PHILCO CORPORATION

Lansdale, Pa.

Release No. 888
July 17, 1950

June 21, 1950

4BP15

The 4BP15 type is a magnetic focus and magnetic deflection cathode-ray tube intended primarily for use as the scanner in a flying-spot video-signal generator.

The 4BP15 features an extremely uniform phosphor screen so applied as to be practically free of graininess.

The tube has a face plate optical quality which will not limit the performance of a high quality objective lens normally needed in flying-spot applications. The 20 inch radius of curvature has been found to be an excellent compromise between electron optic and light optic requirements so as to provide good resolution to the edge of the screen area.

Other features include (1) an external conductive coating on the neck which should be grounded to prevent corona between the yoke and neck, and (2) an external insulating coating on the bulb cone to reduce arcing over the bulb under high humidity conditions.

GENERAL CHARACTERISTICS

Electrical

Heater Voltage	6.3		Volts
Heater Current	0.6	± 10%	Amperes
Focusing Method	Magnetic		
Deflecting Method	Magnetic		
Approximate Deflecting Angle	50		Degrees
Phosphor	P15		
Fluorescence	Blue Green		
Persistence	Very Short		
Direct Interelectrode Capacitances, Approx.			
Cathode to all other electrodes	3.5		uuf
Grid #1 to all other electrodes	4.0		uuf
External Conductive Coating to Anode Capacitance	500	Max	uuf
	100	Min	uuf

Mechanical

Overall Length	13-1/16 ± 5/16	Inches
Greatest Diameter of Bulb	4 ± 1/16	Inches
Minimum Useful Screen Diameter	3-5/8	Inches
Bulb Contact	J1-21	
Base	Medium long-shell octal	
Basing	4AE	
Bulb Contact Alignment		
J1-21 contact aligns with Pin #5	±10	Degrees

MAXIMUM RATINGS Design Center Values

Anode Voltage[1]	25,000	Max	Volts DC
Grid #1 Voltage			
Negative-Bias Value	350	Max	Volts DC
Positive-Bias Value	0	Max	Volts DC
Positive-Peak Value	2	Max	Volts DC
Peak Heater-Cathode Voltage[2]			
Heater Negative with respect to cathode			
During warm-up period not to exceed 15 seconds	410	Max	Volts DC
After equipment warm-up period	175	Max	Volts DC
Heater Positive with respect to cathode	175	Max	Volts DC

TYPICAL OPERATING CONDITIONS

Anode Voltage	25,000		Volts DC
Grid #1 Voltage[3]	-75 to -175		Volts DC
Focusing Coil Current[4]	140	Approx	Ma DC
Spot Position (undeflected)	15	Max	MM

