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R.M.A. REGISTRATION FEE

DU MONT
CATHODE-RAY TUBES
Types 3GP1, 3GP4, 3GP5

The Type 3GP Cathode-Ray Tubes are designed for oscillographic and other applications where small spot size, a brilliant trace, and a minimum of defocusing with deflection are required. The three types differ only in the characteristics of the fluorescent screens.

CHARACTERISTICS

HEATER			
Voltage, a.c. or d.c.		6.3 volts	
Current		0.6 ampere	
DEFLECTION		Electrostatic	
FOCUS		Electrostatic	
SCREEN	3GP1	3GP4	3GP5
Phosphor	P1	P4	P5
Fluorescence	Green	White	Blue
Persistence	Medium	Medium	Short

MECHANICAL CHARACTERISTICS

Overall Length	11½" ±⅜"
Maximum Diameter	3" $\pm\frac{1}{16}$"
Bulb	C24W1C
Base	*Medium magnal*
Basing RMA Basing Designation	11A

The basing is such that:

1. The direction of the trace produced in the screen by deflecting electrodes D_3 and D_4 will not deviate more than ±10° from a plane through pin No. 1 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_1 and D_2 will be 90° ±3°.
2. With deflection electrode D_3 (pin No. 9) positive with respect to D_4 (pin No. 6) the spot will be deflected approximately toward pin No. 1; while with deflection electrode D_1 (pin No. 3) positive with respect to D_2 (pin No. 8) the spot will be deflected approximately toward pin No. 4.

DIRECT INTERELECTRODE CAPACITANCES

Control Electrode (grid) to all other electrodes	8.9 uuf
Deflection Plate D_1 to Deflection Plate D_2	1.6 uuf
Deflection Plate D_3 to Deflection Plate D_4	1.2 uuf
D_1 to all other electrodes	11.7 uuf
D_3 to all other electrodes	6.9 uuf
D_1 to all other electrodes except D_2	10.1 uuf
D_2 to all other electrodes except D_1	10.2 uuf
D_3 to all other electrodes except D_4	5.7 uuf
D_4 to all other electrodes except D_3	5.8 uuf

RATINGS

Heater voltage	6.3 volts
Heater current	0.6 amp. ±10%
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 plate	500 volts (max.)
Grid circuit resistance	1.5 megohms (max.)
Impedance of any deflecting electrode circuit at heater supply frequency	1.0 megohms (max.)

TYPICAL OPERATION

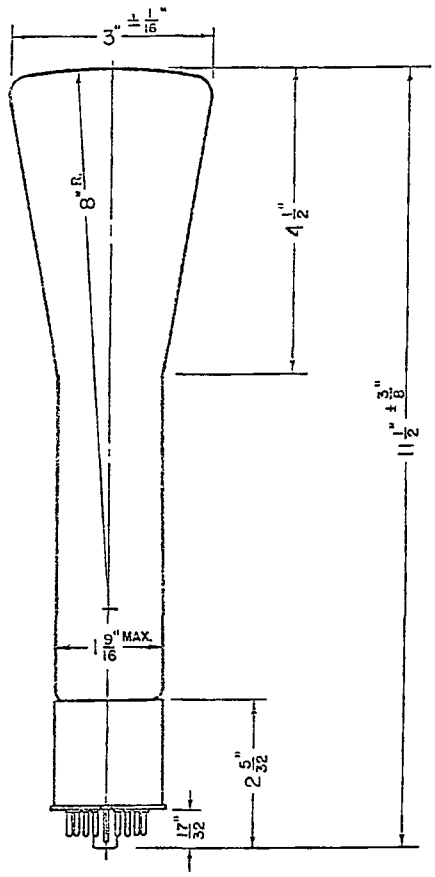
Heater voltage	6.3	6.3	volts
Anode #2 voltage (E_{b2})	1000	1500	volts
Anode #1 voltage (E_{b1}) for focus when E_{c1} = 75% of cut-off value	234	350	volts ±20%
Range of E_{b1} to focus with values of E_{c1} between 0 and cut-off	234	350	volts +25%, —30%
Grid voltage (E_{c1}) for beam cut-off	33	50	volts ±50%
Anode #1 current, I_{b1}, at E_{c1} = 0; E_{b1} adjusted for focus		1330	microamp. max.

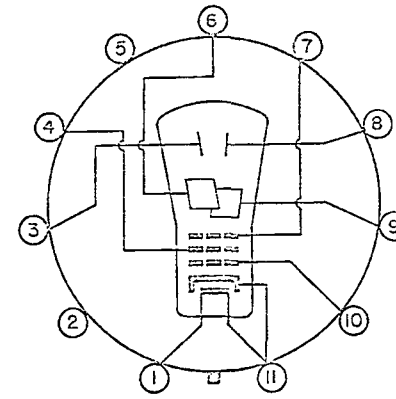
DEFLECTION	FACTOR	SENSITIVITY
D_1D_2	80 d.c. volts/kv. in. ±20%	0.32 mm. kv./d.c. volt (av.)
D_3D_4	70 d.c. volts/kv. in. ±20%	0.36 mm. kv./d.c. volt (av.)

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 with (5) 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 15 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 deflection electrodes D_1 and D_2 and by deflection electrodes D_3 and D_4 respectively.





Bottom View of Base

Pin #1	Heater
2	No Connection
3	Deflection Plate D_1
4	Focusing Electrode
5	No Connection
6	Deflection Plate D_4
7	Accelerating Electrode
8	Deflection Plate D_2
9	Deflection Plate D_3
10	Control Electrode
11	Heater-Cathode

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