



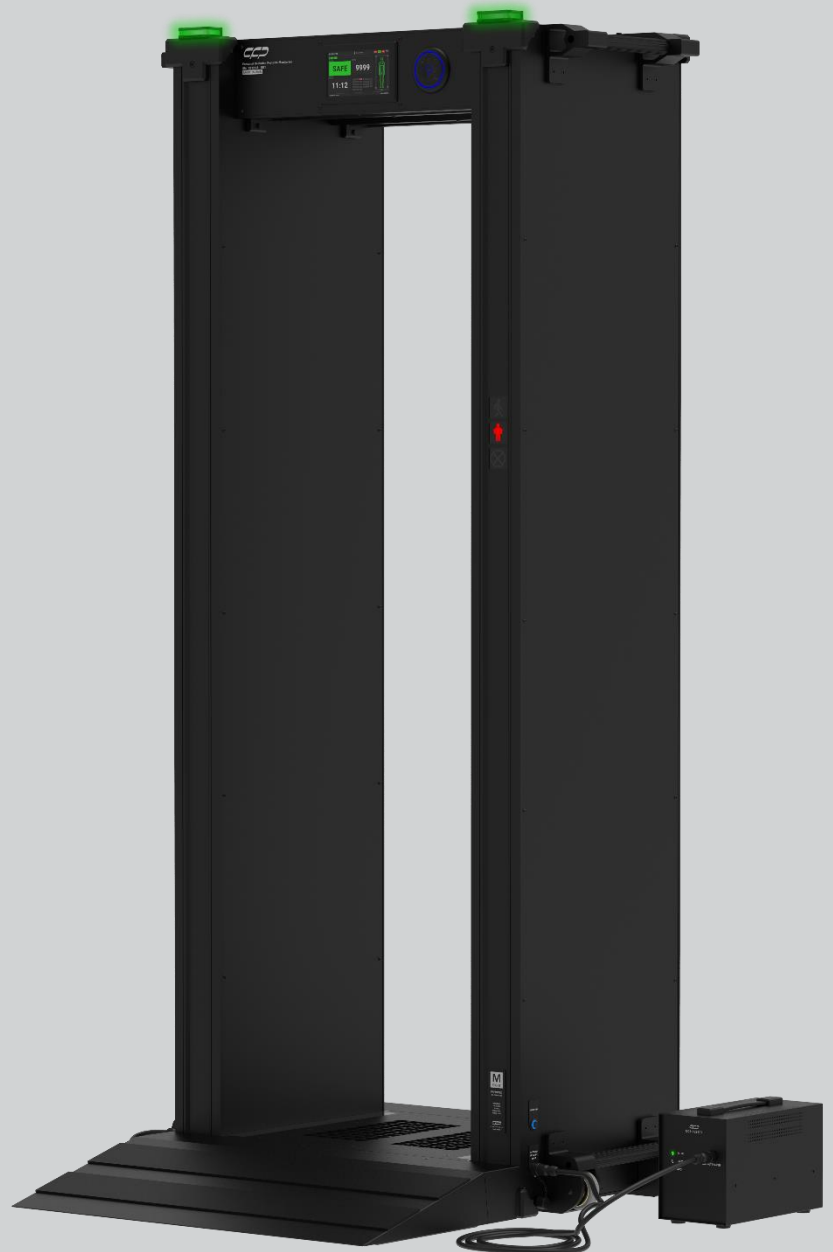
Innovator In Spectroscopy Equipment

PRPM2120



PERSONNEL RADIATION PORTAL MONITORING MODEL PRPM2120

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CATALOG



SPECTROMETER



FREE DOWNLOAD

PERSONNEL RADIATION PORTAL MONITORING

MODEL PRPM2120

Features

- Wide energy range
- Ready for field operation
- User information display
- Easy to assemble design
- Background updating Procedure
- Optional gate monitoring camera
- Data storage for further exploration
- Protective against dust and moisture
- Programmable detection parameters
- Resistant against impact and vibration
- Easily visible informative alarm indicator
- Slow natural degradation of the light yield
- Accurate alarms with low false alarm rate
- Robust and suitable for use in challenging conditions
- sensors to detect person presence
- Password security for device configuration
- Individual and sum detectors measurements
- Intelligent contamination detection algorithm
- Resistant against electromagnetic interference
- Stand-alone application based on internal battery
-
- Large plastic scintillators with efficient detection accuracy
- Highly efficient scintillators with long technical attenuation length
