VALVE ELECTRONIC **CV254**

ADMIRALTY SURFACE WEAPONS ESTABLISHMENT

Specification AD/CV 254 Issue 8 Dated 30.3.62. To be read in conjunction with K1001.	SECURITY Specification: Unclassified Valve: Unclassified

→ Indicates a change

TYPE OF VALVE: Cathode Ray Tube

TYPE OF DEFLECTION: Electro magnetic Symmetrical

TYPE OF FOCUS: Electro static

BULB: Internally coated with conductive coating.

SCREEN: BY8

PROTOTYPE: VCRX 134

MARKING

See K1001/4

BASE

BS448/B8-0

CONNECTIONS

PIN	ELECTRODE	
1.	Pin omitted	
2.	Anode 1	a_1
3.	Anode 2	a_2
4.	Pin omitted	
5.	Grid	g.
6.	Cathode	k.
7.	Heater	h.
8.	Heater	h.
Side Contact	Anode 3	a_3

CAP

See BS448/CT1 Cap Contact, securely fastened to a BS448/CT8 Cavity contact. ←

DIMENSIONS

See drawing on page 4. ←

RATING

			Note
Heater Voltage	(V)	4.0	
→ Heater Current	(A)	1.0	
Max. 3rd Anode Voltage	(kV)	9.0	

TYPICAL OPERATING CONDITIONS

3rd Anode Voltage	(kV)	8.0	
2nd Anode Voltage	(kV)	1.3 ±100V	A
1st Anode Voltage	(kV)	1.35 ±100V	A
Beam Current	(μA)	150	B
Vg for cut-off (approx.)	(-V)	70	

CAPACITANCES (pF)

→ Max. C grid to all other electrodes	20	C
Max. C cathode to all other electrodes.	20	

PACKAGING

See K1005

NOTES

A. The first anode must always be at least 50V positive to the second anode.

B. Measured under suitable pulse conditions.

C. Target to be 15 pF.

TESTS

To be performed in addition to those applicable in K1001.

Tests are to be performed in the specified order unless otherwise agreed with the Inspecting Authority.

Test conditions - unless otherwise stated:-

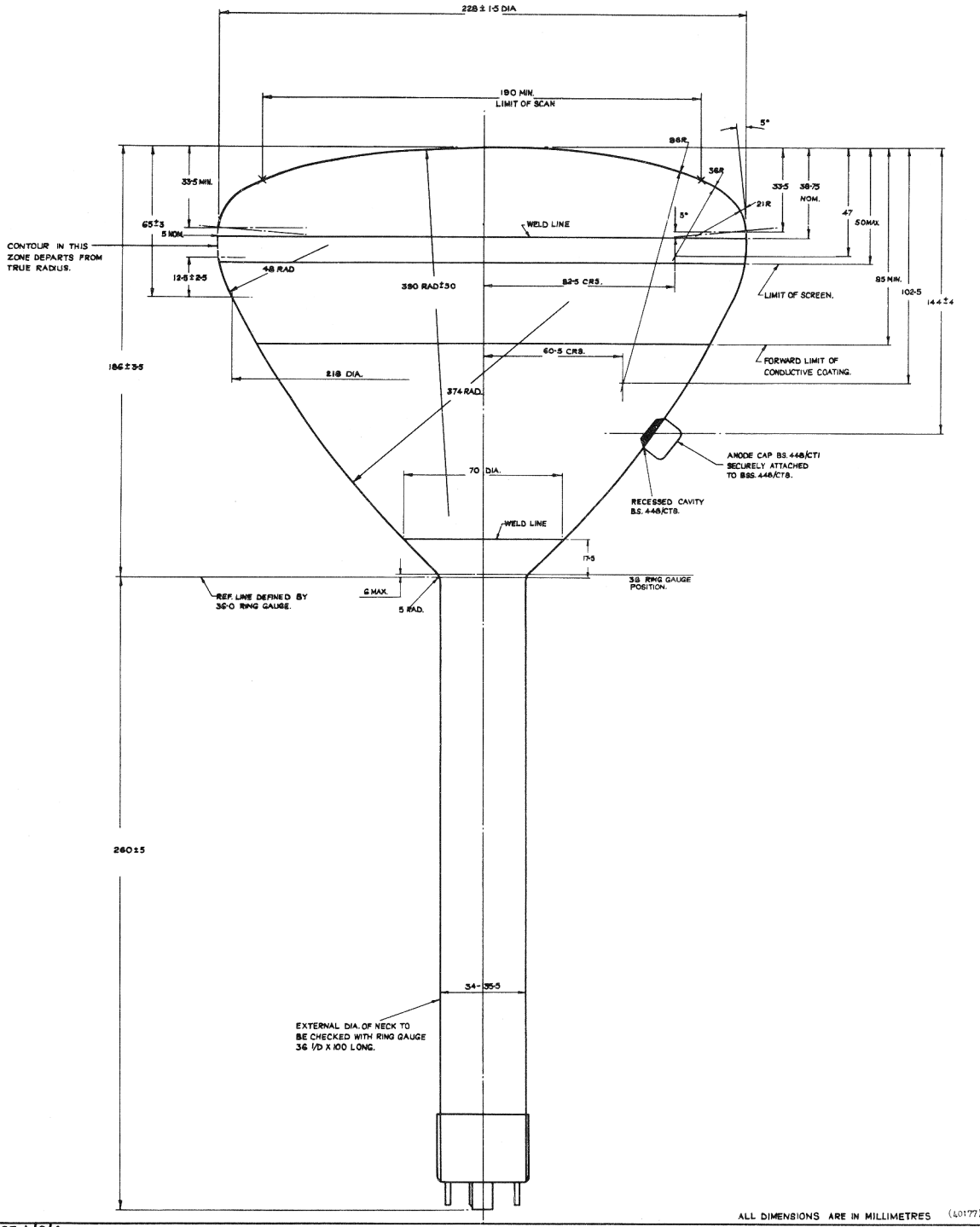
V_h (V)	V_{g1} (V)	V_{a1} (kV)	V_{a2} (kV)	V_{a3} (kV)
4.0	Adjust	1.35 ± 100V (See Note A on Page 1)	Adjust	8.0

