



ENGINEERING DATA

RAYONIC
3MP1
3MP2
3MP7
3MP11

RAYONIC® 3MP1 CATHODE RAY TUBE

GENERAL DATA

Focusing Method	Electrostatic
Deflecting Method	Electrostatic
Phosphor Number	P1
Fluorescent Color	Green
Phosphorescent Color	None
Persistence	Medium
Mounting Position	Any

ELECTRICAL DATA

Heater Voltage	6.3 Volts
Heater Current	0.6 ±10% Amperes
Direct Interelectrode Capacitances (approx.)	
Cathode to all other electrodes	7.5 μmf
Grid #1 to all other electrodes	8.0 μmf
D1 to D2	4.6 μmf
D3 to D4	5.6 μmf
D1 to all other electrodes	6.4 μmf
D2 to all other electrodes	6.0 μmf
D3 to all other electrodes	8.0 μmf
D4 to all other electrodes	7.4 μmf

MECHANICAL DATA

Overall Length	8 ± ¼ Inches
Greatest Diameter of Bulb	3 ± 1/16 Inches
Minimum Useful Screen Diameter	2¾ Inches
Bulb Number	ASA J24P
Base-Small Shell Duodecal	JETEC B12-43
Basing	JETEC 12F
Base Alignment	
D1D2 trace aligns with pin #4 and tube axis 0 ± 10 Degrees	
Positive voltage on D1 deflects beam approximately toward pin #4	
Positive voltage on D3 deflects beam approximately toward pin #1	
Angle between D3D4 and D1D2 traces; 90 ± 1 Degrees	

Deflection Plates

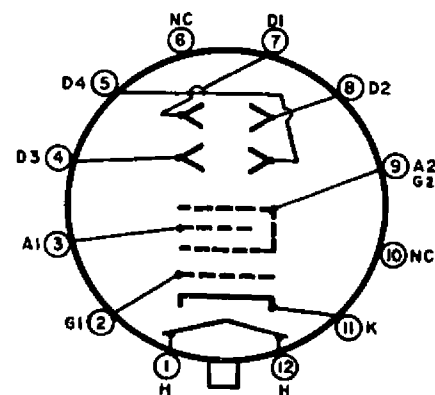
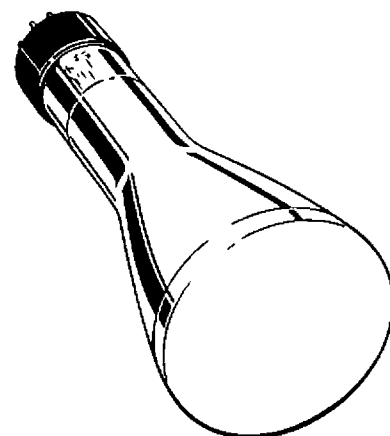
- D1-D2 are nearest to the screen
- D3-D4 are nearest to the base

MAXIMUM RATINGS (Design Center Values)

Anode Voltage (A2)	2750 Volts DC
Anode (A2) Input	6 Watts
Anode #1 (Focusing Electrode) Voltage	1000 Volts
Grid #1 (G1) Voltage	
Negative-Bias Value	200 Volts DC
Positive-Bias Value	0 Volts DC
Positive-Peak Value	2 Volts
Peak Heater-Cathode Voltage	
Heater negative with respect to cathode	
during warm-up (max. 15 seconds)	410 Volts
after equipment warm-up	125 Volts
Heater positive with respect to cathode	125 Volts
Peak Voltage between Anode #2 and any deflecting plate	500 Volts

QUICK REFERENCE DATA

OSCILLOSCOPE TUBE
 FACE—3" ROUND
 DEFLECTION SENSITIVITY—MODERATE
 LENGTH—SHORT
 MONOACCELERATOR
 FACE PLATE—CLEAR, SPHERICAL
 DEFLECTION—ELECTROSTATIC
 FOCUSING—ELECTROSTATIC



12F

3MP1

TUBE RATINGS

Focusing Electrode (A1) Current for any operating condition -15 to +10 μ Amps
 Spot Position (Undelected) (Note 1) 15 Max. mm
 A1 Voltage 12% to 30% of A2 Voltage
 G1 Voltage 2.7% to 6.3% of A2 Voltage (Note 2)
 Deflection Factors
 D1 and D2 115 to 145 Volts DC/inch/A2 Kilovolt
 D3 and D4 110 to 140 Volts DC/inch/A2 Kilovolt

OPERATING CONDITIONS

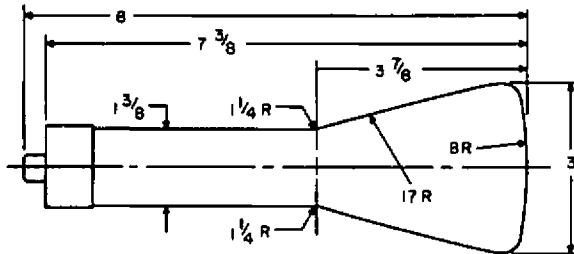
	Minimum	Typical	Typical	
Anode Voltage (A2)	500	1000	2000	Volts
Focusing Electrode Voltage (A1)	60 to 150	120 to 300	240 to 600	Volts
Grid #1 Voltage (Note 2)	-13.5 to -31.5	-27 to -63	-54 to -126	Volts
Deflection Factor D1-D2	57.5 to 72.5	115 to 145	230 to 290	Volts DC/Inch
Deflection Factor D3-D4	55 to 70	110 to 140	220 to 280	Volts DC/Inch

MAXIMUM CIRCUIT VALUES

Grid #1 Circuit Resistance 1.5 Megohms
 Resistance in any Deflecting Electrode Circuit (Note 3) 1.0 Megohms

NOTES

1. With deflecting electrodes connected to Anode (A2).
2. For visual extinction of undeflected focused spot.
3. The resistance in each deflecting electrode circuit should be approximately equal.



ALL DIMENSIONS IN INCHES
 ALL DIMENSIONS ARE NOMINAL

3MP2

The Waterman Rayonic Type 3MP2 is identical to the Type 3MP1 except that it has a green fluorescent, green phosphorescent, long persistence phosphor.

3MP7

The Waterman Rayonic Type 3MP7 is identical to the Type 3MP1 except that it has a blue fluorescent, yellow phosphorescent, long persistence phosphor. Use of 3MP7 at anode voltages below 1000 volts is not recommended.

3MP11

The Waterman Rayonic Type 3MP11 is identical to the Type 3MP1 except that it has a blue fluorescent, short persistence phosphor.

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Manufacturers of **POCKETSCOPE®**, **CRAFTSCOPE®**, **PULSESCOPE®**, **PANELSCOPE®**,
PANELPACK®, **RAKSCOPE®**, **SYSTEMAT®**, **RAYONIC® TUBES**

