17HP4

KINESCOPE

RECTANGULAR GLASS TYPE

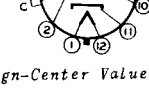
LOW-VOLTAGE FOCUS — MAGNETIC DEFLECTION

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	μμf
Cathode to All Other Electrodes	5	μμf
External Conductive Coating to Ultor●	1500 max. / 750 min.	μμf
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" ± 3/8"
Greatest Diagonal of Tube		16-5/8" ± 1/8"
Greatest Width of Tube		15-3/8" ± 1/8"
Greatest Height of Tube		12-9/32" ± 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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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_{c_2}) between 150 and 500 volts*

Grid-No.4 Voltage for Ultor Current of 100 μamp. . .	-0.4% to 2.2% of E_u	volts
Grid-No.1 Voltage for Visual Extinction of Undeflected Focused Spot	11% to 25.7% of E_{c_2}	volts
Grid-No.4 Current.	-25 to +25	μamp
Grid-No.2 Current.	-15 to +15	μamp
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 / *and grid-No.2 voltage of*	*14000* / *300*	*16000* / *300*	*volts* / *volts*
Grid-No.4 Voltage for Ultor Current of 100 μamp	-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	gausses

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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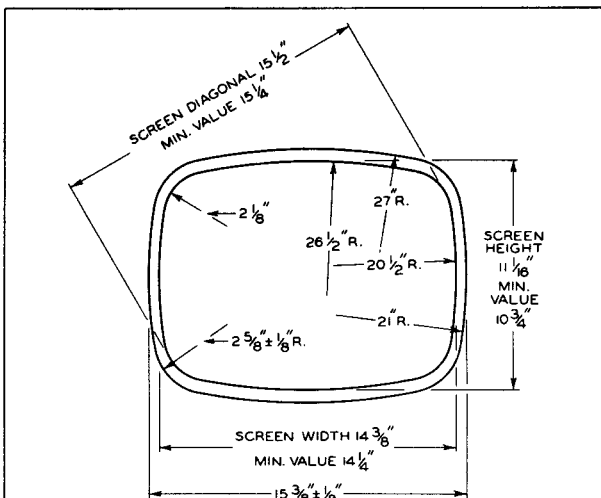

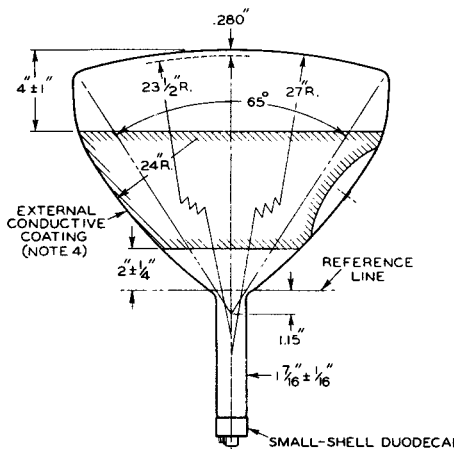

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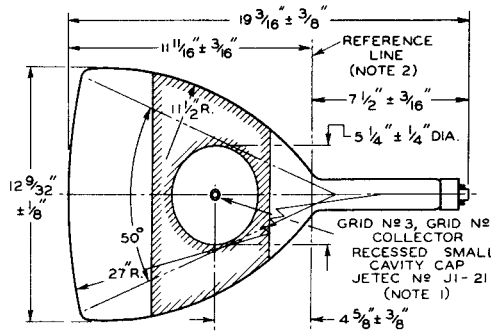

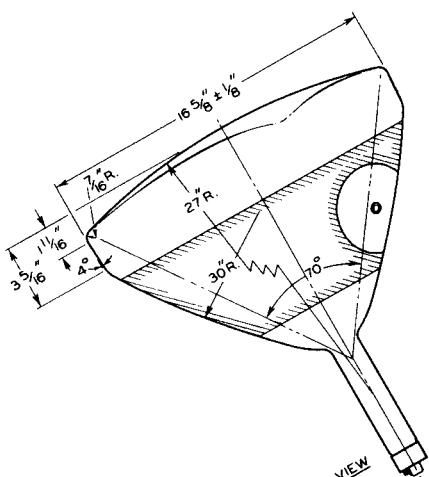

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NOTE 1: THE PLANE THROUGH THE TUBE AXIS AND PIN No.6 MAY VARY FROM THE PLANE THROUGH THE TUBE AXIS AND BULB TERMINAL BY ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF ± 30°. BULB TERMINAL IS ON SAME SIDE AS PIN No.6.

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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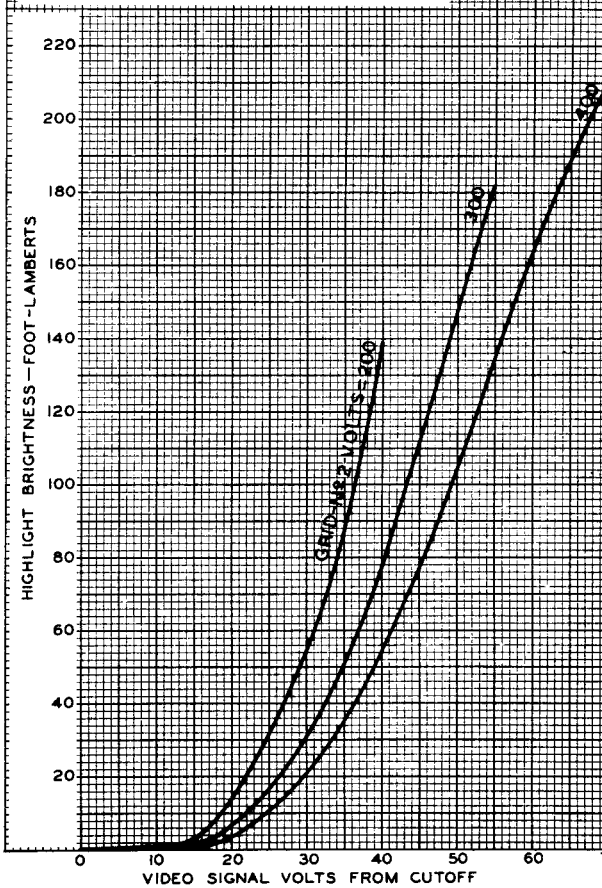
AVERAGE GRID-DRIVE CHARACTERISTICS

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 3/8" X 11 1/16"



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AVERAGE GRID-DRIVE CHARACTERISTICS