

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

Specification MOSA/CV1588 Issue 5 Dated 26.10.1953 To be read in conjunction with K1001	<table> <tr> <th colspan="2">SECURITY</th></tr> <tr> <th>Specification</th><th>Valve</th></tr> <tr> <td>UNCLASSIFIED</td><td>UNCLASSIFIED</td></tr> </table>	SECURITY		Specification	Valve	UNCLASSIFIED	UNCLASSIFIED
SECURITY							
Specification	Valve						
UNCLASSIFIED	UNCLASSIFIED						

—————> Indicates a change

TYPE OF VALVE - Cathode Ray Tube			<u>MARKING</u>	
TYPE OF DEFLECTION - Electrostatic, suitable for symmetrical operation			See K1001/4	
BULB - Internally coated with conductive coating			<u>BASE</u>	
SCREEN - GGN/28/35			12-pin Spigot Type	
PROTOTYPE - VCRL39A				
<u>RATING</u>			Note	<u>CONNECTIONS</u>
			Pin	Electrode
Heater Voltage	(V)	4	1	Cathode
Heater Current	(A)	1.1	2	Grid
Max. Final Anode Voltage	(kV)	1	3	Heater
X-plate Sensitivity	(mm/V)	170/Va ₃	4	Heater
Y-plate Sensitivity	(mm/V)	170/Va ₃	5	A ₂
<u>TYPICAL OPERATING CONDITIONS</u>			6	Pin omitted
Final Anode Voltage	(V)	800	7	Y ₂
Second Anode Voltage	(V)	135	8	X ₂
Beam Current	(μA)	3	9	A ₃
			10	X ₁
			11	Y ₁
			12	Pin omitted
			<u>DIMENSIONS</u>	
			See Drawing on Page 4	
<u>NOTES</u>				
A The tube shall be adequately free from microphony.				
B No objectionable fluorescence shall be produced at the screen or glass by ultra-violet light of the wavelength transmitted by nickel-oxide glass.				
C The tube shall be capable of operating at a pressure equivalent to six inches of mercury at 15°C.				
D Viewing the screen of the tube with the key on the base uppermost, a positive potential applied to pin X ₂ shall deflect the spot to the right and a positive potential applied to pin Y ₂ shall deflect the spot downwards.				

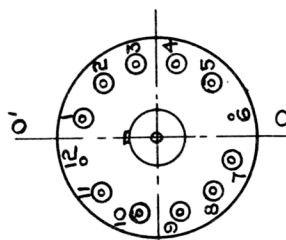
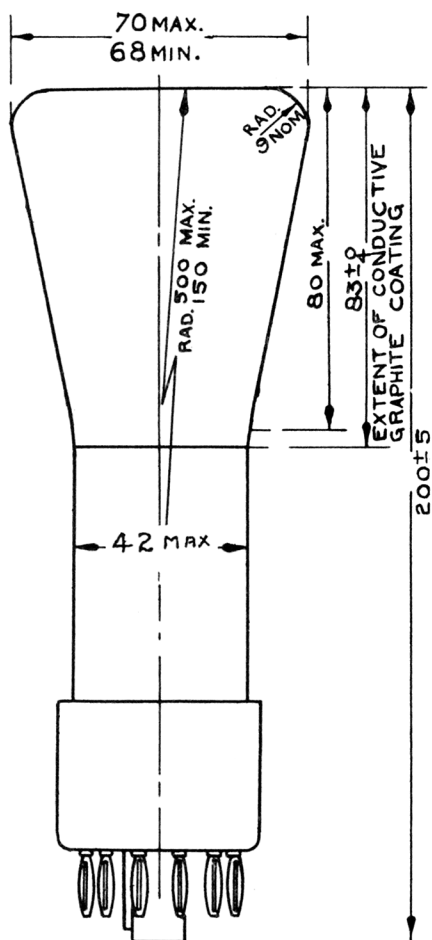
CV1588

TESTS

To be performed in addition to those applicable in K1001

	Test Conditions				Test	Limits		No. Tested	Note
						Min.	Max.		
a	<u>Deflection voltages shall be applied symmetrically in all cases.</u>								
	See K1001/5A.13				<u>INTER-ELECTRODE CAPACITANCES (pF)</u>				
					(1) Each X or Y plate to all other electrodes.	-	15	T/A	
					(2) Grid to all other electrodes.	-	20	T/A	
					(3) X ₁ to Y ₁ plate	-	3	0.5%	
					(4) X ₂ to Y ₂ plate	-	3	(5)	
					(5) X ₁ to Y ₂ plate	-	2		
				(6) X ₂ to Y ₁ plate	-	2			
b	Cathode 50V positive to heater				I _{h-c} (μA)	-	25	100%	
c	V _h	V _{a3}	V _{a2}	V _g	I _h (A)	0.85 0.95	1.25	5%(10)	
	4	0	0	0					
d	4	800	Adjust for optimum focus	Adjust to cut off	V _g (V)	-7	-16	100%	
e	4	800	Adjust for optimum focus	Adjust	V _g (V)	-1	-	100%	
	Adjust V _g to give a light output of 0.0012 candelas on a closed raster.								
f	L	800	Adjust for optimum focus		(1) Line width (mm)	-	0.8	100%	
	<u>DEFLECTION</u> - With a sine-wave time base of 10 Kc/s nom. and line length of 55 mm in the X and Y directions successively, the line width to be measured at the centre of the trace.				(2) V _{a2} (V)	50	175	5%(10)	

	Test Conditions				Test	Limits		No. Tested	Note
						Min.	Max.		
g	Vh	Va3	Va2	Vg	<u>GRID INSULATION</u> (1) Leakage current (μA) (2) Increase in voltmeter reading	-	3.5	100%	
	4	800	Any convenient value	-16		-	100%	100%	
Recommended method - K1001/5A.3.2 Resistor - 5 megohms									
h	4	800	Adjust for optimum focus	Any convenient value	<u>DEFLECTION SENSITIVITIES</u> (1) X plate (mm/V) (2) Y plate (mm/V) (3) Deviation of X to Y plate sensitivities	145/Va3	195/Va3	5%(10)	
						145/Va3	195/Va3	5%(10)	
						0.85	1.15	100%	
j	4	800	Adjust for optimum focus	Any convenient value	Deviation of spot from centre of screen (mm)	-	5	100%	
k	4	800	Adjust for optimum focus	Any convenient value	<u>USEFUL SCREEN AREA</u> Diameter (mm)	55	-	100%	
	Deflections to cover stated circle centred on centre of screen								
l	4	800	Adjust for optimum focus	Any convenient value	(1) Orientation of X axis of deflection relative to 00' on the drawing (2) Angle between X and Y axes of deflection	80°	100°	100%	
						85°	95°	100%	



PIN CONNECTIONS
VIEWED FROM
UNDERSIDE OF
BASE

ALL DIMENSIONS IN
MILLIMETRES

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION CV.1588 ISSUE 5 DATED 26.10.1953.

AMENDMENT NO.1

Page 2

Clause "C" Th Limits:-

DELETE MIN. 0.95

INSERT MIN. 0.85

T.V.C. for
R.A.E.

November, 1963
NP152579

✓ RAS
14/2/64