14QP4-A
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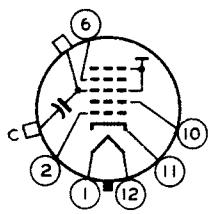
SHORT RECTANGULAR GLASS TYPE — ALUMINIZED SCREEN
LOW-VOLTAGE FOCUS — MAGNETIC DEFLECTION

DATA

General:

Heater, for Unipotential Cathode:		
Voltage	6.3	ac or dc volts
Current	0.6 ± 10%	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	1000 max. 600 min.	μμf μμf
Faceplate, Spherical		Filterglass
Light transmission (Approx.)		74%
Phosphor (For Curves, see front of this Section)		P4—Sulfide Type Aluminized
Fluorescence		White
Phosphorescence		White
Persistence		Short
Focusing Method		Electrostatic
Deflection Method		Magnetic
Deflection Angles (Approx.):		
Diagonal		70°
Horizontal		65°
Vertical		50°
Electron Gun		Ion-Trap Type Requiring External Single-Field Magnet
Tube Dimensions:		
Overall length		16-5/32" ± 3/8"
Greatest width		12-17/32" ± 1/8"
Greatest height		9-23/32" ± 1/8"
Diagonal		13-11/16" ± 1/8"
Neck length		6-7/8" ± 3/16"
Screen Dimensions (Minimum):		
Greatest width		11-1/2"
Greatest height		8-5/8"
Diagonal		12-3/4"
Projected area		96 sq. in.
Weight (Approx.)		10 lbs
Operating Position		Any
Cap		Recessed Small Cavity (JETEC No.J1-21)
Bulb		J109-1/2
Base		Small-Shell Duodecal 6-Pin (JETEC No.B6-63)
Basing Designation for BOTTOM VIEW		12L

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 - Ultor (Grid No.3, Grid No.5, Collector)
C - External Conductive Coating

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14QP4-A
PICTURE TUBE

Maximum Ratings, *Design-Center Values:*

ULTOR VOLTAGE	11000 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 peak value	160 max.	volts
Negative bias value	180 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:

With any ultor voltage (E_{c_5k}) between 8000# and 11000 volts and grid-No.2 voltage (E_{c_2k}) between 200 and 500 volts

Grid-No.4 Voltage required for focus:
- Changes directly with E_{c_5k} at the rate of approximately 30 volts for each 1000-volt change in E_{c_5k}.
- Changes inversely with E_{c_5k} at the rate of approximately 10 volts for each 100-volt change in E_{c_2k}.
- Changes inversely with ultor current at the rate of approximately 25 volts for each 50-μa change in ultor current.
- For typical values, *see Examples of Use of Design Ranges.*

Grid-No.1 Voltage (E_{c_1k}) for visual extinction of focused raster	*See Raster-Cutoff-Range Chart*	
Grid-No.1 Video Drive from Raster Cutoff (Black Level): White-level value (Peak positive)	Same value as determined for E_{c_1k} except video drive is a positive voltage	
Grid-No.4 Current	-25 to +25	μa
Grid-No.2 Current	-15 to +15	μa
Ion-Trap Magnet Current (Average)**	$\sqrt{E_{c_5k}/11000} \times 27$	ma
Minimum Field Strength of PM Ion-Trap Magnet§	$\sqrt{E_{c_5k}/11000} \times 30$	gausses
Field Strength of Adjustable Centering Magnet*	0 to 8	gausses

#,**,§,*: See next page.

14QP4-A

PICTURE TUBE

Examples of Use of Design Ranges:

With ultor voltage of	*10000*	*volts*
and grid-No.2 voltage of	*300*	*volts*
Grid-No.4 Voltage for focus with ultor current of 100 μa.	−15 to +285	volts
Grid-No.1 Voltage for visual extinction of focused raster	−29 to −77	volts
Grid-No.1 Video Drive from Raster Cutoff (Black Level): White-level value.	29 to 77	volts
Minimum Field Strength of PM Ion-Trap Magnet	29	gausses

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 8000 volts.

