



9QP4

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ET-T1332
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CATHODE-RAY TUBE

9-INCH RECTANGULAR, GLASS

7 $\frac{11}{16}$ BY 6 $\frac{1}{8}$ INCH PICTURE SIZE

FOCUS—ELECTROSTATIC

FACEPLATE—SPHERICAL, CLEAR

DEFLECTION—MAGNETIC

ION-TRAP GUN

70-DEGREE DEFLECTION ANGLE

PERSISTENCE—SHORT

DESCRIPTION AND RATING

The 9QP4 is a television picture tube especially designed to feature small size, light weight, and a low-current heater for series-string operation.

The reduction in size and weight over other tubes with comparable characteristics makes it particularly suitable for use in small, light weight, portable television receivers.

Since the tube is designed primarily for series-string operation, its use will permit the circuit simplification and power reduction possible in such service.

GENERAL

ELECTRICAL

Heater Voltage	4.7 $\pm$ 10% Volts
Heater Current	.03 Amperes
Heater Warm-up time	.11 Seconds

Focusing Method—Electrostatic

Deflecting Method—Magnetic

Deflection Angle, approximate

Diagonal	70 Degrees
Horizontal	61 Degrees
Vertical	49 Degrees

Direct Interelectrode Capacitances, approximate

Cathode to All Other Electrodes	.6 μ f
Grid-No. 1 to All Other Electrodes	.4 μ f

OPTICAL

Phosphor Number—P4

Fluorescent Color—White

Phosphorescent Color—White

Persistence—Short

Faceplate—Clear

MECHANICAL

Over-all Length	12 $\frac{3}{4}$ $\pm$ $\frac{1}{16}$ Inches
Greatest Bulb Dimensions	
Diagonal	8 $\frac{5}{8}$ + $\frac{1}{8}$ - $\frac{1}{16}$ Inches
Width	8 $\frac{7}{32}$ + $\frac{1}{8}$ - $\frac{1}{16}$ Inches
Height	6 $\frac{11}{16}$ + $\frac{1}{8}$ - $\frac{1}{16}$ Inches

Minimum Useful Screen Dimensions

Diagonal	8 $\frac{1}{4}$ Inches
Width	7 $\frac{11}{16}$ Inches
Height	6 $\frac{1}{8}$ Inches

Neck Length	6 $\frac{1}{2}$ Inches
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Base—Small-shell Duodecal 7-Pin, JETEC No. B7-179

Basing, JETEC Designation—12AD

Mounting Position—Any

Net Weight, approximate	2 Pounds
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MAXIMUM RATINGS*

CATHODE-DRIVE SERVICE

DESIGN-CENTER VALUES†

Anode Voltage‡	6800 Max Volts DC
Focusing-Electrode Voltage for Focus	-100 to +500 Max Volts DC
Grid-No. 2 Voltage	300 Max Volts DC
Cathode to Grid-No. 1 Voltage§	
Negative-Bias Value	0 Max Volts DC
Positive-Bias Value	100 Max Volts DC
Negative-Peak Value	.2 Max Volts
Positive-Peak Value	130 Max Volts

Peak Heater-Cathode Voltage

Heater Negative with Respect to Cathode

During Warm-up Period not to Exceed 15 Seconds	200 Max Volts
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After Equipment Warm-up Period	150 Max Volts
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Heater Positive with Respect to Cathode	150 Max Volts
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TYPICAL OPERATING CONDITIONS*

