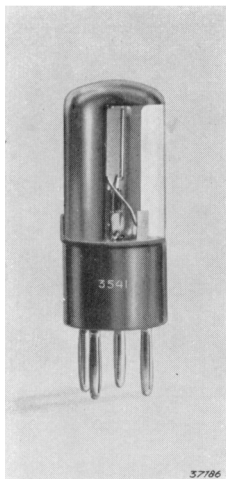


PHOTO-ELECTRIC CELL

3541



CHARACTERISTICS

Cathode		Caesium
Anode voltage	V_a	= 100 V
Sensitivity	N	= 150 $\mu\text{A}/\text{lm}$
Anode-to-cathode capacity	C_{ak}	= 3.4 pF
Maximum anode voltage	$V_{a\text{max}}$	= 100 V
Maximum anode current	$I_{1\text{max}}$	= 7.5 μA
Maximum temperature	t_{max}	= 50° C

SPECIAL ADVANTAGES

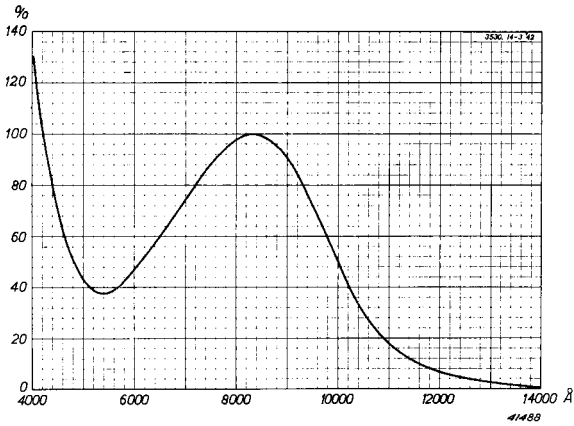
1. High sensitivity
2. Uniform sensitivity over the whole surface of the cathode
3. Maximum sensitivity to infra-red light
4. Low inherent noise

DESCRIPTION

The 3541 photo-cell is gasfilled and has a caesium cathode. The very high sensitivity to light of the longer wavelengths calls for a cathode with a very low work-fuction; this requirement is met by coating a first layer of silver with a second one of specially treated caesium oxide. This coating contains readily ionisable caesium atoms. The gaseous atmosphere increases the sensitivity seven or eight times. The gas pressure is so chosen that the striking voltage is considerably higher than the working voltage; thus no attempt is made to attain maximum gain, and a very low level of hiss results.

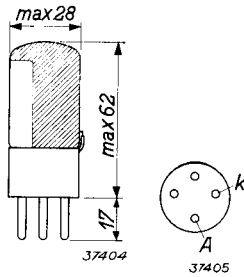
While this cell is mainly used in sound-film equipment, it is also very suitable for many other applications, particularly when small size is important. The diagram overleaf shows the relative sensitivity as a function of wavelength. The curve may be used for calculating the strength of any type of light source, it being remembered that 100% corresponds to a sensitivity of 8000 $\mu\text{A}/\text{W}$. That is to say, a current of 8000 μA will flow through the cell, when it is touched by a radiation energy of 1 W.

PHILIPS "MINIWATT" SPECIAL VALVES



Relative sensitivity against wavelength, 100% corresponding to a sensitivity of 8000 $\mu\text{A}/\text{W}$.

The cell should never be exposed to illumination so strong that the anode current exceeds 7.5 μA ; an excessive current will cause the cathode to be damaged by positive ions, and the sensitivity of the cell will be impaired.



Electrode connections, and maximum dimensions in millimetres.