

# HORIBA

## The Skin's Secrets Revealed



## IN VIVO RAMAN ANALYZER (RZ-660)

[www.horiba.com/](http://www.horiba.com/)



Explore the future

**HORIBA**

# Exploring the Depths of Your Skin

Whether you're a researcher, cosmetic industry professional, or part of a Clinical Research Organization (CRO), RZ-660, In Vivo Raman Analyzer, delivers advanced *in vivo* skin analysis with unmatched precision. Utilizing state-of-the-art **Raman spectroscopy**, this analyzer offers **non-invasive, non-destructive evaluations** without the need for pre-analytical sample preparation.

Enhance your workflow with RZ-660, and take advantage of HORIBA's proven expertise and industry-leading technology for reliable, efficient results.



Designed for precision and ease of use, RZ-660 offers cutting-edge, non-invasive skin analysis, perfect for a variety of research and development applications:

- Micrometer-scale, *in vivo* analysis directly on volunteers
- Non-invasive skin assessment
- Skin characterization & topical product development



## A Remote Probe for Exploring Various Skin Areas

A flexible and easily maneuverable probe that reaches various areas of the body without needing to move the volunteer, ensuring comfort and delivering optimal results. Moreover, the articulated arm and multifunction pedal offer added stability and increase user independence.



RZ-660 and its articulated arm for large skin area measurements



## Complete and Swift Analysis with Single-Shot Acquisition

Outstanding analysis capability delivers rapid and comprehensive data collection, thanks to the RZ-660's advanced design, high-performance optics, and efficient data acquisition technology.



## Cutting-Edge Skin Analysis with HORIBA's Advanced Technology

**Advanced Skin Characterization:** Carry out in-depth molecular investigations of the skin, including proteins, lipids, and hydration.

**Micrometer-Scale Analysis:** Achieve precise, in-depth results at the micrometer scale, uncovering skin components from the surface to the deeper layers.

