

StreetLab & StreetLab Mobile



imagination at work

Beneficios

1. 2-en-1 Identificación:
químicos y biológicos
en un solo instrumento
2. “Apunte y dispare”
con operacion con una
sola mano
3. Operacion Remota via
Wireless
4. Soporte 24/7



Equipos de Emergencia son nuestros usuarios



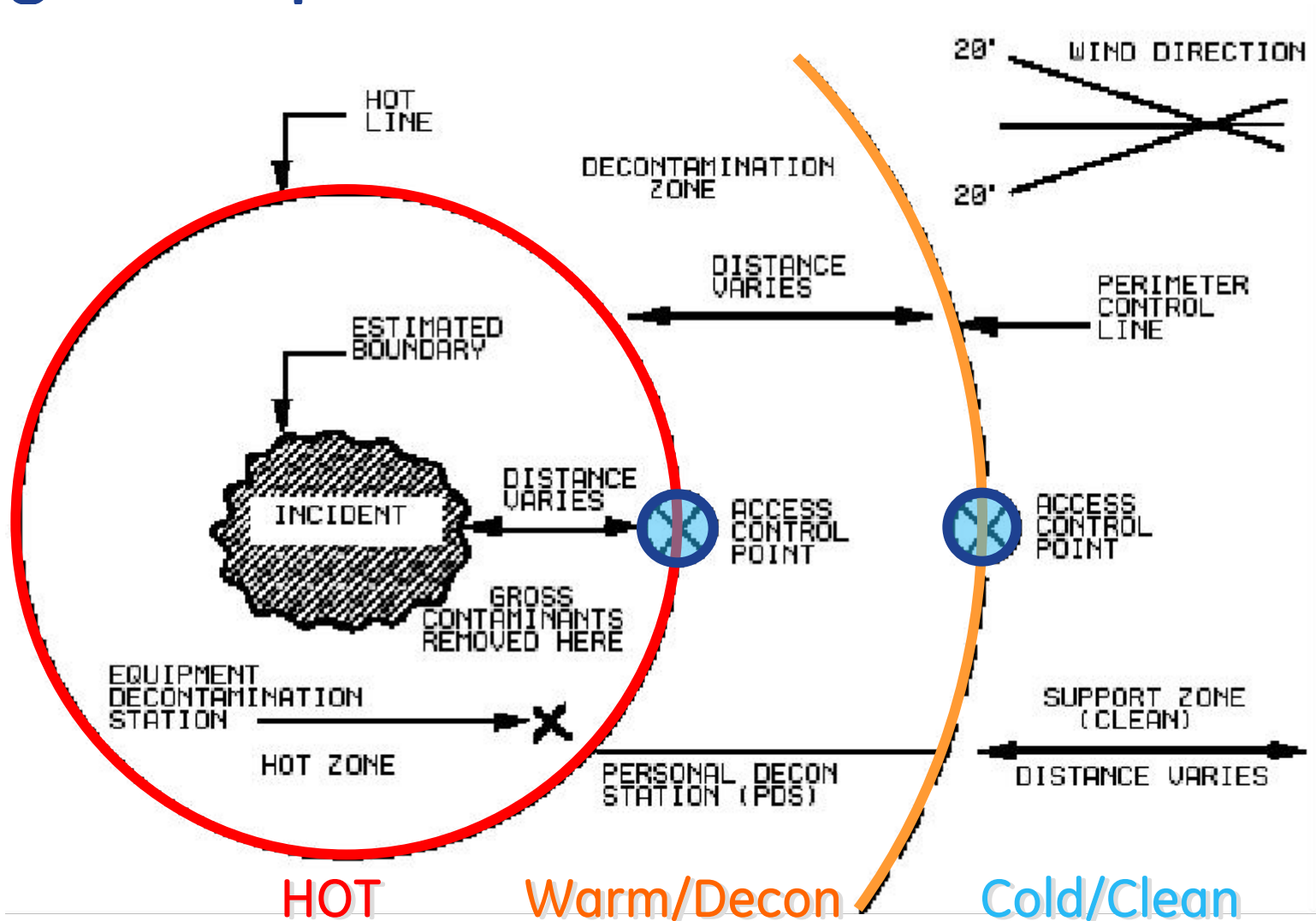
HazMat Teams: Diseñado para facilitar el uso de la A Gear



