

## CHARACTERISTICS

### GENERAL DATA

Focusing Method . . . . .	Electrostatic
Deflecting Method . . . . .	Magnetic
Deflection Angle (approx.)	
Horizontal . . . . .	85 Degrees
Diagonal . . . . .	90 Degrees
Phosphor . . . . .	P4
Fluorescence . . . . .	White
Persistence . . . . .	Medium
Faceplate . . . . .	Gray Filter Glass
Light Transmittance (approx.) . . . . .	68 Percent

### ELECTRICAL DATA

Heater Voltage . . . . .	6.3 Volts
Heater Current (approx.) . . . . .	0.6 Ampere
Direct Interelectrode Capacitances (approx.)	
Cathode to All Other Electrodes . . . . .	5 $\mu\mu\text{f}$
Grid No. 1 to All Other Electrodes . . . . .	6 $\mu\mu\text{f}$
External Conductive Coating to Anode <sup>1</sup> . . . . .	750 $\mu\mu\text{f}$ Max. 500 $\mu\mu\text{f}$ Min.
Ion Trap Magnet . . . . .	External, Single Field Type

### MECHANICAL DATA

Minimum Useful Screen Dimensions . . . . .	24 x 18½ Inches
Bulb Contact, (Recessed Small Cavity Cap) . . . . .	J1-21
Base, (Small Shell Duodecal 6-Pin) . . . . .	B6-63
Basing . . . . .	12L

## RATINGS

### MAXIMUM RATINGS (Design Center Values)

Anode Voltage . . . . .	20,000 Volts dc
Grid No. 4 Voltage (Focusing Electrode) . . . . .	-500 to +1000 Volts dc
Grid No. 2 Voltage . . . . .	500 Volts dc
Grid No. 1 Voltage	
Negative Bias Value . . . . .	125 Volts dc
Positive Bias Value . . . . .	0 Volts dc
Positive Peak Value . . . . .	2 Volts
Peak Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	
During Warm-up Period Not to Exceed 15 Seconds . . . . .	410 Volts
After Equipment Warm-up Period . . . . .	180 Volts
Heater Positive with Respect to Cathode . . . . .	180 Volts

### RECOMMENDED OPERATING CONDITIONS

Anode Voltage <sup>2</sup> . . . . .	18,000 Volts dc
Grid No. 4 Voltage . . . . .	-72 to +396 Volts dc
Grid No. 2 Voltage . . . . .	300 Volts dc
Grid No. 1 Voltage Required for Cutoff <sup>3</sup> . . . . .	-28 to -72 Volts dc
Ion Trap Magnet Strength (approx.) . . . . .	40 Gauss

### CIRCUIT VALUES

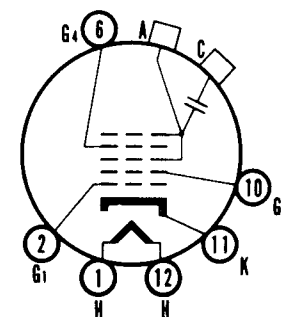
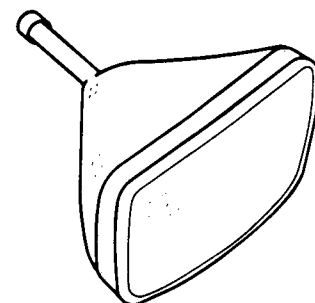
Grid No. 1 Circuit Resistance . . . . .	1.5 Megohms Max.
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### NOTES:

1. External conductive coating must be grounded.
2. Brilliance and definition decrease with decreasing anode voltage. In general, the anode voltage should not be less than this value.
3. Visual extinction of focused raster. Extinction of the stationary focused spot will require that these values be about 5 volts more negative.

