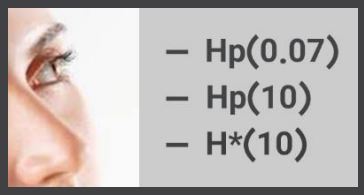
Innovator In Spectroscopy Equipment

PRM2415



PORTABLE RADIATION MONITOR MODEL PRM2415

www.cfp.co.ir

CATALOG

H*(10)
DOSIMETERS

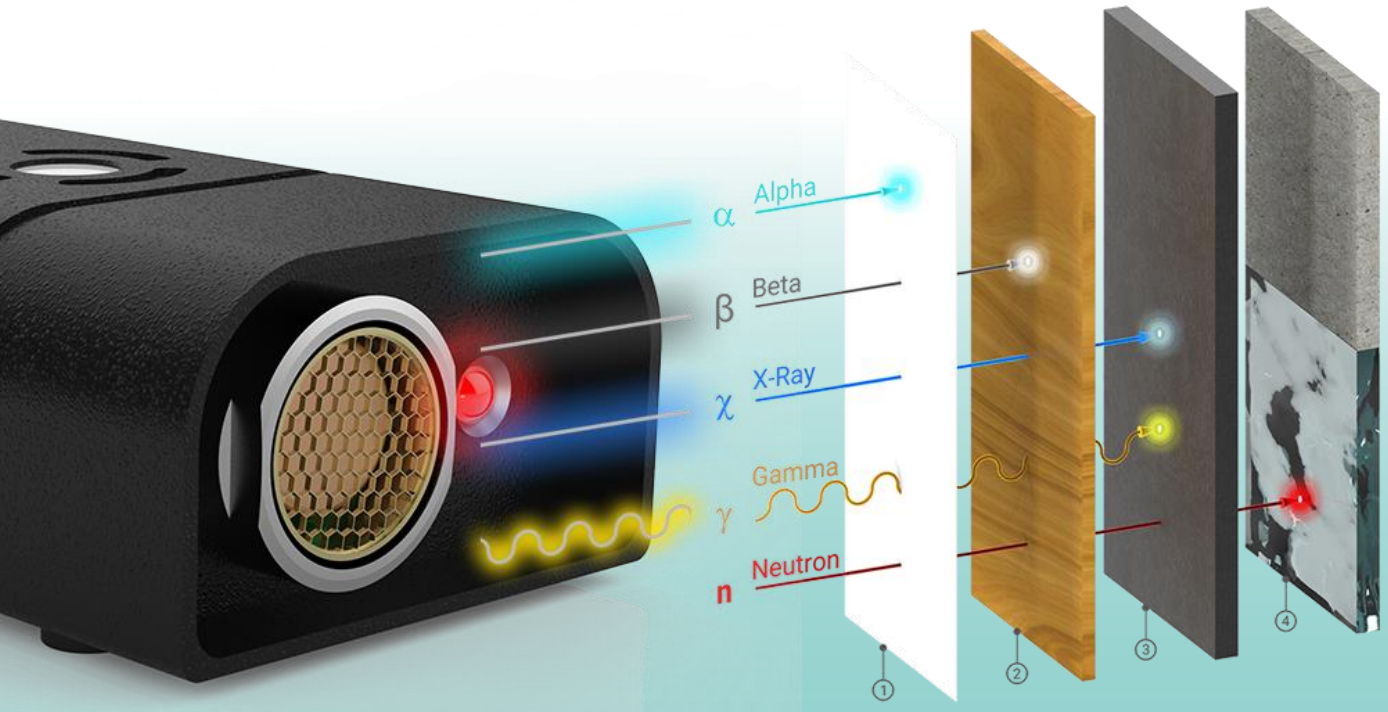
FREE DOWNLOAD

PORTABLE RADIATION MONITOR
MODEL PRM2415

Features

- Standalone operation
- User-friendly software
- Geiger Mueller detector
- Wide operational dose range
- Detect the presence of a source of radiation
- Calibration due date presentation in software
- Monitor variations in background radiation at different elevations
- Radioactivity measurement in environment over long periods of time
- Radiation measurement of common radioactive materials such as lantern mantels
- 360-degree detection capability
- Rugged case with high protection
- Rate equivalent does measurement
- Capability of searching for radioactive items
- Robust and suitable in challenging conditions
- Free portable software for windows and android
- Audible response with adjustable alarm thresholds
- Separate measurement of alpha, beta and gamma dose rates
- cps, uSv/hr, mR/hr with accumulated counterparts measurements
- Compare the effect of different types of materials to shield alpha, beta or gamma radiation

Alpha, Beta, X- and Gamma-Rays



① Paper
② Thin plates made of wood, aluminum, etc
③ Lead, iron, and other thick metal plates
④ Water, concrete, ctc