- Different scan scenarios (Walk-Thru, Pause, Pause-and-Turn, Front-and-Back)
- Capability of connecting to PC over LAN interface for data transfer

FAST AND RELIABLE WITH LOW FALSE ALARMS



Description

The PRPM2120 from Control Farayand Pasargad (CFP) is a personal radiation portal monitoring system. The system is capable of detecting abnormal gamma and beta radiation (depending on the version) in people passing through the gate in either direction. The PRPM2120 is produced in two versions. The first version is able to detect gamma rays and the second version is capable of detecting gamma and beta radiation by adding a beta panel.

PRPM2120 utilizes large plastic scintillators with efficient detection parameters. The plastic scintillators have highly efficient detection parameters and the natural degradation of their light yield is impressively slow.

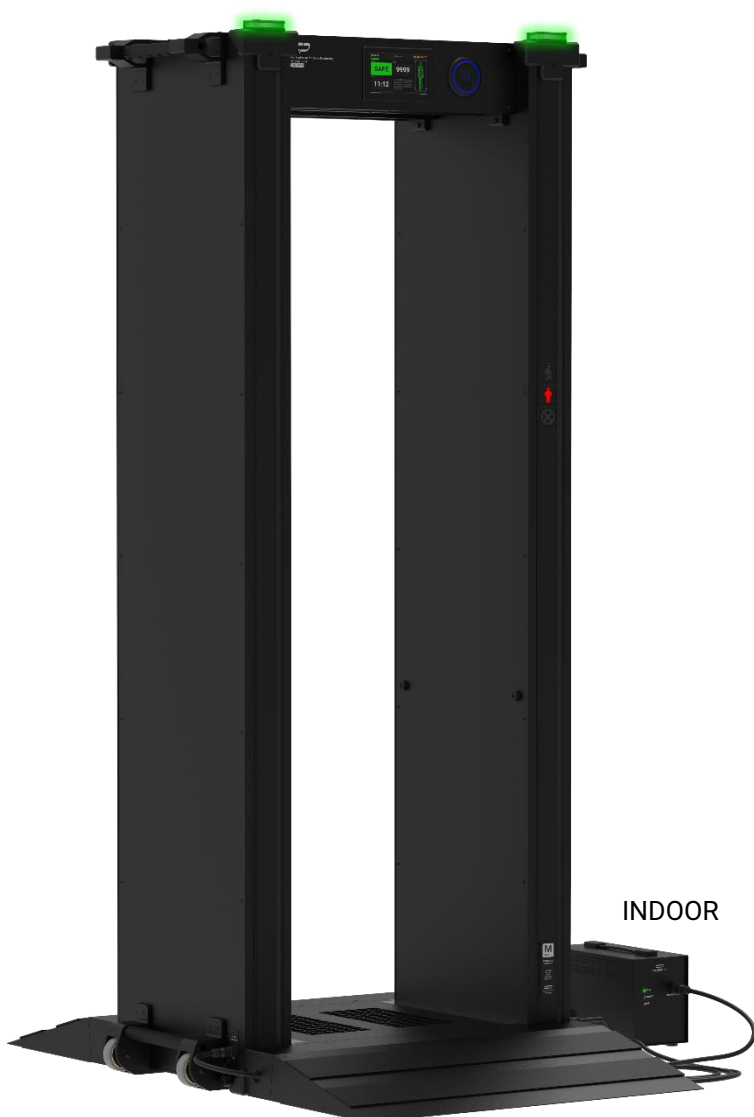
PRPM2120 come with different user modes including Walk-Thru, Pause, Pause-and-Turn, Front-and-Back. Each mode result in a different throughput, sensitivity and count time. The device can update background measurements manually or automatically for considering natural radiation in different locations. The set-up and configuration can be easily done using a password protected administrator panel.

