RCA

5AZP4

PROJECTION KINESCOPE

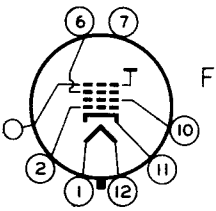
ALUMINIZED FLUORESCENT SCREEN
FORCED-AIR COOLED AT MAXIMUM ULTOR INPUT
ELECTROSTATIC FOCUS MAGNETIC DEFLECTION

DATA

General:

Heater, for Unipotential Cathode:		
Voltage	6.3	ac or dc volts
Current	0.6 ± 10%	amp
Direct Interelectrode Capacitances:		
Grid No.1 to all other electrodes	8 max.	μμf
Cathode to all other electrodes	5	μμf
Faceplate, Spherical	Non-browning Glass	
Refractive index	1.519	
Phosphor (For curves, see front of this Section)	P4—Silicate Type Aluminized	
Fluorescence	White	
Phosphorescence	White	
Persistence	Medium	
Focusing Method	Electrostatic	
Deflection Method	Magnetic	
Deflection Angle (Approx.)	50°	
Overall Length	12-3/16" ± 3/8"	
Greatest Diameter of Bulb	5" ± 1/8"	
Minimum Useful Screen Diameter	4-1/2"	
Minimum Optical-Quality-Circle Diameter	4-1/4"	
Weight (Approx.)	1-1/2 lbs	
Mounting Position	Any	
Ultor Lead	Molded-On Insulated Cable 48" Long	
Bulb	J-40	
Base	Small-Shell Duodecal 7-Pin (JETEC No.B7-51)	
Basing Designation for BOTTOM VIEW	12AA	

Pin 1 - Heater
Pin 2 - Grid No.1
Pin 6 - Grid No.3
Pin 7 - Internal Connection-Do Not Use
Pin 10 - Grid No.2



Pin 11 - Cathode
Pin 12 - Heater
Flexible Cable - Ultor (Grid No.4, Collector)

NOTE: Socket contacts for vacant pin positions 3,4,5,8, and 9 should be removed so that maximum insulation is provided for pins 6 and 7.

Air Flow to Face (When average ultor input exceeds 9 watts): An adequate air flow sufficient to limit the faceplate temperature to the specified value should be delivered perpendicularly from a nozzle having a diameter of about 2 inches onto the face of the tube when it is in operation. The blower should have adequate capacity to provide for a total system pressure drop including that of the air filter.

Face Temperature	100 max.	°C

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Maximum Ratings, *Absolute Values:*

ULTOR VOLTAGE	40000 max.	volts
ULTOR INPUT (AVERAGE):		
Without forced-air cooling of faceplate	9 max.	watts
With forced-air cooling of faceplate	12 max.	watts
GRID-No.3 VOLTAGE	9000 max.	volts
GRID-No.2 VOLTAGE	400 max.	volts
GRID-No.1 VOLTAGE:		
Negative bias value	150 max.	volts
Positive bias value	0 max.	volts
Positive peak value	2 max.	volts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	175 max.	volts
Heater positive with respect to cathode	10 max.	volts

Equipment Design Ranges:

For any ultor voltage (E_{c_4}) between 35000 and 40000 volts*

Grid-No.3 (Focusing Electrode) Voltage for ultor current of 300 μamp	18.5% to 22.5% of E_{c_4}	volts
Grid-No.2 Voltage when circuit design utilizes grid-No.1 voltage (E_{c_1}) at fixed value for raster cutoff	2.15 to 5.4 times E_{c_1}	volts
Grid-No.1 Voltage for Visual Extinction of Focused Raster when circuit design utilizes grid-No.2 voltage (E_{c_2}) at fixed value	-18.5% to -46.5% of E_{c_2}	volts
Maximum Grid-No.3 Current for ultor current of 300 μamp	100	μamp
Grid-No.2 Current	-15 to +15	μamp

Examples of Use of Design Ranges:

For ultor voltage of 36000 volts

Grid-No.3 (Focusing Electrode) Voltage for ultor current of 300 μamp	6650 to 8100	volts
Grid-No.2 Voltage when circuit design utilizes grid-No.1 voltage of -65 volts for raster cutoff	140 to 350	volts
Grid-No.1 Voltage for Visual Extinction of Focused Raster when circuit design utilizes grid-No.2 voltage of 200 volts	-37 to -93	volts

*: See next page.

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Maximum Circuit Values:

Grid-No.1-Circuit Resistance . . . . . 1.5 max. megohms

* Brilliance and definition decrease with decreasing ultor voltage. In general, the ultor voltage should not be less than 35000 volts.

OPERATING CONSIDERATIONS

X-ray radiation is produced at the face of the 5AZP4 when it is operated at its normal ultor voltage. These rays can constitute a health hazard unless the tube is adequately shielded. For X-ray shielding considerations, see sheet X-RAY PRECAUTIONS FOR CATHODE-RAY TUBES at front of this Section.

An *air-cooling system* is required to cool the face of the 5AZP4 when the tube is operated with an average ultor input in excess of 9 watts. The system consists of a suitable blower and air duct, having an outlet diameter of about 2 inches, directed perpendicularly onto the face of the tube. The air flow must be adequate to limit the faceplate temperature to 100°C. The cooling air must not contain water, dust, or other foreign matter. The air-cooling system should be electrically interconnected with the ultor power supply to prevent operation of the tube without cooling.

