



17HP4

KINESCOPE

RECTANGULAR GLASS TYPE

LOW-VOLTAGE FOCUS

MAGNETIC DEFLECTION

17HP4

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 μ f
Cathode to All Other Electrodes. 5 μ f
External Conductive Coating to Ultor[•] { 1500 max. μ f
750 min. μ f

Faceplate, Spherical 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. Electrostatic

Deflection Method. Magnetic

Deflection Angles (Approx.):

Diagonal 70°
Horizontal 65°
Vertical 50°

Ion-Trap Gun Requires External, Single-Field Magnet

Overall Length 19-3/16" $\pm$ 3/8"

Greatest Diagonal of Tube. 16-5/8" $\pm$ 1/8"

Greatest Width of Tube 15-3/8" $\pm$ 1/8"

Greatest Height of Tube. 12-9/32" $\pm$ 1/8"

Screen Size. 14-3/8" x 11-1/16"

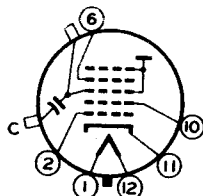
Mounting Position. Any

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

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

• ▲ See next page.

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TENTATIVE DATA 1

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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 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. . . -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.)

$$\sqrt{\frac{E_u}{12000}} \times 42$$
 gaussess

Field Strength of Adjust-

able Centering Magnet. .

0 to 8 gaussess

Examples of Use of Design Ranges:

For ultor voltage of	14000	16000	volts
and grid-No.2 voltage of	300	300	volts

Grid-No.4 Voltage for

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

- In the 17HP4, 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.

▲ This value has been specified to take care of the condition where an ac voltage is provided for dynamic focusing.



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OPERATING NOTES

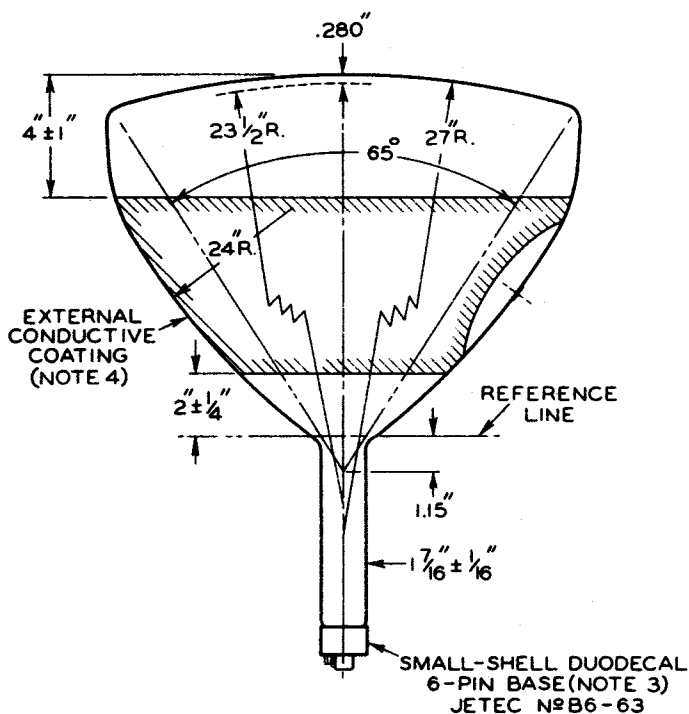
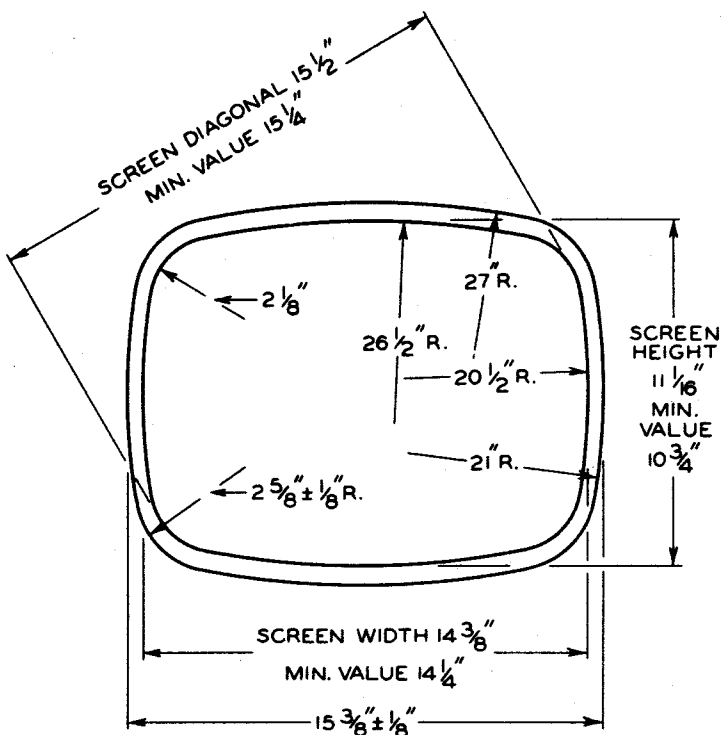
X-Ray Warning. When operated at ultor voltages up to 16 kilovolts, the 17HP4 does not produce any harmful x-ray radiation. However, because the rating of the tube permits operation at voltages as high as 17.6 kilovolts (absolute value), shielding of the 17HP4 for x-ray radiation may be needed to protect against possible injury from prolonged exposure at close range whenever the operating conditions involve voltages in excess of 16 kilovolts.

