MINISTRY OF SUPPLY, R.R.E. VALVE ELECTRONIC **CV2447**

Specification MOS/CV2447 Issue 1 Dated:- February, 1958 To be read in conjunction with K1001 and BS448	SECURITY Specification: Unclassified Valve: Unclassified

——— Indicates a change

TYPE OF VALVE:- Cathode Ray tube TYPE OF DEFLECTION:- Magnetic TYPE OF FOCUS:- Magnetic SCREEN:- BB1 Aluminium Backed PROTOTYPE:- X9	MARKING See K1001/4 BASE BS.448. B12A With metal shell

RATING			Note
Heater Voltage	(V)	6.3	
Heater Current	(A)	0.6	B
Max. First Anode Voltage	(V)	600	A
Min. First Anode Voltage	(V)	250	
Max. Final Anode Voltage	(kV)	15	A
Min. Final Anode Voltage	(kV)	9	
Max. Heater-Cathode Voltage	(V)	150	A.C.
Max. Beam Current	(uA)	50	A
TYPICAL OPERATING CONDITIONS			
First Anode Voltage	(V)	600	
Final Anode Voltage	(kV)	15	
Max. grid Voltage for cut-off		-160	

CONNECTIONS	
Pin	Electrode
1	h
2	g
3	No pin
4	No pin
5	No pin
6	Internal Connection
7	Internal Connection
8	No pin
9	No pin
10	a_1
11	k
12	h
Side Contact	a_2

CAPACITANCES		
Max. Cg. to all other electrodes	(pf)	12
Max. Ck to all other electrodes	(pf)	12

SIDE CONTACT
BS.448. CT 1.

DIMENSIONS
See drawing, page 5

NOTES

A. Absolute maximum value.

B. Heater current may be between 0.3 and 0.6 amp. nominal.

C. Heater negative to cathode.

To be performed in addition to those applicable in K1001

	Test Conditions	Tests	Limits Min.	Limits Max.	No. Tested
a	See K1001/5A.13.	Capacitances (pf) Grid to all other electrodes Cathode to all other electrodes	 - -	 12 12	 5%(20) 5%(20)
	FOR ALL TESTS GIVEN BELOW Vh = 6.3 Volts				
b		Heater Current (A)	0.28	0.66	100%
	FOR ALL TESTS GIVEN BELOW, EXCEPT CLAUSES "k" and "l", Va1 = 600V; Va2 = 15 kV				
c	Adjust for optimum focus. Adjust Vg for cut-off. See K1001/5A.10.	Grid Base -Vg (V)	55	160	100%
d	Adjust Vg to give a light intensity of 0.06 "orthochromatic candela," using a focussed raster of convenient size. See Note 1 and K1001/5A.9.	Light Intensity and Grid Drive 1. Change in Vg from value (V) found in test "c". 2. The beam current shall increase smoothly from cut-off to that required for 0.06 "orthochromatic candela".		20	100% 100%
e	Focus adjusted for optimum. Linear line scan of length 250 mm. and 100 uS duration. (i) Grid, +ve drive from cut-off by 100 uS pulse and amplitude as found in test "d1" at 100 p.p.s. OR (ii) Using an interlaced 405 line T.V. raster with the frame scan expanded to facilitate line width measurement, D.C. +ve grid drive from cut-off as found in test "d1".	Line Width measured at the centre of the trace (mm) (i) OR (ii)		0.3 0.25	100%
f	(i) Vg -160V OR (ii) See K1001/5A.3.2. Resistor 10 megohm	Grid Insulation (i) Leakage current (uA) OR (ii) Increase in voltmeter reading.	 - -	 16 100%	100%
g	A voltage of 160V shall be applied between heater and cathode. See K1001/5A.3.3.	Heater-Cathode Leakage Leakage current (uA)	-	160	100%

