



CATHODE-RAY TUBE

TYPE 7AMP-

The Du Mont Type 7AMP- is a 7-inch diagonal, square face, two beam, electrostatic deflection and focus cathode-ray tube having improved deflection sensitivity, accuracy and extremely low interaction between traces. The use of a post accelerator with high maximum ratings permits high brightnesses and small spot sizes to be obtained. The deflection electrode and acceleration electrode connections are brought out through the bulb wall to minimize lead inductance and capacity and to improve insulation. The two second anodes and the shield, normally tied together, have separate connections for astigmatism control and special applications. A collar or ring base has been designed and incorporated into this tube for ease of connection to these leads.

GENERAL CHARACTERISTICS¹

Electrical Data

Focusing Method	Electrostatic	
Deflection Method	Electrostatic	
Direct Interelectrode Capacitances, Maximum		
Cathode to all	4.6	μμf
Grid No. 1 to all	4.0	μμf
D1 to D2	2.1	μμf
D3 to D4	1.4	μμf
D1 to all	5.0	μμf
D2 to all	5.0	μμf
D3 to all	4.1	μμf
D4 to all	4.1	μμf

Optical Data

Phosphor Number	1	2	7	11	14
Fluorescence	Yellow-Green	Yellow-Green	White	Blue	Blue
Phosphorescence	-----	Green	Yellow-Green	----	Orange
Persistence	Medium	Medium	Long	Medium Short	Medium

Mechanical Data

Overall Length	17 $\frac{5}{8} \pm \frac{1}{4}$ Inches
Greatest Bulb Diagonal	7 $\frac{1}{32} \pm \frac{3}{32}$ Inches
Minimum Useful Screen Width ²	4.5 Inches

Bulb Contact	J1-22
Collar (12-Pin Diheptal)	Special

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 East Rutherford, New Jersey

TL-1117 - 5
 1/12/62

FORM 808H

DUMONT
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GENERAL CHARACTERISTICS (Mechanical Data) (Continued)

Base	B12-37	
Basing	Special	
Collar and Base Alignment:		
Collar Pin No. 1 and Base Key each aligns with the D3D4 trace	± 10	Degrees
Positive voltage on D1 deflects the beam approximately toward Base Pin No. 4		
Positive voltage on D3 deflects the beam approximately toward Base Key		
Bulb Contact Alignment:		
Bulb cap aligns with D3D4 trace	± 10	Degrees
Bulb cap on same side as Base Key		
Trace Alignment:		
D1D2 trace aligns with D3D4 trace	90 ± 1	Degrees
Corresponding traces align with	1	Degree

MAXIMUM RATINGS (Absolute Maximum Values)

Heater Voltage	6.3	Volts
Heater Current at 6.3 Volts	$0.6 \pm 10\%$	Ampere
Post Accelerator Voltage	11,500	Max. Volts DC
Accelerator Voltage ³	3850	Max. Volts DC
Ratio Post Accelerator Voltage to Accelerator Voltage ⁴	3.0	Max.
Focusing Voltage	1900	Max. Volts DC
Grid No. 1 Voltage		
Negative Bias Value	200	Max. Volts DC
Positive Bias Value	0	Max. Volts DC
Positive Peak Value	0	Max. Volts DC
Peak Heater-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	750	Max. Volts



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TYPICAL OPERATING CONDITIONS