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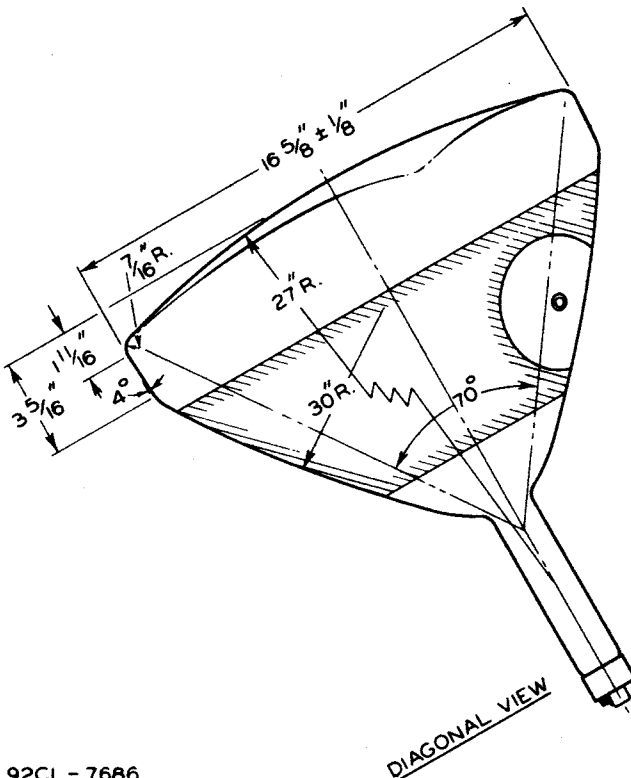
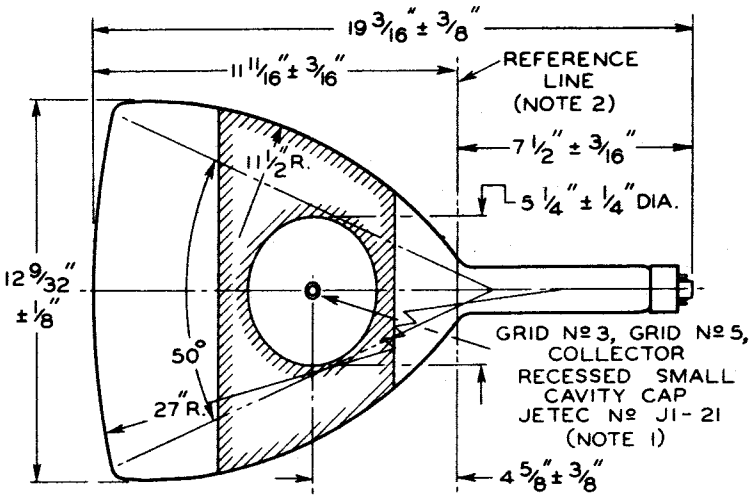
CE-7686A



17HP4

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17HP4



92CL - 7686

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CE-7686B

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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 BULB TERMINAL BY ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF $\pm 30^\circ$. BULB TERMINAL 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 2-3/4".

NOTE 4: EXTERNAL CONDUCTIVE COATING MUST BE GROUNDED.