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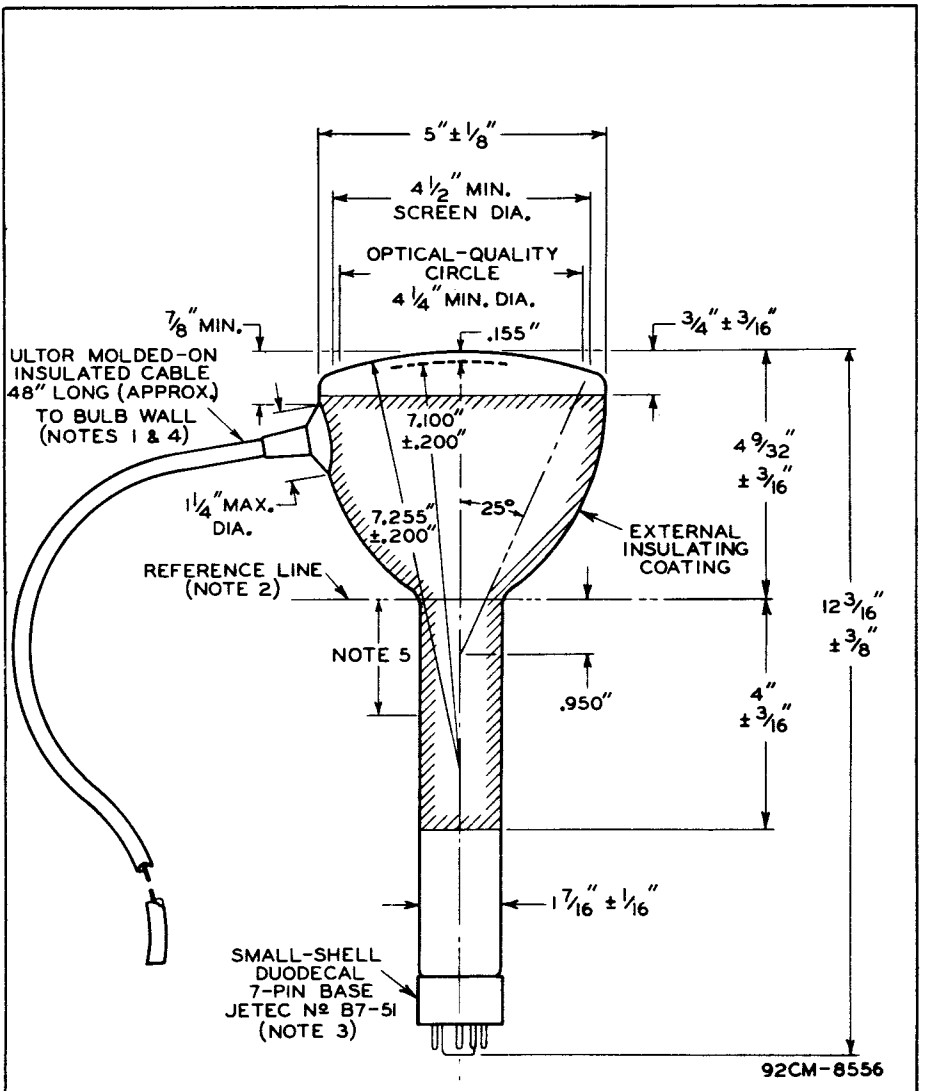

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NOTE 1: THE PLANE THROUGH THE TUBE AXIS AND VACANT PIN POSITION No.3 MAY VARY FROM THE PLANE THROUGH THE TUBE AXIS AND ULTOR-CABLE CONNECTION AT BULB WALL BY ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF ± 20°. ULTOR-CABLE CONNECTION IS ON SAME SIDE AS VACANT PIN POSITION No.3.

NOTE 2: REFERENCE LINE IS DETERMINED BY POSITION WHERE GAUGE 1.500" + 0.003" - 0.000" I.D. AND 2" LONG WILL REST ON BULB CONE.

NOTE 3: SOCKET FOR THIS BASE SHOULD NOT BE RIGIDLY MOUNTED; IT SHOULD HAVE FLEXIBLE LEADS AND BE ALLOWED TO MOVE FREELY. SOCKET CONTACTS CORRESPONDING TO VACANT PIN POSITIONS No.3, 4, 5, 8, AND 9 SHOULD BE REMOVED IN ORDER TO PROVIDE MAXIMUM INSULATION FOR PINS No.6 AND 7.

NOTE 4: ULTOR CABLE SHOULD NOT BE SHARPLY BENT WITHIN 3" OF BULB WALL.

NOTE 5: THE WINDINGS OF THE DEFLECTING YOKE SHOULD NOT EXTEND MORE THAN 2" FROM THE REFERENCE LINE TOWARD THE BASE. THEY SHOULD BE INSULATED TO WITHSTAND 20 KV AND BE SPACED AT LEAST 1/10" FROM THE TUBE NECK.

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AVERAGE DRIVE CHARACTERISTICS