CV2447

To be performed in addition to those applicable in K1001

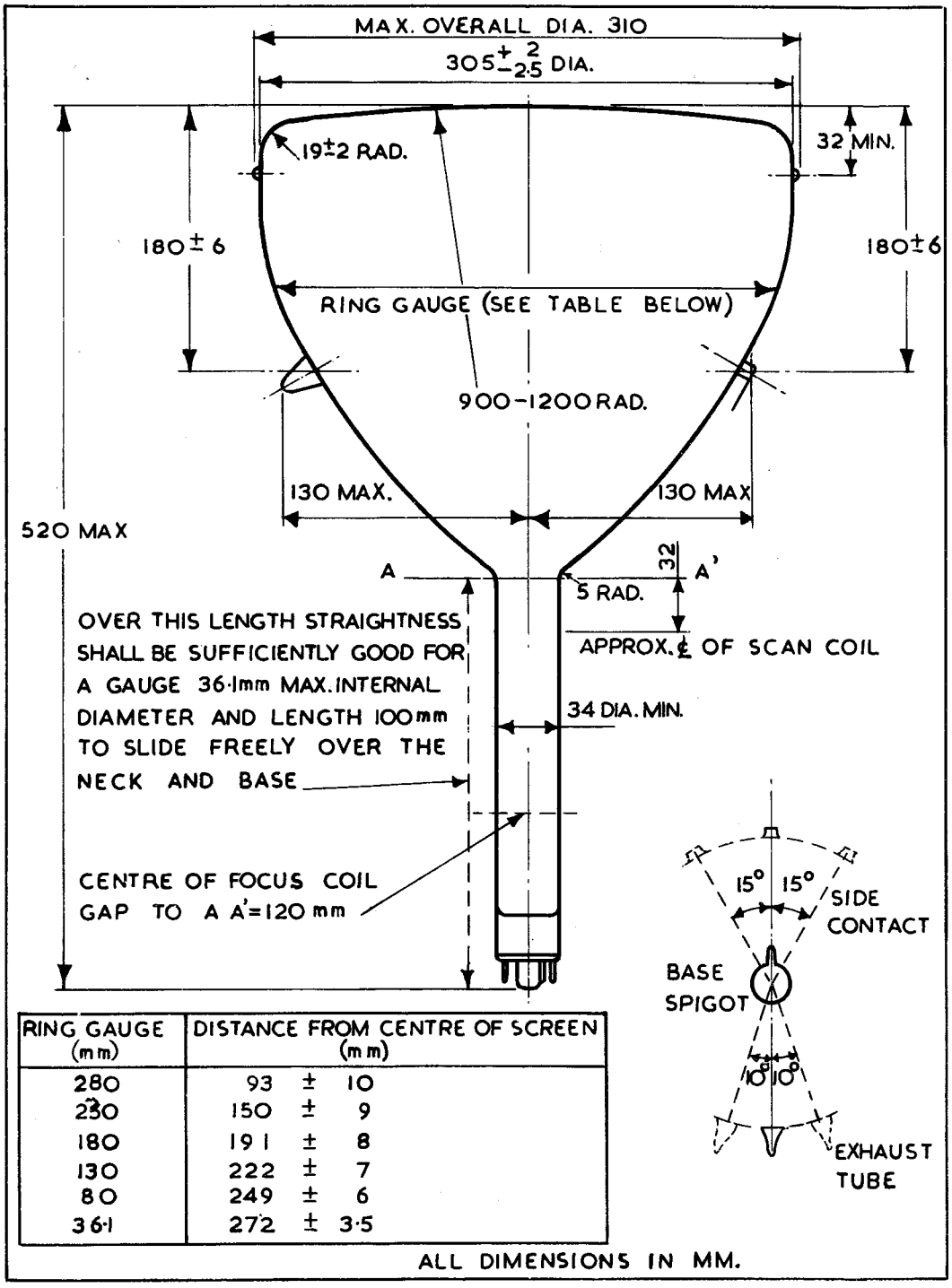
	Test Conditions	Tests	Limits Min.	Limits Max.	No. Tested
h	Adjust for optimum focus and any convenient light intensity with a raster scan to cover the whole screen area.	Useful Screen Area Diameter on the geometric centre of the screen (mm)	250		100%
j	No focussing or deflecting fields 1. Vg any convenient value 2. Grid pulsed 100 uS, 25 to 100 p.p.s. Amplitude as found in test "d1".	1. Deviation of the spot from the centre of the screen (mm) 2. Unfocussed spot diameter (mm)	- -	15 12	100% 5% (20)
k	Va2 18kV. Va1 600V Vg -200V. Preheat cathode at Vh = 6.3V for 10 minutes. The tube to he held with the screen horizontal and uppermost. Focus field as in clause "e". The tube to be viewed for 10 seconds in a dark box or room whilst the neck of the tube is tapped with an approved forked rubber covered wooden hammer at a minimum of 4 taps per second.	Flash Over and Stray Emission Any flashover or stray emission can be ignored during the first five seconds when any emission should be deflected off the screen. During the remaining five seconds, when there should be no deflecting field the tube shall be rejected if flashover or stray emission appears.			100%
l	Vh 6.3V Va1 300V Va2 -20V Adjust Vg for I_k any convenient value i.e. 400 to 1,000 uA.	Gas Ratio The ratio $\frac{Ia2\ uA}{I_k\ uA}$	-	$2x10^{-4}$	100%
m	With a defocussed raster covering the useful screen area. See note 2.	Blemishes. (Stones, Bubbles and Screen Defects) Above 1.0 mm. diameter 1.0 mm to 0.6 mm. dia. 0.6 mm. to 0.3 mm. dia. Spacing between blemishes. (mm)	None 20	 7 15	100%
n	Adjust Vg for cut-off With no deflecting field grid to be pulsed positively by the drive value founded in test "d.1". at a pulse length of 10 µS and repetition frequency of 10kc/s. Adjust focus coil current to give a defocussed spot of 5 mm. dia. approx.	Afterglow. (µ Sec.) Decay time to 30% of the excitation level.		4	5% (5)

NOTES

1. The lamp used for the calibration of the photocell - OB8 filter combination shall have a colour temperature of 2600 ± 50°K.

2. If two or more blemishes, including those below 0.3 mm. are separated by a distance not greater than the maximum dimension of the largest blemish in the group, then the group of blemishes shall be considered as one blemish of dimension equal to the maximum overall dimension of the group.

CV 2447



RING GAUGE (mm)	DISTANCE FROM CENTRE OF SCREEN (mm)
280	93 ± 10
230	150 ± 9
180	191 ± 8
130	222 ± 7
80	249 ± 6
36·1	272 ± 3·5

ALL DIMENSIONS IN MM.

CV 2447/1/5