

**SPECIFICATION  
FOR  
OPTO - SENSORS**

**Customer :**  
**Representative :**  
**Type :           A9013**  
**PerkinElmer Part No. :       95503651**  
**Date :           2005.11.30**

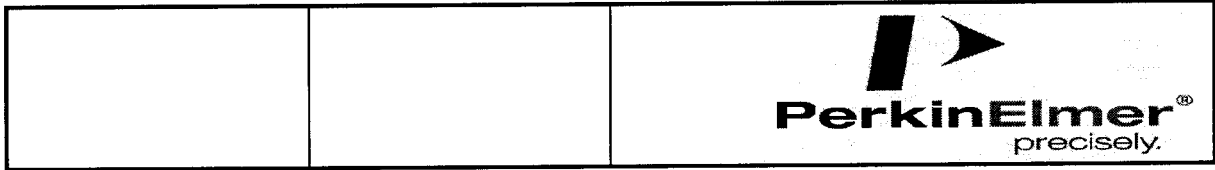
**This specification has been provided by R &D Department of  
PerkinElmer Optoelectronics**

**No. of Samples :       NA**  
**Technical Data :       4 pages**

**The undersigned hereby confirm that PerkinElmer quality assurance system has been applied to the shipment this specification is attached to. All devices have met the requirements of PerkinElmer test specifications and passed a 100% final production test plus a sample lot outgoing inspection in accordance with GB/T 2828.1-2003/ISO 2859-1: 1999.**

|                  |   |
|------------------|---|
| <b>CHECKED :</b> | <b>APPROVED :</b><br>William Wang<br>2005.11.30 |
|------------------|---|

| <b><u>Customer Approval :</u></b>   | <b>Date</b> | <b>Signature</b> |
|---|-------------|------------------|
| <b>IN CASE OF SAMPLES ACCEPTANCE ; PLEASE ATTACH THE SIGNED FRONT PAGE OF THIS SPECIFICATION TO YOUR KIND ORDER</b> |             |                  |



**SPECIFICATION  
FOR  
OPTO - SENSORS**

**Type : A9013**

|  |  |
|--|--|
| <input checked="" type="checkbox"/> <b>Standard Type</b> | <input type="checkbox"/> <b>Customer Specific Type</b> |
|--|--|

The marked test criteria have been applied to the attached samples and will be implemented as 100% test at final assembly. Below typical characteristic data are provided for reference.

|          |                      |            |  |               |                |           |
|----------|----------------------|------------|--|---------------|----------------|-----------|
|          | <b>R</b>             | <b>1</b>   | <i>Resistance value at 1 lux (0.093 fc)</i>                        | :             |                | <b>kΩ</b> |
| <b>x</b> | <b>R</b>             | <b>10</b>  | <i>Resistance value at 10 lux (0.93 fc)</i>                        | :             | <b>27 – 94</b> | <b>kΩ</b> |
|          | <b>R</b>             | <b>100</b> | <i>Resistance value at 100 lux (9.3 fc)</i>                        | :             |                | <b>kΩ</b> |
|          | <b>R</b>             |            | <i>Resistance value as stated besides</i>                          | :             |                | <b>kΩ</b> |
| <b>x</b> | <b>R<sub>0</sub></b> | <b>1</b>   | <i>Minimum Resistance 1 sec after removal from light</i>           | :             | <b>0.5</b>     | <b>MΩ</b> |
|          | <b>R<sub>0</sub></b> | <b>5</b>   | <i>Minimum Resistance 5 sec after removal from light</i>           | :             |                | <b>MΩ</b> |
|          | <b>R<sub>0</sub></b> |            | <i>Minimum Resistance after dark time stated besides</i>           | :             |                | <b>MΩ</b> |
|          | <b>γ</b>             |            | <i>Slope as given by</i> $\frac{\lg(R_{10}/R_{100})}{\lg(100/10)}$ | <i>typ.</i> : |                |           |

|   |   |               |             |
|---|---|---------------|-------------|
| <b>LIMIT VALUES</b>                                   |   |               |             |
| <b>Maximum Power Dissipation</b>                      | : | <b>90</b>     | <b>mW</b>   |
| <b>Maximum Supply Voltage (DC or AC<sub>pk</sub>)</b> | : | <b>150</b>    | <b>V</b>    |
| <b>Temperature Coefficient</b>                        | : | <b>0.4</b>    | <b>%/°C</b> |
| <b>Peak Spectral Response</b>                         | : | <b>600±20</b> | <b>nm</b>   |

|                                     |                                       |
|-------------------------------------|---------------------------------------|
| <b>ENCAPSULATION</b>                |                                       |
| <input type="checkbox"/>            | <b>Hermetically Sealed Metal Case</b> |
| <input type="checkbox"/>            | <b>Hermetically Sealed Glass Bulb</b> |
| <input checked="" type="checkbox"/> | <b>Epoxy Coating</b>                  |
| <input type="checkbox"/>            | <b>Lacquer Coating</b>                |

