ACS Material Equipment Series

InSitu Pro™

AECH400V-EC

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I. Product Composition

1) Main Unit

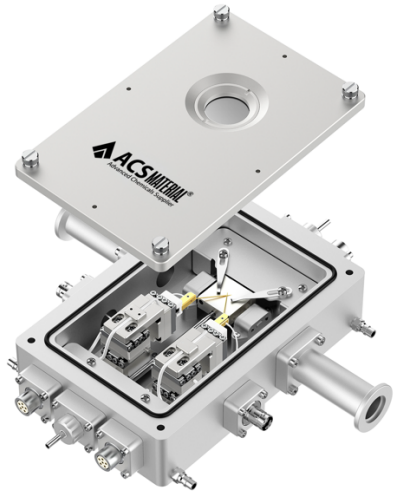

Photo of InSitu Pro™ AECH400V-EC

II. Product Features

InSitu Pro™ AECH400V-EC is specifically designed for temperature-dependent electrical property testing of samples, enabling the characterization of how a material's electrical performance varies with temperature. Based on an optical thermal stage, this system integrates an electrical module—including probes, displacement mechanisms, and electrical interfaces.

By adjusting the probe position, precise contact between the probe tip and any desired area on the sample surface can be achieved. Electrical signals are transmitted through the probe, signal wires, and interfaces to external measuring instruments (such as a source meter or digital multimeter) to collect relevant data, allowing for in-depth analysis of the material's electrical characteristics at different temperatures.

AECH400V-EC has a temperature range of -190 °C to 400°C, features electrically controlled probe holder, allowing probe position adjustment via motorized control during experiments, with displacement accuracy up to 5 nm.

Depending on the probe holder design, the system is available in versions with internally adjustable probes, externally adjustable probes, and electrically controlled adjustable probes.

This product series features ultra-wide-range precision temperature control. Based on the target temperature and specific application requirements, a variety of advanced temperature control

solutions are available, including liquid helium cooling, liquid nitrogen cooling, thermoelectric cooling, resistive heating, infrared heating, and laser heating—providing powerful support for complex temperature variation experiments.

Compatible Instruments

The system is designed to integrate with a wide range of optical and electrical instruments.

Software Integration

Multi-language SDKs (e.g., LabVIEW, C#) are available to enable efficient and customized system integration.

III. Product Specifications

InSitu Pro™ Precision Electronic Probe Stage	
Model #	AEC400V-EC
SKU#	EIEVCH4C
Heating/ Cooling Method	Liquid nitrogen cooling, Resistive heating
Temperature Range	-190° C~400° C
Temperature Stability	±0.1℃
Temperature Control Rate	Maximum heating rate: 150 °C/min; Maximum cooling rate: 40 °C/min

Sample Stage	Silver; 23 x 23 mm
Optical Path	Reflection/Transmission (ϕ2 mm light-transmitting hole)
Top Window Size	ϕ25 x 1 mm
Window Material	quartz glass (transmission wavelength range: 220 nm–2500 nm), manually removable and replaceable
Dist. From Top Window to Sample Stage Surface	12.5 mm
Chamber Height	10.5 mm
Probe	Motorized probe holders x 2 + tungsten carbide gold-plated probe x 2
Probe Adjustment	XYZ axis travel: ±6mm
Probe Interface	BNC x 2
Sample Stage Surface Potential	Grounded / electrically floating sample stage
Chamber	Vacuum

Dimensions	110 x 170 x 45 mm
New Weight	1.5kg
Basic Configuration	1 x main unit, 1 x temperature controller, 1 x cooling controller, 1 x liquid nitrogen tank, 1 x water circulation system, 1 x software