



19AP4 - B KINESCOPE

19AP4-B

METAL-CONE ENVELOPE

MAGNETIC FOCUS

MAGNETIC DEFLECTION

Supersedes Type 19AP4-A

DATA

General:

Heater, for Unipotential Cathode:

Voltage. 6.3 ac or dc volts
Current. 0.6 amp

Direct Interelectrode Capacitances (Approx.):

Grid No.1 to All Other Electrodes. 7 μf
Cathode to All Other Electrodes. 5 μf

Face Plate. Frosted RCA "Filterglass"

Phosphor (For Curves, see front of this Section) No.4-Sulfide Type
Fluorescence and Phosphorescence White

Persistence of Phosphorescence. Medium

Focusing Method. Magnetic

Deflection Method. Magnetic

Deflection Angle (Approx.) 66°

Ion-Trap Gun Requires External Single-Field Magnet

Overall Length $21\text{-}1/2" \pm 1/2"$

Greatest Diameter of Envelope. $18\text{-}5/8" \pm 1/8"$

Screen Diameter. $17\text{-}3/8"$

Mounting Position. Any

Anode Terminal Metal-Cone Lip

Base Small-Shell Duodecal 5-Pin

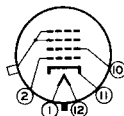
Basing Designation for BOTTOM VIEW 12D₁

Pin 1-Heater

Pin 2-Grid No.1

Pin 10-Grid No.2

Pin 11-Cathode



Pin 12-Heater

Metal-Cone Lip:

Anode,

Grid No.3

Maximum Ratings, Design-Center Values:

ANODE[□] VOLTAGE[●]. 19000 max. volts

GRID-No.2 VOLTAGE. 410 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 150 max. volts

Heater positive with respect to cathode. 150 max. volts

□ Anode and grid No.3, which are connected together within tube, are referred to herein as anode.

● The product of anode voltage and average anode current should be limited to 6 watts.

▲ Has transmission of about 65%.

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Typical Operation:

Anode Voltage*	12000	14000	volts
Grid-No.2 Voltage.	300	300	volts
Grid-No.1 Voltage for Visual Extinction of Undelected Focused Spot	-33 to -77	-33 to -77	volts
Focusing-Coil Current (DC, Approx.) [■]	140	150	ma
Ion-Trap Magnet Current (DC, Approx.) [#]	75	80	ma
Field Strength of Single-Field, Ion-Trap Magnet (Approx.) [†]	45	50	gausses

Maximum Circuit Values:

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

Minimum Circuit Values:

The power supply should be of the limited-energy type with inherent regulation to limit the continuous short-circuit current to 5 ma. If the supply permits the instantaneous short-circuit current to exceed 1 ampere, or is capable of storing more than 250 microcoulombs, the effective resistance in circuit between indicated electrode and the output capacitor should be as follows:

Grid-No.1 - Circuit Resistance.	150 min.	ohms
Grid-No.2 - Circuit Resistance.	470 min.	ohms
Anode - Circuit Resistance	22000 min.	ohms

The resistors used should be capable of withstanding the applied voltage.

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

■ For JETEC Focusing Coil No.106, or equivalent, positioned with air gap toward kinescope screen, and center line of air gap about 3 inches from Reference Line (see Outline Drawing). The indicated currents are for the condition with the combined grid-No.1 bias voltage and video-signal voltage adjusted to produce a highlight brightness of 18 foot-lamberts for 12000 volts, or 22 foot-lamberts for 14000 volts, on a 15-5/8" x 11-3/4" picture area.

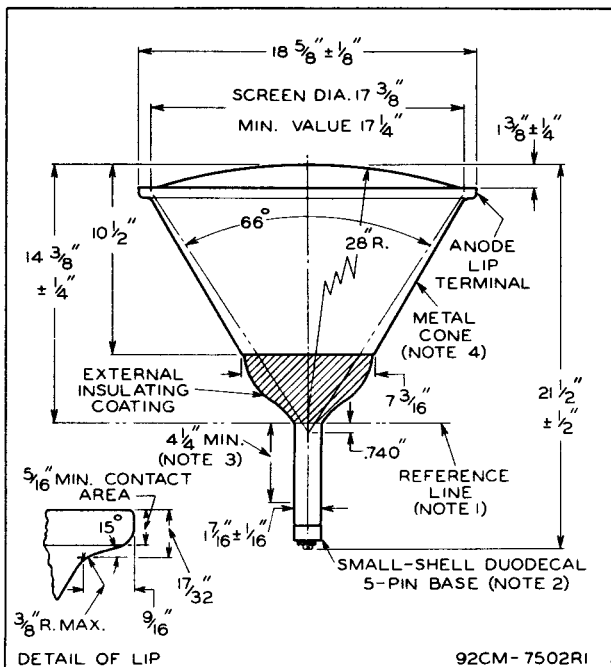
For JETEC Ion-Trap Magnet No.111, or equivalent, located in optimum position and rotated to give maximum brightness.

