

# VERY LOW RANGE ENVIRONMENTAL GAMMA COUNTER

## 极低量程环境伽马计数器

Model Series ~ LoGAM

LoGAM-E/W ~ LoGAM-D-E/W

### FEATURES: 特点

- NO HIGH PRESSURE
- 无高压
- OKAY FOR ANY SHIPMENT
- 可选择任何邮寄方式
- REPLACES LARGE "HAZARDOUS" PIC Detectors
- 替换有巨大“危险的”高压电离室探测器
- RUGGED REAL TIME, IN-LINE, CONTINUOUS
- 坚固, 实时, 在线, 连续
- EASY CALIBRATION
- 容易标定
- Full SCADA compatibility
- SCADA全兼容



### APPLICATION: 应用

- Drift Free Measurement of environmental gamma levels
- 对伽马环境测量无漂移
- **LoGam Series** monitors detect small changes in ambient radiation levels to same or better than traditional PIC chambers
- 系统探测环境中辐射细微变化, 优于传统高压电离室
- Now you can legally ship your equipment for use in other locations or for calibration and maintenance.  
现在您可合法地将设备寄到任何地点进行使用, 标定或维护

### PROBLEM: 问题

CURRENT REGULATIONS and Environmental concerns demand ever lower levels of Gamma Flux measurement. ION chambers have been the sensor of choice due to their reputation for wide range, linearity and stability, and Ion chambers are incredibly versatile detectors.

However Ion chambers have a wide range for higher level measurements. They are adapted to see background and below only by using large 10-14" diameters and high pressures of 10 to 20 atmospheres.

Unfortunately reliably going to the low levels desired has not been possible until now. PIC instruments have filled this need and the size and high pressure of the PIC instruments was inconvenient yet tolerated for lack of something better. Now current near prohibition on shipping the PIC pressurized chambers have precluded overlooking what was a mere inconvenience.



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### LoGAM-E/W ~ LoGAM-D-E/W

由于当前法规及对环境的担心，对 $\gamma$ 流出物的测量低到前所未有的限值，电离室因其宽量程，线性和稳定性成为首选，电离室也是极理想的多用途探测器。然而，电离室的宽量程适于较高探测限测量，只有使用直径10-14"大电离室在高压10-20个大气压下，可见本底及以下辐射。

可惜直到现在，可靠地测量到低限才实现，高压电离室（PIC）仪器满足了这个要求，但是其体积和高压使该仪器由于近期禁运变得极不方便，。

### **SOLUTION: 解决方案**

The **LoGAM Series Continuous Real Time** monitors solve this problem.

LoGAM系列连续实时检测系统解决了这个问题

- Data is analyzed and displayed in units of micro R/hr or micro Sv/h.
- 数据分析和显示单位微伦/小时或微希沃特/小时
- Data is continuously updated. It also accumulates to give better statistics. every minute, every hour and every day.
- 数据持续更新，累积以每分钟，每小时，每天给出更好统计
- Longer update times correspond with greater precision and increased sensitivity.
- 更新时间越长精度和灵敏度越高。
- Measurements of radiation concentration logged are 24 hr/day, 7 day/week.
- 浓度24小时录入
- Shipping and portability are no longer are problem as with the more hazardous and unwieldy PIC instruments.
- 和较有害无屏蔽的PIC仪器比较，邮寄和便携性都不再是问题

## **ENVIRONMENTAL GAMMA MONITORS**

### 环境伽马监测器

### **DESCRIPTION: 说明**

**LoGAM Series** is an industrial radiation measurement system. It includes detector and electronics for measuring of Gamma field strength. The pre-amps are plug in modules allowing change or addition of functions at a later date, and allow rapid repair by module replacement in the field. The modular system is covered by TA's unique exchange warranty system in addition to the full one year warranty.

