

# Model 357RM Tritium in Air Monitor



## LOW COST MONITOR FOR DETECTION AND MEASUREMENT OF AIRBORNE TRITIUM

The **Model 357RM** is Overhoff's basic, low-cost fixed tritium in air monitor. Suitable for rack-mount or table-top use, this general purpose monitor features the essential components for the stable measurement of tritium: dual 2L ionization chambers with gamma compensation, pump system with a HEPA filter and flow-meter, radon/alpha pulse suppression, and a single adjustable alarm set-point with audible/visible alarm indicators.

The Model 357RM tritium monitor is stable down to  $1 \mu\text{Ci}/\text{m}^3$  ( $0.04 \text{ MBq}/\text{m}^3$ ). (1 S.D.)

OTC tritium monitors are 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 357RM 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 357RM is periodic service of the pump and replacement of the dust filter.

The sensitivity and noise level of Model 357RM is superior to current competitive instrumentation by an order of magnitude.

### Applications:

- ◆ Room air
- ◆ Stacks, hoods, or other effluents
- ◆ Process piping
- ◆ Glove boxes, and similar

### AVAILABLE OPTIONS:

- ◆ Remote Alarm and Display Units
- ◆ Low Flow Alarm
- ◆ Tritium Gas Calibrator
- ◆ Calibration Resistor
- ◆ RS232, USB, Ethernet Output
- ◆ Logarithmic Output
- ◆ 4-20 mA Output
- ◆ HTO: Gas Ports for noble gas compensation
- ◆ Wire-Grid Chamber to reduce tritium contamination

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## TECHNICAL SPECIFICATIONS

<b>RANGE</b>	<u>Available in the following ranges:</u> a) 1 to 19,999 $\mu\text{Ci}/\text{m}^3$ , MDA is 1 $\mu\text{Ci}/\text{m}^3$ b) 0.01 to 199.99 $\text{MBq}/\text{m}^3$ , MDA is 0.04 $\text{MBq}/\text{m}^3$ c) 0.1 to 1,999.9 DAC where 1 DAC=10 $\mu\text{Ci}/\text{m}^3$ d) 1 to 19,999 $\mu\text{Sv}/\text{h}$ , MDA is 1 $\mu\text{Sv}/\text{h}$  Extra-sensitive option: e) 0.1 to 1,999.9 $\mu\text{Ci}/\text{m}^3$ , MDA is 1 $\mu\text{Ci}/\text{m}^3$
<b>DISPLAY</b>	Digital Meter, 4 1/2" digit LED
<b>ACCURACY</b>	$\pm 10\%$ of reading, $\pm 1 \mu\text{Ci}/\text{m}^3$ , whichever is greater
<b>STABILITY AND DRIFT, LONG TERM</b>	$\pm 1 \mu\text{Ci}/\text{m}^3$ , ambient temperature
<b>NOISE</b>	$\pm 1 \mu\text{Ci}/\text{m}^3$ , 2 sigma, with 20 second time constant
<b>GAMMA COMPENSATION</b>	second ionization chamber of equal volume, coaxially mounted, serves to cancel effects of external gamma fields
<b>RESPONSE RATE</b>	two linear time constants 20 seconds for measurements below 80 $\mu\text{Ci}/\text{m}^3$ 3 seconds for measurements above 80 $\mu\text{Ci}/\text{m}^3$
<b>ALARM SYSTEM</b>	single alarm, with set point adjustable from 1 to 1,000 $\mu\text{Ci}/\text{m}^3$
<b>INDICATORS</b>	acoustic signaler, red LED
<b>IONIZATION CHAMBER VOLUME</b>	measuring: 1,600 $\text{cm}^3$ total wetted: 2,000 $\text{cm}^3$
<b>ION TRAP</b>	Kanne Type, coaxial integral
<b>PORTS</b>	hose barb fittings for 3/16" I.D. vinyl tubing
<b>FLOWMETER</b>	0-10 LPM adjustable rotameter
<b>DUST FILTER AND PUMP</b>	high efficiency respirator type cartridge. long life continuous duty oscillating piston positive displacement pump
<b>ENVIRONMENTAL</b>	storage: $-40^\circ\text{C}$ to $+60^\circ\text{C}$ Operating: $0^\circ\text{C}$ to $+50^\circ\text{C}$ 0 to 95 % R.H. non-condensing
<b>POWER</b>	115 VAC or 240VAC, 50/60 Hz
<b>PHYSICAL CABINET</b>	19 " rack mount, aluminum sheet metal
<b>DIMENSIONS</b>	8.8" [223mm] H x 19.0" [483mm] W x 6.0" [406mm] D
<b>WEIGHT</b>	40 lbs. [18.2Kg]
<b>OPTIONS</b>	-Plate-out proof wire-grid chamber to reduce tritium contamination -For HTO only measurement: Gas ports for noble gas compensation -Low flow alarm <u>-Choice of one data output:</u> RS232, USB, Ethernet, 4-20mA, or logarithmic output

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