

The DRM-3000 Monitor

Radiation Detection Division

Health Physics



The DRM-3000 Monitor is the latest innovative instrument designed to provide the best possible user experience in Area Monitoring today. The DRM-3000 supports three external detectors and one internal detector, with automatic identification from a wide range of external detectors up to 100 meters distant to the Monitor, Either Wall or Tabletop mounted, the DRM-3000 can be powered directly from any AC source or Powered through POE. Radiation Data is sent from the DRM-3000 through any wireless medium or Ethernet cable. Color Coded background changes according to the radiation level, providing an excellent visual indication of the radiological conditions.

The DRM-3000 supports a wide range of external detectors



Features

- IP-65, Hardened, High Impact Plastic Casing
- Supports 1 internal and 3 external detectors
- Auto recognition of ALL Rotem, and other detectors
- Wall or Tabletop mounted
- Large 7" HD Graphic Display with Status icons
- Background Color on Display reflects dose rate according to thresholds
- Multicolored LED provides visual reference to threshold levels
- Option to activate Internal Buzzer or High Volume Buzzer
- Up to 100 yards cable between Detector and Meter
- Powered by external Power 110VAC, POE or Internal Battery (24 hours)
- Provides 4-20mA outputs for each of the 4 detectors via the Aux Connector
- Accepts any 4-20mA input from external devices
- Advanced communication: TCP/IP, RS-485, Wi-Fi, Xbee...
- Setup/Diagnostics via RMVC software
- Saves up to 1 years data internally
- Direct connection to Computer or network via standard Ethernet cable

Technical Data

Casing	Material	High Impact Plastic (ABS-PC) with Aluminum back cover	
	Dimensions	L x W x H): 9" x 3" x 10" 230 x 76 x 252 mm	Weight: 3.75 lb's 1.7 Kg
	Environmental:	Weather proof IP-65, CE Certified	
Electronics	Display:	7 inch HD Display	
	CPU Mainboard ARM Cortex®-A7 core i.MX 6UltraLite (NXP)	GUI and communication Firmware: Linux embedded Updates available via TCP/IP	
	CPU Detectors ARM® 32-bit Cortex®-M3 CPU	Interface between Instrument and external Detectors Updates available via TCP/IP	
	Internal Detector*	Wide range GM tube based	
Backup Battery	Capacity	24 hours (optional)	
	Charging Time	5 hrs	
I/O	3 x External Detectors	Serial (RS-485) or Digital pulse or Analogue pulse	
	AUX connector D-Type 26 pin	RS-485 and 4-20 mA and External Power 24V and optional light tower and Dry contact	
	RJ-45	Ethernet Cable	
	Dry Contact Solenoid		
Alert indicators	High Volume Buzzer	100 dB at 30 cm	
	Multicolored LED	Colors: White, Green, Yellow, Red, Purple, Blue and Turquoise	
Telemetry Protocol	XBEE, WRM2	Single package x 4	

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Internal Detectors

Using different combinations of High Range and Low Range GM tubes we are able to offer a number of combinations that can be used in the internal detector for the DPU-3




	Low Range	Wide Range	High Range	Very High Range
Measuring Range	0.1 uSv/h to 40 mSv/h	0.1 uSv/h to 10 Sv/h	50 μSv/hr to 10 Sv/hr	0.1 uSv/h to 100 Sv/h
H.R. GM Tube	-	ZP-1301	ZP-1301	4G60M
L.R. GM Tube	ZP-1201	ZP-1201	-	ZP-1201
Sensitivity	17 cps/mR/h	17 cps/mR/h 0.3 cps/mR/h	0.3 cps/mR/h	17 cps/mR/h 60 cps/R/h

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External Detectors

Wide Range Detector	0.1 μ Sv/h to 10 Sv/h (0.01 mR/h to 1,000 R/h)	
	Designed for measuring a wide range of gamma radiation fields mainly in Nuclear power sites.	
GM Type	ZP-1201	ZP-1301
Sensitivity	17 cps/mR/h	0.3 cps/mR/h
Accuracy	\pm 15% within the full range	
Energy Range	65 keV – 2 MeV	
Dimensions	170 mm x 38 mm Diam	6.7" x 1.5" Diam
Weight	220 gr	(0.48 lbs)
Casing	Aluminum, splash proof	
Max. cable Length	100 meters	

GM-40 Gamma Detector	250 μ Sv/h to 10 Sv/h (25 mR/h to 1000 R/h)	
	Designed for measuring a wide range of gamma radiation fields mainly in Nuclear power sites.	
GM Type	ZP1301 or equivalent	
Sensitivity	0.3 cps/mR/h	30 cps/mSv/h
Accuracy	\pm 15% within the full range	
Energy Range	70 keV – 1.3 MeV	
Dimensions	170 mm x 38 mm Diam	6.7" x 1.5" Diam
Weight	220 gr	(0.48 lbs)
Casing	Aluminum, splash proof	
Max. cable Length	100 meters	



