R A U L A N D

TYPE 12AGP-, 12AGP-A CATHODE-RAY TUBES

The type 12AGP- is a 12" electrostatic focus and magnetic deflection round metal envelope cathode-ray tube, suitable for radar applications. A low voltage electrostatic focus lens is employed, designed to operate at or near cathode potential to afford substantially automatic focus, independent of accelerator voltage variation.

It features an almost completely flat face which minimizes parallax error, electrostatic straight gun (no Ion Trap needed) and a gray filter glass (luxide) face to increase contrast. It has a long persistence screen.

The type 12AGP-A tube utilizes a metal backed (aluminized) screen for greater light output and to minimize screen charging effects. It is otherwise identical to the 12AGP-.

TENTATIVE CHARACTERISTICS

GENERAL

Electrical Data

Heater Voltage	6.3	Volts
Heater Current	0.6 ± 10%	Amper
Heater warm-up time (approx.)	11 seconds	
Focusing Method	Electrostatic(low voltage	
Deflecting method	Magnetic	
Deflecting angle (Approx.)	54	Degree
Phosphor	No. 7 No. 14	No. 19
Fluorescence	Blue Blue	Orange
Phosphorescence	Yellow Orange	Orange
Persistence	Long Medium-long	Long
Face Plate - Gray Filter Glass		
Light Transmission (Approx. 66%		
Direct Interelectrode Capacitances, Approx.		
Cathode to all other electrodes	5	uuf.
Grid No. 1 to all other electrodes	6	uuf.

Mechanical Data

Overall Length	17-7/8 ± 7/16	Inches
Greatest diameter of envelope	12 7/16 ± 1/8	Inches
Minimum useful screen diameter	11 3/8 Dia.	Inches
Radius (Face Plate)	125	Inches
Anode contact	Metal cone lip	
Base (small shell Duodecal 6 pin)	B6-63	
Basing connections	12M	

from JETEC release #1472, May 31, 1955

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MAXIMUM RATINGS Design Center Values

Accelerator voltage [1 & 2]	14,000	Max. Volts D-C
Grid #4 voltage (focus anode)	-500 to +1000	Max. Volts D-C
Grid #2 voltage	+1000	Max. Volts D-C
Grid #1 voltage (control electrode)		
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[3]		
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[4]	12,000	Volts D-C
Grid #4 voltage	-0.4 to +2.2% of E_{anode}	
Grid #4 current	-15 to +25	ua. D-C
Grid #2 voltage	+500	Volts
Grid #1 voltage[5]	-33 to -77	Volts
Spot Position (Undeflected)[6]	20	MM
Field strength of adjustable centering magnet	0 to 8	Gausses

MAXIMUM CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5	Max. Megohms

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 12AGP- 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.

