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

CV 1534

Specification MOS(A)/CV1534 Issue 1 Dated 31. 3. 54. To be read in conjunction with K1001.	SECURITY Specification: UNCLASSIFIED Valve: UNCLASSIFIED

TYPE OF VALVE - Cathode Ray Tube

TYPE OF DEFLECTION - Suitable for electrostatic or magnetic deflection

BULB - Internally coated with conductive coating

SCREEN - 009

PROTOTYPE - VCR.528

MARKING

See K1001/4

BASE

B12D

RATING

			Note
Heater Voltage	(V)	4.0	
Heater Current	(A)	1.0	
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	(μA)	20	A

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 values of beam current, owing to extreme liability to screen burning.

TESTS

To be performed in addition to those applicable in K1001

	Test Conditions					Test	Limits Min.	Limits Max.	No. Tested	Note
a	See K1001/5A.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.	-30	-100	100%	
d	4 Vg adjusted to give a light output of 0.025 candela on a close raster.	6	ditto	1.8	-	(1) Vg (V) (2) Change in Vg from value noted in Test (c) (V)	-3 -	- 40	100% 100%	
e	4 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 shall be measured at the centre of the trace. GRID. The grid shall be pulsed positively with amplitude equal to the value obtained in Test (d.2), Nom Tp = 100 µsecs. Nom. PRF = 100 c/s.	6	ditto	1.8	-	(1) Line width (mm) (2) Va2 (V)	- 800	~~0.8~~ 0.5 1800	100% 100%	1
f	4 See K1001/5A.3.2. Resistor = 10 megohms	6	Any convenient value	1.8	-100	GRID INSULATION 1. Leakage current (µA) 2. Increase in voltmeter reading	 -	10 100%	100% 100%	
g	4	6	Adjusted for optimum focus	1.8	Any convenient value	DEFLECTION SENSITIVITIES 1. X-plate (mm/V) 2. Y-plate (mm/V)	1090/Va3 1000/Va3	1660/Va3 1600/Va3	100% 100%	

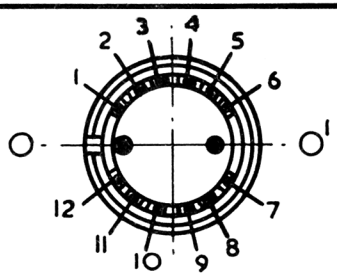
TESTS (Continued)

CV 1534

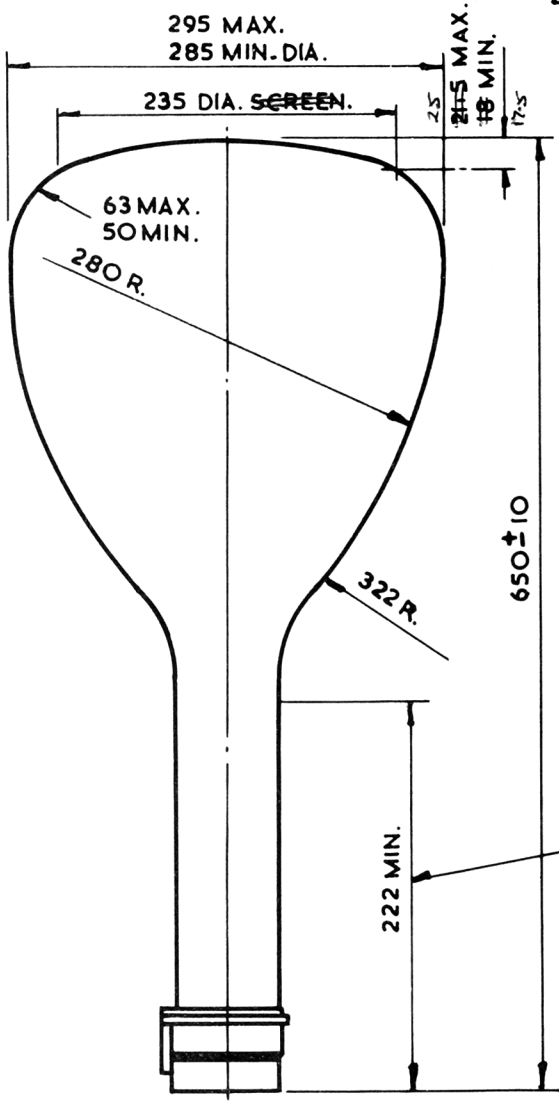
	Test Conditions					Test	Limits		No. Tested	Note
	Vh	Va3 (kV)	Va2 (kV)	Va1 (kV)	Vg		Min.	Max.		
h	4	6	As for Test (g)	1.8	Any convenient value	Deviation of spot from centre of screen (mm)	-	25	100%	
j	4	6	As for Test (c)	1.8	Any convenient value	USEFUL SCREEN AREA X-deflection (mm) Y-deflection (mm)	~~±107.5~~ ~~±105~~ ~~±105~~ ±65	- -	100%	4 Amdt 1
	Deflections measured from centre of screen.									
k	4	6	Any convenient value	1.8.	As for Test (h)	Orientation of Y-axis of deflection	-	±10°	100%	
	Angle measured relative to axis OO' shown in Drawing on Page 4.									
m	4	6	As for Test (k)	1.8	As for Test (h)	Angle between X- and Y-axis	88°	92°	~~5%~~(10)	
n	Test to be performed using Test Set Type 331, or other approved method.					Afterglow (secs)	~~10~~ 15	~~20~~ 30	10%	Amdt 1

NOTE

1. Alternatively, the line width may be measured using a raster having a linear scan of 210 mm at 10 kc/s in the X direction and a 50 c/s scan in the Y direction. The Y-scan shall be expanded so that individual lines are spaced apart by at least one line width. Measurements shall be made at the centre of the screen. The grid need not be pulsed for this test but the grid voltage should be set to the value obtained in Test (d.2).



VIEW OF UNDERSIDE OF BASE.



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.

ALL DIMENSIONS IN MILLIMETRES.

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION MOA/CV1534 ISSUE 1 DATED 31. 3. 54.

AMENDMENT NO.1.

Page 2. Clause (e) line width

In limits column, Delete: 0.8 max., Insert 0.5 max.

Page 3. Clause (j) Useful screen area

In limits column.
Against X - Deflection. Delete: ± 105, Insert: ± 107.5 mm min.
Against Y - Deflection. Delete: ± 105, Insert: ± 65 mm min.

Clause (n) Afterglow

In limits column. Delete: 10 min 20 max.
Insert: 15 min 30 max.

Page 4. Outline Drawing

Delete the word "screen" from 235 mm dia dimension
Delete: 21.5 max., Insert: 25 mm max.
Delete: 18 min., Insert 17.5 mm min.

July. 1965. T.V.C. for R.R.E. 15 7/65