Intelligent analysis of the counts from different scintillators and their fusion based on the statistical modeling of underlying phenomena makes PRPM2120 decision accurate and decrease the false alarm rate. PRPM2120 is equipped with internal battery which makes it suitable for portable applications.

PRPM2120 is designed with easily readable display that can help to monitor its status. In the case of any abnormality detection, the device indicator color would change to the appropriate color.

To detect the presence of a person in the gate, PRPM2120 can be optionally equipped with optical sensors. These sensors would help the device emphasize on the time when the person is inside the gate and the detection unit presents the most relevant information. Optional camera can also be added to PRPM2120 to take photo synchronized with the optical person detection system and alarm system.

One important feature in PRPM2120 is the design considerations for fast assembling, so two people can assemble the device in at most 1 hours. It should be noted that the industrial, electronic and performance design of this gate is based on the latest standard in the field.



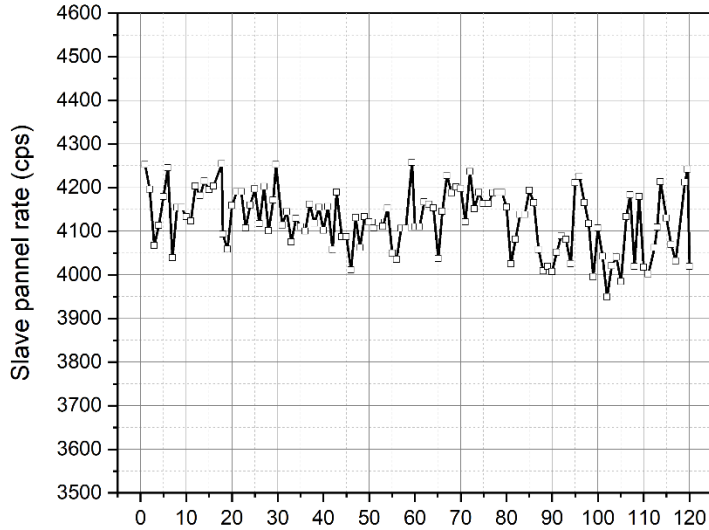
INDOOR



OUTDOOR

Specifications

Unit: PRPM2120-SPECT				
Type	Personnel radiation portal monitoring			
Version	Version1		Version2	
Radiation Detection	Gamma		Beta & Gamma	
Type	Indoor	Outdoor	Indoor	Outdoor
Color	Black	White	Black	White
Input(s)				
LAN	Setting configure via LAN cable (read and write)			
Power	DC power supply – 12V – 2A			
Optical sensor (optional)	Person detection sensor			
Camera (optional)	Image Acquisition			
Output(s)				
Output	Alarm output signal			
Control(s)				
Power key (on the master pannel)			Power push button to turn the system on or off	
Function key				Main menu
				Recheck the detection system
				Hardware setting menu
				Setup menu
				Up, Down, Right and Left keys
				Select the desired setting
Indicator(s)				
Light alarm (confirmed by test SSDL)	Easily visible super bright LED indicator with alarm dependent color in LCD Box			
Sound alarm (confirmed by test SSDL)	Sound alarm in LCD Box			
	Sound alarm can be heard within 2 meters			
Speed				
Display				
Type	Full Color Graphic LCD			
Size	7"			
Performance				
Gamma energy range	50keV – 3MeV			