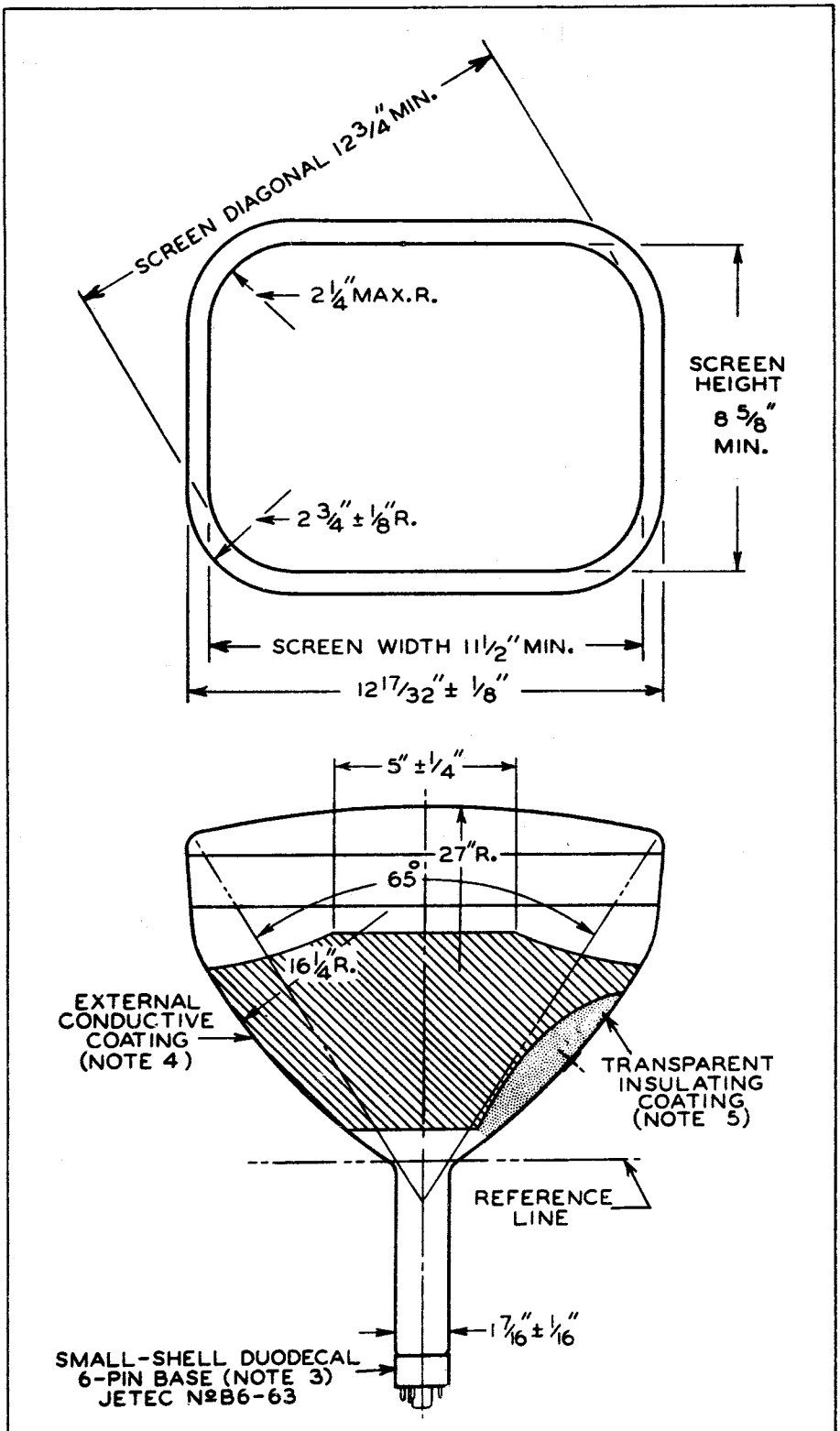
** For JETEC Ion-Trap Magnet No.117, or equivalent, located with the trailing edge of the pole pieces located over the gap between grid No.1 and grid No.2 and rotated to give maximum brightness.

