

DuMONT

CATHODE-RAY TUBE

5AGP-

The DuMont Type 5AGP- is a 5-inch diameter, flat face, single beam, post accelerator, electrostatic deflection and focus cathode-ray tube designed for oscillographic applications. Deflection plate and accelerator leads are brought out through the neck for reduced capacitances.

GENERAL CHARACTERISTICS

Electrical Data

Deflection Method	Electrostatic	
Focusing Method	Electrostatic	
Direct Interelectrode Capacitances, Approx.		
Cathode to all other electrodes	4.1	$\mu\mu\text{f}$
Grid No. 1 to all other electrodes	4.9	$\mu\mu\text{f}$
D1 to D2	1.6	$\mu\mu\text{f}$
D3 to D4	1.1	$\mu\mu\text{f}$
D1 to all other electrodes except D2	2.2	$\mu\mu\text{f}$
D2 to all other electrodes except D1	2.3	$\mu\mu\text{f}$
D3 to all other electrodes except D4	1.6	$\mu\mu\text{f}$
D4 to all other electrodes except D3	1.6	$\mu\mu\text{f}$

Optical Data

Phosphor No.	1	2	7	11
Fluorescence	Green	Blue-Green	Blue	Blue
Phosphorescence	----	Green	Yellow	----
Persistence	Medium	Long	Long	Short
Faceplate			Flat, Clear	

Mechanical Data

Overall Length	16 3/4 $\pm$ 1/4	Inches
Greatest Bulb Diameter	5 1/4 $\pm$ 3/32	Inches
Minimum Useful Screen Diameter	4.5	Inches
Bulb Contact (Recessed Small Ball)	J1-22	
Neck Contacts (Small Ball)	J1-25	
Base (Medium Shell Diheptal 12-Pin)	B12-37	
Basing	14Q	
Base Alignment:		
D1D2 trace aligns with Pin No. 5 and Tube Axis $\pm$ 10		Degrees
Positive Voltage on D1 deflects beam approx. towards Pin No. 5		
Positive Voltage on D3 deflects beam approx. towards Pin No. 1		
Angle between D1D2 and D3D4 traces	90 $\pm$ 1	Degrees

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GENERAL CHARACTERISTICS (MECHANICAL DATA) (Continued)

Bulb Contact Alignment:		
J1-22 Contact aligns with D1D2 trace	± 10	Degrees
J1-22 Contact on same side as Pin No. 5		

RATINGS (ABSOLUTE MAXIMUM VALUES)

Heater Voltage	6.3	Volts
Heater Current at 6.3 Volts	$0.6 \pm 10\%$	Ampere
Post Accelerator Voltage	7,700	Max. Volts DC
Accelerator Voltage	3,850	Max. Volts DC
Accelerator Input	6	Max. Watts
Focusing Electrode Voltage	2,000	Max. Volts DC
Ratio Post Accelerator to Accelerator Voltage	2	Max.
Grid No. 1 Voltage		
Negative Bias Value	200	Max. Volts DC
Positive Bias Value	0	Max. Volts DC
Positive Peak Value	2	Max. Volts
Peak Heater to Cathode Voltage		
Heater Negative with respect to cathode	180	Max. Volts
Heater Positive with respect to cathode	180	Max. Volts
Peak Voltage between Accelerator and any Deflection Electrode	800	Max. Volts

TYPICAL OPERATING CONDITIONS

Post Accelerator Voltage	4,000	Volts DC
Accelerator Voltage	2,000	Volts DC
Focusing Electrode Voltage ¹	400 to 685	Volts DC
Grid No. 1 Voltage ²	-52 to -88	Volts DC
Modulation ³	35	Max. Volts DC
Line Width "A" ³	.022	Max. Inch
Spot Position ⁴	Within a 15 mm square	
Pattern Distortion ⁵		
Deflection Factors:		
D1D2	68 to 92	Volts DC/Inch
D3D4	59 to 81	Volts DC/Inch
Deflection Factor Uniformity ⁶	2%	Max.



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CIRCUIT DESIGN VALUES

Focusing Voltage	200 to 342 Volts per Kilovolt of Accelerator Voltage	
Focusing Current for any operating condition	-15 to +10	Microamperes
Grid No. 1 Voltage ²	-26 to -44 Volts per Kilovolt of Accelerator Voltage	
Grid No. 1 Circuit Resistance	1.5	Max. Megohms
Deflection Factors:		
Ratio Post Accelerator to Accelerator Voltage	2.0	
D1 and D2	34 to 46 Volts DC/Inch/KV of Accelerator Voltage	
D3 and D4	29.5 to 40.5 Volts DC/Inch/KV of Accelerator Voltage	
Resistance In any Deflecting-Electrode Circuit ⁷	5.0	Max. Megohms

NOTES

1. For any value of beam current.
2. Visual extinction of the undeflected, focused spot.
3. Measured In accordance with MIL-E-1 specifications with a beam current of 25 μ ADC.
4. With Ec1 adjusted to avoid damage to the screen, with each deflecting-electrode connected to the accelerator, and with the tube shielded, the undeflected spot will fall within a 15 mm square concentric with tube face.
5. With a raster pattern the size of which is adjusted so that the widest points of a pattern just touch the sides of a 3.075-inch square, no point on these pattern sides will lie within an inscribed 2.925-inch square.
6. The deflection factor (for both D1D2 and D3D4 plate pairs, separately) for any deflection of less than 75% of the useful scan will not differ from the deflection factor for a deflection at 25% of the useful screen by more than the indicated value.
7. It is recommended that the deflection-electrode circuit resistance be equal.

TL- 1108 -6

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