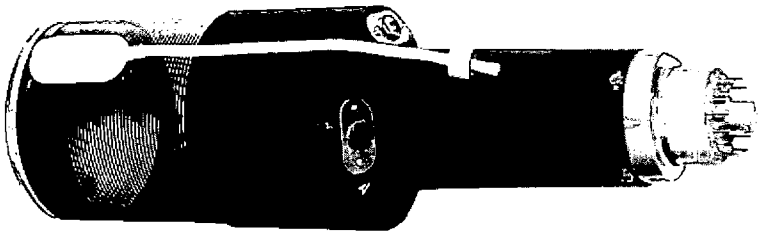
from JEDEC release #2462, May 11, 1959

DU MONT

INDUSTRIAL CATHODE-RAY TUBES

TYPES: 5BFP1, 5BFP2, 5BFP7, 5BFP11



GENERAL CHARACTERISTICS[1]

ELECTRICAL DATA

Focusing Method	Electrostatic
Deflecting Method	Electrostatic
Direct Interelectrode Capacitances, Approximate:	
Cathode to all	4.2 μμf
Grid No. 1 to all	4.3 μμf
D1 to D2	2.4 μμf
D3 to D4	2.0 μμf
D1 to all	11.5 μμf
D2 to all	12.6 μμf
D3 to all	10.9 μμf
D4 to all	10.6 μμf

OPTICAL DATA

Phosphor Number	1	2	7	11
Fluorescent Color	Green	Green	Blue	Blue
Phosphorescent Color	—	Green	Yellow	—

Phosphor Number	1	2	7	11
Persistance	Medium	Long	Long	Short

Faceplate: Clear Glass

MECHANICAL DATA

Overall Length	18 5/16 ± 1/16 Inches
Greatest Diameter of Bulb	5 1/4 ± 3/32 Inches
Minimum Useful Screen Diameter	4 1/2 Inches
Bulb Contact - Molded Contact Cover	Special
Connectors (Deflection plates, A2 and Shield)	Special
Base - Double Shell Diheptal, 12-Pin	Special
Basing	Special
Weight (Approximate)	4 Pounds
Base Alignment:	
D1D2 trace aligns with base key and tube axis	± 10 Degrees
Positive voltage on D1 deflects beam approximately toward base Pin No. 7	
Positive voltage on D3 deflects beam approximately toward Base Pin No. 4	
Bulb Contact Alignment:	
Molded contact cover aligns with D3D4 trace	± 10 Degrees
Molded contact cover on same side as Pin No. 4	
Trace Alignment:	
Angle between D3D4 and D1D2 traces	90 ± 2 Degrees
Corresponding traces align within	2 Degrees
Post Accelerator Helix (Spiral) Resistance Minimum	165 Megohms

RATINGS (Absolute Maximum Values)

Heater Voltage	6.3 Volts
Heater Current at 6.3 Volts	0.6 ± 10% Ampere
Post Accelerator Voltage	15,000 Max. Volts DC
Accelerator Voltage	4,000 Max. Volts DC
Ratio Post Accelerator Voltage to Accelerator Voltage	4.9 Max.
Accelerator Input[2]	6 Max. Watts
Focusing Electrode Voltage	1,550 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
Peak Heater-Cathode Voltage	
Heater negative with respect to cathode	
During warm-up period not to exceed 15 seconds	410 Max. Volts
After equipment warm-up period	180 Max. Volts
Heater positive with respect to Cathode	180 Max. Volts
Peak Voltage between Accelerator and any Deflection Electrode	600 Max. Volts

TYPICAL OPERATING CONDITIONS

Post Accelerator Voltage	13,250 Volts
Accelerator Voltage	2,750 Volts
Post Accelerator Current[3]	65 Max. μADC
Focusing Electrode Voltage	600 to 900 Volts
Grid No. 1 Voltage[4]	−35 to −65 Volts
Deflection Factors:	
D1 and D2	130 to 161 Volts DC per Inch
D3 and D4	110 to 138 Volts DC per Inch
Useful Scan:	
D1 and D2 4 (± 2 from tube face center)	Min. Inches
D3 and D4 4 (± 2 from tube face center)	Min. Inches
Interaction Factor[5]	14 x 10^{-6} Max. Inches/Volt
Pattern Distortion[6, 7]	
Modulation[8]	36 Max. Volts DC
Line Width "A"[9]	.020 Max. Inch
Line Width "B"[8, 9]	.024 Max. Inch
Focusing Electrode Current for any operating condition	−10 to +5 μA
Spot Position (Focused and Undeflected)[10]	Within a 16-mm Square

FEATURES

- 2 Independently Controlled Beams
- Integral Mu-Metal Shield
- Linear Post Accelerator
- Aluminized Screen
- Flat Faceplate
- Fast Writing Rates
- Low Pattern Distortion
- Designed for 70,000 Foot Altitude
- Proven Performance as Du Mont Type K1253
- Meets Requirements of MIL-E-1
- Plug-In Neck DP Connectors Minimize "C" and "L" Effects

APPLICATIONS

- Oscillography
- Radar
- Dual Beam Indicator

DU MONT
INDUSTRIAL TUBE SALES DEPARTMENT
750 Bloomfield Avenue Clifton, New Jersey, U.S.A.

