5LP-A CATHODE-RAY TUBES

The Type 5LP-A cathode-ray tubes are designed for oscillographic applications. The intensifier principle is used to provide a maximum deflection sensitivity for a given final accelerating voltage. The gun is designed to draw negligible focusing electrode current.

The Type 5LP-A is recommended for replacement only.

GENERAL CHARACTERISTICS

Electrical

Heater Voltage	6.3 Volts
Heater Current	0.6 ± 10% Ampere
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, Nominal

Grid No. 1 to all other electrodes	9 μμf.
D1 to D2	2 μμf.
D3 to D4	1.5 μμf.
D1 to all other electrodes except D2	8 μμf.
D2 to all other electrodes except D1	8 μμf.
D3 to all other electrodes except D4	6 μμf.
D4 to all other electrodes except D3	7 μμf.

Mechanical

Overall Length	16¾ ± ⅜ Inches
Greatest Diameter of Bulb	5-5/16 ± 1/16 Inches
Minimum Useful Screen Diameter	4½ Inches
Bulb Contact (Anode No. 3)	Small Cap (C1-1)
Base	Medium Magnal
Basing	11T

Base Alignment

D3D4 trace aligns with Pin No. 6 and tube axis ± 10 Degrees

Positive voltage on D1 deflects beam approximately toward Pin No. 3

Positive voltage on D3 deflects beam approximately toward locating key.

Angle between D3D4 and D1D2 traces 90 ±3 Degrees

Bulb Contact Alignment:

Anode No. 3 Contact aligns with D3D4 trace ± 10 Degrees

Anode No. 3 Contact on same side as locating key.

MAXIMUM RATINGS—(Design Center Values)

Anode No. 3 Voltage (Accelerator High Voltage Electrode)	4000 Max. Volts D-C
Anode No. 2 Voltage[1,2]	2000 Max. Volts D-C
Ratio Anode No. 3 Voltage to Anode No. 2 Voltage	2 Max.
Anode No. 1 Voltage	1000 Max. Volts D-C
Grid No. 1 Voltage	
Negative Bias Value	125 Max. Volts D-C
Positive Bias Value	0 Max. Volts D-C
Positive Peak Value	2 Max. Volts
Peak Voltage between Anode No. 2 and any Deflection Electrode	550 Max. Volts

TYPICAL OPERATING CONDITIONS

For Anode No. 3 Voltage of	3000	4000	Volts
For Anode No. 2 Voltage of	1500	2000	Volts
Anode No. 1 Voltage for focus	282 to 475	375 to 632	Volts
Grid No. 1 Voltage[3]	−22.5 to −67.5	−30 to −90	Volts

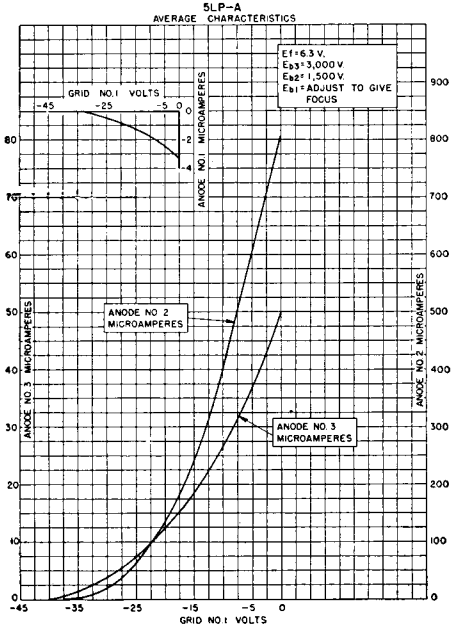
Deflection Factors:			
D1 and D2	62 to 93	82 to 124	Volts D-C per Inch
D3 and D4	54 to 81	73 to 109	Volts D-C per Inch
Anode No. 1 Voltage for focus			18.8% to 31.6% of Eb2 Volts
Grid No. 1 Voltage[3]			1.5% to 4.5% of Eb2 Volts
Anode No. 1 Current for any operating condition			−50 to +10 Microamperes
Deflection Factors:			
No 3rd Anode or Eb3 = Eb2			
D1 and D2			33 to 51 Volts D-C per Inch per Kilovolt of Eb2
D3 and D4			31 to 45 Volts D-C per Inch per Kilovolt of Eb2
Eb3 = Twice Eb2			
D1 and D2			41 to 62 Volts D-C per Inch per Kilovolt of Eb2
D3 and D4			36 to 54 Volts D-C per Inch per Kilovolt of Eb2
Spot Position (Undeflected)			Within a 10 millimeter radius circle[4]

