



TBM-IC-PULSE-X

Nanosecond Pulse X-Ray Portable Plasma Chamber®

Model: TBM-IC-PULSE-X

now smaller and lighter. Based on stable, essentially drift-free electrometer technology.

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

Features

- Pulsed X-Ray Response
- **Meets 10CFR 34.25 Requirements**
- **Meets and Exceeds** 100 R/h
(Other Ranges Available)
- Digital Readout:
6 Digit-Rate, 8 Digit Integrate
Dose Rate & Total Dose Read Out
- Lightweight 26 oz
- Flat Response - Sealed Air Plasma Chamber
- Sees Axially Below 5 KEV Gamma or X-Ray
- Sees High Energy Up to 10 MeV & Above
- Sees Beta, Gamma, X-Ray, Positrons
- Fast Response
- **IP64**
- **CE Mark**

Application

Whenever a fast, sensitive instrument is needed, the **TBM-IC-PULSE-X** with **TA's Plasma Chamber®** is the latest in a series. These portable plasma chambers are

Pulsed X-Ray Response

TBM-IC-PULSE-X is the **ONLY** radiology imaging portable plasma 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.

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

Description

The **TBM-IC-PULSE-X** consists of a 3" diameter plasma 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 50 R/h in a single range. Dose range is 0.001R - 10R in a single range. Other Ranges are also available.

**Meets 10CFR 34.25 - Federal Requirements For
Radiation Survey Instruments**



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Pulsed X-Ray Response

Dose Rate Range:	1 mR/h to 50 R/h in a single range (8 digits)
Total Dose:	1 mR to 10 R (6 digits) in a single range
Pulse Width Range:	20 nano-seconds to continuous emission
Repetition Rates:	Single pulse to 1000/second and above
Wide Energy Range:	2 KeV to 10 MeV and above
High Dose Limits:	2 KeV to 10 MeV and above

User should inform TA of **highest-expected**: 10-second, total-dose exposure

Detector:	Sealed Air ion chamber 2" dia. Internal volume 50 cc
Inside Wall:	Plastic plus graphite lining
Cap:	Removable protective cap
Window:	1.7" dia. x 0.5 mg/cm ² Kapton



Rate Mode – Green Light

Electronics

Readout:	LCD 8 digits with backlight
Count Lamp:	Green Flashing LED
Over-Range:	Red LED Indicator
Range Rate:	6 digit 0.01 R/h to 100R/h in a single range
Audio Alarm:	User settable anywhere within TBM range
Electrometer:	Solid State MOSFET input.
Electronics:	Analog to Digital converter LCD drivers
Batteries:	NEDA 15A, 6 ea. (AA)– 200 hour life NEDA CR-1220 - 7 years life
Dimensions:	5-1/2" x 3-1/2" x 8" including handle
Weight:	2.9 lbs. complete with batteries



Pulse Mode – Red Light

Options:

- Other Rate or Integrated Ranges
- Other Readout Units such as SI units: Sv and Sv/h.
- Chamber sleeves or caps
- X-Ray-SLV is X-Ray compliance sleeve with 10cm² aperture.



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Model: TBM-IC-PULSE-X

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	
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			100 mR/hr	130	+30%	
H-60			300 mR/hr	390	+30%	
			2R/hr	2.6	+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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