

## R A U L A N D

TYPES 22DP7, 22DP14, 22DP19, 22DP25CATHODE RAY TUBES

The type 22DP7, 22DP14, 22DP19 and 22DP25 tubes are 22" electrostatic focus and magnetic deflection, round metal envelope cathode ray tubes, suitable for radar application.

They feature an almost completely flat face, which minimizes parallax error and they have a long persistence screen.

TENTATIVE CHARACTERISTICSGENERALElectrical Data

Heater Voltage	6.3	Volts		
Heater Current	0.6 $\pm$ 10%	Amperes		
Heater warm-up time (approx.)	11	Seconds		
Focusing Method	Electrostatic	Low Voltage		
Deflecting method	Magnetic			
Deflecting angle (Approx.)	70	Degrees		
Phosphor	No. 7	No. 14	No. 19	No. 25
Fluorescence	Blue	Blue	Orange	Orange
Phosphorescence	Yellow	Orange	Orange	Orange
Persistence	Long	Med. Long	Long	Long

Face Plate - Clear Glass

Direct Interelectrode Capacitances, (Approx).

Cathode to all other electrodes	5	uuf.
Grid No. 1 to all other electrodes	6	uuf.

Mechanical Data

Overall Length	21-5/8 $\pm$ 7/16	Inches
Greatest diameter of envelope	21-3/4 $\pm$ 1/8	Inches
Minimum useful screen diameter	20-1/4	Inches
Radius (face plate)	165	Inches
Accelerator contact	Lip of cone	
Base (small shell Duodecal 6 pin)	B6-63	
Basing connections	12M	

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Accelerator voltage <sup>1</sup> & <sup>2</sup>	16,000	Max. Volts D-C
Grid #4 voltage (focus anode)	-500 to $\pm$ 1000	Max. Volts D-C
Grid #2 voltage	$\pm$ 1000	Max. Volts D-C
Grid #1 voltage		
Negative bias value	-125	Max. volts D-C
Positive bias value	0	Max. volts D-C
Positive peak value	$\pm$ 2	Max. volts
Peak Heater Cathode Voltage <sup>3</sup>		
Heater negative with respect to cathode	180	Max. volts D-C
Heater positive with respect to cathode	180	Max. volts D-C
Heater negative with respect to cathode during warm-up period, not to exceed 15 sec.	410	Max. volts D-C

TYPICAL OPERATING CONDITIONS

Accelerator Voltage <sup>4</sup>	12,000	Volts D-C
Grid #4 voltage	-0.4 to $\pm$ 2.2% of Eanode	
Grid #4 current	-15 to $\pm$ 25	ua. D-C
Grid #2 voltage	$\pm$ 300	Volts D-C
Grid #1 voltage <sup>5</sup>	-33 to -77	Volts
Spot Position (Undelected) <sup>6</sup>	20	MM
Field strength of adjustable centering magnet	0 to 8	Gausses

MAXIMUM CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5	Max. Megohms
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Note 1: Accelerator and Grid #3, which are connected together within the tube, are referred to herein as Accelerator.

Note 2: At or near this rating, the effective resistance of the accelerator supply should be adequate to limit the accelerator input power to six watts. The screen of the 22DP- can be permanently damaged should the current density be permitted to rise too high. To prevent burning, minimum beam current densities should be employed.

Note 3: Cathode should be returned to one side or to the mid-tap of the heater transformer windings.

Note 4: Brilliance and definition decrease with decreasing accelerator voltage. In general, accelerator voltage should not be less than 8000 volts.

Note 5: Visual extinction of undeflected focused spot.

