

NATIONAL VIDEO CORPORATION

CATHODE RAY TUBE TYPE 27UP₄

The tube type 27UP₄ is an electrostatic focus and magnetic deflection direct view picture tube. It has an all glass, rectangular bulb designed for 90° deflection. The faceplate is of gray glass and has a spherical contour. The electron gun is designed to be used with an external ion-trap magnet.

GENERAL CHARACTERISTICS

Heater Voltage	6.3	Volts
Heater Current	0.6	Ampere
Focusing Method	Electrostatic	
Deflection Method	Magnetic	
Deflection Angle (Approx.) Horizontal	85	Degrees
Diagonal	90	Degrees
Face Plate Light Transmission (Neutral Density Filter)	68%	Approx.
Phosphor	No. 4	
Fluorescence	White	
Persistence	Medium	
Direct Interelectrode Capacitances (Approx.)		
Cathode to all other electrodes	5	uuf
Grid No. 1 to all other electrodes	6	uuf
External conductive coating to anode	750	uuf Max.
	500	uuf Min.

MECHANICAL DATA

Overall Length	23 1/16 ± 3/8	Inches
Greatest Dimensions of Bulb:		
Diagonal	26 13/16 ± 3/16	Inches
Width	25 9/32 ± 3/16	Inches
Height	20 7/32 ± 3/16	Inches
Minimum Useful Screen Size	24 x 18 1/2	Inches
Bulb Contact	J1-21	
Base	B6-63	
Basing	12L	
Bulb contact alignment		
J1-21 Contact aligns with pin position 6	+30	Degrees

MAXIMUM RATINGS

Anode Voltage ¹	20,000	Max. Volts D.C.
Grid No. 2 Voltage	500	Max. Volts D.C.
Grid No. 1 Voltage		
Negative Bias Value	125	Max. Volts D.C.
Positive Bias Value	0	Max. Volts D.C.
Positive Peak Value	2	Max. Volts

Peak Heater-Cathode Voltage

Heater negative with respect to cathode during warm-up
period not to exceed 15 seconds

After equipment warm-up

Heater positive with respect to cathode

410 Max. Volts D.C.
180 Max. Volts D.C.
180 Max. Volts D.C.

TYPICAL OPERATING CONDITIONS

Anode Voltage

Grid No. 4 Voltage³

Grid No. 2 Voltage

Grid No. 1 Voltage⁴

Ion-Trap Magnet

16,000 Volts D.C.
0 to +396 Volts D.C.
300 Volts D.C.
-28 to -72 Volts D.C.
40 gauss