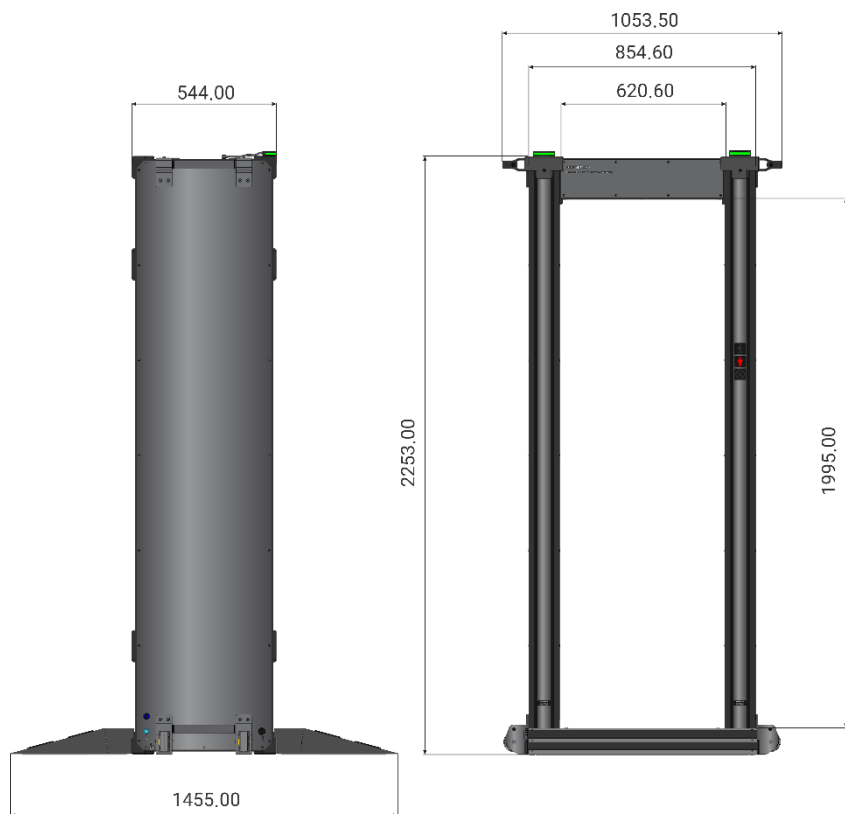
Beta energy range	Not detect			100keV – 3MeV																		
Coefficient of Variation COV(%)	Time (sec)	MASTER PANEL			SLAVE PANEL			BETA PANEL														
		$\bar{x}$ (cps)	σ	COV (%)	$\bar{x}$ (cps)	σ	COV (%)	$\bar{x}$ (cps)	σ	COV (%)												
	1	4804.68	90.48	1.88	5084.04	89.94	1.77	1573.81	50.20	3.19												
	2	4855.81	75.75	1.56	5102.13	76.45	1.50	1595.99	43.14	2.70												
	5	4913.34	67.28	1.37	5180.30	67.86	1.31	1631.01	41.85	2.57												
	10	4975.12	69.44	1.40	5312.57	68.65	1.29	1626.09	29.52	1.82												
	<table><tr><th colspan="4">DATA</th></tr><tr><th>N</th><th>AVG</th><th>SIGMA</th><th>COV(%)</th></tr><tr><td>120</td><td>4123.81208</td><td>4123.81208</td><td>1.79568</td></tr></table> 										DATA				N	AVG	SIGMA	COV(%)	120	4123.81208	4123.81208	1.79568
	DATA																					
	N	AVG	SIGMA	COV(%)																		
	120	4123.81208	4123.81208	1.79568																		
SLAVE PANEL count rate variation @ 1 sec sampling time																						
Gamma MDA	< 1 μ ci ¹³⁷ Cs @ 100 nSv/h background < 0.5 μ ci ⁶⁰ Co @ 100 nSv/h background																					
Beta MDA	Not detect			< 0.5 Bq/cm ² ⁹⁰ Sr/ ⁹⁰ Y @ 10 sec, pause mode & 100nSv/h background																		
Readout	Counts in CPS from 0 to 250k																					
Internal sampling	20 /second																					
Detector																						
Gamma detector	Type: Plastic scintillator																					
	No:2																					
	Sensitive area: 410 mm × 189.8mm × 50.8mm Volume ~40 Liter (Total size: 80 Liter)																					
Beta detector	No detector			Type: Plastic scintillator																		
	-			No:1																		
	-			Surface Area: 410mm x 320mm																		
	-			Window thickness: 12mg/cm2																		
PMT	Hamamatsu 14-pin 10-stage PMTs																					
Data Acquisition and Analysis																						
OS	Windows 8 or higher versions																					
Software	PRPM2120-SPECT (SOFTWARE)																					
Measurement																						
Count rate	Each 50ms sampling interval																					
	Maximum count rate: 250K																					