MAXIMUM CIRCUIT VALUES

Grid #1 Circuit Resistance	1.5	Max	Megohms

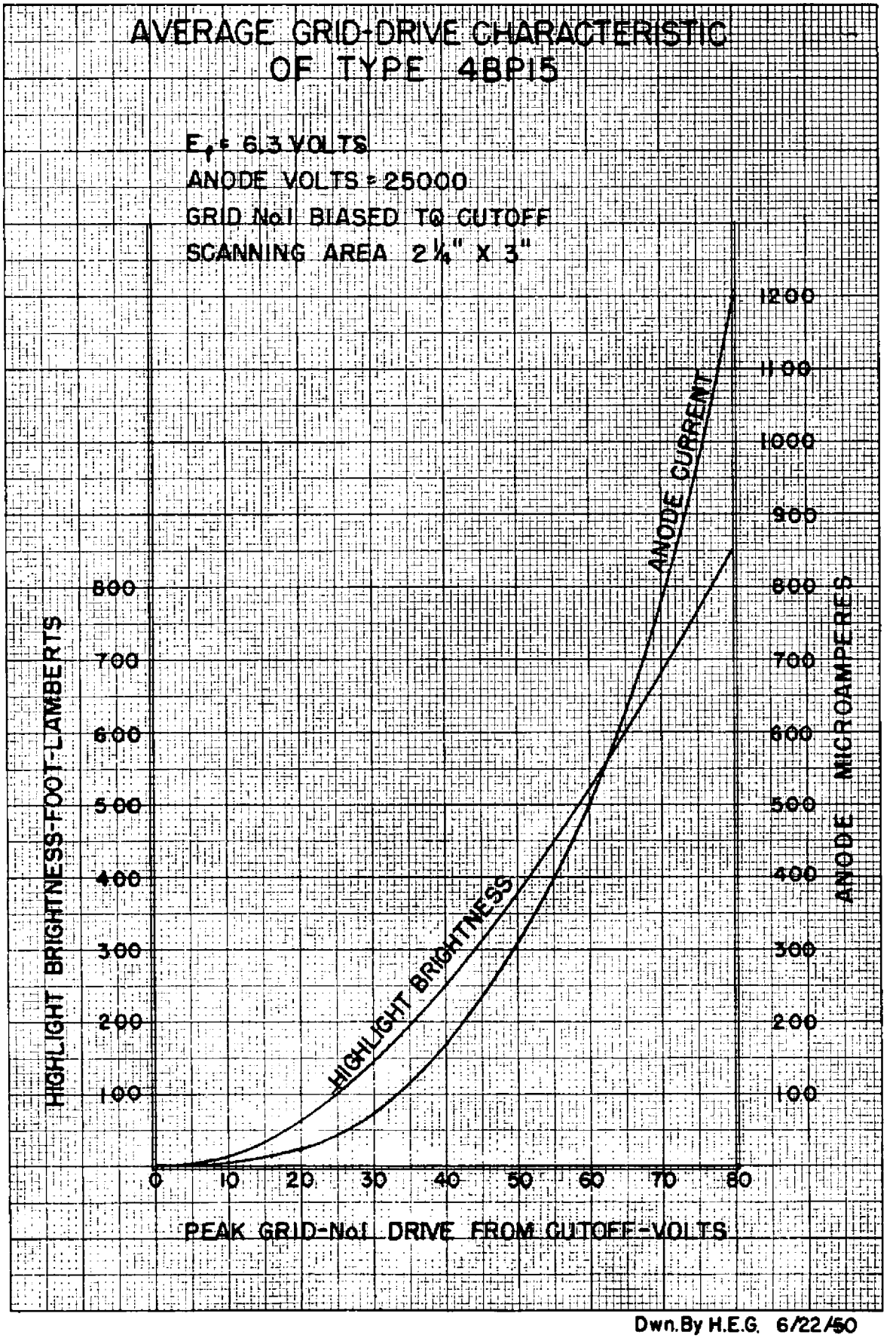
NOTES

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

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

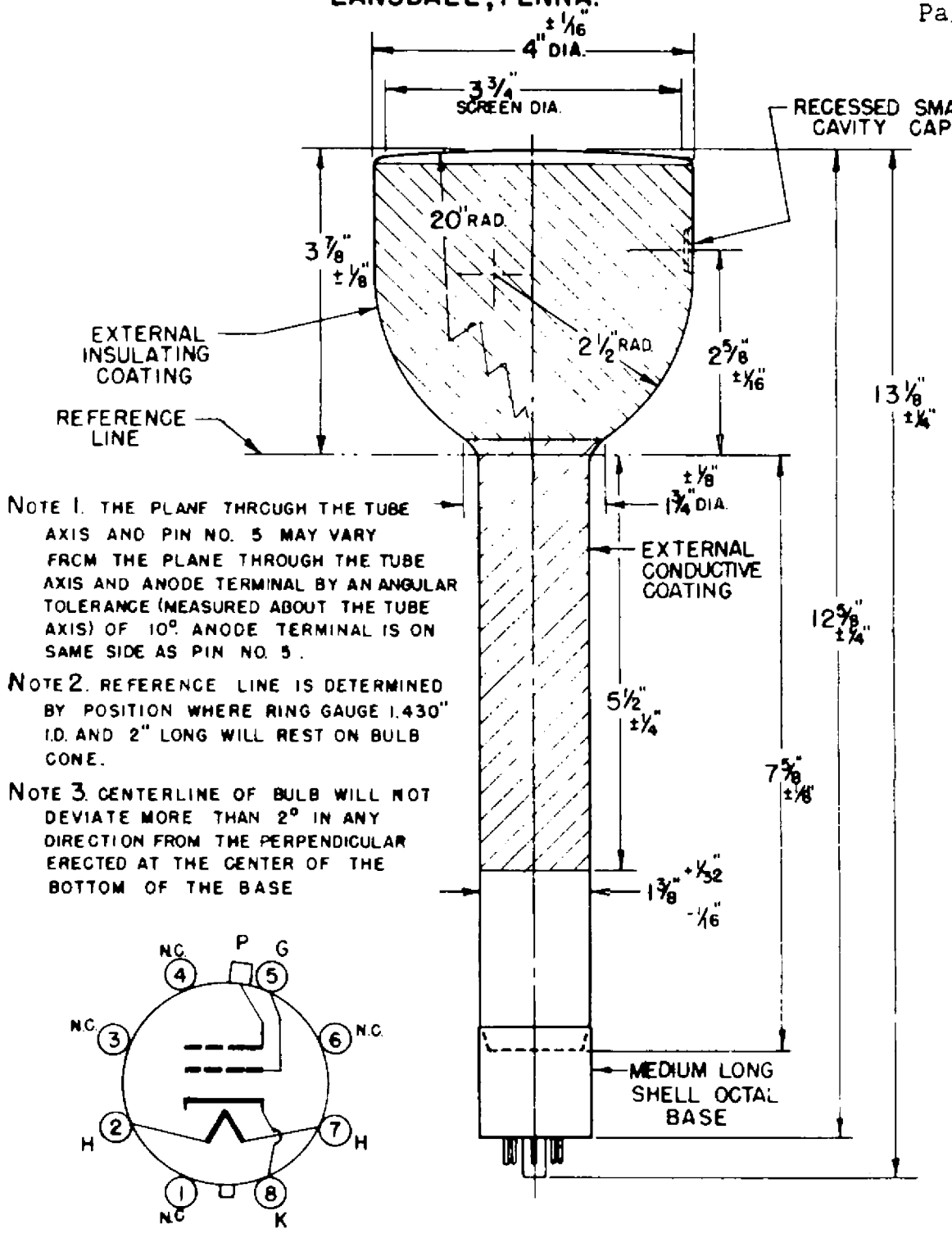
3. Visual extinction of undeflected focused spot.

4. For standard focus coil #106 or equivalent, with the combined Grid #1 bias voltage and video signal voltage adjusted for 150 microamperes of anode current.



Dwn. By H.E.G. 6/22/50

PHILCO TUBE LABORATORY
LANSDALE, PENNA.



NOTE 1. THE PLANE THROUGH THE TUBE AXIS AND PIN NO. 5 MAY VARY FROM THE PLANE THROUGH THE TUBE AXIS AND ANODE TERMINAL BY AN ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF 10°. ANODE TERMINAL IS ON SAME SIDE AS PIN NO. 5.

NOTE 2. REFERENCE LINE IS DETERMINED BY POSITION WHERE RING GAUGE 1.430" I.D. AND 2" LONG WILL REST ON BULB CONE.

NOTE 3. CENTERLINE OF BULB WILL NOT DEVIATE MORE THAN 2° IN ANY DIRECTION FROM THE PERPENDICULAR ERECTED AT THE CENTER OF THE BOTTOM OF THE BASE

TUBE TYPE 4BP15

Dwn By H.E.G.
Date 6/22/50