HazMat Teams: En el Campo



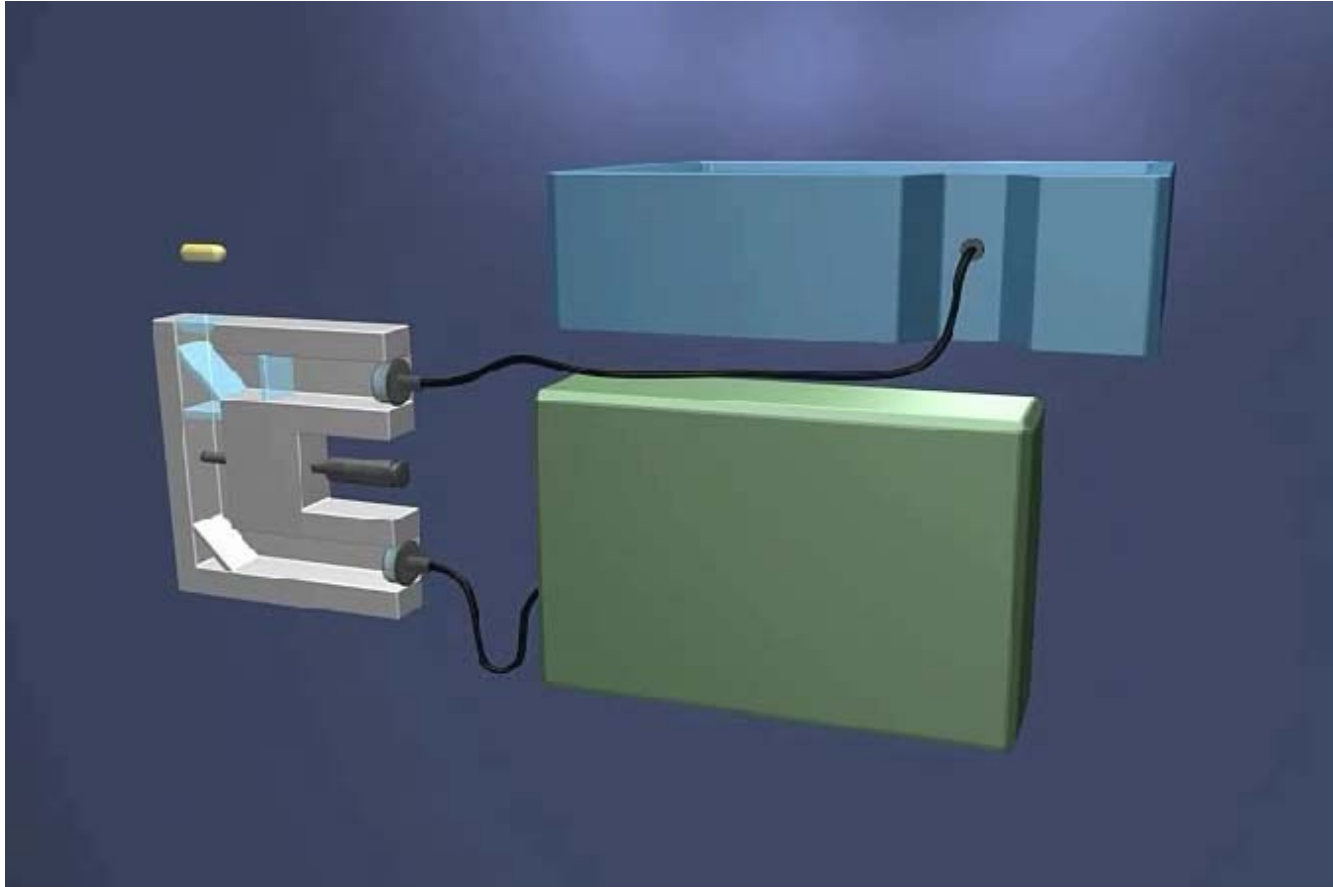
Logistica para cada incidente



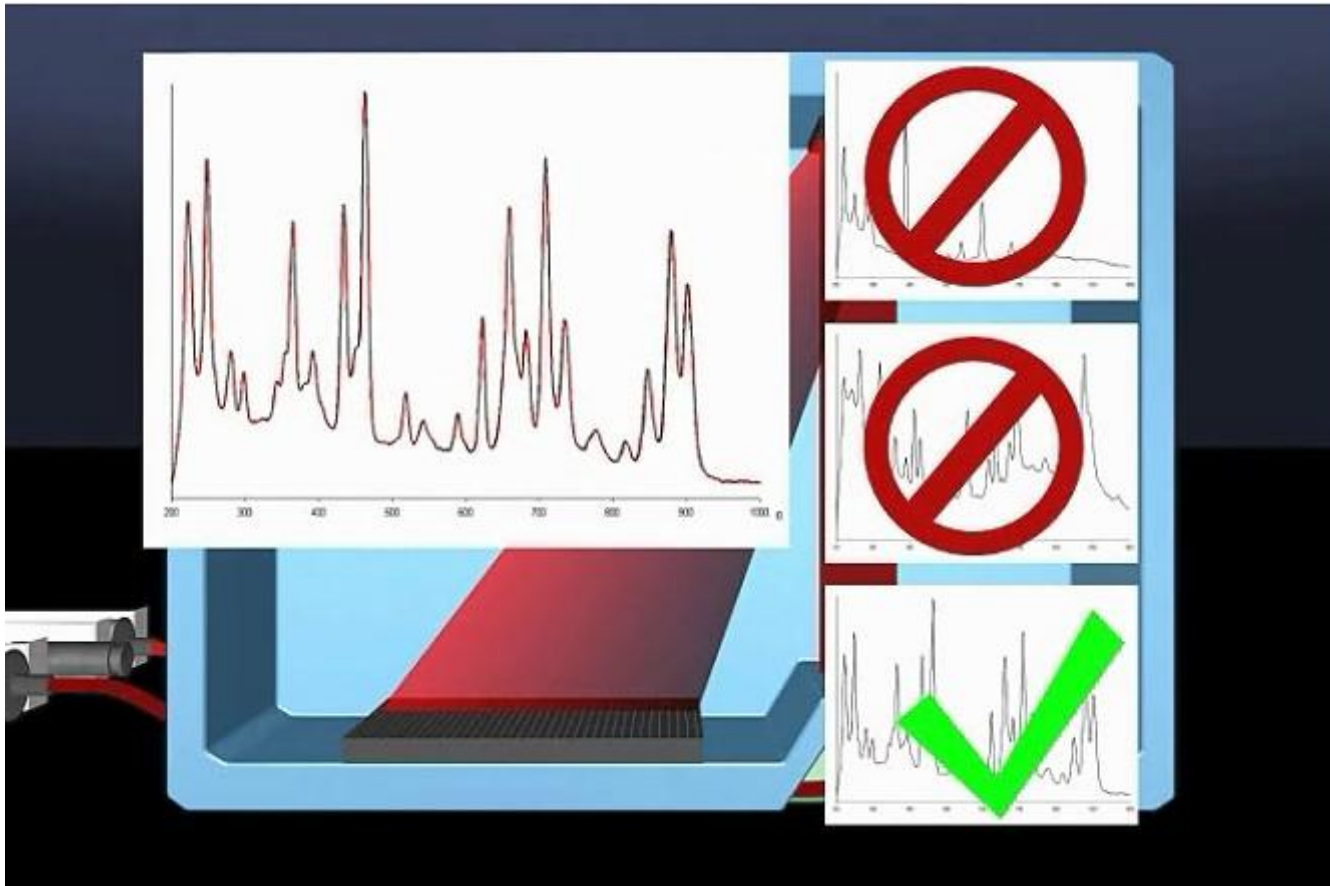
Technology Overview

Quimicos

Tecnologia Raman

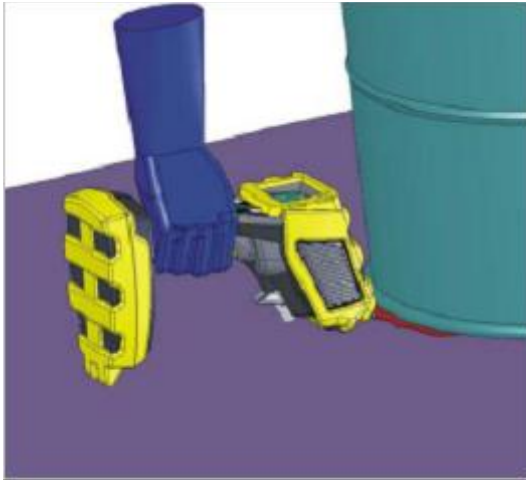


Tecnologia Raman

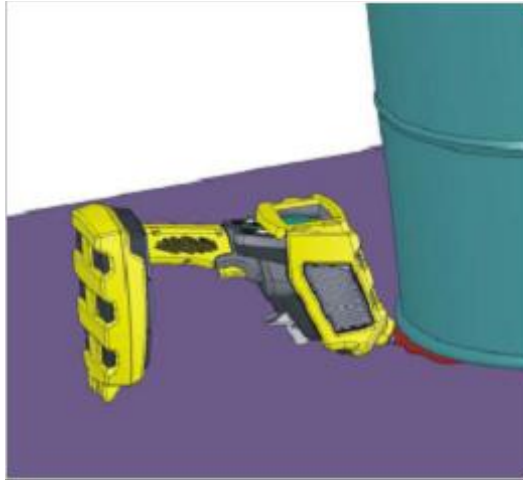


Operacion Flexible

Una Mano:



Manos Libres:



Liquidos:



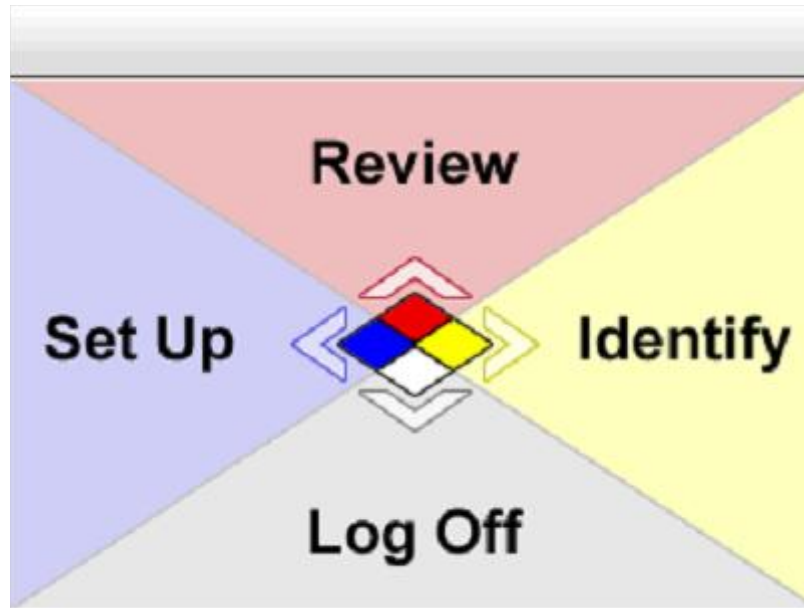
Vial holder:



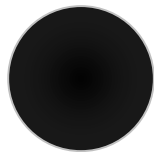
Operacion del Instrumento

Control Joystick con una mano

Pantalla:



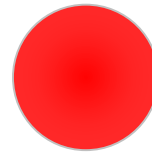
Controles:



Seleccionar



Joystick

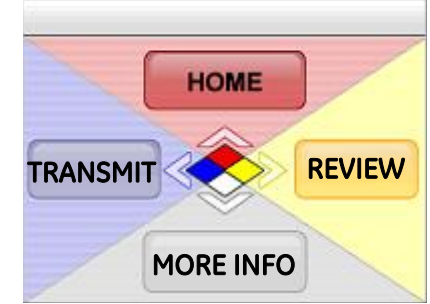
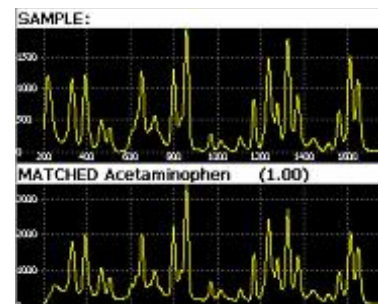
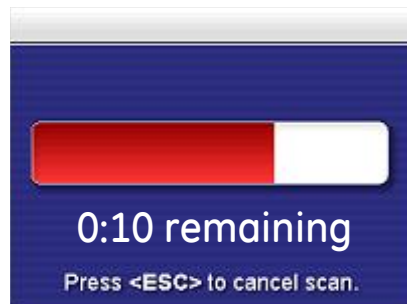
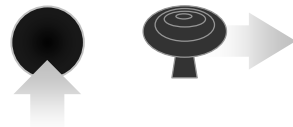
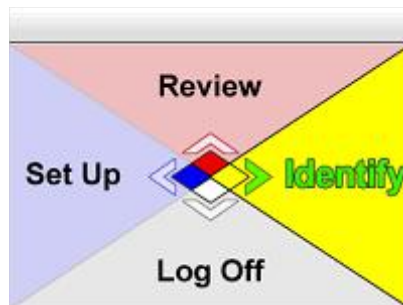
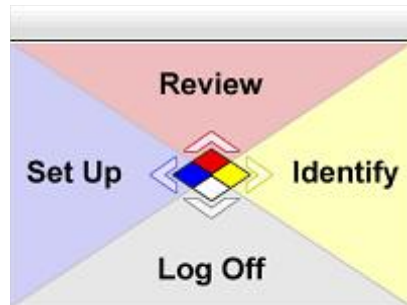


Laser enable

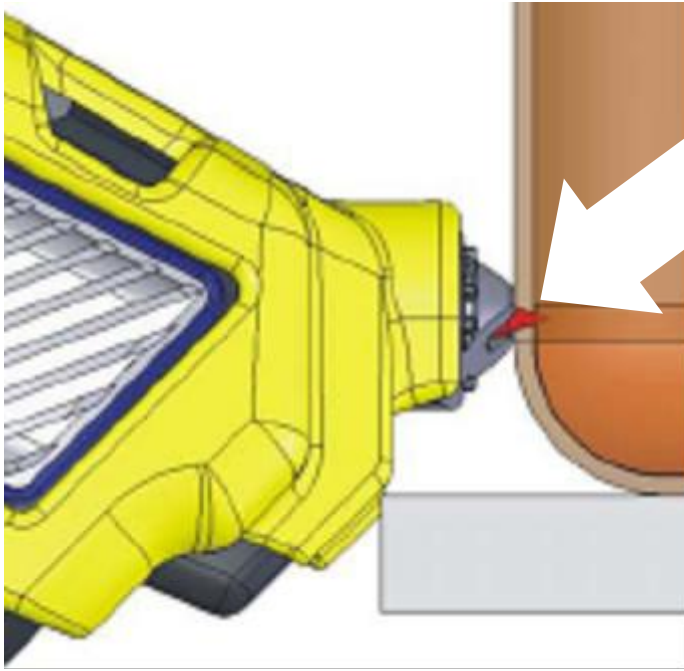


Gatillo

Operacion solo con una Mano

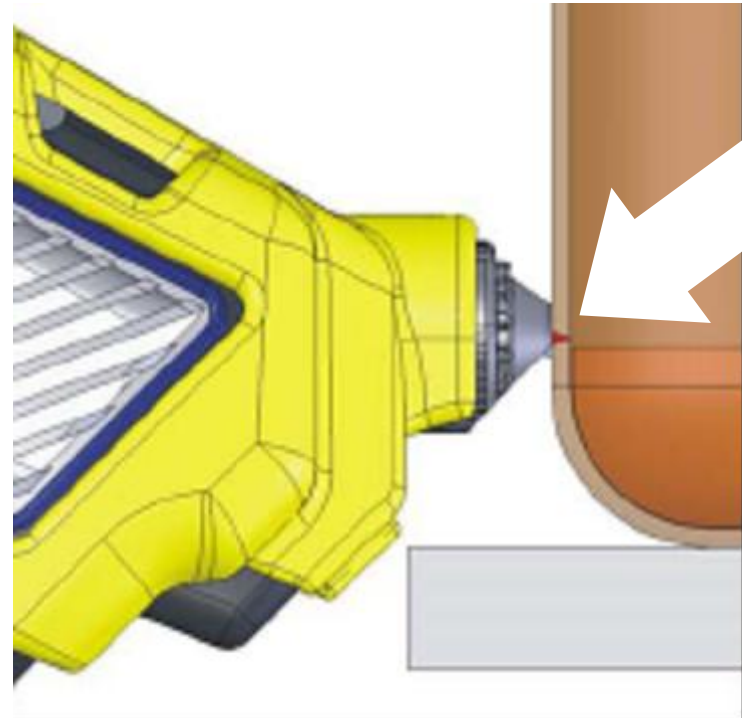


Uso: Posicion de la Nariz



Liquidos:

