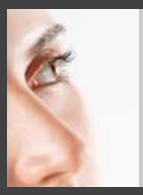
Innovator In Spectroscopy Equipment

PD2319

Windows



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PERSONAL DOSIMETER MODEL PD2319

CE

CATALOG

DOSIMETERS

FREE DOWNLOAD

www.cfp.co.ir

PERSONAL DOSIMETER
MODEL PD2319

Features

- IP63, IP65, IP67
- Wide dynamic range
- Dosimeter-to-PC communication
- Compact design with low weight
- High sensitivity and uniform response
- Sensitivity to Alpha, Beta, Gamma & X-rays
- Geiger-Mueller (GM) & semi-conductor (Si) and scintillation detector
- Designed for field use to measure all types of ionizing radiation and collection of Alpha, Beta, Gamma and X-ray emitting sources in three types
- Cost effective
- Durable and versatile
- Wide temperature range
- Ready for field operation
- Simple and compact design
- Easy to use and low maintenance
- Protective against dust and moisture
- Resistant against impact and vibration
- Resistant against electromagnetic interference
- Robust and suitable for use in challenging conditions

MEASURE ALL TYPES OF IONIZING RADIATION
ALPHA, BETA, GAMMA AND X-RAY

Description

PD2319 is a highly sensitive radiation dosimeter designed for various environmental conditions based on Geiger-Mueller (GM) and semi-conductor detector. PD2319 comes in three versions. Version 1 is capable of detecting Gamma and X-ray radiation (two Types, see specifications for more information), version 2 detects Beta, Gamma and X-rays while in version 3 Alpha, Beta, Gamma and X-ray can be detected.

PD2319 provides a high dynamic range for dose values which results from the operation based on two sensors. One sensor is responsible to provide accurate calculations in low dose values while the other one takes the role in high values. All sensors are Geiger-Mueller (GM) tube, scintillator and semi-conductor. The sensor is fully enclosed inside the instrument. When ionizing radiation or a particle strikes the sensor, it is detected electronically and monitored by embedded system. Radiation is measured in different units while these units can be easily selected. The versions come with detection window are suitable to detect low energy rays or particles. PD2319 version 3 (Alpha, Beta, Gamma and X-ray) is equipped with a special window to allow crossing Alpha radiation which increase the device sensitivity against dust and moisture. Note that some very low energy radiation cannot be detected due to their inability to cross the window.

The industrial and electrical design in PD2319 makes the device immune against different environmental, electromagnetic and mechanical turbulence. PD2319 is CE certified.

Specifications

UNIT:PD2319				
Type	Personal dosimeter (portable)			
Version	Version 1(Scintillator)	Version 1	Version 2	Version 3
Energy detection	Gamma and X-ray	Gamma and X-ray	Beta, Gamma and X-ray	Alpha, Beta, Gamma and X-ray
Input(s)				
Port	USB remote read and write			
Output(s)				
Output	No output signal			
Control(s)				
USB	Set and read all data			
Power	Push to turn on and long press 3 seconds to turn off			
KEY	Three push button function key (thumb activated)			
Indicator(s)				
LED battery status	Green color (full), Red Color (charging)			
LED alarm & sign	Green (LOW) —Yellow (MID) —RED (HI)			
Buzzer	85 Db in 30cm (open rubber protective)			
Display				
Type	Full color IPS LED Display			
Size	2.4", 320 × 240 pixels			
Performance				
Energy range (Gamma)	0.1 —3MeV	0.02 —3MeV	0.02 —3MeV	0.02 —3MeV
Energy range (Beta)	-	-	100 - 3500keV	100 - 3500keV
Energy range (Alpha)	-	-	-	3.5 - 5.5MeV
Measurement range (Gamma)	0.01μSv/h - 10Sv/h	0.1μSv/h - 10Sv/h	0.1μSv/h - 10Sv/h	0.1μSv/h - 10Sv/h
Measurement range (Beta)	-	-	1μSv/h —10mSv/h	1μSv/h —10mSv/h
Measurement range (Alpha)	-	-	-	1μSv/h - 10mSv/h
Accuracy	+/- 10%	+/- 20%	+/- 20%	+/- 20%
Continuous run time	In normal conditions ≥24 h In economy mode ≥ 64 h			
Detector				
Beta, Gamma, and X- ray detector	Scintillator & GM	2 GM	Si & GM	2 GM
Radiation measured	Gamma and X-ray	Gamma and X-ray	Beta, Gamma and X-ray	Alpha, Beta, Gamma and X-ray
Data Acquisition and Analysis				
OS	Built in Windows 7 or higher versions			
Software	PD2319 (SOFTWARE)			
Battery				
Type	Li-ion 4500mAh			
Batter life	Over 300 charges and 70% capacity			
Certificates				
Electromagnetics	Electrostatic discharge EMI radiated measurement Power frequency magnetic field			

