MINISTRY OF SUPPLY - DLRD(A)/RRE

VALVE ELECTRONIC

CV 2286

Specification MOS(A)/CV2286 Issue 2 Dated 1. 4. 54. To be read in conjunction with K1001	SECURITY Specification: UNCLASSIFIED Valve: UNCLASSIFIED

→ Indicates a change

TYPE OF VALVE - Cathode Ray Tube	MARKING Sec K1001/4
TYPE OF DEFLECTION - Electrostatic, symmetrical	
TYPE OF FOCUS - Electrostatic	
BULB - Internally coated with conductive coating	BASE B12D
SCREEN - YY6	
PROTOTYPE - VCRX393	

RATING

			Note
Heater Voltage	(V)	4.0	
Heater Current	(A)	1.1	
Max. Fourth Anode Voltage	(kV)	6.0	A
Max. Third Anode Voltage	(kV)	4.0	A
Max. First Anode Voltage	(kV)	2.5	A
Typical Operating Conditions			
Fourth Anode Voltage	(kV)	4.0	
Third Anode Voltage	(kV)	2.0	
→ Second Anode Voltage	(V)	350	
First Anode Voltage	(kV)	2.0	
X-plate Sensitivity	(mm/V)	0.18	
Y-plate Sensitivity	(mm/V)	0.24	

CONNECTIONS

Pin	Electrode
1	G
2	C
3	H
4	H
5	A1
6	A2
7	Internally coated (See Note D)
8	Y2
9	X2
10	A3
11	X1
12	Y1
S.C.	A4

SIDE CONTACT

Snap Terminal.

DIMENSIONS AND CONNECTIONS

See Drawing on Page 4

NOTES

A. The tube shall operate with Va1 = 2.5 kV, Va3 = 3kV, and Va4 = 6kV under conditions of reduced pressure equivalent to 6 ins of mercury at 15°C.

B. The tube shall be adequately free from microphony.

C. The tube shall be of the post deflection acceleration type, and the design shall be such that with Va1 = 2.5kV the focus shall be substantially unaffected by varying the value of Va4 to that of Va3. A change of ± 10% in Va2 shall not produce an appreciable change in cut-off voltage.

D. The tube will normally be operated with A3 and conductive coating tied, and if the manufacturer so desires these electrodes may be strapped internally with the connection omitted from contact marked "internal coating".

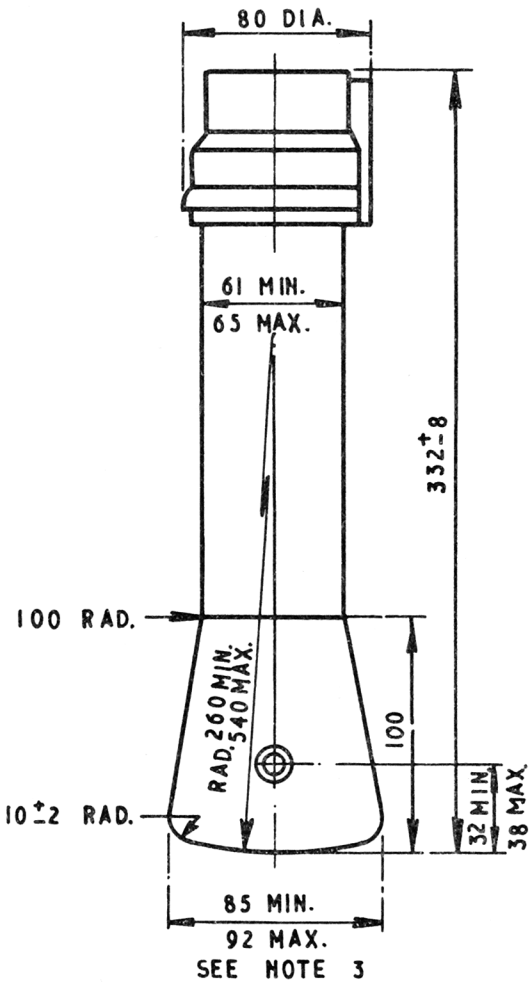
TESTS

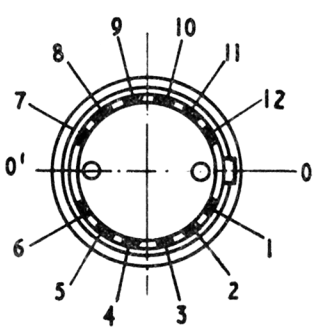
To be performed in addition to those applicable in K1001

