



CATHODE-RAY TUBE

TYPE 3BDP-

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

The 3BDP- is designed as a replacement for the 3SP-.

GENERAL CHARACTERISTICS

Electrical Data

Focusing Method		Electrostatic	
Deflecting Method		Electrostatic	
Direct Interelectrode Capacitance (Approximate)			
Grid No. 1 to all other electrodes		8.3	μμf
Cathode to all other electrodes		5.6	μμf
D1 to D2		7.2	μμf
D3 to D4		5.7	μμf
D1 to all other electrodes		9.3	μμf
D2 to all other electrodes		8.2	μμf
D3 to all other electrodes		7.3	μμf
D4 to all other electrodes		7.8	μμf

Optical Data

Phosphor No.	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	9 1/8 ± 1/4	Inches
Greatest Dimensions of Bulb:		
Width	3 ± 1/16	Inches
Height	1 1/2 ± 1/16	Inches
Minimum Useful Screen Dimensions:		
Horizontal	2 3/4	Inches
Vertical	1 1/8	Inches
Base	B12-43	
Basing	12E	

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GENERAL CHARACTERISTICS (MECHANICAL DATA) (Continued)

Trace Alignment:

D1D2 trace aligns with bulb wall	± 1.0	Degree
Angle between D1D2 and D3D4 traces	90 ± 1	Degrees

Base Alignment:

D1D2 trace aligns with tube axis and key	± 5	Degrees
Positive voltage on D1 deflects beam approximately toward key		
Positive voltage on D3 deflects beam approximately toward Pin No. 4		

MAXIMUM RATINGS (DESIGN CENTER VALUES)

Heater Voltage	6.3	Volts
Heater Current at 6.3 Volts	$0.6 \pm 10\%$	Ampere
Accelerator Voltage	2,750	Max. Volts DC
Accelerator Input	6	Max. Watts
Focusing Electrode Voltage	1,100	Max. Volts DC
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-Cathode Voltage		
Heater Negative with respect to cathode	125	Max. Volts
Heater Positive with respect to cathode	125	Max. Volts
Peak Voltage between Accelerator and any Deflection Electrode	550	Max. Volts

TYPICAL OPERATING CONDITIONS

Accelerator Voltage	1,000	2,000	Volts DC
Focusing Electrode Voltage	165 to 310	330 to 620	Volts DC
Grid No. 1 Voltage ¹	-29 to -67.5	-58 to -135	Volts DC
Deflection Factors:			
D1D2	73 to 99	146 to 198	VDC/Inch
D3D4	52 to 70	104 to 140	VDC/Inch
Focusing Electrode Current for any operating condition Spot Position ²		-15 to +10	μ ADC
		Within a 6-mm radius circle	

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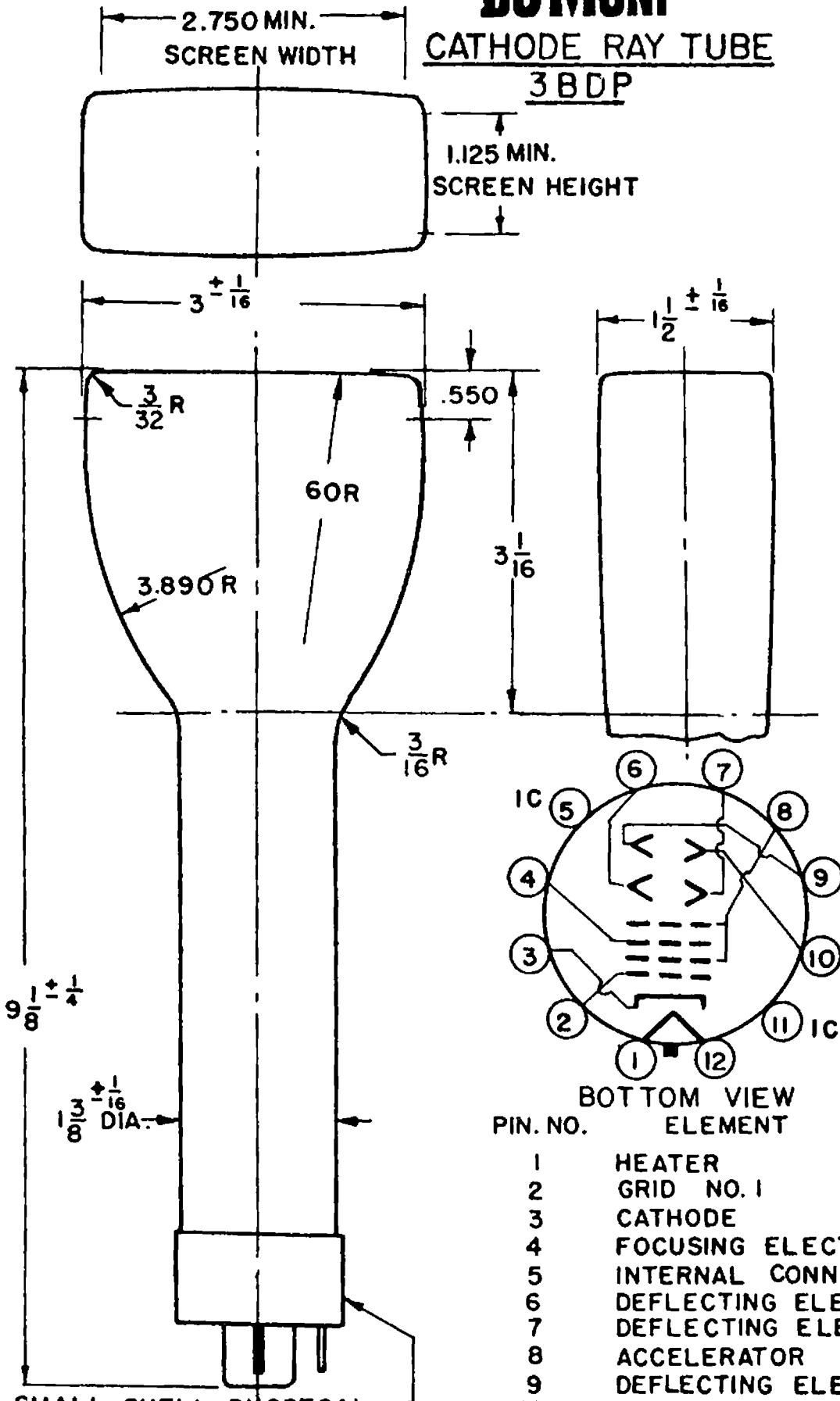
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NOTES

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 6-mm radius circle, centered with respect to the tube center.
3. It is recommended that the deflection-electrode circuit resistances be approximately equal.

DUMONT

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SMALL SHELL DUODECAL
12-PIN BASE (B12-43)
Allen B. Du Mont Laboratories, Inc.
Clifton, New Jersey

BOTTOM VIEW
ELEMENT

- | PIN. NO. | ELEMENT |
|----------|-------------------------------------|
| 1 | HEATER |
| 2 | GRID NO. 1 |
| 3 | CATHODE |
| 4 | FOCUSING ELECTRODE |
| 5 | INTERNAL CONNECTION |
| 6 | DEFLECTING ELECTRODE D ₃ |
| 7 | DEFLECTING ELECTRODE D ₄ |
| 8 | ACCELERATOR |
| 9 | DEFLECTING ELECTRODE D ₂ |
| 10 | DEFLECTING ELECTRODE D ₁ |
| 11 | INTERNAL CONNECTION |
| 12 | HEATER |

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