	Radiated EM field immunity
Environmental	High temperature variation Low temperature variation High temperature shock Low temperature shock Cold temperature start-up Moisture and dust protection Immersion
Mechanical	Vibration Mechanical shock Impact (microphonics)
Radiological	Accuracy, Reproducibility Angular response Over range response Response time

Application

- Security control
- Nuclear industry
- Accelerator sites
- Measuring background radiation
- Roentgenology and radiotherapy
- Individual radiation and protection
- Nuclear medicine (X-rays, CT scans, etc.)
- Research activities in radioecology and radiology
- Dose monitoring of population
- Half-life calculation (counts/interval vs. time)
- Counts/interval vs. distance and shielding studies
- Radiation protective measures in case of nuclear disasters
- Health physics (for contamination monitoring on surfaces, clothing and objects etc.)
- Scientific research

Electrical, Mechanical and Environmental

Unit:PD2319				
Type	Personal dosimeter (portable)			
Version	Version 1 (Scintillator)	Version 1	Version 2	Version 3
Energy detection	Gamma and X-ray	Gamma and X-ray	Beta, Gamma and X-ray	Alpha, Beta, Gamma and X-ray
Electrical				
Power required	0.65W			
Physical				
Dimensions (L × W × H)	171x 70 x 57 (mm)			
Weight	470gr			
Protection class	IP63, IP65, IP67	IP63, IP65, IP67	IP63, IP65, IP67	IP53
Mechanical	Beta, Gamma and X-ray			

Gamma and X-ray

Alpha, Beta, Gamma and X-ray

Environmental	
Storage temperature	-10°C to 40°C @ standard box & 35% humidity
Operating temperature	-20°C to 50°C
Relative humidity	10 to 95%

Software and user interface

Device GUI

PD2319 dosimeter can be used standalone using the companion 2.4 inch display. In the following we see the most important modes in the device GUI.

99% Shows measurements with high level of coefficient of variation (Rapidly changing environmental radiation)

30% Shows measurements with moderate level of coefficient of variation (Changing environmental radiation)

12% Shows measurements with low level of coefficient of variation (Almost constant environmental radiation)

Figure 1: Presents device GUI in low level of radiation.

Figure 2: Presents device GUI in moderate level of radiation.

Figure 3: Presents device GUI in high level of radiation.

Figure 4: Presents device GUI in night vision mode (Dark Mode)

Figure 5: Presents device splash

Figure 6: Different modes of status bar including (from top to bottom): Remaining memory information, sending data to PC, memory full warning, low battery warning, typical working status bar (time, recording data, connected to PC, silent mode) and typical working status bar (time, active alarm)

