

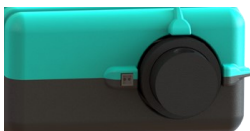
## Specifications and Laser Safety

RamTest™ is IEC/EN 60825-1 compliant  
 RamTest™ software is CFR 21 compatible

Specification / Feature	'RamTest'
Weight	4 ½ lb (2 kg)
Hand-Held	Yes
Portable	Yes
Battery, Continuous Operation, hrs	6-8 hrs
Battery Recharge, hrs	2-3 hrs
Extra Battery Pack + Charger	Yes
Excitation Source, Wavelength	532 nm
Excitation Source, Power	30 mW
Spectral Range, cm <sup>-1</sup>	100 – 4000 cm <sup>-1</sup>
Spectra Resolution, cm <sup>-1</sup>	4 – 6 cm <sup>-1</sup>
Coupled to Microscope	No
Mapping Option	No
Continuous measurement mode	Yes
SERS available	Yes

### Laser Safety:

Laser Safety Interlock (Proximity Sensor)



Laser Radiation Warning Label on Unit's Cover



Nominal Ocular Hazard Distance (NOHD): 1¼' (38 cm)

## Sample Database

### Category: Drugs, Medicine & Other Substances

4-Fluoramphetamine	Codeline	Paracetamol
4-Methylcathinone	Diazepam	Phenazepam
ACBM(N)-2201	Heroin	Phentermine
Acetic Acid	JWH-122	TFMPP
Acetylsalicylic acid	Ketamine	Thebaine
AKB48-F	MDMA	Vodka
Amphetamine	Methamphetamine	Water
Anastrozolum	Methylenedioxy Pyrovalerone	
Azidoethanol	Modafinil	
BZP	Morphine	
Chloramphenicol	Nimesulide	
Cocaine	Noscapine	

### Category: Explosives

Acetone	trinitro-m-cresol
Butanone peroxide	1,3,5-trinitro-2,4,6-triaminobenzene
DEGN	n-methyl-2,4,6-trinitroaniline
EGDN	2,4,6-trinitroaniline
Ethyl Alcohol	2,4,6-trinitrobenzaldehyde
Glycerol	2,4,6-trinitrobenzoic acid
Hydrogen Peroxide	1,3,5-trimethyl-2,4,6-trinitrobenzene
Isopropyl Alcohol	2,4,6-trinitro-m-xylene
m-Xylene	2,4,6-trinitro-m-diphenylamine
Methyl Alcohol	2,4,6-trinitrobenzene-1,3-diol
Naphthalene	2,4,6-trinitrotoluene
Nitroglycerine	octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
TEGDN	2,4,6-trinitrophenol
Toluene	2,4,6-trinitro-1,3,5-benzenetriol
1,2-dinitrobenzene	2-ethyl-1,3,5-trinitrobenzene
1,3,4,6-tetranitrotohydroimidazo[4,5-d]imidazole	2,4-dinitro-2,4-diazahexan
1,3,5,7-tetranitro-1,3,5,7-tetraazacyclooctane	2,4-dinitro-2,4-diazapentane
1,3,5-trinitro-1,3,5-triazacyclohexane	2,4-dinitroaniline
1,3,5-tribromo-2,4,6-trinitro-benzene	2,4-dinitrotoluene
1,3,5-trichlorotrinitrobenzene	2,5-dinitrotoluene
1,3,5-trinitroso-1,3,5-triazacyclohexane	2,6-dinitrotoluene
1,3-dinitrobenzene	2,6-dinitrophenol
1,3-dinitrodiazapentane	2-amino-6-nitrotoluene
1,4-dinitrobenzene	2-methyl-5-nitro-2h-tetrazole
1,5-dinitronaphthalene	2-nitroaniline
2,2',4,4',6,6'-hexanitrodiphenylamin	2-nitrodiphenylamine
2,2',4,4',6,6'-hexanitrodiphenyl sulfide	2-nitrotoluene
2,2',4,4',6,6'-hexanitrostilbene	3,4,5-trinitrotoluene
2,2',4,4',6,6'-pentanitro-5-stilbene	3,4-dinitrotoluene
2,2',4,4',6,6'-hexanitrodibenzene	3-nitrotoluene
2,2',4,4',6,6'-hexanitrodiphenyl sulfone	4,6-dinitrobenzofuroxan
2,3,4,6-tetranitroaniline	4-amino-2,6-dinitrotoluene
2,3,4-trinitrotoluene	4-nitroaniline
2,3,6-trinitrotoluene	4-nitrodiphenylamine
2,3-dimethyl-2,3-dinitrobutane	4-nitrotoluene
2,3-dinitrotoluene	1,1-diamino-2,2-dinitroethene
2,4,5-trinitrotoluene	k-55



Measure With Handheld Raman  
 What You Couldn't Measure Before!

RamTest - ART for art & archeology  
 RamTest - BIO for biology  
 RamTest - CHE for chemistry  
 RamTest - CSI for police & crime scenes  
 RamTest - GEO for geology & gems



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# Why RamTest™ -CSI ?



- The only 532 nm hand-held Raman
- 15-16X greater sensitivity → faster analysis
- Unmatched analytical power (widest range + best resolution in class)
- Superior performance in water and organic solvents (due to lower absorption)
- Fluorescence background automatically subtracted
- Measures through containers
- 2-fold lower price
- Reduced losses due to breakthrough optical design
- 532 nm Excitation → 5-16X stronger Raman:  
Raman Signal Intensity:  $\sim (1/\lambda_{exc})^4$ , where  $\lambda_{exc} = 532, 785$  or  $1064$  nm
- Reduced excitation laser absorption and Raman signal self-absorption in water and most of organic solvents.

# RamTest™ -CSI Applications

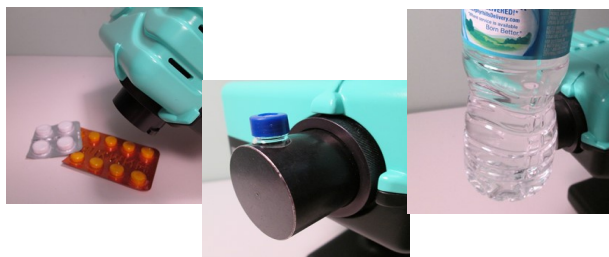
RamTest™-CSI:

- > 500% faster analysis for container-free analytes
- 20-1600% faster analysis for analytes in glass / plastic containers
- Superior performance in water and organic solvents



## Broad Applicability Scope

- Inorganic, organic, biological materials
- Solids: powders, tablets, chips, crystals, fibers, etc.
- Liquids / Solutions (including water!)
- Mixed Liquids and Mixed Solids



# RamTest™ -CSI Software

Three different operation control modes for Administrator, Operator, and developers



Friendly user interphase and quick sample collection for high quality spectra.



Hazmat procedures for quick action when a hazardous substance is identified.

