

GAMMA & NEUTRON HIGH RANGE UNDERWATER PORTABLE MONITOR

γ & 中子高量程水下便携式监测器

Model Series ~ CP-MU-GN

FEATURES:特点

- USE IN REACTOR CORE & SPENT FUEL POOL
- 用于反应堆心和乏燃料池
- FULLY SUBMERSIBLE, RUGGED PROBE
- 水下耐用探头
- FOUR LINEAR RANGES
- 四个线性量程
 - DMU-1- UP TO 1,000,000 R/hr (GAMMA)
 - DMU-1000 FROM 100 mR/hr to 1,000 R/hr (GAMMA)
 - CP - MU -7 READS UP TO 10^7 R/hr (GAMMA)
 - CP-MU-GN - DMU-GN PROBE (GAMMA & NEUTRON DETECTOR)
- WATERPROOF DETECTOR SYSTEM
- 防水探测器系统
- WEIGHTED PROBES
- 带重量的探头
- STABLE AND DEPENDABLE
- 稳定可靠
- FAST RESPONSE
- 快速响应
- LIGHTWEIGHT AND PORTABLE
- 轻量便携
- BATTERY OPERATED
- 电池供电
- 2-WAY SERIAL PORT-STANDARD
- 2路串口-标准型



CP-MU -
Electronics

DMU-1 Probe

APPLICATION: 应用

Underwater monitoring (and in hot cell monitoring) of Reactor Spent Fuel Elements, Reactor components and dose rate measurements of irradiated objects is available in this extremely high range capability instrument and the waterproof construction of the ion chamber detection system.

此高量程仪器可用于反应堆乏燃料池水下监测，反应堆组件，辐照物件剂量率测量，防水结构电离室探测系统。



**TECHNICAL ASSOCIATES
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Divisions of  US NUCLEAR CORP

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Useful in determining the fuel burn up rate as well as security in detecting stolen fuel rods.
用于确定燃料燃烧率，确保丢失燃料棒安全。

GENERAL DESCRIPTION: 一般描述

- Model Series CP-MU Underwater Monitor System consists of an electronic package (**Model CP-MU**) coupled to a High Range **DMU-1** or Mid Range **DMU-1000** Detectors.
CP-MU水下监测系统由电子学组件（型号CP-MU）连接到高量程**DMU-1**或中量程**DMU-1000**探测器组成。
- The system includes 60 feet (optional 100 feet) of special low noise cable with a waterproof coupling to a 5" long x 1/2" diameter aluminum tube containing an ion chamber (**Model DMU-1**) or
系统包括60英尺（可选100英尺）低噪音专用防水电缆，连接到长5" x直径1/2"装电离室铝箱内（**Model DMU-1**）
- 7-1/2" long x 5-3/4" diameter aluminum ion chamber (**Model DMU-1000**).
或者长7-1/2" x 直径5-3/4"铝电离室（**Model DMU-1000**）。
- Model **CP-MU-GN** has dual in line detectors.
型号CP-MU-GN为双电离室

CP-MU-D1 (GAMMA)
CP-MU-D1000 (GAMMA)
CP-MU-7-D1 (GAMMA)
CP-MU-GN (GAMMA & NEUTRON)

DESCRIPTION DETAILS: 详细描述

- Calibration is fully adjustable.
校准可完全调整
- The instrument case is made of drawn aluminum with epoxy lettering for easy decontamination. Case openings are sealed by gasket or screw closure for protection of electronics.
仪器外箱材质为深拉铝，带树脂刻字便于去污，箱口带密封圈或螺旋盖用于保护电子元件。
- A reliable MOSFET electrometer circuit and improved solid state electronics assure long uninterrupted service. Mechanical switching of the high impedance circuit has been eliminated.
可靠MOSFET静电计和改进了的固态电子学确保了仪器长期无故障工作。手动高抗阻电路开关已经淘汰。
- Protection against influence by magnetic fields up to 60 gauss has been built into the instrument.
仪器内置保护以免受达60高斯磁场影响。
- A top handle and four rubber feet achieve a stable base with no loss of display visibility.
上方提手和四个橡胶脚提供了稳定基础而且不影响视觉显示



