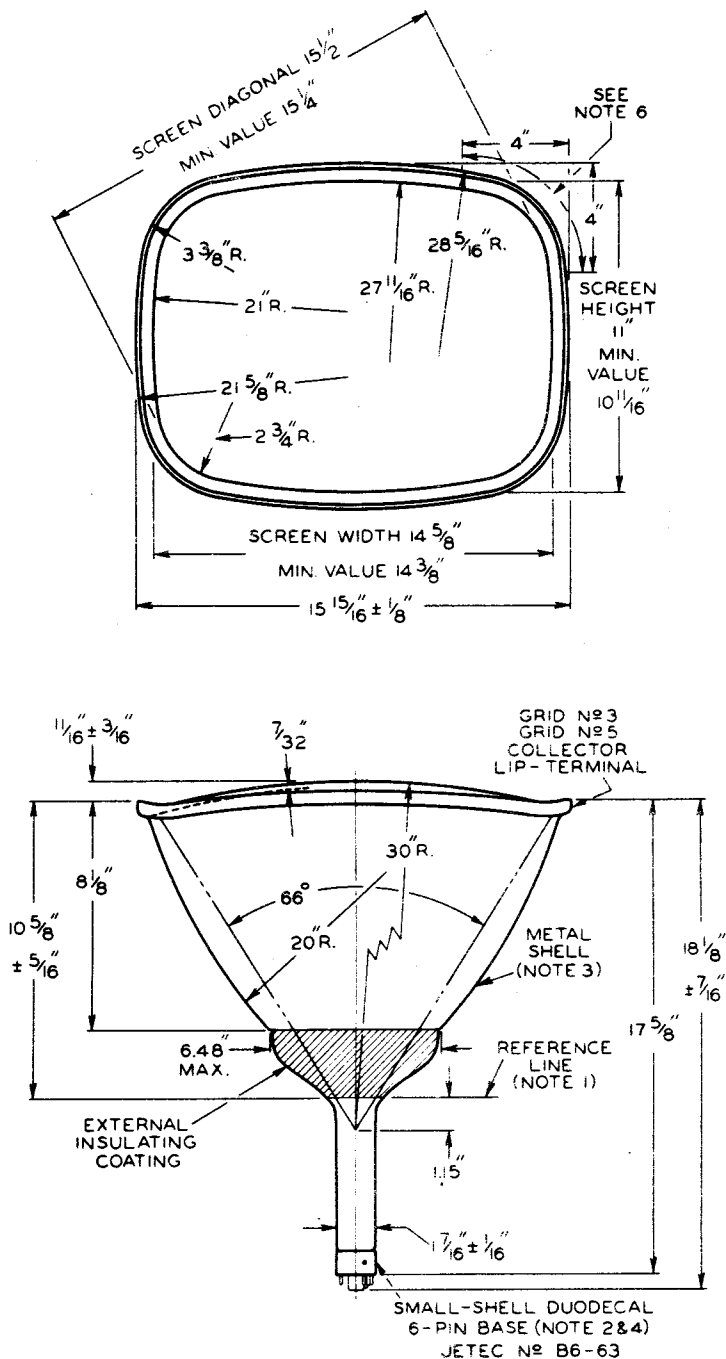
X-Ray Warning. When operated at ultor voltages up to 16 kilovolts, the 17GP4 does not produce any harmful x-ray radiation. However, because the rating of the tube permits operation at voltages as high as 17.6 kilovolts (absolute value), shielding of the 17GP4 for x-ray radiation may be needed to protect against possible injury from prolonged exposure at close range whenever the operating conditions involve voltages in excess of 16 kilovolts.

Direction of the field of the ion-trap magnet should be such that the north pole is adjacent to vacant pin position No. 8 and the south pole to pin No. 2.