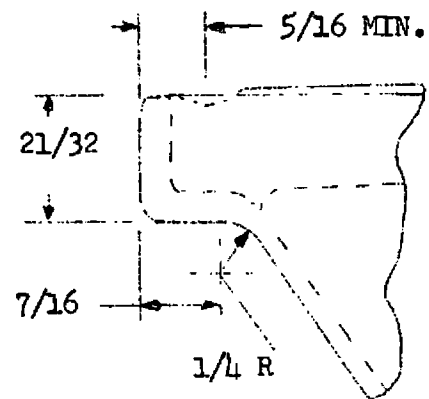
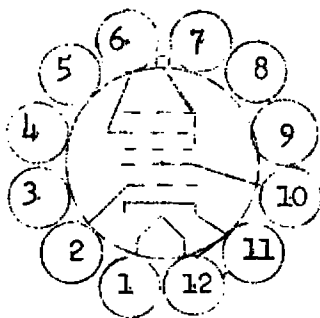
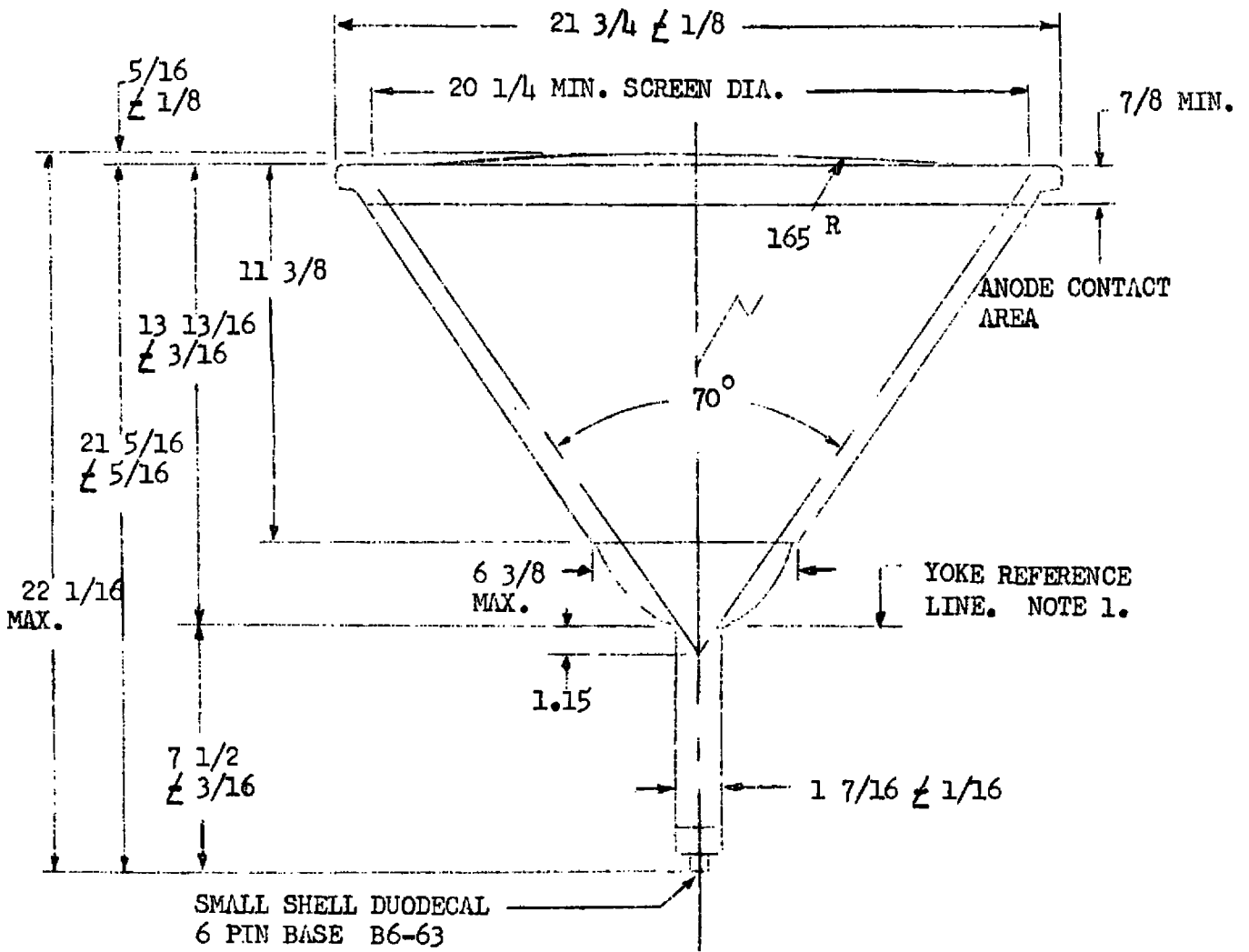
Note 6: The center of the undeflected focused spot will fall within a circle of 20 MM radius concentric with the center of the tube's face.

22DP7

22DP14

22DP19

22DP25



NOTE 1. REFERENCE LINE DETERMINED BY POSITION WHERE REFERENCE LINE GAUGE #110 WILL REST ON GLASS FUNNEL.