



9QP4

CATHODE-RAY TUBE

9-INCH RECTANGULAR, GLASS
FOCUS—ELECTROSTATIC
DEFLECTION—MAGNETIC
70-DEGREE DEFLECTION ANGLE

7 $\frac{11}{16}$ BY 6 $\frac{1}{8}$ INCH PICTURE SIZE
FACEPLATE—SPHERICAL, CLEAR
ION-TRAP GUN
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 0.3 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	12¾ ± 1/8	Inches
Greatest Bulb Dimensions		
Diagonal	8 5/8 + 1/8 - 1/8	Inches
Width	8 7/32 + 1/8 - 1/8	Inches
Height	6 11/16 + 1/8 - 1/8	Inches
Minimum Useful Screen Dimensions		
Diagonal	8 1/4	Inches
Width	7 11/16	Inches
Height	6 1/8	Inches
Neck Length	6 1/2	Inches
Base—Small-shell Duodecal 7-Pin, JETEC No. B7-179		
Basing, JETEC Designation—12AD		
Mounting Position—Any		
Net Weight, approximate	2	Pounds

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 Value2 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
After Equipment Warm-up Period	150 Max	Volts
Heater Positive with Respect to Cathode	150 Max	Volts

TYPICAL OPERATING CONDITIONS*
CATHODE-DRIVE SERVICE

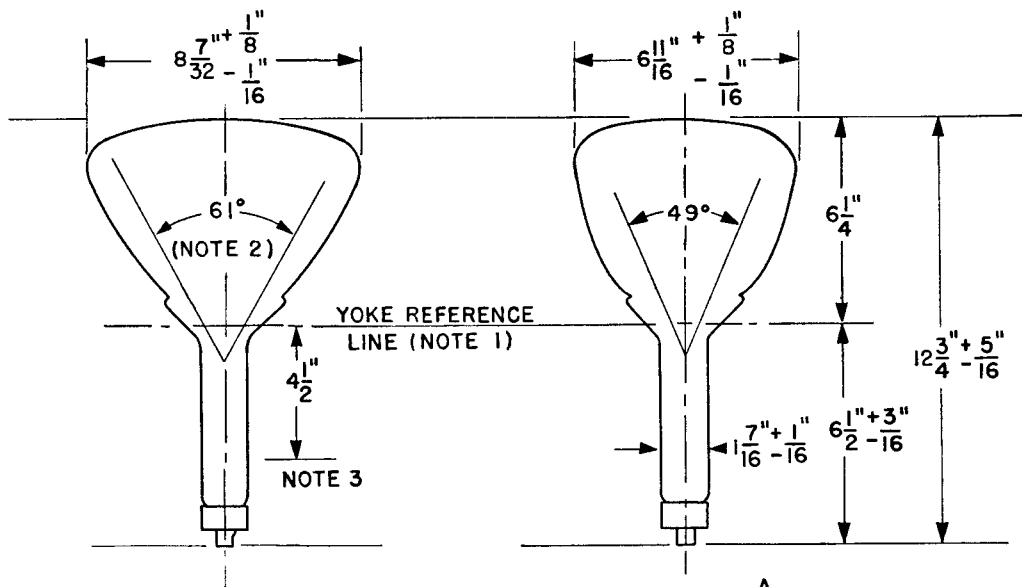
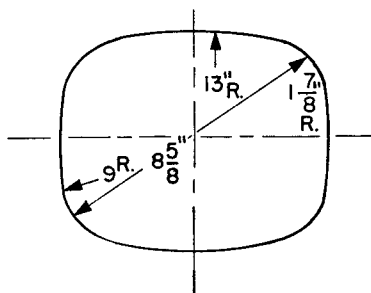
Anode Voltageπ	5500	Volts DC
Focusing-Electrode Voltage for Focus	0 to 400	Volts DC
Focusing-Electrode Current	-15 to +25	Microamperes DC
Grid-No. 2 Voltage	200	Volts DC
Cathode to Grid-No. 1 Voltage ◆	+28 to +52	Volts DC
Ion-Trap Field Intensity △, approximate	22	Gausses

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

