



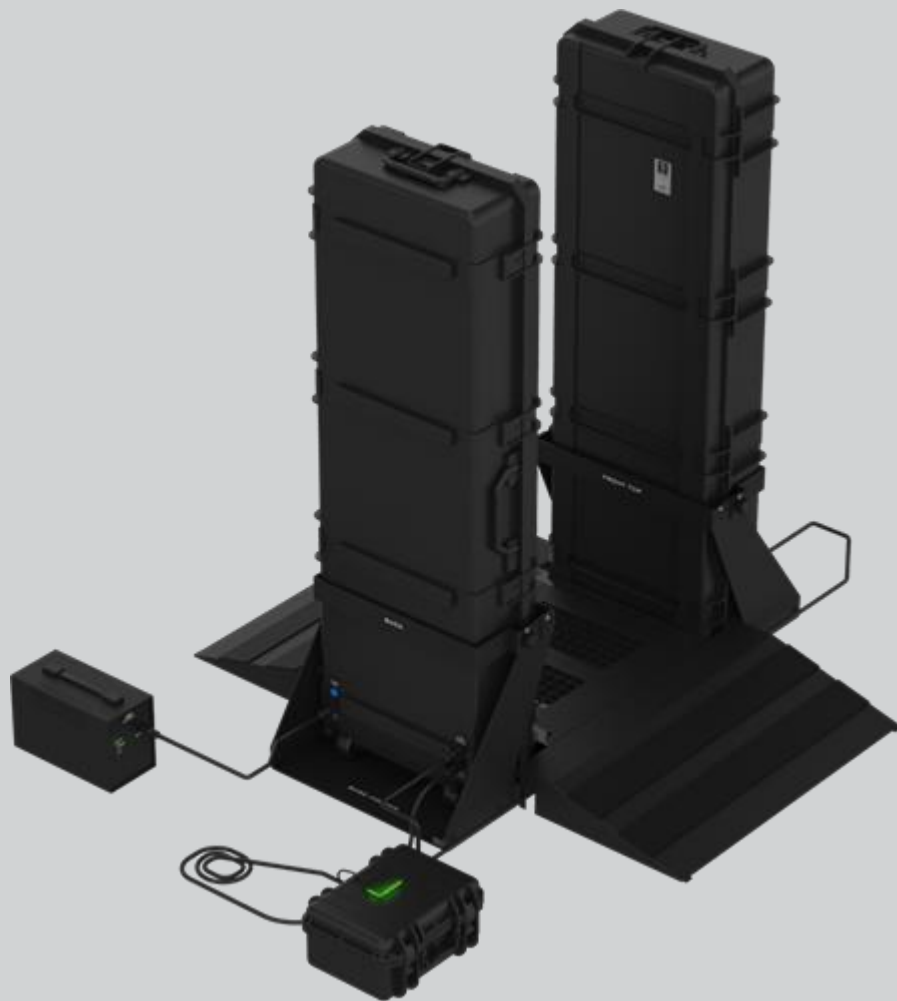
Innovator In Spectroscopy Equipment

PRPM2120-SPECT



**PERSONNEL RADIATION
PORTAL MONITORING SPECT
MODEL PRPM2120-SPECT**

www.cfp.co.ir



CATALOG



SPECTROMETER



FREE DOWNLOAD

PERSONNEL RADIATION PORTAL MONITORING SPECT

MODEL PRPM2120-SPECT

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-SPECT 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-SPECT 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. This radiation portal monitoring in both versions, ability to classify the type of gamma radiation to three groups include medical-special nuclear material, industrial and normal material.

PRPM2120-SPECT come with different user modes including Walk-Thru, Pause. In the Walk-Thru scan, the person passes through the gate and if contains radioactive material, must participate in the pause scan and identify the group of radioactive material from it. Each mode result in a different throughput, sensitivity and count time.

Intelligent analysis of the counts from different scintillators and their fusion based on the statistical modeling of underlying

phenomena makes PRPM2120-SPECT decision accurate and decrease the false alarm rate. PRPM2120-SPECT 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-SPECT is equipped with internal battery which makes it suitable for portable applications.

PRPM2120-SPECT is designed with easily readable display that can help to monitor its status in the LCD box. 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-SPECT 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.

One important feature in PRPM2120-SPECT is the design considerations for fast assembling, so two people can assemble the device in at most 10 and 60 minutes for gamma version and gamma & beta version respectively.



