



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

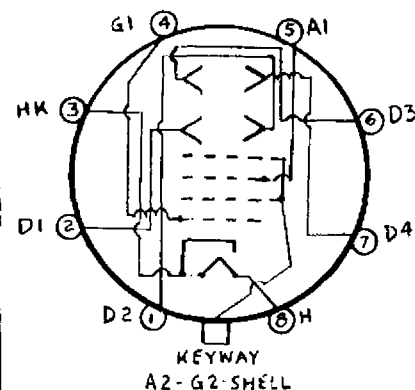
D1-D2 are nearest to the base
D3-D4 are nearest to the screen

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— $1\frac{1}{2}$ " x 3"
DEFLECTION SENSITIVITY—GOOD
LENGTH—SHORT
MONOACCELERATOR
FACE PLATE—CLEAR, CYLINDRICAL
FOCUSING—ELECTROSTATIC
DEFLECTION—ELECTROSTATIC



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

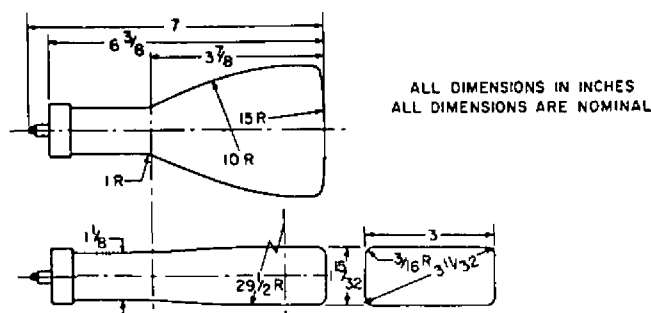
MAXIMUM CIRCUIT VALUES

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.

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