	Test Conditions						Test	Limits		No. Tested	Note
	Vh (V)	Va4 (kV)	Va3 (kV)	Va2 (kV)	Va1 (kV)	Vg (V)		Min.	Max.		
	Deflection voltages shall be applied symmetrically in all cases.										
a	See K1001/5A.13						Capacitances (pF) 1. Each X or Y-plate to all other electrodes. 2. One X-plate to one Y-plate 3. Grid to all other electrodes.	 - - -	 25 6 25	 5%(10) 5%(10) 5%(10)	
b	4.0	0	0	0	0	0	Ih (A)	0.8	1.3	100%	
c	4.0	4.0	2.0	Adjust for optimum focus	2.0	Adjust to cutoff	Vg (V) Value to be noted	-	-100	100%	
d	4.0	4.0	2.0	As for Test (c)	2.0	-	1. Vg (V) 2. Change in Vg from Test (c) (V) 3. Within the range of grid voltage from cut-off to standard light output the beam current shall increase continuously.	-1 - -	- 35 -	100% 100% 100%	
	Adjust Vg to give a light output of 0.032 candela.										
e	4.0	4.0	2.0	As for Test (c)	2.0	-	1. Line Width (mm) 2. Va2 (V)	- 100	0.6 425	100% 100%	
	DEFLECTION - With a sine wave time-base of 10 kc/s nom. and line length of 66 mm in the X direction and 70 mm in the Y direction successively, the line width shall be measured at the centre of the trace. GRID - The grid will be pulsed positively from cut-off with amplitude equal to the value obtained in Test (d.2). Nom. Tp = 100 µsecs. Nom. PRF = 100 c/s.										

TESTS (Cont'd)

	Test Conditions						Test	Limits		No. Tested	Note
	Vh (V)	Va4 (kV)	Va3 (kV)	Va2 (kV)	Va1 (kV)	Vg (V)		Min.	Max.		
f	4.0	4.0	2.0	Any convenient value	2.0	-80	Grid Insulation 1. Leakage current (μA)	-	8	100%	
	Recommended method: See K1001/5A.3.2, Resistor = 10 megohms						2. Increase in voltmeter reading	-	100%	100%	
g	4.0	4.0	2.0	As for Test (f)	2.0	Any convenient value	Deflection Sensitivities 1. X-plate (mm/V)	0.16	0.20	5%(10)	
							2. Y-plate (mm/V)	0.21	0.27	5%(10)	
h	4.0	4.0	2.0	As for Test (f)	2.0	As for Test (g)	Deviation of spot from centre of screen (mm)	-	6	100%	
j	4.0	4.0	2.0	As for Test (f)	2.0	As for Test (g)	Useful Screen Area 1. Deflections to cover stated rectangle	-	-		
	Measurement to be made on a raster 50 x 55 mm in the X and Y directions successively.						2. Deviation of centre of boundary lines of raster from a true rectangle (mm)	-	±2	5%	
k	4.0	4.0	2.0	As for Test (f)	2.0	As for Test (g)	1. Orientation of X axis of deflection relative to 00' on drawing	80°	100°	100%	
							2. Orientation of the diameter through the centre of the snap terminal relative to 00'	80°	100°	100%	
m	4.0	4.0	2.0	As for Test (f)	2.0	As for Test (g)	Angle between X and Y axes of deflection	88°	92°	100%	
n	4.0	4.0	2.0	As for Test (f)	2.0	Adjust	Persistence (secs)	4	16	100%	
	Test shall be performed using approved test gear and a close raster of convenient size.										





VIEW OF UNDERSIDE OF BASE

NOTES

1. THE INTERNAL CONDUCTIVE COATINGS SHALL BE OF SUCH DIMENSIONS THAT THEY FUNCTION EFFECTIVELY BUT DO NOT OBSCURE THE REQUIRED USEFUL SCREEN AREA.
2. WHEN VIEWING THE SCREEN WITH THE TUBE POSITIONED SUCH THAT THE SPIGOT IS UPPERMOST, A POSITIVE VOLTAGE APPLIED TO TERMINAL X_1, SHALL DEFLECT THE SPOT TO THE LEFT, AND A POSITIVE VOLTAGE APPLIED TO TERMINAL Y_1, SHALL DEFLECT THE SPOT UPWARDS.
3. THIS DIA. SHALL INCLUDE ANY PROTRUSION DUE TO SIDE CONTACT.

ALL DIMENSIONS IN MILLIMETRES.