§ For specimen PM ion-trap magnet, such as Heppner Model No.E437 or equivalent, located in optimum position and rotated to give maximum brightness. For a given equipment application, the tolerance range for the strength of the PM ion-trap magnet should be added to the minimum value. The maximum strength of this magnet should not exceed the specified minimum value by more than 6 gausses. This procedure will insure use of a PM ion-trap magnet allowing adequate adjustment to permit satisfactory performance without loss of high-light brightness.

* Distance from *Reference Line* for suitable PM centering magnet should not exceed 2-1/2". Excluding extraneous fields, the center of the undeflected focused spot will fall within a circle having 1/4-inch radius concentric with the center of the tube face. It is to be noted that the earth's magnetic field can cause as much as 7/16-inch deflection of the spot from the center of the tube face.

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

14QP4-A
PICTURE TUBE



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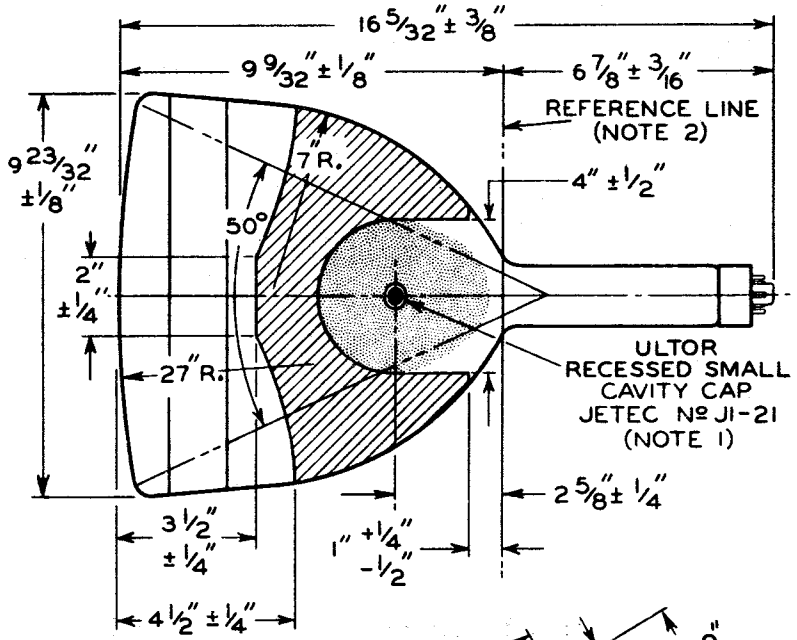
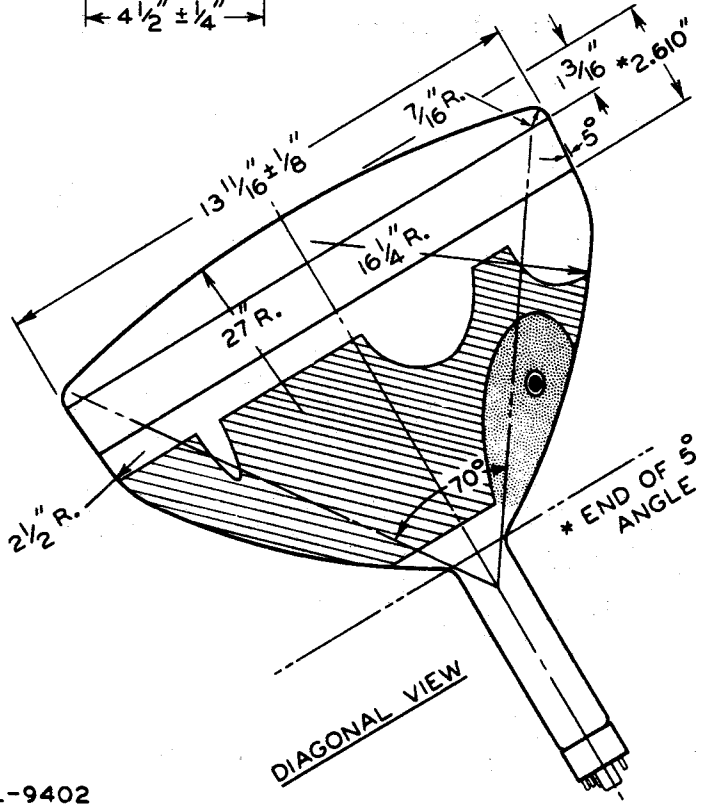
14QP4-A

