

AC-2S Series specifications

Model	AC-2S	AC-2S Pro α	AC-2S Pro β
Measuring principle	Photoemission yield spectroscopy in air (PYSA) (Detector: Low-energy electron count method)		
Measurement energy scanning range	3.4 - 6.2 eV (364 - 200 nm)	2.0 - 6.2 eV (620 - 200 nm)	3.4 - 6.2 eV (364 - 200 nm)
Repeatability (standard deviation)	Work function 0.02 eV (sample: Au plate)		
Measurement time	Standard time required for work function measurement: Approx. 5 minutes* * For measurement energy scanning range: 4.2 - 6.2 eV, step: 0.1 eV, count time: 5 s per step		
Maximum count rate (CPS: Electron count per second)	4,000 cps		
UV lamp	Deuterium (D ₂) lamp	Laser-driven light source (LDLS)	
Minimum light intensity	Up to 1.0 nW (at 5.9 eV)	Up to 5.0 nW (at 5.9 eV)	Up to 1.0 nW (at 5.9 eV)
Maximum light intensity	500 nW or higher (at 5.9 eV)	2,500 nW or higher (at 5.9 eV)	200 nW or higher (at 5.9 eV)
UV spot size	Up to 4 × 4 mm ²	Up to 4 × 4 mm ²	Up to 0.4 × 0.4 mm ²
Spectrometer	Grating-type monochromator		
Sample size	50 mm×50 mm (max.), thickness 10 mm (max.)		
Sample stage size	115 mm × 122 mm	120 mm × 122 mm heated sample stage	120 mm × 122 mm heated sample stage
Multi-point measurement function	Up to 4 points (automatic measurement)		
Operating temperature/humidity range	15 °C - 35 °C (no sudden changes), up to 60 % RH (no condensation)		
Power source	100 - 240 V AC, 50/60 Hz, 5 A (max.)	Main unit: 100 - 240 V AC, 50/60 Hz, 5 A (max.) LDLS (AC adapter): 100 - 240 V AC, 50/60 Hz, 2.5 A LDLS (main unit): 12 V DC, 120 W Temperature controller: 100 V AC (±10 %), 50/60 Hz, 1 A (max.)	
Dry compressed air supply conditions	0.1 - 0.2 MPa, 0.5 L/min (measurement), 2.0 L/min (purging)* * Separate conditions apply to the air supply. We recommend an optional compressor (sold separately). (Contact Riken Keiki for more information.)		
External dimensions	LC (light source unit): Approx. 480 (W) × 317 mm (H) × 450 mm (D) DC (measuring unit): Approx. 465 (W) × 360 mm (H) × 450 mm (D)	LC (light source unit)*: Approx. 623 (W) × 317 mm (H) × 450 mm (D) DC (measuring unit): Approx. 465 (W) × 360 mm (H) × 450 mm (D) Temperature controller: Approx. 200 (W) × 163 mm (H) × 150 mm (D) * The LDLS power supply is housed in the LC (light source unit).	
Weight	AC-2S LC (light source unit): Approx. 25 kg AC-2S DC (measuring unit): Approx. 31 kg	AC-2S LC (light source unit): Approx. 30 kg AC-2S DC (measuring unit): Approx. 31 kg Temperature controller: Approx. 5 kg	

Accessories

- Display
- PC
- Power supply cable (for LC)
- Power supply cable (LC-DC)
- Adapter plug
(3-pin → 2-pin + ground wire)
* AC-2S: ×1, Pro α/β : ×3
- USB interface cable (PC-LC)
- RS-232C interface cable (LC-DC)
- Detector
- Optical fiber
- Accessory sample set
- Tweezers
- Measurement/analysis/
data conversion software (CD- ROM)

Optional accessories

(sold separately)

- Compressor (with dry air generator)
- Tray for powder samples
(1.0 mm deep)
- Tray for powder samples (0.5 mm deep)
- Optical fiber protective acrylic cover
- Different diameter union joint
(for dry air)
- Detector (for replacement)
- Optical fiber (for AC-2S and Pro α)
- Optical fiber (for Pro β)
- D₂ lamp (for AC-2S)
- Ozone filter

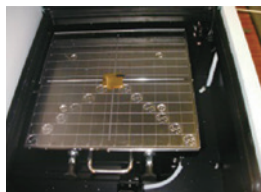
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* The contents described in this catalog are subject to change without notice according to the performance improvement.