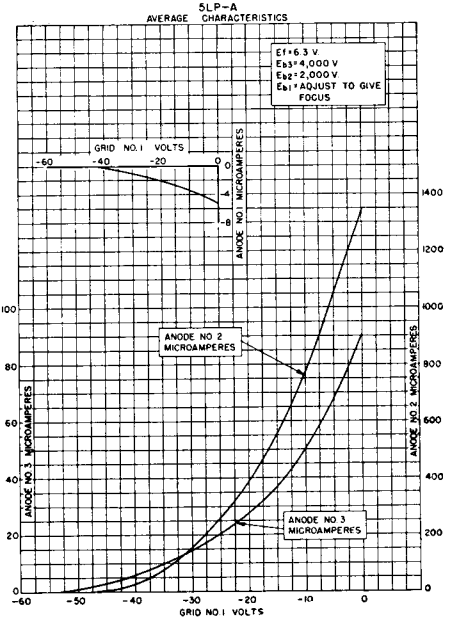
MAXIMUM CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5 Max. Megohms
Resistance in any Deflecting Electrode Circuit[5]	5 Max. Megohms

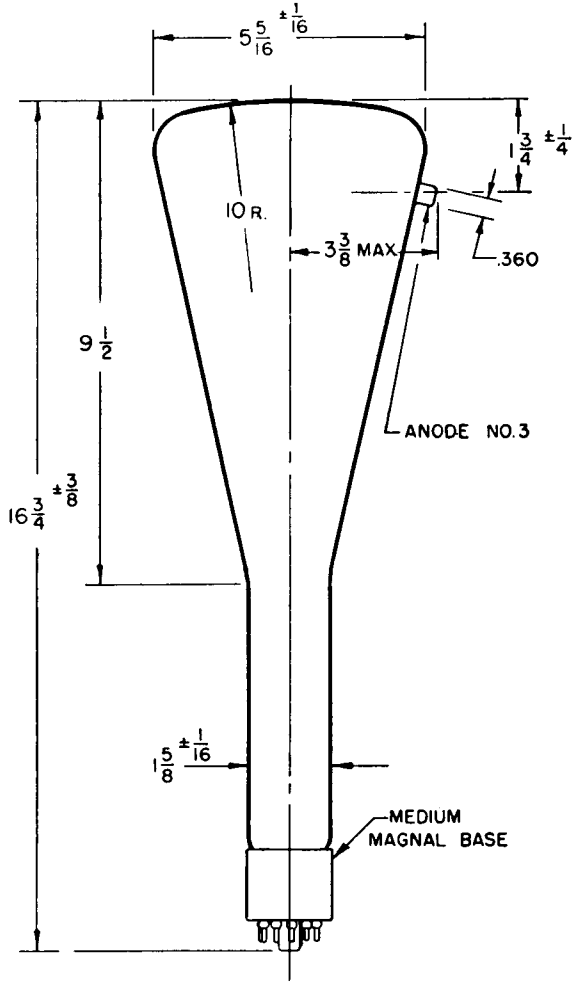
NOTES

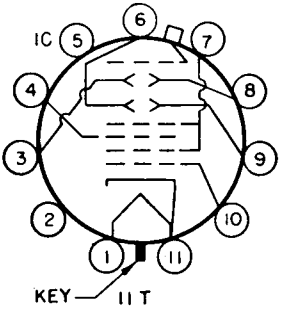
1. Anode No. 2 and Grid No. 2, which are connected together within the tube, are referred to herein as Anode No. 2.
2. The product of Anode No. 2 Voltage and Average Anode No. 2 current should be limited to 6 watts.
3. Visual extinction of undeflected focused spot.
4. Centered with respect to the tube face, with the tube shielded.
5. It is recommended that the deflecting electrode circuit resistances be approximately equal.
6. For optimum focus the average potentials of the deflection plates and second anode should be the same.





TYPE 5LP-A





BOTTOM VIEW OF BASE

PIN NO.	ELEMENT
1	HEATER
3	DEFLECTING ELECTRODE D_1
4	ANODE NO. 1
5	INTERNAL CONNECTION
6	DEFLECTING ELECTRODE D_4
7	ANODE NO.2, GRID NO.2
8	DEFLECTING ELECTRODE D_2
9	DEFLECTING ELECTRODE D_3
10	GRID NO. 1
11	HEATER & CATHODE