Description

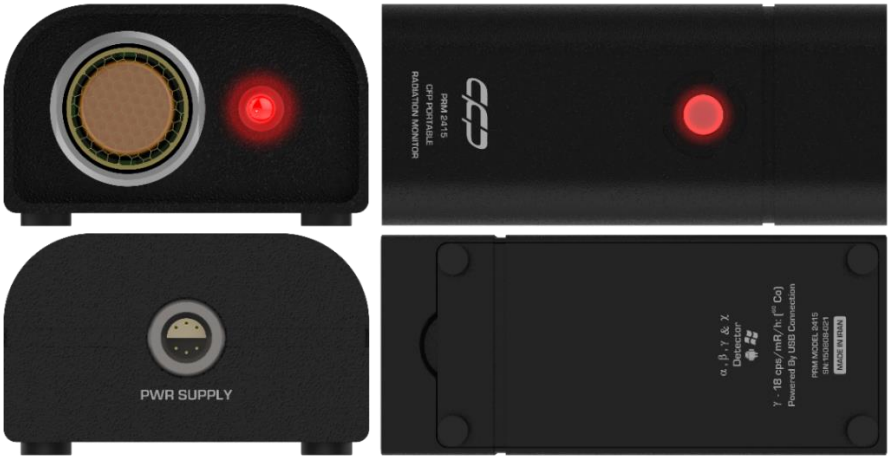
The PRM2415 Radiation Monitor detects alpha, beta, gamma, and X-ray radiation. Use the Radiation Monitor to explore radiation statistics, measure the rate of nuclear decay, and monitor radon progeny. This easy-to-use sensor consists of a Geiger-Mueller tube mounted in a small, rugged, aluminum case.

Applications of PRM2415 include environmental dose monitoring, shielding, and decay rate measurements. The Radiation Monitor senses ionizing radiation by means of a Geiger-Mueller (GM) tube. The tube is fully enclosed inside the instrument.

When ionizing radiation or a particle strikes the tube, it is sensed electronically and monitored by a computer, or by a flashing count light. Radiation is measured in counts in a time interval, as configured in data-collection software. About 5 to 25 counts at random interval (depending on location and altitude) can be expected every minute from naturally occurring background radiation. The end of the GM tube has a thin mica window. This mica window is protected by the screen at the end of the sensor. It allows alpha particles to reach the GM tube and be detected. The mica window will also sense low energy beta particles and gamma radiation.

The device comes with a highly user-friendly software. The software allows configuring various parameters. There are three measurement modes including α-β-γ mode, β-γ mode and γ mode. Fusing these modes, the user can measure the radiation from α, β and γ separately. After starting the operation, the device measures the background dose and sets the threshold for audio alarm. When the dose rate exceeds this threshold, the device would generate and audio alarm.

To measure gamma and X-rays, hold the tip of the Radiation Monitor toward the source of radiation. The device is equipped with a physical window which allows the penetration of particles and rays to reach the GM tube. To detect alpha radiation, position the monitor so the suspected source of radiation is next to the GM window. Alpha radiation will not travel far through air, so put the source as close as possible (within 1/4 inch) to the screen without touching it. Even a humid day can limit the already short distance an alpha particle can travel. To detect beta radiation, point the end window toward the source of radiation. Beta radiation has a longer range through air than alpha particles, 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. To determine whether radiation is alpha, beta, or gamma, hold the tip of the monitor toward the specimen. If there is an indication of radioactivity, it is most likely gamma or high energy beta. Place a piece of aluminum about 3 mm (1/8") thick between the case and the specimen. If the indication stops, the radiation is most likely beta. (To some degree, most common radioactive isotopes emit both beta and gamma radiation). If there is no indication through the back of the case, position the end window close to, but not touching, the specimen. If there is an indication, it is probably alpha or beta. If a sheet of paper is placed between the window, and the indication stops, the radiation is most likely alpha. In order to avoid particles falling into the instrument, do not hold the specimen directly above the end window. The Radiation Monitor does not detect neutron, microwave, radio frequency (RF), laser, infrared, or ultraviolet radiation. Some isotopes it will detect relatively well are cesium-137, cobalt-60, technique - 99m, phosphorus-32, and strontium-90. Some types of radiation are very difficult or impossible for this GM tube to detect. Beta emissions from tritium is too weak to detect using the Radiation Monitor. Americium-241, used in some smoke detectors, can overexcite the GM tube and give an indication of a higher level of radiation than is actually there.



