ML

Multi-Reflection Sample Interfaces

PRODUCT HIGHLIGHTS

- Small and lightweight
- Highly accurate mid IR analysis
- No sample preparation
- Lab, fume hood or field use
- Available with general purpose and specific method
- 12 VDC cigarette lighter adapter for mobile uses
- Integrated Multi-Reflection Sample Interfaces are available
- Ideal for on-site, in field use.
- USB connection to any PC

SYSTEM SPECIFICATIONS

• Display	External computer
• Size	8" X 8" X 4.5"
• Weight	8 lbs.
• Operating Ranges	-10°C to 50°C 14°F to 122°F
• Power	100/120/240 VAC 50/60 Hz 12 VDC Option
• Warm Up Time	10 minutes
• Response Time	2 Minutes

SYSTEM REQUIREMENTS

• Operating System	Windows XP™
• Processor	Pentium IV 3GHZ
• Memory Ram	1GB
• Hard Disk	40GB

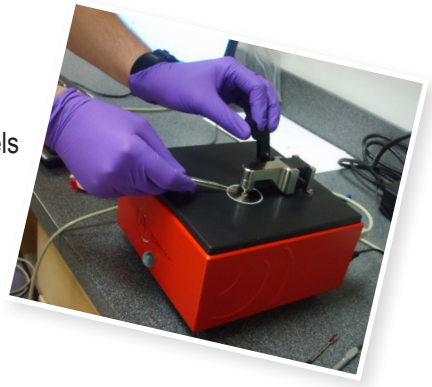
The MicroLab (ML) is available with a variety of sample interfaces for enhanced sensitivity and to improve quantitative results. Single and multi-reflection disks have been engineered using a patented diamond and ZnSe composite. Diamond is the world's most durable substance and a ZnSe substrate is used for maximum IR signal.

The MicroLab (ML) is an extremely small mid-IR fingerprint region spectrometer specifically designed for sample analysis in challenging, multi-user environments. The heart of the system is a patented, rugged interferometer field proven to be used in any environment. The ML was designed to give the user ultimate flexibility in where to use the system whether it's a traditional analytical lab, a temporary field lab or even in the field.

The ML was designed to give the user the capabilities of much larger, traditional FTIR benches in a significantly more compact size. It is simple to use and will analyze an exceptionally broad range of liquids, powders, pastes and gels. With the touch of a button, the ML provides valuable information about the identity and amount of chemical substances present in a material.

The ML Will:

- Monitor the quality of products
- Determine ingredients in a mixture are at the proper levels
- Assess quality of incoming raw materials
- Identify contaminants
- Monitor the mixing, blending or curing process
- Track the decomposition of key additives in a blend



Simple to Use - Minimal Training Required

With the ML's innovative sampling interface, no sample preparation is required, measurements take less than 2 minutes and cleanup takes seconds. Because the ML's software and user interface are intuitive, no technical spectroscopy training is required to use the system.

A2 TECHNOLOGIES

Sample Types

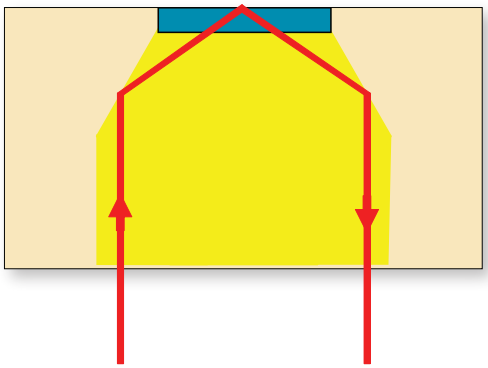
• Polymers • Oils • Gels • Greases • Pastes • Dairy • Acids • Gasoline

• Bases • Diesel • Liquids • Wine • Foodstuffs • Powders • Solids • Soil

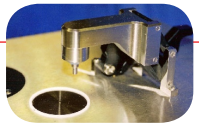
Sample Measurement with the ML

Single Reflection:

Diamond Thickness:	0.5 mm
Applications:	Samples requiring high pressure and/or high throughput.
Size:	1 mm diamond diameter with 200 um “active area”
Mount:	Flush for optimum sample contact
Temperature:	100 Degrees C. Max
Range:	4000-650 cm^{-1}
Diamond Absorption:	Usually not visible in spectrum. 1900 - 2200 cm^{-1} region undisturbed.

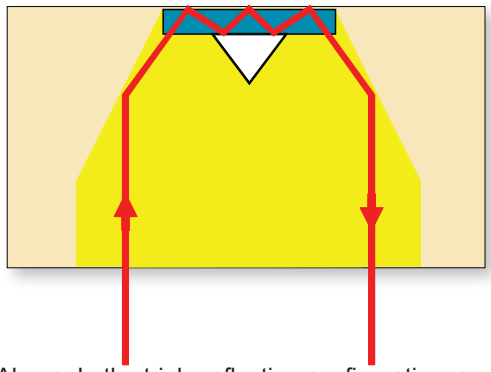


Above: In the single reflection configuration a ZnSe prism focuses the IR beam into the diamond and then focuses it back in the detector.

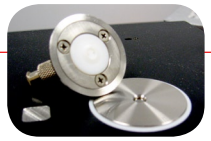


Triple Reflection:

Diamond Thickness:	0.5 mm
Applications:	Samples requiring moderate pressure and/or high throughput.
Size:	2 mm diamond diameter with 200 um “active area”
Mount:	Flush for optimum sample contact
Temperature:	100 Degrees C. Max
Range:	4000-650 cm^{-1}
Diamond Absorption:	Visible in spectrum. 1900 - 2200 cm^{-1} region still useful

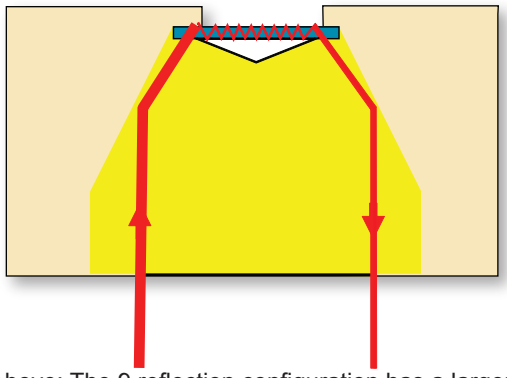


Above: In the triple reflection configuration, an air gap causes 3 reflections within the diamond.



Nine Reflection DuraDisk:

Diamond Thickness:	0.25 mm
Applications:	Samples requiring high sensitivity. Ideal for liquids.
Size:	6 mm diamond diameter with 4 mm “active area”
Mount:	Recessed sampling area for liquid retention.
Temperature:	100 degrees C. Max.
Range:	4000-650 cm^{-1}
Diamond Absorption:	Diamond absorption region (1900 - 2200 cm^{-1}) not useful.



Above: The 9 reflection configuration has a larger air gap which causes 9 reflections within the diamond.

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