CV464

VALVE ELECTRONIC

ADMIRALTY SIGNAL & RADAR ESTABLISHMENT

Specification AD/CV464/Issue 1.
Dated 27.11.50.
To be read in conjunction with K1003.

SECURITY	
Specn.	Valve
Unclassified	Unclassified

→ indicates a change

TYPE OF VALVE:- Cathode Ray Tube.
TYPE OF DEFLECTION:- Electromagnetic; Symmetrical.
TYPE OF FOCUS:- Electrostatic.
BULB:- Internally coated with conductive coating.
SCREEN:- OOL (Aluminium backed).
PROTOTYPE:- 9L01A

RATING		Note
Heater Voltage (V)	4.0	
Heater Current (A)	1.2	
Max. Va3 (kV)	9.0	
Typical Working Conditions		
Va3 (kV)	8.0	A
Va2 (kV)	1.3±100 V	B
Va1 (kV)	1.35±100 V	B
Beam Current (μA)	150	C
Vg for cut-off approx. (-V)	70	
CAPACITANCES (pF)		
Max. Cgc	20	D
Max. C cold cathode to all other electrodes	20	

MARKING

See K1003/7.

BASE
IO

Pin	Electrode
1	Pin omitted
2	A1
3	A2
4	Pin omitted
5	Modulator
6	Cathode
7	Heater
8	Heater

CAP

See K1001/AI/D5.2.
Anode 3 and graphite.

DIMENSIONS

See drawing page 4.

NOTES

A. As the screen is aluminium backed, the tube may be used with either Anode or Cathode at earth potential.

B. The first anode must always be at least 50 V positive to the second anode.

C. Measured under suitable pulse conditions.

D. Target to be 15 pF.

TESTS

To be performed in addition to those applicable in K1003.

	Test Conditions					Test	Limits		No. Tested	Note
	Vh (V)	Va1 (kV)	Va2 (kV)	Va3 (kV)	Vg (V)		Min.	Max.		
a	See K1003/5.12.					Capacitances (pF) (i) Cgc (ii) C cold cathode to all other electrodes.	- -	20 20	6 per week	D
b	4.0	-	-	-	-	Ih (A)	0.7	1.2	100%	
c	4.0	1.35 ± 100 V	-	8.0	-	(i) Line width (mm)	-	0.8	100%	B
	See K1003/5.7. Va2 adjusted for optimum focus and Vg adjusted for a light intensity of 0.12 candles, from a 130 mm x 130 mm raster.					(ii) Va2 (V) (iii) Beam Current (μA)	1200 -	1400 5.0	100%	B
d	4.0	1.35 ± 100 V	As in 'c'	8.0	Adjust	Negative Vg for cut-off. To be noted as Vg1. (V)	-	100	100%	
e	4.0	1.35 ± 100 V	As in 'c'	8.0		(i) Negative Vg to be noted as Vg2 (V) (ii) Vg1 - Vg2 (V)	1 -	- 50	100%	
	The beam to be deflected off the usable screen area and Vg adjusted to give beam current of 150 microamps. When Vg is varied from cut-off Vg1, to Vg2, the beam current shall increase continuously.									