Post Accelerator Voltage	4000	Volts
Accelerator Voltage	2000	Volts
Focusing Voltage	400 to 680	Volts
Grid No. 1 Voltage ⁵	-45 to -75	Volts
Modulation ⁶	45	Volts Max.
Line Width ⁷	.030	Inch Max.
P1 Light Output ⁷	20	Ft. L. Min.
Deflection Factors:		
D1D2	63 to 80	Volts DC/Inch
D3D4	48 to 62	Volts DC/Inch
Deflection Factor Uniformity ⁸		
D1D2	2%	Max.
D3D4	3%	Max.
Pattern Distortion at 75% of Useful Screen Width ⁹	2 1/2 %	Max.
Tracking Error ¹⁰	2%	Max.
Interaction Factor ¹¹	0.000014	Inch/Volt DC Max.
Spot Position (Undelected) ¹²	Within a 5/16-inch radius circle	
Focusing Current for any operating condition	-15 to +10	Microamperes
Grid No. 1 Circuit Resistance	1.5	Max. Megohms
Resistance in any Deflecting-Electrode Circuit ¹³	1.0	Max. Megohms

NOTES

1. Values are for each unit unless otherwise stated.
2. Following the bulb contour.
3. Accelerator power input (average) should be limited to six watts.
4. This tube is designed for optimum performance when operating at an Eb3/Eb2 ratio of 2.0. Operation at other ratios of Eb3/Eb2 may result in increased deflection non-uniformity, pattern distortion, and tracking error.



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TYPE 7AMP-

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(Continued)

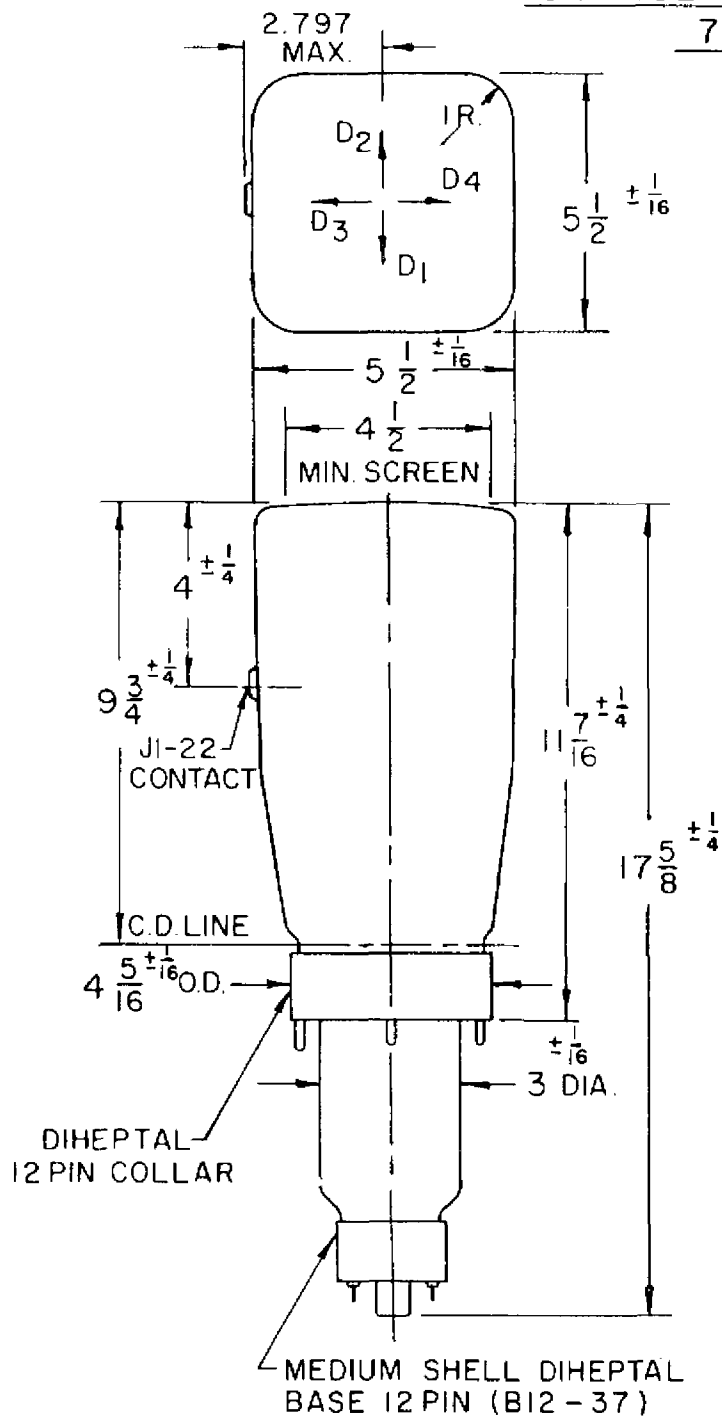
5. Visual extinction of the focused, undeflected spot.
6. The increase in Grid No. 1 voltage from cut-off to produce an Ib3 of 25 μ ADC.
7. Measured in accordance with MIL-E-1 specifications, using an Ib3 of 25 μ ADC.
8. The deflection factor for deflections of less than 75% of the useful scan will not differ from the deflection factor for a deflection of 25% of the useful scan by more than the indicated value.
9. The edges of a raster pattern, whose mean dimensions are the indicated percentage of useful screen width, will not deviate from the mean dimension by more than the specified amount.
10. The positions of the spot of each beam, when deflected from the center by applied voltages proportional to the deflection factor, will not deviate from each other by more than the indicated percentage of the deflection.
11. The deflection of one beam when balanced D.C. voltages are applied to the deflection electrodes of the other beam will not be greater than the indicated value.
12. Centered with respect to the tube face and with the tube shielded.
13. Deflection-electrode circuit resistances should be equal. Higher resistance values up to 5.0 megohms may be used for low beam current operation.

