

# RA802 Pharmaceutical Analyser



**The RA802 Pharmaceutical Analyser is a compact benchtop Raman imaging system that redefines formulation analysis. It is easy to use, yet gives rich chemical information.**

Designed exclusively for the pharmaceutical industry, the RA802 rapidly obtains detailed information on the distribution of chemical species. With unique LiveTrack™ focus-tracking technology, it can efficiently analyse uneven, curved, or rough surfaces at incredible speeds and without any sample preparation.

The RA802 has the functionality needed to meet the specific challenges of pharmaceutical analysis, enabling you to formulate more efficiently.

- Analyse multiple tablets without the need for user intervention
- No sample preparation needed; look at tablets, powders, granules, and liquid samples
- No risk of sample modification or contamination
- View information-rich chemical images rendered onto 3D surface data
- Easy to use, making Raman spectroscopy accessible to all users, without compromising performance

## Redefining Raman spectroscopy

The RA802 brings together the chemical analysis power of Raman spectroscopy (a light scattering technique) and advanced imaging technologies in a simple, robust system. It gives you outstanding performance and the results you need, quickly and without complexity.

### No sample preparation

The RA802 provides a practical solution for analysing formulations, with no risk of sample modification or contamination. Intact tablets can be analysed, or they can be split or sliced to reveal their internal structures. Look at powders, granules and liquids in their original form. The RA802 reveals detailed chemical and physical information, from the distribution and size of API domains to physical topography. Understand your sample by viewing information-rich chemical images rendered onto 3D surface data.

### Rough, uneven, or curved surfaces? No problem!

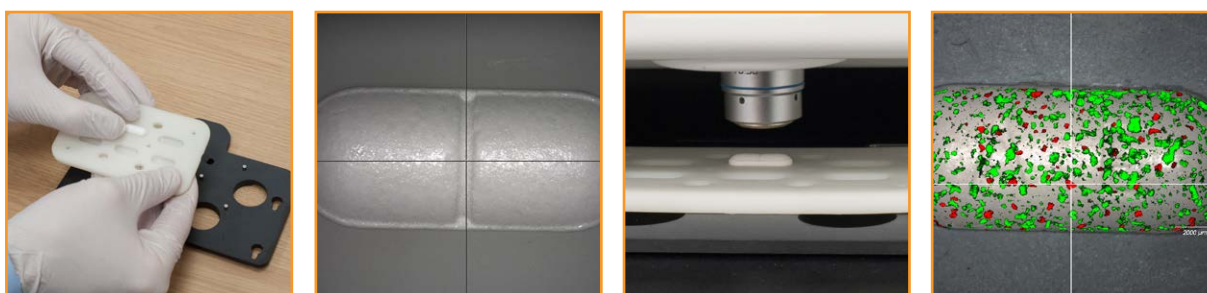
Analyse uneven, curved, or rough surfaces at incredible speeds. The RA802 uses LiveTrack technology to produce two dimensional and three dimensional chemical maps of a tablet's surface.

- Maintain focus during data collection, for optimum spatial resolution across the whole tablet surface
- Look at tablets, powders, granules, liquids and sprays
- Acquire domain size and distribution information from complex surfaces (e.g. a tablet surface)
- Determine tablet coating uniformity
- Measure surface topography

## Simplifying formulation analysis

### Simplify Raman imaging with the RA802

1. You place your tablets on the dedicated tablet holder, snapping or splitting them as necessary
2. The RA802 automatically generates a macro image providing an overview of the array of samples
3. You specify the area to analyse
4. The RA802 then:
  - a. scans the tablets, using LiveTrack focus-tracking technology to keep them in focus
  - b. generates tablet images, particle statistics and metrics that reveal chemical and physical information about your tablet



### Save time

- The RA802 can acquire data unattended. Its queuing capability enables you to configure measurements and leave the RA802 to run them
- The RA802 uses a line-focused laser; this minimises power density on the sample and avoids harming sensitive or delicate samples
- Ultra-fast Raman data collection (StreamLine™ Rapide) collects data at over 1000 spectra/s
- No need for the time-consuming sectioning or milling of coated tablets; just split them to expose their interiors

### Reliable data

- Reveal detailed chemical and physical information about the true contents of your sample. No sample preparation is required, so there is no risk of modification or contamination
- Inbuilt automated performance qualification (PQ) and optimisation
- A Raman spectral library dedicated to pharmaceuticals makes it quick and easy to identify unknowns

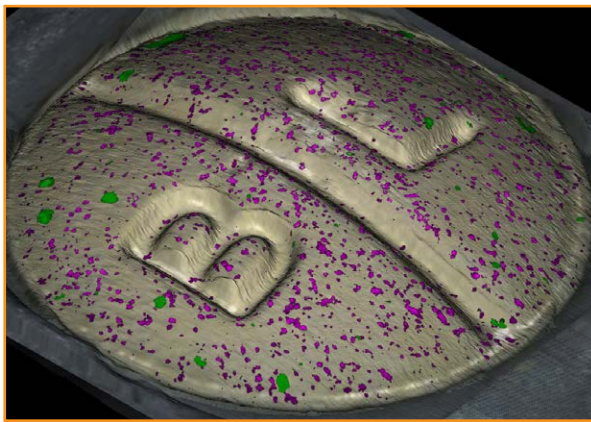
### Flexibility

- Generate images of the formulations used in intact tablets, split tablets, milled tablets, powders and sprays
- Differentiate and identify API polymorphs and excipients
- Analyse tablets through transparent coatings
- Raman analysis is non-contact and non-destructive, so you can study the same sample many times and with other techniques

