Admiralty Signal and Radar Establishment

CATHODE RAY TUBE

CV2415

Specification AD/CV2415 Issue No. 1 dated 26.2.57. To be read in conjunction with K.1001.	SECURITY Specification: Unclassified Tube: Unclassified

TYPE OF VALVE: Cathode Ray Tube

TYPE OF DEFLECTION: Magnetic

TYPE OF FOCUS: Electrostatic

BULB: Internally coated with conductive coating.

SCREEN: 009 (Aluminium backed)

PROTOTYPE: VCRX225

MARKING

See K.1001/4

BASE

See BS448/B8.0

RATING

(All limiting values are absolute)

			Note
Heater Voltage	(V)	4.0	
Heater Current	(A)	1.0	
Max. First Anode Voltage	(kV)	1.45	A
Max. Second Anode Voltage	(kV)	1.4	
Max. Third Anode Voltage	(kV)	8.0	A
Max. Beam Current	(μA)	50.0	

TYPICAL OPERATING CONDITIONS

Third Anode Voltage	(kV)	7.0	
Second Anode Voltage	(kV)	1.0	
First Anode Voltage	(kV)	1.25	B
Working Beam Current (peak)	(μA)	50	

Pin	Electrode
1	No connection
2	First Anode
3	Second Anode
4	No connection
5	Grid
6	Cathode
7	Heater
8	Heater
Side Contact	Third Anode

SIDE CONTACT

C18 ~~Flush Type~~ see BS448/ 6/1.4

DIMENSIONS AND CONNECTIONS

See drawing on page 4.

NOTES

A:- The tube shall be capable of operating with these voltages at a pressure equivalent to 4.45" of mercury at 15°C.

B:- The first anode must always be at least 50V. positive to the second anode and the supply network must take account of variations in first anode current from zero to working value.

C:- To prevent damage to the screen material and to ensure that maximum life is obtained from cathode and screen, the tube should not be operated with a stationary, or slowly moving spot. The tube should be operated at its minimum useful brightness.

D:- The tube may be mounted in any position.

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TESTS

To be performed in addition to those applicable in K1001.

	Test Conditions					Test	Limits		No. Tested
	Vh	Va3 (kV)	Va2 (kV)	Va1 (kV)	Vg		Min.	Max.	
a	See K1001/5A.13.					INTERELECTRODE CAPACITANCE (pF.) Cg- all	-	25	5%(10)
b	4.0	0	0	0	0	Ih (A)	0.7	1.2	100%
c	4.0	7.0	Adjust for optimum focus	1.25	Adjust to cut off	Negative Vg (V) (Value to be noted for use in test e)	-	100	100%
d	4.0	7.0	Adjust for optimum focus	1.25	Vg adjusted to give a light output of 0.15 Candela from a close raster of convenient size.	SCREEN EFFICIENCY Beam Current (μA)	-	~~5~~ 10	100%
e	4.0	7.0	ditto	1.25	Adjust	1. Negative Vg (V) 2. Change in value of Vg from valve in test (c) (V)	1 -	- 55	100% 100%
	Deflect beam off the usable screen area, and adjust Vg to give I_g = 50 μA.								
f	4.0	7.0	ditto	1.25	-	1. Line width (mm) 2. Va2 (V)	- 900	0.8 1200	100% 100%
	DEFLECTION - With a sinewave time base of 10 kc/s nom. and line length of 135 mm. in X and Y directions successively, the line width shall be measured at the centre of the trace. GRID - The grid shall be pulsed positively with amplitude equal to the value obtained in test (e.2), the nominal values of pulse duration and recurrence being 100 μ secs. and 100 c/s respectively.								
g	4.0	7.0	Any convenient value	1.25	-100	GRID INSULATION 1. Leakage current (μA) 2. Increase in voltmeter reading	- -	20 100%	100% 100%
	or, (2) Using recommended method of K1001/5A.3.2. with 5 Megohms resistor.								

TESTS (CONTD.)

