

VeeMAX III

AT A GLANCE

- ▶ Selectable angle of incidence – from 30 to 80 degrees in 1-degree increments
- ▶ Automated option for automated high-precision experiments
- ▶ Measurement of thin films and monolayers to relatively thick films
- ▶ Optimize spectral results with selectable angle of incidence
- ▶ Integrated position for IR polarizer – essential for monolayer analysis and study of polymer orientation
- ▶ Optional single reflection ATR crystals



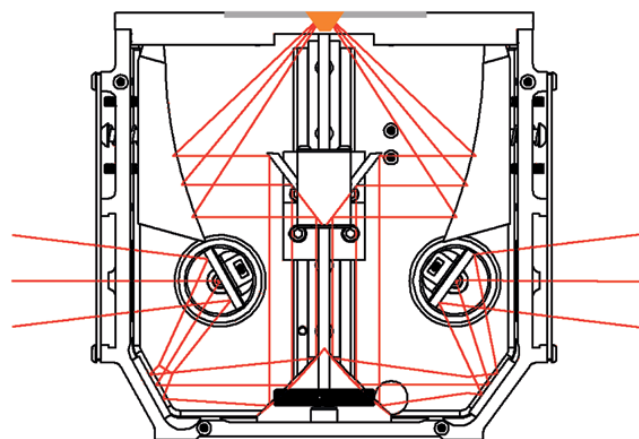
FULLY AUTOMATED
WITH AUTOPRO SOFTWARE



The VeeMAX III is a variable angle, high-performance, research-grade specular reflection accessory. The unique variable angle optical design (U.S. Patent No. 5,106,196) makes it a key accessory to analyze a wide range of samples.

Typical VeeMAX III applications include depth profiling, analysis of monolayers and ultra-thin films, determination of polymer orientation and spectroelectrochemistry. From monolayers to relatively thick films, all experiments may be optimized by varying the angle of incidence from 30 to 80 degrees. Changing the angle is as easy as turning the angle selector on the front panel of the accessory.

To make measurements, the sample is placed face down on the sampling surface. Designed for unrestricted access to the sampling area, large samples may be readily analyzed. Masks with 2", 5/8" and 3/8" apertures are provided to suit different sample geometries. Thanks to the optical design of this accessory and the quality of the diamond-turned optics, excellent throughput is realized even at high angles of incidence.



VeeMAX III with ATR optical layout.

Another important design feature of the VeeMAX III is its enclosed optics for purging, which eliminates the need to purge the entire sample compartment. This significantly decreases sampling time. It is furnished with two internal polarizer mounts allowing the PIKE polarizer to be inserted into the accessory on either the source or detector side of the spectrometer. The polarizer setting dial is easily accessed without breaking the purge when changing polarizer orientation.

VERSATILE ATR OPTIONS

The VeeMAX III accessory may be fitted with an ATR flat plate, allowing for variable angle ATR experiments. Please see the ATR section of our catalog for complete configuration options.

AUTOMATION

An optional automated version of the VeeMAX III accessory is available. It features a precision motor with USB interface and PIKE Technologies AutoPRO software. Operation of the VeeMAX III can be integrated with the spectrometer software of most FTIR instruments, which allows the operator to precisely and reliably control a wide range of angles of incidence and data collection simultaneously. Automated sampling decreases operator and measurement error, and increases workflow productivity.



Automated VeeMAX III with polarizer option. Angle of incidence and polarization angle can be set independently.

SPECTROELECTROCHEMICAL CELLS

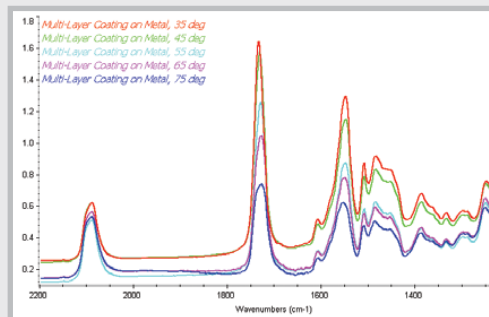
A spectroelectrochemical cell options for the VeeMAX III is also available. The PIKE cell, for applications requiring customization, allows for external reflection experiments using a flat IR window or CaF₂ prism or for ATR-SEIRAS experiments. The PIKE electrochemistry cell is equipped with a precision micrometer for electrode positioning. Alternatively, PIKE offers an out-of-the-box cell for the popular ATR-SEIRAS measurements. ATR-SEIRAS has emerged as an alternative to external reflection based IR spectroelectrochemistry, and has been shown to be a powerful tool. To learn more, See the Jackfish cell in the ATR section.



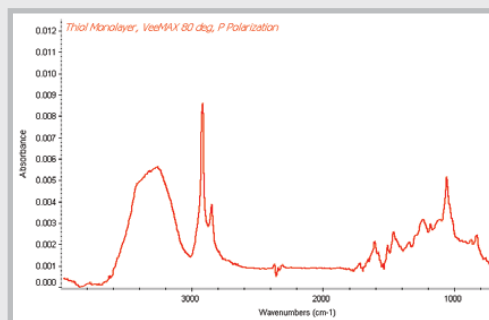
The Jackfish J2 Electrochemical Cell

APPLICATIONS

Through the unique variable angle design, the VeeMAX III angle of incidence feature provides a versatile accessory to optimize the measurement. Manual and automated options available.



Multi-layered coating on metal substrate spectra, measured using the VeeMAX III.



Thiol monolayer spectrum, measured using the VeeMAX III set at 80 degrees angle of incidence, ZnSe polarizer and MCT detector.

