24ALP4

CATHODE-RAY TUBE

24-INCH RECTANGULAR GLASS	21-7/16 BY 16-7/8 INCH PICTURE SIZE
FOCUS - ELECTROSTATIC	FACEPLATE - SPHERICAL, GRAY
DEFLECTION - MAGNETIC	EXTERNAL CONDUCTIVE COATING
110-DEGREE DEFLECTION ANGLE	NON-ION-TRAP GUN

ALUMINIZED SCREEN

DESCRIPTION AND RATING

The 24ALP4 is a 24-inch electrostatic-focus and magnetic-deflection glass picture tube. Outstanding features include a short over-all length, a small neck diameter and a non-ion-trap gun. The fluorescent screen is aluminized to increase light output and reduce undesirable screen charging. An external conductive coating is provided to serve as a filter capacitor, when grounded.

GENERAL

ELECTRICAL

Heater Voltage	6.3	Volts
Heater Current	0.6 ± 10%	Amperes
Heater Warm-up Time *	11	Seconds
Focusing Method - Electrostatic		
Deflecting Method - Magnetic		
Deflection Angle, approximate		
Diagonal	110	Degrees
Horizontal	105	Degrees
Vertical	87	Degrees
Direct Interelectrode Capacitances, approximate		
Cathode to All Other Electrodes	5	μμf
Grid-No. 1 to All Other Electrodes	6	μμf
External Conductive Coating to Anode Capacitance		
Maximum	2500	μμf
Minimum	2000	μμf

OPTICAL

Phosphor Number - P4, Sulfide
Fluorescent Color - White
Phosphorescent Color - White
Persistance - Short

Faceplate - Gray

Light Transmission at Center, approximate	76	Percent

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from JETEC release #2001, Aug. 23, 1957

MECHANICAL

Overall Length	15 7/8 ± 5/16	Inches
Neck Length	5 7/16 +3/16 − 1/8	Inches
Greatest Bulb Dimensions		
Diagonal	24 ± 1/8	Inches
Width	22 11/16 ± 1/8	Inches
Height	18 1/2 ± 1/8	Inches
Minimum Useful Screen Dimensions		
Diagonal	22 13/16	Inches
Width	21 7/16	Inches
Height	16 7/8	Inches
Area	332	Square Inches

Bulb Contact - Recessed Small-cavity Cap, JETEC No. J1-21
Base - Small-button Eightar, 7-Pin, JETEC No. B7-183
Basing Designation - 8HR
Bulb Contact Alignment
Anode Contact Aligns with Pin-No. 4 Position ± 30 Degrees

Mounting Position - Any
Net Weight, approximate . . . . . 27 Pounds

MAXIMUM RATINGS

DESIGN-CENTER VALUES †

Anode Voltage ‡	20,000 Max	Volts DC
Focusing-Electrode Voltage	-500 to +1000 Max	Volts DC
Grid-No. 2 Voltage	500 Max	Volts DC
Grid-No. 1 Voltage		
Negative-Bias Value	140 Max	Volts DC
Positive-Bias Value	0 Max	Volts DC
Positive-Peak Value	2 Max	Volts
Negative-Peak Value	200 Max	Volts
Peak Heater-Cathode Voltage		
Heater Negative with Respect to Cathode		
During Warm-up Period Not to Exceed 15 Seconds	410 Max	Volts
After Equipment Warm-up Period	180 Max	Volts
Heater Positive with Respect to Cathode	180 Max	Volts

TYPICAL OPERATING CONDITIONS

Anode Voltage §	17,000	Volts DC
Focusing-Electrode Voltage for Focus	0 to 500	Volts DC
Focusing-Electrode Current	-15 to +25	Microamperes DC
Grid-No. 2 Voltage	300	Volts DC
Grid-No. 1 Voltage △	-28 to -72	Volts DC

MAXIMUM CIRCUIT VALUES

Grid-No. 1 Circuit Resistance	1.5 Max	Megohms
Grid-No. 2 Circuit Resistance	0.1 Min	Megohms
Focusing-Electrode Circuit Resistance	0.1 Min	Megohms

Protective resistance in the grid-No. 2 and focusing-electrode circuits is advisable to prevent damage to the tube. If applicable, one resistor common to both circuits may be used.

* Heater warm-up time required for the voltage across the heater terminals to increase to 5.0-volts in the JETEC test circuit, with E = 25-volts and R = 31.5-ohms.

† The maximum ratings provide a ten-percent safety factor in accordance with the standard design-center system of rating cathode-ray tubes. The tube will withstand the combined effects of variations in line voltage and components provided the design-center values are not exceeded by more than ten percent.

‡ Anode, grid-No. 3, and grid-No. 5, which are connected together within the tube, are referred to herein as anode.

If this tube is operated at voltage in excess of 16,000 volts, x-ray radiation shielding may be necessary to avert possible danger of personal injury from prolonged exposure at close range. The protective face-viewing window of apparatus using tubes of this type may provide such a safeguard. If the radiation measured in contact with this window does not exceed 6.25 milliroentgens per hour, the window will normally provide adequate protection.

