

Compact Raman spectrometers

# Scan. Match. Result.

## Quick identification and verification of substances with Cora 5001

Cora 5001 is Anton Paar's Raman spectrometer for quickly identifying substances, even through packaging. It provides excellent sensitivity for delivering the results you need while being outstandingly robust. With Cora 5001 you get results, not just spectra. Whether you are working in quality control, incoming goods inspection, teaching, or R&D – you benefit from the easiest guided workflows available.

### Cora 5001 – the solution to your needs

- ✓ I need to check 100 % of the supplied goods so no incorrect or contaminated raw materials are used in production which could ruin an entire batch.
- ✓ It's my job to increase the efficiency of the QC laboratory and I am looking for a quick test to verify the chemical composition.
- ✓ My Raman microscope is expensive and difficult to operate. For many samples I don't need a spatially resolved result.
- ✓ I want to see what happens during my chemical reaction.
- ✓ I have to safely identify whether an unknown substance is dangerous or illegal.





# Cora 5001 delivers results, not just spectra

Cora 5001 verifies the identity of your samples with a clear "pass / fail" result. Unknown samples can be identified without any prior knowledge. If you have a specific task requiring more involved modeling, our spectroscopy experts are ready to design custom-made analysis methods for your instrument.

## Specialized reference libraries: identify substances within seconds

Choose from industry-specific Raman libraries covering thousands of substances. Add your own library entries to adapt to growing demands.

## Intuitive user guidance on a 10" touchscreen

This is Raman technology for everyone: Guided workflows take you through your spectroscopy tasks step by step. Customize your user interface with a simple touch. Define sample-specific methods with just a few clicks for time-saving and reproducible analysis independent of the operator.

## Small and easy to transport

Cora 5001 is ready for use in the field, in your lab, and in the warehouse. If you need to analyze substances at their location, choose the battery option and measure on-site.

## "Dual-core Raman": Two wavelengths for maximum sample variety

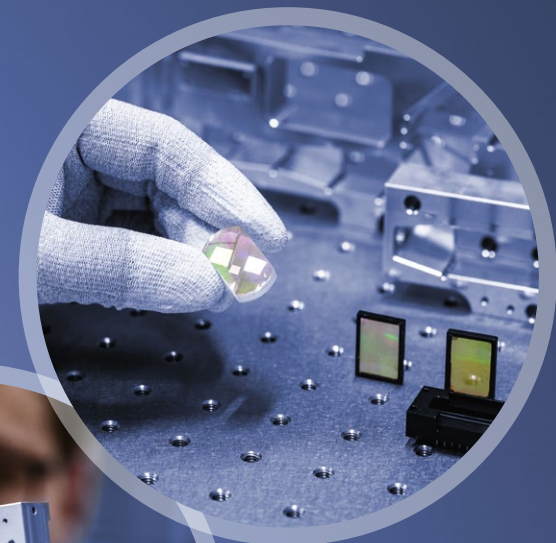
Working with fluorescing substances or many different samples can make analysis difficult. To counter this, the "Dual-core Raman" option provides two different wavelengths in one instrument to maximize the signal and minimize fluorescence. Each Raman core is a fully equipped and independent spectrometer system. Hop from one wavelength to the other at the touch of a button. No extra alignment or recalibration is needed.

# The core of Cora

Raman signals are unique to your substance just like a fingerprint. In Raman analysis, molecules are excited by a laser and generate a specific spectrum which is of the order of  $10^8$  times weaker than the laser beam. Hence, to harvest the signal a good Raman instrument needs high-quality components – all perfectly matched with each other.

## Highly sensitive components in a robust device

Many decades of experience in manufacturing reference-class optical instruments form the foundation for producing the core of Cora 5001. Core components are designed and manufactured in Germany – and aligned in the optical bench without any moving parts, which ensures a long life and ultimate robustness. Our experience is your benefit: Cora 5001 comes with a full 3-year warranty and qualified after-sales application support from our experts.



### ALIGNED WITH PRECISION

5-axis alignment of the optical components ensures maximum signal output.

### MADE TO LAST

The solid basis of Cora 5001 is the optical bench – precisely machined from a single block of aluminum. It protects all the optical components from external influences.

### BUILT TO PERFORM

Critical components are assembled under clean-room conditions to ensure enduring accuracy.



# Cora 5001 series – Make your choice

## Cora 5001 Direct

### Reproducible conditions for your sample

Cora 5001 Direct analyzes samples in a closed measuring compartment. No sample preparation is required. Holders for tablets, vials, and more can be placed precisely onto the motorized sample stage.

