

Model **357RM-C14** Carbon-14 in Air Monitor



MODEL 357RM-C14

LOW COST MONITOR FOR DETECTION AND MEASUREMENT OF AIRBORNE C-14 (CO₂)

The **Model 357RM-C14** is Overhoff's basic, low-cost fixed C-14 version air monitor based on the popular Model 357RM. Suitable for rack-mount or table-top use, this general purpose monitor features the essential components for the stable measurement of C-14: dual 2L ionization chambers for 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-C14 air monitor is stable down to 0.1 $\mu\text{Ci}/\text{m}^3$ (0.01 MBq/m³). (1 S.D.)

OTC tritium monitors are designed and built to distinguish C-14 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-C14 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-C14 is periodic service of the pump and replacement of the dust filter.

The sensitivity and noise level of Model 357RM-C14 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
- ◇ Carbon-14 Air Monitoring

AVAILABLE OPTIONS:

- ◇ Remote Alarm and Display Units
- ◇ Low Flow Alarm
- ◇ Calibration Resistor
- ◇ RS232, USB, Ethernet Output
- ◇ Logarithmic Output
- ◇ 4-20 mA Output
- ◇ HTO: Gas Ports for noble gas compensation

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TECHNICAL SPECIFICATIONS

RANGE	<u>Available in the following ranges:</u> a) 0.1 to 1,999.9 $\mu\text{Ci}/\text{m}^3$ b) 0.01 to 199.99 MBq/m^3
DISPLAY	Digital Meter, 4 1/2" digit LED
ACCURACY	$\pm 10\%$ of reading, $\pm 0.1 \mu\text{Ci}/\text{m}^3$, whichever is greater
STABILITY AND DRIFT, LONG TERM	$\pm 0.2 \mu\text{Ci}/\text{m}^3$, ambient temperature
NOISE	$\pm 0.2 \mu\text{Ci}/\text{m}^3$, 2 sigma, with 20 second time constant
GAMMA COMPENSATION	second ionization chamber of equal volume, coaxially mounted, serves to cancel effects of external gamma fields
RESPONSE RATE	two linear time constants 20 seconds for measurements below $80 \mu\text{Ci}/\text{m}^3$ 3 seconds for measurements above $80 \mu\text{Ci}/\text{m}^3$
ALARM SYSTEM	single alarm, with set point adjustable from 0.1 to $100 \mu\text{Ci}/\text{m}^3$
INDICATORS	acoustic signaler, red LED
IONIZATION CHAMBER VOLUME	measuring: 1,600 cm^3 total wetted: 2,000 cm^3
ION TRAP	Kanne type, coaxial integral
PORTS	hose barb fittings for 3/16" I.D. vinyl tubing
FLOWMETER	0-10 LPM adjustable rotameter
DUST FILTER AND PUMP	high efficiency respirator type cartridge. long life continuous duty oscillating piston positive displacement pump
ENVIRONMENTAL	storage: -40°C to $+60^\circ \text{C}$ Operating: 0°C to $+50^\circ \text{C}$ 0 to 95 % R.H. non-condensing
POWER	115 VAC or 240VAC, 50/60 Hz
PHYSICAL CABINET	19" rack mount, aluminum sheet metal
DIMENSIONS	8.8" [223mm] H x 19.0" [483mm] W x 6.0" [406mm] D
WEIGHT	40 lbs. [18.2Kg]
OPTIONS	-Plate-out proof wire-grid chamber to reduce contamination -For HTO only measurement: Gas ports added 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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