- Rotate half-way
- Through glass / plastic



Solid/Powder Samples:

- Rotate completely out
- Solid substances, baggie, or exposed powder

Capacidad Extendida

Beneficios

1. Operacion Remota
2. Transmite resultados en < 2 seg
3. Busca en forma segura por sustancias peligrosas

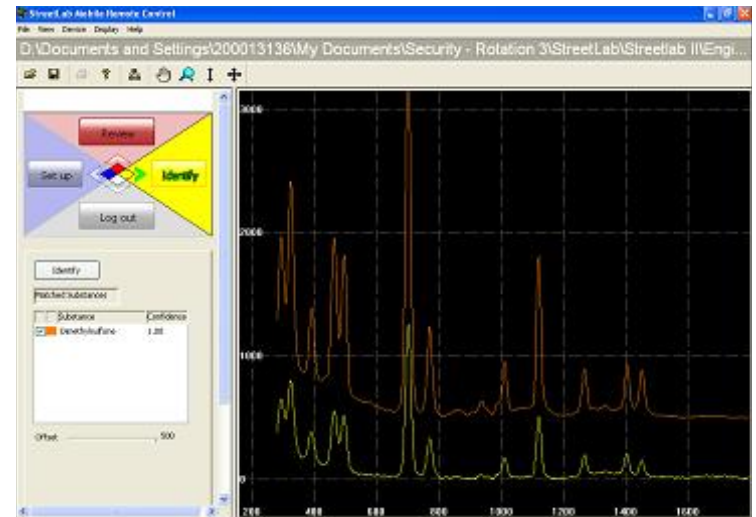
Especificaciones Tecnicas

- Rango: TBD
(est. urban line-of-sight: ~500m)
- “Wireless Modem Technology”
(superior to WiFi or Bluetooth)

Instrument warning:



Remote PC Software:



Biblioteca de Substancias

Actualmente: 900 sustancias (+ WingMan support)
Target Largo Plazo: 5,000 sustancias

Substance categorias:

- Narcoticos
- Precursor-Cutting agents
- Medicinas sin prescripcion
- Alcoholes toxicos
- Pesticidas
- Acidos Clorinados
- Herbicidas
- Explosivos
- Petroquimicos
- Agente para gases lacrimogenos
- Componentes Organicos Volatiles
- Gasoline Range Organics
- Diesel Range Organics
- Nervio & blister agentes
- Y otros mas....

Library substances recommended by Mid-West Research:

- CERCLA (Comprehensive Environment Response, Compensation, and Liability act)
- NIOSH PEL, CWC (Chemical Warfare Convention)
- EPASW-846 (8260 & 8270) (EPA Solid Waste)
- EPA-HPV90-USA(High product volume chemicals)
- EPA HPV94 USA additions, ITF-25 Alpha, ITF-25
- FBI (white powders)

Puerto Replicador

Que es?

Conector para transferir informacion.
Reduce el peso y tamaño del
instrument0 weight and size.

Puertos:

- 2 USB Masters..... Add memory stick +
Mouse/Keyboard
- USB Slave..... Direct PC connection
- Serial port..... Software and library
upgrades
- DC input..... Operate without using
battery power



Especificaciones Tecnicas

Laser.....	785 nm
Peso.....	< 6 lbs
Vida de la Bateria.....	> 5 hrs
Warm up.....	~30 sec
Promedio Scaneo..	Depends on sample. Most < 2 minutes.
Operacion.....	“Point and shoot”, hands free, and vial
Interface Usuario...	Joystick + 2 buttons + trigger
Biblioteca...	900 (target for launch)
Dimensiones.....	15” x 5.5” x 8”
Wireless tech.....	“Wireless modem technology”
Wireless rango	(est. urban line-of-sight: ~500m)
I/O.....	DC Input, 2 USB Master, USB Slave, and Serial



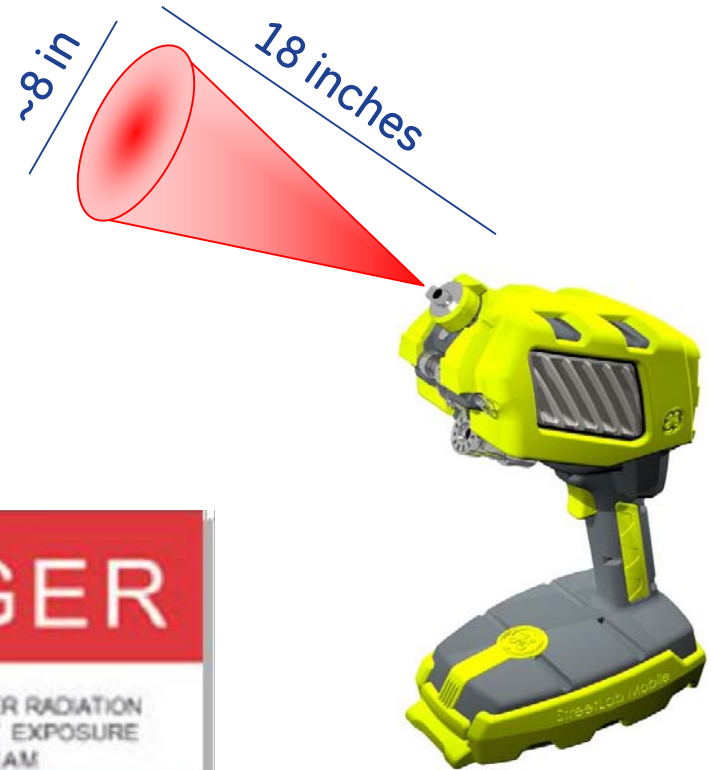
Manejo Seguro

Uso Seguro de la fuente Laser

Laser class: 3B:

- Class 3B laser devices can be harmful to eyesight if viewed directly.
- Keep eyes clear of Hazard Zone!
- Always position sample substance directly in front of laser!
- To check to see if it's working:
 1. Check red LED light
 2. Use white paper

Hazard Zone: 18 inch from nose, approximately 8 inch diameter



Informacion Adicional

Substancias Explosivas

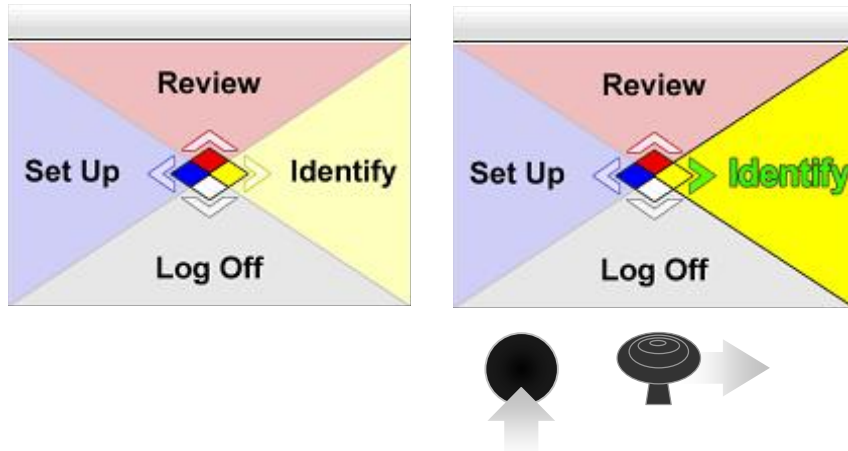
Colores oscuros absorben en un laser de 785-nm el cual puede hacer que la muestra se caliente. Esto puede resultar en que la muestra cree chispas, humo, fuego, quemadura y en algunos casos explosion

Por eso recomendamos:

1. Chequee el color de la muestra antes de ser expuesta al laser Raman.
2. No analize substancias explosivas sospechosas color gris o negras,
3. No cheque muestras dentro de un papel negro o termal.
4. Siempre que la muestra a analizar pueda ser explosiva es recomendable seguir estos pasos,
 - a. Limite la cantidad a menos de 25 mg. y
 - b. Opere el instrumento en froma remota a una distancia prudente.

USO BASICO

Calibracion



1. Rotate nose cone all the way out (counter clock-wise)
2. Enable laser with right-hand button
3. Click "identify"
4. Position Acetaminophen pill directly in front of nose cone (so that the pill is touching the cone)
5. Click left "select" button when prompted

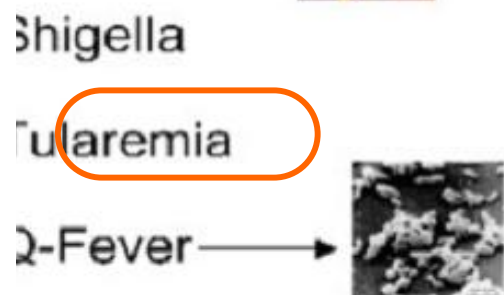
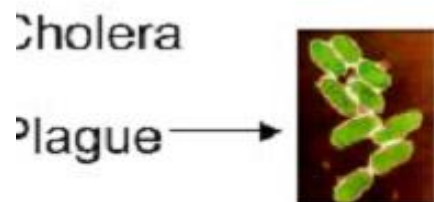
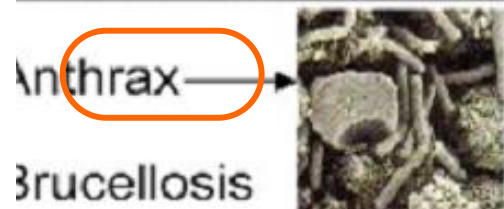


Technology Overview

Bio

Deteccion de Agentes Biologicos

Bacteria/Rickettsia



Typhus

Viruses

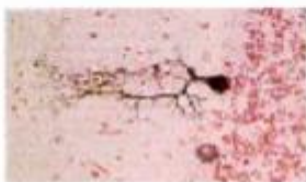
Smallpox

Rift Valley Fever

Crimean-Congo

Hemorrhagic Fever

VEE



Toxins

Botulinum



Ricin



SEB →

T2 Mycotoxins

Saxitoxin

C. perfringens toxins

Neurotoxins

Aflatoxin

E-Coli

First Responders

Features

Plastico extra rugged

- * Capacidad Bio
- * Control con Joystick
- Software Simple
- * Diseño Ergonomico
- * Operacion Remota
- Biblioteca Flexible
- Sellado al agua

Beneficios

Rugged

- * Un solo instrumento hace quimico/bio
- * Train once for both chem/bio detection
- * Operacion facil con una sola mano
- * Operacion Remota
- * Transmision inmediata del resultado

