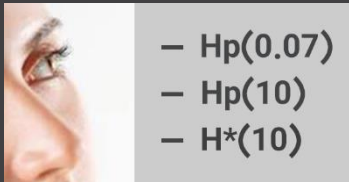




Innovator In Spectroscopy Equipment

PD2318



PERSONAL DOSIMETER MODEL PD2318

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CATA-



DOSIMETERS



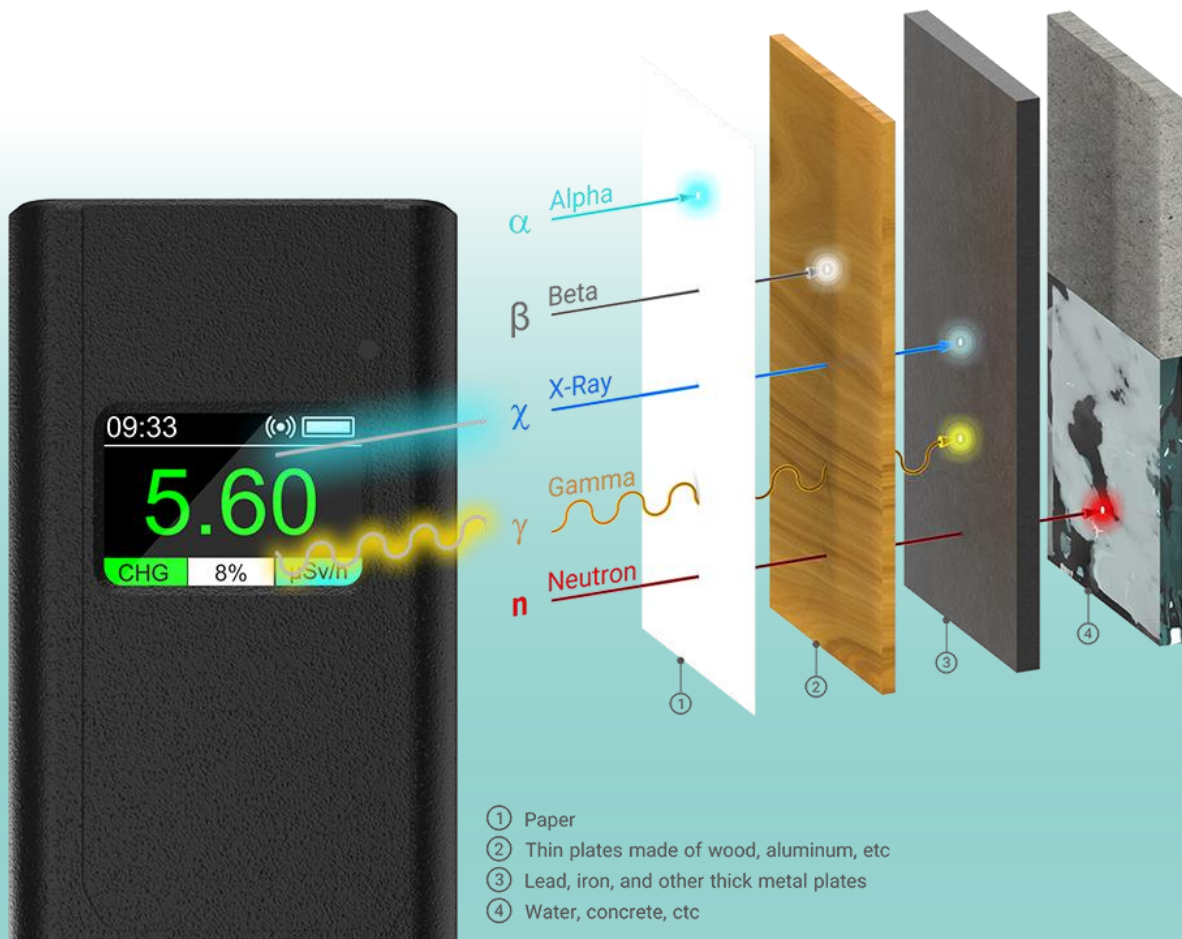
FREE DOWN-

PERSONAL DOSIMETER

MODEL PD2318

Features

- Parameters self-check
- Full color LCD display
- 3 color Alarm indicator
- Monitor counts/time (rate)
- High immunity to interference
- Background radiation monitoring
- Compact design with Low weight
- Easy to use and low maintenance
- Silicon pin photo diode detector
- Cost effective Semiconductor Sensor
- Optional charging and data transfer unit
- Capable of detecting Gamma & X-Ray radiation
- Automatic power down mode and sleep mode
- Measurement in wide range energies and dose rate
- Highly integratable
- Light and sound alarm
- Measurement count from 0.01cpm to 300Kcpm
- Dose range from 0.1uSv/h to 10mSv/h @Cs137
- High sensitivity and wide measurement range
- Detecting hard beta or gamma radiation source
- High Resistance to impacts and vibration, dust moisture and electromagnetic interference
- High Data Security Based on Data Reader and Charging Unit



Description

The PD2318 is a highly sensitive radiation dosimeter designed for various environmental conditions based on Silicon semiconductor detector. Capable of detecting Gamma and X radiation, PD2318 is equipped with a unified charging and data unit. The PD2318 has an onboard DC boost circuit and the voltage supplied by battery is 3.7V. The design in PD2318 is highly efficient which leads to only 0.2W (54mA @ 3.7V) power consumption. CFP has a handful of documents and example sample to get you up and running.

The data and charging unit comes in two versions. The first version comes with five docks and the second version has one dock. Also the first version includes large display which makes it a complete data reader and charging unit but for the second version the data will present on a PC connected to the unit. The Windows program written for outputs can visualize graphs in various types.

