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electronic ETC tube corp.

CATHODE RAY TUBE

6FP-

The ETC type 6FP is a 4.5 x 5.5 inch rectangular, electrostatic deflection and focus mono-accelerator cathode-ray tube.

The mono-accelerator feature of the 6FP- assures considerable improvement in general performance without sacrificing spot size, light output, or sensitivity.

For minimizing variation in focus with accelerator voltage variations, a low-voltage electrostatic focus lens is employed which requires only a small fraction of the accelerator voltage for focusing.

Deflection plates, the deflection plate leads are brought out through the neck of the tube.

GENERAL CHARACTERISTICS

Electrical Data

Heater Voltage	6.3 Volts
Heater Current	0.6 ± 10% Amperes
Focusing Method	Electrostatic
Deflecting Method	Electrostatic

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

Direct Interelectrode Capacitances	Max.
Cathode to all other electrodes	4.5 uuf
Grid No. 1 to all other electrodes	4.5 uuf
D1 to D2	3.5 uuf
D3 to D4	1.7 uuf
D1 to All	5.0 uuf
D2 to all	5.0 uuf
D3 to all	3.0 uuf
D4 to all	3.0 uuf

Mechanical Data

Overall Length	15-3/4 ± 1/4 Inches
Greatest Bulb Diameter	4-1/2 x 5-1/2 ±1/16 In.
Minimum Useful Screen (Along Tube Axis)	3-3/4 x 4-3/4 Inches
Neck Contacts	Pins
Base (Medium Shell Diheptal 12 Pin)	D-12-37
Basing	Special

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Mechanical Data

Base Alignment	
D3D4 trace aligns with Index Key and Tube Axis	±10 Degrees
Positive voltage on D1 deflects the beam approximately towards Pin No.4	
Positive voltage on D3 deflects the beam approximately towards Pin No.1	
Trace Alignment - Side Walls	2 Degrees
Angle between D3D4 and D1D2 trace	90° ± 1 Degrees

MAXIMUM RATINGS Design Center Values

Accelerator Voltage (Note 1)	3500 Max. Volts D-C
Focusing Voltage	1500 Max. Volts D-C
Grid No. 1 Voltage	
Negative Bias Value	200 Max. Volts D-C
Positive Bias Value	0 Max. Volts D-C
Positive Peak Value	0 Max. Volts D-C
Peak Heater to Cathode Voltage	
Heater Negative with respect to Cathode	180 Max. Volts D-C
Heater Positive with respect to Cathode	180 Max. Volts D-C
Peak Voltage between Accelerator and any Deflection Electrode	900 Max. Volts D-C

TYPICAL OPERATING CONDITIONS

For Accelerator Voltage of	2500 Volts D-C
Focusing Voltage	0 to 300 Volts D-C
Grid No. 1 Voltage (Note 2)	-34 to -56 Volts D-C
Modulation Factor (Note 3)	40 Volts Max.
Line Width A (Note 3)	.030 Inches Max.
P1 Light Output (Note 3)	15 Ft. L. Min.
Deflection Factors	
D1 and D2	48 to 60 Volts D-C/Inch
D3 and D4	32 to 42 Volts D-C/Inch
Deflection Factor Uniformity (Note 4)	1% Max.
Useful Scan	
D1D2	4-3/4 Inches
D3D4	3-3/4 Inches
Spot Position (Undeflected and focused)	Within 1/4" Radius Circle

CIRCUIT DESIGN VALUES

Focusing Current for any operating condition	-15 to +15 Microamperes D.C.
Grid No. 1 Voltage -13/6 to -22.4	Volts per Kilovolt of Accelerator Voltage
Grid No. 1 Circuit Resistance	1.5 Max. Megohms
Deflection Factors:	
D1 and D2 19.4 to 24.0	Volts D-C/Inch/KV of Accelerator Voltage
D3 and D4 12.8 to 16.8	Volts D-C/Inch/KV of Accelerator Voltage
Resistance in any Deflecting-Electrode Circuit (Note 5)	1 Max. Megohms

