VALVE ELECTRONIC CV274

ADMIRALTY SIGNAL ESTABLISHMENT

Specification AD/CV274/Issue 4 Dated 8.10.46. To be read in conjunction with K1003	SECURITY Specification [redacted] Unclassified Valve Unclassified

→ indicates a change

TYPE OF VALVE:- Cathode Ray Tube
DEFLECTION:- Magnetic
TYPE OF FOCUS:- Electrostatic
BULB:- Internally coated with conductive coating
SCREEN:- To give a white trace with negligible afterglow

MARKING

See K1003/7.1.1. and 7.1.2.

Additional Marking:-

Serial No. .....

BASE AND CONNECTIONS

U.S. Magnal. 11 Pin
See K1001/AIV/D4.10

RATING			Note
Heater Voltage	(V)	4.0	
Heater Current	(A)	1.0	
Max. Va1	(kV)	0.25	
Max. Va3	(kV)	7.0	A
TYPICAL OPERATING CONDITIONS			
Va1	(V)	250	
Va2	(V)	1000	
Va3	(kV)	6.0	
Beam Current	(μA)	100	
Desirable line width	(mm)	0.4	B

Pin	Electrode
1	Heater
2	Cathode
3	Modulator
4	Blank
5	A1 (250 V)
6	Blank
7	Blank
8	A2
9	Blank
10	Blank
11	Heater
Side Contact	A3

DIMENSIONS

See Figure 1. Page 4.

PACKING

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 (μμF)	6	10	0.5%	
b	4.0	-	-	-	Ih (A)	0.7	1.2	5%	
c	4.0	6.0	Adjusted	Adjusted	(i) Light output (E.F.C.)	7.0	-	100%	1
	Adjust Vg to give 100 μA IB; tube operated with a raster, size 8" x 6"				(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'	Adjust to visual cut off on an 8" x 6" raster	(i) Vg (V)	-	-40	100%	
					(ii) Change in Vg from value in 'c' (ii) (V)	-	15	100%	
f	4.0	6.0		-80	Grid insulation				
	See K1003/5.4.2. Resistor = 5 Megohms				(i) Leakage Current (μA)	-	16	100%	
					(ii) Increase in Voltmeter reading	-	100%	100%	

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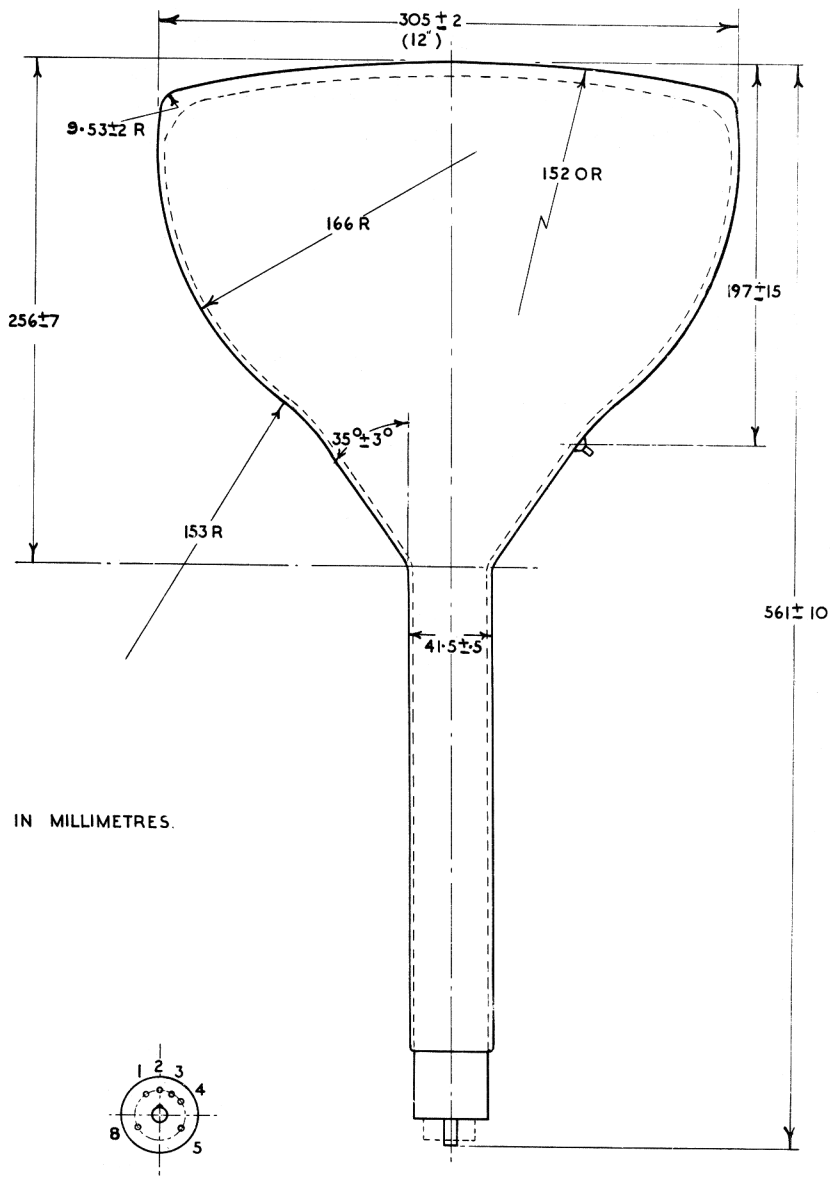
TESTS (Continued)

	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	Glasswork blemishes. 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%	

NOTES

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.



ALL DIMENSIONS IN MILLIMETRES.