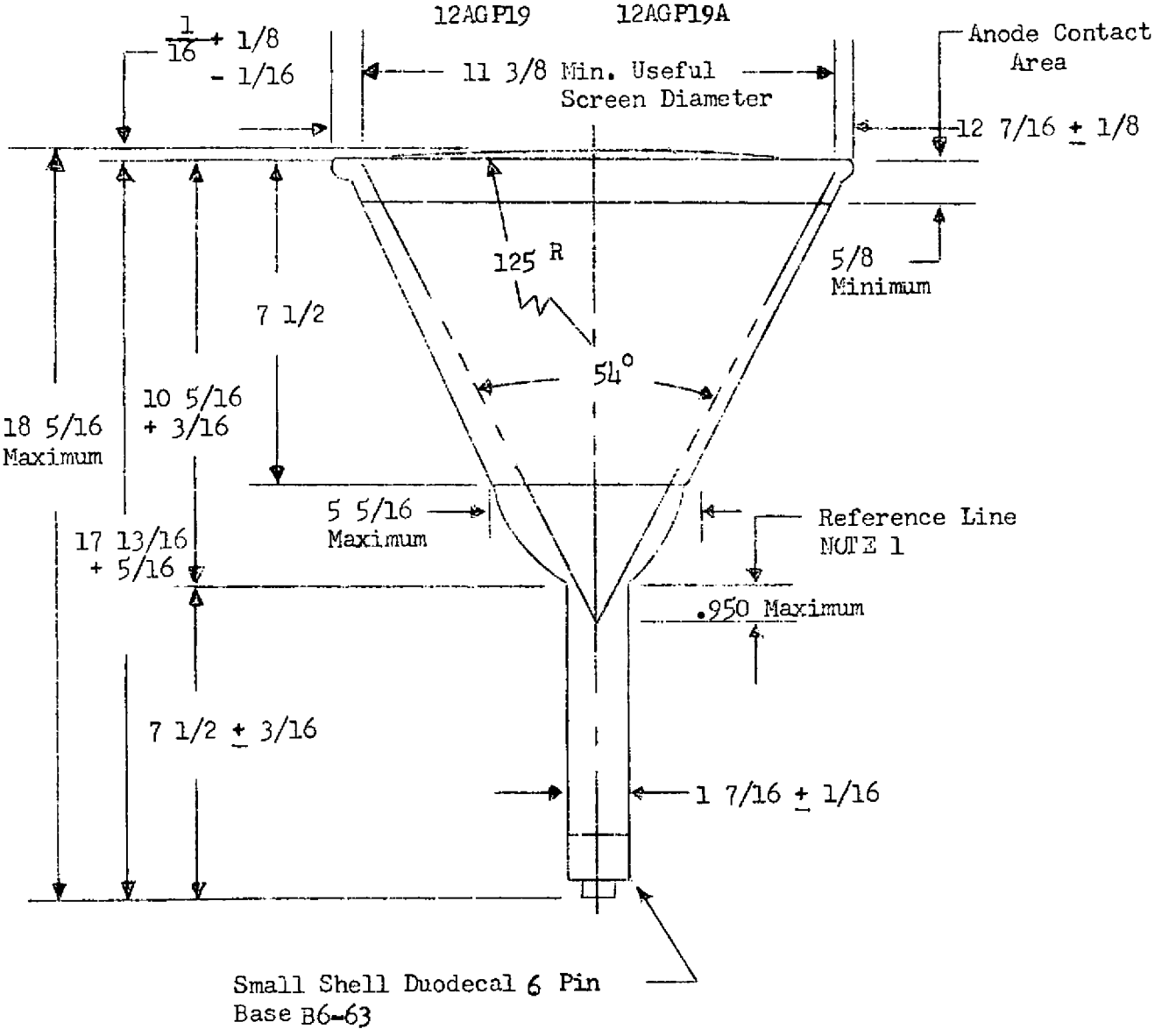
Note 6: The center of the undeflected focused spot will fall within a circle of 20 MM radius concentric with the center of the tube's face.

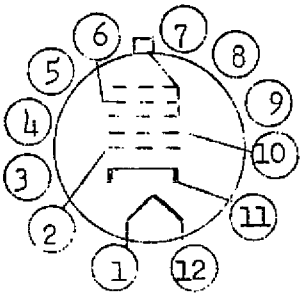
The Rauland Corporation
Chicago, Illinois

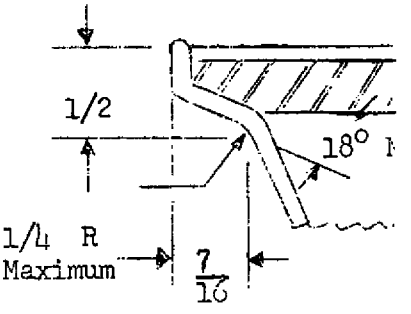
12AGP7 12AGP7A

12AGP14 12AGP14A

12AGP19 12AGP19A







NOTE 1

Reference line determined by position where reference line gauge JETEC #112 will rest on glass funnel.

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