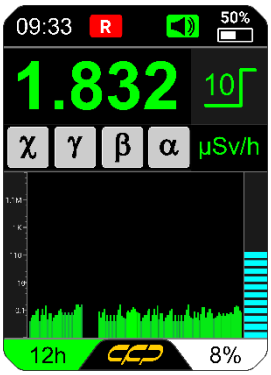

Figure 1

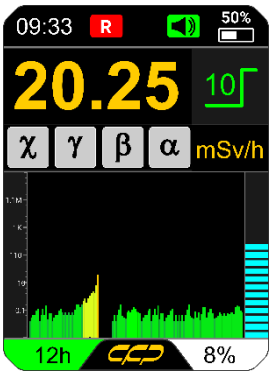

Figure 2

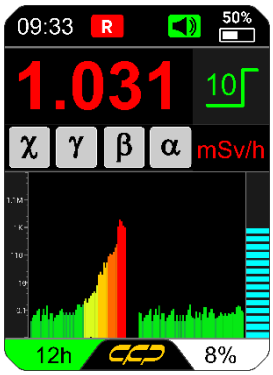

Figure 3

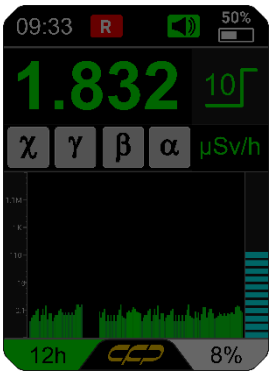

Figure 4

Figure 5

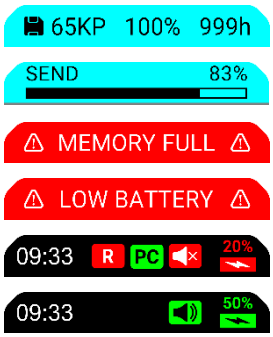

Figure 6

PD2319GUI

Device information can be read by PC and tablet via PD2319 software

PC software

PD2319 (SOFTWARE)

Input /Output (Using PD2319 software)

USB

Data Output formats

CSV, TXT

Ordering info

PD2319 (Gamma & X-ray) standard package includes

Part #	Image	Description
PD2319 (X & Gamma) main		PD2319 for Gamma & X-ray
ACCE2319001 (X & Gamma)		User guide CD (1 Pack)
ACCE2319002 (X & Gamma)		Box with foam inserted (1 Pack)
ACCE2319003* (X & Gamma)		Guaranty (one year)

PD2319 (Beta, Gamma & X-ray) standard package includes

Part #	Image	Description
PD2319 (Beta & Gamma) main		PD2319 for Beta, Gamma and X-ray
ACCE2319001 (Beta & Gamma)		User guide CD (1 Pack)
ACCE2319002 (Beta & Gamma)		Box with foam inserted (1 Pack)
ACCE2319003* (Beta & Gamma)		Guaranty (one year)

PD2319 (Alpha, Beta, Gamma & X-ray) standard package includes

Part #	Image	Description
PD2319 (Alpha, Beta & Gamma) main		PD2319 for Alpha, Beta, Gamma & X-ray
ACCE2319001 (Alpha, Beta & Gamma)		User guide CD (1 Pack)
ACCE2319002 (Alpha, Beta & Gamma)		Box with foam inserted (1 Pack)
ACCE2319003* (Alpha, Beta & Gamma)		Guaranty (one year)

* We fully support our products. We guarantee your satisfaction in the quality of our instruments by providing a complete one-year warranty covering any defect of workmanship, material, and/or design. If our products do not perform, we will provide complete repair and/or replacement. For guaranty conditions, please refer to device manual (PD2319 - Manual).

Optional accessories and services

Part #	Image	Description
ACCE2319004		Installation
ACCE2319005		Training
ACCE2319006**		Re-Calibration (interval) services. 1year factory maintenance suggested, not required
ACCE2319007		Protective hard case for PD2319
ACCE2319011		USB to micro USB cable for PC connection

** = The proper maintenance & calibration of your instruments is critical to ensure proper performance & accuracy. for Re-calibration (interval) services, please call with CFP company (021- 46045383).

Innovator in Spectroscopy Equipment

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