MINISTRY OF AIRCRAFT PRODUCTION (DCD)

CATHODE RAY TUBE TYPE

VCR112

Specification MAP/CV 1112/Issue 4 Dated 25.8.45 To be read in conjunction with K 1003	SECURITY Specification: RESTRICTED	Valve: RESTRICTED

TYPE OF DEFLECTION:- Electrostatic (see Note A)

BULB:- Internally coated with conductive coating.

SCREEN:- To give a green or white trace.

MARKING
See K1001/4

BASE
7 Clip Base

RATING		Note
Heater Voltage (V)	4.0	
Heater Current (A)	1.0	
Max. Final Anode Voltage (kV)	3.5	
X-plate Sensitivity (mm/V)	870/Va3	
Y-plate Sensitivity (mm/V)	500/Va3	
Desirable spot size (mm)	1.0	
Max. beam current (μA)	50	
TYPICAL OPERATING CONDITIONS		
Third Anode Voltage (kV)	3.0	
Second Anode Voltage (V)	560	
First Anode Voltage (V)	200	

Pin	Electrode
1	G
2	H and K
3	H
4	A1
5	A2
6	X1
7	X2
Side Contact 1	Y2
Side Contact 2	A3, internal plate screen metallising and graphite
Side Contact 3	Y1

NOTES

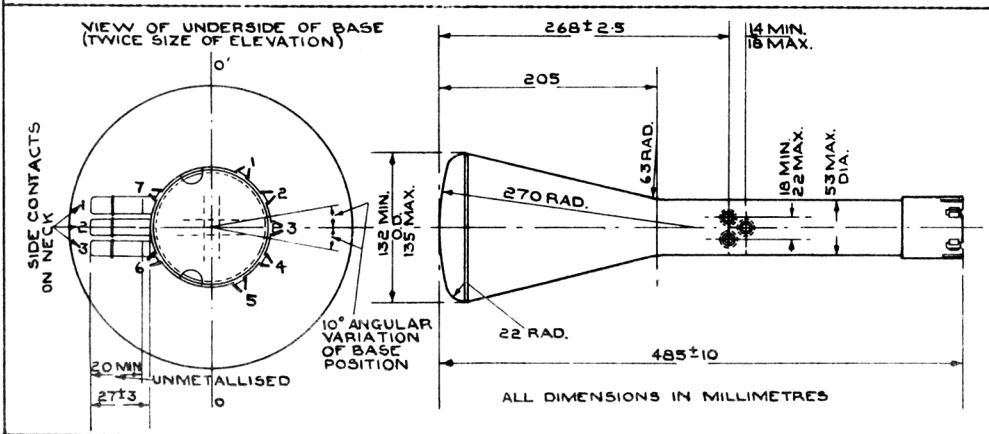
A - The tube to be suitable for operation with asymmetrical deflection voltages at frequencies up to 200 Mc/s. applied to the pair of plates which are connected to the side terminals, and with symmetrical deflection on the pair of plates which are brought out to contacts on the base.

B - The external metal coating, if used, shall be of such dimensions that it functions effectively but does not obscure the required useful screen area.

C - Sides of glass tubes to be substantially parallel and radius of join to be as small as possible.

D - Viewing the screen with the side contacts Y1 and Y2 on the right, a positive voltage applied to terminal X1 shall deflect the spot to the right. A positive voltage applied to terminal Y1 shall deflect the spot downwards.

E - Metal caps on side contacts to conform to BSS 448.



→ Indicates a change

To be performed in addition to those applicable in K.1003.

Clause	Test Conditions					Test	Limits		No. Tested
	Vh	V_{a3} (kV)	V_{a2}	V_{a1} (kV)	V_{g1}		Min.	Max.	
(a)	See K.1003 Clause 5.12					INTER-ELECTRODE CAPACITANCES (pF)			
						1. Each X-plate to all other electrodes	-	15	10%(10)
						2. Each Y-plate to all other electrodes	-	7.0	10%(10)
						3. Grid to all other electrodes	-	12.0	10%(10)
						4. One X to one Y plate	-	0.2	10%(10)
(b)	4.0	0	0	0	0	I_h (A)	-	1.3	10%(10)
(c)	4.0	3.0	-	0.2	-	1. The line width shall not be greater than that of standard tube.			100%
	Adjust V_{a2} for optimum focus and Vg to give spot brilliance equal to that of standard tube on a scan length of 80 mm in the X and Y directionssuccessively.					2. V_{a2} (V)	420	670	100%
						3. Vg (V)	To be at least 2 V negative to cathode.		100%
(d)	4.0	3.0	As in test (c)	0.2	Adjusted to give cut-off	1.-Vg	-	60	100%
						2. Increase in negative Vg compared with value noted in test (c)(3).	-	35	100%
(e)	4.0	3.0	As in test (c)	0.2	-60	GRID INSULATION			
	See K.1003 Clause 5.4.2 Resistor = 5 megohms					Leakage current (μA)	-	12	100%
						Increase in voltmeter reading	-	100%	100%
(f)	4.0	3.0	As in test (c)	0.2	Any convenient value	DEFLECTION SENSITIVIES			
						1. X plates (mm/V)	$740/V_{a3}$	$1000/V_{a3}$	10%(10)
						2. Y plates (mm/V)	$425/V_{a3}$	$575/V_{a3}$	10%(10)
(g)	4.0	3.0	As in test (c)	0.2	Any convenient value	Deviation of spot from centre of screen (mm)	-	10	100%
(h)	4.0	3.0	As in test (c)	0.2	Any convenient value	USEFUL SCREEN AREA			
						1. X deflection (mm)	-40	-	100%
	Deflection measured from centre of screen					2. Y deflection (mm)	-40°	-	100%
(j)	4.0	3.0	As in test (c)	0.2	Any convenient value	1. Orientation of X axis of deflection relative to 00° on drawing.	80°	100°	100%
						2. Angle between X and Y axes of deflection.	85°	95°	100%
(k)	4.0	3.0	As in test (c)	0.2	Any convenient value	TRAPEZOIDAL DISTORTION			
						1. Angles between adjacent sides	85°	95°	10%(10)
	An area of at least 80 x 80 mm to be scanned					2. Angles between opposite sides	175°	185°	10%(10)