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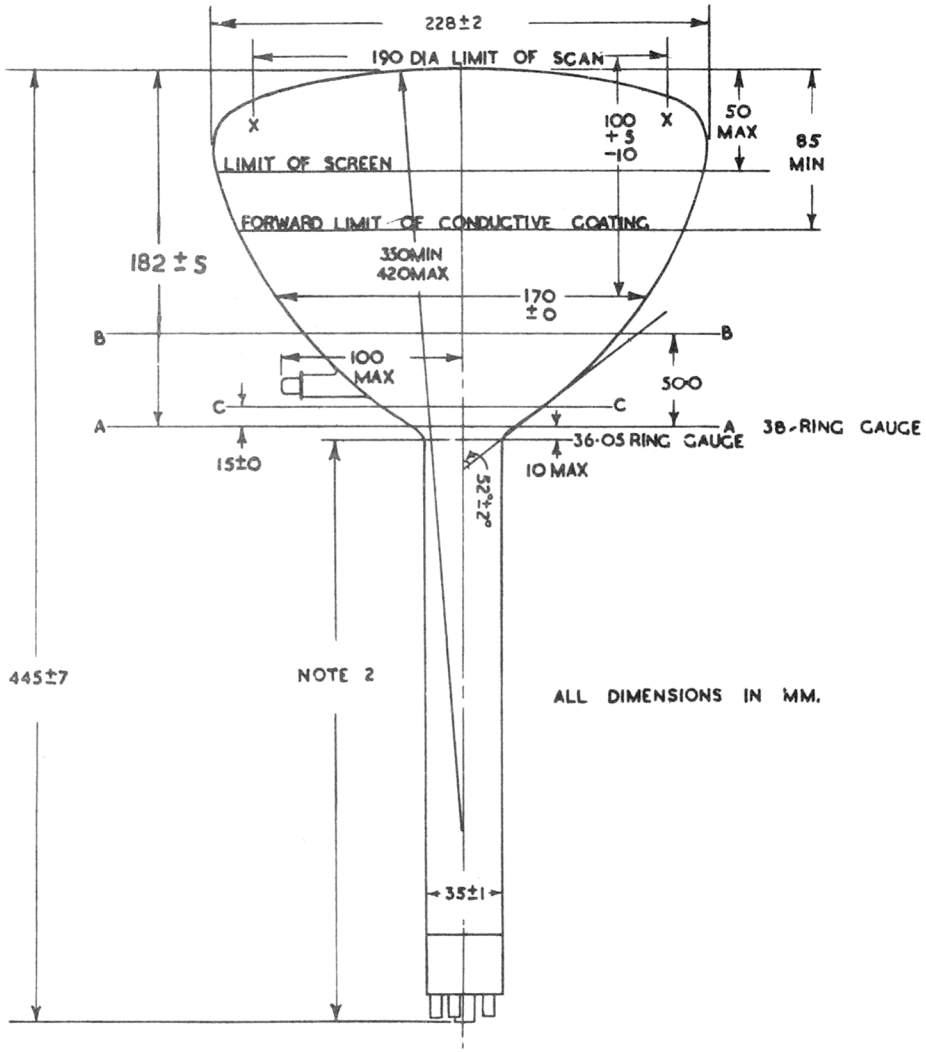
TESTS (Contd.)

	Test Conditions					Test	Limits		No. Tested	Note
	Vh (V)	Va1 (kV)	Va2 (kV)	Va3 (kV)	Vg (V)		Min.	Max.		
f	4.0	1.35± 100V	As in 'c'	8.0	Any current value	Deviation of centre of unfocussed spot from centre of screen (mm)	-	10	100%	
g	4.0	1.35± 100V	As in 'c'	8.0	As in 'c'	Screen graininess	To be no worse than that of a standard tube		100%	
h	4.0	1.35± 100V	As in 'c'	8.0	-100	Grid insulation (Megohms)	10	-	100%	
j	4.0	0	0	0	0	**Heater** Cathode Current (μA)	-	200	100%	
	Cathode at + 100 V. w.r.t. heater.									
k	Tube to be rotated about the neck.					Radial Movement of edge of screen (mms)	-	5	100%	



NOTES:

1. ANY PROTUBERANCE DUE TO SEALING OFF OR ANODE CAP MUST LIE BETWEEN A-A & B-B.
2. OVER THIS LENGTH STRAIGHTNESS SHALL BE SUFFICIENTLY GOOD FOR A GAUGE 37MM MAX. INTERNAL DIA. & 100MM. LENGTH TO SLIDE FREELY OVER NECK & BASE.
3. THE ANGLE BETWEEN PLANE THROUGH ANODE CAP & AXIS OF TUBE & PLANE THROUGH SPIGOT KEY & AXIS OF TUBE SHALL NOT EXCEED 15°
4. THE ANODE CAP SHOULD BE OF THE AMERICAN OCTAL TYPE.
5. THE RADIUS OF CURVATURE OF THE FACE OF THE TUBE WILL APPLY OVER THE 190MM SCAN INDICATED BY POINTS X X.
6. THE WIDTH OF THE ANODE CAP & STALK OR ADAPTER PROJECTED ON TO A PLANE AT RIGHT ANGLES TO THE CENTRE LINE OF THE TUBE MUST NOT BE GREATER THAN 15MM.
7. THE SLOPE OF THE BULB MUST BE 52°±2° WITH RESPECT TO THE CENTRE LINE OF THE TUBE BETWEEN LINES C-C & A-A.