

Specification MOS(A)/CV2904	<u>SECURITY</u>	
Issue 1 Dated 23. 6. 54.	<u>Specification</u>	<u>Valve</u>
To be read in conjunction with K1001	UNCLASSIFIED	UNCLASSIFIED

TYPE OF VALVE - Cathode Ray Tube				<u>MARKING</u>	
TYPE OF DEFLECTION - Magnetic				See K1001/4.	
TYPE OF FOCUS - Magnetic				<u>BASE</u>	
SCREEN - 009 (with aluminium backing)				International Octal	
PROTOTYPE - C211Q/X2				Metal shell. See also Drawing Note V.	
<u>RATING</u>				<u>CONNECTIONS</u>	
				Pin	Electrode
Heater Voltage	(V)	6.3	Note B	1	No connection
Heater Current	(A)	0.6		2	Heater
Max. Final Anode Voltage	(kV)	18		3	Pin omitted
Max. Heater-Cathode Voltage	(V)	265		4	Pin omitted
				5	Grid
				6	Pin omitted
				7	Heater
				8	Cathode
				SC	Anode
<u>CAPACITANCES</u> (pF)					<u>SIDE CONTACT</u>
Gc - all (max.)		8.0		See K1001/A1/D5.1	
Cg - all (max.)		12.0		<u>DIMENSIONS</u>	
See Drawing on Page 4.					
<u>NOTE</u>					
A. The fluoride screen shall not contain beryllium.					
B. Max. fault conditions. For normal operation, the conditions specified in K1001/5A.3.3 shall apply.					

To be performed in addition to those applicable in K1001

	Test Conditions				Test	Limits		No. Tested	Note
	Vh (V)	Va (kV)	Vg (V)	Ib (μ A)		Min.	Max.		
a	See K1001/5A.13				Capacitances (pF) Grid to all other electrodes Cathode to all other electrodes	6.0 6.0	14.0 10.0	6 per week	1
b	6.3	-	-	-	Ih (A)	0.55	0.65	100%	
c	6.3	15.0	Adjust for out-off	-	Vg (V)	-55	-105	100%	
d	6.3	15.0	Adjust	100	(i) Change in Vg from value found in Test (c); (V) (ii) Line Width; (mm) (iii) Focus Coil Current; (mA) (iv) Within the range of Vg from cut-off to that for Ib = 100 μ A, the beam current shall increase continuously.	25 - 15 20	40 0.25 30 35	100%	2
e	6.3	15.0	-105	-	Grid Insulation (i) Leakage Current (μ A) (ii) Increase in voltmeter reading	- -	10.5 100%	100%	
f	6.3	15.0	Any convenient value	-	Useful Screen Area Diameter (mm)	165	-	100%	
g	6.3	15.0	Near out-off	-	Deviation of unfocussed spot from the centre of the screen (mm)	-	5	100%	
h	6.3	15.0	Adjust	50	Diameter of unfocussed spot (mm)	-	20	100%	
j					Screen blemishes to be not worse than an agreed standard.	-	-	100%	