**LoGAM**系列行业辐射测量系统包括探测伽马场强测量所用的探测器和电子学，前置放大器为模块式允许更换和日后功能拓展，及通过现场更换模块达到快速检修。此模块系统TA公司质保范围，外加全年质保。

**Principal Detectors** in this system Gamma flux is measured using a cluster of energy compensated long life T-1150 GM tubes. The energy range is 60 KeV to 3 MeV.

**系统中主要探测器：**由一组长寿命的能量补偿T-1150GM管测量伽马流，能量范围60 KeV - 3 MeV

### **SENSITIVITY: 灵敏度**



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### LoGAM-E/W ~ LoGAM-D-E/W

The **LoGAM Series** Gamma monitors will detect changes of less 10% of ambient terrestrial and cosmic radiation, over a wide temperature range.

The standard sensitivity version measures as low as 1 $\mu$ R/h (.01  $\mu$ Sv/h) with good stability.

**LoGam-伽马监测器**将监测到宽温度范围下变化小于10%的大地射线和宇宙射线，这款标准的灵敏度测量低到1 $\mu$ R/h，稳定性良好。

### SIZE: 尺寸

The tripod mounted sensor is compact, measuring 7" [178mm] diameter x 14" [356mm] long, excluding power supply module. The total package weighs only 18 lbs [8.2 kg].

带三脚架的传感器体积紧致，直径7" [178mm] x 长14" [356mm]，不包括电源模块。总重量仅18磅，8.2公斤。

### ENVIRONMENTAL: 环境要求

The sensor package is waterproof and operates from 0°C to +50°C without drift in zero and change in span sensitivity.

探头组件防水，操作温度0°C to +50°C无漂移，灵敏度无影响。

### REMOTE CAPABILITY: 远程功能:

The standard **LoGAM Series** monitors are AC operated but can be installed in remote locations. Data can be stored at the site of the **LoGAM Series** monitor on compact flash memory cards or transmitted in real-time via optional RF link.

标准LoGam-系列 AC供电，但经常安装在偏远地方，数据现场存储在LoGam系列内存卡里或通过RF链接实时传输。

### DATA: Analysis-Display & Archive 数据分析-显示-存档

- Historical data is easily displayed on-screen (and/or printed out on the optional graphics printer) in tabular or graphical format, showing quantitative information as well as trends.
- 历史数据容易屏显图形或表格，显示定量信息和趋势（和/或用图形打印机打印）
- Data is recorded frequently so time-resolution is excellent.
- 数据录入频繁因此时间分辨率极佳
- Ethernet and USB ports (with security) make it easy to archive and further analyze data.
- 以太网和USB接口（带锁）容易存档和进一步分析
- Continuous, Reliable Data: – **YES**, False Alarms: – **NO**
- 连续可靠数据-是，虚报-无
- Each alarm activates fail-safe relays. Relay contacts are available to user. (on AC power models)



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- 每次报警激活故障继电器，提供继电器触片（AC供电系列）
- User friendly specialized software.
- 用户专用软件
- Data is interfaced with a USB or Ethernet port.
- 数据可USB或以太网接口传输
- Full SCADA compatibility and CADA.
- 全SCADA和CADA兼容

**OPTIONS:** MODBUS or other protocols. Printer

可选: MODBUS或其它协议, 打印机

MODEL	DESCRIPTION	POWER
<b>LoGAM-E</b>	Environmental Range ( 4-Decades) 环境量程, 4个量级 1-10,000 uR/Hr (.01 – 100 uSv/h)	110 VAC 220 VAC
<b>LoGAM-W</b>	Wide Range ( 7 – Decades) 宽量程, 7个量级 10 uR/Hr – 100 R/Hr (0.1 uSv/h – 1Sv/h)	110 VAC 220 VAC
<b>LoGAM-D-E</b>	Detection Head from LoGAM-E includes; Detector Analyzer Logic Transmitter 探测部分包括探头分析仪逻辑转换器	12 V DC
<b>LoGAM-D-W</b>	Detection Head from LoGAM-W includes; Detector Analyzer Logic Transmitter	12 V DC

## SPECIFICATIONS:

## 规格

**Ambient Temperature:**

65 - 100 ° F (wider temperatures ranges optional)

环境温度:

65 - 100 ° F (可选宽范围的)

**Optional Cooling System:**

Cooler model **Cool-33** for detector is used in case of higher ambient temperatures.

