



LOW COST MONITOR FOR ULTRA SENSITIVE DETECTION OF AIRBORNE TRITIUM

The **Model 347** is a low-cost, high sensitivity general purpose tritium monitor for reliable measurements as low as $0.5 \mu\text{Ci}/\text{m}^3$ ($0.02 \text{ MBq}/\text{m}^3$) even in the presence of significant gamma fields.

QUADRUPLE 2L IONIZATION CHAMBERS FOR BEST SENSITIVITY AND GAMMA COMPENSATION

The Model 347 utilizes four 2L Kanne type ionization chambers arranged in a cruciform pattern to provide unsurpassed sensitivity and omnidirectional gamma compensation. Virtually no offset in gamma fields all the way up to 30 mR/hr.

A separately mounted pump and flowmeter system includes both HEPA and Ultra-Pure filters to ensure the sample is free of particulates.

The Model 347 is designed and built to distinguish tritium against natural radon background using proprietary radon recognition and elimination circuitry. Instruments that do not have this feature will exhibit a noisy zero response.

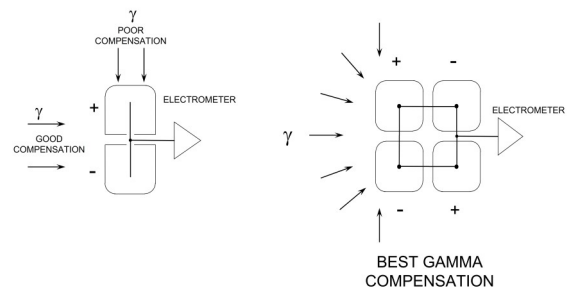
With radon rejection, the Model 347 ignores radon and is therefore fast, sensitive, and accurate. Once adjusted, it is long-term zero stable, and due to special electrometer design, the span calibration is permanently stable.

The only maintenance required for Model 347 is periodic service of the pump and replacement of the dust filter.

Applications:

- ◆ Room air
- ◆ Stacks, hoods, or other effluent passages
- ◆ Low level tritium monitoring
- ◆ Superior gamma compensation & stability

GAMMA COMPENSATION



Cruciform arrangement provides omnidirectional gamma compensation

AVAILABLE OPTIONS:

- ◆ Remote Alarm and Display Units
- ◆ Tritium Gas Calibrator
- ◆ Calibration Resistor
- ◆ RS232, USB, Ethernet Output
- ◆ Logarithmic Output
- ◆ 4-20 mA Output
- ◆ Stainless Steel Wheeled Cart

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Model 347 Ultra-Sensitive Tritium in Air Monitor

TECHNICAL SPECIFICATIONS

RANGES	<u>Available in the following ranges:</u> a) 1 to 19,999 $\mu\text{Ci}/\text{m}^3$, MDA is 0.5 $\mu\text{Ci}/\text{m}^3$ b) 0.1 to 1,999.9 $\mu\text{Ci}/\text{m}^3$, MDA is 0.5 $\mu\text{Ci}/\text{m}^3$ c) 0.01 to 199.99 MBq/ m^3 , MDA is 0.02 MBq/ m^3
DISPLAY	4 ½ digit panel meter
ACCURACY	$\pm 10\%$ of reading, 1 $\mu\text{Ci}/\text{m}^3$ whichever is greater
STABILITY AND DRIFT, LONG TERM	$\pm 0.5 \mu\text{Ci}/\text{m}^3$, ambient temperature, after warm-up
NOISE	$< 1 \mu\text{Ci}/\text{m}^3$, 1 sigma, with 20 second time constant
GAMMA COMPENSATION	second pair of ionization chambers of equal volume, mounted in cruciform pattern, serves to cancel effects of external gamma fields, total compensation volume: 4,000 cm^3
RESPONSE RATE ELECTRONIC	two linear time constants, 30 seconds for $< 80 \mu\text{Ci}/\text{m}^3$ 3 seconds for $> 80 \mu\text{Ci}/\text{m}^3$
WARM-UP TIME	less than 5 minutes required for high voltage power supplies to stabilize
ALARM SYSTEM	single alarm, with set point adjustable from 1 to 1000 $\mu\text{Ci}/\text{m}^3$
IONIZATION CHAMBER MEASUREMENT VOLUME	measuring: 2900 cm^3 total wetted: 4000 cm^3
ENVIRONMENTAL	storage: -40°C to $+60^\circ \text{C}$ operating: 0°C to $+50^\circ \text{C}$ 0 to 95 % R.H. non-condensing
FLOWMETER	0 -10 LPM adjustable rotameter
DIMENSIONS	8.8" [223mm] H x 19.0" [483mm] W x 16.0" [406mm] D
WEIGHT	45 lbs [20.4 kg]
POWER	115 VAC or 240 VAC 50/60 Hz

DUST FILTER, FLOWMETER, and PUMP separately mounted

DIMENSIONS	7.0" [178mm] H x 17.0" [432mm] W x 16.0" [406mm] D
WEIGHT	20 lbs [9.1 kg]

OPTIONS:	<u>Choice of one data output:</u> -RS232, USB, Ethernet, 4-20mA, or logarithmic Output -Stainless Steel Wheeled Cart
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Released 10/26/20