

DU MONT

CATHODE-RAY TUBES

Types 5MP1, 5MP4, 5MP5

(Formerly designated as Types 2505A5, 2505D5, 2505C5)

The Type 5MP cathode-ray tubes are designed for oscillographic and other applications where simplicity of the equipment is of paramount importance. A small bright spot is obtained at low

accelerating voltage and without balanced deflection. The three types differ only in the characteristics of the fluorescent screens.

CHARACTERISTICS

HEATER

Voltage, a.c. or d.c.

2.5 volts

Current

2.1 amperes

DEFLECTION

Electrostatic

FOCUS

Electrostatic

SCREEN

Phosphor
Fluorescence
Persistence

5MP1

5MP4

5MP5

P1

P4

P5

Green

White

Blue

Medium

Medium

Short

MECHANICAL CHARACTERISTICS

Overall Length

15 7/8" $\pm 3/8$ "

Maximum Diameter

5 5/16" $\pm 1/16$ "

Bulb

C42 1/2 Y1C

Base

Large 7 pin

Basing

RMA Basing Designation

7AN

The basing is such that:

1. The direction of the trace produced on the screen by deflecting electrodes D_1 and D_2 will not deviate more than $\pm 10^\circ$ from a plane through pin No. 4 and the axis of the tube; while the angle between the direction of this trace and that of the trace produced on the screen by deflecting electrodes D_3 and D_4 will be $90^\circ \pm 3^\circ$.
2. With deflecting electrode D_1 (pin No. 5) positive with respect to D_2 (pin No. 6) the spot will be deflected approximately toward pin No. 4; while with deflecting electrode D_3 (pin No. 3) positive with respect to D_4 (pin No. 6) the spot will be deflected approximately toward pin No. 2.

DIRECT INTERELECTRODE CAPACITANCES (NOMINAL)

Control electrode (grid) to all other electrodes

7.5 uuf

Deflecting Plate D_1 to all other electrodes

6.5 uuf

Deflecting Plate D_3 to all other electrodes

6.0 uuf

RATINGS

Heater voltage

2.5 volts

Heater current

2.1 ± 0.3 amp.

Anode #2 (Accelerating Electrode) voltage (E_{b2})

1500 volts (max.)

Anode #1 (Focusing Electrode) voltage (E_{b1})

1000 volts (max.)

Grid (control electrode) voltage (E_{c1})

Never positive

Peak voltage between Anode #2 and any deflecting electrode

600 volts (max.)

Grid circuit resistance

1.5 meg. (max.)

Impedance of any deflecting electrode circuit

1.0 meg. (max.)

at heater supply frequency

TYPICAL OPERATION

Heater voltage	2.5	2.5 volts
Anode #2 voltage (E_{b2})	1000	1500 volts
Anode #1 voltage (E_{b1}) for focus when E_{c1} is 75% of cut-off value	250	375 volts $\pm 20\%$
Range of E_{b1} to focus with values of E_{c1} between 0 and cut-off	250	375 volts $+25\%$, -30%
Grid voltage (E_{c1}) for beam cut-off	-33	-50 volts $\pm 50\%$
Anode #1 current, I_{b1} , at $E_{c1} = 0$ and E_{b1} adjusted for focus		1330 microamp. max.

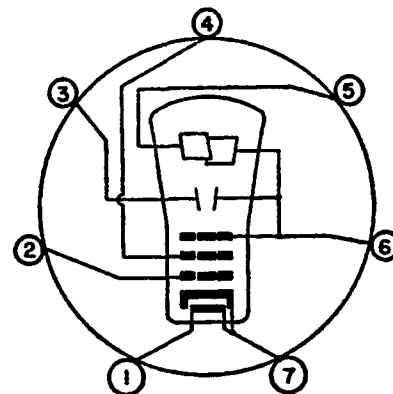
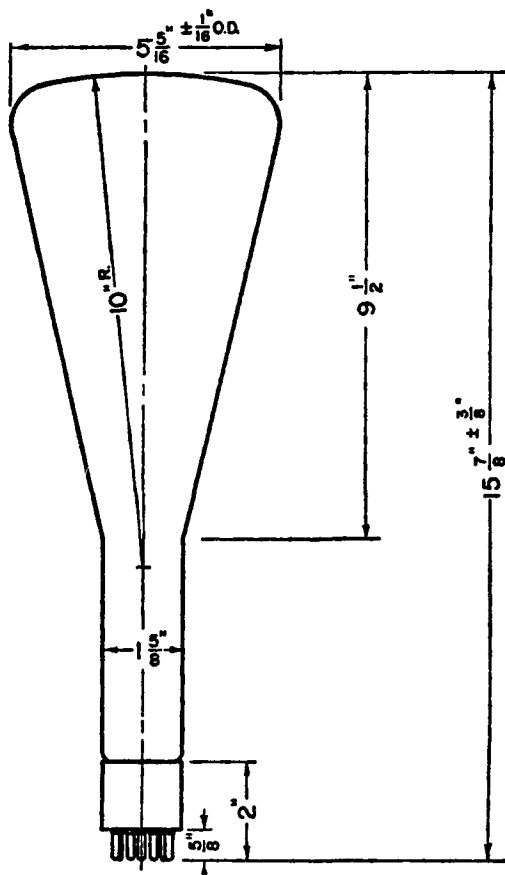
DEFLECTION

	FACTOR	SENSITIVITY
D_1D_2	44 d.c. volts/kv. in. $\pm 20\%$	0.58 mm. kv./d.c. volt (av.)
D_3D_4	40 d.c. volts/kv. in. $\pm 20\%$	0.64 mm. kv./d.c. volt (av.)

SPOT POSITION

When the tube is operated at (1) normal heater voltage; (2) $E_{b2} = 1500$ volts; (3) E_{b1} adjusted for focus; (4) E_{c1} set at such a value as will avoid damage to the screen; (5) with each of the deflecting electrodes connected to anode #2 through a one megohm resistor; and (6) with the tube shielded against external influences:

The spot will fall within a 30 mm. square, the center of which coincides with the geometric center of the tube face, and the sides of which are parallel to the traces produced by deflecting electrodes D_1 and D_2 and by deflecting electrodes D_3 and D_4 respectively.



Bottom View of Base

- Pin # 1 Heater
 2 Control Electrode
 3 Deflection Plate D_3
 4 Focusing Electrode
 5 Deflection Plate D_1
 6 Accelerating Electrode
 Deflection Plates D_2 & D_4
 7 Heater & Cathode

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