



ENGINEERING DATA

RAYONIC
3XP1
3XP2
3XP7
3XP11

RAYONIC® 3XP1 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 $0.6 \pm 10\%$ Amperes
Direct Interelectrode Capacitances (approx.)
Cathode to all other electrodes $5.2 \mu\text{f}$
Grid #1 to all other electrodes $5.7 \mu\text{f}$
D1 to D2 $6.9 \mu\text{f}$
D3 to D4 $5.4 \mu\text{f}$
D1 to all other electrodes $7.0 \mu\text{f}$
D2 to all other electrodes $7.4 \mu\text{f}$
D3 to all other electrodes $8.0 \mu\text{f}$
D4 to all other electrodes $7.3 \mu\text{f}$

MECHANICAL DATA

Overall Length $8\frac{7}{8} \pm \frac{1}{8}$ Inches

Bulb Dimensions	Greatest Dim.	Min. Useful Screen	
Diagonal	$3\frac{1}{32} \pm \frac{1}{32}$	3	Inches
Width	$3 \pm \frac{3}{64}$	$2\frac{3}{4}$	Inches
Height	$1\frac{1}{32} \pm \frac{3}{64}$	$1\frac{1}{8}$	Inches

Base-Local JETEC D8-1

Basing See basing diagram

Base Alignment

- D1D2 trace aligns with pin #3 and tube axis 0 ± 10 Degrees
- Positive voltage on D1 deflects beam approximately toward pin #3
- Positive voltage on D3 deflects beam approximately toward pin #5
- Angle between D3D4 and D1D2 traces; 90 ± 1 Degrees

Trace Alignment

- Angle between trace and bulb wall $\pm 1\frac{1}{2}$ Degrees

Deflection Plates

- D1-D2 are nearest to the screen ($3''$ Dimension)
- D3-D4 are nearest to the base ($1\frac{1}{32}''$ Dimension)

MAXIMUM RATINGS (Design Center Values)

Anode Voltage (A2) 2750 Volts DC
Anode (A2) Input 6 Watts
Anode #1 (Focusing Electrode) Voltage 1100 Volts
Grid #1 (G1) Voltage
Negative-Bias Value 125 Volts DC
Positive-Bias Value 0 Volts DC
Positive-Peak Value 2 Volts
Peak voltage between Anode #2 and any deflecting plate 550 Volts

QUICK REFERENCE DATA

OSCILLOSCOPE TUBE

FACE— $1\frac{1}{2}'' \times 3''$

DEFLECTION SENSITIVITY—HIGH

LENGTH—SHORT

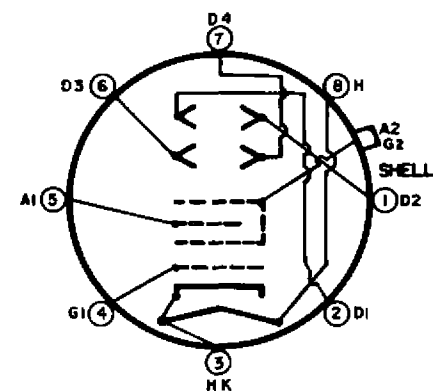
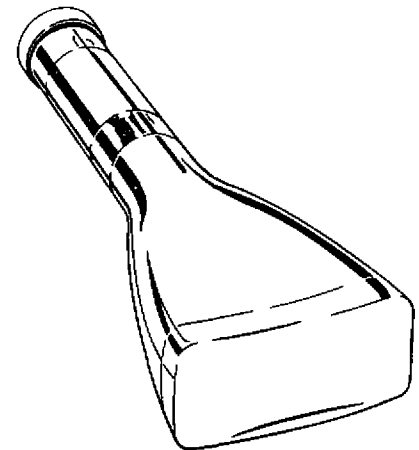
MONOACCELERATOR

FACE PLATE—CLEAR, CYLINDRICAL

DEFLECTION—ELECTROSTATIC

FOCUSING—ELECTROSTATIC

JAN APPROVED



TUBE RATINGS

Focusing Electrode (A1) current for any operating condition - 15 to +10 μ Amps
 Spot Position, Undelected (Note 1) 7.0 Max. mm
 Useful Scan
 D1D2 2¾ Inches
 D3D4 1½ Inches
 A1 Voltage 20% to 35% of A2 Voltage
 G1 Voltage 3.375 max% of A2 Voltage (Note 2)
 Deflection factors
 D1 and D2 (3" Dimension) 34 to 46 Volts DC/inch/A2 Kilovolts
 D3 and D4 (1½" Dimension) 14 to 19 Volts DC/inch/A2 Kilovolts

OPERATING CONDITIONS

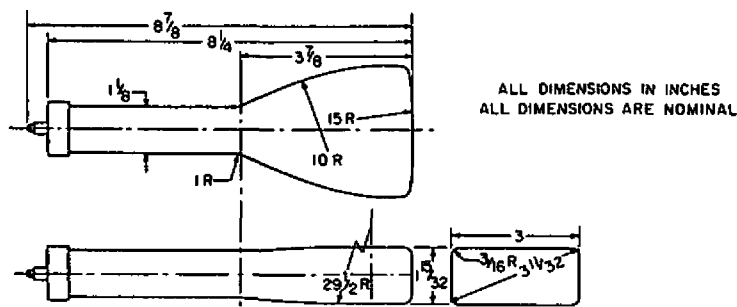
	Minimum	Typical	Typical	
Anode Voltage (A2)	1000	1500	2000	Volts
Focusing Electrode Voltage (A1)	200 to 350	300 to 525	400 to 700	Volts
Grid #1 Voltage (Note 2)	-34 max.	-51 max.	-67.5 max.	Volts
Deflection Factor D1-D2	34 to 46	51 to 69	68 to 92	Volts DC/Inch
Deflection Factor D3-D4	14 to 19	21 to 28.5	28 to 38	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.



3XP2

The Waterman Rayonic Type 3XP2 is identical to the type 3XP1 except that it has a green fluorescent, green phosphorescent, long persistence phosphor.

3XP7

The Waterman Rayonic Type 3XP7 is identical to the Type 3XP1 except that it has a blue fluorescent, yellow phosphorescent, long persistence phosphor.

3XP11

The Waterman Rayonic Type 3XP11 is identical to the Type 3XP1 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

