

ADMIRALTY SIGNAL & RADAR ESTABLISHMENT

Specification AD/CV2280 Issue 2.

Dated : 29. 6. 53.

To be read in conjunction with K1001.

SECURITYSpecificationValve

Unclassified

Unclassified

→ indicates a change

TYPE OF DEFLECTION : Electrostatic.BULB : Internally coated with conductive coating.SCREEN : BY8.PROTOTYPE : VCRX192.MARKING

See K1001/4.

BASE

B12B

RATING

Note

|                                |     |
|--------------------------------|-----|
| Heater Voltage (V)             | 4.0 |
| Heater Current (A)             | 1.0 |
| Max. Fourth Anode Voltage (kV) | 5.0 |
| Max. Third Anode Voltage (kV)  | 2.0 |

TYPICAL OPERATING CONDITIONS

|                            |      |
|----------------------------|------|
| Fourth Anode Voltage (kV)  | 4.0  |
| Third Anode Voltage (kV)   | 2.0  |
| Second Anode Voltage (V)   | 150  |
| X-Plate Sensitivity (mm/V) | 0.13 |
| Y-Plate Sensitivity (mm/V) | 0.13 |

PinElectrode

|                 |                                      |
|-----------------|--------------------------------------|
| 1               | C                                    |
| 2               | G                                    |
| 3               | H                                    |
| 4               | H                                    |
| 5               | A2                                   |
| 6               | Pin omitted                          |
| 7               | Y2                                   |
| 8               | X2                                   |
| 9               | A1, A3 and<br>conductive<br>coating. |
| 10              | X1                                   |
| 11              | Y1                                   |
| 12              | Pin omitted                          |
| Side<br>Contact | A4                                   |

SIDE CONTACT

Snap Terminal - CT7. See ds448/CT7

DIMENSIONS

See Drawing on Page 4.

PACKING

See K1005 under CV1526

NOTES

A. The tube shall be of the post deflector accelerated type and of a design such that a change of  $\pm 10\%$  in the Va2 Voltage shall not produce an appreciable change in the cut-off voltage.

B. The tube shall be adequately free from microphony.

## TESTS

To be performed in addition to those applicable in K1001.

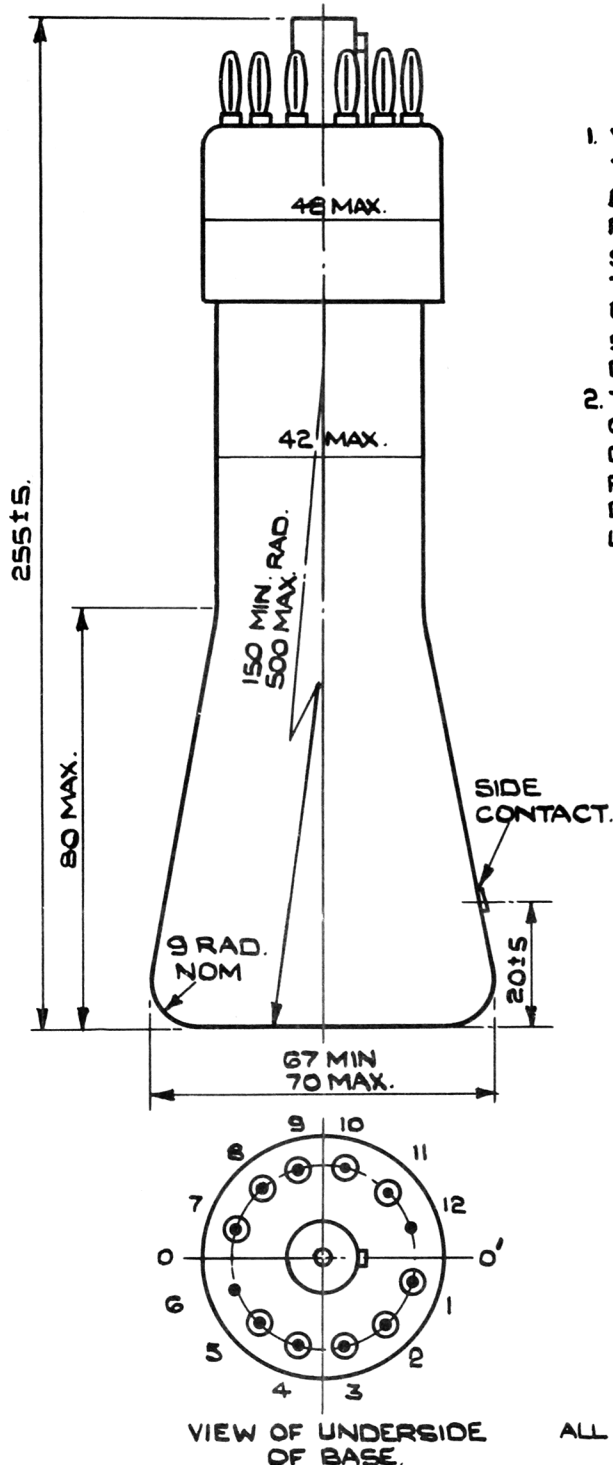
| Test Conditions  |                 |                    |     |                             | Test  | Limits  |      | No. Tested |  |
|--|-----------------|--------------------|-----|-----------------------------|---|---|------|------------|--|
| Vh   | Va4<br>(kV)     | Va1<br>Va3<br>(kV) | Va2 | Vg                          |   | Min.  | Max. |            |  |
| In all cases symmetrical deflecting voltages shall be applied to the Y plates and asymmetrical deflecting voltages to the X plates.  |                 |                    |     |                             |   |   |      |            |  |
| a  | See K1001/ATIII |                    |     |                             | Capacitances (pF)<br>i. Each X or Y plate to all other electrodes.<br>ii. One X to one Y plate.<br>iii. Grid to all other electrodes. | -   | 15   | 5%(5)      |  |
| b  | 4.0             | 0                  | 0   | 0                           | 0   | Ih (A)  | 0.9  | 1.1        | 5%(10)                                 |
| c  | 4.0             | 4.0                | 2.0 | Adjusted for optimum focus. | Adjusted to cut off   | Vg (V)  | -    | -105       | 100%                                   |
| d  | 4.0             | 4.0                | 2.0 | -do-                        | -   | i. Vg (V)<br>ii. Change in value of Vg from Test 'c' (V)<br>iii. Within the range of grid voltage from cut-off to standard light output beam current shall increase continuously.<br>iv. Afterglow (secs) | -1.0 | -          | 100%<br>Amdt 2<br>100%<br>100%<br>100% |
| c  | 4.0             | 4.0                | 2.0 | -do-                        | -   | i. Line width (mm)<br>ii. Va2 (V)   | -    | 1.2        | 100%<br>5%(10)                         |
| DEFLECTION With a sine wave time base of 10 kc/s nom. and a line length of 55 mm in the X and Y directions successively. The line width to be measured at the centre of the trace.<br>GRID. The grid will be pulsed positively from cut-off with amplitude equal to the value obtained in test (d.ii), the nominal values of pulse duration and recurrence being 100 μsecs and 100 c/s respectively. |                 |                    |     |                             |   |   |      |            |  |

