

# CHEMICAL, BIOLOGICAL AND RADIATION SENSORS ROBUST WATER SAFETY MONITOR

Model Series ~ MiniTect-H2O

MiniTect-H2O-SC (Suitcase) & MiniTect-H2O-BP (Backpack)

## FEATURES:

- SOLAR POWERED
- SIMPLIFY YOUR TESTING – ALL IN ONE SYSTEM
- MEASURES RADIONUCLIDES IN WATER DOWN TO MILITARY DRINKING WATER STANDARDS
- 4 – 6 RADIONUCLIDE TESTS
- THE WORLDS ONLY ALPHA-BETA IN WATER SENSORS
- REAL TIME, IN-LINE, CONTINUOUS, TRUE, FAIL-SAFE DESIGN WITH ALARM DETECTS ALPHAS, BETAS AND GAMMAS, TRITIUM, RADON, RADIUM URANIUM
- 6 MAJOR CHEMICAL TESTS: DETECTS CHLORIDE, NITROGEN, TOC
- COLIFORM (TOTAL FECAL & E-COLI BACTERIA)
- NO REAGENTS REQUIRED
- EASY INSTALLATION, CALIBRATION
- USB PORT FOR DATA DOWNLOAD TO PC OR TABLET



**MiniTect-H2O-SC  
Suitcase Model**



**MiniTect-H2O-BP  
Backpack Model**

## APPLICATION:

MONITOR COMMUNITY DRINKING WATER & WASTEWATER;  
IN GROUND AND SURFACE WATERS, AGAINST RADIOACTIVE  
AND OTHER CHEMICAL & BIOLOGICAL CONTAMINANTS.

- TERRORIST CONTAMINATION
- INDUSTRIAL CONTAMINATES: LABORATORY, POWER PLANT, AGRICULTURAL
- INDUSTRIAL ACCIDENT/ILLEGAL DUMPING
- RESIDUAL TREATMENT ADDITIVES

**Measures down to Military Drinking Water Standards and Below  
for several waterborne hazards.**



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## PROBLEM:

Water sources are vulnerable to many risks of accidental or intentional contamination by individuals, groups, industry, medical labs & hospitals, terrorist, naturally occurring radioactive materials (NORM) and residual treatment additives.

The majority of water sources for populous communities are from surface water: reservoirs, lakes, rivers, etc., all of which can be easily contaminated.

Water districts and wastewater facilities have not had the option of a robust real-time monitor for radionuclides. Only individual monitors for specific chemical and biological contaminants have been available.

This lack of a comprehensive, robust detection monitor has seriously hampered the development of an Online Contaminant Monitoring System (OSMS), needed to protect the nation's water

## SOLUTION:

The **MiniTect Series** combines several detection goals into one monitor.

The **MiniTect Series** continuously monitors radionuclides using both ion exchange resin beads and particulate filter.

Chloride, TOC, and Nitrogen are monitored with detectors integrated within the **MiniTect Series** system.

Additional monitoring is available and will be tailored to specific needs on request.

Electronics are accessible via USB port with data download at testing site to PC or Tablet.

MEASUREMENT	SENSITIVITY	TOP OF RANGE	SENSOR	MAINTENANCE	COMMENTS
FLOW	0.5% of Reading	0.06 gpm – 2 gpm	Volumetric Flow	None	10 - 36 VDC Input
TEMPERATURE	0.15	32 - 1000 F	RTD	Periodic Calibration	10 - 36 VDC Input
PRESSURE	0.2% Full Range	0-60 psi	Ceramic Diaphragm	None	10 - 36 VDC Input

## System flow rate

- **Standard:** 100 to 1,000 ml/minute
  - **Optional:** Wide range of flow rates available
  - **Sample temperature:** Up to 80° F liquid- **standard** (Optional to 115° F)
  - **Ambient temperature:** 35 - 100 ° F
- Optional:** Cooler model **Cool-33** is used in case of higher sample or ambient temperatures.

