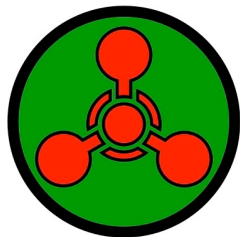# Photon Systems *STANDOFF 200* Analyzer

One Instrument To Detect Them All

Being first on the scene means dealing with unknowns. Other existing real time detectors are incapable of identifying biowarfare agents. Only the *STANDOFF 200* is capable of detecting trace chemical, explosives *and* biowarfare agents on surfaces, in real time, with no reagents or consumables.
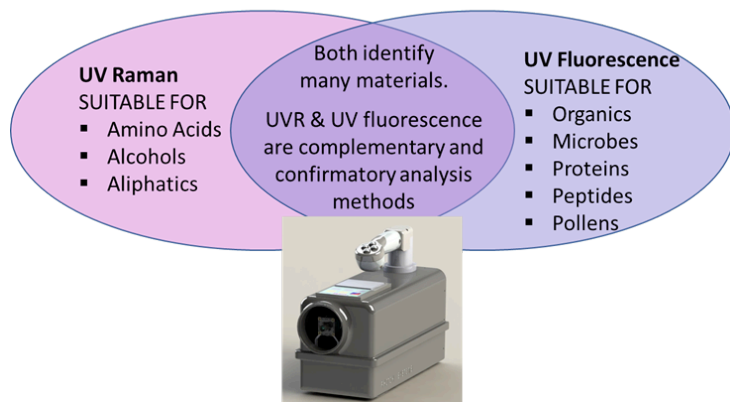

Standoff Safety

Most sensors require touching or handling unknown hazardous materials. For greater safety, the *STANDOFF 200* standoff detection capabilities enable detection at up to 5 meter standoff distances, even in bright sunlight. Now, you can safely identify a substance on a surface without getting near it.

Two Orthogonal Detection Techniques

Many detectors suffer from poor sensitivity and/or incorrect identification due to the use of only one detection technique. The *STANDOFF 200* is the only standoff handheld detector to utilize both deep UV Raman and fluorescence. This enables unsurpassed sensitivity and specificity for detecting a wide range of chemicals, explosives and biological agents. NASA/JPL is using this same technology on Mars to detect organic compounds with SHERLOC detector on the Mars 2020 probe.

1 to 5 m standoff detection in real-time

UV Raman
SUITABLE FOR
- Amino Acids
- Alcohols
- Aliphatics

Both identify many materials.

UVR & UV fluorescence are complementary and confirmatory analysis methods

UV Fluorescence
SUITABLE FOR
- Organics
- Microbes
- Proteins
- Peptides
- Pollens

STANDOFF 200 Analyzer

Integrated Deep UV Raman and Fluorescence Analyzer for Standoff Detection of
Chem, Bio, & Explosives

Standoff Handheld Chem Bio & Explosives Analyzer

The *STANDOFF 200* Analyzer is the first and only fully integrated real-time deep UV Raman and fluorescence analyzer instrument, providing complementary and confirmatory testing in a single handheld device.

Identify a wide range of unknown chemical, biological, and explosive materials on surfaces at standoff distances of 1 to 5 m, in the field, in real time, and in full daylight conditions in a single, hand-held instrument. The Photon Systems *STANDOFF 200* analyzer employs two complementary optical methods, deep UV Raman and fluorescence spectroscopy, without any optical interference from ambient light or due to Raman and fluorescence spectral overlap.

The *STANDOFF 200* is a fully self-contained hand-held point-and-shoot analyzer with ATAK and MFK compatibility which contains a deep UV laser and control electronics, auto-calibrating spectrometer, autofocus telescope for targets from 0.6 to 5+ m, single handed control, wide and narrow field of view context images, and embedded computer with on-board data processing and CBE library and display showing context information and target identification.

Features

Single handed operation: 4-button plus trigger control

Warm-up: < 10s from cold start, 3 s from standby mode

Built-in-test: full functional test of all components on startup

Spectral Calibration: Auto-calibrated on analyzer startup

Two Coaxial Context Cameras: 75° wide angle image, 20mm micro image around laser spot

Autofocused Standoff: 0.6 m to 5+ m

Materials Detected: Chemical, Biological and Explosives

CBE Libraries: Built in unclassified library +SD card libraries

Standoff Distance: 0.5 m to 5+ m in full daylight conditions

Spectral Range: **Raman**: 250 cm^{-1} to 4000cm^{-1}
Fluorescence: 270nm to 320nm

Context Info with Spectral Data: Date/time stamps, GPS, azimuth, distance and two contextual photos

Power Supply: User replaceable 24 V LiPO battery pack (UN/DOT 38.3 rated) or 24 V wall adapter

Communication: WiFi/Bluetooth (to Android/ATAK/MFK), plus Wired USB 3.0

Weight: 10 pounds

Dimensions: 7" W x 11" H x 16" L

Battery Lifetime: >20 hrs in standby, >300 full data sets

Display: Color 1920x1080, 5.9" LCD

Ambient: -40 ^{o}C to +60 ^{o}C, 0-90% humidity, -1 km to +20 km

Shock/Vib: TBD

Ingress Protection: IP67

Robot compatible: ¼ -20 camera thread or dove-tail mount

Maintenance: > 1 year with window clear of debris