

CATHODE RAY TUBE TYPE 21AMP23A

The tube type 21AMP23A is a magnetic 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. It has an electron gun designed to be used with an ion-trap magnet. It has an external conductive coating. It has a metal-backed screen to increase light output.

GENERAL CHARACTERISTICS

Focusing Method	Magnetic	
Deflection Method	Magnetic	
Deflection Angle (Approx) Horizontal	85	Degrees
Diagonal	90	Degrees
Face Plate Light Transmission (Neutral Density Filter)	71%	Approx.
Phosphor	No. 23	
Fluorescence	Brown (Sepia)	
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	Max. uuf
	500	Min. uuf

MECHANICAL DATA

Overall Length	20 ± 7/16	Inches
Greatest Dimensions of Bulb:		
Diagonal	21-3/8 ± 1/8	Inches
Width	20-1/4 ± 1/8	Inches
Height	16-3/8 ± 1/8	Inches
Minimum Useful Screen Dimensions	15 x 19-1/8	Inches
Bulb Contact	J1-21	
Base	B5-57	
Basing	12N	
Bulb Contact Alignment		
J1-21 Contact Aligns with Pin Position #6	± 30	Degrees

RATINGS Design Center Values

Heater Voltage	6.3	Volts
Heater Current	0.6 ± 10%	Amperes
Anode Voltage ¹	18,000	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	410 Max. Volts D.C.
After equipment warm-up	180 Max. Volts D.C.
Heater positive with respect to cathode	180 Max. Volts D.C.

TYPICAL OPERATING CONDITIONS

Anode Voltage	16,000 Volts D.C.
Grid No. 2 Voltage	300 Volts D.C.
Grid No. 1 Voltage ²	-33 to -77 Volts D.C.
Focusing Coil Current ³	102 ± 20% Ma. D.C.
Ion-Trap Magnet Current ⁴	95 ± 50% Ma. D.C.

MAXIMUM CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5 Max. Megohms
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NOTES

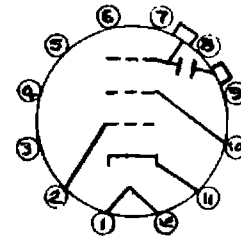
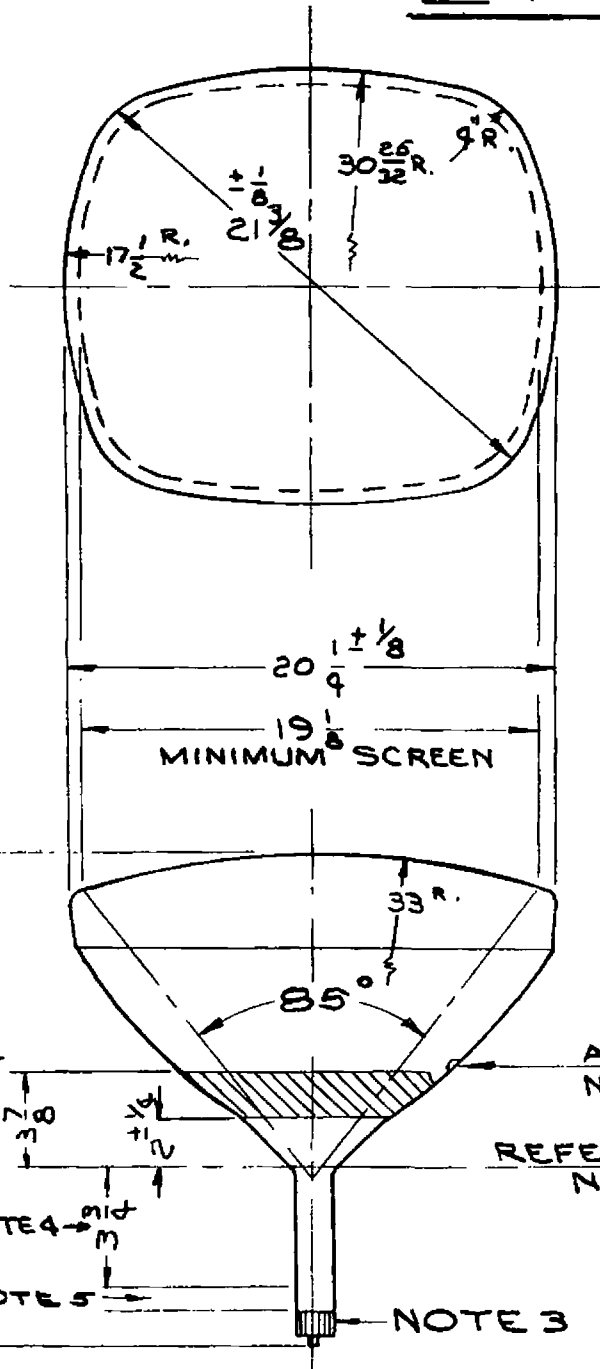
¹Because the rating of the tube permits anode voltages as high as 19.8 kilovolts (absolute maximum), shielding of x-ray radiation from the tube may be necessary. This precaution should be observed when the anode is operated in excess of 16 kilovolts.

²Visual extinction of undeflected, focused spot.

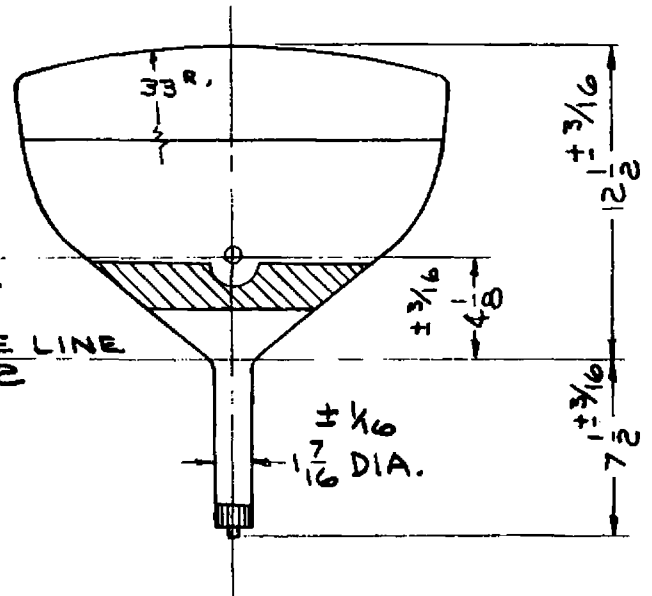
³For JETEC standard focus coil #109 with a combined grid 1 bias and video signal voltage adjusted to produce a highlight brightness of 30 foot lamberts on a picture area of 15 x 19-1/8 inches. Distance from reference line of bulb to center of focus coil air gap equal to 3 inches.

⁴For JETEC #111 single-field ion-trap magnet at optimum position.

21AMP23A



12N BASING



NATIONAL VIDEO CORP.

CHICAGO 32, ILLINOIS

9.1.21AMP23A

DRAWN BY
F. TOMS

SCALE
1" = 8"

EFFECTIVE
4-21-54

SUPERSEDES
ORIGINAL

DISTRIBUTION
A, B, C, D, E, G, H

NOTES

- NOTE 1: The plane through the tube axis and vacant pin position 6 aligns with the anode contact $\pm 30^\circ$.
- 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 focusing device must be within this space.
- NOTE 5: Keep this space clear for ion-trap magnet.