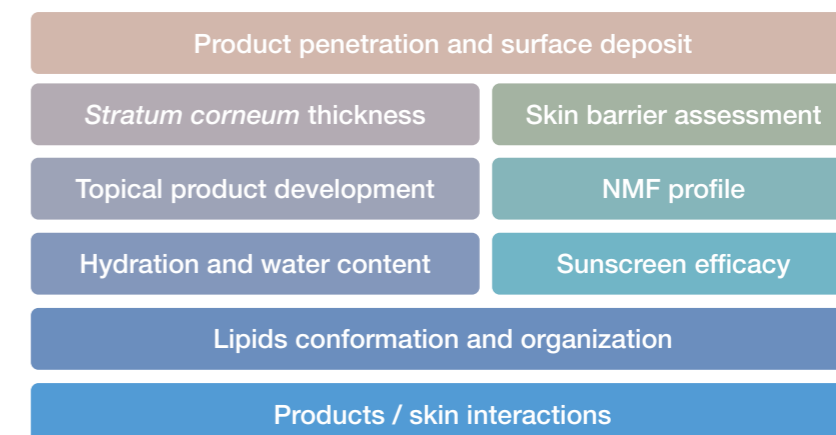
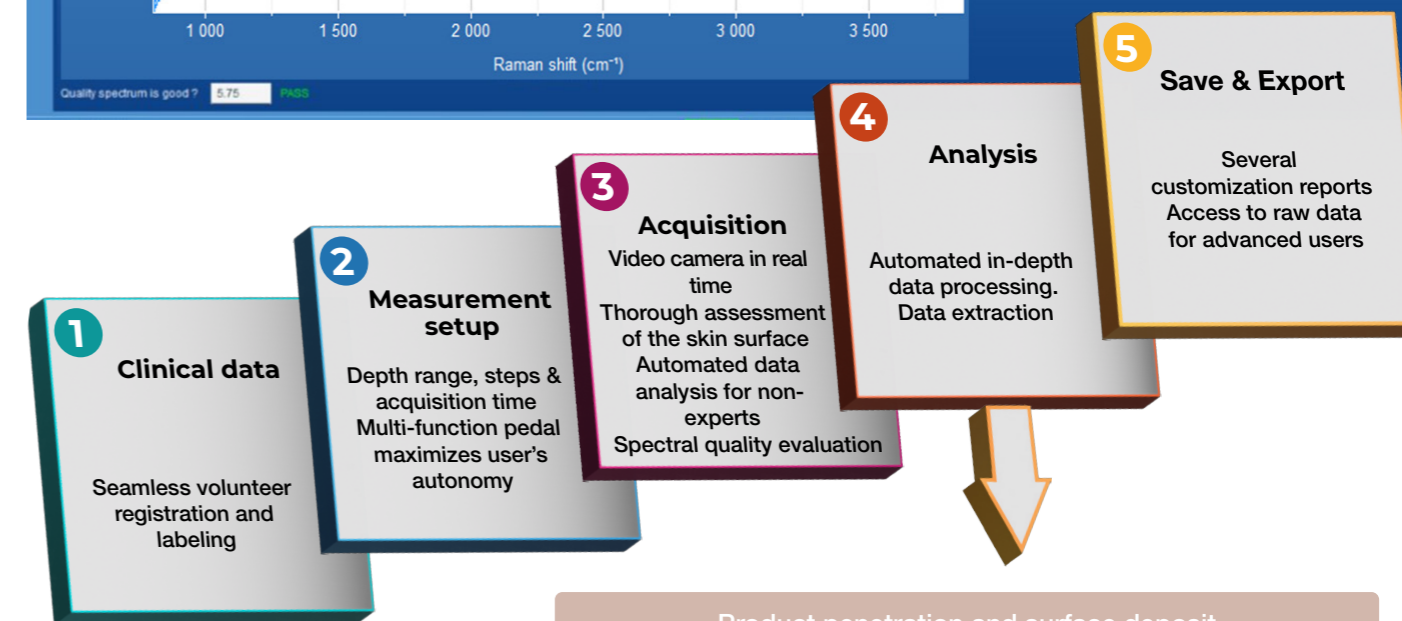
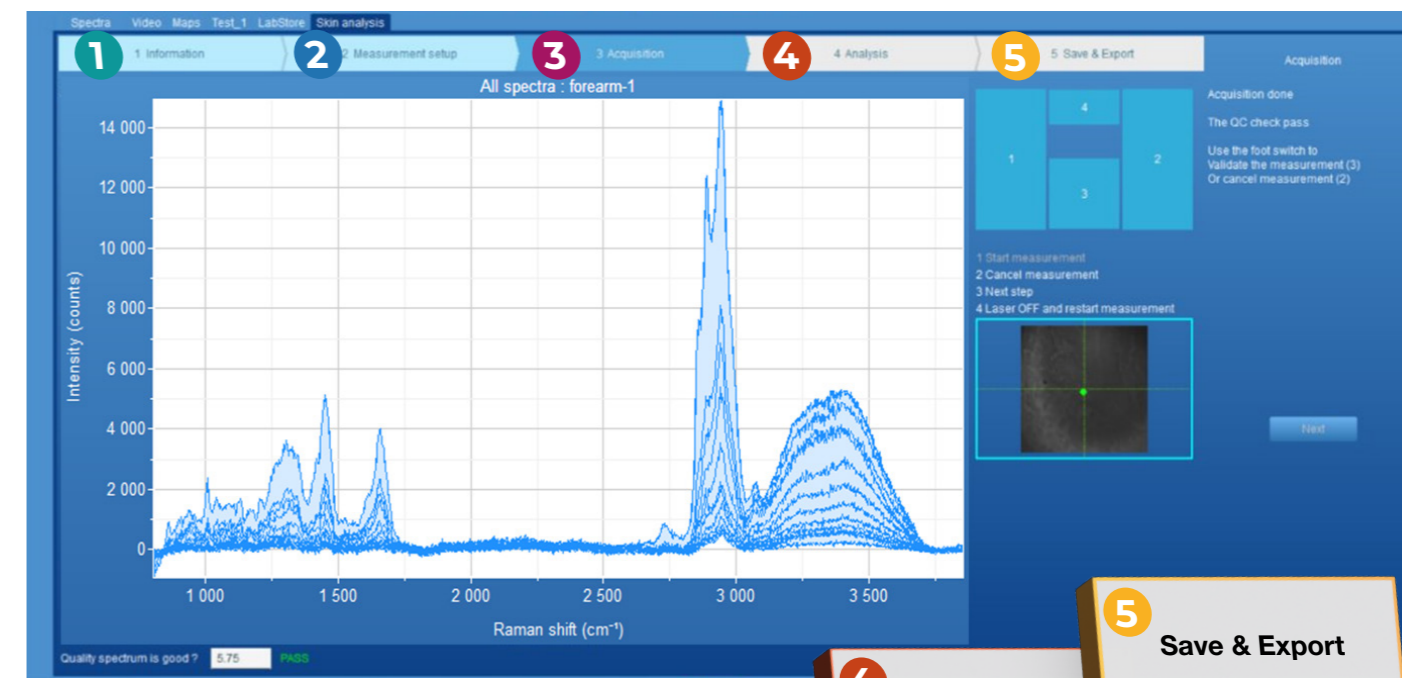


## Dedicated and Easy to Use Software to Simplify Workflows

The RZ-660, featuring its dedicated skin analysis application, is distinguished by its intuitive design, providing step-by-step guidance through the entire process.