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External Detectors

GM-42 Gamma Detector	0.1 μ Sv/h to 10 mSv/h (0.01 mR/h to 1R/h)	
	Used to measure radiation dose rate levels and accumulated dose in populated areas of cyclotron sites and nuclear medical departments	
GM Type	ZP-1201 or equivalent	
Sensitivity	18 cps/mR/h	1800 cps/mSv/h
Accuracy	\pm 15% within the full range	
Energy Range	50 keV to 1.5 MeV	
Dimensions	197 mm x 38 mm Diam	7.75" x 1.5" Diam
Weight	250 g	0.55 lbs
Casing	Aluminum, splash proof	
Max. cable Length	100 meters	
GM-41 Gamma Detector	50 μ Sv/h to 1 Sv/h (5 mR/h to 100 R/h)	
	Used to measure radiation dose rate levels and accumulated dose in the high radiation areas (Cyclotron Bunkers and Hot Cells) of cyclotron sites and nuclear medical departments.	
GM Type	ZP 1313 or equivalent	
Sensitivity	2 cps/mR/h	200 cps/mSv/h
Accuracy	\pm 15% within the full range	
Energy Range	50 keV to 1.3 MeV	
Dimensions	170 mm x 38 mm Diam	6.7" x 1.5" Diam
Weight	200 g	0.44 lbs
Casing	Aluminum, splash proof	
Max. cable Length	100 meters	



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External Detectors

PM-11 Gamma Detector	0 to 50,000 cps	
	Used to measure released effluent from exhaust stacks and effluent in liquid tanks before releasing.	
Detector	Na (TI) 2" x 2" Crystal	
Sensitivity	20,000 cps/mR/h	2,200 cps/uSv/h
Accuracy	± 10% within the full range	
Energy Range	40 keV to 1.5 MeV	
Dimensions	340 mm x 70 mm diam	13.4" x 2.75" diam
Weight	1,750 g	3.9 lbs
Casing	Aluminum, splash proof	
Max. cable Length	100 meters	
42-30 Neutron Detector	Thermal to approx. 12 MeV	
	Used to measure neutron flux levels in the Cyclotron Bunker of cyclotron sites.	
Detector	2 atm ³ He tube (LND 25185 or equivalent)	
Sensitivity	200 cpm/mrem/hr	20,000 cpm/mSv/h
Accuracy	± 15% within the full range	
Energy Range	Thermal to approx. 12 MeV	
Dimensions	38.1 x 25.4 x 26.2 cm	15" x 10" x 10.3"
Weight	8.8 kg	19.5 lbs
Moderator	25.4 cm (10.0 in.) diameter polyethylene sphere	
Max. cable Length	100 meters	

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External Detectors

IC-10 Detector	1µSv/hr to 250 mSv/hr (0.1 mR/hr to 25 R/hr)	
	Used to measure exposure rates of gamma, x-ray and beta radiation over a wide range.	
Detector	500 cc Aerated Ion Chamber	
Sensitivity	Low Range 160 cps/mR/h	High Range 1.6 cps/mR/h
Accuracy	± 10% within the full range	
Energy Range	20 keV to 1.3 MeV	
Dimensions	260 mm x 89 mm diam	10.2" x 5.5" diam
Weight	470 g	1 lbs
Casing	Aluminum handle with Polypropylene chamber	
Max. cable Length	100 meters	
GM-10 Detector	0 to 42,000 cps	
	Used for efficient surface monitoring of alpha, beta and gamma contamination as well as measuring low energy gamma radiation	
Detector	Pancake LND 73118 or equivalent	
Sensitivity	3,500 cpm/mR/h	350 cpm/uSv/h
Accuracy	± 15% within the full range	
Energy Range	20 keV to 1.3 MeV	
Dimensions	260 mm x 75mm diam.	10.2" x 2.9" diam.
Weight	370 g	0.8 lbs
Casing	Aluminum, splash proof	
Max. cable Length	100 meters	

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External AMP Detectors





The Following detectors are Radiation Hardened and waterproof to 20 meters. Used in Cyclotron Bunkers and Hot Cells to provide accurate radiation measurements.

AMP-50 Detector	0.1 μSv/h to 40 mSv/h (10μR/h to 4 R/h)
Detector	GM Tube ZP1201 or equivalent
Sensitivity	17 cps/mR/h
Energy Range	50 KeV to 2 MeV
Dimensions	137mm (5.39"), diameter: 33 mm (1.29")
AMP-100 Detector	50 μSv/hr to 10 Sv/hr (5 mR/h up to 1,000 R/h)
Detector	GM Tube ZP1301 or equivalent
Sensitivity	0.3 cps/mR/h
Energy Range	70 keV to 2 MeV
Dimensions	110mm (4.33"), diameter: 24.5mm (0.96")
AMP-200 Detector	10 mSv/h to 100 Sv/h (1 R/h to 10,000 R/h)
Detector	GM Tube 4G60M or equivalent
Sensitivity	60 cps/R/h
Energy Range	60 KeV to 2 MeV
Dimensions	110mm (4.33"), diameter: 24.5mm (0.96")
AMP-300 Detector	1 mSv/h to 300 Sv/h (0.1 R/h to 30,000 R/h)
Detector	Energy compensated Silicon diode
Energy Range	60 KeV to 2 MeV
Dimensions	110mm (4.33"), diameter: 24.5mm (0.96")

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External Detectors

Prescila Neutron Detector	
	
Detector	PRESCILA proton recoil scintillator
Sensitivity	350 cpm per mrem/hr
Energy Range	Thermal to 100 MeV neutrons
Dimensions	25.7 x 10.8 x 10.8 cm (10.125 x 4.25 x 4.25 in.)
Weight	2.2 kg (5 lb)
Casing	Aluminum housing with an ergonomic foam grip
Max. cable Length	100 meters
SFP Alpha Beta Detector	
	
Detector	Plastic Scintillator with photomultiplier
Active Area	130 x 77 mm (100 cm ²)
Efficiency	Am-241: 44% CI-36: 49%
Mass	0.7 Kg
Dimensions	100 x 100 x 270 mm
Casing	Aluminum
Max. cable Length	100 meters

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