† Measured at center of field with General Electric Gauss Meter, Cat. No. 409X51.



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NOTE 1: REFERENCE LINE IS DETERMINED BY POSITION WHERE HINGED GAUGE 1.500" + .003" - .000" I.D. AND 2" LONG WILL REST ON CONE.

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 CIRCLE CONCENTRIC WITH CONE AXIS AND HAVING DIAMETER OF 3".

NOTE 3: LOCATION OF DEFLECTING YOKE AND FOCUSING COIL MUST BE WITHIN THIS SPACE.

NOTE 4: METAL CONE AND GLASS FACE OPERATE AT HIGH VOLTAGE. ANY MATERIAL IN CONTACT WITH THE CONE OR THE FACE MUST HAVE INSULATING PROPERTIES ADEQUATE TO WITHSTAND THE APPLIED ANODE VOLTAGE PLUS 10%.

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AVERAGE GRID-DRIVE CHARACTERISTICS

$E_f = 6.3$ VOLTS

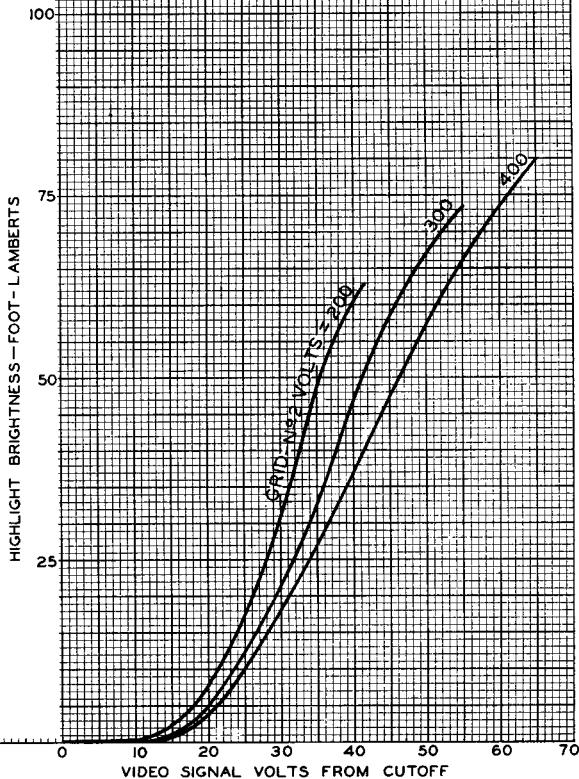
ANODE VOLTS = 14000

GRID No 1 BIASED TO CUTOFF OF

UNDEFLECTED FOCUSED SPOT

RASTER SIZE = $15\frac{5}{8} \times 11\frac{3}{4}$ " (FOCUSED

FOR AVERAGE BRIGHTNESS)



JULY 5, 1950

TUBE DEPARTMENT

92CM-7508

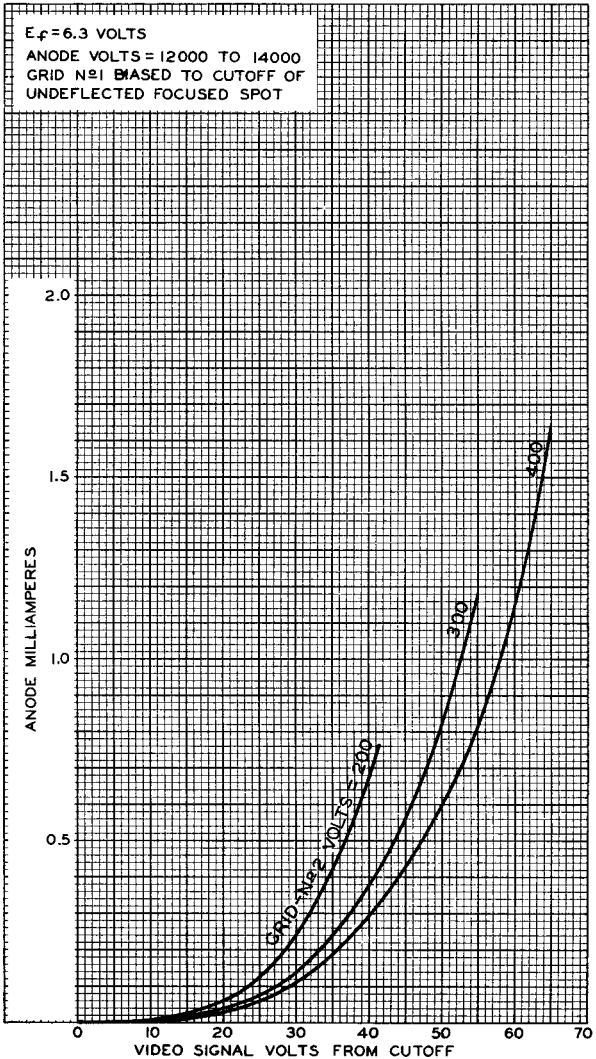
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY



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AVERAGE GRID-DRIVE CHARACTERISTICS



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RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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