Specifications

Unit: PRPM2120-SPECT			
Type	Personnel radiation portal monitoring		
Version	Version1	Version2	
Radiation Detection	Gamma	Beta & Gamma	
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 (in the LCD Box)			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	Easily visible super bright LED indicator with alarm dependent color in LCD Box		
Sound alarm	Sound alarm in LCD Box		
Display			
Type	Full Color Graphic LCD		
Size	7"		
Performance			
Gamma energy range	50keV – 3MeV		
Beta energy range	Not detect	100keV – 3MeV	
Gamma MDA	< 1µci ¹³⁷ Cs @ 100 nSv/h background < 0.5µci 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 × 1200mm × 50.8mm Volume ~25 Liter (Total size: 50 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

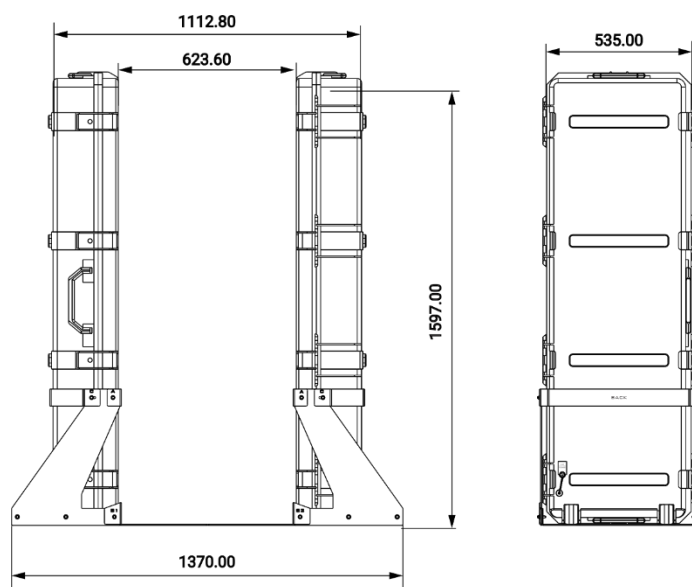


Electrical, Mechanical and Environmental

Unit : PRPM2120-SPECT

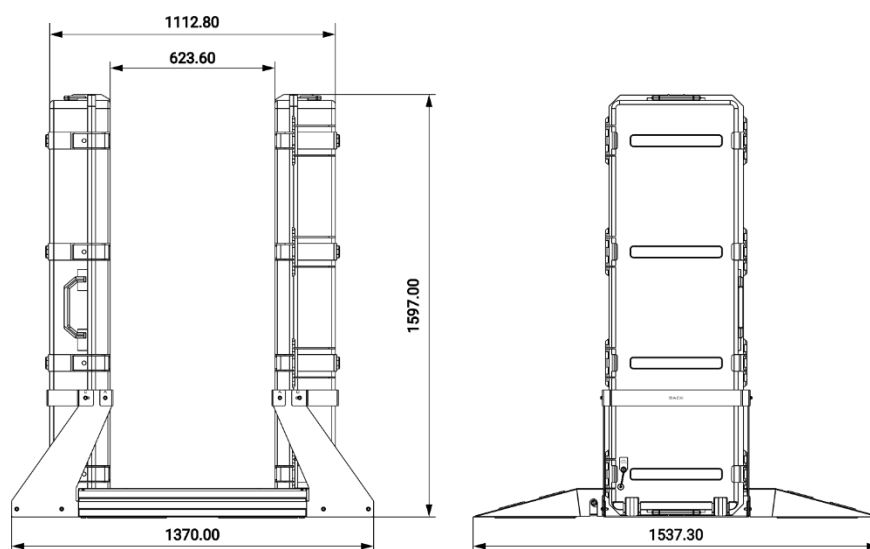
Type	Personnel radiation portal monitoring spect	
Version	Version1: Gamma	Version2: Beta & Gamma
Electrical		
Power required	DC power supply – 12V – 2A	
	Internal battery (8 hours support in indoor working mode)	
Physical		
Dimensions	1597 × 1370 × 535 mm	1597 × 1370 × 1537.30 mm
Weight panels	100 kg	140 kg
Package weight	120 kg	180 kg

Mechanical



Unit: mm

PRPM2120-SPECT



Unit: mm

PRPM2120- BETA SPECT

Environmental

Storage temperature	10°C to 30°C @ relative humidity < 65%
Operating temperature	-20°C to 50°C

Software and user interface

LCD Box GUI device

PRPM2120-SPECT can be used standalone using the companion 7" display in LCD Box. In the following we see the most important window in the device GUI.