## Electronics

- **Internal Electronics:** USB port
- **Data Down Load:** PC or Tablet (User choice)



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## MINITECT – SC – SUITCASE \*

Size and Weight: Minimum configuration \*

- **Dimensions:** 20" wide X 26" deep X 6.6" high, plus laptop pc
- **Hand Carry Weight:** 40 lbs
- **Roller Case**

## MINITECT - BP- BACKPACK SYSTEM (2) Backpacks = (1) System \*

Size and Weight: Minimum configuration \*

- **Dimensions:** 2 each 12" wide X 24" deep X 8" high fits in optional backpack plus laptop pc
- **System Weight:** 25 lbs per backpack, Includes solar panels and batteries

\* Minimum configuration includes working system with only the Alpha, Beta, and Gamma radiation sensors.

\* Addition of Chem and Bio sensors will add to size and weight

## CHEMICAL & BIOLOGICAL SPECIFICATIONS

MEASUREMENT	SENSITIVITY	RANGE	SENSOR	EPA DRINKING WATER STANDARD	MAINTENANCE / ACTION
TOTAL CHLORIDE	0.5 mg/l	0.5 – 18,000 mg/l	Ion-Selective Electrode (ISE)	4 mg/l	6 Month Sensor Life
PH		0 - 14	PH Electrode	6-6.5 mg/l (Recommended, not enforceable)	Occasional Cleaning 5 Year Sensor Life
CONDUCTIVITY	>0 uS/cm3	>0-5,000 µS/Cm3	Graphite Electrode	n/a	Occasional Cleaning 5 Year Sensor Life
TURBIDITY	>0 FNU	>0-3,000 FNU	Optical Sensor	0.3 FNU	Occasional Cleaning 3 Year Sensor Life
OXIDATION REDUCTION POTENTIAL		-999 mV to + 999 mV	PH Electrode	n/a	Occasional Cleaning 5 Year Sensor Life
TOTAL ORGANIC CARBON (TOC)	>0 mg/l	>0 mg/l – 400 mg/l	Proprietary	n/a	Occasional Cleaning 5 Year Sensor Life
Coliform Counts (Total Fecal and E-Coli Bacteria)	1 – 100 count/ml	1 – 100 count/ml	Proprietary	0 counts (Based on Testing procedure)	Occasional Cleaning 5 Year Sensor Life



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### RADIOLOGICAL SPECIFICATIONS

MEASUREMENT	SENSITIVITY	TOP OF RANGE	SENSOR	MAINTENANCE
Gross Alpha	15 pCi/liter	10,000 pCi/liter	Crushed Scintillation Bed of Crystals preceded by Radon and Uranium traps	6 months for finished water Replace De-ionizer cartridges
Beta	1,000 pCi/liter	50 µCi/liter	Crushed Scintillation Bed of Crystals	6 months for finished water Replace De-ionizer cartridges
Gamma Dissolved	5,000 pCi/liter	50 µCi/liter	Nal Gamma Spec Scintillation Crystal	3 to 6 months for finished water. Replace Particulate Filter Cartridge
Gamma Particulate	5,000 pCi/liter	50 µCi/liter	Nal Gamma Spec Scintillation Crystal	3 to 6 months for finished water. Replace Particulate Filter Cartridge

MEASUREMENT	SENSITIVITY RANGE	TOP OF RANGE	SENSOR	MAINTENANCE / ACTION	EPA MAX LEVELS FOR DRINKING WATER
Tritium	20,000 pCi/liter	1 Ci/liter	Crushed Scintillation Bed of Crystals	6 Months for Finished Water Replace De-ionizer Cartridges	20,000 pCi/liter
Radon	100 pCi/liter	2000 pCi/liter	Ion Chamber with Water Bubbler--Agitator	3 Months Clean Vapor Trap	Unregulated



