

**NANO SECOND PULSE X-RAY
PORTABLE ION CHAMBER**
纳秒 X-ray 便携电离室
Model – TBM-IC-PULSE-X

FEATURES:特点

- PULSED X-RAY RESPONSE
脉冲X-Ray响应
- **MEETS 10CFR 34.25 REQUIRMENTS**
符合核管会要求
- MEETS AND EXCEEDS 100 R/h (other ranges available)
达到并超过100 R/h (可选其它量程)
- DIGITAL READOUT:
6 digit-rate, 8 digits integrate
数字读数, 6位数计数率, 8位总计数
DOSE RATE & TOTAL DOSE READ OUT
读出剂量率&总剂量
- LIGHTWEIGHT 26 oz.
轻量26盎司
- FLAT RESPONSE - SEALED AIR ION CHAMBER
平坦响应-密封空气电离室
- SEES AXIALLY BELOW 5 KEV GAMMA OR X-RAY
可见同轴5KEV以下伽马或X-ray
- SEES HIGH ENERGY UP TO 10 MeV & ABOVE
可见10 MeV及以上高能量
- SEES BETA, GAMMA, X-RAY, POSITRONS
可见 β γ x 正电子
- FAST RESPONSE
快速响应
- **IP64**
防护等级
- **CE MARK**
CE认证



APPLICATION: 应用

Whenever a fast, sensitive ion chamber instrument is needed, the **TBM-IC-PULSE-X** is the latest in a series. These portable ion chambers are now smaller and lighter.

Based on stable, essentially drift-free electrometer technology.



TECHNICAL ASSOCIATES

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US NUCLEAR CORP

NANO SECOND PULSE X-RAY PORTABLE ION CHAMBER 纳秒 X-ray 便携电离室 Model – TBM-IC-PULSE-X

TBM-IC-PULSE-X是系列里最新版，快速灵敏，这些便携式电离室小巧轻量。
基于稳定的基本上无漂移的静电计技术。

Especially useful in **Non-Destructive Testing** or other **Industrial or Medical** applications where **pulsed x-rays** are used.

尤其适用于使用脉冲X-rays无损检测或其它工业，医疗行业应用

PULSED X-RAY RESPONSE:

脉冲X-Ray响应

TBM-IC-PULSE-X is the **ONLY** radiology imaging portable ion chamber that will detect nanosecond pulsed x-rays. It will accurately measure the integrated Total Dose from pulsed x-ray machines over a wide range of pulse widths and repetition rates.

TBM-IC-PULSE-X是唯一的用于辐射学影像测量纳秒脉冲x-ray的便携式电离室。此仪器精确测量宽量程脉冲宽度和重复率条件下的脉冲X光机总剂量

This monitor also measures low energies and short pulses that other survey meters ignore to the detriment of worker health.

此监测仪也测量其它测量仪忽略的但对工人健康有影响的低能和短脉冲

DESCRIPTION: 描述

The **TBM-IC-PULSE-X** consists of a 3" dia air ion chamber coupled to a stable solid state MOSFET input electrometer with built in Analog to Digital converter to read out directly in mR/h or total mR.

Rate range is 0.01 R/h to 100 R/h in a single range.

Dose range is 0.001R - 100R in a single range. Other Ranges are also available.

此仪器电离室直径2"，连接到稳定的固态MOSFET输入静电计中，模拟-数字转换器直接读出mR/h或总计数mR，计数率量程0.01 R/h - 100 R/h单量程。总剂量单量程0.001R - 100R，可选择其它量程

- **MEETS 10CFR 34.25 - FEDERAL REQUIRMENTS FOR RADIATION SURVEY INSTRUMENTS**
- 符合核管会（10CFR 34.25）-美国联邦对辐射测量仪规定

SPECIFICATIONS: 规格

PULSED X-RAY RESPONSE

脉冲X-Ray响应

Total Dose: 总剂量	1 mR to 100 R in a single range (8 digits) 单量程1 mR - 100 R (8位数)
Dose Rate Range: 剂量率量程	1 mR/hr to 10,000 mR/hr (6 digits) or 10 mR/h to 100,000 mR/h
Pulse Width Range: 脉冲宽度	20 nano-seconds to continuous emission 20纳秒-连续发射