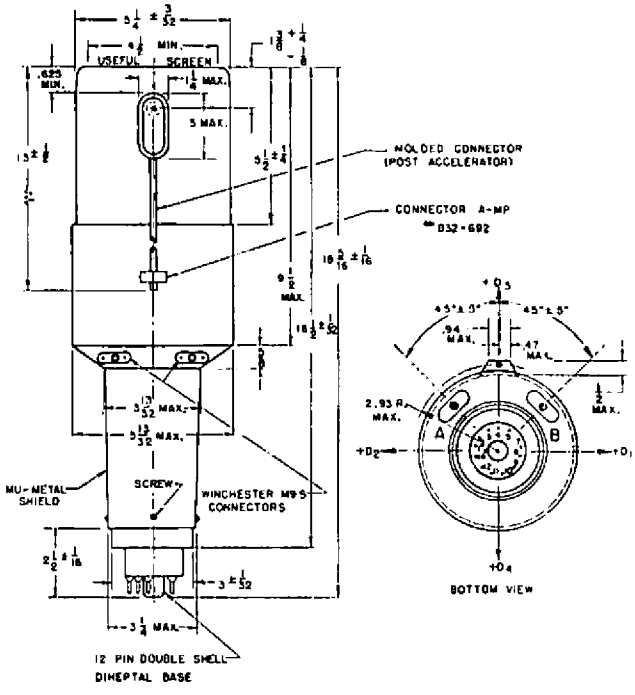
MAXIMUM CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5 Max. Megohms
Resistance in any Deflecting-Electrode Circuit[11]	1.0 Max. Megohms

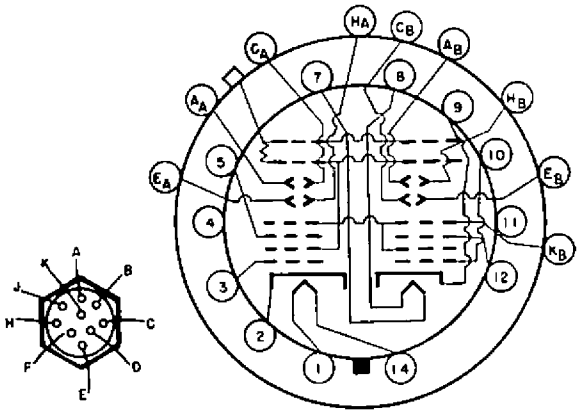
NOTES

1. Values are for each unit unless otherwise stated.
2. Accelerator power input (average) should be limited to six watts. At 100 μA beam current the cathode current shall not exceed 1.0 mA DC. To protect tube against damage, this measurement should be taken by pulsing the grid from cut-off to the specified beam current at a 10 percent duty cycle and multiplying the current meter readings by 10.
3. With beams cut off. All readings of beam current shall be in addition to the reading obtained for post accelerator current.
4. Visual extinction of undeflected focused spot.
5. The deflection of one beam when balanced DC voltages are applied to the deflection electrodes of the other will not be greater than the indicated value.
6. The total vertical movement of the upper end of a 3-inch vertical trace (centered with respect to the tube face), deflected horizontally 1.5 inches to the left and right of the center of the tube face, shall not exceed 0.10 inch. The total vertical movement of the lower end of the 3-inch trace also shall not exceed 0.10 inch. The D3D4 trace shall be considered vertical.
7. The sum of the total horizontal movement of the left and right ends of a 3-inch horizontal trace (centered with respect to the tube face), deflected vertically 1.5 inches above and below the center of the tube face, shall not exceed 0.10 inch. The D1D2 trace shall be considered horizontal.
8. For an Ib3 of 50 μADC measured in accordance with MIL-E-1 specifications.
9. To be measured at ± 1.625 inches from the tube face center.
10. Centered with respect to the tube face and with the tube shielded and deflecting electrodes connected to accelerator.
11. It is recommended that the deflecting-electrode circuit resistances be approximately equal. Higher resistance values up to five megohms may be used for low beam current operation.

OUTLINE DRAWING TYPE 5BFP—



BASING TYPE 5BFP—



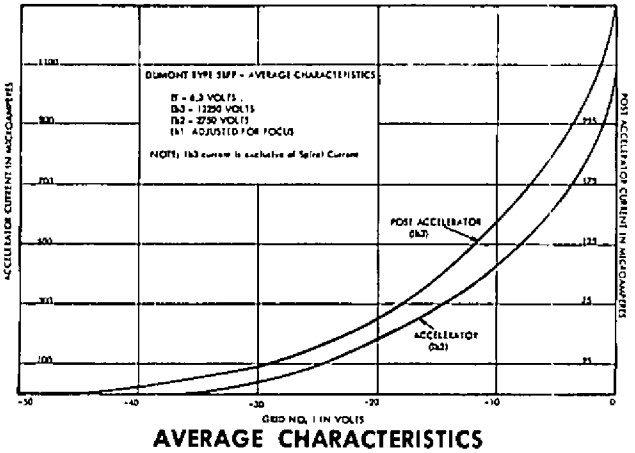
UNIT—A ELEMENT	RECEPTACLE
DEFLECTING ELECTRODE D_1	C
DEFLECTING ELECTRODE D_2	A
DEFLECTING ELECTRODE D_3	H
DEFLECTING ELECTRODE D_4	E
SHIELD	B

UNIT—A PIN NO.	UNIT—A ELEMENT
1	HEATER
2	CATHODE
3	GRID NO. 1
5	FOCUSING ELECTRODE
14	HEATER

UNIT—B	
ACCELERATOR	K
DEFLECTING ELECTRODE D_1	H
DEFLECTING ELECTRODE D_2	A
DEFLECTING ELECTRODE D_3	E
DEFLECTING ELECTRODE D_4	C

UNIT—B	
7	HEATER
8	HEATER
9	CATHODE
10	GRID NO. 1
12	FOCUSING ELECTRODE

Recommended accessories: Socket Du Mont P/N 34001610, Socket Mounting Ring Du Mont P/N 35001750, Post Accelerator Connector Du Mont P/N 243-19, and two (2) Deflection Plate Connectors Du Mont P/N 243-20.



AVERAGE CHARACTERISTICS TYPE 5BFP—

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