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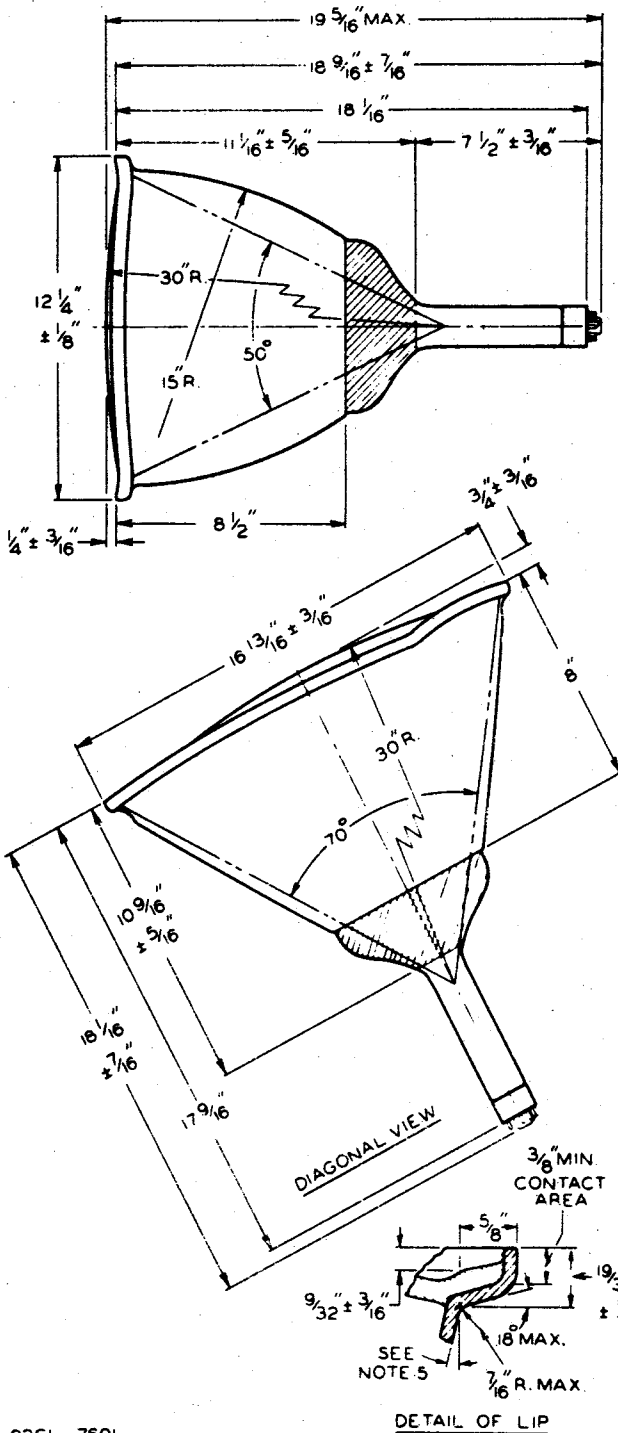
CE-7601A



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92CL - 7601

DETAIL OF LIP

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NOTE 1: 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 2: 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 METAL-SHELL AXIS AND HAVING A DIAMETER OF 2-3/4".

NOTE 3: METAL SHELL AND GLASS FACE OPERATE AT HIGH VOLTAGE. ANY MATERIAL IN CONTACT WITH THE SHELL OR THE FACE MUST BE INSULATED TO WITHSTAND THE MAXIMUM APPLIED ULTOR VOLTAGE.

NOTE 4: THE PLANE THROUGH THE TUBE AXIS AND PIN No. 6 MAY VARY FROM THE HORIZONTAL AXIS OF THE GLASS FACE BY AN ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF $\pm 10^\circ$.

NOTE 5: IN THIS REGION THE ANGULAR VARIATION AROUND PERIPHERY OF METAL SHELL IS 0° TO 18° .

NOTE 6: SUPPORT TUBE BY LIP ONLY AT CORNERS WITHIN THIS SPACE.

