

ADMIRALTY SIGNAL & RADAR ESTABLISHMENT

|  |                                      |                              |
|--|--------------------------------------|------------------------------|
| Specification AD/CV2270 Issue 2<br>Dated : 30. 1. 53.<br>To be read in conjunction with K1001. | <u>SECURITY</u>                      |                              |
|  | <u>Specification</u><br>Unclassified | <u>Valve</u><br>Unclassified |

→ Indicates a change

|   |     |   |   |                  |
|---|-----|---|---|------------------|
| <u>TYPE OF VALVE:-</u> Gas-filled photo-electric cell.<br><u>CATHODE:-</u> Caesium Antimony.<br><u>ANODE:-</u> Frame or Rod Type.<br><u>ENVELOPE:-</u> Glass.<br><u>PROTOTYPE:-</u> 90AG. |     |   | <u>MARKING</u>                              |                  |
|   |     |   | See K1001/4.<br>See Notes 'A' and 'B' below |                  |
|   |     |   | <u>BASE</u><br>B7G                          |                  |
|   |     |   | See K1001/AIV/D9                            |                  |
| <u>RATING</u>   |     |   | <u>Pin</u>                                  | <u>Electrode</u> |
| Working Voltage (V)   | 90  | A | 1   | Cathode          |
| Max. Voltage (V)  | 100 | B | 2   | Cathode          |
| Max. Cathode Current (µA)   | 2.5 |   | 3   | Anode            |
| Min. Sensitivity (µA/lumen)   | 75  | C | 4   | Anode            |
|   |     |   | 5   | Anode            |
|   |     |   | 6   | Cathode          |
|   |     |   | 7   | Cathode          |
|   |     |   | <u>DIMENSIONS</u>                           |                  |
|   |     |   | See page 3.                                 |                  |
|   |     |   | <u>PACKAGING</u>                            |                  |
|   |     |   | See K1005                                   |                  |
| <u>NOTES</u>  |     |   |   |                  |
| A. The working voltage is to be clearly and permanently marked on each photocell.   |     |   |   |                  |
| B. The maximum voltage is considered to be the voltage which will never be exceeded at any time when the cell is illuminated. It is <u>NOT</u> to be marked on the cell.                  |     |   |   |                  |
| C. At $V_a = 90$ volts.   |     |   |   |                  |

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TESTS

To be performed in addition to those applicable in K1001.

|     | Test Conditions           |                        | Test<br>(See Test)                               | Limits |      | No.<br>Tested | Note         |
|-----|---------------------------|------------------------|--|--------|------|---------------|--------------|
|     | V <sub>a</sub><br>(Volts) | Light Flux<br>(lumens) |  | Min.   | Max. |               |              |
| → a | 25                        | 0.02                   | Sensitivity<br>( $\mu\text{A}/\text{lumen}$ )    | 21     |      | 100%          | 1,2          |
| → b | 90                        | 0.02                   | Sensitivity<br>( $\mu\text{A}/\text{lumen}$ )    | 75     |      | 100%          | 1,2          |
| c   |                           |                        | Gas Factor                                       |        | 7.0  | 100%          | 3            |
| d   | 90                        | 0                      | Dark Current ( $\mu\text{A}$ )                   |        | 0.1  | 100%          | 2            |
| e   | 100                       | 0.02                   | There must be no<br>uncontrolled break-<br>down. |        |      | 100%          | 1,2,<br>4,5. |
| f   | 100                       | 0                      | Dark Current ( $\mu\text{A}$ )                   |        | 0.2  | 100%          | 2,4          |
| g   | 110                       | 0                      | Dark Current ( $\mu\text{A}$ )                   |        | 0.2  | 100%          | 2            |

NOTES

1. Light flux is to illuminate a cathode area through a circular aperture of 1 cm diameter, the centre of which is to be 23 mm above the seat of the cell.
2. Test is to be carried out with a resistor of 0.1 megohm to 5% connected in series with the anode circuit. All voltages in the test are measured across the cell and the resistance in series.
3. Gas Factor is the ratio  $I_{va} = 90 : I_{va} = 25$ .
4. Tests are to be carried out in the order given above, and test (f) to follow after observing test (e).
5. Observation of photocell for breakdown should be of at least 10 secs. duration. Should the photocell exhibit any tendency to breakdown during this period, a further test of two minutes duration is to be made.

