RamPalm

1064 nm Handheld Raman Technology

Palm-format identification power for high-fluorescence samples — one instrument, clear options, no spectroscopy expertise required.



RAMPALM · 1064 NM HANDHELD RAMAN SPECTROMETER

01
DEFEATS FLUORESCENCE

1064 nm excitation and a deep-cooled InGaAs detector identify coloured, dark and impure samples that overwhelm 785 nm handhelds.

02
TRUE HANDHELD PORTABILITY

2.5 kg one-hand operation, ≥ 2 h continuous battery, USB Type-C charging and a −20 to 40 °C operating range.

03
TRACE LIQUID DETECTION

Optional surface-enhancement (SERS) chips amplify trace toxic and hazardous liquids for checkpoint-level sensitivity.

04
REPORTS WITHOUT A PC

Results export as PDF, TXT or EXCEL via WiFi, Bluetooth, USB 2.0 or memory card — anywhere the job takes you.

KEY ADVANTAGES

- 1064 nm handheld Raman engineered for high-fluorescence samples across pharmaceutical, security, petrochemical, archaeology and chemical-defence applications
- Narrow-linewidth laser (0.10 nm), stability ≤ ±1 %/60 min; output 0–600 mW software-adjustable
- High-throughput spectrometer: 127–2000 cm^{-1} at 9–15 cm^{-1} resolution
- Identifies solids, powders and liquids — hazardous, toxic, precursor, flammable and explosive chemicals
- Trace detection of toxic and hazardous liquids with SERS chips
- Library packages for public security, pharmaceutical and petrochemical work — plus a custom library built from your own samples, expandable at any time
- On-screen identification with library matching — results graded for rapid decision-making
- WiFi / Bluetooth / USB 2.0 data transfer; reports in PDF / TXT / EXCEL
- Field-rugged: −20 to 40 °C, ≥ 2 h per charge, USB Type-C

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1064 nm Handheld Raman Technology — System & Technology

SYSTEM OVERVIEW

1064 NM NARROW-LINEWIDTH LASER

0.10 nm linewidth, ≤ ±1 %/60 min stability; 0–600 mW software-adjustable output protects delicate samples and pushes through tough ones.

DEEP-COOLED InGaAs DETECTOR

TEC cooling to −20 °C delivers high sensitivity at 1064 nm, where fluorescence no longer drowns the Raman signal.

HIGH-THROUGHPUT SPECTROMETER

127–2000 cm^{-1} range at 9–15 cm^{-1} resolution — the full fingerprint region for reliable library matching.

TOUCHSCREEN WORKFLOW

Measure and identify on the built-in display with guided operation — no spectroscopy expertise required.

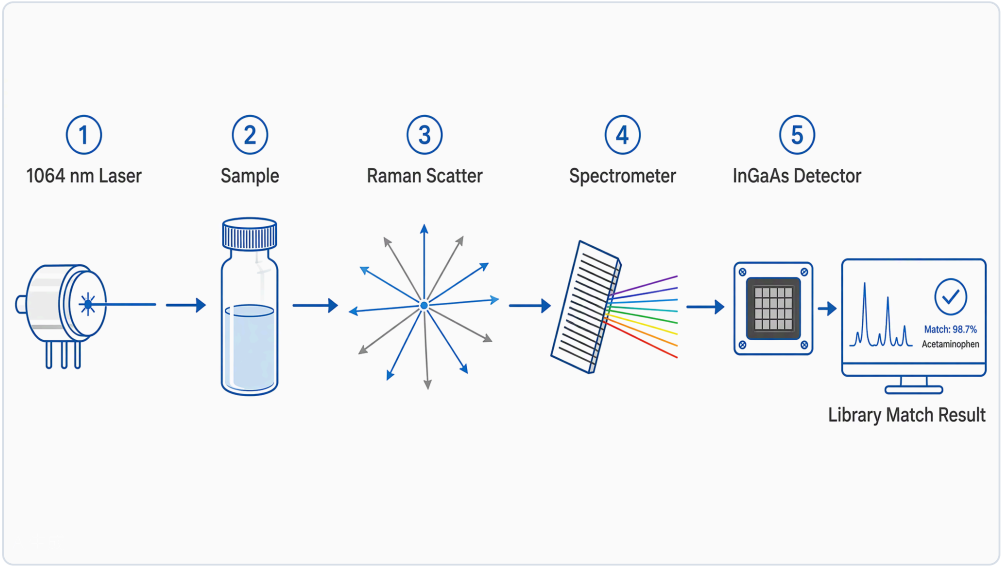
SERS TRACE MODE

Trace toxic and hazardous liquids are measured on surface-enhancement chips for checkpoint-level sensitivity.