CATHODE-DRIVE SERVICE

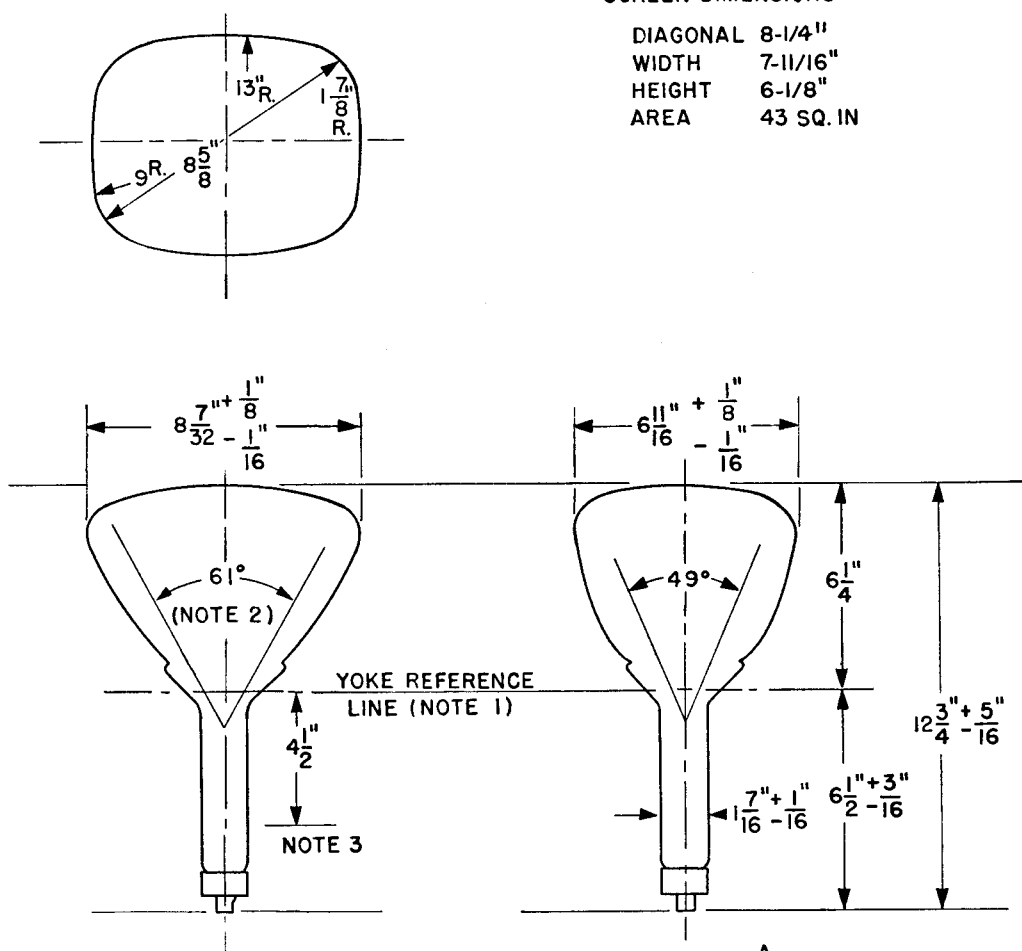
Anode Voltage π	5500 Volts DC
Focusing-Electrode Voltage for Focus	0 to 400 Volts DC
Focusing-Electrode Current	-15 to +25 Microamperes DC
Grid-No. 2 Voltage	200 Volts DC
Cathode to Grid-No. 1 Voltage $\diamond$	+28 to +52 Volts DC
Ion-Trap Field Intensity Δ , approximate	22 Gauss

Grid- No. 1 Circuit Resistance.....1.5 Max Megohms

- * Voltages are positive with respect to Grid-No. 1 unless otherwise specified.
- † The maximum ratings provide a ten percent safety factor in accordance with the standard design-center system of rating cathode-ray tubes. The tube will withstand the combined effects of variations in line voltage and components provided the maximum design-center values are not exceeded by more than ten percent.
- ‡ Anode, Grid-No. 3, and Grid-No. 5 which are connected together within the tube are referred to herein as anode.
- § Grid-No. 1 must not be positive with respect to cathode at any time during warm-up or subsequent operation.
- π Brightness and focus quality decrease with decreasing anode voltage. In general, the anode voltage should not be less than 3500 volts.
- ◆ For visual extinction of focused raster.
- △ Single-field ion-trap magnet adjusted to optimum position, equivalent to 22 milliamperes through RETMA ion-trap magnet No. 117.

SCREEN DIMENSIONS

DIAGONAL	8-1/4"
WIDTH	7-11/16"
HEIGHT	6-1/8"
AREA	43 SQ. IN



NOTES:

1. REFERENCE LINE IS DETERMINED BY THE PLANE OF THE UPPER EDGE OF THE SHOULDER OF THE REFERENCE-LINE GAGE (RETMA NO. 110) WHEN THE GAGE IS RESTING ON THE CONE.
2. DEFLECTION ANGLE ON DIAGONAL IS 70 DEGREES.
3. APPROXIMATE POSITION OF ION-TRAP MAGNET

