

ADMIRALTY SIGNAL ESTABLISHMENT

Specification AD/CV274/Issue 4 Dated 8.10.46. To be read in conjunction with K1003	<u>SECURITY</u>	
	<u>Specification</u> Restricted	<u>Valve</u> Unclassified

→ indicates a change

<u>TYPE OF VALVE:-</u> Cathode Ray Tube <u>DEFLECTION:-</u> Magnetic <u>TYPE OF FOCUS:-</u> Electrostatic <u>BULB:-</u> Internally coated with conductive coating <u>SCREEN:-</u> To give a white trace with negligible afterglow			<u>MARKING</u>	
			See K1003/7.1.1. and 7.1.2.	
			<u>Additional Marking:-</u> Serial No.	
			<u>BASE AND CONNECTIONS</u>	
			U.S. Magnal. 11 Pin See K1001/AIV/D4.10	
<u>RATING</u>		Note	<u>Pin</u>	<u>Electrode</u>
Heater Voltage (V)	4.0		1	Heater
Heater Current (A)	1.0	2	Cathode	
Max. Va1 (kV)	0.25	3	Modulator	
Max. Va3 (kV)	7.0	4	Blank	
			5	A1 (250 V)
			6	Blank
			7	Blank
			8	A2
			9	Blank
			10	Blank
			11	Heater
<u>TYPICAL OPERATING CONDITIONS</u>			Side	
Va1 (V)	250	B	Con-	A3
Va2 (V)	1000		tact	
Va3 (kV)	6.0			
Beam Current (μA)	100			
Desirable line width (mm)	0.4			
			<u>DIMENSIONS</u>	
			See Figure 1. Page 4.	
			<u>PACKING</u>	
			See K1001/7	

NOTES

- A. The tube shall be used with the cathode earthy.
- B. Measured with a beam current of 100 μA and an 8" x 6" 405 line raster repeated 25 times per second.

TESTS

To be performed in addition to those applicable in K1003.

	Test Conditions				Test	Limits		No. Tested	Note
	Vh (V)	Va3 (kV)	Va2 (V)	Vg (V)		Min.	Max.		
a	-	-	-	-	Inter-Electrode Capacity. Modulator to all other electrodes ($\mu\text{M}\text{F}$)	6	10	0.5%	
b	4.0	-	-	-	Ih (A)	0.7	1.2	5%	
c	4.0	6.0	Ad-just-ed	Ad-just-ed	(i) Light output (E.F.C.)	7.0	-	100%	1
					(ii) Vg (V)	To be at least 1V negative w.r.t. cathode		100%	
d	From initial conditions as in 'c', and scanning with 405 lines interlaced 2:1 repeated 25 times per second, adjust the line scan to 23.5 cms. and decrease the amplitude of vertical line scan until the horizontal lines just merge				(i) Focus (new height of raster when lines just merge) (cms.)	-	13.7	100%	
					(ii) Focussing voltage Va2 (V)	700	1200	100%	
e	4.0	6.0	As in test 'c'	Ad-just to	(i) Vg (V)	-	-4.0	100%	
					(ii) Change in Vg from value in 'c' (ii) (V)	-	15	100%	
f	4.0	6.0		-80	Grid insulation				
					(i) Leakage Current (μA)	-	16	100%	
					(ii) Increase in Voltmeter reading	-	100%	100%	
See K1003/5.4.2. Resistor = 5 Megohms.									

TESTS (Continued)

	Test Conditions				Test	Limits		No. Tested	Note
	Vh (V)	Va3 (kV)	Va2 (V)	Vg (V)		Min.	Max.		
g	4.0	A voltage of 100 V applied between heater and cathode			Heater-Cathode Insulation (Cathode positive) Leakage current (μA)	-	200	100%	
h	4.0	6.0	As in test 'c'	Any convenient value	Deviation of spot from centre of screen (mm)	-	10	100%	
j	4.0	6.0	As in test 'c'	Any convenient value	Effective screen area and screen graininess	23.5 x 18.4		100%	2
					The tube must be capable of scanning this area, and shall show no graininess worse than a standard tube				
k	<u>Glasswork blemishes.</u> Any blemishes on the face of the tube less than $\frac{1}{2}$ sq.mm. in area may be ignored; not more than 5 blemishes of size $\frac{1}{2}$ to $1\frac{1}{2}$ sq.mm. may appear, and of these no 2 shall be closer together than 1 inch. Blemishes of area greater than $1\frac{1}{2}$ sq. mm. shall cause the tube to be rejected.							100%	
<u>NOTES</u>									
1. The light output shall be measured using a photo-electric cell which has a spectral response equivalent to that of the eye.									
2. This area is obtained by using the rubber mask supplied by A.S.E., rounding of the corners, as produced by the mask, is permitted in scanning this area.									