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AVERAGE GRID-DRIVE CHARACTERISTICS

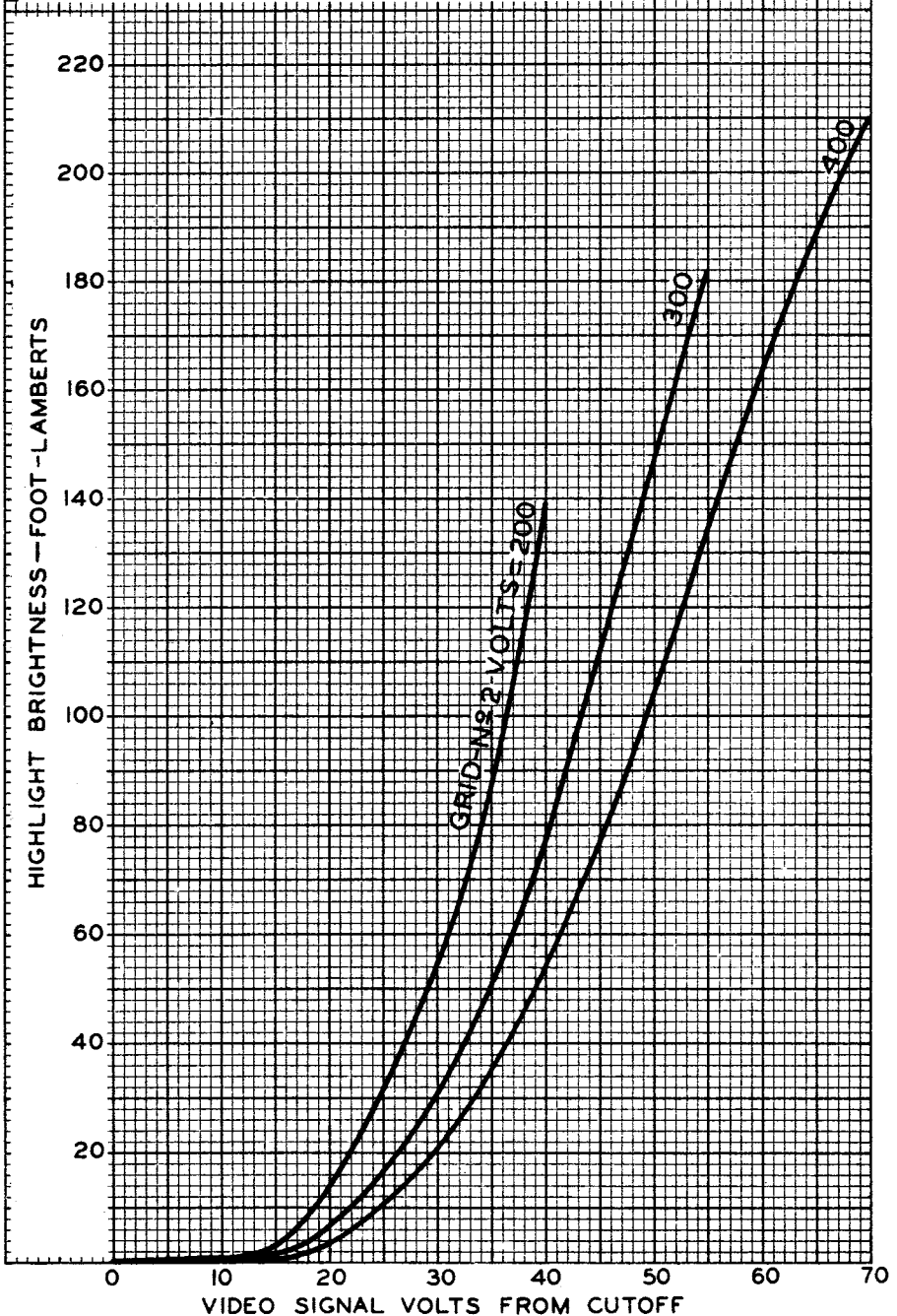
$E_f = 6.3$ VOLTS

ULTOR (GRIDS - No 3 & No 5
AND COLLECTOR) VOLTS = 14000

GRID - No 4 VOLTS ADJUSTED TO GIVE FOCUS
AT AVERAGE RASTER BRIGHTNESS

GRID No 1 BIASED TO CUTOFF OF
UNDEFLECTED FOCUSED SPOT

RASTER SIZE = $14 \frac{5}{8}$ " x 11"



