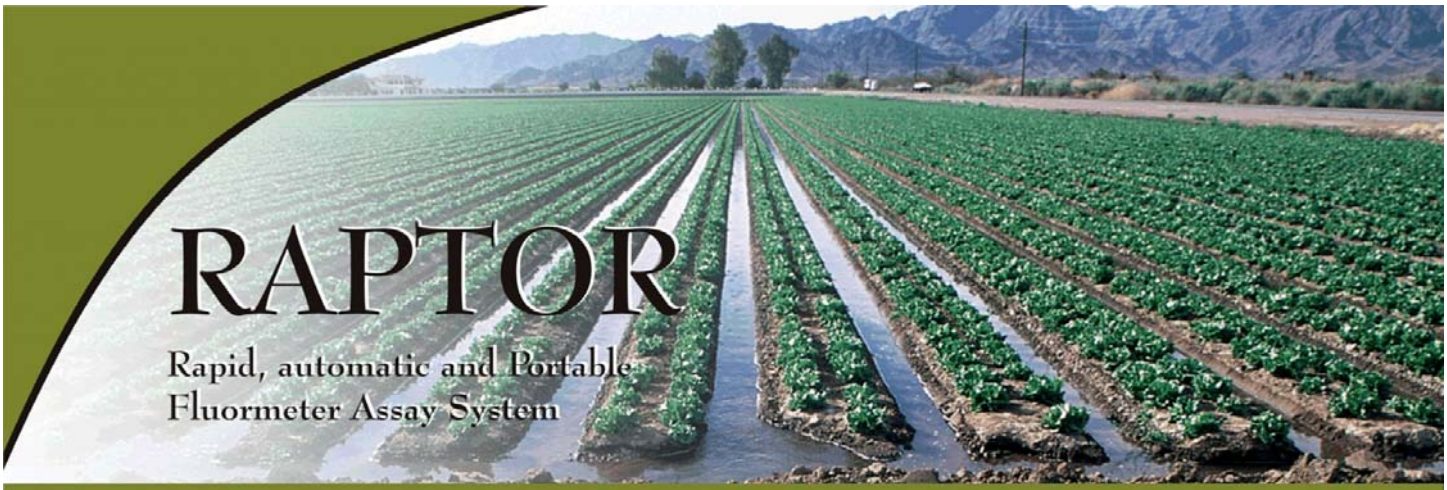

IDENTIFY: 4-Channel Bioidentification System

RAPTOR 4-channel bioassay system.

The RAPTOR™ is a portable, 4-channel fluorometric assay system that can be used for high-sensitivity monitoring of biological agents, toxins, explosives, and chemical contaminants. It is a careful integration of optics, fluidics, electronics, and software into one compact system for use in laboratory settings and field assays. This unit can automatically perform a user-defined, multi-step, assay protocol while simultaneously tracking fluorescently-tagged chemical reactions occurring on the surface of each of the system's four disposable optical waveguide sensors.

Using immunoassay techniques, toxins and markers such as Y. pestis F1 antigen have been detected at levels below 1 ppb from samples of a few hundred microliters. Each waveguide may be functionalized with a different assay, allowing up to four different assays to be run simultaneously. The results of these assays are displayed on a four line x 16 character LCD. The RAPTOR can also be run from a desktop PC, via an RS-232 link, using Windows-based software that is provided with the system.

The RAPTOR uses a disposable plastic coupon containing four injection-molded optical waveguides. These wave-guides are functionalized with the desired chemistry and inserted into the coupon. They are then simultaneously interrogated using 635 nm light while monitoring the return fluorescent signal. To run an assay, the user simply inserts a coupon and presses the Run Assay key. Assays typically take between 10 to 15 minutes and the results are displayed on the four line x 16 character LCD for each of the four waveguides.

Windows-based software allows the user to graphically monitor data recovery while an assay is running.

For more technical information visit www.resrchintl.com.

FEATURES

- Compact, portable system (about the size of a car battery)
- Immunoassay-based biosensor for real time or near real time detection of microbial pathogens
- Typical assay times of 10-15 minutes
- Coupons may be reused if test results continue to be negative
- Successfully used with urine, whole blood, milk, marine water, 10% meat slurries and slurries of human waste.

APPLICATION AREAS

- Water quality monitoring
- Laboratory testing
- Food safety monitoring
- Medical
- Agriculture
- Environmental
- Homeland security
- Mailrooms
- UAV's (Unmanned Aerial Vehicles)

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RAPTOR™ SPECIFICATIONS	
Parameter	**Value**
Use profile	Indoor/outdoor sample collection, transfer, and assay; storage of 63 assay recipes; user in full MOPP gear either walking or in slowly moving HumVee.
Physical size	18.6 cm L x 27.4 cm H x 17.3 cm W
Weight	5.6 kg (w/o battery)
Operating temperature range	1 to 35°C
Storage range	-29 to 66°C
Assay coupon	Four simultaneous assays, disposable, coded for assay identification. Coupon reseals upon removal for archival storage.
Fluids storage	On-board storage of buffer and reagent. Reagent stored at constant temperature in reusable thermal storage module.
Sensitivity	Dependent on analyte, 1 to 10 ppb is typical.
Assay time	Dependent on assay, 9 to 13 minutes is typical.
Data/command entry	Day-night visible keypad and display, usable in MOPP gear.
Visual	Liquid crystal display; display provides positive/negative/retest for each agent.
Communication	RS-232 bi-directional serial link and DB-15 accessory connector.
Data storage	EEPROM retains raw/processed data for over 200 assays.
Batteries	Primary battery BA-5590/U, 1.05 kg (2.3 lb); lifetime 9 to 24 hours.
Humidity	20 to 90%, noncondensing.
Ancillary equipment	Nylon twill photographer's-style case, carry strap compatible with MOPP gear; weight 1.2 kg (2.6 lb.); lump-in-cord power supply.
Accessories support	Three digital input lines and six software-controlled external drivers.

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