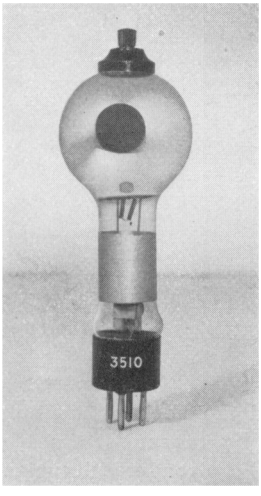
PHOTO-ELECTRIC CELL 3510



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CHARACTERISTICS

Cathode			potassium
Anode voltage	V_a	= 100	V
Sensitivity	N	= 3	μA/lm
Anode to cath. capacity	C_{ak}	= 3	pF
Maximum anode voltage	$V_{a\,max}$	= 500	V
Maximum anode current	$I_{a\,max}$	= 3	μA
Admissible temperature .	t_{max}	= 50	°C

SPECIAL ADVANTAGES

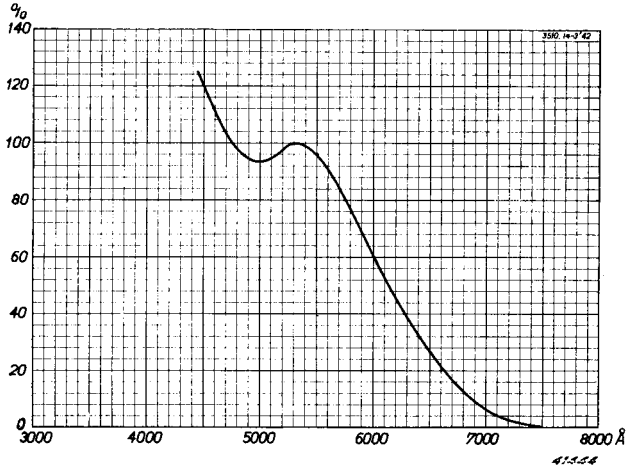
1. High sensitivity to blue and green light
2. Very low current when unilluminated
3. Suitable for measuring very low intensities of illumination

DESCRIPTION

The Philips 3510 is a vacuum cell with a potassium cathode, offering the advantage of high sensitivity to light of a wavelength below 6500 Å. Accordingly the 3510 photo-cell is used when good sensitivity to blue light, such as the radiation from mercury vapour lamps and similar sources, is desired, or when a blue or green filter is in use.

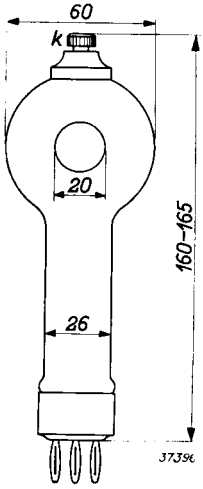
Since the sensitivity of 3 μA/lm quoted above is measured with illumination from an incandescent lamp running at a filament temperature of 2600° K, the corresponding figure for light richer in blue rays will be much higher; the sensitivity to daylight is 6 μA/lm. The curve overleaf, showing response in relation to wavelength, permits the ascertainment of the cells sensitivity to any sort of illumination; in the graph 100% corresponds to a sensitivity of 1215 μA/W. This expression for the sensitivity means that through the cell a current of 1215 μA will flow, when it is touched by a radiation energy of 1 W. The permissible maximum anode current is 3 μA, and the cell must never be exposed to light of such intensity that this figure is exceeded; observance of this precaution will ensure that sensitivity is not impaired.

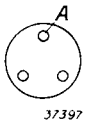
The 3510 cell is in most cases employed for photometric applications involving currents of the order of 10^{-11} A, and, unless the atmosphere is absolutely dry, the glass path between anode and cathode provides inadequate insulation. This



Sensitivity against wavelength; 100% corresponds to a sensitivity of 1215 μA/W.

difficulty is overcome by fixing a metallic ring round the neck of the bulb; earthing this ring ensures that stray currents, which by reason of the high voltage are liable to appear on the surface of the glass, are rendered harmless The 3510 photo-cell has a three-pin base, but two of the pins are not used; the anode is connected to the normal anode pin, while the cathode is joined to the top cap.





Electrode connections and maximum dimensions in millimetres.