§ Brightness and focus quality decrease with decreasing anode voltage. In general, the anode voltage should not be less than 15,000 volts.

△ For visual extinction of focused raster.

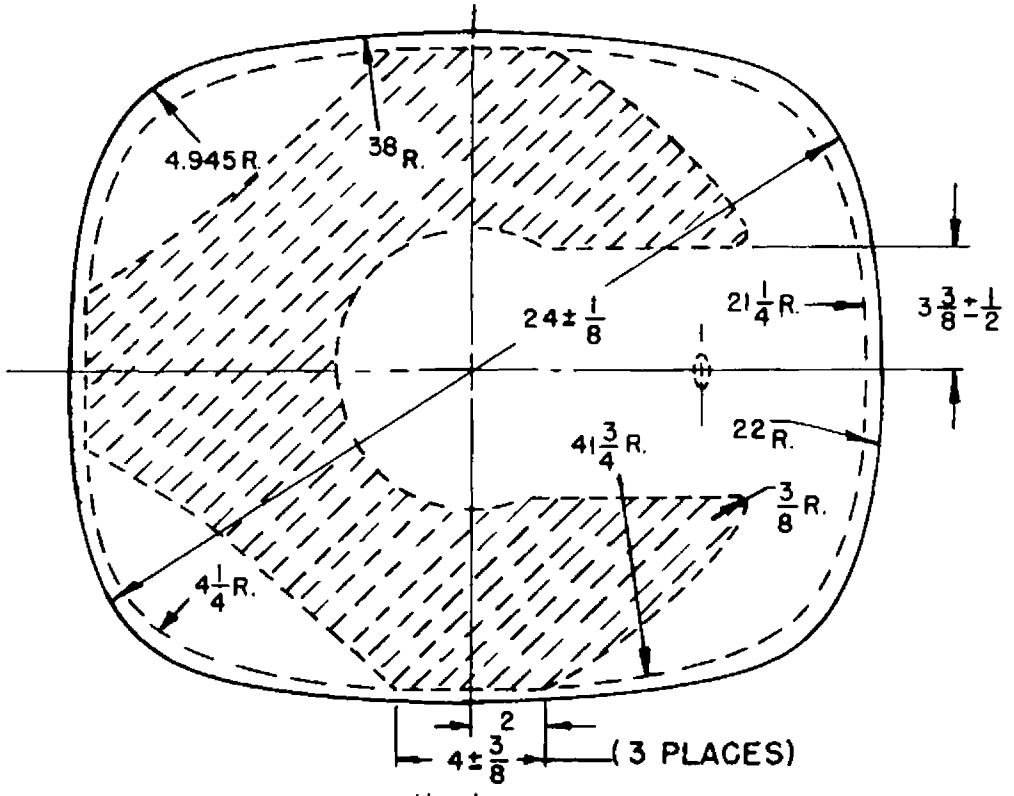
Electronic Components Division

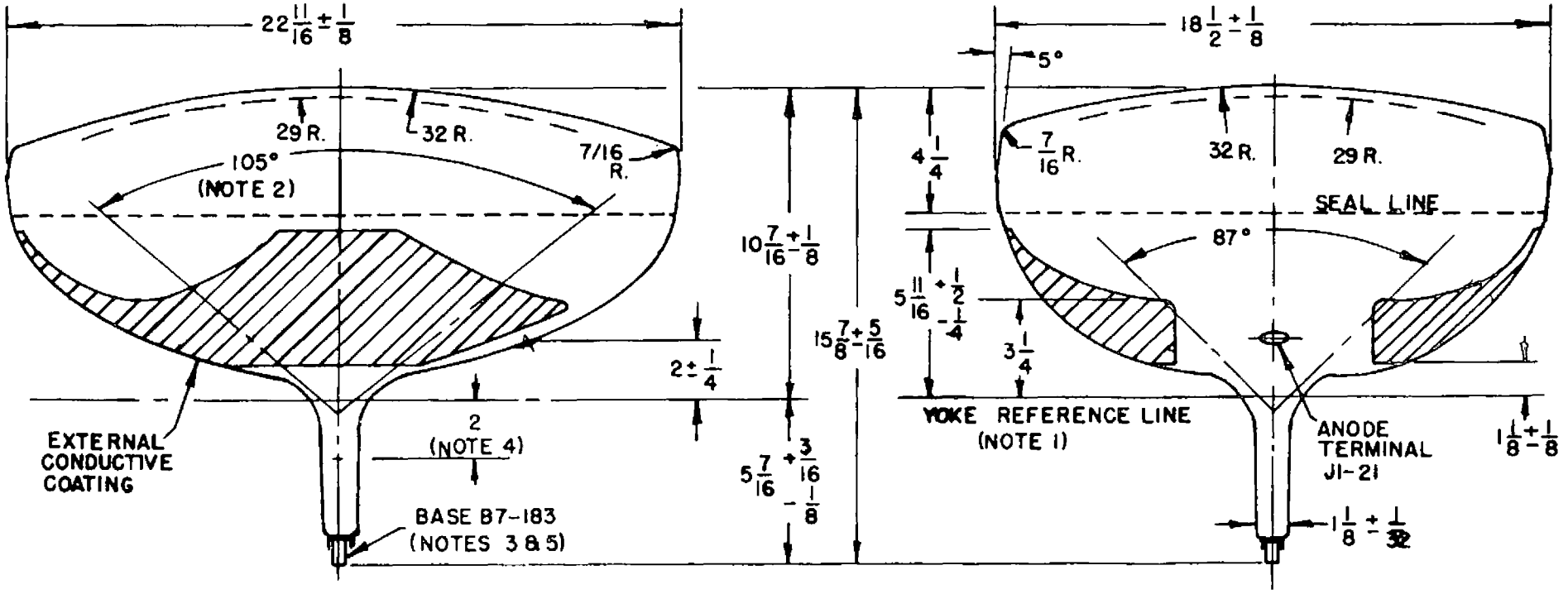
GENERAL ELECTRIC COMPANY

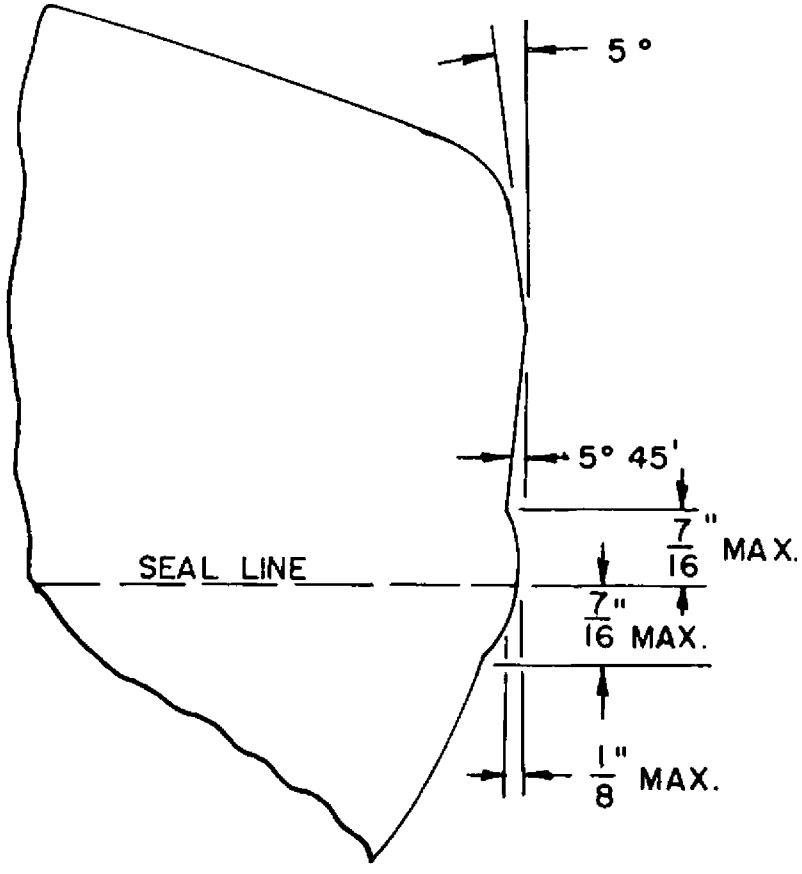
Schenectady 5, N. Y.

SCREEN DIMENSIONS

DIAGONAL	22 - 13/16
WIDTH	21 - 7/16
HEIGHT	16 - 7/8
AREA	332 SQ. IN.



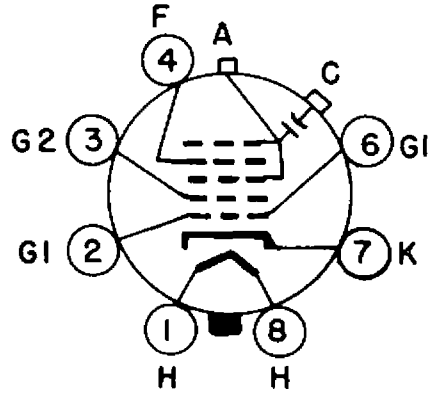




DETAIL AT
SEAL LINE

NOTES:

1. THE REFERENCE LINE IS DETERMINED BY THE INTERSECTION OF THE PLANE C-C' OF GAGE (RETMA NO.126) WITH THE GLASS FUNNEL.
2. DEFLECTION ANGLE ON THE DIAGONAL IS 110°.
3. ANODE TERMINAL ALIGNS WITH PIN NO.4 ± 30 DEGREES.
4. RECOMMENDED POSITION OF CENTERING MAGNET, IF USED.
5. USE A NON-RIGIDLY MOUNTED SOCKET WITH FLEXIBLE LEADS. BOTTOM CIRCUMFERENCE OF BASE WAFER WILL FALL WITHIN 1-3/4 INCH DIAMETER CIRCLE CONCENTRIC WITH THE BULB AXIS.



BASING DIAGRAM
8 HR