## TYPE 5AHP-, 5AHP-A CATHODE-RAY TUBE

The Type 5AHP- is a 5-in electrostatic focus and magnetic deflection cathode-ray tube suitable for radar applications. A low-voltage electrostatic focus lens is employed, designed to operate at or near cathode potential to afford substantially automatic focus, independent of accelerator voltage variations. In addition, the 5AHP- employs the Du Mont high-resolution electron gun. Spot size of the Self-focus Type 5AHP- is materially better than that of magnetically focused types, with a gain of approximately 20% in resolution over the magnetically focused types. Little sacrifice in internal light output is observed and weight and space are saved by the elimination of the focus coil.

The Type 5AHP-A utilizes an aluminized screen for greater light output and to minimize screen charging effects; it is otherwise identical to the 5AHP-. If a P19 screen is selected, the aluminized version should be used.

## **GENERAL CHARACTERISTICS**

## Electrical

Heater Voltage Heater Current					
Focusing Method					
Deflecting Method					
Deflecting Angle (ap)					
Phosphor	No. 7	No. 14	No. 19		
Fluorescence	Blue	Blue	Orange		
Phosphorescence			Orange		
Persistence	Long	Medium-long	Long		
Direct Interelectrode Capacitances, Approx.					
Cathode to all othe	r electrod	es 5	$\mu\mu f$ .		
Grid No. 1 to all or	ther electr	odes 6	$\mu\mu\mathbf{f}$ .		

## Mechanical

Overall Length	
Greatest Diameter of Bulb	$4^{15/16} \pm \frac{3}{2}$ Inches
Minimum Useful Screen Diameter	
Bulb Contact (Recessed Small Ball Cap)	
Base (Medium-Shell Octal 8-Pin)	B8-65 or B8-11
Basing	
Bulb Contact Alignment	
J1-22 Contact aligns with pin No. 5	±10 Degrees

## MAXIMUM RATINGS—(Design Center Values)

Accelerator Voltage	10,000 Max. Volts D-C
Focusing Electrode Voltage	-500 to +1000 Max. Volts D-C
Grid No. 2 Voltage	700 Max. Volts D-C
Grid No. 1 Voltage	
Negative Bias Value	180 Max. Volts D-C
Positive Bias Value <sup>1</sup>	0 Max. Volts D-C
Positive Peak Value	0 Max. Volts
Peak Heater-Cathode Voltage	
Heater Negative with respect to Cathode	180 Max. Volts D-C

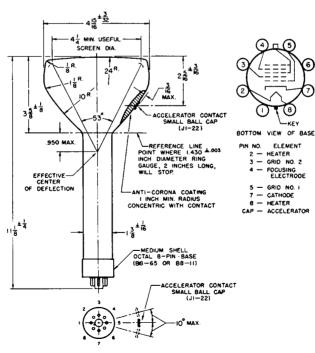
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Accelerator Voltage <sup>2</sup>	5,000	7,000	Volts D-C
Focusing Electrode Voltage <sup>3</sup>	0 to 200	0 to 250	Volts D-C
Focusing Electrode Current	-15 to $+15$	-15 to $+15$	$\mu$ A. D-C
Grid No. 2 Voltage	300	300	Volts D-C
Grid No. 1 Voltage	—28 to —72	—28 to —72	Volts D-C
Line Width A <sup>5</sup>	.010	.009	Inch Max.
Spot Position (Undeflected)	₹,	5/6	Inch
Alignment Magnet Field Strength	0-4	0-4	Gausses

## NOTES

- At or near this rating, the effective resistance of the accelerator supply should be adequate to limit the accelerator input power to 6 watts. The screen of the 5AHP19-A can be permanently damaged should the current density be permitted to rise too high. To prevent burning, minimum beam current densities should be employed.
- Brilliance and definition decrease with decreasing accelerator voltage. In general, accelerator voltage should not be less than 5,000 volts, except for the 5AHP19-A. For this type, the accelerator voltage should not be less than 7,000 volts.
- 3. With Grid No. 1 voltage adjusted to produce an accelerator current of 100  $\mu$ A., with the pattern adjusted for best overall focus. Measured with a 525-line interlaced and synchronized  $2\frac{3}{4}$ x $3\frac{3}{4}$ -inch pattern, with interlaced line blanking (current measured before applying blanking).
- 4. Visual extinction of focused 2\%x3\%-inch raster pattern.
- 5. Measured with a 525-line interlaced and synchronized pattern with interlaced line blanking. Pattern width adjusted to 90% of minimum useful screen diameter. Ib=100  $\mu$ A., measured before applying blanking. Line width is the merged raster height divided by the number of lines (262.5) (measured in center of tube face).
  - The 5AHP19-A should be checked at 7,000 volts. To avoid damage to the screen, it is recommended that the screen current be not more than 50  $\mu$ A. when measuring line width. The line width under these conditions will be .009 inch maximum (current measured before applying blanking).
- 5. The center of the undeflected, focused spot will fall within a circle of \( \frac{5}{16} \)-inch radius concentric with the center of the tube face, with the tube shielded.
- 7. For optimum quality of the focussed spot, the use of a beam alignment magnet is recommended. This may be obtained by the use of an adjustable magnet of the specified strength located approximately  $5\frac{1}{8}$  inches from the reference line.

### TYPE 5AHP-



NOTE: I-DO NOT HANDLE TUBE BY THE PART OF THE BULB HAVING THE ANTI-CORONA COATING.