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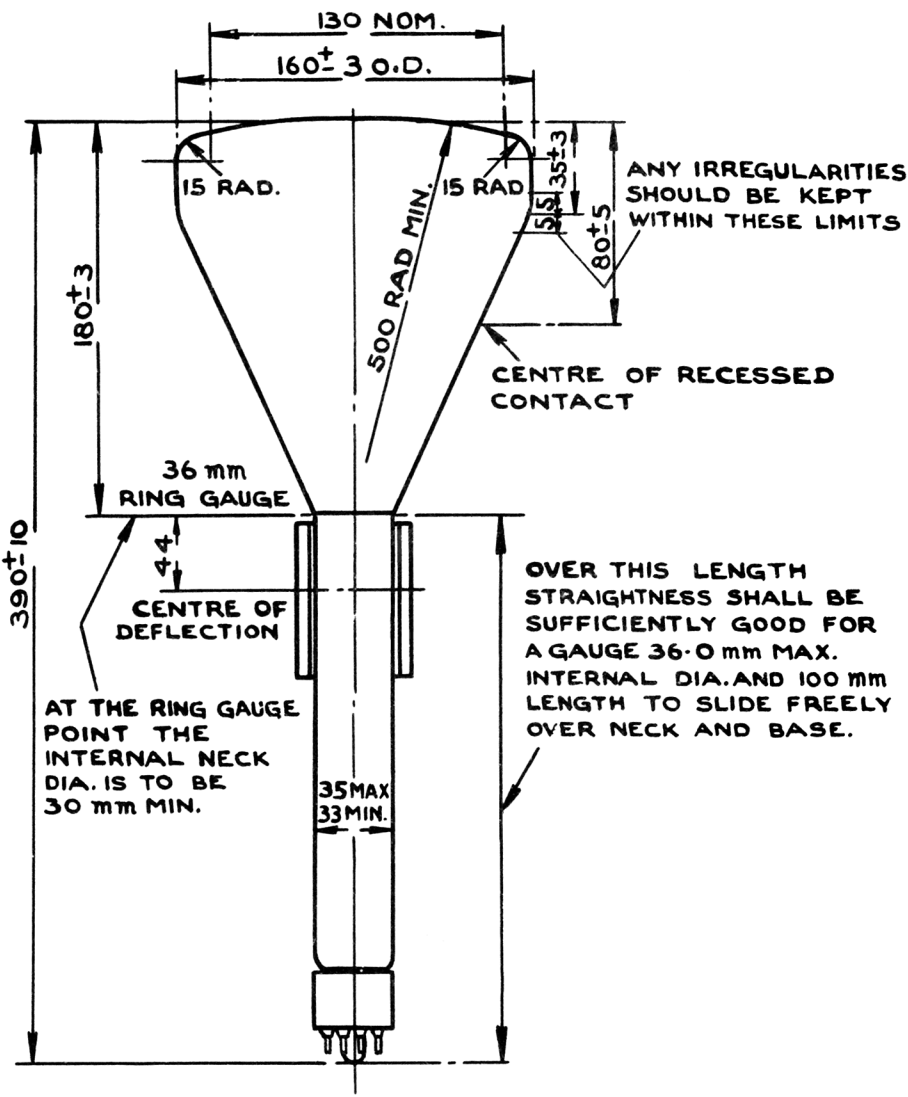
	Test Conditions					Test	Limits		No. Tested
	Vh	Va3 (kV)	Va2 (kV)	Va1 (kV)	Vg		Min.	Max.	
h	4.0	7.0	Any convenient value	1.25	Any convenient value	Deviation of spot from centre of screen (mm)	-	10	100%
j	4.0	7.0	Any convenient value	1.25	Any convenient value	USEFUL SCREEN AREA Diameter (mm)	135	-	100%
k	Screen to be scanned with an interlaced 405 line T.V. defocussed raster of convenient size. Vg adjusted for a screen brightness of 2 E.F.C. Excitation time 120 secs. ± 15 secs.					AFTERGLOW PERSISTANCE Decay time to 0.014 E.F.C. at 20°C (Secs.) (Assume temperature coefficient of persistance to be - 6 secs. per °C. within the limits 18 - 22°C.)	120	-	20% 10 per week



THE ANGLE BETWEEN THE PLANES THROUGH THE TUBES AXIS AND THE CENTRE OF THE SIDE CONTACT, AND THE TUBE AXIS AND THE KEY IN THE SPIGOT OF THE BASE SHALL NOT BE MORE THAN ± 10°

ALL DIMENSIONS IN MILLIMETRES

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION AD/CV2415

ISSUE NO. 1: DATED 26.2.57.

AMENDMENT NO. 1.

Page 1. At top left-hand corner of page,
Add - "Admiralty Signal and Radar Establishment"

Near middle of page at right-hand side, under heading SIDE CONTACT,

Delete: "Flush Type"
Substitute: "CT8 see BS448 6/1.8".

Page 2. Clause "d". In column headed "Limits Max"

Amend figure against "Beam current" from 5 to 10.

May 1960
N17177/D

T.V.C. for A.S.W.E.

AAS 11/60