MINISTRY OF SUPPLY

CATHODE RAY TUBES

CV1381 (ACR8) & CV1383 (ACR11)

Specification MOS/CV1381/Issue 1 Dated April 2nd 1946. To be read in conjunction with K1003	SECURITY Specification: Restricted C.R.T.: Restricted

→ Indicates a change

TYPE OF DEFLECTION:- Electrostatic, suitable for symmetrical deflection on X plates and asymmetrical deflection on Y plates, at frequencies up to 200 mc/s	MARKING See K1001/4
BULB:- Internally coated with conductive material	
SCREEN:- GGN53	

RATING			Note
Heater Voltage	(V)	4	
Heater Current	(A)	1.1	
Max. Final Anode Voltage	(kV)	4	
X plate sensitivity	(mm/V)	$\frac{900}{V_{A3}}$	
Y plate sensitivity	(mm/V)	$\frac{500}{V_{A3}}$	
TYPICAL OPERATING CONDITIONS			
Final Anode Voltage	(kV)	3	
Second Anode Voltage	(V)	560	
First Anode Voltage	(V)	150	
Beam Current	(μA)	20	

BASE
7 Clip

DIMENSIONS AND CONNECTIONS

See Drawing on Page 4

NOTE

A:- Tubes types CV1381 and CV1383 are identical except that the external surface of CV1381 is unmetallised while that of CV1383 is metallised in accordance with the drawing on page 4.

B:- The focussing system should be of the three electrode type. It is assumed in this specification that a separate connection will be made to A_1. Alternatively A_1 may be connected internally to A_2 or A_3

C:- There shall be an electrostatic screen between the X and Y plates

D:- The tube shall be adequately free from microphony. This test to be covered by Type Approval.

CV1381 &CV1383 TESTS

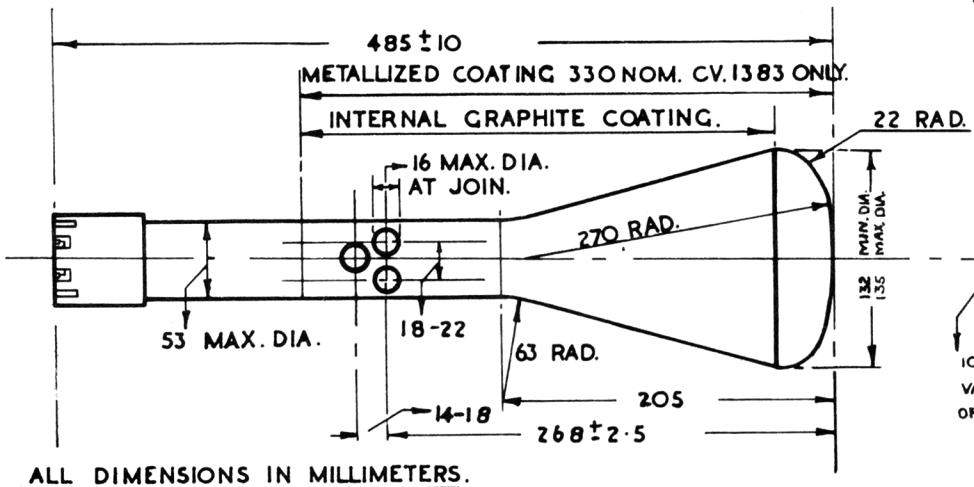
To be performed in addition to those applicable in K1003