PD2318 is a portable multi-purpose instrument, which can be equipped with different external detection units for various applications as applicable. The device senses ionizing radiation by means of a SEM crystals. The SEM is fully enclosed inside the instrument. When ionizing radiation or a particle strikes the tube, it is sensed electronically and monitored by PD2318. Radiation is measured in counts in time intervals while the device can also transfer the rate into dose and present the result. About 5 to 25 counts at random intervals (depending on location and altitude) can be expected every minute from naturally occurring background radiation.

To measure gamma and X-rays, hold the tip of the Radiation Monitor toward the source of radiation. Low-energy

gamma radiation (10-40KeV) cannot penetrate the side of the PD2318, but may be detected through the window. Although the device is specifically designed to capture Gamma and X radiation, it can detect high energy beta radiation. Beta radiation has a longer range through air, but can usually be shielded (e.g., by a few millimeters of aluminum). High energy beta particles may be monitored through the back of the case. Some isotopes detected relatively well are cesium-137, cobalt-60, technetium-99m, phosphorus-32, and strontium-90. Some types of radiation are very difficult or impossible for this device to detect. Beta emissions from tritium and Gamma emissions from Americium-241 are too weak to be detected well using PD2318.

The display implemented on the device can present various information for the user in a real-time manner. This display includes several menus. In the main menu, the count rate or alternatively dose is displayed. Beside the device present the connection to dock status, measurement coefficient of variation and data unit in this menu. The other menu is acquiring time where the user can select a time to save the measurement. In the configuration menu where alarm setting and unit for measurement can be set. The device alarm threshold can be easily set and then the device will generate audio alarm when the measurements exceed the threshold. The final menu is status menu in which the user can view the total incident dose to the device, battery and storage status.

Based on the aforementioned features, PD2318 is a suitable choice for any personal healthcare system which support a unified data reading procedure and charging.