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Repetition Rates: Single pulse to 1000/second and above
重复率 单个脉冲到1000/秒以上

Wide Energy Range: 2KeV to 10Mev & above
宽能量范围

High Dose Limits: Per customer specification*
高剂量限值 用户订购时选择

User should inform TA of highest-expected:
10-second, total-dose exposure
用户应通知TA公司其期待的上限：10秒，总剂量辐射

***Note:** TA also makes TBM ion chambers that measure up to 10 million R/hr
注：TA公司也生产TBM电离室，测量达到 10^6 R/hr

DETECTOR: Sealed Air ion chamber 3" dia.
Internal volume 50 cc
探测器 密封空气电离室直径3', 内部容积50cc

Inside Wall: Plastic plus graphite lining
内壁 塑料+石墨里衬

Cap: Removable protective cap
帽 可拆卸保护帽

Window: 2.3" dia. x 0.5 mg/cm² Kapton.
窗

ELECTRONICS:

Readout: LCD 8 digits with backlight
读数 LCD 8位数带背景灯

Count Lamp: Green Flashing LED
计数灯 绿色闪烁LED

Over-range: Red LED Indicator
过量程 红色LED指示

Audio Alarm: User settable anywhere within TBM range
声音报警 TMB量程内用户设定

Electrometer: Solid State MOSFET input.
静电计 固体MOSFET输入

Electronics: Analog to Digital LCD drivers.
电子学 模拟-数字转换器LCD驱动

FAQ



RATE MODE – GREEN LIGHT
剂量率模式-绿灯



PULSE MODE – RED LIGHT
总计数模式-红灯



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Batteries: NEDA 15A, 6 ea. (AA)– 200 hour life.
NEDA CR-1220 - 7 years life.
电池: NEDA 15A, 6节 AA 200小时寿命
NEDA CR-1220,7年寿命

WEIGHT & DEMENSIONS:

Dimensions: 5-1/2" x 3-1/2" x 8" including handle.
尺寸

Weight: 2.9 lbs. complete with batteries.
重量

Options: 选购

Other Rate or Integrated Ranges 其它计数率或总剂量量程

Other Readout Units such as Si units: Sv and Sv/h.其它读出单位如Sv, Sv/h

Chamber sleeves or Caps 电离室袖套或帽

X-Ray-SLV is X-Ray compliance sleeve with 10cm² aperture.

带 10cm² 光圈 X-Ray 符合套的 X-Ray-SLV



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NAVY TEST RESULTS TBM-IC-PULSE-X with TBM-IC-PULSE-X Prototype

INTEGRATE MODE						
X-RAY SOURCE	PULSES/SEC	DISTANCE	FIELD TLD mR	TBM-IC-MVR - Prototype	DEVIATION	TBM-IC-Pulse-X
XR-200	198	24"	145	115.6	-20%	±5%
	198	48"	41.2		-29%	
XR-300	198	24"	228	1.89	-18%	±8%
	198	48"	2.28		-17%	
LR-FLASH	10	24"	150	123	-18%	±8%
	10	48"	22	19	-14%	
BETATRON	7.5 MeV 45 sec	4 meters	61	30.75	-50%	±12%
NOTE: other brands also read low on BetaTron. Navy admits TLD might be at fault.						
			DOSE	DOSE		
Cs-137			5 mR	9 mR		
Cs-137			500 mR	500 mR	GOOD	
			1,000 mR	1,060 mR	+6%	
Cs-60			500 mR	500 mR	GOOD	
Cs-60			1,000 mR	1,060 mR	GOOD	
DOSE RATE MODE						
H-100 H-60			100 mR/hr 300 mR/hr 2R/hr	130 390 2.6	+30% +30% +30%	
NAVY COMMENTS / COMPLAINTS						
COMPLAINT			SOLUTION			
Microphonics			Protect the window with screen when window is tapped			
TA SUCCESS	ITEM					
	Battery Life		OKAY			
	Weight		OKAY			



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