## Discover the Power of Skin Analysis Application: Streamlined and User-Friendly

Skin analysis application excels in simplicity, guiding you effortlessly through every step—from volunteer registration to comprehensive data analysis.



# Transform Your Approach to Skin Analysis

## Advanced Water Content Technology

Transform your research and product development with RZ-660's Raman technology, engineered to provide accurate insights into skin hydration levels.



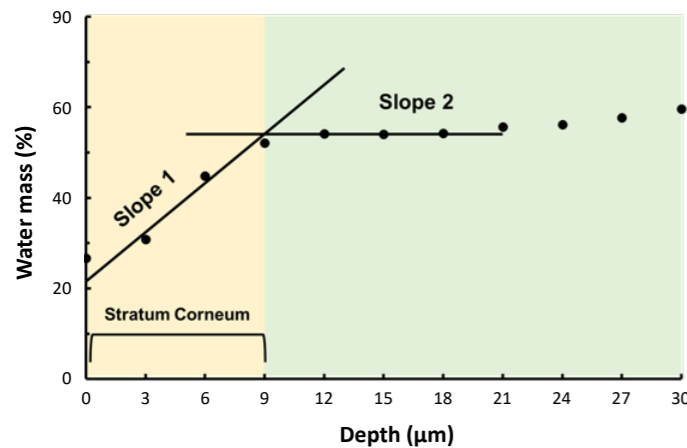
**Precise Hydration Analysis:** Accurately measure and analyze skin water content to optimize formulations for ideal moisture balance and effective hydration.

**Tailored Solutions:** Develop targeted skincare products that address specific hydration needs, enhancing skin moisture retention.

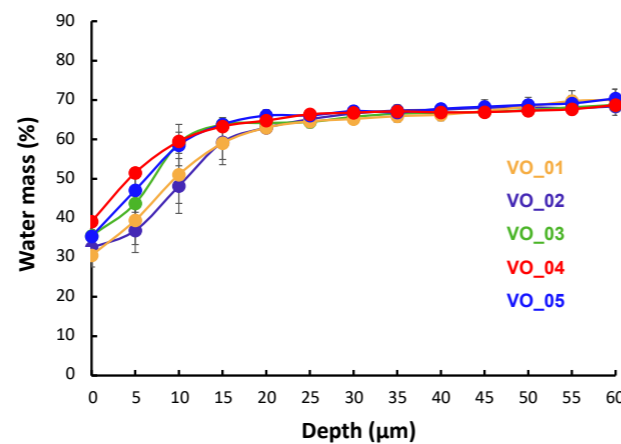
**Improved Efficacy:** Leverage real-time water content data to create products that visibly improve skin health and appearance.

**Stratum Corneum Thickness:** Determine the thickness of the *stratum corneum* with in-depth water profiles at micrometer-level precision, offering a comprehensive understanding of skin structure.

With RZ-660's advanced Raman technology, gain a comprehensive understanding of skin hydration and elevate your skincare solutions to achieve exceptional results.



Stratum corneum thickness calculation: Two lines are fitted to the measured water concentration profile, and their intersection marks the lower boundary of the stratum corneum.

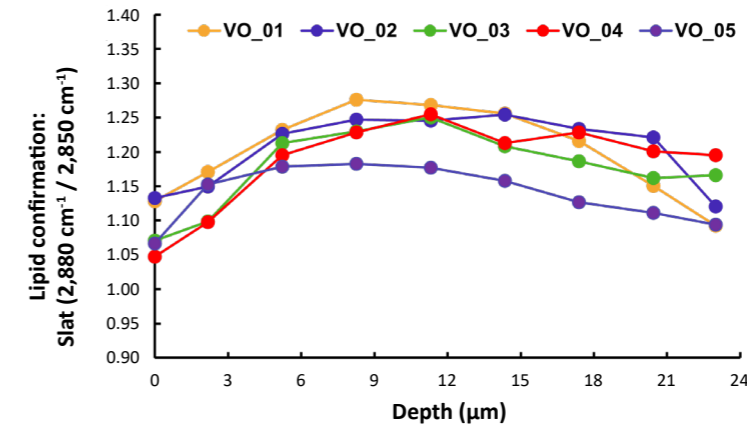


Measured water concentration profile from five volunteer (VO\_01 to VO\_05).

