TYPE 12ABP-, 12ABP-A CATHODE-RAY TUBES

The Type 12ABP- is a 12-inch 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 12ABP- employs a high resolution electron gun. The face plate is of gray filter glass.

The Type 12ABP-A utilizes an aluminized screen for greater light output and to minimize screen charging effects; it is otherwise identical to the 12ABP-.

GENERAL CHARACTERISTICS

Electrical Data

Heater Voltage			6.3 Volts
Heater Current			0.6 ± 10% Ampere
Focusing Method			Electrostatic
Deflecting Method			Magnetic
Deflecting Angle (Approx.)			55 Degrees
Phosphor	No. 7	No. 14	No. 19
Fluorescence	Blue	Blue	Orange
Phosphorescence	Yellow	Orange	Orange
Persistence	Long	Medium-long	Long
Direct Interelectrode Capacitances, Approx.			
Cathode to all other electrodes			5 μμf.
Grid No. 1 to all other electrodes			6 μμf.

Mechanical Data

Overall Length	18 ± 3/8 Inches
Greatest Diameter of Bulb	12-7/16 ± 1/8 Inches
Minimum Useful Screen Diameter	11 Inches
Bulb Contact (Recessed small cavity cap)	J1-21
Base (Small shell duodecal 6-Pin)	B6-63
Basing	12M
Bulb Contact Alignment	
J1-21 contact aligns with vacant pin position No. 3	± 10 Degrees

MAXIMUM RATINGS (Design Center Values)

Accelerator Voltage	12,000 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[1]	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
Heater positive with respect to cathode	180 Max. Volts D-C

TYPICAL OPERATING CONDITIONS

Accelerator Voltage[2]	10,000 Volts D-C
Focusing Electrode Voltage[3]	0 to 300 Volts D-C
Focusing Electrode Current	—15 to +15 μa. D-C
Grid No. 2 Voltage	300 Volts D-C
Grid No. 1 Voltage[4]	—28 to —72 Volts D-C
Line Width A[5]	.019 Inch
Spot Position (Undeflected)[6]	5/8 Inch
Alignment Magnet Field Strength[7]	0 to 4 Gausses

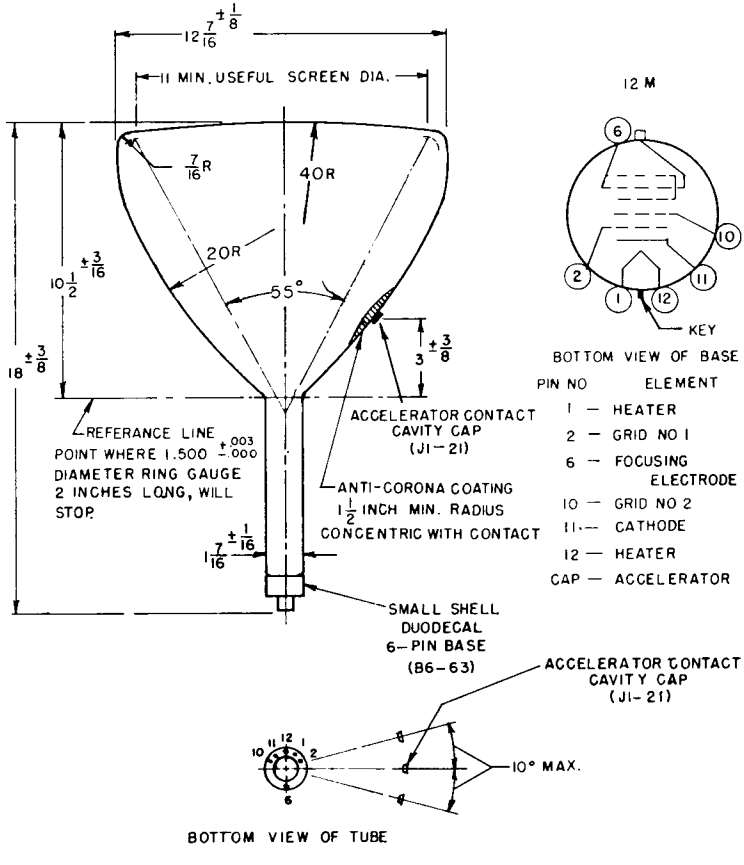
MAXIMUM CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5 Max. Megohms

NOTES

1. 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 12ABP19 can be permanently damaged should the current density be permitted to rise too high. To prevent burning, minimum beam current densities should be employed.
2. Brilliance and definition decrease with decreasing accelerator voltage. In general, accelerator voltage should not be less than 8,000 volts.
3. With Grid No. 1 voltage adjusted to produce an accelerator current of 100 μA. with the pattern adjusted for best overall focus. Measured with a 525-line interlaced and synchronized 7½ x 10-inch pattern, with interlaced line blanking (current measured before applying blanking).
4. Visual extinction of focused 7½ x 10-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 μA., 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.)
   To avoid damage to the screen of the 12ABP19, it is recommended that the screen current be not more than 50 μA. when measuring line width. The line width under this condition will be .018 inch maximum (current measured before applying blanking).
6. The center of the undeflected, focused spot will fall within a circle of ⅝-inch radius concentric with the center of the tube face, with the tube shielded.
7. For optimum quality of the focused 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 5-7/16 inches from the reference line.

TYPE 12ABP-



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