24/7 soporte

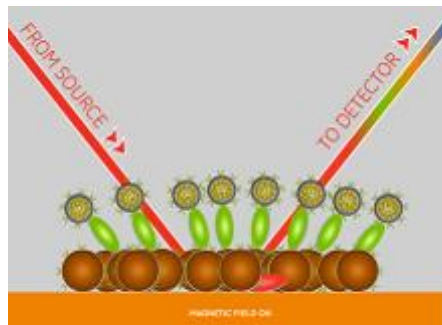
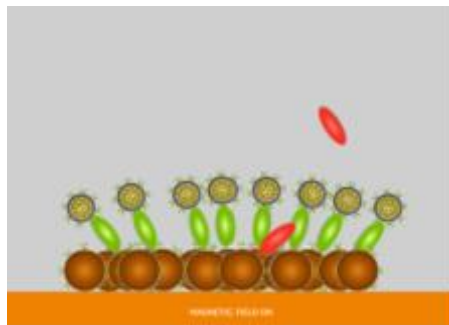
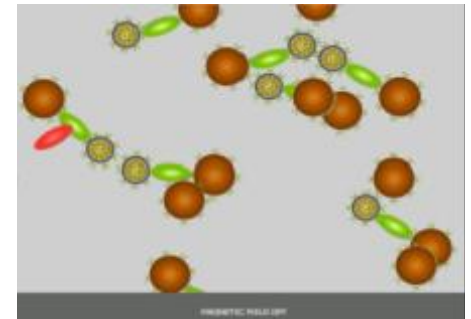
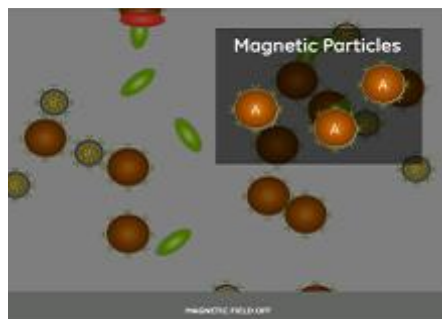
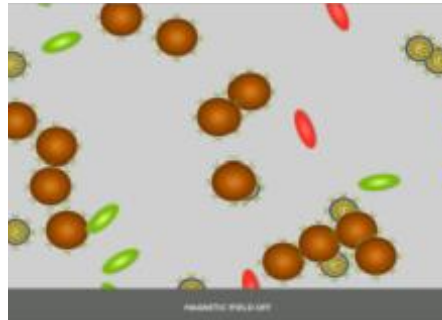
Decon-capable

*StreetLab Mobile differentiators
(Where we win!)

Values

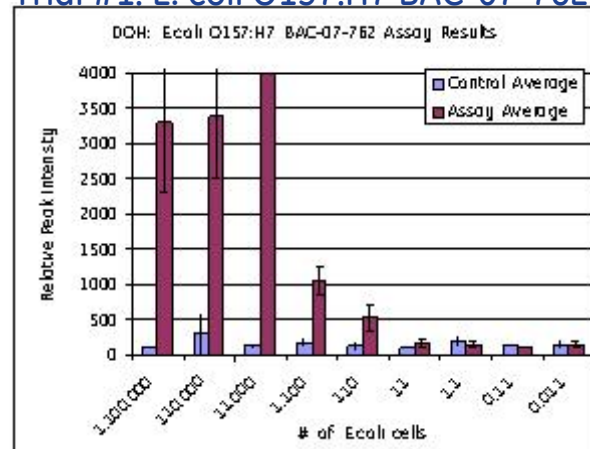
- * Preparedness
- * Speed
- Confidence
- Safety

Tecnologia Bio

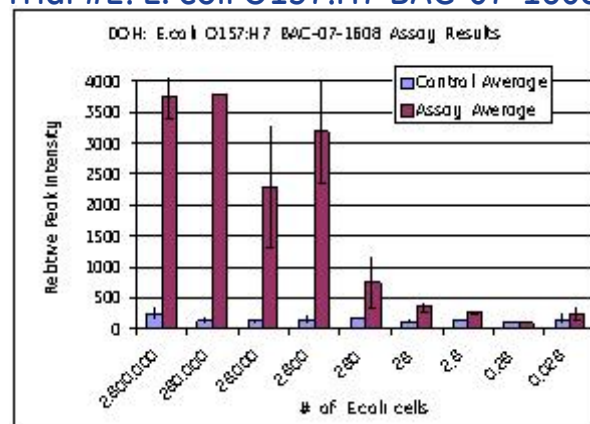


5 *E. coli* Strains tested at NYS DOH

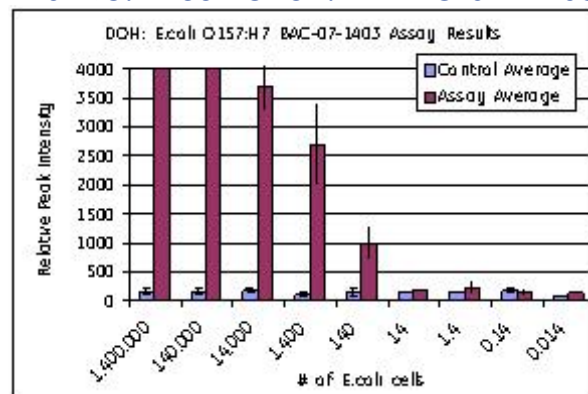
Trial #1: *E. coli* O157:H7 BAC-07-762



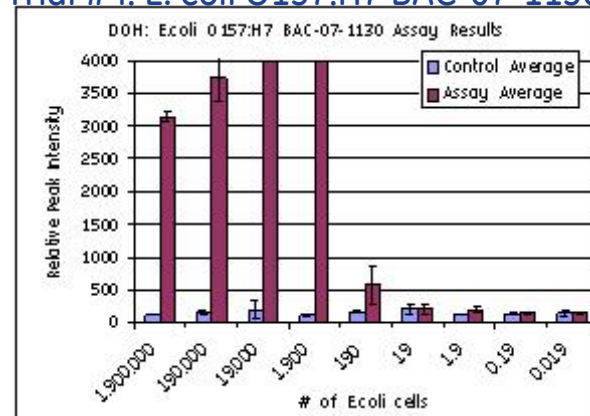
Trial #2: *E. coli* O157:H7 BAC-07-1608



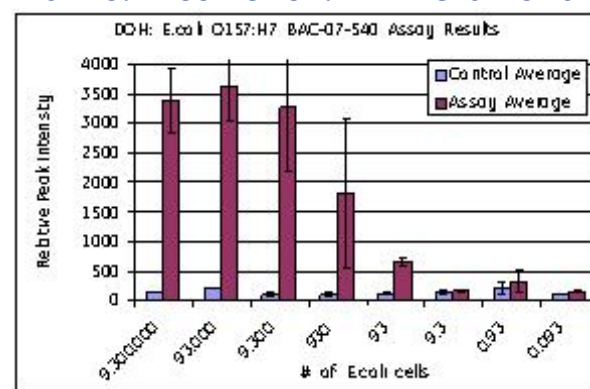
Trial #3: *E. coli* O157:H7 BAC-07-1403



Trial #4: *E. coli* O157:H7 BAC-07-1130



Trial #5: *E. coli* O157:H7 BAC-07-540

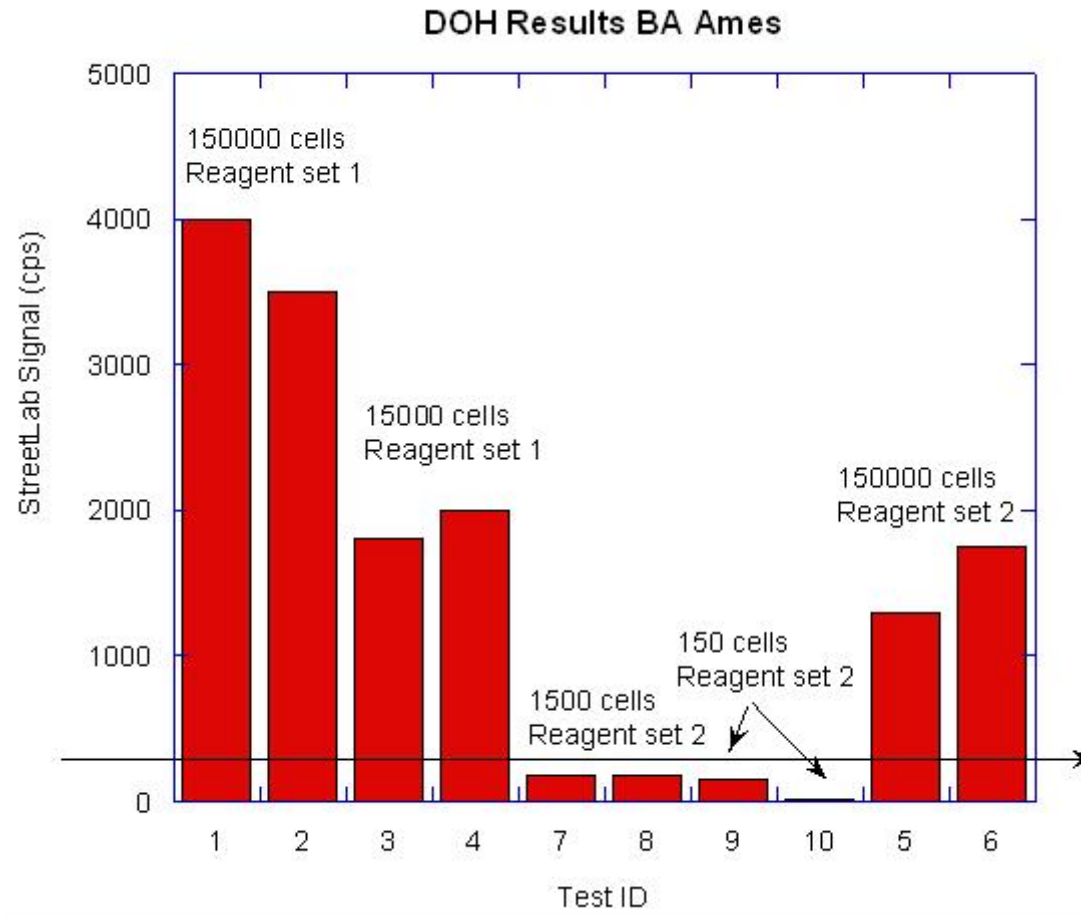


❖ As low as 93 cells detected.