### Laser Class 1 for maximum user safety

The Cora 5001 Direct instruments are certified as laser Class 1. There is no need for laser safety measures – the instrument is as safe as a DVD player.

### Autofocus – gets the strongest signal

Manual focusing on thin or opaque samples with a weak Raman signal can be tricky. Cora's autofocus finds the spot with the best Raman signal within seconds.

## Cora 5001 Fiber

### Flexible probe for measurements outside the instrument

With Cora 5001 Fiber the sample no longer needs to be taken to the instrument. You can analyze substances regardless of the sample's shape or size; the Fiber probe can even be used in-situ.

### Safeguarded one-handed measurements

Cora 5001's Fiber probes are the safe solution for one-handed measurements. Thanks to the remote trigger on the handle and redundant laser safety features, the user is securely in control of the process each and every second.

### Monitoring of your chemical reactions in real-time

You can use Cora 5001 Fiber in different laboratory setups or for at-line analysis. Simply place the Fiber probe in front of a glass window of your reactor, for example.

### Discover the benefits of Raman technology with Cora 5001

- ✓ Results within seconds – 300 times faster than alternative methods
- ✓ Non-invasive and non-destructive
- ✓ Save time: no sample preparation needed
- ✓ No influence of water on the results
- ✓ In-situ live reaction monitoring
- ✓ Safe measurement through packaging





# Tailor-made solutions for your applications

## Raman spectroscopy + microwave-assisted synthesis

Combine your Cora 5001 Fiber with an Anton Paar synthesis instrument and find out what really happens during your synthesis.

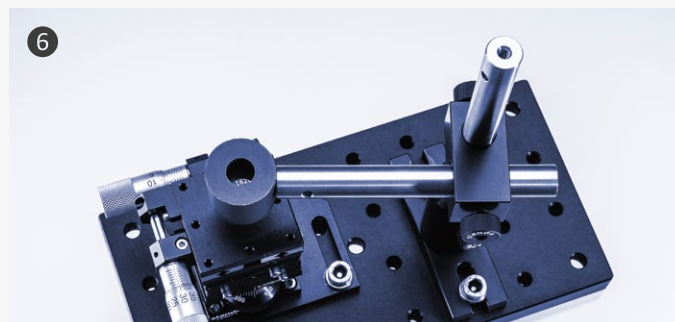
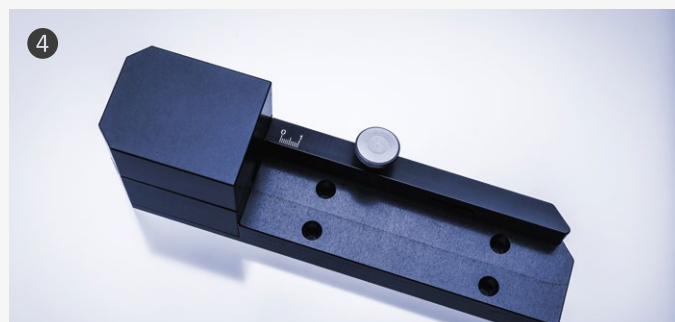
**INVESTIGATE  
YOUR CHEMICAL  
REACTIONS IN REAL-TIME**

**DETERMINE  
THE REACTION  
KINETICS**

**OPTIMIZE  
THE PARAMETERS OF  
YOUR SYNTHESIS**



**Cora 5001 + Monowave 400**



## The right accessories for efficient work

Whatever substances you measure, in whatever form, these accessories enable analysis in just a few seconds.

### Cora 5001 Direct

- 1 Use your own vials**  
We have the right holder for you – use your own round or rectangular vials or cuvettes of different sizes.
- 2 For pills or other small solid samples**  
The pill holder positions small solid samples like pills and tablets.
- 3 For foils and microscope slides**  
Thin samples like foils and slides can be inserted easily with the substrate holder.

**All sample holders are equipped with magnets which snap into place precisely and allow reproducible analysis without refocusing.**

### Cora 5001 Fiber

- 4 Fixed focus adjustment for your Fiber**  
The docking station holds the Fiber probe and vials in place for reliable and reproducible results.
- 5 Accurate adjustment at the tip of the Fiber probe**  
If you need to analyze substances with a defined distance to the probe, use the adjustable spacer tip. This ensures consistent focusing and optimum signal acquisition.
- 6 The ultimate solution for addressing any sample**  
The xyz stage positions the Fiber probe precisely where needed. Micrometer screws for alignment in all three dimensions enable on-spot measurements even with samples of small size or a high level of inhomogeneity.