Clause	Test Conditions V_h	V_{a3} (kV)	V_{a1}	V_{a2}	V_g	Tests	Limits Min.	Limits Max.	No. Tested
(a)	0	0	0	0	0	Capacitances (pf)			
						1. Each X plate to all other electrodes	-	15	
						2. Each Y plate to all other electrodes	-	7	10%
						3. Grid to all other electrodes	-	12	(10)
						4. Each X plate to each Y plate	-	0.2	
(b)	4	0	0	0	0	I_h (A)	-	1.2	10% (10)
(c)	4	3	150	-	-	1. Line width shall not be greater than that of a standard tube			
	Adjust V_{a2} for focus and V_g to give spot brilliance equal to that of a standard tube using a trace of length 80 mm in the X and Y directions successively.					2. V_{a2} (V)	420	670	100%
						3. V_g (to be noted)	At least 2V negative to cathode		
(d)	4	3	150	As in (c)	-	1. V_g (V)	-	-60	
	Adjust V_g for visual cut-off					2. Increase in negative value of V_g compared with value noted in (c) 3	-	20	100%
(e)	4	3	150	As in (c)	60	Grid Insulation			
	Recommended method: See K1003, clause 5.4.2. Insert resistor = 5 megohms					Leakage Current µA	-	12	100%
						Increase in voltmeter reading	-	100%	

CV1381 & CV1383

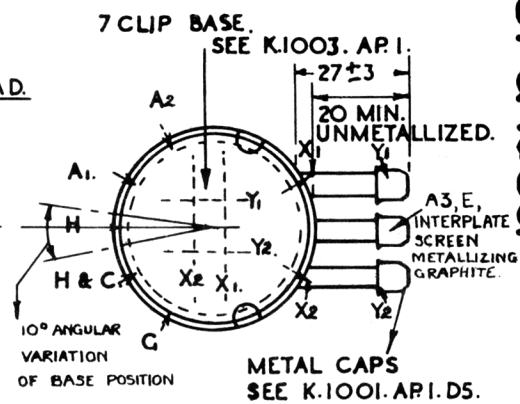
(f)	4	3	150	As in (c)	Any convenient value	Deflection Sensitivities 1. X plate (mm/V) 2. Y plate (mm/V)	 $\frac{740}{Va3}$ $\frac{425}{Va3}$	 $\frac{1000}{Va3}$ $\frac{575}{Va3}$	 10% (10)
(g)	4	3	150	As in (c)	As in (f)	Deviation of spot from centre of screen (mm)	-	10	100%
(h)	4	3	150	As in (c)	As in (f)	Useful Screen Area X deflection (mm) Y deflection (mm)	 ±40 ±40	 - -	 10%
(j)	4	3	150	As in (c)	As in (f)	Orientation of Axes 1. X axis 2. Y axis	 80° -10°	 100° +10°	 100%
	Angles measured relative to axis 00' on drawing								
(k)	4	3	150	As in (c)	As in (f)	Trapezoidal Distortion 1. Angles between adjacent sides 2. Angles between opposite sides	 85° 175°	 95° 185°	 10% (10)
	An area of at least 80 x 80 mm to be scanned								
(l)	4	4	150	See clause 5.14 of K1003		Over Voltage Test			100%
(m)	4	3	150	As in (c)	As in (c)	Life Test Life (hrs)	 500	 -	 1%
	Deflection to cover a raster of area 80 mms X 80 mms.								

CV. 1381. UNMETALLIZED . CV.1383. METALLIZED.



ALL DIMENSIONS IN MILLIMETERS.

VIEW OF BASE TWICE SIZE OF ELEVATION.



NOTE: 1. THE EXTERNAL METAL COATING SHALL BE OF SUCH DIMENSIONS THAT IT FUNCTIONS EFFECTIVELY BUT DOES NOT OBSCURE THE REQUIRED USEFUL SCREEN AREA.

2. SIDES OF GLASS TUBES TO BE SUBSTANTIALLY PARALLEL & RADIUS OF JOIN TO BE AS SMALL AS POSSIBLE.

3. VIEWING THE SCREEN WITH THE SIDE TERMINALS Y_1 & Y_2 ON THE RIGHT A POSITIVE VOLTAGE APPLIED TO TERMINAL X_1 SHALL DEFLECT THE SPOT TO THE RIGHT. A POSITIVE VOLTAGE APPLIED TO TERMINAL Y_1 SHALL DEFLECT THE SPOT DOWNWARDS.