# 3KP4
# KINESCOPE

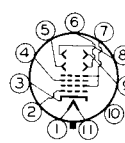
ELECTROSTATIC FOCUS ELECTROSTATIC DEFLECTION

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 | 8 | μμf |
| Cathode to All Other Electrodes | 5 | μμf |
| $DJ_1$ to $DJ_2$ | 2.5 | μμf |
| $DJ_3$ to $DJ_4$ | 2.5 | μμf |
| $DJ_1$ to All Other Electrodes | 11 | μμf |
| $DJ_2$ to All Other Electrodes | 8 | μμf |
| $DJ_3$ to All Other Electrodes | 7 | μμf |
| $DJ_4$ to All Other Electrodes | 8 | μμf |
| Phosphor (For Curves, see front of this Section) | | No.4 |
| Fluorescence and Phosphorescence | | White |
| Persistence of Phosphorescence | | Medium |
| Focusing Method | | Electrostatic |
| Deflection Method | | Electrostatic |
| Overall Length | | 11-1/2" ± 1/4" |
| Greatest Diameter of Bulb | | 3" ± 1/16" |
| Minimum Useful Screen Diameter | | 2-3/4" |
| Raster Size (Approx.) | | 1-7/8" x 2-1/2" |
| Mounting Position | | Any |
| Base | | Medium-Shell Magnal 11-Pin |
| Basing Designation for BOTTOM VIEW | | 11M |

Pin 1 – Heater
Pin 2 – Grid No.1
Pin 3 – Cathode
Pin 4 – Anode No.1
Pin 5 – Deflecting Electrode $DJ_3$
Pin 6 – Deflecting Electrode $DJ_4$




Pin 7 – Anode No.2, Grid No.2
Pin 8 – Deflecting Electrode $DJ_2$
Pin 9 – Deflecting Electrode $DJ_1$
Pin 10 – Internal Connection-Do Not Use
Pin 11 – Heater

*$DJ_1$ and $DJ_2$ are nearer the screen*

*$DJ_3$ and $DJ_4$ are nearer the base*

With $DJ_1$ positive with respect to $DJ_2$, the spot is deflected toward pin 4. With $DJ_3$ positive with respect to $DJ_4$, the spot is deflected toward pin 1.

The angle between the trace produced by $DJ_3$ and $DJ_4$ and its intersection with the plane through the tube axis and pin 1 does not exceed 10°.

The angle between the trace produced by $DJ_3$ and $DJ_4$ and the trace produced by $DJ_1$ and $DJ_2$ is 90° ± 3°.

3KP4

# 3KP4
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**Maximum Ratings,** *Design-Center Values:*

| | | |
|---|---|---|
| ANODE-No.2 VOLTAGE■ | 2500 max. | volts |
| ANODE-No.1 VOLTAGE | 1000 max. | volts |
| GRID-No.1 (CONTROL ELECTRODE) VOLTAGE: | | |
| Negative bias value | 200 max. | volts |
| Positive bias value | 0 max. | volts |
| Positive peak value | 2 max. | volts |
| PEAK VOLTAGE BETWEEN ANODE No.2 AND ANY DEFLECTING ELECTRODE | 500 max. | volts |
| PEAK HEATER-CATHODE VOLTAGE: | | |
| Heater negative with respect to cathode: | 125 max. | volts |
| Heater positive with respect to cathode. | 125 max. | volts |

**Equipment Design Ranges:**

*For any anode-No.2 voltage ($Eb_2$) between 1500* and 2500 volts*

| | | |
|---|---|---|
| Anode-No.1 Voltage for Focus□ | 16% to 30% of $E_{b_2}$ | volts |
| Grid-No.1 Voltage for Visual Cutoff | 1.9% to 4.5% of $E_{b_2}$ | volts |
| Anode-No.1 Current for Any Operating Condition | −15 to +10 | μamp |
| Deflection Factors: | | |
| $DJ_1$ & $DJ_2$ | 50 to 68 v dc/in./kv of $E_{b_2}$ | |
| $DJ_3$ & $DJ_4$ | 38 to 52 v dc/in./kv of $E_{b_2}$ | |
| Spot Position | ⊕ | |

**Examples of Use of Design Ranges:**

*For anode-No.2 voltage of 2000 volts*

| | | |
|---|---|---|
| Anode-No.1 Voltage□ | 320 to 600 | volts |
| Grid-No.1 Voltage for Visual Cutoff | −38 to −90 | volts |
| Deflection Factors: | | |
| $DJ_1$ & $DJ_2$ | 100 to 136 | volts dc/in. |
| $DJ_3$ & $DJ_4$ | 76 to 104 | volts dc/in. |

**Maximum Circuit Values:**

| | | |
|---|---|---|
| Grid-No.1-Circuit Resistance | 1.5 max. | megohms |
| Resistance in Any Deflecting Electrode Circuit○ | 5 max. | megohms |

**Minimum Circuit Values:**

When the output capacitor of the power supply is capable of storing more than 250 microcoulombs, and when the inherent regulation of the power supply permits the instantaneous short-circuit current to exceed 1 ampere, the effective resistance in circuit between indicated electrode and the output capacitor should be as follows:

| | | |
|---|---|---|
| Grid-No.1-Circuit Resistance | 220 min. | ohms |
| Anode-No.1-Circuit Resistance | 1100 min. | ohms |
| Anode-No.2-Circuit Resistance | 3000 min. | ohms |

■, *, □, ⊕, ○: See next page.

# 3KP4
# KINESCOPE

The resistors should be capable of withstanding the applied voltage.

■ Anode No. 2 and grid No. 2 which are connected together within tube are referred to herein as anode No. 2.

* Brilliance and definition decrease with decreasing anode-No. 2 voltage.

□ With the combined grid-No. 1-bias voltage and video-signal voltage adjusted for a highlight brightness of 2 foot-lamberts on a 1-7/8"x2-1/2" picture area.

⊕ With 1500 volts on anode No. 2, grid-No. 1 bias adjusted so that spot is just visible, and no deflection, the center of the spot will fall within a circle having 7.5-mm radius concentric with the center of the tube face.

○ It is recommended that the deflecting-electrode-circuit resistances be approximately equal.

OUTLINE DIMENSIONS for Type 3KP4
are the same as those shown for Type 3KP1

RCA

# 3KP4

## AVERAGE CHARACTERISTICS