SYLVANIA engineering data service

SYLVANIA
7AEP1
7AEP*

CHARACTERISTICS

GENERAL DATA

Focusing Method	Electrostatic
Deflection Method	Electrostatic

Types*	Fluorescence	Phosphorescence	Persistence
7AEP1	Green	———	Medium
7AEP2	Blue - Green	Green	Long
7AEP7	Blue - White	Yellow	Long
7AEP11	Blue	———	Short

Faceplate . . . . . Flat,Clear

* In addition to the types shown, the 7AEP- can be supplied with several other screen phosphors.

ELECTRICAL DATA

Heater Voltage	6.3	Volts
Heater Current	0.6 ± 10%	Amperes

Direct Interelectrode Capacitances

	MIN.	MAX.	
Cathode to All Other Electrodes	2.9	4.5	μμf
Grid No. 1 to All Other Electrodes	3.7	6.4	μμf
D1 to D2	1.7	2.7	μμf
D3 to D4	1.0	1.8	μμf
D1 to All Other Electrodes	5.4	7.6	μμf
D2 to All Other Electrodes	5.4	7.6	μμf
D3 to All Other Electrodes	3.4	5.5	μμf
D4 to All Other Electrodes	3.4	5.5	μμf

MECHANICAL DATA

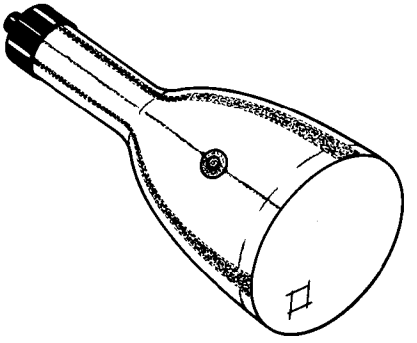
Minimum Useful Screen Diameter	6⅛ Inches
Anode No. 3 Contact (Recessed Small Ball Cap)	J1-22
Bulb	J56Y1
Base (Medium Shell Diheptal 12-Pin)	B12-37
Basing	14J
Base Alignment	
D1-D2 trace aligns with Pin No. 5 and tube axis	0 ± 10 Degrees
Positive Voltage on D1 deflects beam approx. toward Pin No. 5.	
Positive Voltage on D3 deflects beam approx. toward Pin No. 2	
Trace Alignment	
Angle Between Traces D1-D2 and D3-D4	90 ± 1 Degrees
Bulb Contact Alignment	
J1-22 contact aligns with D1-D2 trace	0 ± 10 Degrees
J1-22 contact on same side as Pin No. 5	
Weight (Approx.)	3½ Pounds

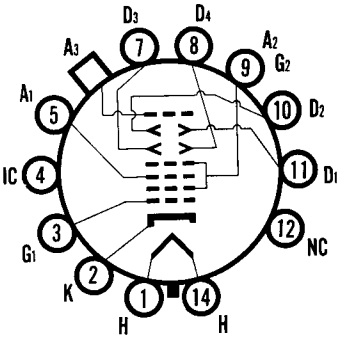
MAXIMUM RATINGS (Absolute Maximum Values)

Anode No. 2 Input	6 Watts
Anode No. 3 Voltage	8800 Volts dc
Anode No. 2 Voltage	4400 Volts dc

QUICK REFERENCE DATA

7" Direct Viewed
Flat Faceplate
Round Glass Type
Electrostatic Deflection
Electrostatic Focus
Post Deflection Acceleration
High Deflection Sensitivity
High Deflection Accuracy
Close Tolerances





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SYLVANIA
ELECTRONIC TUBES
A Division of
Sylvania Electric Products Inc.
PICTURE TUBE OPERATIONS
SENECA FALLS, NEW YORK

Prepared and Released By The
TECHNICAL PUBLICATIONS SECTION
EMPORIUM, PENNSYLVANIA

APRIL, 1960

File Under
SPECIAL AND GENERAL PURPOSE
CATHODE RAY TUBES

MAXIMUM RATINGS (Absolute Maximum Values) (cont'd)

Ratio of Anode No. 3 Voltage to Anode No. 2 Voltage[1]	2 : 1 Maximum
Anode No. 1 Voltage (Focusing Electrode)	1375 Volts dc
Grid No. 1 Voltage	
Negative Bias Value	220 Volts dc
Positive Bias Value	0 Volts dc
Positive Peak Value	0 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	200 Volts
Heater Positive with Respect to Cathode	200 Volts
Peak Voltage Between Anode No. 2 and Any Deflection Plate	825 Volts

TYPICAL OPERATING CONDITIONS

Anode No. 3 Voltage	4000 Volts dc
Anode No. 2 Voltage	2000 Volts dc
Anode No. 1 Voltage for Focus	380 to 620 Volts dc
Grid No. 1 Voltage Required for Cutoff[2]	−45 to −75 Volts dc
Deflection Factors	
Deflection Plates 1-2[3]	81 to 101 Volts dc/Inch
Deflection Plates 3-4[3]	67 to 83 Volts dc/Inch
Pattern Distortion[4]	2½% Maximum
Spot Position[5]	Within a 15 MM. Square
Modulation (Ib3 = 25μa)[6]	37 Volts dc Max.
Line Width "A" (Ib3 = 25μa)[6]	.022 Inches Max.
Light Output (7AEP1, Ib3 = 25μa)[6]	20 Ft. Lamberts Min.
Deflection Factor Uniformity[6]	3% Maximum
Focusing Electrode Current for any Operating Condition	−15 to +10 μa

CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5 Megohms Max.
Resistance in Any Deflecting Plate Circuit[7]	1.0 Megohms Max.