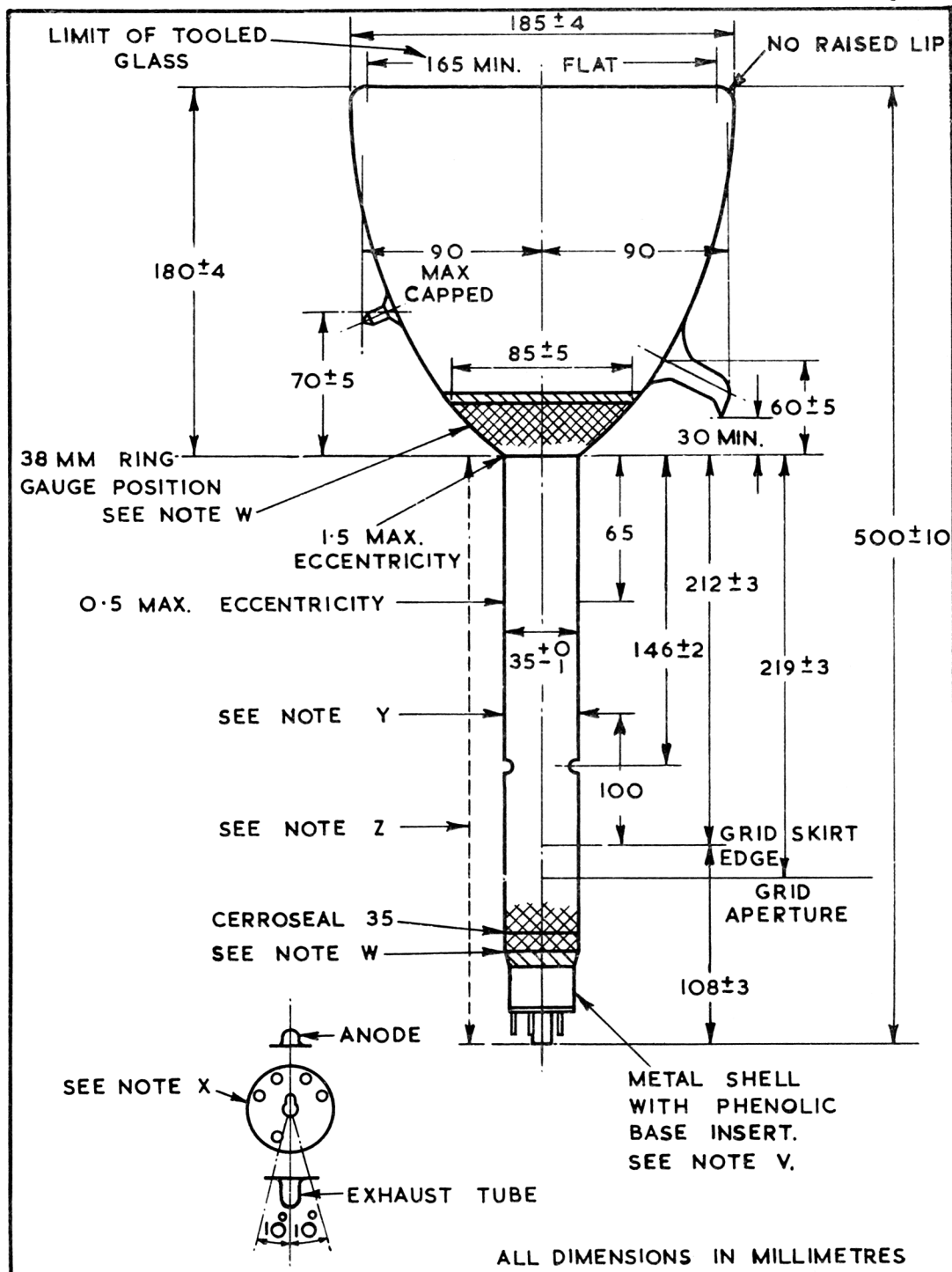
	Test Conditions				Test	Limits		No. Tested	Note
	Vh (V)	Va (kV)	Vg (V)	Ib (μ A)		Min.	Max.		
k	No bubbles or blemishes in the glass face of the tube shall be greater than 0.04 in. dia., and the maximum number of bubbles and blemishes permissible shall be according to the following: With the screen divided into three zones, separated by concentric circles of 2 ins., 4 ins. and 6 ins. diameter, the inner zone bubble density may be up to 2 per sq. in. max., the middle zone 4 per sq. in. max., and outer zone 6 per sq. in. The periphery zone beyond the 6 ins. diameter may include 6 or more per sq. in.								
m	6.3	15.0	Adjust for cut-off	-	Cold Emission	-	-	100%	3
n	6.3	15.0	Adjust	-	Persistence (secs)	84	-	10% (20)	4

NOTES

1. This test shall be performed after the application of the external Aquadag coating.
2. The necessary focussing field shall be obtained using a focus coil having the following characteristics and mounted so that the centre of the gap is at a distance of ~~160~~ mm. from the 38 mm. ring-gauge position.
Focus Coil. 25,000 turns of 38 s.w.g. enamelled copper wire wound on a paxolin tube $1\frac{3}{8}$ ins. outside diameter and 2 inches winding length, and fitted with $5/32$ ins. mild steel end-cheeks and cover, outside diameter $3\frac{3}{8}$ ins.
3. There shall be no spurious excitation of the screen resulting in visual or ultra-violet light output.
4. The tube shall be scanned with a closely-spaced raster 130 mm. x 130 mm. and of good linearity. The light intensity shall be adjusted to 0.14 candela, and the excitation maintained for a total of 30-35 seconds. The raster will then be blacked-out and the time to decay to 0.7% of its initial brightness shall not be less than 84 seconds. Measurement of light output shall be made using an Eel photo-cell with the addition of an eye sensitivity correction filter.

DRAWING NOTES

- V. Maximum diameter of metal shall not exceed 34 mm. and a ring gauge 35.25 mm. max. internal diameter and of length 50 mm. shall slide freely over the base and neck when the shell is cemented to the neck.
- W. Neck to be coated with Acheson Dag No. 490 and two coats of Bakelite Varnish V130/1, having minimum overlap of 3 mm.
- X. Angle between plane through anode connection and axis of tube and plane through base spigot not to exceed 15° .
- Y. The axis of the tube is defined as the extended axis of that section of the gun neck from the modulator edge 100 mm. towards 38 mm. ring gauge reference line.
- Z. Over this length straightness shall be sufficiently good for a gauge 37 mm. maximum internal diameter and of length 100 mm. to slide freely over neck and base.



Specification MOS(A) CV2904 Issue I - dated 23.6.54

Amendment No. 1

Page 2

Clause "D(iii)" Focus coil current

Delete limits 15 to 30 mA

Insert " 20 " 35 mA

Page 3 Note 2

Amend end of ~~this~~ note to read:-

"..... so that the centre of the gap is at a distance of 112 mm. from the 38 mm. ring gauge position".

January, 1959.

N.54126/D

R.R.E.

RAM