❖ Assay is sensitive to 5 different *E. coli* strains

NYS DOH Preliminary Results

Anthrax Assay

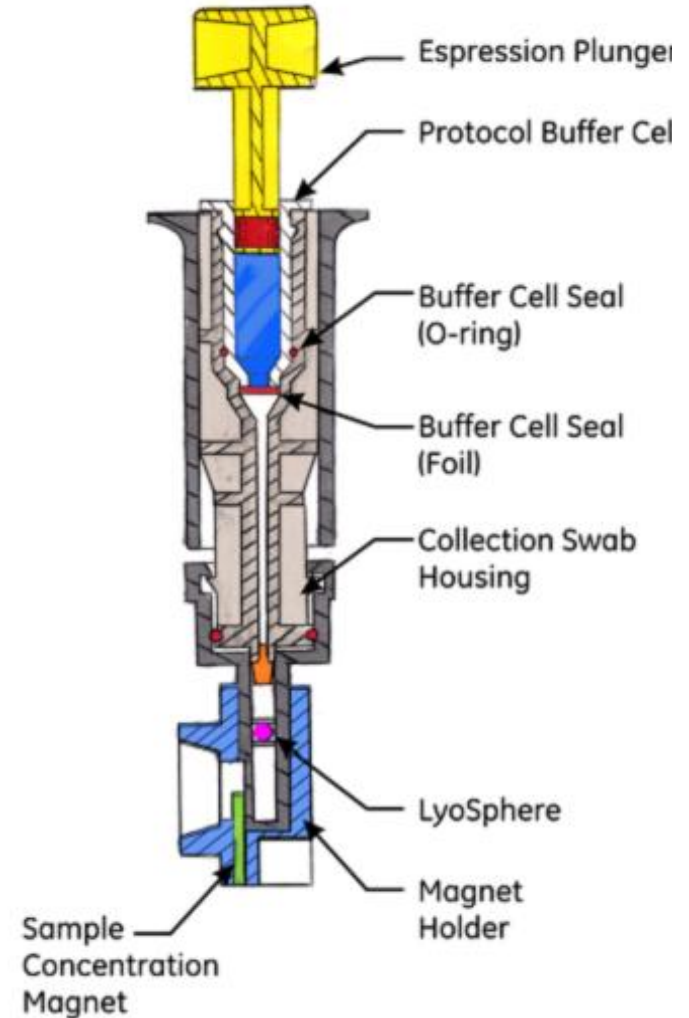
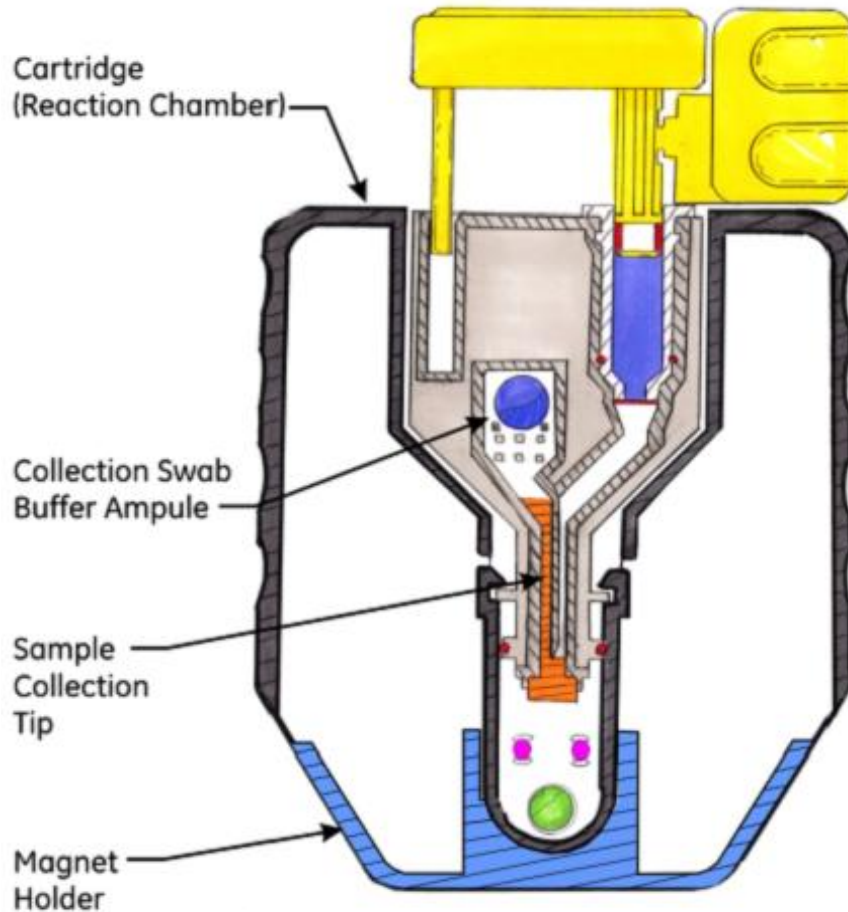


Bio Cartucho – Diseño Externo



imagination at work

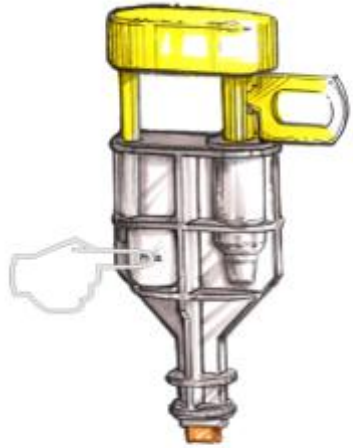
Bio Cartucho – Diseño Interno



Collection Swabs



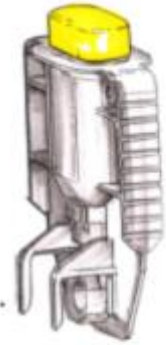
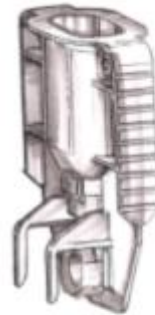
Concept Operacional



① Press to Wet Collection Tip



② Collect Sample



- ③ Insert Collection Swab into the Cartridge (Reaction Chamber).
④ Remove Expression Tag
⑤ Engage Buffer Expression Plunger.

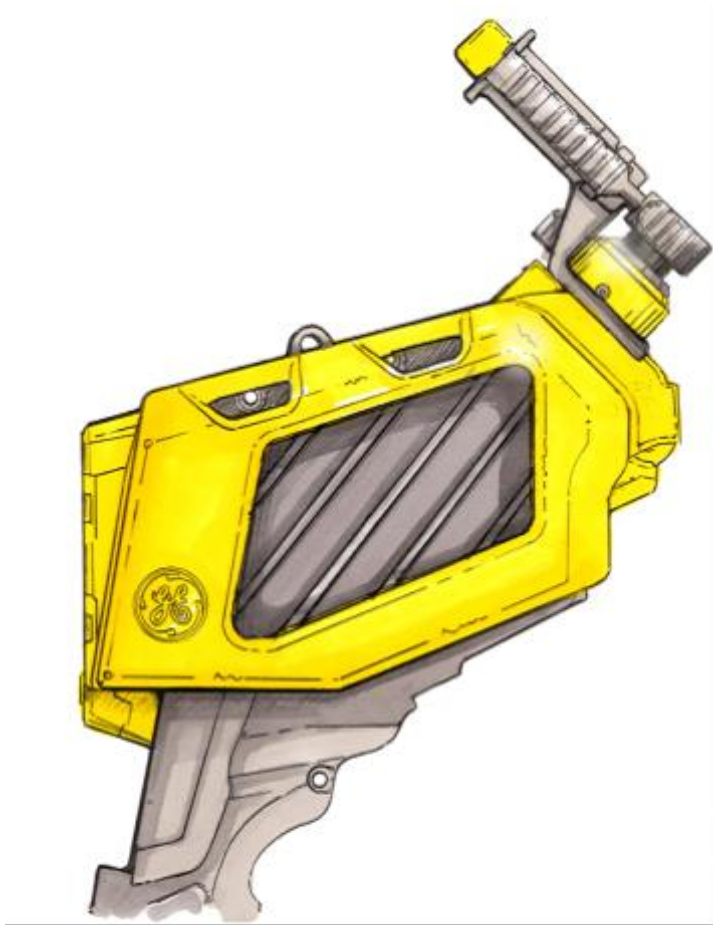
Simple, test
dura 5
minutos

Agitador Cartucho Bio

- Consistent agitation
- Automatic timing
- User freedom



Bio Cartridge – Applied



Soporte Global

“WingMan”:

- 24x7 Reachback program:
 - spectrum interpretation assistance
 - technical support
- 24 Hr Loaner Program

Training Options:

- Operations & Maintenance
 - Computer Based Training, CBT
 - Instructor Lead
- Advanced Troubleshooting & Repair
 - Instructor Lead

Repair Options:

- Return to base (Standard 1-Yr Warranty)
- Warranty Upgrade
- Service Contracts
 - ServiceMax
 - ServicePlus
 - ServicePro



StreetLab Narcotics Library

Drugs	Over The Counter Drugs	Cutting Agents	Precursors	Solvents
Alprazolam	Acetaminophen	Aspartame	Acetic Anhydride (Heroin)	Acetone
Cocaine Base	Aspirin	Baking Soda	Ephedrine (Meth)	Ethanol
Cocaine HCl	Ibuprofen	Benzocaine	Isosafrole (MDMA)	Isopropanol
GHB	Naproxen Sodium	Boric Acid	Min-Pseudoephedrine HCl	Methanol
Heroin		Caffeine	Phenylpropanolamine Base	Propanol
Ketamine		Dextrose	Phenylpropanolamine HCl (Amphetamine)	Toluene
MDMA		Dimethylsulfone	Safrole (MDMA)	
Methamphetamine		Inositol	GBL (GHB)	
Oxycodone		Lactose		
		Lidocaine		
		Mannitol		
		Powdered Sugar		
		Procaine		
		Sucrose		
		Table Sugar		



StreetLab Explosives Library

**Includes Liquid
and Solid
Explosives**

*Source: Naval
Surface Warfare
Center*

Name	Abbreviation
2,4-Dinitrotoluene	2,4DNT
2,6-Dinitrotoluene	2,6DNT
Ammonium Perchlorate	
Ammonium Nitrate/Fuel Oil	ANFO
Butanetriol Trinitrate	BTTN
Butyl Nitrateethylnitramine	BuNENA
Dinormal Propyl Adipate	DNPA
Dioctyl Adipate	DOA
Diphenylamine	DPA
Ethyl Centralite	EC
1,3,5,7-Tetranitro-1,3,5,7-tetra-azacyclooctane	HMX
Nitroglycerine	NG
Nitrocellulose	NC
n-Methyl-p-nitroaniline	MNA
Propylene Glycol Dinitrate	PGDN
Pentaerythritol tetranitrate	PETN
1,3,5-Trinitro-1,3,5-triazacyclohexane	RDX
Sodium Chlorate	
1,3,5-Triamino-2,4,6-trinitrobenzene	TATB
Triacetone triperoxide	TATP
Triethyleneglycol dinitrate	TEGDN
n-2,4,6-Tetranitro-N-methylaniline	Tetryl
Metriol Trinitrate	TMETN
2,4,6-Trinitrotoluene	TNT
Triacetin	