TESTS (CONTD.)

|   | Test Conditions |             |                    |                       |                       | Test   | Limits       |              | No. Tested   |
|---|-----------------|-------------|--------------------|-----------------------|-----------------------|--|--------------|--------------|--------------|
|   | Vh              | Va4<br>(kV) | Va3<br>Va1<br>(kV) | Va2                   | Vg                    |  | Min.         | Max.         |              |
| f   | 4.0             | 4.0         | 2.0                | Any convenient value. | -105                  | <u>Grid Insulation</u><br>1. Leakage Current ( $\mu\text{A}$ )<br>ii. Increase in voltmeter reading.   | -            | 21<br>100%   | 100%<br>100% |
| Recommended alternative method :-<br>See K1001/5A.3.2.<br>Resistor = 5 Megohms.                                 |                 |             |                    |                       |                       |  |              |              |              |
| g   | 4.0             | -           | -                  | ditto                 | -                     | <u>Heater Cathode Insulation</u><br>Leakage Current ( $\mu\text{A}$ )  | -            | 200          | 100%         |
| See K1001/5A.3.3.<br>A voltage of 100 V shall be applied between heater and cathode, the former being negative. |                 |             |                    |                       |                       |  |              |              |              |
| h   | 4.0             | 4.0         | 2.0                | ditto                 | Any convenient value. | <u>Deflection Sensitivities.</u><br>i. X-plate ( $\text{mm/V}$ )<br>ii. Y-plate ( $\text{mm/V}$ )  | 0.10<br>0.10 | 0.16<br>0.16 | 5%<br>(10)   |
| j   | 4.0             | 4.0         | 2.0                | ditto                 | ditto                 | Deviation of spot from centre of screen. (mm)  | -            | 7.0          | 100%         |
| k   | 4.0             | 4.0         | 2.0                | ditto                 | ditto                 | <u>Useful Screen Area</u><br>Diameter (mm)   | 55           | -            | 100%         |
| Deflection to cover stated circle centred on centre of screen.  |                 |             |                    |                       |                       |  |              |              |              |
| l   | 4.0             | 4.0         | 2.0                | ditto                 | ditto                 | Angle between X and Y axes of deflection   | 88°          | 92°          | 100%         |
| m   | 4.0             | 4.0         | 2.0                | ditto                 | ditto                 | i. Orientation of Y axis of deflection relative to 00' on drawing.<br>ii. Orientation of dia. line through snap terminal relative to Y axis. | -            | +10°<br>+10° | 100%<br>100% |

## NOTES.

1. VIEWING THE SCREEN OF THE TUBE WITH THE KEY OF THE BASE UPPERMOST, A POSITIVE POTENTIAL APPLIED TO PIN X<sub>2</sub> SHALL DEFLECT THE SPOT TO THE RIGHT AND A POSITIVE POTENTIAL APPLIED TO PIN Y<sub>2</sub> SHALL DEFLECT THE SPOT DOWNWARDS.
2. THE INTERNAL CONDUCTIVE COATINGS SHALL BE OF SUCH DIMENSIONS THAT THEY FUNCTION EFFECTIVELY BUT DO NOT OBSCURE THE USEFUL SCREEN AREA.



ALL DIMENSIONS IN MILLIMETRES.

ELECTRONIC VALVE SPECIFICATIONS  
SPECIFICATION AD/CV2280  
Issue 2 dated 29.6.53.

Amendment No. 1

Page 1.

Side Contract.

Delete:- Snap Terminal

Insert:- CT7.

See BS448/CT.7

March, 1962.

Admiralty Surface Weapons  
Establishment.

N.11579

✓AAP  
18/62

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION AD/CV2280, ISSUE 2 DATED 29/6/53

AMENDMENT NO. 2

Page 2

Tests

In Test d, ii, amend Max. Limit "20" to read "25".

TVC for ASWE

May 1967.

N229350

✓AAS  
6/3/68