## Advanced Lipid Analysis

### Lipid Conformation

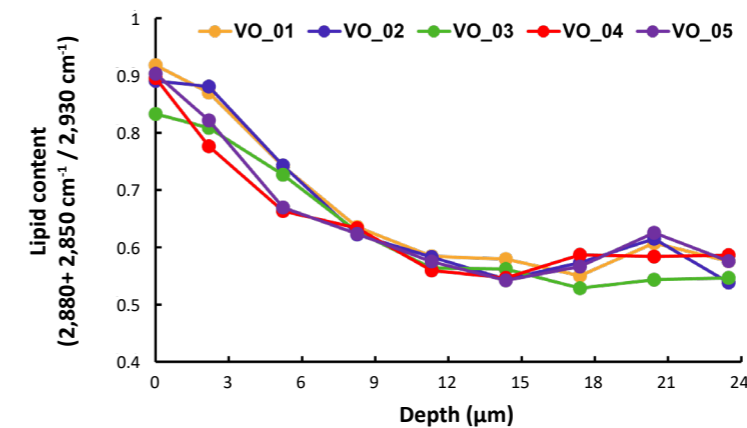
Obtain precise insights into the arrangement and organization of lipids within the skin barrier. Refine your formulations to enhance moisture retention, support barrier function, and address specific hydration needs.



Lipid conformation (Slat) profiles from five volunteers (VO\_01 to VO\_05)

### Lipid Content

Conduct detailed analyses of lipid composition and distribution, allowing you to create products that restore balance, reduce irritation, and improve skin elasticity and firmness.



Lipid content profiles from five volunteers (VO\_01 to VO\_05)

With RZ-660's advanced technology, you can develop superior skincare solutions that meet the unique demands of your research or market, delivering targeted, effective results that set you apart in a competitive landscape.

# In vivo Skin Analysis

## RZ-660 Meets the Challenge

### Precision and Accuracy

Ensuring precise and reliable measurements while minimizing errors.

### Skin Heterogeneity

Addressing the variability in skin characteristics between individuals and across different areas of the body.

### Data Interpretation

Analyzing and interpreting complex data from various techniques to provide clear and useful insights.

### Non-Invasiveness

Developing methods that provide detailed data without damaging or altering the skin.

### Patient Comfort

Ensuring that the methods used are comfortable and well-tolerated by patients during procedures.

### Resolution and Depth

Achieving high-resolution images and measurements at various skin depths to capture microscopic details.

### Data Integration

Combining results from different types of assessments (visual, biomechanical, chemical) to obtain a comprehensive view of skin condition.

**RZ-660:**  
One setup to overcome the *in vivo* challenges.



# Main Specifications

## Raman Skin Analyzer

<b>Base Technique</b>	Raman spectroscopy
<b>Laser Wavelength</b>	660 nm
<b>Laser Power</b>	18-19 mW
<b>Depth resolution</b>	< 5 $\mu\text{m}$
<b>Depth Range</b>	200 $\mu\text{m}$
<b>Gratings</b>	830 gr/mm 1,800 gr/mm
<b>Spectral Range</b>	680 – 3,800 $\text{cm}^{-1}$
<b>Detectors</b>	HORIBA Syncerity™ Open electrode, CCD, Video camera in real time
<b>Dimensions (W x D x H)</b>	627 x 440 x 253 mm
<b>Weight</b>	< 25 kg
<b>Warranty</b>	1 year
<b>Laser safety class</b>	Class 2

The HORIBA Group, made up of 49 companies in 27 countries, is a leading company that provides **analytical and measurement systems** throughout the world. HORIBA business is evolving in the markets of automotive, process and environmental instruments, medical diagnostics, semiconductor instruments and scientific instruments. It is our continual source of joy and pride that our analytical and measurement business can contribute to **global environmental conservation, safety and health, and moreover, to mitigating energy problems.**



# HORIBA Support for Everybody

## Training with experienced professionals



HORIBA offers comprehensive training support for their scientific products, ensuring that users can operate their equipment efficiently and effectively.

The training programs, designed for various skill levels, cover all of the scientific instruments and techniques, providing hands-on experience, theoretical knowledge, and practical applications. This ensures that participants gain a deep understanding of the equipment and can maximize its capabilities in their respective fields.

## Support

HORIBA provides extensive customer support services (including on-site assistance from skilled technician and engineers, software upgrades, helpdesk services and access to comprehensive documentation database) to ensure optimal performance and longevity of their products.



## HORIBA Store

The HORIBA Store offers a wide range of products to enhance the performance and usability of your HORIBA instruments. It provides access to detailed product information, training courses, and maintenance contracts to ensure users can fully utilize their HORIBA equipment.

THE  
**HORIBA**  
STORE

## HORIBA Academy

HORIBA's Raman Academy offers extensive resources for those interested in Raman spectroscopy, whether beginners or experts. The academy provides educational content on the fundamentals of Raman spectroscopy, application notes, articles, and demonstrations of instrument functionalities.

Additionally, it offers hands-on training at HORIBA labs or on-site at user facilities. This comprehensive educational support is designed to enhance the knowledge and skills of users, helping them to effectively utilize Raman spectroscopy in their research and applications.

[www.ramanacademy.com](http://www.ramanacademy.com)



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