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

VALVE ELECTRONIC **CV1528**

Specification MOSA/CV.1528 Issue 4 Dated 12.6.53. 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 - Suitable for electrostatic or magnetic deflection

BULB - Internally coated with conductive coating

SCREEN - OCM.52

PROTOTYPE - VCR.528

MARKING

See K.1001/4

RATING

			Note
Heater Voltage	(V)	4	
Heater Current	(A)	1	
Max. Final Anode Voltage	(kV)	7	
Max. First Anode Voltage	(kV)	2	
X-plate sensitivity	(mm/V)	1345/Va3	
Y-plate sensitivity	(mm/V)	1300/Va3	
Desirable spot size	(mm)	0.25	
TYPICAL OPERATING CONDITIONS			
Final Anode Voltage	(kV)	6	
Second Anode Voltage	(kV)	1.6	
First Anode Voltage	(kV)	1.8	
Beam Current	(uA)	20	A

BASE

12 contact key base

CONNECTIONS

Pin	Electrode
1	Cathode
2	Grid
3	Heater
4	Heater
5	A1
6	A2
7	Internal conductive coating
8	Y2
9	X2
10	A3
11	X1
12	Y1

DIMENSIONS

See Drawing on page 4

NOTE

A. The tube is not suitable for use with a repeating line trace except at very low beam current, owing to extreme liability to screen burning.

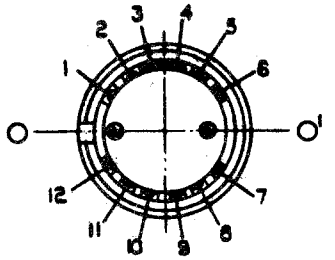
To be performed in addition to those applicable in K.1001

	Test Conditions					Test	Limits Min.	Limits Max.	No. Tested	Note
a	See K.1001/5A.13					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.	 - - -	 20 25 10	 5%(10) 5%(10) 5%(10)	
	Vh	Va3 (kV)	Va2 (kV)	Va1 (kV)	Vg					
b	4	0	0	0	0	Ih (A)	0.8	1.3	100%	
c	4	6	Adjusted for optimum focus	1.8	Adjust to give cut-off	Vg (V) Value to be noted.	-	-100	100%	
d	4	6	ditto	1.8	-	(1) Vg (V) (2) Change in value of Vg from test (c) (V)	-3 -	- 40	100% 100%	
	Vg adjusted to give a light output of 0.025 candelas on a close raster.									
e	4	6	ditto	1.8	-	(1) Line width (mm) (2) Va2 (V)	- 800	0.8 1800	100% 100%	
	DEFLECTION. With a sine wave time-base of 10 kc/s nom. and a line length of 210 mm in the X and Y directions successively, the line width will be measured at the centre of the trace. GRID. The grid will be pulsed positively with amplitude equal to the value obtained in test "d.2", the nominal values of pulse duration and recurrence being 100 uSecs and 100 c/s, respectively.									
f	4	6	Any convenient value	1.8	-100	GRID INSULATION 1. Leakage current (uA) 2. Increase in voltmeter reading	 - -	 10 100%	 100% 100%	
	See K.1001/5A.3.2. Resistor = 10 MΩ									
g	4	6	Adjusted for optimum focus	1.8	Any convenient value	DEFLECTION SENSITIVITIES 1. X-plate (mm/V) 2. Y-plate (mm/V)	 $\frac{1090}{Va3}$ $\frac{1000}{Va3}$	 $\frac{1660}{Va3}$ $\frac{1600}{Va3}$	 100% 100%	

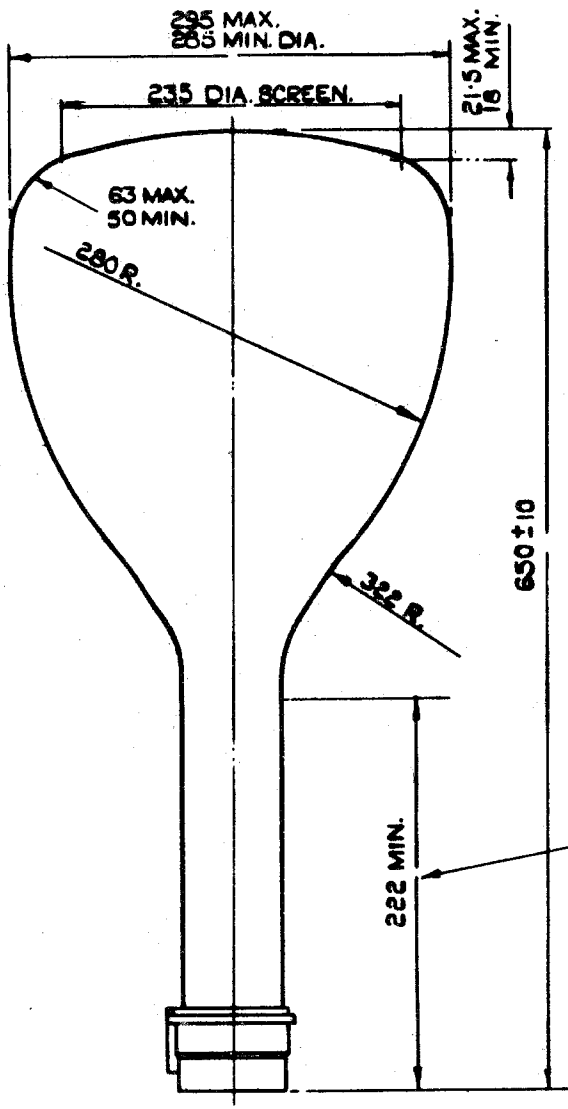
TESTS (Continued)

CV1528

	Test Conditions					Test	Limits		No. Tested	Notes
							Min.	Max.		
	Vh	Va3 (kV)	Va2 (kV)	Va1 (kV)	Vg					
h	4	6	Adjusted for optimum focus	1.8	Any convenient value	Deviation of spot from centre of screen (mm)	-	25	100%	
j	4	6	ditto	1.8	ditto	Useful Screen Area Rectangle (mm)	210 X 100		100%	
	Deflections to cover stated rectangle centred in the centre of the screen with the longer axis in the X direction.									
k	4	6	Any convenient value	1.8	ditto	Orientation of Y axis of deflection	-	±10°	100%	
	Angle measured relative to axis OO' on drawing on page 4.									
m	4	6	ditto	1.8	ditto	Angle between X and Y-axis	88°	92°	5%(10)	
n	Test to be made using Test Set Type 331.					Afterglow (seconds)	10	20	10%	



VIEW OF UNDERSIDE OF BASE.



ALL DIMENSIONS IN MILLIMETRES.

NOTES

1. THE INTERNAL CONDUCTIVE COATING SHALL BE OF SUCH DIMENSIONS THAT IT FUNCTIONS EFFECTIVELY BUT DOES NOT OBSCURE THE REQUIRED USEFUL SCREEN AREA.

2. WHEN VIEWING THE SCREEN WITH THE TUBE POSITIONED SO THAT THE BASE SPIGOT IS UPPERMOST, A POSITIVE VOLTAGE APPLIED TO THE TERMINAL X_1 SHALL DEFLECT THE SPOT TO THE RIGHT AND A POSITIVE VOLTAGE APPLIED TO THE TERMINAL Y_1 SHALL DEFLECT THE SPOT DOWNWARDS.