

CMG8, CMG22 and CMG25 PHOTO CELLS

DESCRIPTION

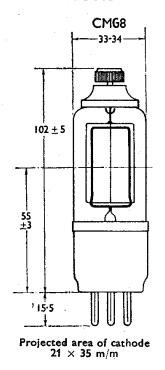
The caesium-silver oxide or CM type of gasfilled photo cell is designed for acoustic reproduction, relay work and innumerable industrial applications. It is made in three standard patterns differing only in size and arrangement of electrodes.

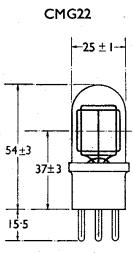
At a low voltage, of the order of 20, the photo-electric current is due to the primary cathode emission and is practically proportional to the illumination. At high voltages the ratio of current-to-light increases with the voltage due to gas ionisation, the increase over the primary current being termed the gas magnification. A gas magnification of 10 is about the safe limit. A higher value may produce a glow discharge in the cell which persists after the light has been removed and which will, if continued, damage the cell. A high resistance should always be in circuit to protect the cell against a glow discharge which may result from a sudden increase in voltage or illumination.

The sensitivity in microamps per lumen as specified previously is measured under an illumination of approximately 40 millilumens from a gasfilled lamp and with the voltage marked on the bulb applied between the electrodes. Under these conditions, the applied potential is called the working voltage. It is marked on each cell and represents the maximum voltage which should normally be applied to the cell to secure adequate emission without seriously impairing the frequency response for acoustic reproduction or incurring danger from a glow discharge.

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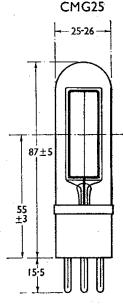
DIMENSIONS





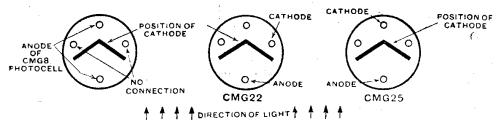
Projected area of cathode 17 \times 20 m/m

All dimensions are in mm. and are the maximum except where otherwise stated.



Projected area of cathode 17 × 40 m/m

BASES



View looking on underside of bases.

TYPES CMG8, CMG22 and CMG25

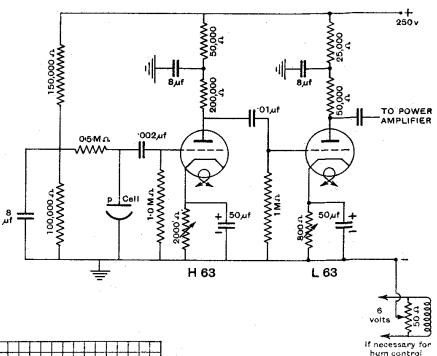
Although the photo-electric current depends on the total light reaching the cathode and not on its distribution, the light should preferably be spread over the cathode surface to avoid local inequalities of sensitivity.

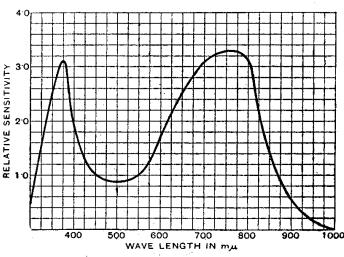
The peak spectral sensitivity is at the red end of the spectrum and the response extends into the near infra red. By using a filter over the light source to cut out visible rays, relay circuits can be operated with invisible radiation.

Grade "A" cells, which differ from the standard types only in sensitivity, are usually adequate for simple relay circuits.

For making measurements of light, specially designed vacuum cells should be used.

Sensitivity exceeds	•••	•••	• • •	•••	•••	•••	75 μ A/lumen
Grade "A" cells	•••	•••	•••	• • • •	•••	•••	$50-75 \mu A/lumen$
Working voltage	•••	•••	•••				80–110





Spectral sensitivity curve.

Circuit for photo cell used on a sound head amplifier.