Figure 1: Entrance allowed

Figure 2: Entrance not allowed

Figure 3: Gate closed

Figure 4: Function key

Figure 5: No alarm status

Figure 6: Alarm status

Figure 7: Warning status (High speed walk-thru)

Figure 8: Various Alarm type



Figure 1



Figure 2



Figure 3



Figure 4

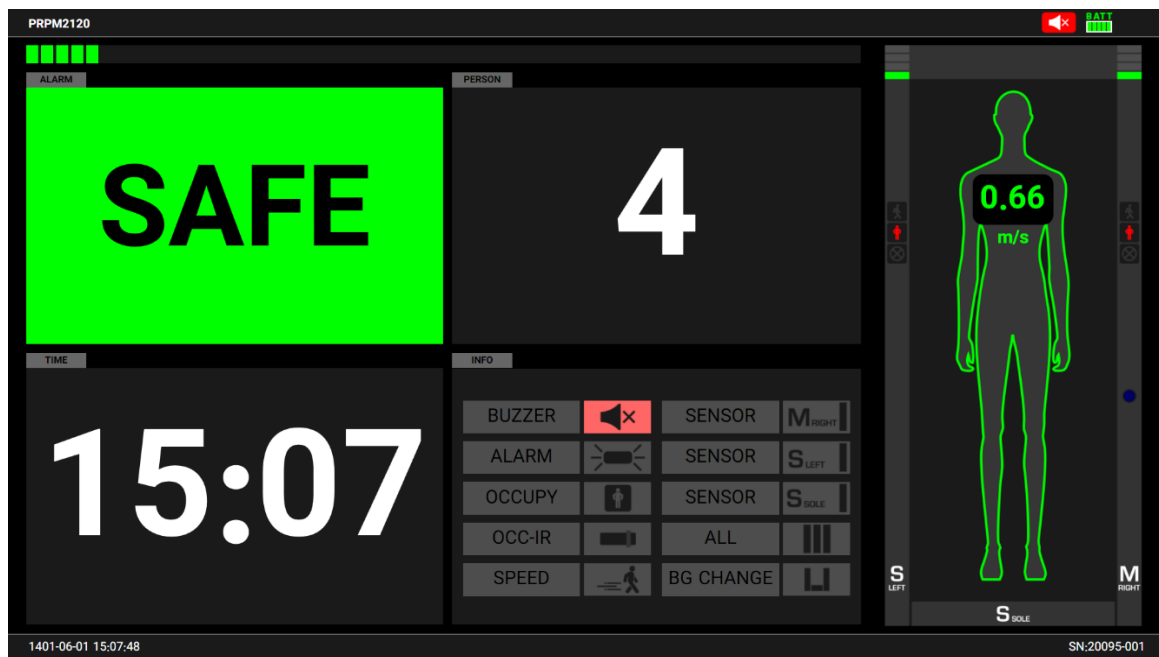


Figure 5

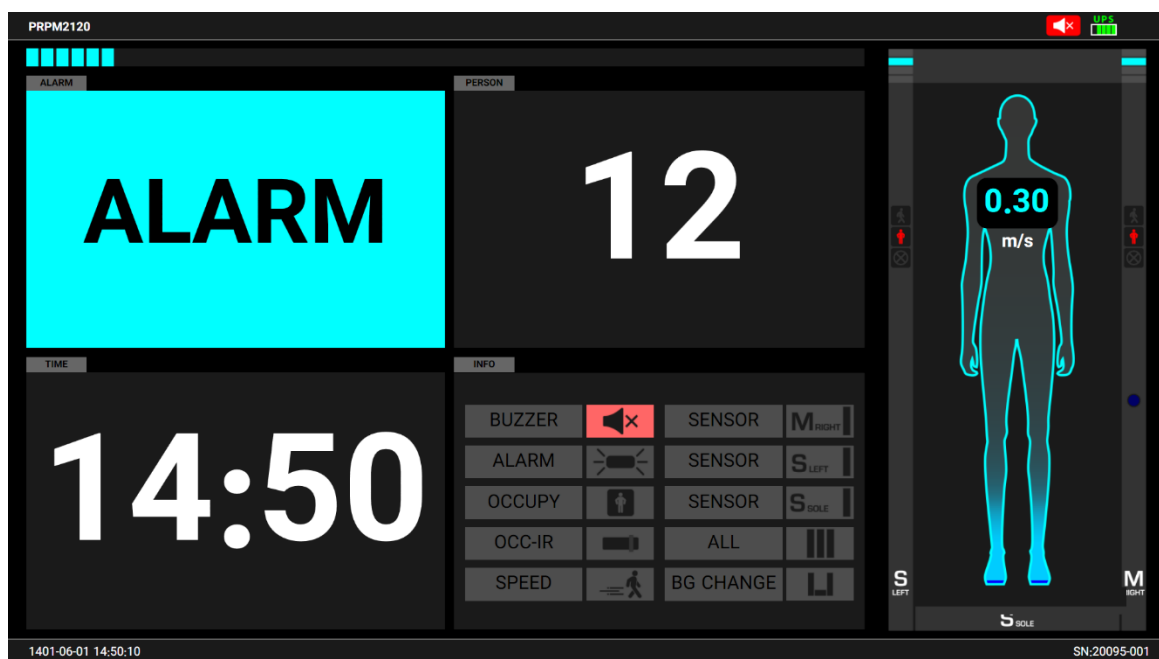


Figure 6

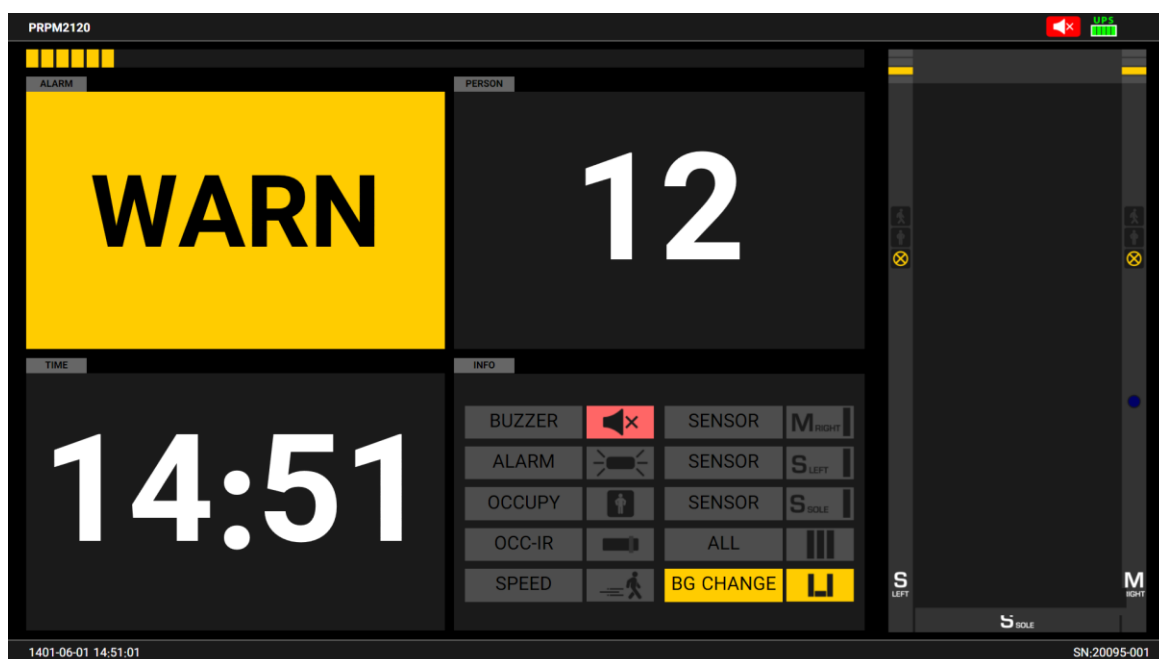


Figure 7

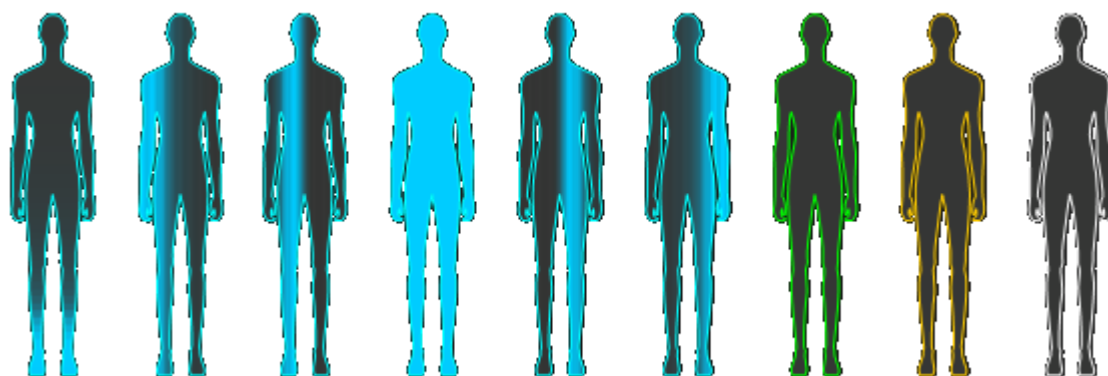


Figure 8

PC software

PRPM2120-SPECT (software)

The PRPM2120-SPECT is provided with utility software to download the data stored in the memory.

Input /Output (Using supplied CFP-PRPM2120-SPECT software)

Optional LAN communication

Data Output formats

LOG

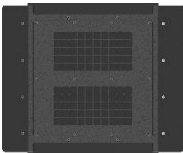
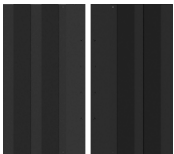
Ordering info**PRPM2120-SPECT Standard package includes**

Part #	Image	Description
PR PM2120-SPECT		Gamma Radiation Portal Monitoring- model PRPM2120-SPECT (Includes: Master panel, Slave panel)
ACCE2120007		2 packs base Holder, Each pack includes: 16 M8x20 Allen screws, 4 M8x20 eight-head screws, 2 front upper fasteners, 2 front lower fasteners, 2 upper back fasteners, and 2 support base trays. All fasteners are equipped with shock absorbers by foam.

