

DUMONT

CATHODE-RAY TUBE

TYPE 3AYP-

TENTATIVE

The DuMont 3AYP- is a 3 x 1 1/2-Inch rectangular face electrostatic deflection and focus cathode-ray tube, designed for small, light weight oscillograph applications. It features a pressed faceplate with uniform glass surface to reduce errors from parallax. A newly-designed gun structure is used for greater rigidity and improved electrical stability.

The 3AYP- is designed as a replacement for the 3XP-.

GENERAL CHARACTERISTICS

Electrical Data

Focusing Method		Electorstatic
Deflection Method		Electrostatic
Direct Interelectrode Capacitance (Approx.)		
Grid No. 1 to all other electrodes	5.7	μf
Cathode to all other electrodes	5.2	μf
D1 to D2	6.9	μf
D3 to D4	5.4	μf
D1 to all other electrodes	7.0	μf
D2 to all other electrodes	7.4	μf
D3 to all other electrodes	8.0	μf
D4 to all other electrodes	7.3	μf

Optical Data

Phosphor	1	2	7	11
Fluorescent Color	Green	Blue-Green	Blue-White	Blue
Phosphorescent Color	-----	Green	Yellow	---
Persistence	Medium	Long	Long	Short
Faceplate			Clear	

Mechanical Data

Overall Length	8.875 ± .125	Inches
Greatest Dimensions:		
Width	3.016 ± .031	Inches
Height	1.516	Max. Inches
Minimum Useful Screen Dimensions:		
Horizontal	2.750	Inches
Vertical	1.125	Inches
Base	D8-1	

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Mechanical Data (Cont'd)

Trace Alignment		
D1D2 trace aligns with bulb wall	± 1	Degree
Angle between D1D2 and D3D4 traces	90 ± 1	Degrees
Base Alignment:		
D1D2 trace aligns with tube axis and Pin No. 3	± 10	Degrees
Positive voltage on D1 deflects beam approximately toward Pin No. 3		
Positive voltage on D3 deflects beam approximately toward Pin No. 5		

MAXIMUM RATINGS (DESIGN CENTER VALUES)

Heater Voltage	6.3	Volts
Heater Current	$0.6 \pm 10\%$	Ampere
Accelerator Voltage	2750	Max. Volts DC
Accelerator Input	6	Max. Watts
Focusing Electrode Voltage	1100	Max. Volts DC
Grid No. 1 Voltage:		
Negative Bias Value	125	Max. Volts DC
Positive Bias Value	0	Max. Volts DC
Positive Peak Value	2	Max. Volts
Peak Voltage between accelerator and any deflection electrode	550	Max. Volts

TYPICAL OPERATING CONDITIONS

Accelerator Voltage	1000	2000	Volts DC
Focusing Electrode Voltage	200 to 350	400 to 700	Volts DC
Grid No. 1 Voltage ¹	-14.5 to -33.5	-28.5 to -67.5	Volts DC
Deflection Factors:			
D1D2	34 to 46	68 to 92	VDC/Inch
D3D4	14 to 19	28 to 38	VDC/Inch
Focusing Electrode Current for any operating conditions	-15 to $+10$		μ ADC
Spot Position ²	Within a 7		MM Radius Circle

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MAXIMUM CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5	Max. Megohms
Resistance In any Deflection Electrode Circuit ³	1.0	Max. Megohms

NOTES

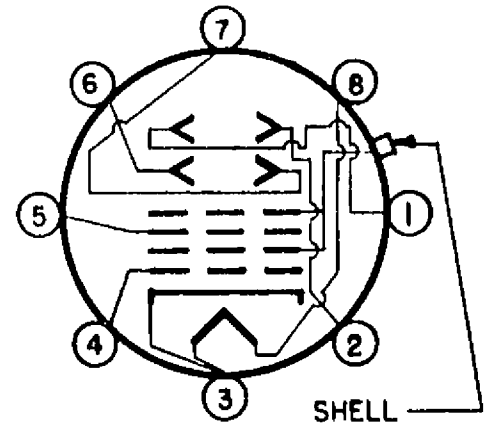
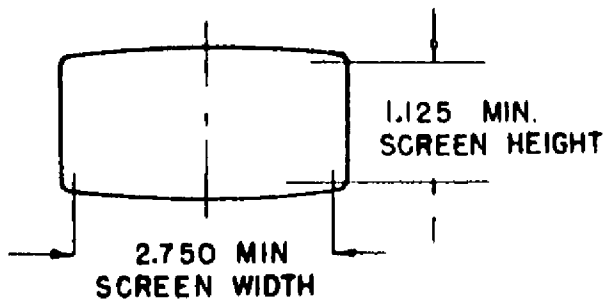
1. Visual extinction of the undeflected, focused spot.
2. When the tube is operated at typical operating conditions, with E_{c1} adjusted to avoid damage to the screen, and with each of the deflection electrodes connected to the accelerator, and the tube shielded against external influences, the spot will fall within a 7 mm radius circle, centered with respect to the tube center.
3. It is recommended that the deflection electrode circuit resistances be approximately equal.

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BOTTOM VIEW OF BASE

- | PIN NO. | ELEMENT |
|---------|-------------------------------------|
| 1 | DEFLECTING ELECTRODE D ₂ |
| 2 | DEFLECTING ELECTRODE D ₁ |
| 3 | HEATER & CATHODE |
| 4 | GRID NO. 1 |
| 5 | FOCUSING ELECTRODE |
| 6 | DEFLECTING ELECTRODE D ₃ |
| 7 | DEFLECTING ELECTRODE D ₄ |
| 8 | HEATER |
| SHELL | ACCELERATOR |