	Test	Test Conditions	AQL %	Insp. Level	Symbol	Limits Min.	Limits Max.	Units	
a	Heater Current	No voltages except V_h.		100%	I_h	0.7	1.2	A	
b	Negative Grid Voltage for cut-off.	V_a2 = Adjust for optimum focus. V_g = Adjust.		100%	V_g	50	80	V	←
c	Beam Current	V_a2 = As for test "b" above. V_g = Adjust to give a light output of 1.0 Candela using a focused raster of convenient size.		100%	I_a3	-	150	/uA	
d	(i) Line width	V_a2 = as for test "b" above.		100%		-	0.8	mm	
	(ii) 2nd Anode Voltage	V_g = Adjust as for Test "c" above Linear line scan - 190 mm in X and Y directions successively.		100%	V_a2	1200	1400	V	
e	Deviation of centre of undeflected spot from centre of screen.	V_a2 = as for test "b" above. V_g = Any convenient value to give reasonable brightness.		100%		-	10	mm	
f	Grid Insulation (i) Leakage Current or (ii) Increase in Voltmeter reading.	V_a2 = as for test "b" above. V_g = -100V or See K1001/5A.3.2 with resistor = 15.4M ohms.		100% -	I_g -	- -	6.5 100%	/uA -	← ←
g	Heater - Cathode Insulation Leakage Current	V_{hk} = -100V See K1001/5A.3.3.		100%	I_{h-k}	-	200	/uA	←

CV254

TESTS (Contd.)

	Test	Test Conditions	AQL %	Insp. Level	Symbol	Limits Min.	Limits Max.	Units
h	Radial Movement of edge of bulb.	Tube to be rotated about the neck.		100%		-	5	mm
j	Useful Screen Area. Diam. through centre of screen.	V_a2 = as for test "b" above.		100%		190	-	mm
→ k	Persistence Decay time to 0.014 foot-lamberts.	V_a2 = as for test "b" above. V_g = adjusted for luminance of 2 foot-lamberts from a close linear raster of convenient size, viewed through a C2 filter. Excitation time = 30 secs.	6.5	IB		30	60	sec.
→ l	Capacitances	See K1001/APP III. Note C on page 1.	6.5	IB				
→	(i) C grid to all other electrodes.					-	20	pF
	(ii) C cathode to all other electrodes.					-	20	pF



ALL DIMENSIONS ARE IN MILLIMETRES (40177)