可选冷却系统:

高温环境下可使用冷却器model **Cool-33**



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### MEASUREMENT RANGE

### 测量范围

LoGam-W: 10uR/h to 100R/hr (0.1 uSv/h to 1 Sv/h)

LoGam-E: 1 -10,000  $\mu$ R/h (0.01–100 $\mu$ Sv/h wider and/or higher ranges optional)  
(可提供更宽/高量程)

Resolution And Accuracy (Span): 10  $\mu$ R/h [0.1  $\mu$ Sv/h]

分辨率和精度

Stability And Drift: Better than  $\pm 10$   $\mu$ R/h ( $\pm 0.1$   $\mu$ Sv/h)

稳定性和漂移

优于 $\pm 10$   $\mu$ R/h ( $\pm 0.1$   $\mu$ Sv/h)

Display: Graphic LCD with backlight

显示

图形LCD带背景灯

### DATA ACQUISITION:

### 数据采集

Communication Link: RS232 Serial Transmission / USB Port

通信:

Software: Complete user friendly data analysis, display and storage

软件:

用户友好数据分析显示和存储

### POWER:

Power: Li-Ion rechargeable battery pack, operates for 8 hrs with display off. (full charge). Recharges in 4 hours at 7.5V, 1A

电源: 锂电可充电电池组, 8小时(关闭屏显) 4小时充电7.5V, 1A

Power Supply Module: **Input:** 100-240VAC, 50-60Hz. **Output:** 7.5VDC, 3A max

电源模块:

输入: 输出:

### OPTIONAL:

Internal NiMH battery, 6 cells, 9.5Ah.  
HPIC will operate for 24 hrs at full charge recharges in 8 hrs.

可选:

内置镍氢电池, 6节, 9.5Ah.

HPIC将使用24小时(充8小时满电情况下)

### ENVIRONMENTAL:

### 环境

Temperature, Humidity: 0° C to +50° C, 99% RH

温度, 湿度



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<b>Enclosure Rating:</b> 外箱等级:	IP64, sealed against dust and water spray IP64, 防尘防溅
<b>DIMENSIONS AND WEIGHTS:</b> <b>尺寸和重量</b>	
<b>Sensor Housing:</b> 传感器外罩	5" [127mm] Diameter x 12.6" [320mm] Long 直径5" [127mm] x 长12.6" [320mm]
<b>Sensor Front Panel:</b> 传感器前板:	6.6" [168mm] Diameter x 0.5" [12mm] Thick 直径6.6" [168mm] x 厚0.5" [12mm]
<b>Mounting Plate:</b> 安装板	25" [635mm] L x 7" [178mm] W x 0.5" [12mm] Thick
<b>Weight:</b> 重量	12.5 lbs [5.7 kg]
<b>Adjustable Height:</b> 可调节高度:	38" to 63" [96.6cm to 160cm] 9 lbs [4.1 kg]
<b>Power Supply Module:</b> 电源模块:	4.8" [122mm] H x 6.3" [160mm] W x 9.4" [239mm] L 5.5 lbs. [2.5 g]

### **OPTIONS: Choose one of the following,**

**可选: 其中任一**

<b>Radio Network:</b> 无线电网络:	1500ft [450M] up to 20miles [32.2km] 1500英尺 (450米) 到20英里 (32.2公里)
<b>Local Data Storage:</b> 本地数据存储:	Data recording media; CF card, data capacity; 512M 数据记录媒介: CF卡, 数据存储容量512M
<b>Shielding And Collimators:</b> 屏蔽和准直仪	



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