

Merlin

AT A GLANCE

- ▶ Automated diffuse reflection accessory for unattended analysis of up to 60 samples
- ▶ High-performance optical design collects maximum amount of energy and provides high-quality spectra
- ▶ Easily programmable for automated sample collection
- ▶ Removable sample tray to speed sample loading and unloading



FULLY AUTOMATED
WITH AUTOPRO SOFTWARE



The Merlin is a high-performance diffuse reflection accessory developed to analyze up to 60 samples with minimal user intervention. This automated accessory will save time and increase productivity in the lab.

Typical applications include soil, powdered pharmaceutical, forensic, and kidney stone analysis where speed and efficiency are important. Spectral quality and reproducibility are excellent with the Merlin.

DESIGN

The design employs an automated R-theta sampling stage providing diffuse reflection analysis with greatly reduced operator intervention and increased sample throughput. The optical design of the Merlin utilizes a high-efficiency fixed ellipsoidal reflector to collect the maximum amount of diffusely reflected energy from the sample. Other optical components important to achieving this high performance are aligned and permanently located. The accessory is baseplate-mounted in the FTIR spectrometer sample compartment.

The Merlin fully automates diffuse reflection FTIR spectroscopy. The sample tray contains positions for 60 samples, plus a center position for a background sample, which usually consists of pure KBr powder. The sample plate is marked into six areas, labeled from A to F. Each area has ten sample positions marked from 1 through 10. This sample position numbering scheme is also used within the software for describing and positioning the samples.

Gold-coated optics version of the Merlin is available for highest performance mid-IR analysis and for automated NIR diffuse reflection sampling.

AUTOPRO SOFTWARE

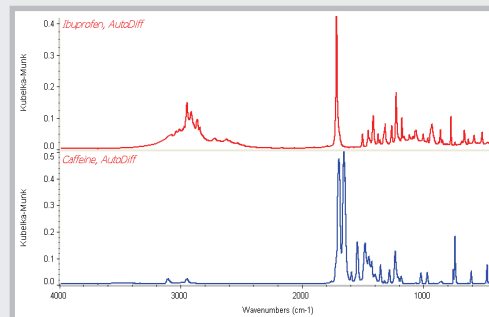
Merlin is controlled by PIKE AutoPRO software which incorporates multi-operator sample submission. The system is extremely flexible and the graphical user interface is intuitive and simple. Additional features include integrating sample information into the spectral data file and file name, and several background collection options such as collecting a background between intervals of sample data collection to minimize atmospheric contributions in the IR spectra. The AutoPRO software integrates seamlessly with most commercially available FTIR software packages.

SPECIFICATIONS

Optical Design	3X beam demagnification
Angle Of Incidence	30°
Stage Motion	R-Theta
Computer Interface	USB
Samples Focus	Z-direction adjustment
Sample Positions	60 cup positions per sampling tray
Sample Cups	Macro cups, 10 mm ID x 2.3 mm deep (micro cups optional, 6 mm ID x 1.6 mm deep)
Purge	Standard purge tubes and purge connections
Power Requirements	100–240 Volts AC; 50/60 Hz
Weight	14.1 kg
Dimensions (W X D X H)	219 x 290 x 333 mm (excluding purge tubes and baseplate)

APPLICATION

To increase productivity and laboratory throughput, the diffuse reflection sampling is easily adapted to automated sampling. Popular applications include pharmaceutical, soil, and kidney stone analysis.



Ibuprofen and Caffeine spectra collected using the Merlin accessory.

PART NUMBER DESCRIPTION

043-31XX	Merlin – Automated Diffuse Reflection System Includes motion control unit (100-240 VAC), AutoPRO software 60-position sample mounting tray, 60 macro sample cups and Sample Preparation Kit
043-81XX	Merlin – Automated Diffuse Reflection System with Gold-Coated Optics Includes motion control unit (100-240 VAC), AutoPRO software, 60-position sample mounting tray, 60 macro sample cups and Sample Preparation Kit

Note: Replace XX with your spectrometer's Instrument Code listed in the back of the catalog.

Replacement Parts and Options

043-3090	Merlin Sampling Cups, macro (60 ea.)
043-3085	Merlin Sampling Cups, micro (60 ea.)
043-3095	Merlin 60-Position Sampling Tray
042-2010	Sample Cup, micro, 6.0 mm diameter, 1.6 mm deep (2 ea.)
042-2020	Sample Cup, macro, 10 mm diameter, 2.3 mm deep (2 ea.)
042-3010	Abrasion Sampling Kit
042-3020	Abrasion Disks, silicon carbide (100 ea.)
042-3025	Abrasion Disks, diamond (50 ea.)
042-3080	Alignment Mirror, aluminum
042-3082	Alignment Mirror, gold
042-3084	Alignment Mirror, diffuse gold