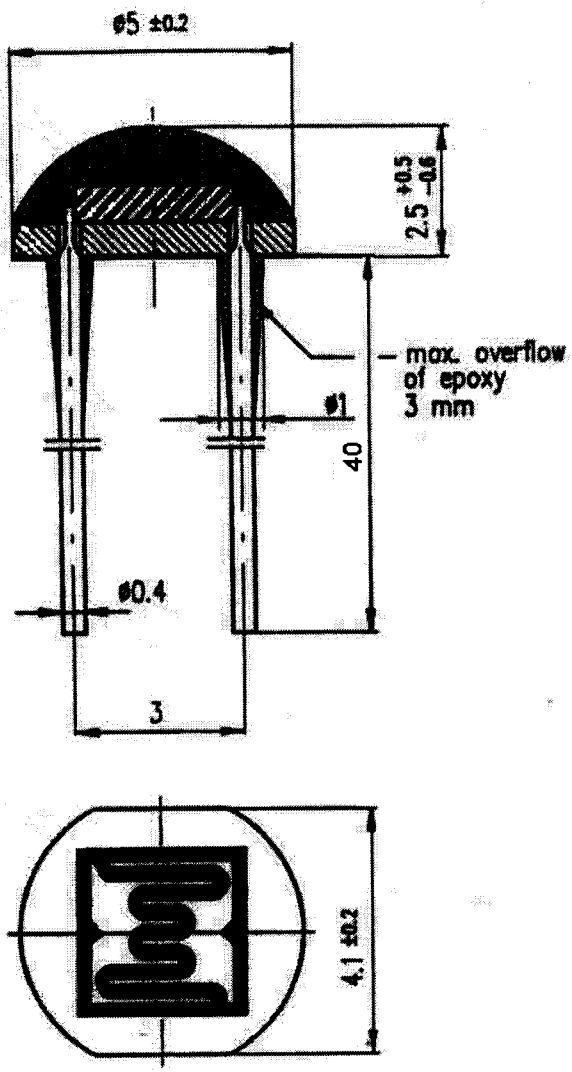
|                 |                        |
|-----------------|------------------------|
| Date 2005.11.30 | Signature William Wang |
|-----------------|------------------------|

**SPECIFICATION  
FOR  
OPTO - SENSORS**

Type : A9013

**Mechanical Drawing**

**PACKAGE DIMENSIONS mm**



Date  
2005.11.29

Signature  
William Wang



## **SPECIFICATION FOR OPTO - SENSORS**

### **COMMON INFORMATIONS**

PerkinElmer Photoconductive Cells pass a 100% final electrical test, consisting light readings at defined light level(s) and dark resistance  $R_0$  taken at certain sec after switch off of an illumination as specified. Additionally an outgoing test according to GB/T 2828.1-2003/ISO 2859-1: 1999 is applied to all shipments. Prior to measurements, all devices are exposed to normal room light (approx. 500 lux) for at least 16 hours. This preconditioning compensates the effect of "light history", a typical reaction of this kind of semiconductive component, leading usually to an adaption of resistance value to its preillumination within a certain range. If no special procedure is required, all readings are taken under a tungsten filament light source being run at  $2854 \pm 50$  K color temperature. Dark resistance readings are achieved at the defined time after covering the light source with an electromagnetic shutter within 10 msec.

### **LONG TIME STABILITY**

is influenced by light history effect as well. Stability of light readings will be guaranteed in case of approximately equal intervals of bright and dark ambient conditions. In case of application of only singular light condition an increase of typical readings has to be expected in case of high ambient light, a decrease in case of long dark period. The absolute variation will be within  $\pm 10\%$  at 10 lux with tendencily higher deviation at lower light levels.

### **STORAGE AND HANDLING**

All PerkinElmer photoconductive cells are subjected to an artificial aging cycle consisting various combinations of illumination and temperature for a certain time. This aging guarantees constancy of light readings at ambient temperatures up to  $70^\circ\text{C}$  within the announced temperature coefficient range. Recommended storage conditions are temperatures beneath  $60^\circ\text{C}$  and usual moisture of approximately 50% r.H. Through soldering process a preheating of components surface exceeding  $130^\circ\text{C}$  should be avoided. Automatic soldering shouldn't last more than 10 seconds at  $260^\circ\text{C}$ . Otherwise a stand off of 5 mm should be applied.