MAXIMUM CIRCUIT VALUES

Grid No. 1 Circuit Resistance

1.5 Max. Megohms

NOTES

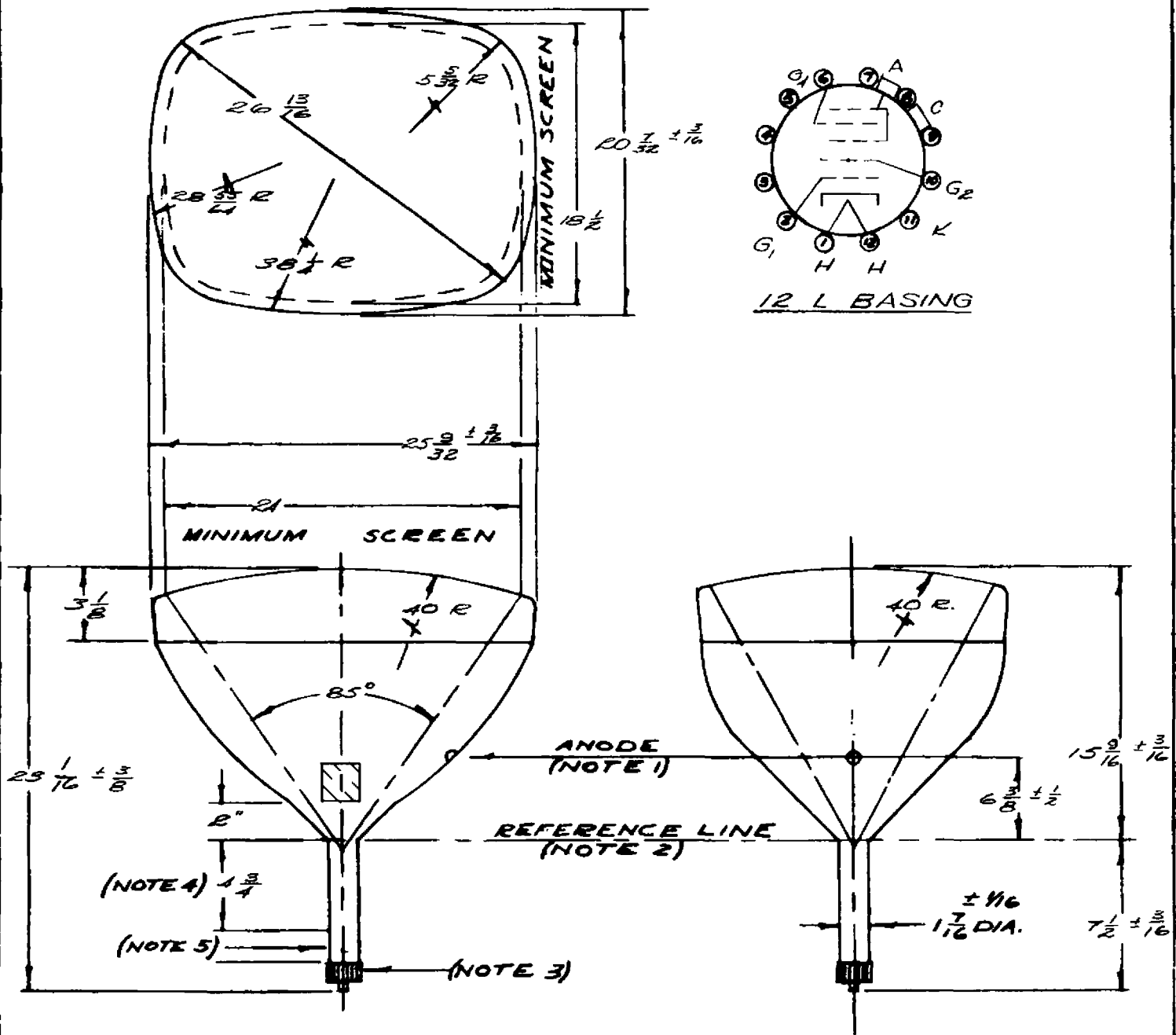
¹Because the rating of this tube permits anode voltages as high as 20 kilovolts (absolute maximum), shielding of x-ray radiation from the tube may be necessary. This precaution should be observed when the anode is operated in excess of 16 kilovolts.

²Grid number four in this tube is the focus control electrode.

³With the combined grid No. 1 bias voltages and video signal voltage adjusted to produce an anode current of 100 ua on a 24 x 18 1/2 inch picture adjusted for best overall focus. For other anode voltages, the focus voltage will be from -0.4% to +2.2% of the anode voltage.

⁴Visual extinction of undeflected, focused raster.

27UP4



NATIONAL VIDEO CORP.

CHICAGO 32, ILLINOIS

9.1.27UP4

DRAWN BY	SCALE	EFFECTIVE	SUPERSEDES	DISTRIBUTION
J. E. KUT	8" = 1"	21 DEC. 54	ORIGINAL	1, B, C, D, E, F, G, H

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NOTES

- NOTE 1: The plane through the tube axis and vacant pin position 6 aligns with the anode contact +30°.
- NOTE 2: Reference line is determined by the plane where the standard JETEC reference line gauge #116 will stop against the bulb.
- NOTE 3: Socket for this base should not be rigidly mounted. It should have flexible leads and be free to move.
- NOTE 4: Location of deflection yoke and centering device must be within this space.
- NOTE 5: Keep this space clear for ion-trap magnet.
- NOTE 6: Configuration of outer conductive coating optional, but must contain the 2 x 2 inch contact area as shown on drawing.