## QUICK REFERENCE DATA

Television Picture Tube  
27" Direct Viewed  
Rectangular Glass Type  
Spherical Faceplate  
Gray Filter Glass  
Magnetic Deflection  
Electrostatic Focus  
Single Field Ion Trap  
Aluminized Screen  
External Conductive Coating



12-L

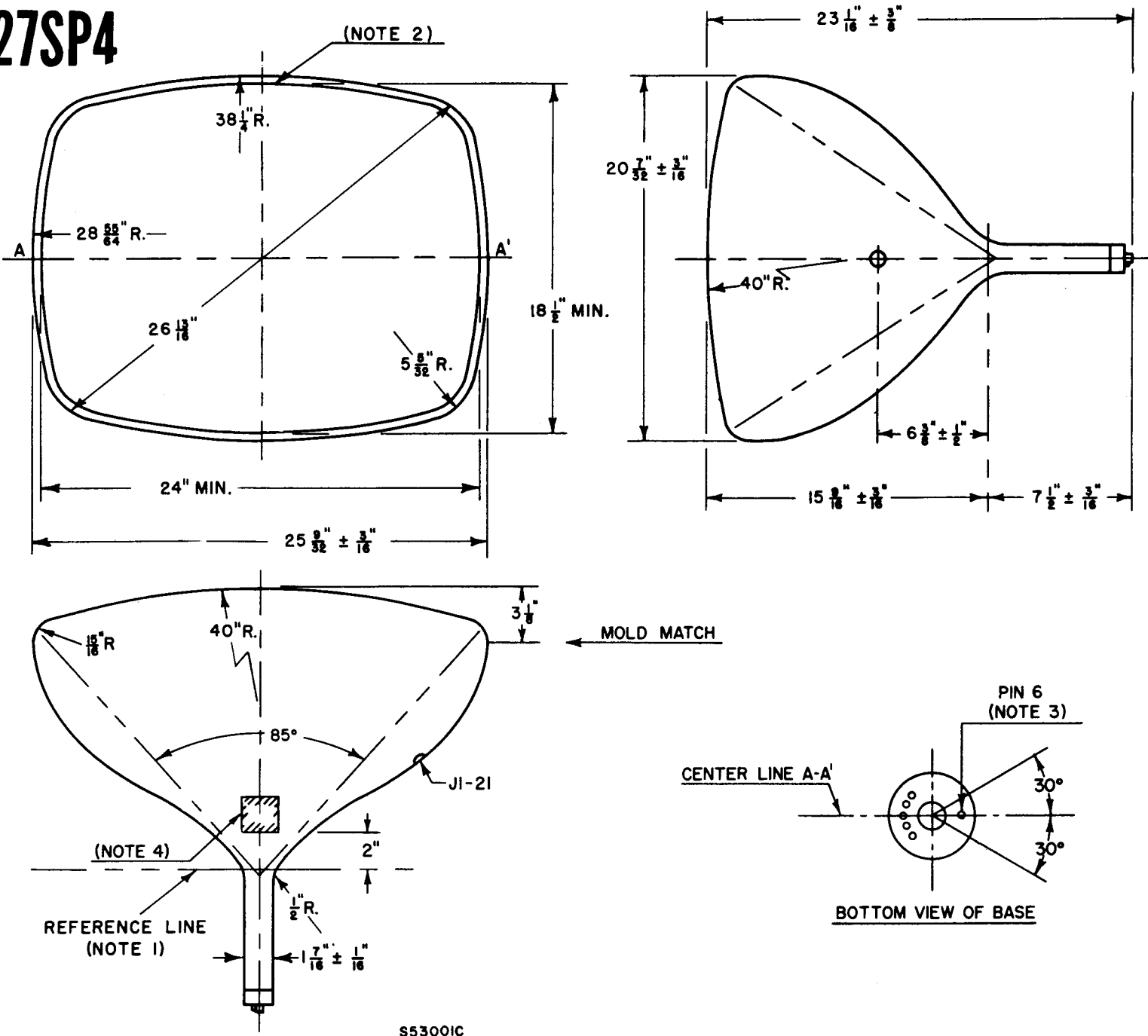
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# 27SP4



## DIAGRAM NOTES:

1. Reference line is determined by the plane C-C1 of the reference line gauge (JETEC No. 116) when the gauge is resting on the cone. The neck diameter near the cone may exceed 1.500" but is limited by the internal contour of the yoke reference line gauge.
2. Useful screen area.
3. Anode contact aligns with pin No. 6  $\pm 30$  degrees.
4. In the interest of reducing the number of potential types due to different external coating shapes, only the 2" x 2" contact point is defined on the picture tube as shown in the drawing. The external coating may take any configuration above the reference line to produce the desired capacitance.

## WARNING:

X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 volts, whichever is less.