NOTES:

1. *This tube is designed for optimum performance when operating at an Eb3/Eb2 ratio of 2.0. Operation at other ratios of Eb3/Eb2 may result in changes in deflection uniformity and pattern distortion.*
2. *Visual extinction of undeflected focused spot.*
3. *Deflecting plates 1-2 are nearer the screen. Deflecting plates 3-4 are nearer the base.*

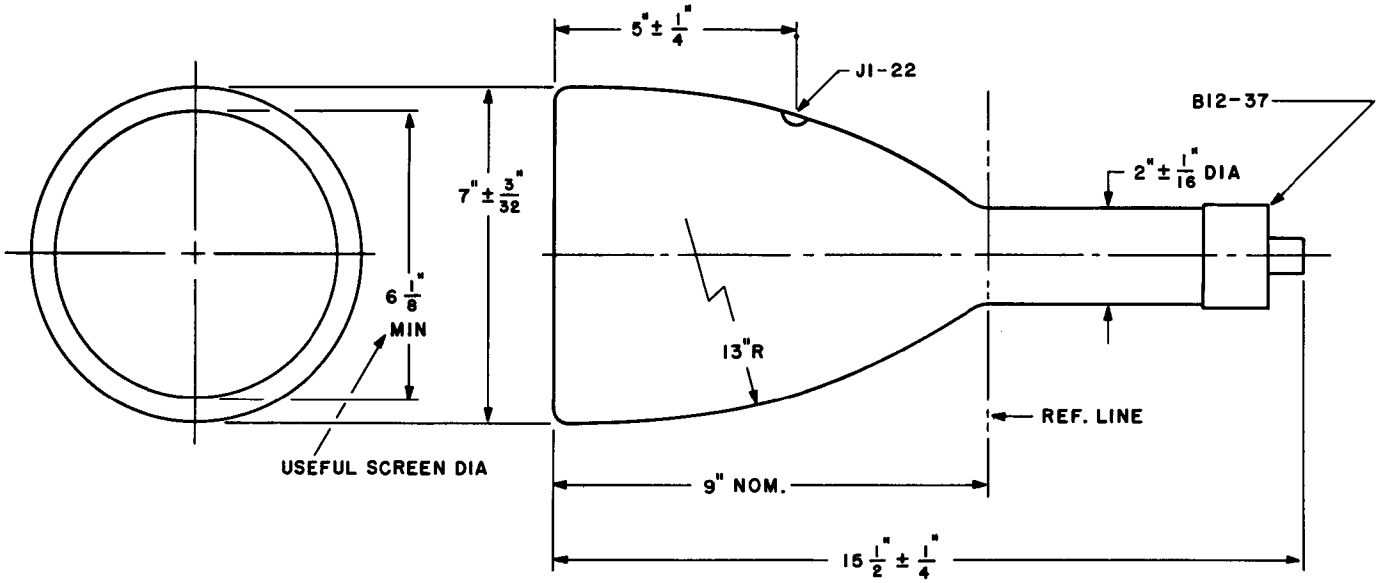
NOTES: (Cont'd)

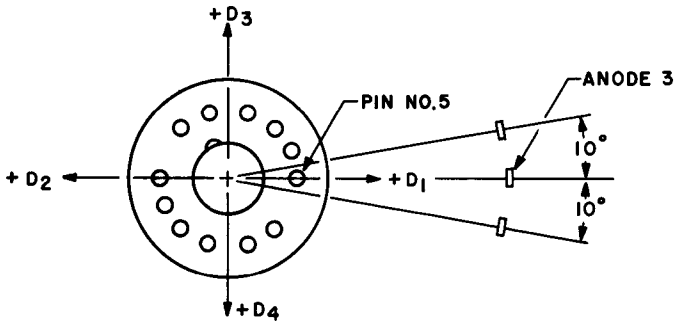
4. *All portions of a raster pattern, adjusted so its widest points just touch the sides of a 4.100 inch square will fall within the area bounded by the 4.100 inch square and an inscribed 3.900 inch square.*
5. *Centered on tube face, sides parallel to deflection axes. Tube to be magnetically shielded and deflecting plates connected to Anode No. 2.*
6. *Measured with accordance Mil-E-1 specs.*
7. *It is recommended that the deflecting plate circuit resistance be approximately equal. Higher resistance values up to five megohms may be used for low beam current operations.*

WARNING:

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.

OUTLINE





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BOTTOM VIEW