NOTES

1. The product of accelerator voltage and average accelerator current should be limited to 6 watts.

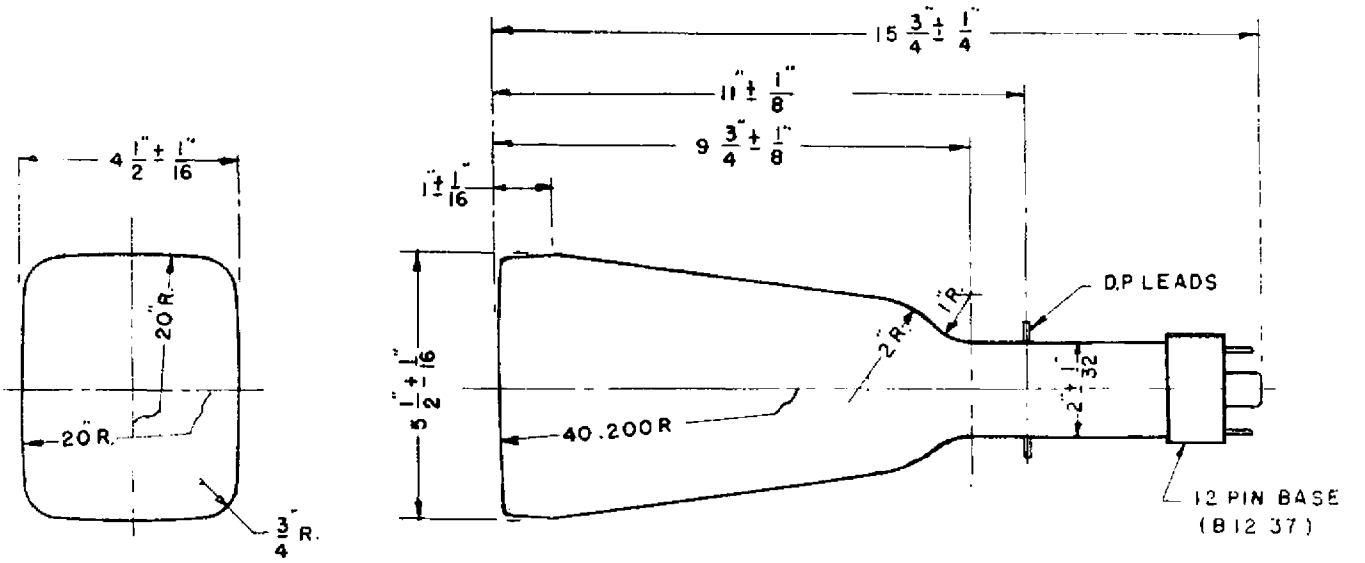
2. Visual extinction of undeflected focused spot.

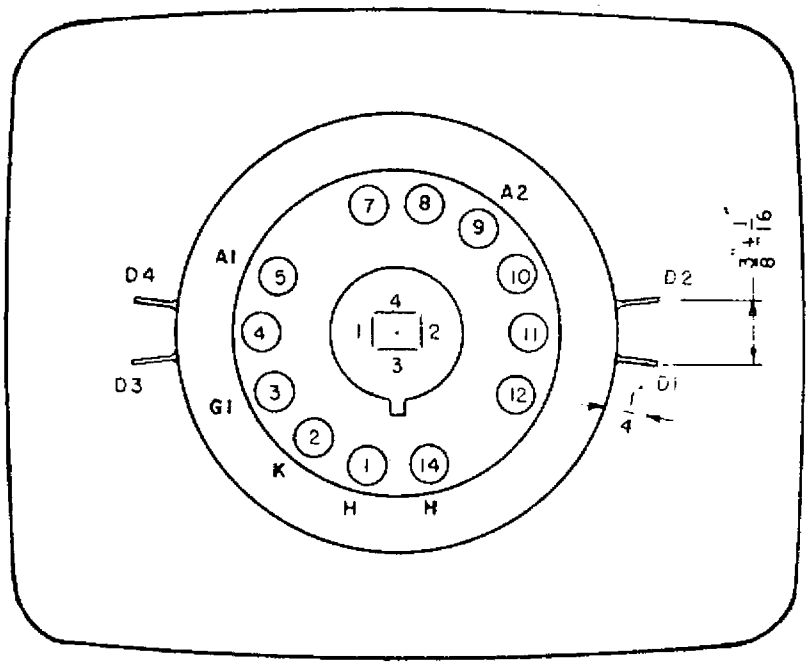
3. Measured in accordance with MIL-E-1B Specifications

4. 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 scan by more than indicated value.

5. It is recommended that the deflecting electrode circuit resistance be approximately equal.

6. An adjustable D-C potential between the accelerator and deflection plates may be used to secure best overall focus.





BOTTOM VIEW OF BASE AND NECK CONNECTIONS.

NOTE:
+ D2 TOWARDS PIN 4

ELECTRONIC TUBE CORPORATION PHILADELPHIA, PA.		
TITLE: 6FP TUBE OUTLINE DRAWING		
TOLERANCES DEC.	FRAC. AS NOTED ANG.	
ENG.	DATE 3-5-58.	APP.
DR. H. WARREN	SCALE 1/4 & 3/4	DRAWING NO. A-3340
CKD. H. Warren	REV. WAS 61DRP	