



HANDHELD RAMAN SPECTROMETER **BRAVO**

High Performance in Your Hands

Innovation with Integrity

BRAVO is THE handheld Raman spectrometer dedicated for fast raw materials identification and verification with optimal spectrum quality and an unrivalled bunch of features.

With its outstanding performance and design, BRAVO is THE choice for all kinds of Raman applications (**Pharma, Narcotics, Art & Restoration, Laboratory/R&D**) supported by extensive libraries with more than 20,000 reference Raman spectra. Custom libraries based on your own measured data are easy to setup, anytime.

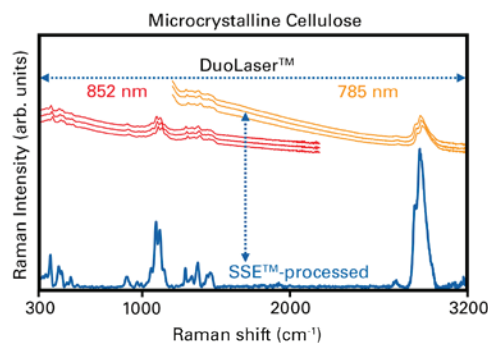
Various accessories are available tailored to different applications with the option of customization. The bag tip¹ and vial tip² enable efficient quality control of raw materials through (semi-)transparent packaging, e.g. glass and foils. As well available are tips for tablets³ and aluminum sample cups⁴ which can hold a small amount of sample material. The variable focus tip⁵ enables measurements at different laser focus positions, e.g. for non-contact mode or bottle measurements. For bottles of various sizes, the bottle adaptation offers flexibility, guaranteeing an easy and efficient workflow and robust positioning.

Unrivalled Bunch of Features

- **SSE™** – Patented fluorescence mitigation
- **DuoLaser™** – Broad spectral range
- **Laser Class 1** – No laser safety requirements
- **GUI in OPUS TOUCH design** – Intuitive and guided operation
- **Verification & ID workflows** – Extensive library support
- **IntelliTip™** – Automated measuring tip recognition
- **WiFi & Ethernet** connectivity – Flexible interfacing
- **Remote control** – Like a benchtop spectrometer
- **SyncService** – Automated data transfer
- **Pharma compliance** – Always up-to-date! (e.g. 21 CFR Part 11, Data Integrity, USP, Ph. Eur.)

SSE™ and DuoLaser™

In many cases, raw material verification by Raman spectroscopy is prevented due to fluorescence. BRAVO uses SSE™ (Sequentially Shifted Excitation), a patented fluorescence mitigation method, based on controlled temperature variations of the laser that enables the measurement of a much wider range of raw materials with handheld Raman systems than ever before. DuoLaser™ excitation (785 nm and 852 nm) provides the highest sensitivity across a broad spectral range and hence guarantees maximum unambiguous verification.



GUI in OPUS TOUCH Design, Verification & ID Workflows with IntelliTip™ Easy and Guided Operation



SyncService

The BRAVO SyncService enables automated data transfer for all electronic records including audit trails and measurements from the BRAVO system into a secure location.

Pharma compliance – Always up-to-date!

Bruker's high-performance systems offer up-to-date compliant solutions to the latest Pharma regulations. Whether this is performance testing or validation testing, all data is collected in accordance with USP and Ph. Eur. benchmarks and cGMP incl. 21 CFR and Data Integrity. All system validation testing is supported by comprehensive validation documentation including test forms for IQ, OQ and PQ.

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**Bruker Optics is ISO 9001, ISO 13485,
ISO 14001 and ISO 50001 certified.**

