

Smart SAGA™

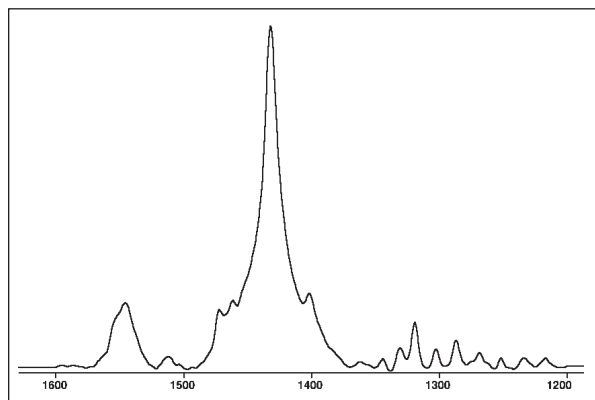
For Research Performance Grazing Angle Reflectance Studies

The Thermo Scientific Smart SAGA (Specular Apertured Grazing Angle) is ideal for grazing incidence analysis of sub-micron films on metallic substrates. Grazing angle reflectance is the technique of choice for analyzing thin coatings or deposits because the high angle of incidence increases pathlength of the infrared beam through the material of interest, significantly enhancing sensitivity. This accessory samples an average angle of 80 degrees from the normal. Analysis of films from 10 Angstroms to 0.5 microns is possible. A permanently mounted polarizer minimizes the 'S' polarized light which does not contribute to spectral data at the surface, increasing sensitivity and sampling speed. Samples are analyzed conveniently by placing them on a horizontal sampling surface and masked using a unique sliding aperture assembly.

This is an extremely easy accessory to use for grazing angle studies, yet it delivers superior performance and great sample area discrimination. Simply lay the sample flat on the horizontal sampling surface, position it using the laser-engraved grid if desired, turn the wheel to set the aperture size, and scan. Monolayer sensitivity is achievable due to the high angle of incidence and selective polarization.

Example Applications

- Ultra-thin coatings
- Adsorbed species on metal substrates
- Lubricants
- Surface contaminants
- Residues
- Molecular monolayers



Cadmium arachidate monolayer on a gold substrate analyzed with a Smart SAGA

Unique Features

In addition to the all of the advantages of the Thermo Scientific Smart Accessories™, the Smart SAGA features a unique internal sliding aperture assembly to quickly provide sampling areas of different sizes. The aperture is set by simply rotating a calibrated thumb wheel on the front of the assembly. It defines the infrared beam area both before and after reaching the sample surface, using a revolutionary double-pass beam path. The design eliminates the need to soot apertures to reduce unwanted reflections, and allows accurate sample definition localized studies. The integrated polarizer allows the best possible sensitivity and signal-to-noise ratio.



The sample stage features a laser-engraved linear measurement grid that allows reproducible sample positioning for localized studies of larger samples. These markings provide spatial information about where data was collected on a sample that can be recorded for future reference.

- 80 degree fixed angle of incidence
- All gold reflecting optics
- Unique internal aperture sliding assembly providing four different shapes and sizes of sample definition. No need to soot the apertures
- Integrated polarizer to eliminate the 'S' polarized light and enhance the "P" polarized light component. The integrated design also protects the polarizer from contamination
- A laser engraved grid on the sampling plate to facilitate reproducible sample positioning and masking when performing quantitative analysis

Specifications

Angle of Incidence: Average 80° fixed

Sampling Area: Two circular active areas: 5mm, and 8mm; one oval active area of 16mm x 8mm, and open beam

Optics: Gold reflective

Sample Positioning: Laser-engraved measurement grid on sample stage

Polarizer: Germanium

Ordering Information

Accessory	Part Number
Smart SAGA	0033-1XX

XX = 99 for Nicolet™ iS™ 10 and Nicolet x700 XX = 99 for Nicolet Nexus™
XX = 97 for Nicolet 380 and Avatar™