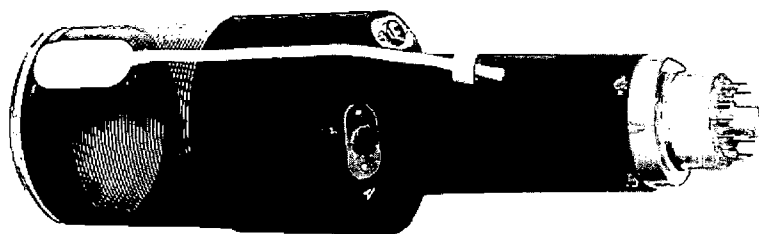




INDUSTRIAL CATHODE-RAY TUBES

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



GENERAL CHARACTERISTICS¹ ELECTRICAL DATA

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

OPTICAL DATA

Phosphor Number	1	2	7	11	Phosphor Number	1	2	7	11
Fluorescent					Persistence	Medium	Long	Long	Short
Color	Green	Green	Blue	Blue					
Phosphorescent					Faceplate				Clear Glass
Color	—	Green	Yellow	—					

MECHANICAL DATA

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

RATINGS (Absolute Maximum Values)

Heater Voltage	6.3 Volts	Positive Bias Value	0 Max. Volts DC
Heater Current at 6.3 Volts	0.6 $\pm$ 10% Ampere	Positive Peak Value	0 Max. Volts
Post Accelerator Voltage	15,000 Max. Volts DC	Peak Heater-Cathode Voltage	
Accelerator Voltage	4,000 Max. Volts DC	Heater negative with respect to cathode	
Ratio Post Accelerator Voltage to Accelerator Voltage	4.9 Max.	During warm-up period not to exceed 15 seconds	410 Max. Volts
Accelerator Input ²	6 Max. Watts	After equipment warm-up period	180 Max. Volts
Focusing Electrode Voltage	1,550 Max. Volts DC	Heater positive with respect to Cathode	180 Max. Volts
Grid No. 1 Voltage	200 Max. Volts DC	Peak Voltage between Accelerator and any Deflection Electrode	600 Max. Volts
Negative Bias Value	200 Max. Volts DC		

TYPICAL OPERATING CONDITIONS

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

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

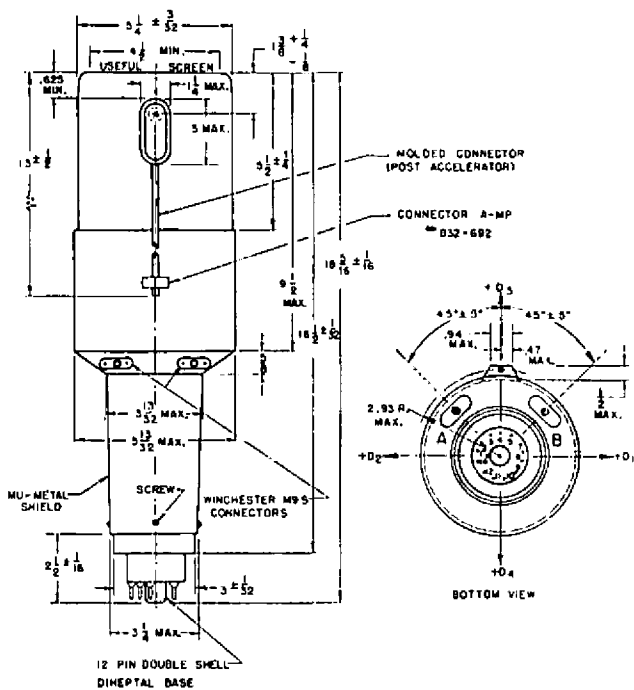
MAXIMUM CIRCUIT VALUES

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

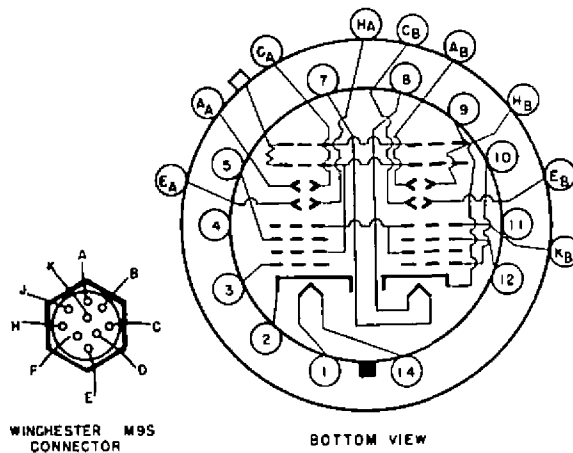
NOTES

1. Values are for each unit unless otherwise stated.
2. Accelerator power input (average) should be limited to six watts. At 100 μ A 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 1b3 of 50 μ ADC 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—



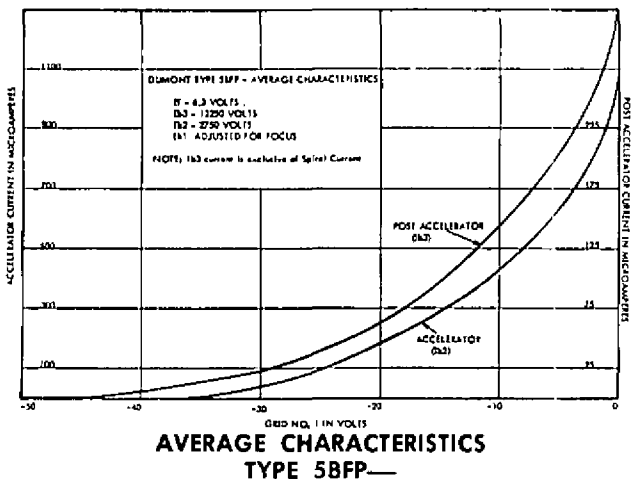
UNIT-A			
ELEMENT		RECEPTACLE	
DEFLECTING ELECTRODE	D ₁	—	C
DEFLECTING ELECTRODE	D ₂	—	A
DEFLECTING ELECTRODE	D ₃	—	M
DEFLECTING ELECTRODE	D ₄	—	E
SHIELD		—	B

UNIT - A	
PIN NO.	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 - 8

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.