



TENTATIVE

ENGINEERING DATA

RAYONIC 3YP1 CATHODE RAY TUBE

RAYONIC

3YP1
3YP2
3YP7
3YP11

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 uuf
 Grid #1 to all other electrodes 5.9 uuf
 D1 to D2 4.6 uuf
 D3 to D4 5.0 uuf
 D1 to all other electrodes 7.0 uuf
 D2 to all other electrodes 6.4 uuf
 D3 to all other electrodes 6.8 uuf
 D4 to all other electrodes 6.4 uuf

MECHANICAL DATA

Overall Length $7.0 \pm 1/8$ Inches

Bulb Dimensions	Greatest Dim.	Min. Useful Screen	
Diagonal	$3\frac{11}{32} \pm \frac{1}{32}$	3	Inches
Width	$3 \pm \frac{3}{64}$	$2\frac{3}{4}$	Inches
Height	$1\frac{15}{32} \pm \frac{3}{64}$	$1\frac{1}{8}$	Inches

Base-Loctal JETEC D8-1
 Basing See basing diagram
 Base Alignment

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

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

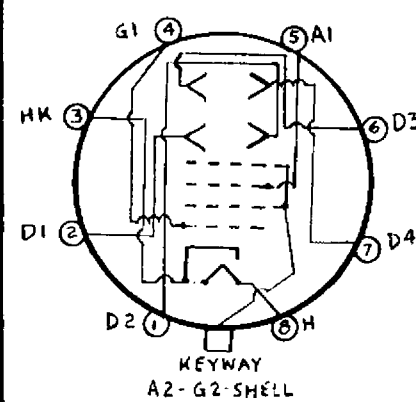
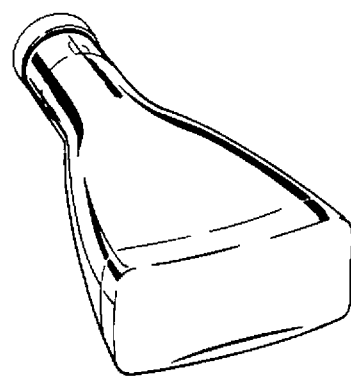
Deflection Plates
 D1-D2 are nearest to the base
 D3-D4 are nearest to the screen

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 DC
 Peak volts between Anode #2 and any deflecting plate 550 Volts

QUICK REFERENCE DATA

OSCILLOSCOPE TUBE
 FACE— $1\frac{1}{2}'' \times 3''$
 DEFLECTION SENSITIVITY—GOOD
 LENGTH—SHORT
 MONOACCELERATOR
 FACE PLATE—CLEAR, CYLINDRICAL
 FOCUSING—ELECTROSTATIC
 DEFLECTION—ELECTROSTATIC



3YP

TUBE RATINGS

Focusing Electrode (A1) current for any operating condition -50 to +10 uAmps
 Spot Position, Undelected 10.0 Max. mm
 Useful Scan
 D1D2 2 3/4 Inches
 D3D4 1 1/8 Inches
 A1 Voltage 18.5% to 34% of A2 Voltage
 G1 Voltage 2.8% to 6.7% of A2 Voltage (NOTE 2)
 Deflection factors
 D1 and D2 (3" Dimension) 68 to 92 Volts DC/inch/A2 Kilovolts
 D3 and D4 (1 15/32" Dimension) 44 to 60 Volts DC/inch/A2 Kilovolts

OPERATING CONDITIONS

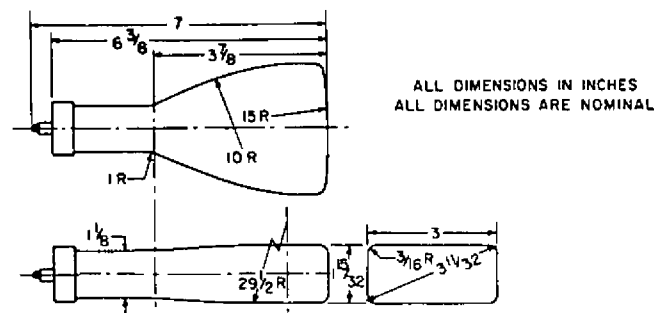
	Minimum	Typical	Typical	
Anode Voltage (A2)	500	1000	2000	Volts
Focusing Electrode Voltage (A1)	92.5 to 170	185 to 340	370 to 680	Volts
Grid #1 Voltage (Note 2)	-14 to -33.5	-28 to -67	-56 to -134	Volts
Deflection Factor D1-D2	34 to 46	68 to 92	136 to 184	Volts DC/Inch
Deflection Factor D3-D4	22 to 30	44 to 60	88 to 120	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.



3YP2

The Waterman Rayonic Type 3YP2 is identical to the Type 3YP1 except that it has a green fluorescent, green phosphorescent, long persistence phosphor.

3YP7

The Waterman Rayonic Type 3YP7 is identical to the Type 3YP1 except that it has a blue fluorescent, yellow phosphorescent, long persistence phosphor. Use of 3YP7 at anode voltages below 1000 volts is not recommended.

3YP11

The Waterman Rayonic Type 3YP11 is identical to the Type 3YP1 except that it has a blue fluorescent, short persistence phosphor.

WATERMAN PRODUCTS CO., INC.

Phone: GARfield 6-8600 Philadelphia 25, Penna., USA Cable Address, Poketscope, Phila.

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