The Future: StreetLab Product Suite

2006

2007

2008

2009

Handhelds

StreetLab™ Mobile



- 785nm laser
- Chem-only launch (bio follows < 90 days)
- 'Point-and-shoot'
- Rugged & Lightweight
- Low resolution (18 cm⁻¹)
- 5+ hour battery life
- One-hand, joystick control

StreetLab™ Mobile Enhanced



- 980 nm fluorescence-free laser
- Chem/Bio 2-in-1
- 'Point-and-shoot'
- Ruggedized
- High resolution

StreetLab™ Sentry



- Lab quality resolution (2cm⁻¹)
- Faster analysis time
- Low operating power
- Lower price (< \$2500)
- A//GE IP
- Chem + Bio

Desktops

StreetLab™



- 785 nm laser
- Class I laser safe sampling
- Versatile sample turret
- Targeted library for narcotics and explosives analysis
- Low resolution (18 cm⁻¹)
- 8+ hour battery life
- Touch-screen GUI

StreetLab™ Enhanced



- 980nm fluorescence-free (Chem/Bio)
- Retrofit of SL Mobile engine
- Meets NIJ/FIDO program requirements
- Larger libraries
- Chem + Bio Analysis
- Compatibility with EOD robots

StreetLab Markets

StreetLab



StreetLab
Mobile



First Responders



Private/Industrial HazMat



DEA Labs, Field & Diversion Control



Clan Lab Task Forces



Pharma



Nuclear



Corrections



Crime Labs



Law Enforcement



Customs



Intelligence



StreetLab

A refresher...



Key Talking Points

1. Fast

- 40% time savings vs. traditional protocol

2. Versatile

- Explosives, narcotics, pharmaceuticals, etc.
- Pills, powders, liquids & solids

3. Portable

- 8 hr battery life (X2)
- Soft, light, carrying case

4. Accurate*

- **PSDB, UK:** 100% precursor detection
- **National Medical Service:** 90% street cocaine
- **Miami-Dade County Sheriffs:** 92% street cocaine; 100% Crystal Meth



Target Market

#1 Crime Labs

#2 DEA Clan Labs

Crime Labs

2,200 analytical chemists testing seized narcotics in U.S.*

Large backlog: 10% of all evidence is never analyzed**

StreetLab Story:

- Saves 40% analysis time vs. traditional procedures (color tests, TLC, crystallization, etc)
- Versatile (powders, pills, liquids)
- Small footprint, non-destructive, easy to interpret
- Ideal first screen for white powders
- Accuracy (3rd party trials 90% positive street cocaine ID)



Dual Crime/Clan Lab Example:

Texas Department of Public Safety Crime Lab Organization

- Drug Analysis Section personnel also investigate clandestine drug labs.
- 40 chemists in 13 DPS labs examine evidence from over 30,000 drug cases annually.



Source: http://www.txdps.state.tx.us/criminal_law_enforcement/crime_laboratory/



imagination at work

Mississippi, MO and many other states do the same

What drugs do Crime Labs see?

Source: NFLIS 2004 Mid-Year Report

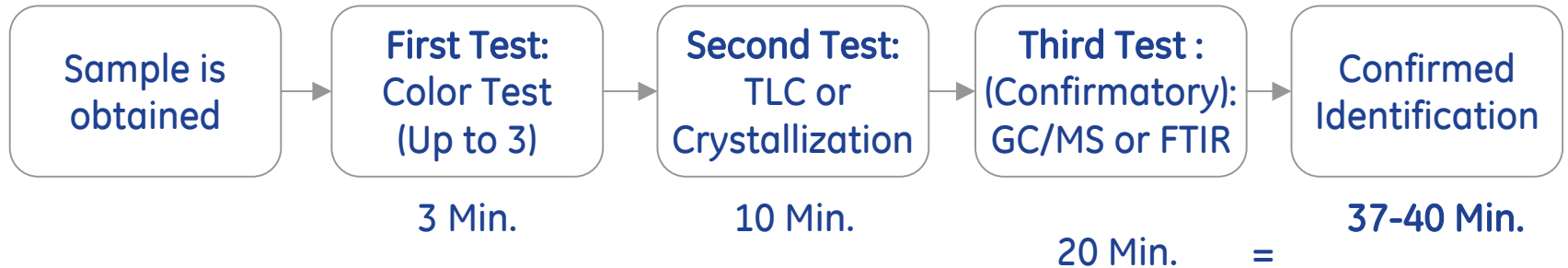
Drug	National		West		Midwest		Northeast		South	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Cannabis/THC	305,400	33.94%	42,818	22.87%	103,520	48.44%	45,882	31.63%	113,180	31.98%
Cocaine	282,867	31.43%	37,125	19.83%	57,606	26.96%	55,594	38.32%	132,541	37.45%
Methamphetamine	116,140	12.91%	71,046	37.94%	16,196	7.58%	648	0.45%	28,250	7.98%
Heroin	54,421	6.05%	6,411	3.42%	11,441	5.35%	18,599	12.82%	17,970	5.08%
Alprazolam	10,549	1.17%	***	***	1,735	0.81%	1,601	1.10%	6,580	1.86%
Oxycodone	10,393	1.15%	957	0.51%	1,671	0.78%	3,673	2.53%	4,093	1.16%
Hydrocodone	9,862	1.10%	1,091	0.58%	1,468	0.69%	1,286	0.89%	6,017	1.70%
Non-controlled, non-narcotic drug	9,199	1.02%	3,516	1.88%	2,009	0.94%	2,055	1.42%	1,618	0.46%
Pseudoephedrine**	5,021	0.56%	815	0.44%	1,970	0.92%	***	***	2,230	0.63%
MDMA	4,769	0.53%	1,006	0.54%	570	0.27%	732	0.50%	2,461	0.70%
Diazepam	3,618	0.40%	497	0.27%	722	0.34%	562	0.39%	1,837	0.52%
Methadone	3,528	0.39%	417	0.22%	594	0.28%	1,038	0.72%	1,479	0.42%
	2,992	0.33%	312	0.17%	575	0.27%	911	0.63%	1,194	0.34%
	2,890	0.32%	***	***	845	0.40%	***	***	671	0.19%
	2,242	0.25%	499	0.27%	251	0.12%	1,116	0.77%	376	0.11%
	2,226	0.25%	161	0.09%	344	0.16%	287	0.20%	1,434	0.41%
	2,208	0.25%	528	0.28%	409	0.19%	349	0.24%	923	0.26%
	1,802	0.20%	689	0.37%	459	0.21%	202	0.14%	452	0.13%
	1,487	0.17%	383	0.20%	153	0.07%	75	0.05%	875	0.25%
	1,412	0.16%	337	0.18%	291	0.14%	250	0.17%	533	0.15%
	1,112	0.12%	78	0.04%	421	0.20%	85	0.06%	528	0.15%
	1,043	0.12%	240	0.13%	129	0.06%	286	0.20%	388	0.11%
	865	0.10%	121	0.06%	281	0.13%	187	0.13%	275	0.08%
Lorazepam	772	0.09%	117	0.06%	220	0.10%	157	0.11%	279	0.08%
Iodine	565	0.06%	379	0.20%	***	***	-	0.00%	102	0.03%
Top 25 Total	837,383	93.05%	171,133	91.39%	203,964	95.45%	136,000	93.75%	326,285	92.20%
All Other Analyzed Items	62,506	6.95%	16,116	8.61%	9,722	4.55%	9,069	6.25%	27,598	7.80%
Total Analyzed Items	899,889	100.00%	187,249	100.00%	213,686	100.00%	145,069	100.00%	353,883	100.00%

Drug	National	
	Number	Percent
Cannabis/THC	305,400	33.94%
Cocaine	282,867	31.43%
Methamphetamine	116,140	12.91%
Heroin	54,421	6.05%

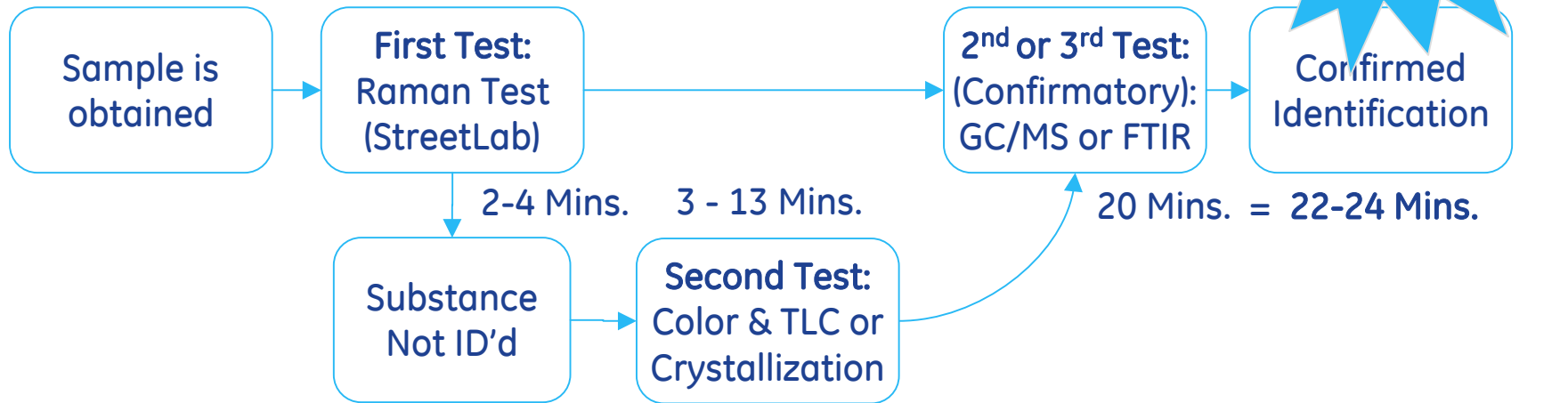
Cocaine and crystal meth > 44%
Heroin = 6%; Ecstasy = 0.5%