Comparison of AC Series Atmospheric Photoemission Yield Spectrometer Specifications

Model			AC-3
Measurement principle	Photoemission Yield Spectroscopy in Air (Low-energy electron counting)		
Electron detector	Open counter		
Photoelectron measurement energy scanning range	3.4 eV to 6.2 eV (364 nm to 200 nm)	4.0 eV to 7.0 eV (310 nm to 177 nm)	
Light intensity measurement energy scanning range	3.4 eV to 6.2 eV (364 nm to 200 nm)	4.0 eV to 7.0 eV (310 nm to 177 nm)	
Repeatability (standard deviation)	Work function 0.02 eV (sample: metal plate)		
Measurement time	Standard time required for work function measurement: Approx. 5 minutes		
Maximum count rate (CPS: Number of electrons measurable per second)	4,000CPS	2,000CPS	
UV lamp	D2 lamp		
Minimum light intensity	Below 1.0 nW (at 5.9 eV)	Below 5.0 nW (at 5.9 eV)	
Maximum light intensity	Over 500 nW (at 5.9 eV)		Over 100 nW (at 5.9 eV)
UV spot size	Below 4 mm × 4 mm (Varies with energy due to condenser lens chromatic aberrations.)		2 mm × 5 mm (No chromatic aberrations because light is condensed using a concave mirror)
Spectrometer	Grating-type monochromator		Nitrogen-substitution grating-type monochromator
Sample shape	180 mm × 180 mm (max.) Max. thickness 1.0 mm ±0.2 mm	50 mm × 50 mm (max.) Max. thickness 10 mm (max.), 1-point measurement	30 mm × 30 mm (max.) Max. thickness 10 mm (max.), 1-point measurement
Measurement location	Multiple locations can be specified on the sample stage for sequential measurement.	Measures sample center.	
Sample stage			
Operating temperature/humidity range	15°C to 35°C Dew point -30°C or higher, 60% RH or less	15°C to 35°C, 20% to 60% RH	
Power supply	100 V to 240 V AC, 50/60 Hz, 5 A (Max)		
Compressed air	High-purity air 0.2 MPa to 0.3 MPa, 0.2 L/min (measurement), 2 L/min (purging)	0.5 MPa to 0.7 MPa, 5 L/min	
High-pressure nitrogen	Not required	Not required	0.5 MPa to 0.6 MPa, 2 L/min (measurement), 5 L/min (purging)
External dimensions	AAC-5 LC (light source unit): Approx. 470 (W) × 500 (D) × 300 (H) mm AC-5 DC (measuring unit): Approx. 600 (W) × 500 (D) × 380 (H) mm (excluding rubber feet and other protrusions)	AC-2 LC1 (light source unit): Approx. 600 (W) × 450 (D) × 310 (H) mm AC-2 DC1 (measuring unit): Approx. 600 (W) × 450 (D) × 360 (H) mm (excluding rubber feet and other protrusions)	Approx. 740 (W) × 680 (D) × 1,080 (H) mm (including casters)
Weight	AC-5 LC (light source unit): Approx. 35 kg AC-5 DC (measuring unit): Approx. 50 kg	AC-2 LC1 (light source unit): Approx. 40 kg AC-2 DC1 (measuring unit): Approx. 50 kg	Approx. 120 kg
Certifications and Approvals	—	UL/cUL	—

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