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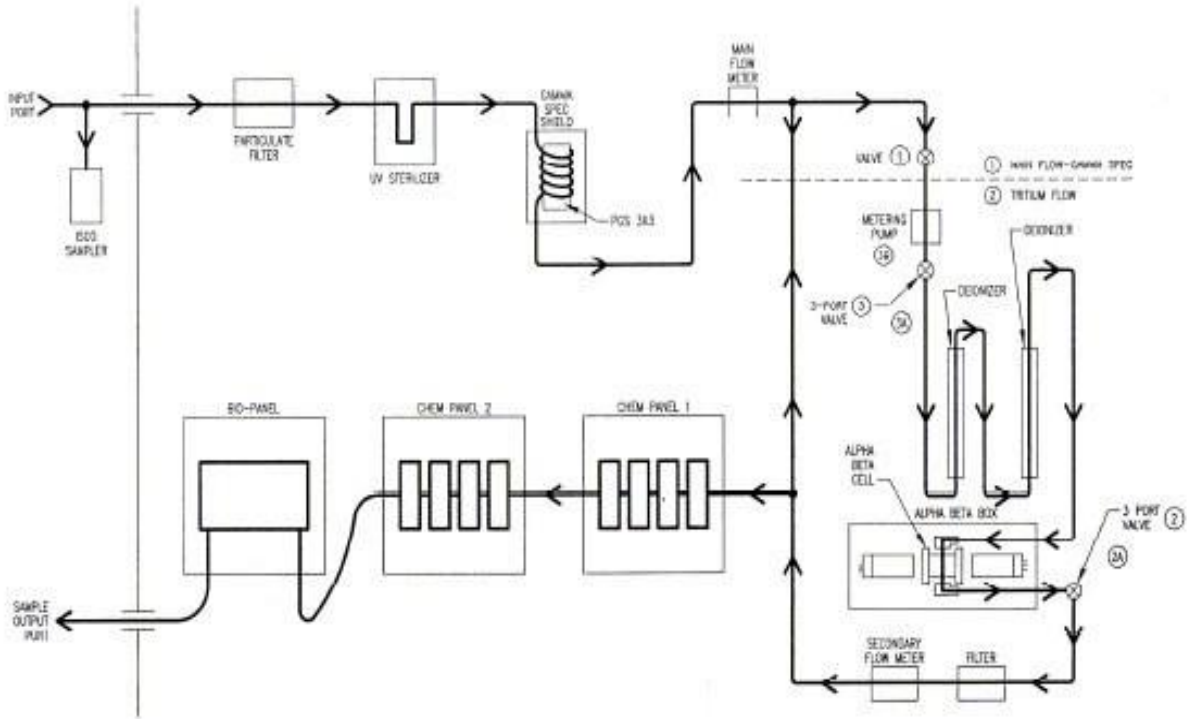
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SSS-33-5FT-R - FLOW CHART DIAGRAM



