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4WP11 - 4WP16

Ultra-High Resolution

Cathode Ray Tube

PHILCO CORPORATION - LANSDALE DIVISION

CATHODE RAY TUBE

DATA SHEET

Tentative

Description

The Philco type 4WP- is an ultra-high resolution cathode ray tube of the magnetic focus and magnetic deflection type. It features an ultra-high resolution spot which is essentially constant over a radius of 0.75 inch. The tube is capable of resolving 3500 lines per inch.

The optical quality, non-browning, flat faceplate, combined with an essentially blemish-free, metal backed screen, makes it suitable for photo-oscillographic applications. The high quality settled screen results in considerably more light output than other types of high resolution screens.

Electrical Data

Focusing Method	Magnetic
Deflection Method	Magnetic
Deflection Angle, approximate	46.5°
Heater Voltage	6.3 Volts
Heater Current	0.60 ±10% Ampere
Direct Interelectrode Capacitance (Maximum)	
Cathode to All Other Electrodes	6.0uuf
Grid #1 to All Other Electrodes	6.0uuf

Optical Data

Phosphor Number	P11	P16
Fluorescent Color	Blue	Bluish Purple
Phosphorescence	Blue	Bluish Purple
Persistence	Medium Short	Very Short

Faceplate

Optical Quality, Flat, Gray, Non-browning

Mechanical Data

Overall Dimensions	
Length	12±1/4 Inches
Greatest Bulb Diameter	3 3/4±3/32 Inches
Minimum Useful Screen Diameter	2.8 Inches
Base	B5-57
Anode Contact	J1-21

Maximum Ratings

Anode Voltage (Note #1)	22,000 Volts DC
Grid No. 1	
Negative Bias Value	100 Volts DC
Positive Bias Value	0 Volts
Positive Peak Value	0 Volts
Heater-Cathode Voltage (Note #2)	±180 Volts DC
Grid No. 1 Circuit Resistance	1.0 megohm

Typical Operating Conditions

Anode Voltage	20,000 Volts
Grid #1 Voltage (Note #3)	-20 to -50 Volts
Line Width "A" (Note #4)	0.0003 Inch
Spot Size (Note #5)	0.0007 Inch

Notes

1. Anode and Grid #2 are connected together within the tube and are referred to herein as anode.

2. Cathode should be returned to one side or to the mid-tap of the heater transformer winding.

3. For visual extinction of the undeflected focused spot.

4. Measured with a 525 line pattern adjusted to 90% of minimum useful screen diameter at Ik = 1.0ua. The line width is the merged raster height divided by the number of lines (500) (measured in the center of tube face).

5. Measured to the half-brightness point at center of face with Ik = 1.0ua.

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Outline Drawing
4WP11 - 4WP16

Ultra-High Resolution
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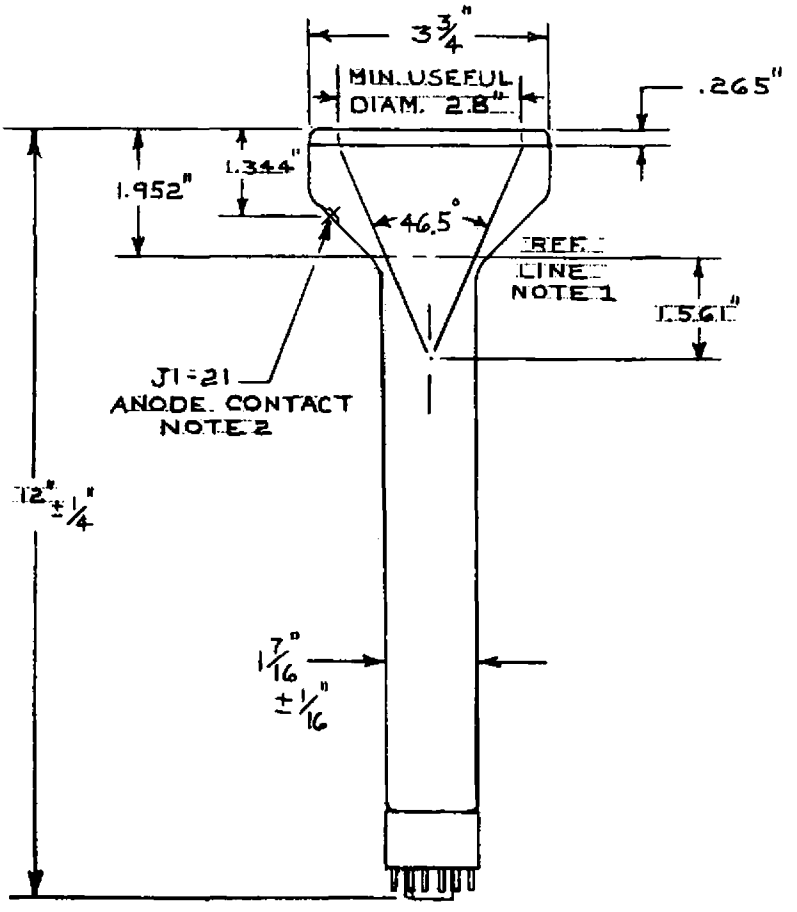

Base lug aligns
with anode button

MECHANICAL NOTES

1. Reference line is determined by a 1.937" ±.002" diameter ring gauge 2 inches long.
2. Anode button is aligned with base lug ±10°.

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 anode voltages higher than 16,000 volts.

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