PICTURE TUBE





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14QP4-A

14QP4-A
PICTURE TUBE

NOTE 1: THE PLANE THROUGH THE TUBE AXIS AND PIN 6 MAY VARY FROM THE PLANE THROUGH THE TUBE AXIS AND ULTOR TERMINAL BY ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF ± 30°. ULTOR TERMINAL IS ON SAME SIDE AS PIN 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 2-1/2".

NOTE 4: EXTERNAL CONDUCTIVE COATING MUST BE GROUNDED.

NOTE 5: TO CLEAN THIS AREA, WIPE ONLY WITH SOFT DRY LINT-LESS CLOTH.

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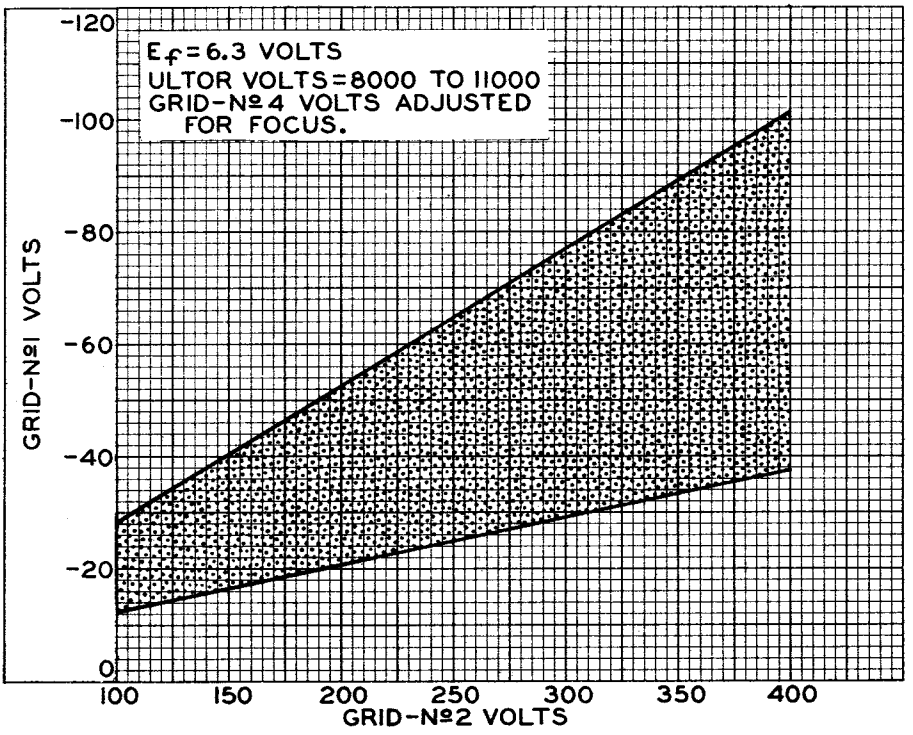
RASTER-CUTOFF-RANGE CHART



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