Specifications

UNIT:2318		
TYPE	Personal Dosimeter	
Version	X & GAMMA	BETA, GAMMA & X
Inputs/Outputs		
Port	USB for charging	USB for charging
	USB remote read and write	USB remote read and write
Power KEY Push Button	Push turn on, short press function, long press select mode, Long press 3 sec tur off	
Controls/Communication		
USB	Set and read all data	Set and read all data
Power KEY Push Button	Push turn on, short press function, long press select mode, Long press 3 sec tur off	
Performance		
Detector	Semiconductor	Semiconductor
Radiation measured	Gamma and X-ray	Beta, Gamma and X-ray
Energy range	120keV-3MeV	60keV-3MeV
Battery type	Li Ion	Li Ion
Dose range	0.1-10000 μ Sv/h	0.1-10000 μ Sv/h
Accuracy	+/- 10% (Cs-137)	+/- 10% (Cs-137) +/- 10% (Sr-90)
Power	0.3W	0.3W
Batter life	Over 300 times	Over 300 times
Work time	8 Hours full load	8 Hours full load
	24 Hours intelligent mode	24 Hours intelligent mode
Continuous run time		
In normal conditions	\geq 1000 h	\geq 1000 h
In economy mode	\geq 5000 h	\geq 5000 h
Buzzer	Not included	Available
Display		
Type	Full color OLED	Full color OLED
Size	64x96 pixels , 0.95 inch	64x96 pixels , 0.95 inch
Indicators		
LED batt status	Green color (FULL) Red Color (Charging)	Green color (FULL) Red Color (Charging)
LED ALRAM & Sign	Green-Yellow-RED (LOW-MID-HIGH)	Green-Yellow-RED (LOW-MID-HIGH)
Charging and data unit (OPTIONAL)		
Number of docks	1 or 5	1 or 5
Communication	USB, Network	USB, Network

Application

- Lantern Mantles
- Accelerating installation
- Electronics (ion implanters)
- Nuclear medicine and industry
- Customs and border control
- Individual radiation and protection
- Civil protection, security and police
- Background Radiation measurement
- Radiation protective measurement
- Roentgen ology and radiotherapy
- Protection in emergency service
- radiation levels during air travel measurement
- Dose monitoring in the case of nuclear disasters
- Counts/Interval vs. Distance and Shielding Studies
- Half-Life Determination (Counts/Interval vs. Time)
- Research activities in Radioecology and Radiology
- Medical procedures (X-Rays, CT scans, etc.)

- X-Ray crystallography and X-Ray fluorescence spectroscopy, electronic microscopy

Electrical and Mechanical

VERSION

STD

PRO

Power required

0.3W

weight

98 gr

Dimension

135mm x 35mm x 15mm

Storage temperature

10°C...+40°C

Operating temperature

0°C...+50°C



Software

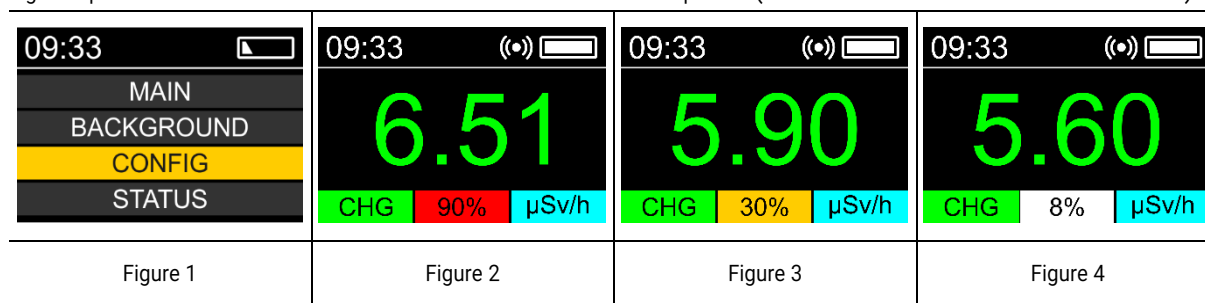
PD2318 dosimeter can be used standalone using the companion 0.95 inch display or with one of the data reading and charger units whether 1-dock or 5-dock versions. In the following we see the most important window in the device GUI.

Figure 1 shows the name of various windows in the GUI.

Figure 2 present a measurement with high CV which makes it unreliable (In this manner the color of CV becomes red)

Figure 3 present a measurement with medium CV (In this manner the color of CV becomes yellow)

Figure 4 present a measurement with low CV which makes it reliable and precise (In this manner the color of CV becomes white)