“

We are confident in the high quality of our instruments. That's why we provide **full warranty for three years.**

”

Effective January 1, 2020, all new instruments\* include repair for 3 years.

You avoid unforeseen costs and can always rely on your instrument.

Alongside the warranty we offer a wide range of additional services and maintenance options.

\*Due to the technology they use, some instruments require maintenance according to a maintenance schedule. Complying with the maintenance schedule is a prerequisite for the 3-year warranty.

### Service and support Directly from the manufacturer

Our comprehensive service provides you with the best individual coverage for your investment so that maximum uptime is ensured.



#### SAFEGUARDING YOUR INVESTMENT

Regardless of how intensively you use your instrument, we help you keep your device in good shape and safeguard your investment – including a 3-year warranty.



#### THE SHORTEST RESPONSE TIMES

We know that sometimes it's urgent. That's why we provide a response to your inquiry within 24 hours. We give you straightforward help from real people, not from bots.



#### CERTIFIED SERVICE ENGINEERS

The seamless and thorough training of our technical experts is the foundation of our excellent service provision. Training and certification are carried out at our own facilities.



#### OUR SERVICE IS GLOBAL

Our large service network for customers spans 86 locations with a total of 350 certified service engineers. Wherever you are located, there is always an Anton Paar service engineer nearby.

## Technical specifications

	Single-wavelength			Dual-wavelength		
<b>Optical specifications</b>						
Excitation wavelength	532 nm	785 nm	1064 nm	532 nm and 785 nm	532 nm and 1064 nm	785 nm and 1064 nm
Spectral range	200 cm <sup>-1</sup> to 3500 cm <sup>-1</sup>	100 cm <sup>-1</sup> to 2300 cm <sup>-1</sup>	100 cm <sup>-1</sup> to 2300 cm <sup>-1</sup>	200 cm <sup>-1</sup> to 3500 cm <sup>-1</sup> for 532 nm 100 cm <sup>-1</sup> to 2300 cm <sup>-1</sup> for 785 nm and 1064 nm		
Resolution (according to ASTM E2529)	9 cm <sup>-1</sup> to 12 cm <sup>-1</sup>	6 cm <sup>-1</sup> to 9 cm <sup>-1</sup>	12 cm <sup>-1</sup> to 17 cm <sup>-1</sup>	9 cm <sup>-1</sup> to 12 cm <sup>-1</sup> for 532 nm 6 cm <sup>-1</sup> to 9 cm <sup>-1</sup> for 785 nm 12 cm <sup>-1</sup> to 17 cm <sup>-1</sup> for 1064 nm		
Laser power	50 mW	0 mW to 450 mW, adjustable	0 mW to 450 mW, adjustable	50 mW for 532 nm 0 mW to 450 mW for 785 nm and 1064 nm		
Spectrograph	f/2; Transmission Volume Phase Grating (VPG)					
Integration time	0.005 s to 600 s	0.005 s to 600 s	0.001 s to 20 s	0.005 s to 600 s for 532 nm and 785 nm 0.001 s to 20 s for 1064 nm		
Wavelength calibration	Automatic via software					
Detector array	2048 px CCD	2048 px CCD	256 px InGaAs	2048 px CCD for 532 nm and 785 nm 256 px InGaAs for 1064 nm		
Laser class	1 for Direct model 3B for Fiber model					
<b>Physical specifications</b>						
Dimensions (D x W x H)	355 mm x 384 mm x 168 mm (14.0 in x 15.1 in x 6.6 in)					
Weight	9.8 kg					
Operating temperature range	10 °C to 35 °C (non-condensing)					
Fiber probe dimensions	Cable length: 1.50 m					
Battery (optional)	Lithium-ion					
Battery run time	>1.5 h					
Power supply input	Inline power supply input: 115/230 V AC, 50/60 Hz Car power adapter input: 9 V to 32 V DC					
Power consumption	Inline power supply input: max. 100 VA DC input: typical 30 VA (60 VA when optional battery is charged)					
<b>Additional specifications</b>						
Display	10" touchscreen					
Data ports	4 x USB 2.0, 1 x Ethernet, 1 x CAN out and 1 x USB to PC					
Data export formats	.csv, .txt, .png, .spc, .aps, .pdf					
Internal storage	8 GB					
Wireless connectivity	WiFi stick (optional)					
Spectral libraries	Factory library, user-built, third-party options					
Security	User roles with customizable permissions, user password logins					