FEB. 8, 1951

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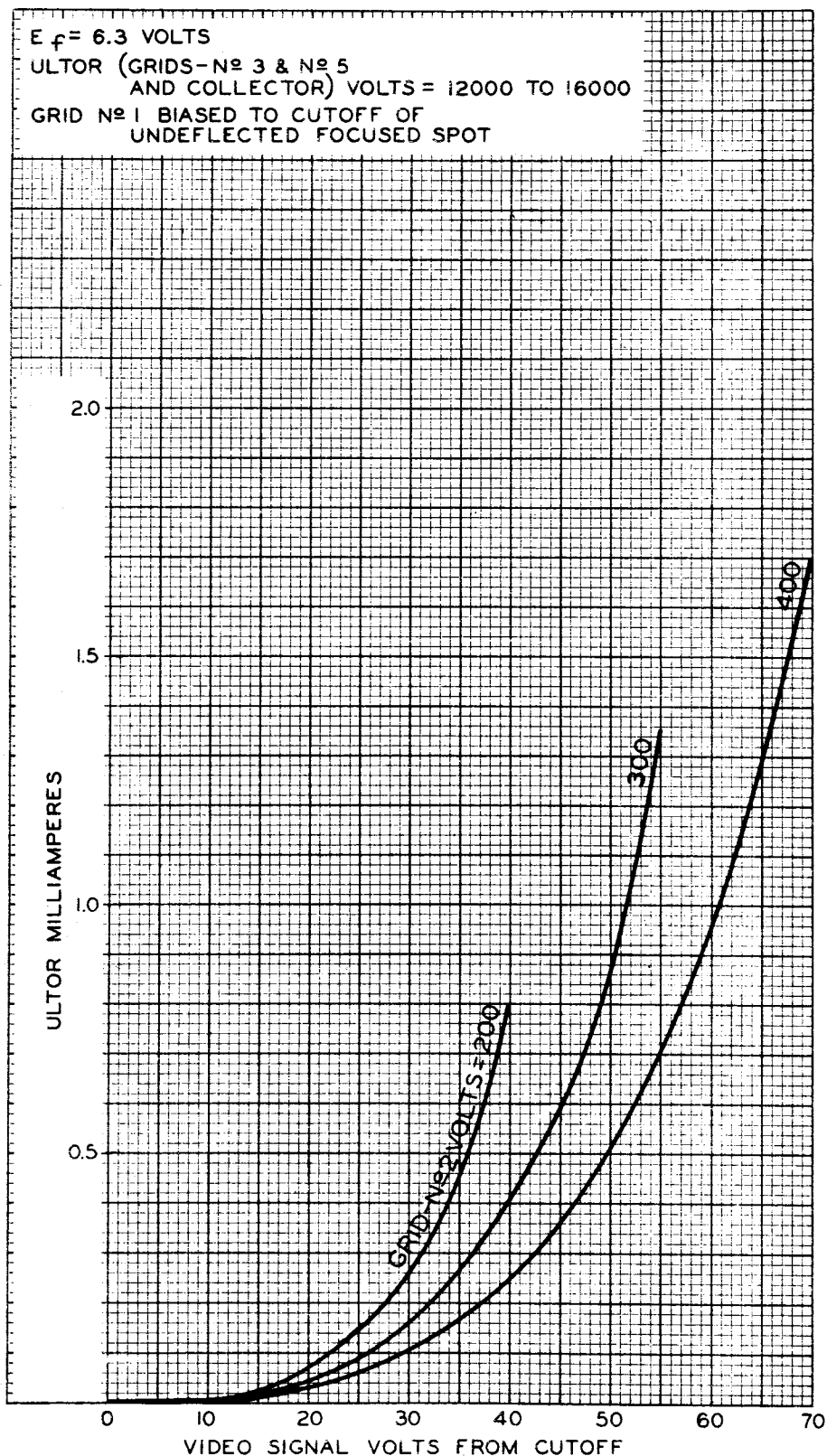
92CM-7606

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AVERAGE GRID-DRIVE CHARACTERISTICS



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