PD2318 GUI

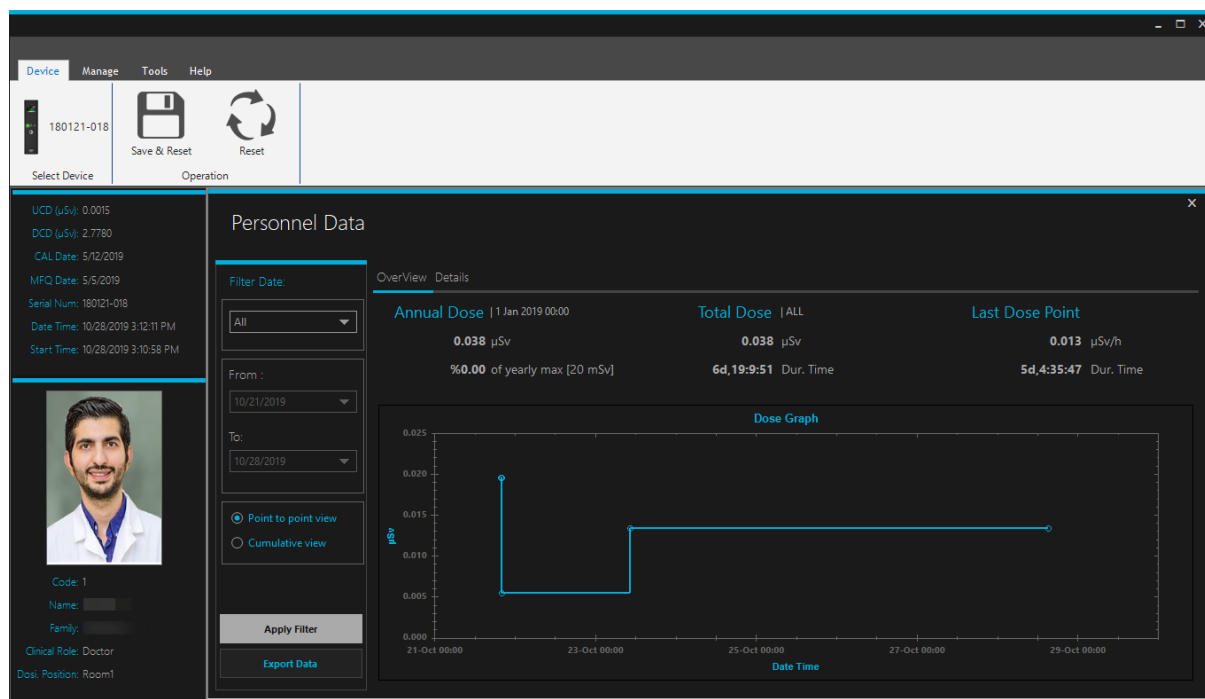
PD2318 is also provided with an optional charging and reading unit equipped with a user-friendly software. This software provides various features including dose dashboard with total dose history, annual dose in number and relation to a configurable yearly limit, detailed views presenting time stamped dose history and battery status for different devices in the unit. This software includes the following panels:

User panel

Setting panel

Admin panel







There are also three windows that show the detailed information for each user including dose overview, cumulative dose history (Years) and dose history versus time. *Note that this software can be used in PC and Tablet but with limited features.*







Main window on charger and dock unit

Ordering info








Standard package includes BETA, GAMMA & X Version

Part #	Image	Description
PD2318 BETA, GAMMA & X		PD2318-BETA, GAMMA & X
ACCE2318001		CD User guide (1 Pack)
ACCE2318003		Guarantee (one year)
ACCE2318007		Protective Rugged Hard case
ACCE2318010		phone jack 3.5mm cable
ACCE2318011		Lanyard Gray color

Standard package includes GAMMA & X Version

Part #	Image	Description
PD2318 GAMMA & X		PD2318- GAMMA & X
ACCE2318001		CD User guide (1 Pack)
ACCE2318003		Guarantee (one year)
ACCE2318007		Protective Rugged Hard case
ACCE2318010		phone jack 3.5mm cable
ACCE2318011		Lanyard Gray color

Optional accessories and services

Part #	Image	Description
ACCE2318004		Installation
ACCE2318005		Training
ACCE2318006		Re-calibration services
ACCE2318012		USB to USB extenuation Cable 10,15, 20, 30 meters
ACCE2318002		box with foam inserted (1 Pack)
DRCU2519-5D		Charging and data unit with 5 docks
DRCU2519-1D		Charging and data unit (1 docks)





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