SPECIFICATIONS

Optics	All reflective
Angle of Incidence Range	30 to 80 degrees
Sample Masks	2", 5/8" and 3/8"
Purge Sealing	Purge tubes and purge barb included
Dimensions (W x D x H)	177 x 92 x 162 mm (excludes baseplate)
FTIR Compatibility	Most, specify model and type

PART NUMBER	DESCRIPTION
013-11XX	VeeMAX III Includes sample masks (2", 5/8" and 3/8"), gold substrate alignment mirror, FTIR base mount, and purge tubes
013-12XX	Automated VeeMAX III Includes controller, cabling, sample masks (2", 5/8" and 3/8"), gold substrate alignment mirror, FTIR base mount, and purge tubes
Note: Replace XX with your spectrometer's Instrument Code listed in the back of the catalog.	

VeeMAX III Sampling Options

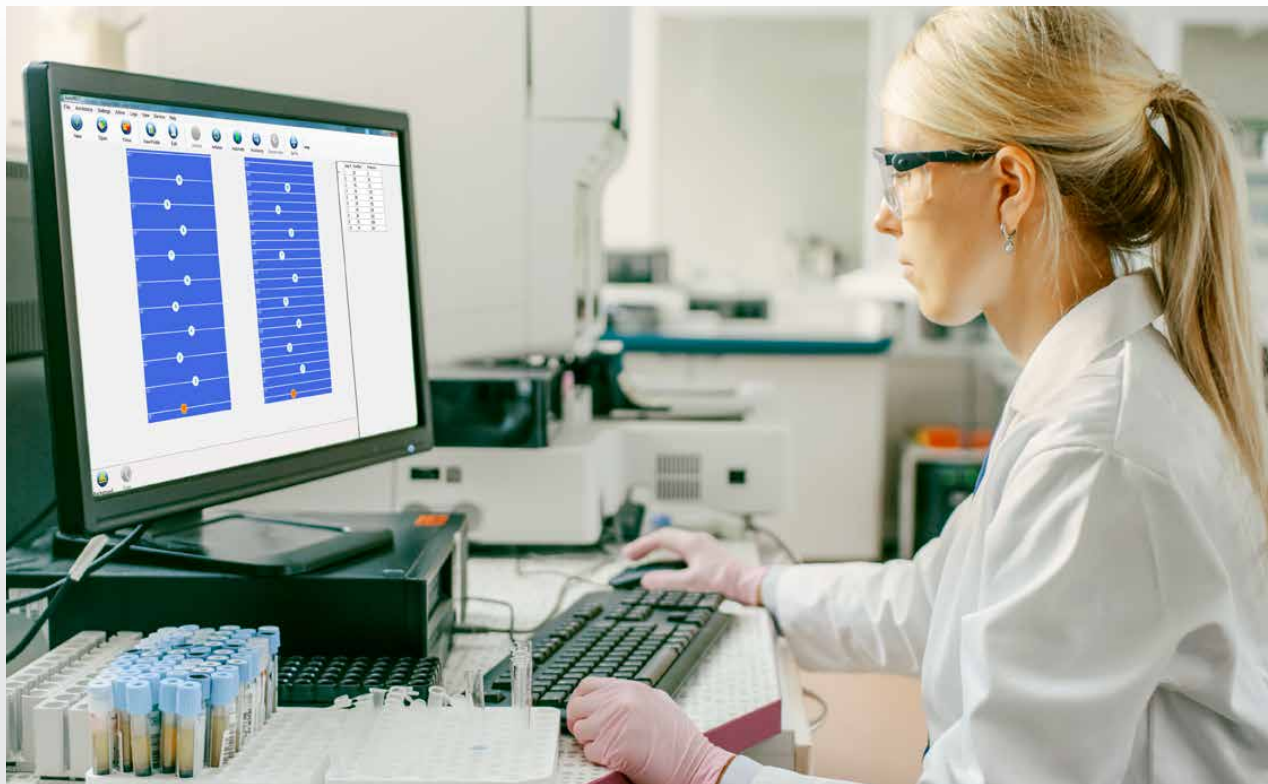
090-1000	Manual Polarizer, ZnSe
090-1200	Manual Polarizer, KRS-5
090-3000	Precision Manual Polarizer, ZnSe
090-3200	Precision Manual Polarizer, KRS-5
090-5000	Precision Automated USB Polarizer, ZnSe
090-5100	Precision Automated USB Polarizer, KRS-5
Note: Automated version includes PIKE Technologies AutoPRO software and controller. More polarizer options are found in the polarizer section of this catalog.	

PART NUMBER	DESCRIPTION
VeeMAX III Replacement Parts	
013-4010	Specular Mask Set
300-0002	Gold Substrate Alignment Mirror, 1.25 x 3.0"
Note: Please contact PIKE Technologies for items not described in this list.	

Spectroelectrochemical Configurations

013-3300	Electrochemical Cell - PTFE
013-3370	Electrochemical Cell - PEEK
160-5527	Prism, CaF ₂ , 60 degree
013-3360	Crystal Holder, 60 degree
160-1144	Flat Window, CaF ₂ , 20 x 2 mm
160-1304	Flat Window, ZnSe, 20 x 2 mm
013-3320	Flat Window Holder

Notes: The electrochemical configuration requires Electrochemical Cell and VeeMAX III Specular Reflection accessory. Must select one or more windows. Choose appropriate window holder. More window types for Specular Reflection measurements may be found in our listing of transmission windows, 20 x 2 mm. Electrodes supplied by the end-user. See VeeMAX III with ATR and Jackfish cell product sheets for full ATR crystal and configuration options.



Automated VeeMAX III programmed with the PIKE Technologies AutoPRO software.



Automated VeeMAX III with polarizer option.