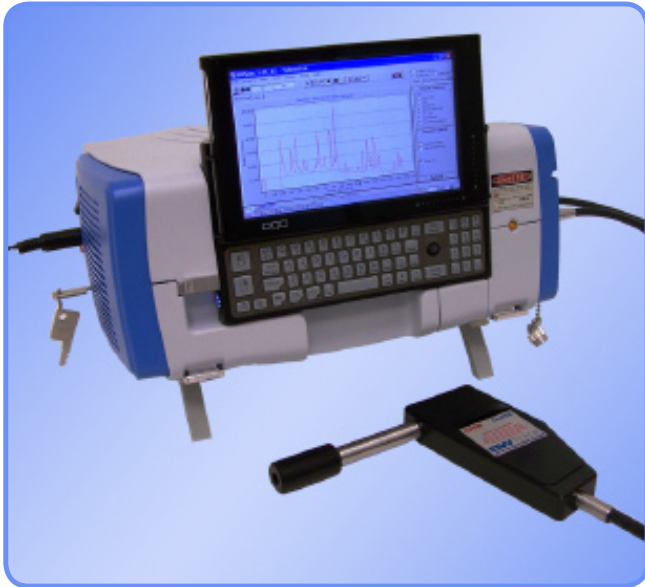


MiniRam™ II

Raman Spectrometer System



The MiniRam™ II Raman spectrometer is completely field-portable with battery operation and an integrated handtop computer. With equivalent performance as our MiniRam with a 785 nm laser, it is designed for in-the-field applications where both portability and high performance are required. Easy to carry, simple to operate, and capable of analyzing samples (solids, powders, liquids) directly from outside transparent containers, MiniRam II is ideal for incoming QC raw materials identification/verification, field operation for unknown substance recognition and anti-counterfeiting. MiniRam II is also equipped with a USB interface for external computer connection.

Highlights:

- ▶ Completely field-portable
- ▶ CleanLaze™ 785 nm laser technology with linewidth as narrow as 0.03 nm, laser lifetime > 10,000 hours
- ▶ Adjustable laser power, control via software
- ▶ High spectral resolution with 785 nm excitation laser: 10 cm⁻¹
- ▶ Wide Raman shift coverage with 785 nm excitation laser: 175 – 3150 cm⁻¹
- ▶ TE-cooled 2048 pixel CCD detector with long-term stability
- ▶ Lithium-polymer battery: ~ 2 hours operating time
- ▶ Multiple data formats and easy data transfer, GRAMS/AI® software interface
- ▶ Fiber optic interface for convenient sampling
- ▶ The handtop computer capable of running all Windows® based software

Applications:

- ▶ Raw materials inspection (PAT, Incoming-QC)
- ▶ Materials identification & verification
- ▶ Forensic materials identification
- ▶ Anti-counterfeiting
- ▶ Minerals identification
- ▶ Gemstone identification & authentication
- ▶ Paint & Pigment identification
- ▶ Ancient art & fossil analysis

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Typical Specifications

| SPECTROMETER | |
|----------------------|---|
| Spectral Coverage | 175 – 3150 cm^{-1} |
| Optical Resolution | 10 cm^{-1} |
| Detector | TE-cooled 2048 CCD array |
| Digitizer Resolution | 16 bit, 250 kHz |
| Dark Noise | < 60 rms at 9 ms, 1 scan |
| Fiber Connector | SMA 905 |
| LASER | |
| Center Wavelength | 785 nm +/- 0.3 nm |
| Laser Linewidth | 785 nm: 0.2 nm (typical) |
| Output Power | 785 nm: > 300 mW |
| Fiber Connector | FC/PC |
| SYSTEM | |
| Integration Time | 9 ms (minimum) – 65,535 ms (maximum) x 2 |
| Computer Interface | USB 1.1 / 2.0 |
| Operating Software | BWSpec™ for Windows Me, 2000, XP with GRAMS/AI® OCX control interface |
| Data Transfer Speed | 3 ms per spectrum in fast acquisition mode |
| Data Format | SPC, TXT, Excel |
| Dimensions | 10.1 x 8.3 x 4.5 inches (257 x 211 x 115 mm) |
| Weight | ≈ 6.8 lbs (~3 kg) |
| Power Input | Rechargeable battery pack with 19 VDC power input |



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Accessories and Options

| | | |
|---|---|---|
| <p>MiniRam™ II System</p> | <ul style="list-style-type: none"> • Fiber optic probe (Lab; Industrial) • Power supply • User manual • USB2.0 cable |  |
| <p>Sampling (probe not included)</p> | <ul style="list-style-type: none"> • Video microscope sampling system • Enhanced Raman cuvette holder • Raman Probe holder • Flow cells for liquid sample and on-line process monitoring (SS; Ti) |  |
| <p>Power</p> | <ul style="list-style-type: none"> • Extra rechargeable battery • Battery charging cradle |  |
| <p>Computer</p> | <ul style="list-style-type: none"> • Personal handtop with 5" LCD, Windows XP, with BWSpec™ pre-installed |  |
| <p>Software</p> | <ul style="list-style-type: none"> • BWSpec™ • BWID™ Standard • BWID™ Pharma • GRAMS/AI® 8 Lab pack • PLSplus/IQ for AI 8 |  |
| <p>Safety</p> | <ul style="list-style-type: none"> • Laser safety goggles |  |
| <p>Carrying case</p> | <ul style="list-style-type: none"> • MiniRam II carrying case |  |