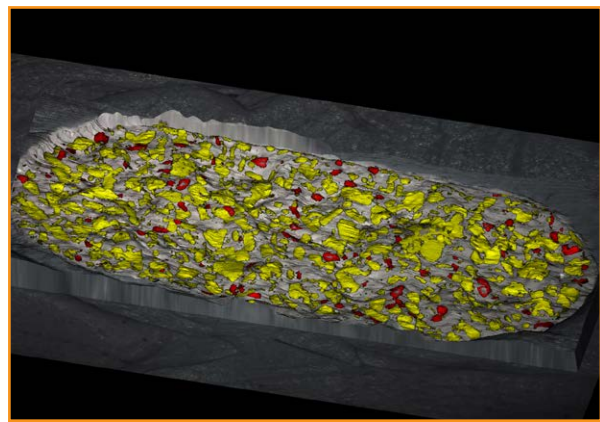
### Powerful software

The RA802's software provides a structure for managing every step of the process. The unique macro image provides a comprehensive overview of all subsequent work. The RA802 can acquire data unattended. Its queuing capability enables you to configure measurements and leave the instrument to run them; you can analyse multiple tablets without the need for user intervention. Renishaw's proprietary empty modelling technique automatically analyses the sample and indicates the components present. This can be achieved without any prior sample knowledge.

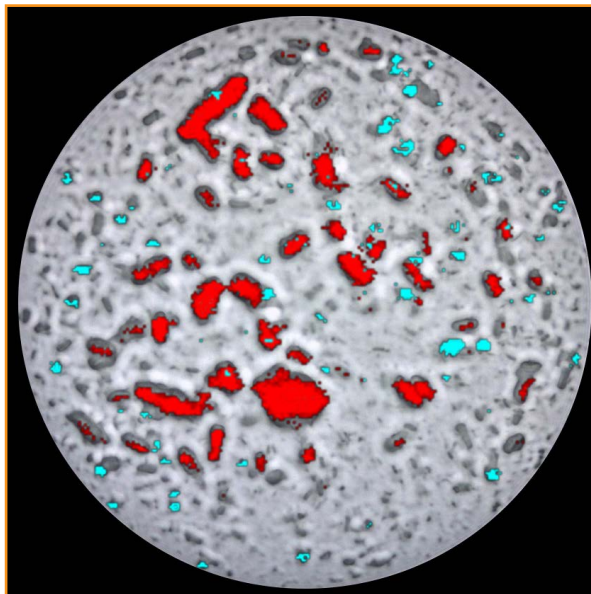
### Examples



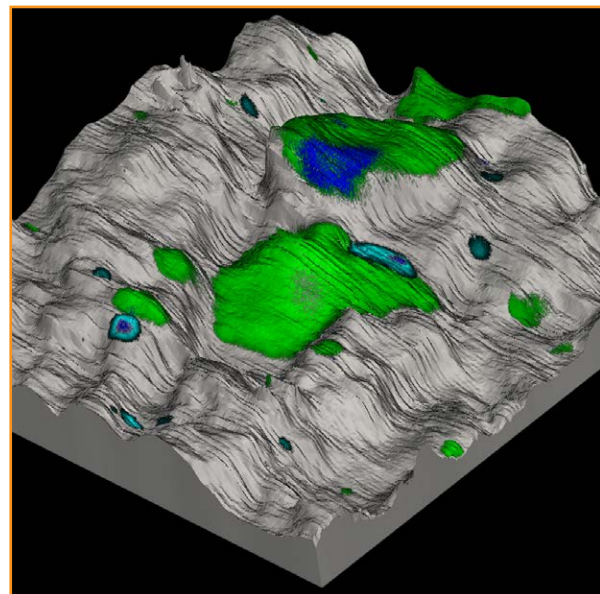
Allergy relief tablet showing low concentration API (green) and maize starch (magenta).



Analgesic tablet split in half showing caffeine (red) and aspirin (yellow).



Allergy relief spray showing the distribution of API (cyan) and micro crystalline cellulose (red).



Powder mixture showing form III (blue) and form V (green) API.

## Specifications

Parameter	Value
Laser wavelength	785 nm Laser power: > 150 mW at sample. Innovative StreamLine technology enables higher laser power use without sample damage
Spectral range	100 cm <sup>-1</sup> to 3250 cm <sup>-1</sup>
Spectral dispersion	2 cm <sup>-1</sup> pixel <sup>-1</sup>
Minimum pixel size	1 µm
Field of view	Macro ~21 mm × 16 mm (with zoom options) Micro ~ 330 µm × 250 µm (with zoom options)
Focusing	Macro – Manual or pre-defined Micro – Automatic (LiveTrack) or manual
Data collection speed	Over 1000 spectra/s
Maximum sample size	~ (110 mm × 90 mm × 25 mm) – fits 96 well plate
Power, voltage	100 – 240 VAC ± 10%, 50/60Hz, 100 W maximum
Dimensions	720 mm (W) × 502 mm (H) × 535 mm (D)
Mass (not including computer)	54 kg
Laser class	Class 1 laser product complies with IEC60825-1. CE marked

## Renishaw. The Raman innovators

Renishaw manufactures a wide range of high performance optical spectroscopy products, including confocal Raman microscopes with high speed chemical imaging technology, dedicated Raman analysers, interfaces for scanning electron and atomic force microscopes, solid state lasers for spectroscopy and state-of-the-art cooled CCD detectors.

Offering the highest levels of performance, sensitivity and reliability across a diverse range of fields and applications, the instruments are designed to meet your needs, so you can tackle even the most challenging analytical problems with confidence.

A worldwide network of subsidiary companies and distributors provides exceptional service and support for its customers.

**Please visit [www.renishaw.com/RA802](http://www.renishaw.com/RA802) for more information.**

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