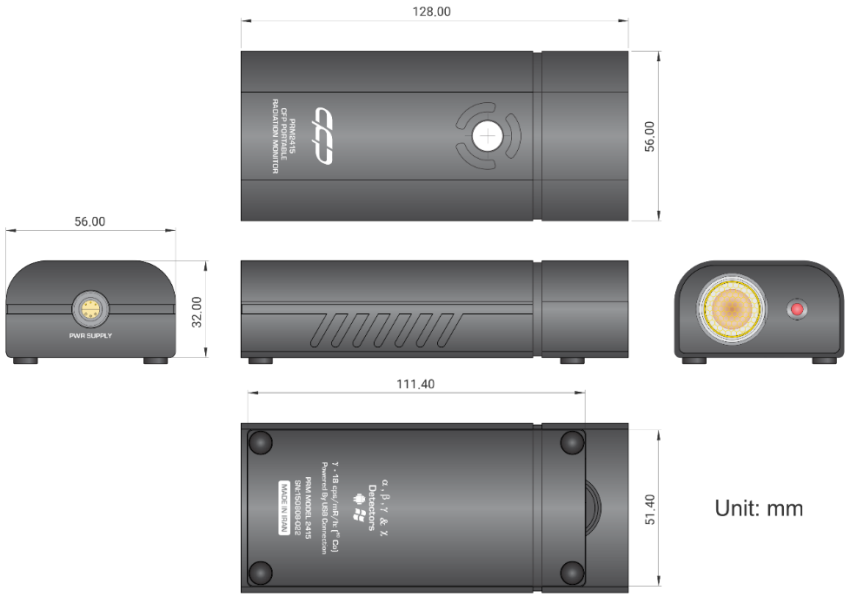
Specifications

Inputs
USB
Outputs
USB
Controls
connectors
Lemo 5Pin
Indicators
Top LED indicator (Blink corresponding to dose rate)
Side LED indicator (Power)
Audio Alarm indicator (Freq. corresponding to dose rate)
Performance
Sensitive to alpha, beta, gamma, and X-ray radiation
Powered by interface connection
Red LED blinks corresponding to dose
Audio signal with frequency corresponding to dose
Sensor
Geiger Mueller tube with a mica end window
Gamma sensitivity
18 cps/mR/hr referenced to Co-60
Dose range
0–2mSv/h (0–2000cps)
Energy
10keV to 3MeV
Accuracy
±15% typical; ±20% max
Calibration
^{137}Cs
Alert level
User-adjustable alert level
Audio Indicator
Internally mounted beeper (can be switched off for silent operation)
Response time for dose rate change
≤7 s (for dose rate change from 1 to 10 µSv/h)

Application

- Security
- Medicine
- Nuclear Industry
- Lantern Mantles
- Scientific Research
- Metallurgical industry
- Background Radiation
- Histogram Data Analysis
- Environmental monitoring
- Counts/Interval vs. Distance Studies
- Counts/Interval vs. Shielding Studies
- Monitoring of raw materials and food
- Medical procedures (X-Rays, CT scans, etc.)
- Half-Life Determination (Counts/Interval vs. Time)
- Check radiation levels during air travel
- Monitoring of radiation-dangerous rooms and facilities
- Radiation protective measures in case of nuclear disasters

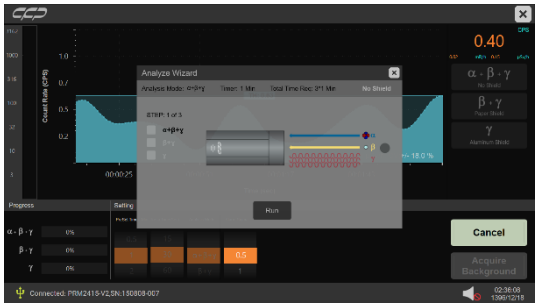
Electrical and Mechanical

Power required	
USB 5V – 20mA	
Physical	
Weight	261 gr
Dimension	56 x32 x128(mm)
Mechanical	
Storage temperature	-20°C to +40°C.
Operating temperature	0°C to +40°C.

Software

Software splash

Background acquire window



Analysis wizard

Report preview window

Setting and calibration curve window

Measurement with threshold curve

Ordering info

Standard package includes

Part #	Image	Description
PRM2415		Portable Radiation Monitor
ACCE2415001		CD User guide (1 Pack)
ACCE2415003*		Guarantee (one year)
ACCE2415007		Protective Rugged Hard case
ACCE2415011		Lemo to USB cable

* =we stand behind 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 manual device (DLS2115 - Manual).

Optional accessories and services

Part #	Image	Description
ACCE2415002		Device Box with Foam Inserted`
ACCE2415004		Installation
ACCE2415005		Training
ACCE2415006**		Re-calibration services
ACCE2415012		USB to USB extend cable (Max Length 30m)

** = 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).