

MINISTRY OF SUPPLY

Specification MOS/CV1399/Issue 2 Dated 1.6.46. To be read in conjunction with K1003.	<u>SECURITY</u>	
	<u>Specification</u> Restricted	<u>C.R.T.</u> Restricted

→ Indicates a change

<u>TYPE OF DEFLECTION</u> : - Electrostatic. Suitable for symmetrical operation.		<u>MARKING</u>  See K1001/4
<u>BULB</u> : - Internally coated with conductive coating.		
<u>SCREEN</u> : - Afterglow. BYL46.		
<u>RATING</u>	<u>Note</u>	<u>BASE</u> 12 contact key base
Heater Voltage (V)	4.0	<u>DIMENSIONS</u> <u>AN</u> <u>CONNECTIONS</u>  See drawing on Page 4.
Heater Current (A)	1.0	
Max. Final Anode Voltage (kV)	4.0	
Desirable Spot Size (mm)	1.0	
X plate sensitivity (mm/V)	1000	
Y plate sensitivity (mm/V)	1000	
<u>TYPICAL OPERATING CONDITIONS</u>		
Final Anode Voltage (kV)	2.0	
Second Anode Voltage (V)	400	
Beam Current (μA)	5	

NOTE

- A:- A magnetic shield shall be supplied fitted to the tube and be such as to provide adequate screening from external magnetic fields.
- B:- When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X<sub>1</sub> shall deflect the spot to the right, and a positive voltage applied to the terminal Y<sub>1</sub> shall deflect the spot downwards.
- C:- CV1399 (ACR23A) and CV1398 (ACR23) differ only in that the former has the screen markings shown in drawing on page 4.