High voltage	0-1200 V, Positive, 12 Bit resolution
Battery	
Standard	Internal battery pack module
Life	over 8 hours at 20°C in indoor performance
Memory	
Memory	8GB SSD
	Storage all device information including settings, alarm status, count rate, etc.

Application

- Inspection in the case of nuclear disasters
- Radiation inspection at airports & rail-way
- Customs and Border Control
- Critical infrastructure
- Homeland security
- Hospitals

Electrical, Mechanical and Environmental

Unit : PRPM2120		
Type	Personnel radiation portal monitoring	
Version	Version1: Gamma	Version2: Beta & Gamma
Electrical		
Power required	DC power supply – 12V – 2A	
	Internal battery (8 hours support in indoor working mode)	
Physical		
Dimensions	210 × 86 × 50 cm	210 × 86 × 50 cm
Weight	170kg	190kg
Mechanical		
	Unit:mm	
PRPM2120		



PRPM2120-BETA

	Environmental
Storage temperature	10°C to 30°C
Operating temperature	-20°C to 50°C

Device GUI

Figure 8: Various Alarm type



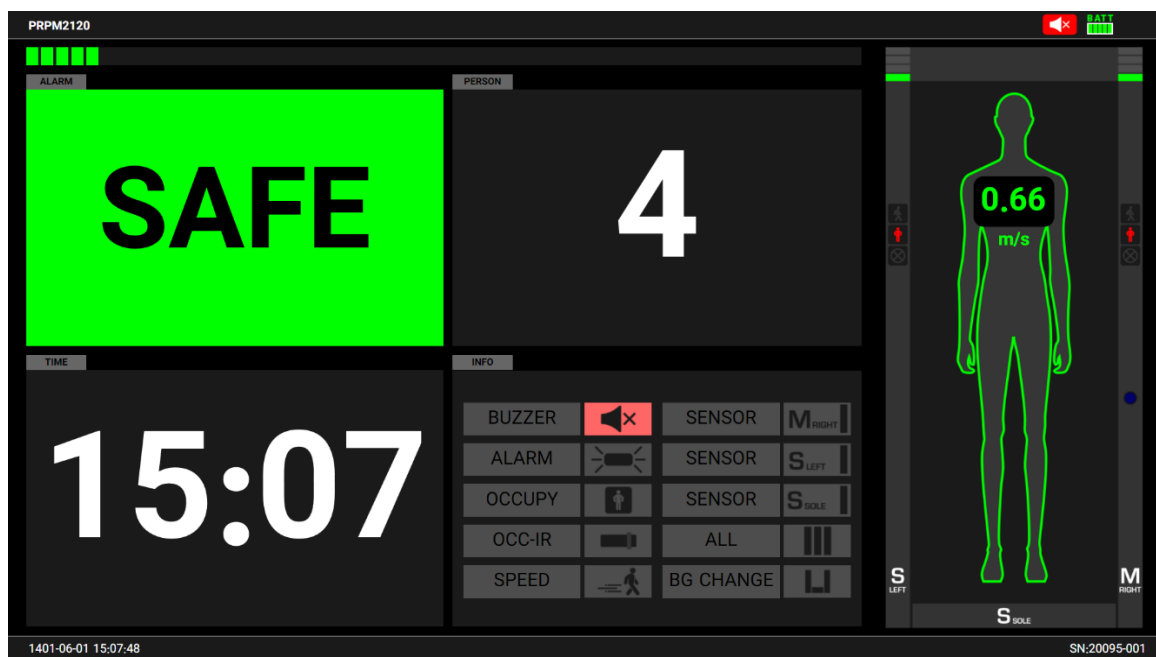


Figure 5

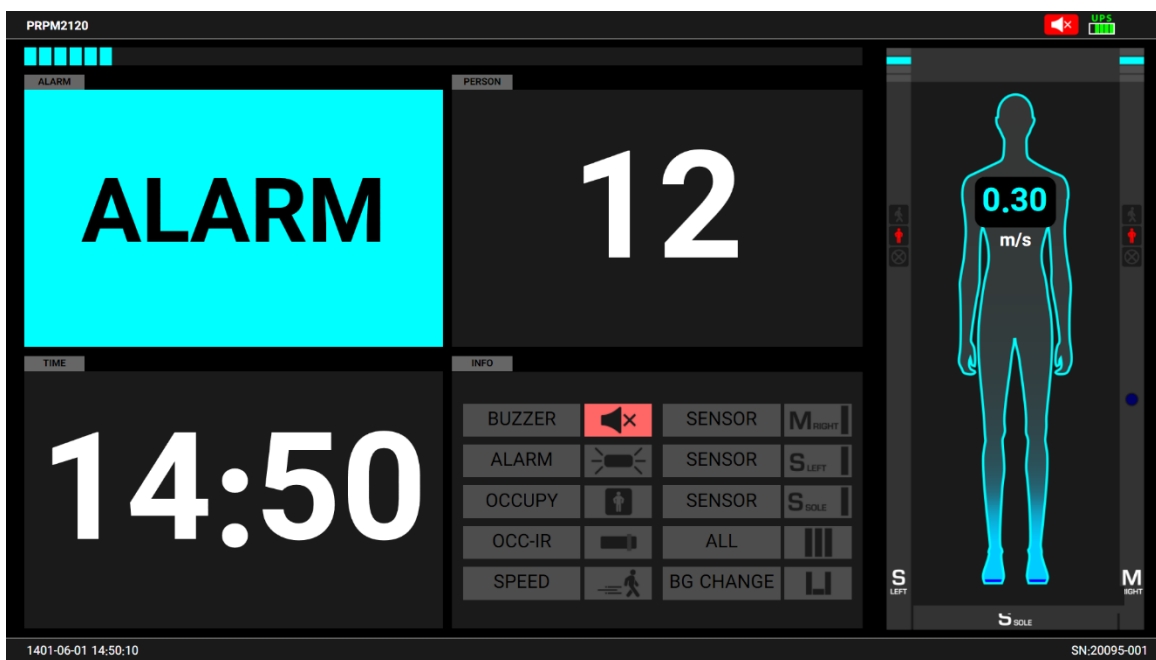


Figure 6

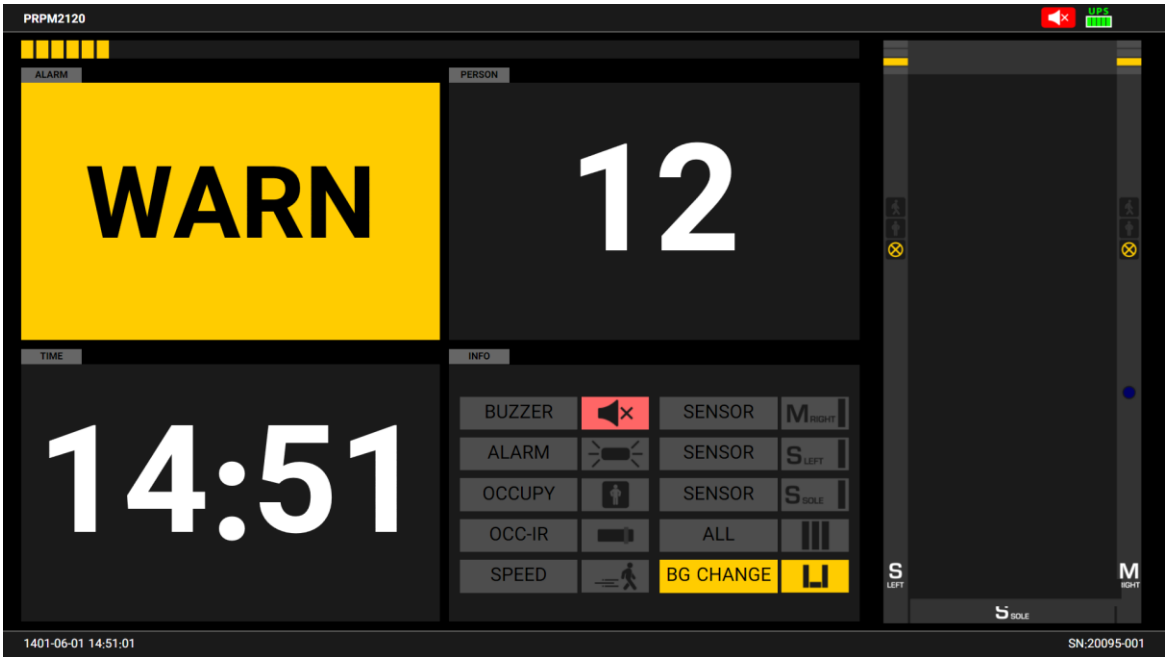


Figure 7

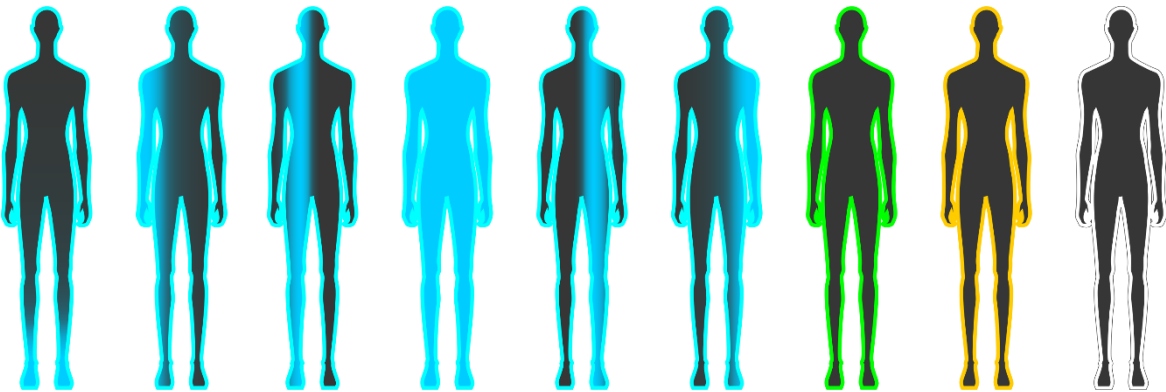


Figure 8

PC software
PRPM2120 (software)
The PRPM2120 is provided with utility software to download the data stored in the memory.
Input /Output (Using supplied CFP-PRPM2120 software)
Optional LAN communication
Data Output formats
LOG

Ordering info

PRPM2120 (Indoor) Standard package includes

Part #	Image	Description
PRPM2120		Personal radiation portal gamma monitoring system, Model PRPM2120 (Indoor), include: master and slave panel, LCD BOX, CAM BOX, STREW M6.
ACCE2120001		User guide CD (1 Pack)
ACCE2120002		Wooden case with inserted foam for master and slave panel, No 2.
ACCE2120003*		Guaranty (one year)
ACCE2120009		DC UPS2121
ACCE2120011		Interface cable, No. 2, 8pin 0.5m, (IP68)
ACCE2120012		Interface cable, No. 2, 8pin 5m, (IP68)
ACCE2120013		Interface network cable (RJ45 LAN), No. 1, 8pin 0.5m, (IP67)

