



SASO 1858 Electric Water Heater Energy Efficiency Test Laboratory

6-Station Product Catalogue

Integrated laboratory test system for household electric storage water heater performance and energy-related testing, combining controlled environment, conditioned water supply, programmable power, six test stations and centralized data acquisition.

6 STATIONS

SASO 1858

IEC 60379



Standards Focus

SASO 1858-related projects / IEC 60379 performance reference

Test Object

Household electric storage water heaters

Test Capacity

6 dedicated test positions

System Type

Integrated laboratory test system

Specifications are subject to final confirmed project configuration.

Product Overview and Test Architecture

The KINGPO electric water heater test laboratory is a six-station integrated system developed for performance and energy-related testing of household electric storage water heaters. It coordinates environmental conditioning, water preparation, electrical supply, measurement and data acquisition within one laboratory workflow.

Integrated laboratory configuration

Environmental conditioning, conditioned water supply, programmable electrical power, test stations and measurement are organized as one system.

Controlled test conditions

Defined ambient, water and electrical conditions support repeatable performance measurement and energy-related test procedures.

Fixed six-station capacity

Two rows with three dedicated test positions provide a structured laboratory arrangement for multiple water heater samples.

Centralized data acquisition

Configured temperature and flow channels are recorded for storage, export, review, statistics and analysis.

6-Station Laboratory

Electric Water Heater Energy Efficiency Test System



ENVIRONMENT + WATER

POWER + MEASUREMENT

DATA ACQUISITION

Functional Test Flow



Detailed Technical Specifications

The following parameters summarize the referenced six-station configuration for quick technical and purchasing review. Final sample compatibility, instrument accuracy, calibration scope and site utilities should be confirmed in the approved technical proposal.

Laboratory Configuration

Parameter	Specification
Main test purpose	Water heater performance and energy-related testing
Referenced test project	SASO 1858
Performance reference	IEC 60379, according to confirmed test scope
Test object	Household electric storage water heaters
Test capacity	6 samples
Reference dimensions	6800 × 3800 × 3200 mm
Station arrangement	2 rows × 3 stations

Controlled Test Conditions

Parameter	Specification
Temperature range	10°C to 50°C
Humidity range	40% to 85% RH
Humidity stability	±3% RH
Air velocity	≤0.25 m/s
Water temperature	10°C to 35°C
Water tank	2000 L, 304 stainless steel
Max. design pressure	1.2 MPa

Electrical Power System

Parameter	Specification
Power supply units	2 three-phase inverter units
Rated capacity	45 kVA per unit
Supply voltage	230 V / 415 V
Single-phase output	5 V to 300 V, adjustable
Frequency range	47 Hz to 63 Hz

Configuration note: Rated voltage, frequency and power range of the water heater samples should be reviewed before the power system configuration is approved.

Data System and Software

Parameter	Specification
Sampling period	5–60 seconds, configurable
Data functions	Storage, export, review, statistics, analysis, printing
Restart function	Automatic test continuation in referenced configuration
User access	Multi-user access
Software language	Chinese / English

Technical note: Final software interface, recorded data fields, communication architecture and report requirements should be confirmed according to the project scope.

Integrated Laboratory System Architecture

Water heater performance testing depends on coordinated environmental, hydraulic, electrical and measurement conditions. The referenced system integrates these functions around six dedicated test stations.



Representative laboratory environment and equipment installation context

01

Controlled Test Environment

Temperature and humidity conditioning with air circulation, refrigeration, heating and humidification functions.

02

Conditioned Water System

2000 L stainless steel tank for water storage, stirring and temperature conditioning within the configured range.

03

Programmable Power Supply

Two 45 kVA inverter power units provide adjustable electrical operating conditions for test samples.

04

Six Test Stations

Fixed 2 × 3 layout with dedicated sample positions, steel frames and adjustable stainless steel hooks.

05

Measurement Channels

Ambient, tank, inlet / outlet water temperature and water flow are monitored through configured sensors.

06

Data Acquisition & Software

Centralized recording, export, review and software-based test data management.

System Integration Logic



Measurement, Test Scope and Data Management

The laboratory combines environmental and water-side measurement points with centralized acquisition. The test items below reflect the referenced KINGPO configuration; final channels and calibration scope should be confirmed in the approved technical proposal.

Measurement and Data Acquisition Configuration

Measurement Parameter	Sensor / Device	Acquisition / Control
Ambient temperature	HMT100 temperature measurement point	UT35A
Ambient humidity	HMT100 humidity measurement point	UT35A
Mixed water tank temperature	Pt100 Class A	UT35A
Inlet / outlet water temperature	Class I Type-T thermocouple	GM10
Water flow	Electromagnetic flowmeter	GM10

Accuracy note: Final instrument models, system measurement accuracy and calibration scope should be confirmed in the approved technical configuration. Individual instrument specifications should not be treated as complete system accuracy.

Energy Consumption & Thermal Retention

24-hour energy consumption coefficient, power consumption and insulation / holding-time related evaluation.

Heating & Electrical Input Performance

Heating tests and input power experiments under defined electrical operating conditions.

Hot Water Output & Water Consumption

Hot water outlet rate and water consumption related work using inlet / outlet temperature and flow measurement.

Controlled Environmental Testing

Configured high-temperature / high-humidity and low-temperature test applications within the system operating range.



Test Control and Data Management Software

The referenced software supports data storage, export, review, statistics, analysis and printing. The sampling period can be configured from 5 to 60 seconds. Automatic test continuation after system restart, multi-user access and Chinese / English language support are included in the referenced configuration.

Project review: Final data fields, report format and communication requirements should be confirmed before the technical proposal is finalized.

Applications, Compliance and Supply Scope

Typical Users

- Electric water heater manufacturer R&D; laboratories
- Internal performance verification teams
- Quality and engineering laboratories
- Third-party water heater test projects

Compliance & Regulatory Assurance

The six-station laboratory was developed for SASO 1858-related electric water heater test projects and can support applicable IEC 60379 performance measurement functions according to the confirmed scope.

The standard edition, test items, measurement channels, site conditions and documentation requirements should be reviewed before final configuration.

Site and Utility Requirements

Laboratory space: review room dimensions, entrance and maintenance access.

Electrical: confirm site voltage, frequency, phase and available capacity.

Water: confirm supply pressure, utility connections and drainage.

Access: allow practical service access to stations, water and power systems.

Scope of KINGPO Supply

Environmental conditioning equipment, conditioned water preparation and supply system, electrical power system, six test stations, temperature and flow measurement devices, data acquisition hardware, test control software and technical documentation according to the confirmed supply scope.

Civil construction, building works and room decoration are not included in the standard supply scope.

Technical Inquiry and Expert Support

KINGPO supplies integrated six-station laboratory systems for electric storage water heater performance and energy-related test projects. Our engineering team can review the required standard, water heater specifications, test items, laboratory utilities and measurement scope before quotation.

Please Provide the Following Information

- Applicable standard: SASO 1858, IEC 60379-related scope, standard edition or project procedure
- Water heater type: Household electric storage water heater and intended test application
- Sample data: Storage capacity range, maximum dimensions, weight and mounting arrangement
- Electrical rating: Rated voltage, frequency and power range
- Required test items: Energy consumption, heating, hot water output, water consumption or specified project tests
- Laboratory site conditions: Available room dimensions, electrical supply, water supply and drainage
- Measurement requirements: Temperature, water flow, data acquisition and documentation scope
- Calibration / documents: Instrument calibration needs, technical files and laboratory quality-system requirements

Product Page



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Catalogue specifications are subject to final
configuration and project confirmation.