WIRELESS DATA & REPORTING

WiFi, Bluetooth and USB 2.0 built in; export results as PDF / TXT / EXCEL by memory card or data cable.

HOW IT WORKS



The 1064 nm laser excites the sample; the spectrometer resolves the Raman-scattered light and the cooled InGaAs detector records a fluorescence-free spectrum for instant library matching.

APPLICATION AREAS

PHARMACEUTICAL QC

Rapid incoming inspection of raw and auxiliary materials — fluorescence-free ID for coloured and impure powders.

Configured with: pharmaceutical library + routine mode + PDF reporting

SECURITY SCREENING

Drugs, explosives, flammable and hazardous chemicals at checkpoints, prisons and mass events.

Configured with: public security library + trace mode (SERS chips)

PETROCHEMICAL

Oil and fuel analysis directly in the field, with EXCEL reporting for records.

Configured with: petrochemical library + routine mode + EXCEL reporting

ARCHAEOLOGY & HERITAGE

Non-destructive authentication of ceramics, pigments and painted artefacts.

Configured with: custom library from your reference samples

HAZMAT & CBRNE

Identification of toxic, precursor and chemical-agent substances from a safe working position.

Configured with: public security library + trace mode (SERS chips)

CUSTOMS & BORDER

Inspection of suspect solids, powders and liquids — including trace residues with SERS chips.

Configured with: public security library + routine & trace mode

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1064 nm Handheld Raman Technology — Specifications

TECHNICAL SPECIFICATIONS

Model	RamPalm
Product type	Handheld Raman spectrometer for high-fluorescence samples
Spectrometer	High-throughput spectrometer
Detector	Deep-cooled InGaAs (TEC cooling to −20 °C)
Laser	1064 nm narrow-linewidth semiconductor laser; linewidth 0.10 nm; stability ≤ ±1 %/60 min; output 0–600 mW software-adjustable
Spectral range	127–2000 cm^{-1}
Spectral resolution	9–15 cm^{-1}
Sample forms	Solid, powder, liquid
Routine identification	Hazardous, toxic, precursor, flammable and explosive chemicals
Trace detection	Trace toxic / hazardous liquids (with surface-enhancement SERS chips)
Battery	≥ 2 h continuous operation; USB Type-C charging

ELECTRICAL & ENVIRONMENT

Charging	USB Type-C
Operating temperature	−20 to 40 °C
Interfaces	WiFi, Bluetooth, USB 2.0
Data export	Memory card / data cable — PDF, TXT, EXCEL
Dimensions	221 × 113 × 46 mm
Weight	2.5 kg

PERFORMANCE HIGHLIGHTS

1064 nm
Fluorescence-defeating excitation wavelength

0.10 nm
Laser linewidth for clean, sharp spectra

127–2000 cm^{-1}
Full fingerprint range at 9–15 cm^{-1}

2.5 kg
One-hand field operation, ≥ 2 h battery

ONE MODEL, READY TO DEPLOY — CLEAR ORDERING OPTIONS

01 DETECTION MODE
- Routine identification — standard, for bulk solids, powders and liquids
- Trace detection — add SERS chips for minute toxic and hazardous liquids

02 TARGET LIBRARY
- Public security · Pharmaceutical · Petrochemical packages
- Custom library built from your own samples — expandable at any time

03 DATA & WORKFLOW
- PDF / TXT / EXCEL export; WiFi, Bluetooth, USB 2.0 — all built in
- Tell us your reporting format; configured before delivery

No variant matrix to navigate. Tell us your application and target list — the instrument is configured with your library before delivery.

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