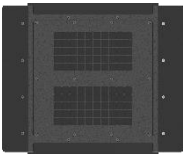
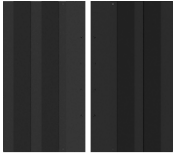
ACCE2120014		Indicator with Interface cable 5 pin 20cm, (IP67)
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PRPM2120 (Outdoor) Standard package includes

Part #	Image	Description
PRPM2120		Personal radiation portal gamma monitoring system, Model PRPM2120 (Outdoor), include: master and slave panel, LCD BOX, CAM BOX, STREW M6.
ACCE2120001		User guide CD (1 Pack)
ACCE2120002		Wooden case with inserted foam for master and slave panel, No 2.
ACCE2120003*		Guaranty (one year)
ACCE2120009		DC UPS2121
ACCE2120011		Interface cable, No. 2, 8pin 0.5m, (IP68)
ACCE2120012		Interface cable, No. 2, 8pin 5m, (IP68)

ACCE2120013		Interface network cable (RJ45 LAN), No. 1, 8pin 0.5m, (IP67)
ACCE2120014		Indicator with Interface cable 5 pin 20cm, (IP67)

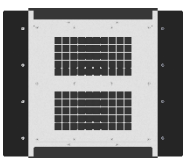
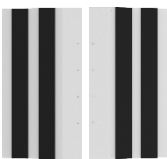
PRPM2120-BETA (Indoor) Standard package includes

Part #	Image	Description
PRPM2120		Personal radiation portal gamma monitoring system, Model PRPM2120 (Indoor), include: master and slave panel, LCD BOX, CAM BOX, STREW M6.
ACCE2120015-BETA		Sole panel (optional)
ACCE2120016-BETA		Ramp
ACCE2120001		User guide CD (1 Pack)
ACCE2120002		Wooden case with inserted foam for master and slave panel, No 2. Wooden case with inserted foam for Sole panel, No 1.
ACCE2120003*		Guaranty (one year)

ACCE2120009		DC UPS2121
ACCE2120011		Interface cable, No. 2, 8pin 0.5m, (IP68)
ACCE2120012		Interface cable, No. 2, 8pin 5m, (IP68)
ACCE2120013		Interface network cable (RJ45 LAN), No. 1, 8pin 0.5m, (IP67)
ACCE2120014		Indicator with Interface cable 5 pin 20cm, (IP67)

* We fully support our products. We guarantee your satisfaction in the quality of our product by providing a complete one-year warranty covering any defect of workmanship, material and design. If our product do not work correctly, we will provide complete repair and/or replacement services. For guaranty conditions, please refer to device manual document (PRPM2120- Manual)

PRPM2120-BETA (Outdoor) Standard package includes

Part #	Image	Description
PRPM2120		Personal radiation portal gamma monitoring system, Model PRPM2120 (Outdoor), include: master and slave panel, LCD BOX, CAM BOX, STREW M6.
ACCE2120015-BETA		Sole panel (optional)
ACCE2120016-BETA		Ramp
ACCE2120001		User guide CD (1 Pack)
ACCE2120002		Wooden case with inserted foam for master and slave panel, No 2. Wooden case with inserted foam for Sole panel, No 1.
ACCE2120003 [*]		Guaranty (one year)
ACCE2120009		DC UPS2121
ACCE2120011		Interface cable, No. 2, 8pin 0.5m, (IP68)

ACCE2120012		Interface cable, No. 2, 8pin 5m, (IP68)
ACCE2120013		Interface network cable (RJ45 LAN), No. 1, 8pin 0.5m, (IP67)
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Optional accessories and services

Part #	Image	Description
ACCE2120004		Installation
ACCE2120005		Training
ACCE2120006**		Re-Calibration (Interval) services. 1year factory maintenance suggested, not required.
ACCE2120017		Gate monitoring camera
ACCE2220018		Camera cable 5pin-0.5m (IP67)

ACCE2220019		Network cable 8pin (IP67) custom length
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** The proper maintenance & calibration of your instruments is critical to ensure correct performance & accuracy. For Re-calibration (Intervals) services, please call CFP company (021- 46045383)





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