

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



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

Overhoff Technology Corporation

1160 U.S. Highway 50, Milford, Ohio, 45150-9705 USA

Telephone: 513 248 2400 Fax: 513 248 2402

Email: sales@overhoff.com www.overhoff.com



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

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 |

Released 4/28/21