StreetLab Saves Time

Traditional Procedure



Procedure with StreetLab

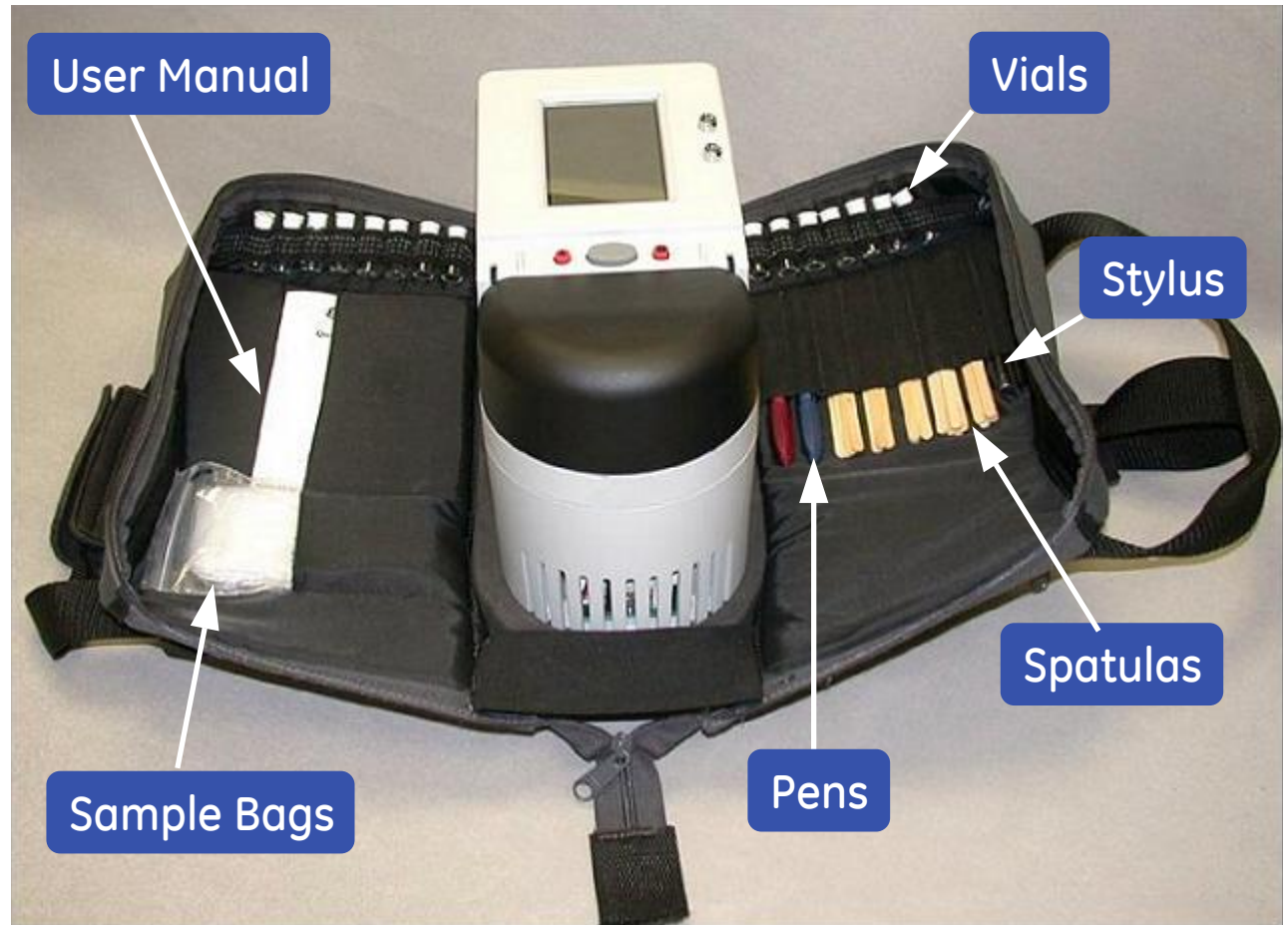


Product Features

StreetLab Case and Accessories



- AC Adapter
- Vehicle Power Adapter
- Li Ion Battery and
- Dual Bay Charger



StreetLab: Versatile Sampling



Elongated Pills



Round Pills



Plastic Bags



Vials

Configuration Summary

- Currently Available:
 - English
 - Russian
 - German
 - Australian (custom library)
- Minimum Order for New Language: TBD Units
- Initial Translation Costs ~\$TBD

Product FAQs

Q: Is the library expandable?

A: Yes, adding and modifying customized libraries is quick and easy.

Q: Can I print the test results?

A: Yes, you need to be connected to a PC or laptop that is connected to a printer.

Q: How long does it take to analyze a sample?

A: Analysis time varies depending on the sample. Most samples take less than 2 minutes.

Q: Can I visually compare test results against stored standard spectra?

A: Yes, the “Zoom Overlay” feature allows for visual analysis and comparison.

Q: Is it safe to use a laser on a sample that might be an explosive substance?

A: In general, yes when small quantities are sampled. Some explosive compounds may be a problem due to their instability or their color. Semtex and detasheet are two examples of problematic colors. Black or smokeless powders may ignite when exposed to our laser.

Q: Can StreetLab data be used in court as confirmatory evidence?

A: Not today...By getting this product into the hands of law enforcement and encouraging them to work with their local jurisdictions (DAs, Courts, etc) over time the product's test results will be accepted as evidence.



Positioning

Crime / Clan Labs

Features

- * Flexible turret substance holder
- Class I safe laser
- * Lightweight benchtop design
- * Two 8 hr + batteries
- * Easy-to-use touch screen interface

Benefits

- * Versatile ID (substance type and format)
- Fast analysis vs. traditional procedure
- * In-lab or field use
- * Extended field use

Values

Speed

Preparedness

Safety

* StreetLab differentiators
(Where we win!)

Case Study: Australian Customs

Initial customer response:

- Fluorescence is a show stopper (ecstasy and street heroin)

Positioning:

- Re-focus on strengths: identifying precursors.
- 100% precursor detection in test by Police Science Development Branch (PSDB), UK

StreetLab Market Segments

	Crime Labs	Clan Lab Task Forces	Customs	Diversion Control
User	Lab Analysts	LE Agents / Chemist	Agents / Inspectors / Labs	Diversion Inspectors
Application	Controlled substance analysis	Precursor, cutting agents and solvents identification	Suspicious powders/ liquids when conducting container inspections	Controlled pharmaceuticals and chemicals
Current process	• Color test + • TLC or crystallization + • GCMS	• Acid strips • Draeger Pumps • Color Tests	• Color Tests (cocaine and heroine only)	• Color Tests
StreetLab Benefits	• Creates an alternative to color test & TLC or crystallization • Broader range of controlled substances	• Identify narcotic precursors & cutting agents • Eliminate need to transport to lab • Portability	• Explosive identification • Broader range of narcotics • Portability	• Identification of pharmaceuticals • Identification of controlled chemicals (precursors)

Key Talking Points

1. Fast

- 40% time savings vs. traditional protocol

2. Versatile

- Explosives, narcotics, pharmaceuticals, etc.
- Pills, powders, liquids & solids

3. Portable

- 8 hr battery life (X2)
- Soft, light, carrying case

4. Accurate*

- **PSDB, UK:** 100% precursor detection
- **Miami-Dade County Sheriffs:** 92% street cocaine; 100% Crystal Meth
- **National Medical Service:** 90% street cocaine



StreetLab 101

- Non-destructive, easy to interpret, affordable, small foot-print device
- Ideal in the crime lab and the field as a rapid, first screen method for unknown substances
- Identifies over 90% of street cocaine*, cutting agents, precursors, solvents and explosives
- Reduces on-going cost of chemical tests (color, TLC, Crystallization)
- Saves time as alternative to color tests, TLC, crystallization and other methods



Warranty

GE Security warrants to the original purchaser of any new merchandise that all items will be free of defects in material and workmanship when used under normal conditions. The warranty is limited to one (1) year for parts and labor.

Consumable items are excluded from this warranty.

Effective Date of Warranty

This warranty is effective from the date of shipment by GE Security or from the date of installation by GE Security (not to exceed three months from the date of shipment).

StreetLab Applications

- Identification of Unknown Liquids and Solids
 - Customs
 - Crime Labs
 - DEA – Labs, Field & Diversion Control
 - Drug Task Forces
- Screening Chemicals at Clan Labs
 - DEA Clan Lab Task Forces
 - Regional Task Forces
- Smuggling
 - Customs (Explosives & Narcotics)
 - DEA (Pharmaceuticals & Precursor Chemicals Div. Ctrl.)
- Analysis of Hazardous Materials
 - Drug Task Forces



Rumor 1: StreetLab does not do mixtures



MYTH!!



