MINISTRY OF SUPPLY - D.L.R.D(A)/R.A.E.

VALVE ELECTRONIC **CV1529**

Specification MOSA/CV1529 Issue 3. Dated 12.3.53. To be read in conjunction with K.1001	SECURITY Specification: UNCLASSIFIED Valve: UNCLASSIFIED

→ Indicates a change

TYPE OF VALVE - Cathode Ray Tube

TYPE OF DEFLECTION - Electrostatic. Suitable for both symmetrical and asymmetrical deflection voltages

BULB - Internally coated with conductive coating

SCREEN - RBN.38

PROTOTYPE - VCR.529

RATING			Note
Heater Voltage	(V)	4.0	
Heater Current	(A)	1.0	
Max. Final Anode Voltage	(kV)	5.0	
X-plate Sensitivity	(mm/V)	$\frac{357}{Va3}$	
Y-plate Sensitivity	(mm/V)	$\frac{780}{Va3}$	
TYPICAL OPERATING CONDITIONS			
→ Final Anode Voltage	(kV)	3.0	
→ Second Anode Voltage	(V)	500	
→ First Anode Voltage	(kV)	2.0	

MARKING
See K1001/4

BASE
B.12.D

CONNECTIONS

Pin	Electrode
1	G
2	C
3	H
4	H
5	A1
6	A2
7	Internal Conductive Coating (See Note D)
8	Y2
9	X2
10	A3
11	X1
12	Y1

DIMENSIONS

See Drawing on Page 3.

NOTES

A. The tube shall be adequately free from microphony.

B. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to terminal X1 shall deflect the spot to the left and a positive voltage applied to the terminal Y1 shall deflect the spot upwards.

C. The internal conductive coating shall be of such dimensions that it functions effectively but does not obscure the required useful screen area.

D. The tube will normally be operated with A3 and the conductive coating tied, and if a manufacturer so desires, one or both of these electrodes may be strapped internally, with the connection omitted from contacts marked:- "Internal conductive coating".

To be performed in addition to those applicable in K.1001

	Test Conditions					Test	Limits Min.	Limits Max	No. Tested	Note
	Vh	Va3 (kV)	Va2 (V)	Va1 (kV)	Vg (V)					
	Deflection voltages shall be applied asymmetrically in all cases.									
a						INTER-ELECTRODE CAPACITANCES (pF) 1. Each X or Y plate to all other electrodes. 2. Grid to all other electrodes. 3. One X to one Y plate.	 - - -	 25 25 6	 5%(10) 5%(10) 5%(10)	
b	4.0	0	0	0	0	Ih (A)	0.8	1.3	100%	
→ c	4.0	3.0	Adjust for optimum focus	2.0	Adjust to cut off	-Vg (V)	40	80	100%	
→ d	4.0	3.0	ditto	2.0	-	(1) Vg (V)	1	-		
	Adjust Vg to give a light output of 0.252 orthochromatic candela on a closed raster					(2) Change in value of Vg from test (c) (V)	-	26	100%	
→ e	4.0	3.0	ditto	2.0	Adjust	(1) Line width (mm)	-	1.0	100%	
→	DEFLECTION. With a sine wave time base of 10 Kq/s (nominal) and a line length of 70 mm in the X and Y directions successively. The line width to be measured at the centre of the trace.					(2) Va2 (V)	400	600		
	GRID. The grid will be pulsed positively from cut-off with amplitude equal to the value obtained in test d(2), the nominal value of pulse duration and recurrence being 100 μsecs and 100 c/s respectively.									
→ f	4.0	3.0	Any convenient value	2.0	-80	GRID INSULATION (1) Leakage Current (μA) (2) Increase in voltmeter reading	 - -	 8.0 100%	 100% 100%	
	Recommended method K.1001/5A.3.2 Resistor = 10MΩ									
→ g	4.0	0	0	0	0	HEATER-CATHODE INSULATION Leakage current (μA)	 -	 200		
	See K.1001/5A.3.3 except that the test voltage shall be 100 volts.									

TESTS (Continued)

CV1529

	Test Conditions					Test	Limits Min.	Limits Max.	No. tested	Note
	Vh (V)	Va3 (kV)	Va2 (V)	Va1 (V)	Vg (V)					
→ h	4.0	3.0	Adjust for optimum focus	2.0	Any convenient value	DEFLECTION SENSITIVITIES				
						(1) X - plate (mm/V)	$\frac{300}{Va3}$	$\frac{415}{Va3}$	100%(10)	
						(2) Y - plate (mm/V)	$\frac{660}{Va3}$	$\frac{900}{Va3}$	100%(10)	
→ j	4.0	3.0	ditto	2.0	ditto	Deviation of spot from centre of screen (mm)	-	6	100%	
→ k	4.0	3.0	ditto	2.0	ditto	USEFUL SCREEN AREA				
	Deflections to cover stated circle centred on centre of screen					Diameter (mm)	70	-	100%	
→ l	4.0	3.0	ditto	2.0	ditto	TRAPEZOIDAL DISTORTIONS				
	A screen area of at least 70 mm x 45 mm to be scanned.					1. Angles between adjacent sides.	85°	95°	100%	
						2. Angles between opposite sides.	175°	185°	100%	
→ m	4.0	3.0	ditto	2.0	ditto	1. Orientation of X axis of deflection relative to OO' on drawing.	80°	100°	100%	
						2. Angle between X and Y axes of deflection.	85°	95°	100%