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CE-7686C



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AVERAGE GRID-DRIVE CHARACTERISTICS

$E_f = 6.3$ VOLTS

ULTOR (GRIDS-№3 & №5

AND COLLECTOR) VOLTS = 14000

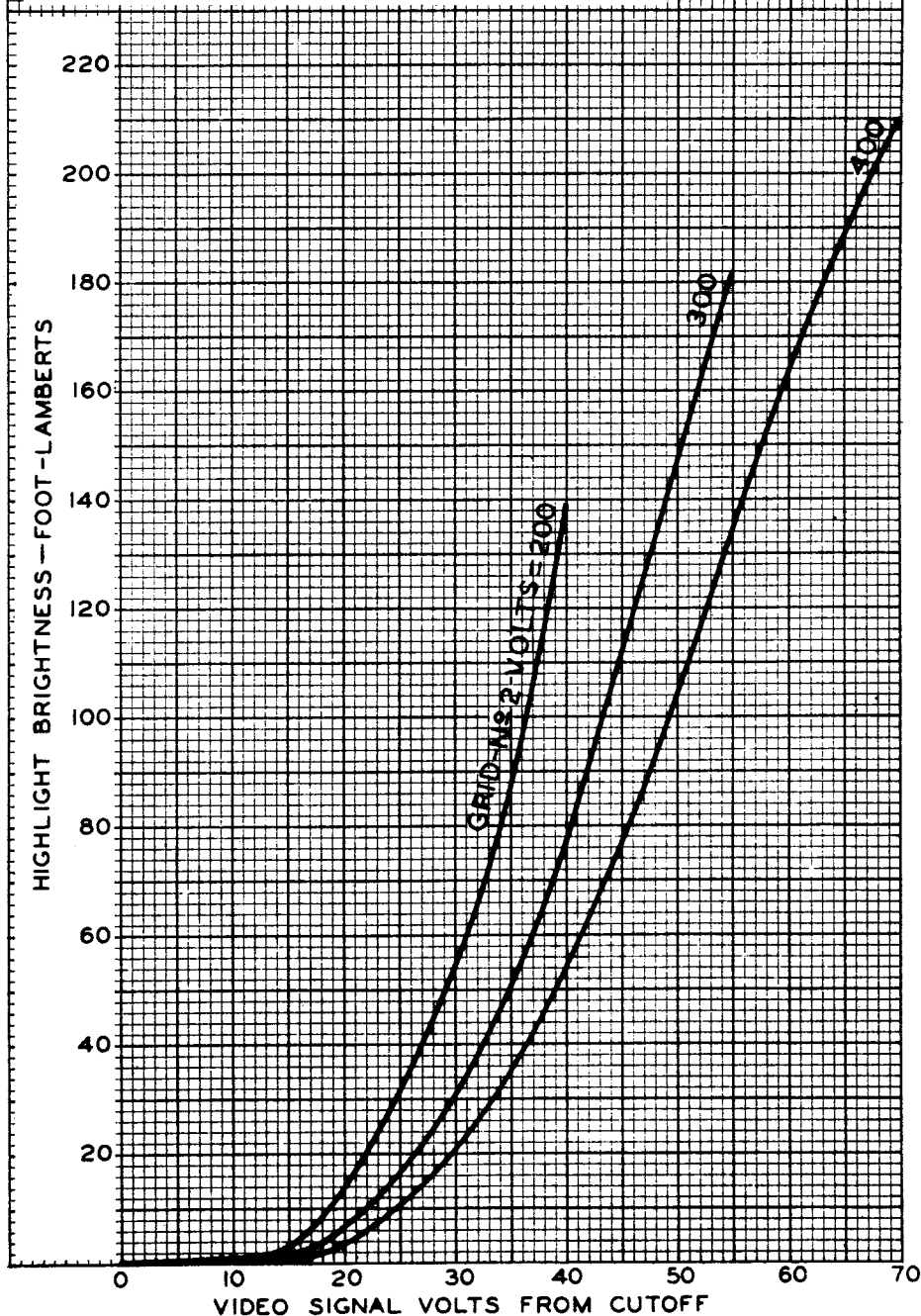
GRID-№4 VOLTS ADJUSTED TO GIVE FOCUS

AT AVERAGE RASTER BRIGHTNESS

GRID №1 BIASED TO CUTOFF OF

UNDEFLECTED FOCUSED SPOT

RASTER SIZE = $14\frac{3}{8}$ " X $11\frac{1}{16}$ "