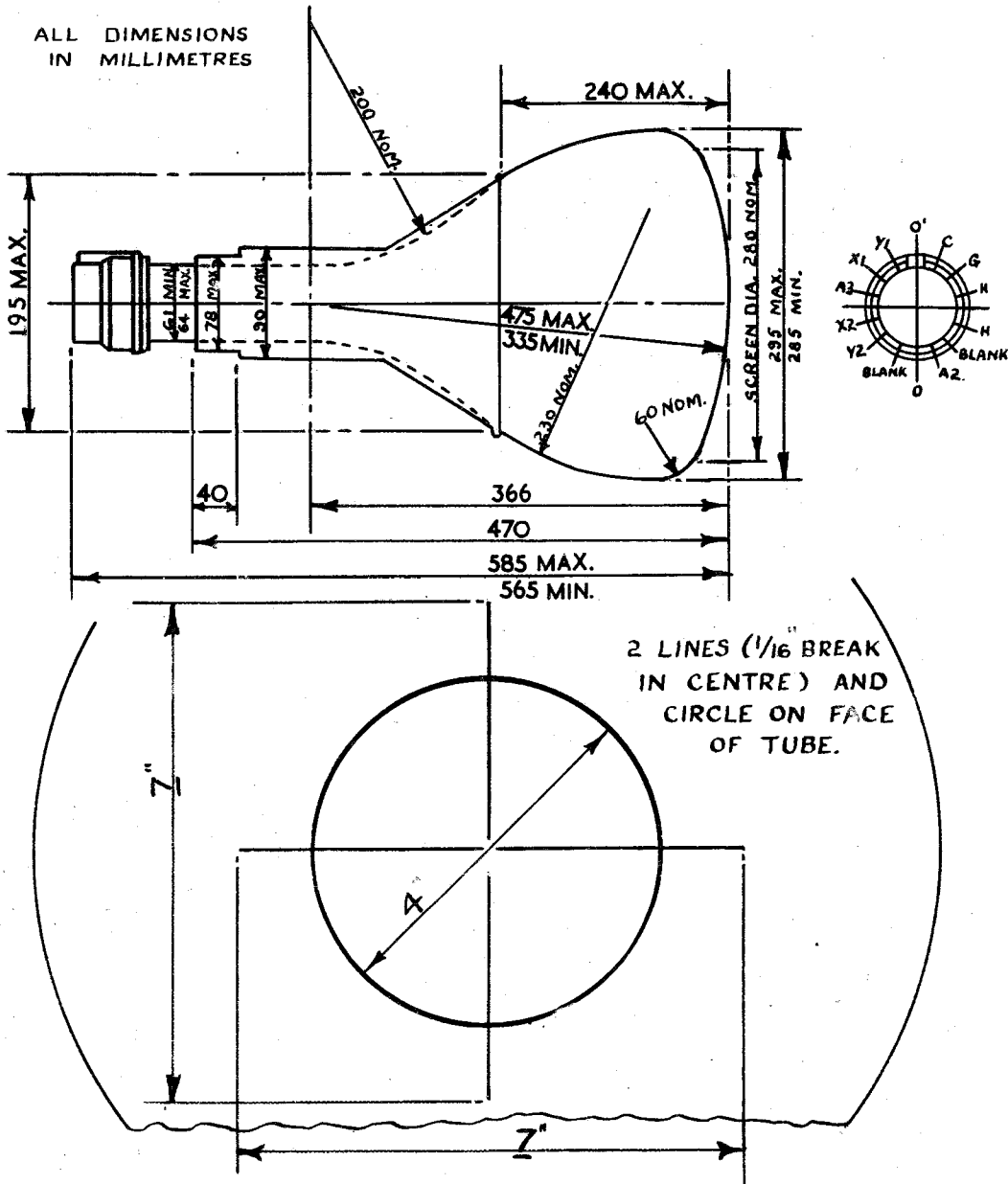
## TESTS

To be performed in addition to those applicable in K1003.

Clause	Test Conditions				Tests	Limits		No. Tested
	V <sub>h</sub>	V <sub>a3</sub> (kV)	V <sub>a2</sub>	V <sub>g</sub>		Min.	Max.	
(a)					Capacitances (pf)			
					1. Each X or Y plate to all other electrodes	-	20	Type Approval Test only
					2. Grid to all other electrodes	-	20	
					3. One X to one Y plate	-	5	
(b)	4.0	0	0	0	I <sub>h</sub> (A)	.75	1.2	100%
(c)	4.0	2.0	-	-	1. The line width shall not be greater than that of standard tube	.3	.6	100%
					3. V <sub>g</sub> (V)			
(d)	4.0	2.0	As in (c)	Adjusted to give cut-off	1. V <sub>g</sub> (V)	-33	-31	100%
					2. Increase in negative value of V <sub>g</sub> compared with value noted in (c) 3	-	10	
(e)	4.0	2.0	As in (c)	-31	Grid Insulation Leakage current (μA)		6.2	100%
					Increase in voltmeter reading	-	100%	
(f)	4.0	2.0	As in (c)	Any convenient value	Deflection Sensitivities	800	1250	10% (10)
					1. X plate (mm/V)	V <sub>a3</sub>	V <sub>a3</sub>	
					2. Y plate (mm/V)	300	1250	
						V <sub>a3</sub>	V <sub>a3</sub>	
(g)	4.0	2.0	As in (c)	Any convenient value	Deviation of spot from centre of screen. (mm)	-	15	100%

(h)	4.0	2.0	As in (c)	Any convenient value	<u>Useful Screen Area</u> <u>Radius</u> (mm)	105		100%
Deflections to cover the stated circle centred on centre of screen								
(j)	4.0	2.0	As in (c)	Any convenient value	Orientation of Y axis of deflection		+10°	100%
Angle measured relative to axis OO' on drawing								
(k)	4.0	2.0	As in (c)	Any convenient value	Angle between X and Y axis	88°	92°	10%
(l)	4.0	2.0	As in (c)	As in (c)	The screen shall not be worse for graininess, non-uniformity and afterglow than the corresponding standard tube			100%
Test to be done by an approved method								
(m)	4.0	4.0	See Clause 5.14 of K1003		Over Voltage Test			100%
(n)	4.0	2.0	As in (c)	Adjusted to give normal brightness raster	<u>Life Tests</u> <u>Life</u> (hrs)	1000	-	1%
Deflection to cover a raster of area 210 x 210 mm.								

ALL DIMENSIONS  
IN MILLIMETRES



2 LINES (1/16" BREAK  
IN CENTRE) AND  
CIRCLE ON FACE  
OF TUBE.

LINES NOT MORE THAN 1/50" WIDE, DRAWN IN BLACK ENAMEL (SUPERIOR BERLIN BLACK FROM CHARLES TURNER & SONS, BLOOMSBURY HOUSE, HIGH HOLBORN) - WHOLE FACE OF TUBE SPRAYED AFTER MARKING WITH CLEAR VARNISH, MAKERS REF. K371 158 1 S.O. D4 2427 FROM JENSON & NICHOLSON LTD. STRATFORD, E.15. - THE CROSS LINES CORRESPOND TO THE ELECTRICAL AXES OF THE TUBE (E ARE THEREFORE NOT NECESSARILY ACCURATELY AT 90° TO EACH OTHER), THE POINT OF INTERSECTION & THE CENTRE OF THE CIRCLE TO ITS ELECTRICAL CENTRE.