PorTL

Portable Thermoluminescent Dosimeter System

Application

Personal and environmental dosimetry monitoring, laboratory dose measurements, educational purposes

- ✓ An easy-to-use, robust and very sensitive dosimetry system for laboratory and environmental measurements
- ✓ To measure the absorbed dose at different indoor and outdoor locations
- ✓ Environmental dose monitoring around nuclear facilities
- ✓ Personal dosimetry
- ✓ Portable Reader equipment suitable for reading out and evaluating the dosimeters at the place of exposure

Key Features

- ✓ Thermoluminescent detector system (TLD)
- ✓ Unlimited number of passive detector cells with memory chip inside containing the identification code and the individual calibration parameters of the dosimeter
- ✓ A moderate price dosimetry system for commercial use
- ✓ Available for small companies and laboratories, too
- ✓ Suitable for outdoor measurements as well
- ✓ A small, easy-to-use, battery powered, microprocessor controlled, portable Reader Unit for providing the preliminary evaluation of the dose absorbed by the dosimeters, not requesting qualified personal
- ✓ The Reader Unit provides
  - ✓ User interface for the operator (via graphical display and keyboard)
  - ✓ Automatic identification of the detectors
  - ✓ The measured dose and a series of parameters are displayed and stored in a built-in flash memory
  - ✓ A dosimeter inserted in the reader permanently is dedicated for automatic cyclic measurements
- ✓ RS-232 interface to connect to a PC for using a dedicated PC software ("PorTL Controller") for downloading, listing and displaying the results of the measurements and setting the parameters of the Reader and the dosimeters
- ✓ Applied, among others, by DESY, NASA, DLR, INT of BME, ELTE, ELI-ALPS, Paks Nuclear Power Plant

General Specification

	Reader	Detector
Power	15 W (during charging)	-
Mass	~3.2 kg	25 g (cell) / 45 g (with carrying case)
Dimensions (H, W, D)	80 mm, 200 mm, 175 mm	∅ 14 mm * 65 mm
Input voltage range	100…240 V~	-
Operational temperature range	-20°C…+40°C	-20°C…+40°C
Non-operational temperature range	-40°C…+50°C	
Operational pressure range	$0.7 \cdot 10^5$ Pa…$1.2 \cdot 10^{-4}$ Pa	$2 \cdot 10^5$ Pa…10^{-4} Pa
Data rate	512 byte / readout	

Environmental Specification

Temperature	-40°C…+50°C
Transportation vibration	< 10^{-1} g^2/Hz for 0.2…1000 Hz
Relative humidity	10%...85%

Measurement Capabilities

Dosimeters	
Type	cell
Material	Al_2O_3:C / LiF:Mg,Ti / LiF:Mg,Ti– 7
Reader	
Battery operated	>100 measurements
Measuring range (s<10%)	10 μSv…100 mSv (Al_2O_3:C) 0.1 mSv…1 Sv (LiF)
Read-out precision	3 digits + exp.
Accuracy (above 10 μGy)	δ < 5%
Measuring modes	manual / automatic read-out
Display	192 x 64 graphical LCD
Displayed information	dose in μSv; date and time of measurement; identification codes; mean dose rate; glow curve; error codes
Storage of information	built-in flash memory (~2000 data sets)

Users so far

Short name	Full name
BME NTI	Budapest University of Technology and Economics, Institute of Nuclear Techniques
DESY	Deutsches Elektronen-Synchrotron, Hamburg
ELTE AT	Eötvös Lóránd University, Department of Nuclear Physics
ELI-ALPS	Extreme Light Infrastructure - Attosecond Light Pulse Source
ER	Eril Research, Inc. USA, on behalf of NASA
MTA EK, KVSz	Centre for Energy Research of the Hungarian Academy of Sciences, Environmental Protection Services
MVM PARt, KVSz	Paks Nuclear Power Plant, Environmental Monitoring Service

Contact us

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