DKG-21 - EcoTest Card
Personal Gamma Radiation Dosimeter

Purpose of use
- Measurement of personal gamma and X-ray radiation equivalent dose rate (EDR).
- Measurement of personal gamma and X-ray radiation equivalent dose (ED).
- Clock, alarm clock.

Application
The dosimeter may be used as an electronic direct reading device at atomic power engineering sites, physics laboratories, health care organizations industrial enterprises and companies that deal with gamma radiation sources. It can be applied together with PDC ECOMONITOR software for programming, reading, and processing of the dosimeter measurement results.

FEATURES:
- Stand-alone use or use within the automated system of personal dosimetry control.
- Dose accumulation history storage in the non volatile memory with real time reference.
- Dose accumulation history transfer to the computer through infrared port.
- Locking power down mode of the dosimeter until all accumulated data read.
- Gamma radiation EDR and ED threshold levels programming with the help of the computer or manually with control keys.
- Blocking certain indication modes with the help of the computer command.
- Light and audio alarm of exceeded programmed threshold level of gamma radiation EDR and ED.
- Digital display automatic switch off if current gamma background is lower than the preset threshold level with instant switching on at: - pressing any control key; - gamma background increase above the preset threshold level; - alarm clock ringing.
- Periodic self testing (batteries, detector).
- Energy compensated Geiger-Muller counter.
DKG-21 Personal Gamma Radiation Dosimeter

**SPECIFICATIONS**

**Measurement ranges and basic relative errors:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Range</th>
<th>Relative Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal gamma radiation equivalent dose rate $H_p(10)$</td>
<td>$\mu$Sv/h</td>
<td>0.1...1 000 000; +15%</td>
<td></td>
</tr>
<tr>
<td>Personal gamma radiation equivalent dose $H_p(10)$</td>
<td>mSv</td>
<td>0.001...9 999; +15%</td>
<td></td>
</tr>
<tr>
<td>Energy range of detected gamma and X-ray radiation and energy dependence</td>
<td>MeV</td>
<td>0.05...6.0; (0.05...1.25; ±25%)</td>
<td></td>
</tr>
<tr>
<td>Recording resolution of dose accumulation history in the non volatile memory</td>
<td>minutes</td>
<td>5...255</td>
<td></td>
</tr>
<tr>
<td>Time of data storage in the non volatile memory</td>
<td>years</td>
<td>not less than 10</td>
<td></td>
</tr>
<tr>
<td>Data exchange rate through infrared port</td>
<td>bit/s</td>
<td>38 400</td>
<td></td>
</tr>
<tr>
<td>Positive data exchange distance between the dosimeter and the infrared port adapter</td>
<td>m</td>
<td>not more than 0.3</td>
<td></td>
</tr>
<tr>
<td>Lithium battery (CR2450) life</td>
<td>hours</td>
<td>2 200</td>
<td></td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>°C</td>
<td>-10...+50</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>kg</td>
<td>0.08</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>mm</td>
<td>86x54x9</td>
<td></td>
</tr>
</tbody>
</table>

**PDC-Ecomonitor Software Programming and Dosimetry Control**

**Key functional characteristics**

"PDC ECOMONITOR" allows to:

- program parameters and operating modes of the DKG-21 "EcotestCARD" dosimeters;
- read dosimeter measurement results of DKG-21 "EcotestCARD", MKS-07 "POSHUK", and MKS-U dosimeters;
- load and process earlier saved dosimeter measurement results;
- save the read dosimeter measurement results in files;
- view and print the dosimetry information as reports;
- save the information as reports or text files for further processing by other word processors;
- export the read information in Microsoft Excel for further processing in Excel.

**Use environment:** The “PDC-ECOMONITOR” program operated with installed Windows 2000 Professional or Windows XP Professional, and connected Tekram IR-210B infrared-port adapted.

**Purpose of use:** The "PDC ECOMONITOR" program is designed for automated noncontact programming of the operating modes of DKG-21 "EcotestCARD" dosimeters and automated noncontact reading of dosimeter measurement results of DKG-21 "EcotestCARD", MKS-U and MKS-07 "POSHUK" dosimeters.

**Application:** The program can be used by enterprises and organizations, as well as by individual users to program DKG-21 "EcotestCARD" dosimeters, and to read and process on the computer dosimeter measurement results of DKG-21 "EcotestCARD", MKS-U and MKS-07 "POSHUK" dosimeters.