TL-1117 - 5

DUMONT

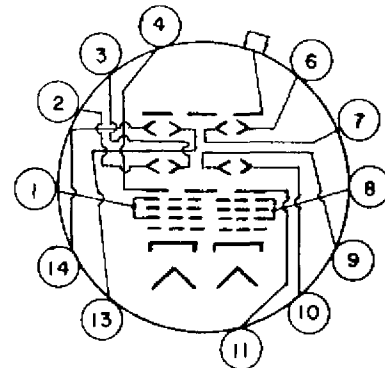
CATHODE RAY TUBE

7 AMP -



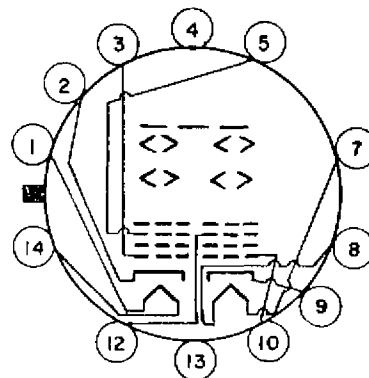
NOTES

1. SHIELD (COLLAR PINS NO. 4 & 11) IS COMMON TO BOTH BEAMS.
2. J1-22 CONTACT, COLLAR PIN NO. 1 AND BASE KEY ALIGN WITH D3, D4 TRACE ± 10°.



BOTTOM VIEW-12 PIN COLLAR

PIN NO.	ELEMENT	BEAM
1	ACCELERATOR	A
2	DEFLECTOR D3	A
3	DEFLECTOR D4	A
4	SHIELD	A
13	DEFLECTOR D2	A
14	DEFLECTOR D1	A
6	DEFLECTOR D1	B
7	DEFLECTOR D2	B
8	ACCELERATOR	B
9	DEFLECTOR D4	B
10	DEFLECTOR D3	B
11	SHIELD	B
BULB CONTACT	POST ACCELERATOR	



BOTTOM VIEW-12 PIN BASE

PIN NO.	ELEMENT	BEAM
1	HEATER	A
2	CATHODE	A
3	GRID NO. 1	A
4	INTERNAL CONNECTION	A
5	FOCUSING ELECTRODE	A
14	HEATER	A
7	HEATER	B
8	HEATER	B
9	CATHODE	B
10	GRID NO. 1	B
11	INTERNAL CONNECTION	B
12	FOCUSING ELECTRODE	B