

MINISTRY OF SUPPLYCATHODE RAY TUBE 3

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

→ Indicates a change

TYPES OF DEFLECTION:- Electrostatic, suitable for symmetrical deflection on X plates and asymmetrical deflection on Y plates, at frequencies up to 200 mc/s		<u>MARKING</u> See K1001/4.
BULB:- Internally coated with conductive material	SCREEN:- GGN53	
<u>RATING</u>	Note	<u>BASE</u> 7 Clip
Heater Voltage (V)	4	<u>DIMENSIONS AND CONNECTIONS</u> See Drawing on Page 4
Heater Current (A)	1.1	
Max. Final Anode Voltage (kV)	4	
X plate sensitivity (mm/V)	900	
Y plate sensitivity (mm/V)	500	
	VA3	
<u>TYPICAL OPERATING CONDITIONS</u>		
Final Anode Voltage (kV)	3	
Second Anode Voltage (V)	560	
First Anode Voltage (V)	150	
Beam Current (μA)	20	
<u>NOTE</u>		
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.		

CVI381 & CVI383

TESTS

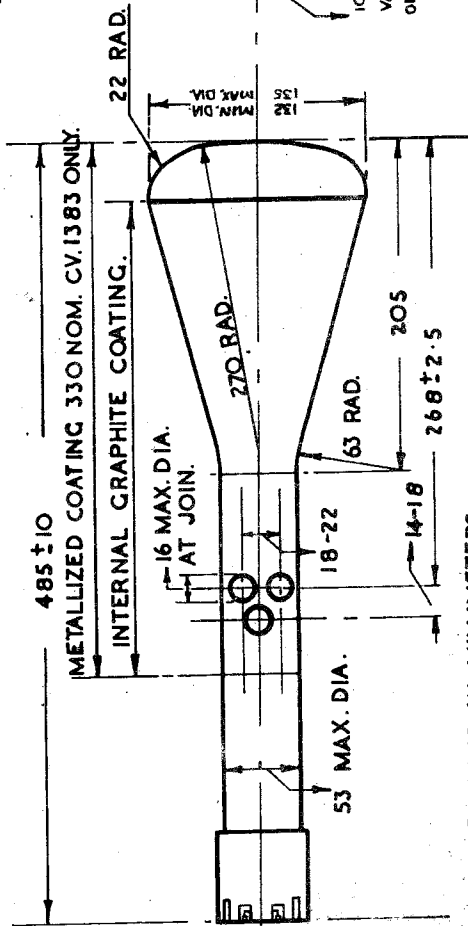
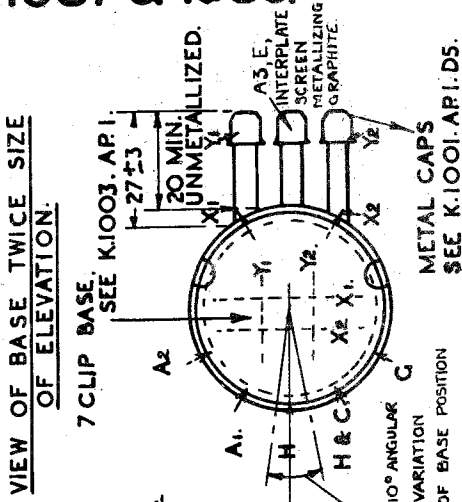
To be performed in addition to those applicable in K1003

Clause	Test Conditions					Tests	Limits		No. Tested.
	V _h	V _{a3} (kV)	V _{a1}	V _{a2}	V _g		Min.	Max.	
(a)	0	0	0	0	0	<u>Capacitances</u> (pf) 1. Each X plate to all other electrodes 2. Each Y plate to all other electrodes 3. Grid to all other electrodes 4. Each X plate to each Y plate	-	15	10% (10)
(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 2. V _{a2} (V) 3. V _g (to be noted)	420	670	100%
							At least 2V negative to cathode		
(d)	4	3	150	As in (c)	-	1. V _g (V) 2. Increase in negative value of V _g compared with value noted in (c) 3	-	-60	100%
							-	20	
(e)	4	3	150	As in (c)	60	<u>Grid Insulation</u> Leakage Current μ A Increase in voltmeter reading	-	12	100%
							-	100%	

Recommended method:
See K1003, clause 5.4.2. Insert resistor = 5 meg-ohms

(f)	4	3	150	As in (c)	Any convenient value	<u>Deflection Sensitivities</u> 1. X plate (mm/V) 2. Y plate (mm/V)	$\frac{740}{V_{a3}}$ $\frac{425}{V_{a3}}$	$\frac{1000}{V_{a3}}$ $\frac{575}{V_{a3}}$	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)	<u>Useful Screen Area</u> X deflection (mm) Y deflection (mm)	± 40 ± 40	- -	10%
(j)	4	3	150	As in (c)	As in (f) Angles measured relative to axis 00' on drawing	<u>Orientation of Axes</u> 1. X axis 2. Y axis	80° -10°	100° $+10^\circ$	100%
(k)	4	3	150	As in (c)	As in (f) An area of at least 80 x 80 mm to be scanned	<u>Trapezoidal Distortion</u> 1. Angles between adjacent sides 2. Angles between opposite sides	85° 175°	95° 185°	10% (10)
(l)	4	4	150	See clause 5.14 of K1003		<u>Over Voltage Test</u>			100%
(m)	4	3	150	As in (c)	As in (c) Deflection to cover a raster of area 80 mms X 80 mms.	<u>Life Test</u> Life (hrs)	500	-	1%

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



ALL DIMENSIONS IN MILLIMETERS.

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.