SEPT. 26, 1951

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92CM-7685

17HP4



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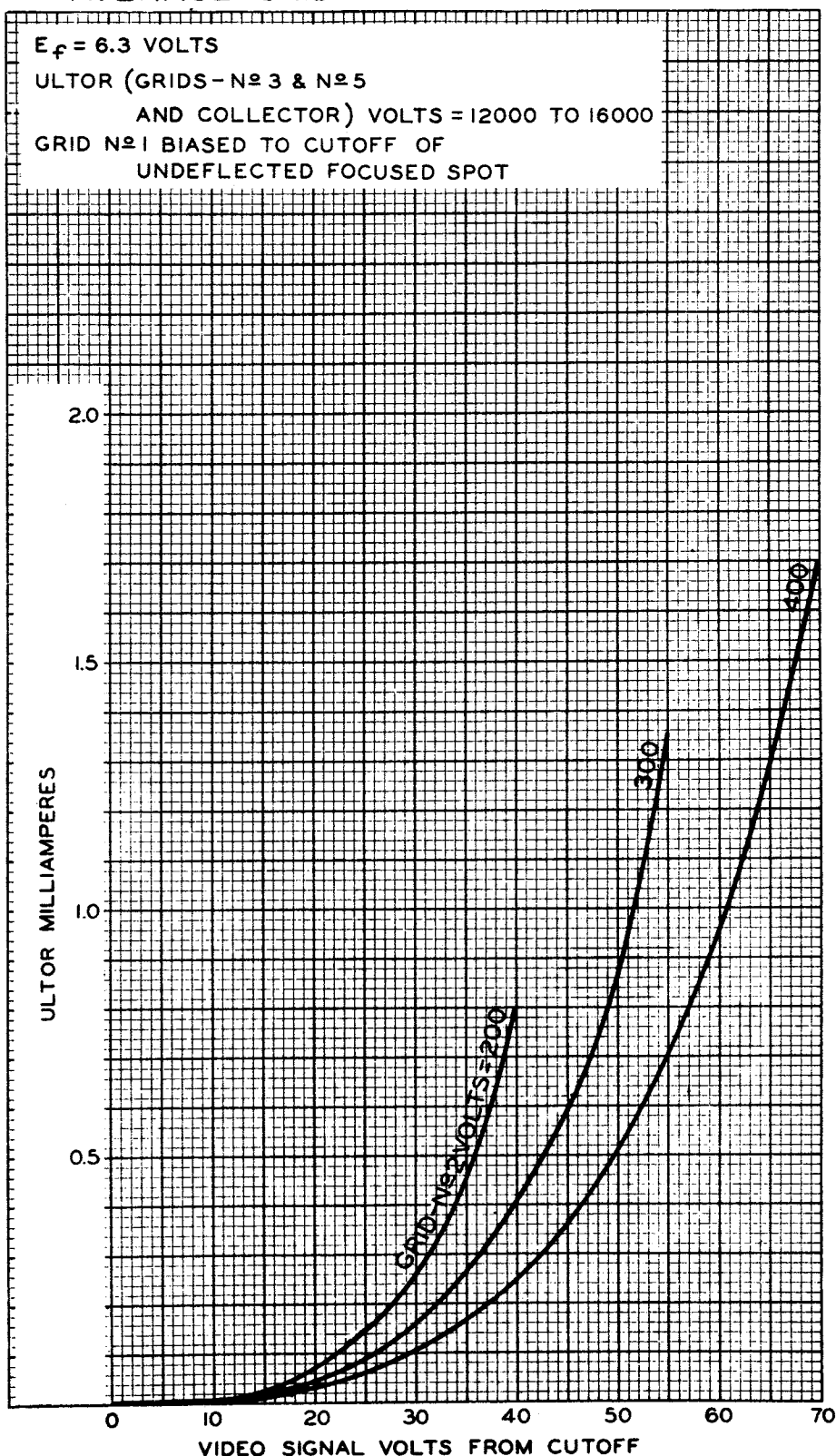
AVERAGE GRID-DRIVE CHARACTERISTICS

$E_f = 6.3$ VOLTS

ULTOR (GRIDS - N $\circ$ 3 & N $\circ$ 5

AND COLLECTOR) VOLTS = 12000 TO 16000

GRID N $\circ$ 1 BIASED TO CUTOFF OF
UNDEFLECTED FOCUSED SPOT



SEPT. 26, 1951

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92CM - 7684