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RANGES 量程

CP-MU	PROBE MODEL	RANGE	RANGE Sv	DETECTOR SIZE	PROBE LENGTH	DETECT
CP-MU-D1	DMU-1	0.1KR/hr to 1000.0 KR/hr	1 Sv/h to 10,000Sv/h	0.25" Dia. x 8" Long 1.0cc internal	5 feet or 8 inches	GAMMA
CP-MU-D100	DMU-100	1 mR/hr to 1000 R/hr	1 μSv/h to 10 Sv/h	100 cc internal	5 feet or 8 inches	GAMMA
CP-MU-D1000	DMU-1000	0.1 R/hr to 1000.0 R/hr	10mSv/h to 10Sv/h	5.75" Dia x 8" Long 1000 cc internal	8 inches	GAMMA
CP-MU-GN	DMU-GN	0.1KR/hr to 1000.0 KR/hr	1Sv/h to 10,000Sv/h	0.385" x 12" long	5 feet or 12 inches	GAMMA NEUTRON
CP-MU-7-D1	DMU-1	1KR/hr to 10 ⁷ R/hr	10Sv/h to 100,000Sv/h	0.25" Dia. x 8" Long 1.0cc internal	5 feet or 8 inches	GAMMA
CP-MU-7-D1000	DMU-1000	1 R/hr to 10,000.0 R/hr	10mSv/h to 100Sv/h	5.75" Dia x 8" Long 1000 cc internal	8 inches	GAMMA

SPECIFICATIONS: 规格

CP-MU SERIES MODELS: CP-MU系列

- CP-MU:** ELECTRONIC PACKAGE FOR ALL MODELS IS THE SAME OR SIMILAR
适用于所有型号的电子学组件相同或类似
- CP-MU-D100:** DMU-100 Probe with 60-foot cable. (GAMMA)
DMU-100探头带60英尺线（伽马）
- CP-MU-D1000:** DMU-1000 Probe and 60-foot cable. (GAMMA)
DMU-1000 探头带60英尺缆线。（伽马）
- CP-MU-GN:** DMU-GN Probe with two channel version & two detectors (GAMMA & NEUTRON)
DMU-GN 探头带两通道&两个探测器（伽马&中子）



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Accuracy: 精度	± 10% (DECADE)
Calibration: 刻度	Gamma - Cs-137 (Co-60 Optional) Neutron – RaBe 伽马-- Cs-137 (可选Co-60) 中子-- RaBe
Time Constant: 时间常数	2 seconds fast, 12 seconds slow 2秒&12秒
Temperature Range: 温度范围	-30°C to +57°C
Drift: 漂移:	At room temperature - less than 0.5% per °C 室温下少于0.5% 每度



ELECTRONICS

电子学

Readout: 读数	LCD 8 digits. LCD 8 位数
Indicator Lamp: 指示灯:	LED High Level: Green; Over-Range Indicator: Red LED高限: 绿灯, 过量程指示: 红
Electrometer: 静电计	Solid State MOSFET input 固态MOSFET输入
Range Adjusts: 量程调整:	1 (one) internal screwdriver adjustment 内部手调一次
Zero Adjust: 零点调整:	Knob 旋钮
MOSFET Protection Circuit: MOSFET保护电路:	Prevents damage to MOSFET when coupling or decoupling detector system. 当与探测器耦合或断开时防止损坏MOSFET。
Serial Port: 串口:	2 way RS-232 for data collection or remote computer readout. 2路 RS-232用于数据收集或计算机远程读数。
Battery: 电池:	6 "AA" cells, carbon-zinc, alkaline, Li or Nimh type batteries can be interchanged without instrument adjustments. Use alkaline batteries below 0°C 6节AA电池, 碳锌, 碱性, 锂电, 或镍氢电池可互换无需调整仪器。 低于0°C使用碱性电池



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Battery Check:	Pushbutton with LED indicator
电池检测:	带LED指示按钮
Electronics:	A-D converter, LCD drivers
电子学:	A-D转换器, LCD驱动

WEIGHT & DIMENSIONS:

重量&尺寸

Dimensions: 6-1/2" long x 3-1/2" x 9" tall including handle

尺寸: 6-1/2"长 x 3-1/2" x 9"高, 包括把手

Weight: Electronics 28 oz.

重量: 电子学28盎司

Detector System: DMU-100 - Sealed ion chamber 0.25" dia x 8" long. Internal 1.0 cc

探测系统: DMU-100密封电离室, 直径0.25"x长8", 内容量1.0cc

Detector System: DMU-1000 - Sealed ion chamber 5.75" dia x 8" long. Internal 1000 cc

探测系统: DMU-1000-密封电离室直径5.75"x长8", 内容量1000cc

Detector System: DMU-GN - Sealed proportional chamber He3 or Bf-3

探测系统: DMU-GN-密封正比计数室He3或Bf-3

OPTIONAL: 选购

~ Readout in SI units: Sv and Sv/h

读出单位Sv 和 Sv/h

~ WIN-W -- RS-232 Software

WIN-W—RS-232 软件

~ USB Port

USB接口

~ Cable length 100ft (30 meters)

缆线长100英尺 (30米)

~ Alarm settable visual alarm LED

可设定视觉LED报警

~ Lighter weight chamber **MODEL ~ DMU-1000LW**, non-submersible

轻量室 **MODEL ~ DMU-1000LW**, 非潜水型。



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