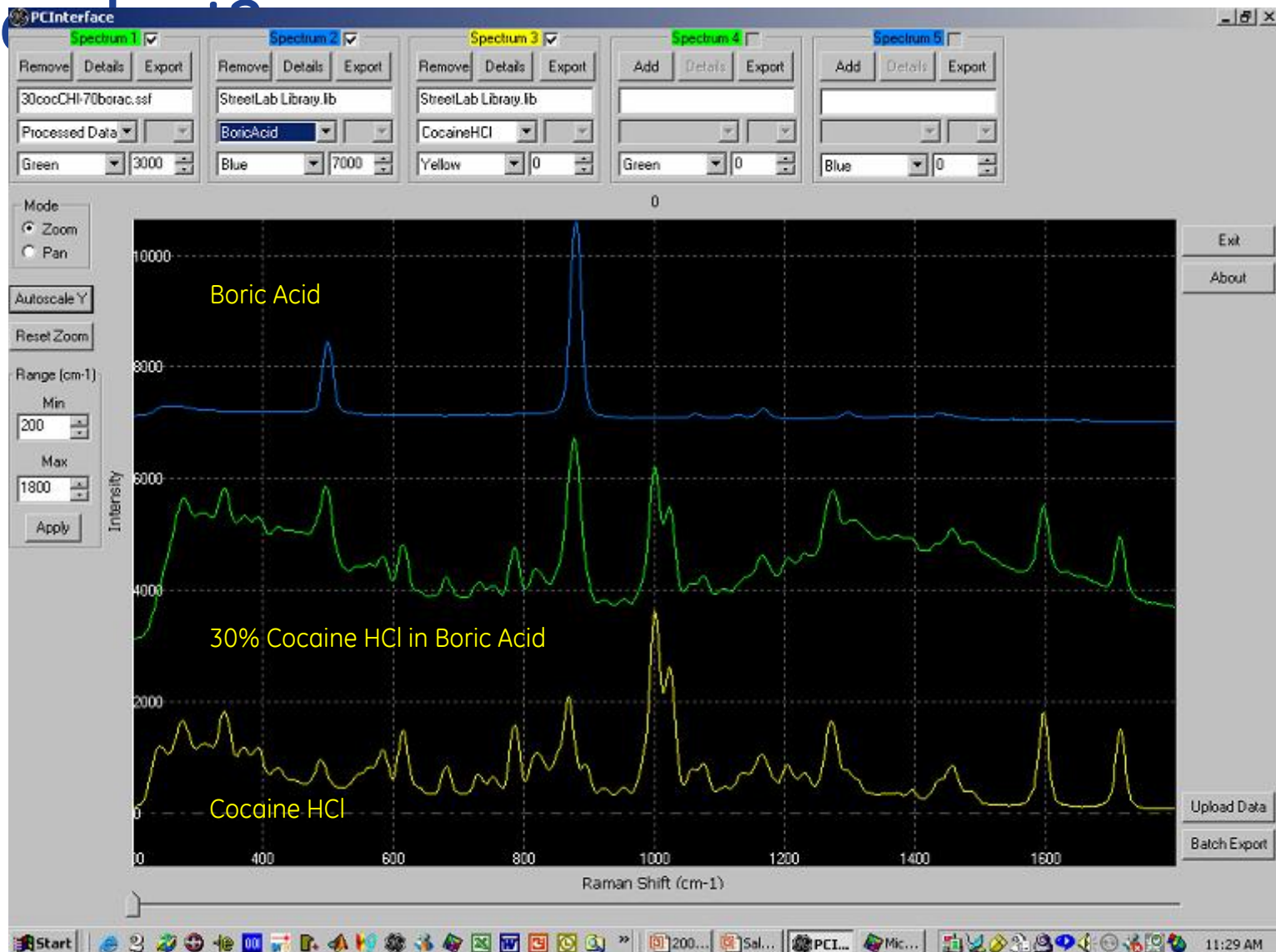
Instrument validated against laboratory standards (i.e., pure samples)

Compounds measured with a match index > 90%

Cocaine measured at mixtures down to 20%

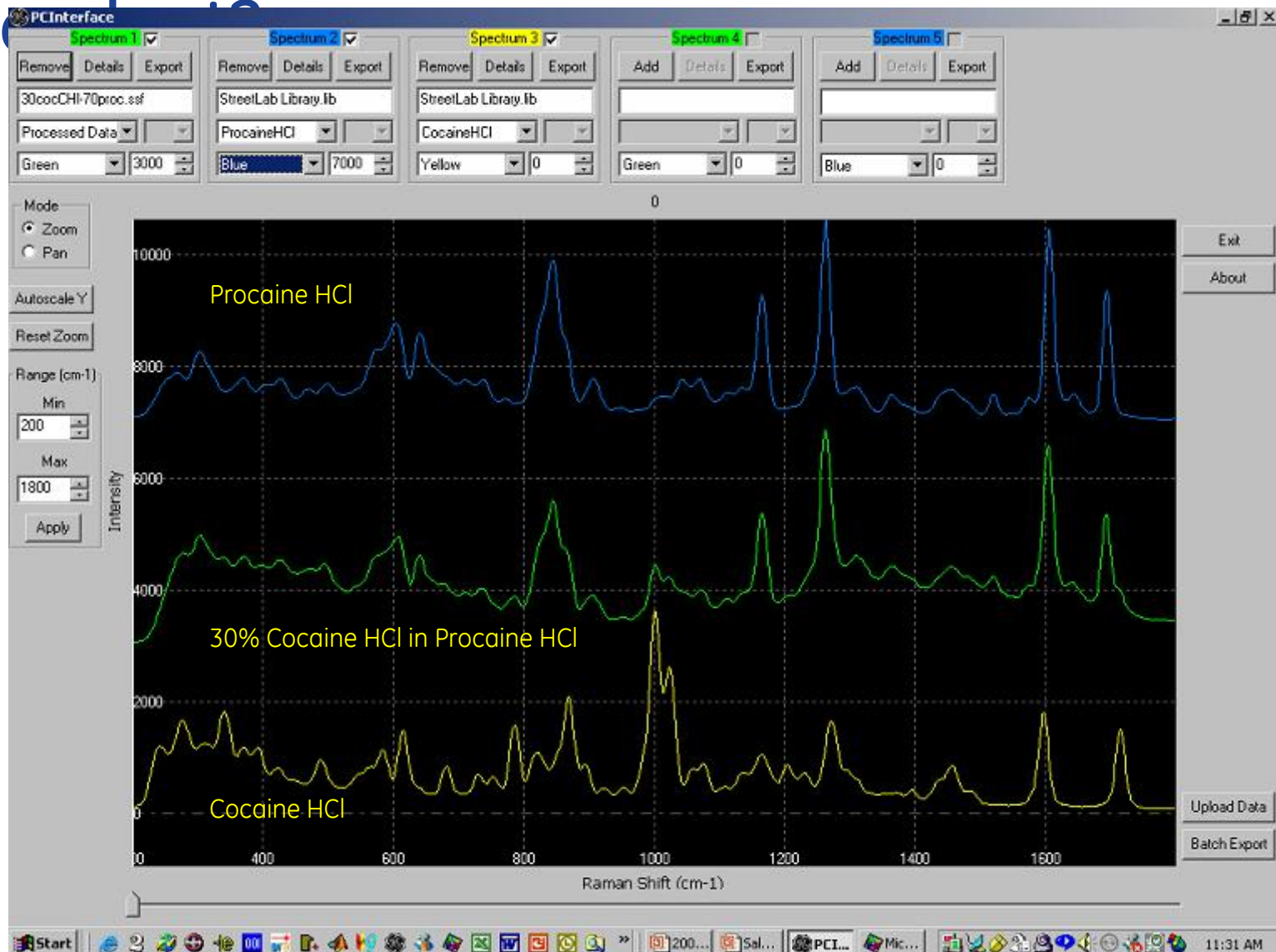
Cutting Agent	% Cocaine	Index Match (Cocaine HCl)		
Inositol	80%	100	98	100
	60%	100	96	-
	40%	84	94	94
	30%	88	92	98
	20%	74	74	80
Lactose	80%	92	90	100
	60%	100	98	96
	40%	94	86	90
	30%	78	86	60
	20%	-	62	-
Mannitol	80%	92	92	84
	60%	90	84	86
	40%	84	86	90
	30%	84	88	90
	20%	80	78	68

Why is StreetLab sensitivity cutting agent dependent?



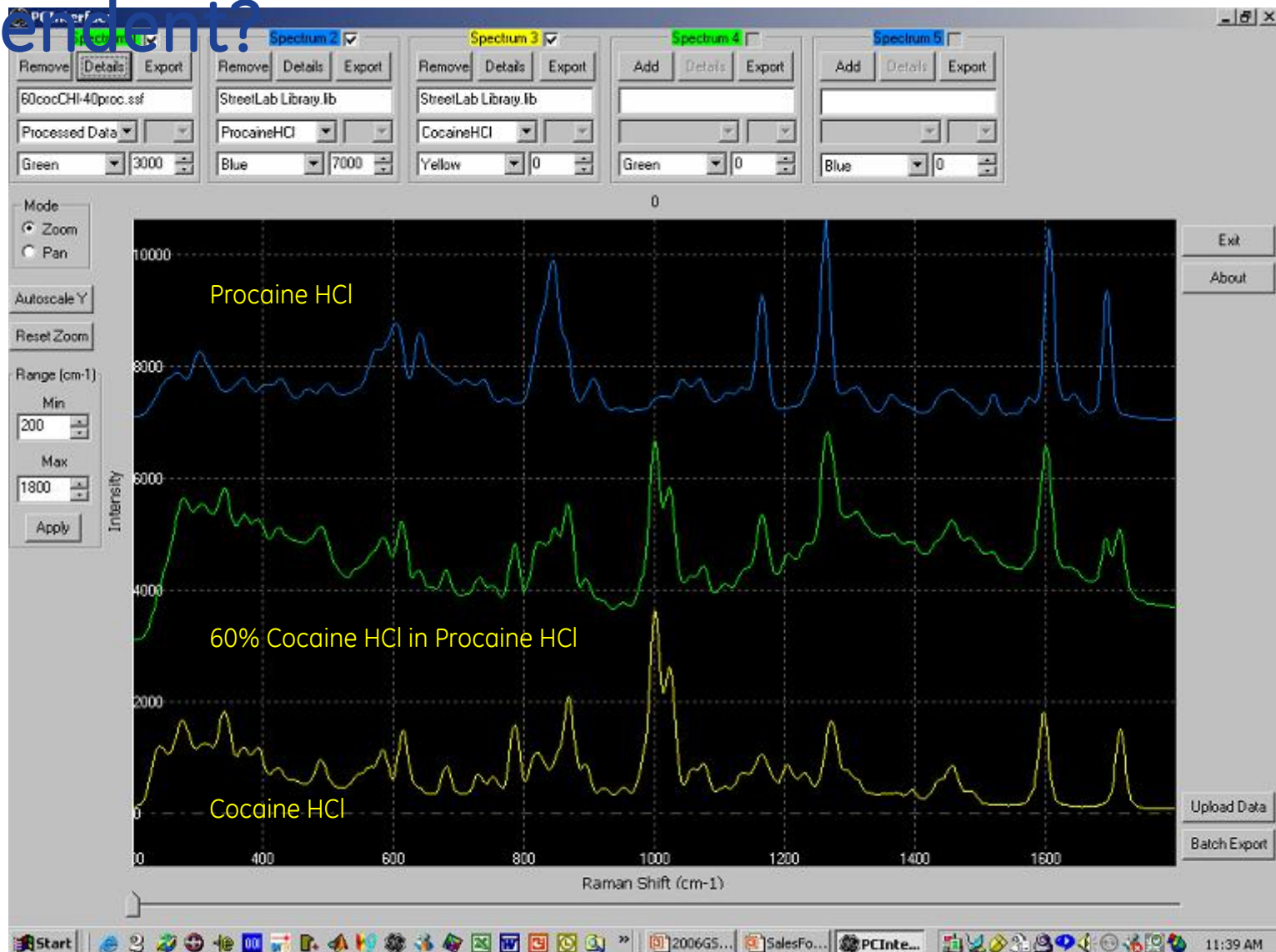
imagination at work

Why is StreetLab sensitivity cutting agent dependent?



imagination at work

Why is StreetLab sensitivity cutting agent dependent?



imagination at work