FLOW CHART OF MINITECT



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# CHEMICAL, BIOLOGICAL AND RADIATION SENSORS

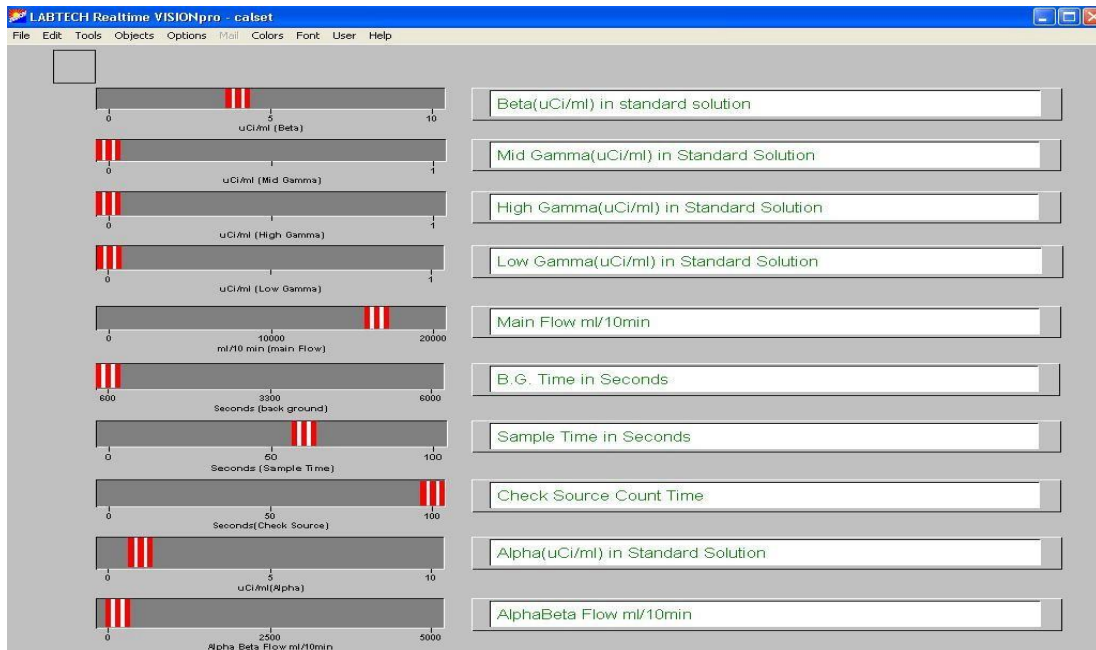
## ROBUST WATER SAFETY MONITOR

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This screenshot allows the user to set all “Alarm Set Points” for all Detector Chambers

### CALIBRATION SET SCREEN



This screenshot Displays & finds both **Background & Source Counts**, and sets Parameters.

### TEST SCREEN



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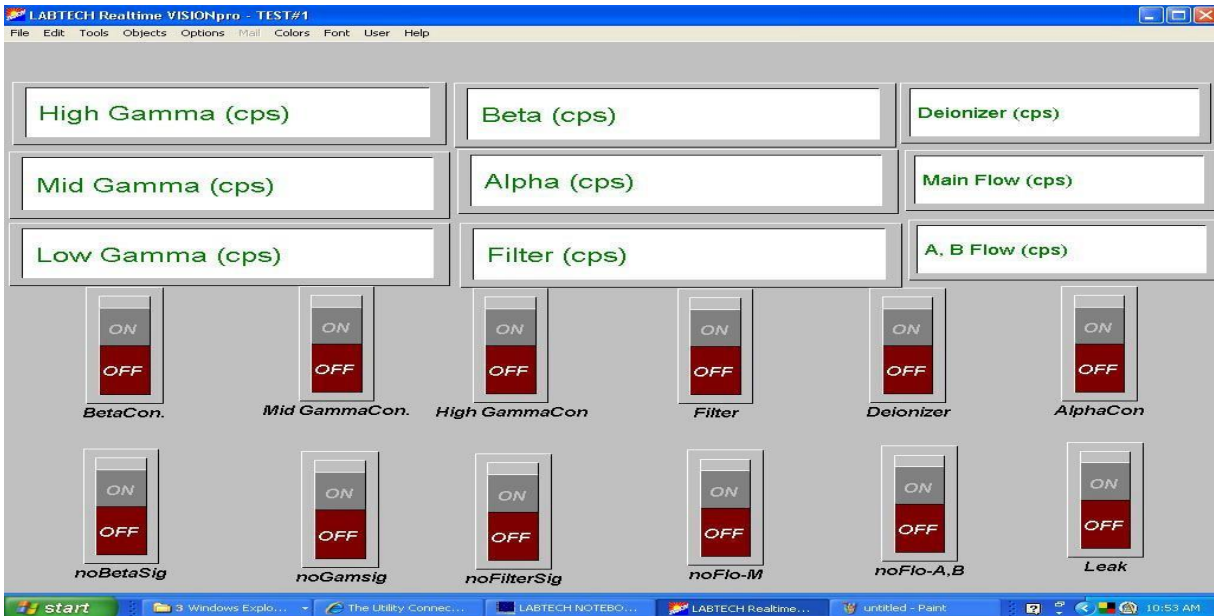
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This is “Test Screen” which allows the user to test Primary Detectors and Functions.

## OPERATE SCREEN



This is the “Main Screenshot” displaying All Functions of the System.



Real - Time  
Air & Water  
Specialists



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