

CHARACTERISTICS

GENERAL DATA

Focusing Method	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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* In addition to the types shown, the 3BMP- can be supplied with several other screen phosphors.

ELECTRICAL DATA

Heater Voltage	1.5 Volts
Heater Current	0.14 ± 10% Ampere
Direct Interelectrode Capacitances (Maximum)	
Cathode to All Other Electrodes	4.2 μf
Grid to All Other Electrodes	5.8 μf
Between Deflecting Plates 1-2	2.1 μf
Between Deflecting Plates 3-4	1.5 μf
Deflecting Plate 1 to All Other Electrodes	5.8 μf
Deflecting Plate 2 to All Other Electrodes	5.8 μf
Deflecting Plate 3 to All Other Electrodes	4.5 μf
Deflecting Plate 4 to All Other Electrodes	4.5 μf

MECHANICAL DATA

Minimum Useful Screen Diameter	2.68 Inches
Bulb Contact (Recessed Small Ball Cap)	J1-22
Bulb	J24V
Base (Medium-Shell Diheptal 12-Pin)	B12-37
Basing	14J
Base Alignment	
D1-D2 trace aligns with Pin No. 5 and Tube Axis	±10 Degrees
Positive Voltage on D1 deflects beam approx. toward Pin No. 5	
Positive Voltage on D3 deflects beam approx. toward Pin No. 2	
Angle between traces D1-D2 and D3-D4	90 ± 1 Degrees
Bulb Contact Alignment	
J1-22 contact aligns with D1-D2 trace	±10 Degrees
J1-22 contact on same side as Pin No. 5	

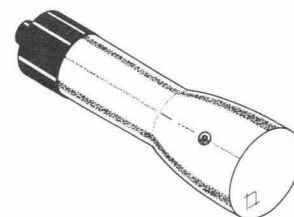
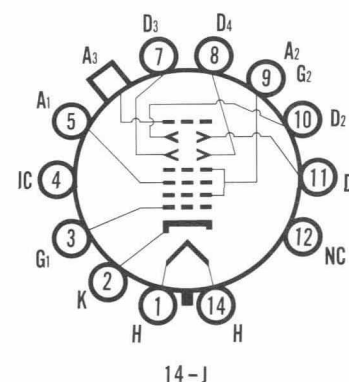
RATINGS

MAXIMUM RATINGS (Absolute Maximum Values)

Anode No. 3 Voltage	6600 Volts	dc
Anode No. 2 Voltage	2200 Volts	dc
Ratio Anode No. 3 to Anode No. 2 Voltage ¹	3.0	
Anode No. 2 Input (Av. except for 3BMP12) ²	6.0 Watts	
Anode No. 1 Voltage (Focusing Electrode)	1500 Volts	dc
Grid No. 1 Voltage		
Negative Bias Value	200 Volts	dc
Positive Bias Value	0 Volts	dc
Positive Peak Value	0 Volts	
Peak Heater-Cathode Voltage		
Heater Negative with Respect to Cathode	50 Volts	
Heater Positive with Respect to Cathode	0 Volts	
Peak Voltage Between Anode No. 2 and Deflection Plate	550 Volts	

QUICK REFERENCE DATA

3" Direct Viewed
Round Glass Type
Electrostatic Deflection
Electrostatic Focus
Close Tolerances
Flat Face Plate
Post Deflection Acceleration
Very Low Heater Power



SYLVANIA ELECTRONIC TUBES

A Division of
Sylvania Electric Products Inc.

PICTURE TUBE OPERATIONS SENECA FALLS, NEW YORK

Prepared and Released By The
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SEPTEMBER, 1960

PAGE 1 OF 2

File Under
SPECIAL AND GENERAL PURPOSE
CATHODE RAY TUBES

TYPICAL OPERATING CONDITIONS²

Anode No. 3 Voltage	4000 Volts	dc
Anode No. 2 Voltage	2000 Volts	dc
Anode No. 1 Voltage for Focus	375 to 575 Volts	dc
Grid No. 1 Voltage Required for Cutoff ³	-45 to -75 Volts	dc
Deflection Factor		
Deflecting Plates 1-2	180 to 220 Volts	dc/Inch
Deflecting Plates 3-4	133 to 163 Volts	dc/Inch
Deflection Factor Uniformity ⁴	2%	Max.
Pattern Distortion ⁵	2%	Max.
Modulation at Anode No. 3 Current = $25\mu\text{Adc}$ ⁴	38 Volts	dc Max.
Line Width "A" at Anode No. 3 Current = $25\mu\text{Adc}$	.016 Inches	Max.
Light Output at Anode No. 3 Current = $25\mu\text{Adc}$ ⁶ (3BMP1)	20 Foot Lamberts	Min.
Spot Position ⁷	Within a 10 mm Square	

CIRCUIT VALUES

Grid Circuit Resistance	1.5 Megohms	Max.
Deflection Circuit Resistance ⁸	1.0 Megohms	Max.

NOTES:

1. These types are designed for optimum performance when operating at EB3/EB2 ratio of 2.0.
2. Type 3BMP12 can be severely and permanently damaged if current density is allowed to rise too high. Test and operate at minimum usable currents.
3. Visual extinction of undeflected focused spot.
4. Per MIL-E-1 specifications.
5. All portions of a raster pattern, adjusted so its widest points just touch the sides of a 1.938 inch square, will fall within the area bounded by the 1.938 inch square and an inscribed 1.862 inch square.
6. Measured in accordance with MIL-E-1 specifications using a raster size of $1\frac{7}{8} \times 1\frac{7}{8}$ inches.
7. With tubes magnetically shielded, deflecting plates connected to Anode No. 2, and spot focused. Limit square centered on tube face, with sides parallel to deflection axes.
8. It is recommended that the deflecting electrode circuit resistance be approximately equal. Higher resistance values up to five megohms may be used for low beam current operation.

OUTLINE