ACCE2120008		LCD box (include: computer ,7 inch display, 9 function keys)
ACCE2120009		DC UPS2121, DC power supply
ACCE2120011		2 x 0.5 meter (0.5 m) IP68 8-pin interface cable
ACCE2120012		2 x 8 pin interface cable 5 meters (5.0 m) IP68
ACCE2120014		1 warning indicator with 5-pin 20 cm IP67 interface cable
ACCE2120001		User manual and software CD (one copy)
ACCE2120002		Wooden case with inserted foam for Sole panel with accessories.
ACCE2120003*		Guaranty (one year)

PRPM2120-BETA-SPECT Standard package includes

Part #	Image	Description
PR PM2120-SPECT		Gamma Radiation Portal Monitoring- model PRPM2120-SPECT (Includes: Master panel, Slave panel)
ACCE2120007		2 packs base Holder, Each pack includes: 16 M8x20 Allen screws, 4 M8x20 eight-head screws, 2 front upper fasteners, 2 front lower fasteners, 2 upper back fasteners, and 2 support base trays. All fasteners are equipped with shock absorbers by foam.
ACCE2120008		LCD box(include: computer ,7 inch display, 9 function keys)
ACCE2120009		DC UPS2121, DC power supply
ACCE2120011		2 x 0.5 meter (0.5 m) IP68 8-pin interface cable
ACCE2120012		1 x 8 pin interface cable 5 meters (5.0 m) IP68
ACCE2120014		1 warning indicator with 5-pin 20 cm IP67 interface cable

ACCE2120015-BETA		Gamma and beta detector sole panel
ACCE2120016-BETA		Front Ramp, Rear Ramp and 8 x M6 Red Steel Allen Bolts
ACCE2120001		User manual and software CD (one copy)
ACCE2120002		Wooden case with inserted foam for Sole panel with accessories.
ACCE2120003*		Guaranty (one year)

* 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-SPECT- Manual)

Optional accessories and services

Part #	Image	Description
ACCE2120004		Installation
ACCE2120005		Training

ACCE2120006**		Re-Calibration (Interval) services. 1year factory maintenance suggested, not required.
ACCE2120018		Gate monitoring camera
ACCE2120019		Camera cable 5pin-0.5m (IP67)
ACCE2120020		Network cable 8pin (IP67) custom length

** The proper maintenance & calibration of your instruments is critical to ensure correct performance & accuracy. For Re-calibration (Intervals) services, please call CFP company (021- 57416072)





Innovator in Spectroscopy Equipment



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