



ENVIRONMENTAL TEST CHAMBERS

IEC 60068 Temperature Humidity Test Chamber for Electronics

QTH Series Product Catalogue

Programmable environmental chamber for controlled high- and low-temperature and humidity exposure of PCB assemblies, electronic modules, sensors, connectors and small electronic components.

100–1000 L

IEC 60068

10–98% RH



Test Methods

IEC 60068-2-1 / -2-2 / -2-30 / -2-78

Test Objects

PCBs, sensors, connectors, electronic modules

Temperature Options

-20°C / -40°C / -70°C to +150°C

Humidity & Volume

10–98% RH; 100 / 150 / 225 / 416 / 1000 L

Product Overview and Chamber Configuration

The QTH series is a temperature humidity test chamber for electronics designed for controlled climatic exposure of components and small products. Its multi-volume platform combines refrigeration, heating, humidification, dehumidification and programmable control for laboratory environmental testing.

Electronic component test scope

For PCB assemblies, sensors, connectors, optoelectronic parts, semiconductor-related components and small automotive electronic parts.

Configurable climatic range

Three published low-temperature options extend to +150°C, with a standard humidity range of 10% to 98% RH.

100 L to 1000 L chamber volumes

Five published chamber volumes help laboratories match specimen size, loading quantity and internal air-circulation space.

Programmable control and data functions

Touchscreen operation, LAN or USB connectivity, and graphical / Excel-format data output are stated in the published product configuration.

QTH Series

Temperature Humidity Test Chamber



Programmable Control

Electronic Components

IEC 60068 Test Profiles

Typical Laboratory Workflow

1 Confirm Test Profile

Standard, temperature, RH and dwell conditions

2 Prepare Specimens

Arrange samples, shelves and cable routing

3 Program Chamber

Set temperature / humidity sequence

4 Condition Samples

Run controlled climatic exposure

5 Evaluate Results

Inspect or functionally test to the procedure

Detailed Technical Specifications

The following values summarize the published catalogue-level configuration. Final performance conditions, sample loading, test profile and verification method should be confirmed for the selected model.

Available Models and Internal Dimensions

Parameter	QTH-100	QTH-150	QTH-225	QTH-416	QTH-1000
Internal volume	100 L	150 L	225 L	416 L	1000 L
W × H × D	500×500×400	500×600×500	500×750×600	700×850×700	1000×1000×1000
Unit	mm	mm	mm	mm	mm

Environmental Performance

Parameter	Published Specification
Temperature range	B: -20°C to +150°C; C: -40°C to +150°C; D: -70°C to +150°C
Humidity range	10% to 98% RH
Optional low humidity	5% to 98% RH; customization to be confirmed
Temperature fluctuation	±0.5°C
Temperature uniformity	±1°C
Humidity uniformity	5% RH
Temperature stability	0.2°C
Humidity stability	2% RH
Temperature deviation	±2.0°C
Humidity deviation	3% RH
Approx. heating rate	3°C/min; customization stated as available
Approx. cooling rate	1°C/min; customization stated as available

Chamber Construction

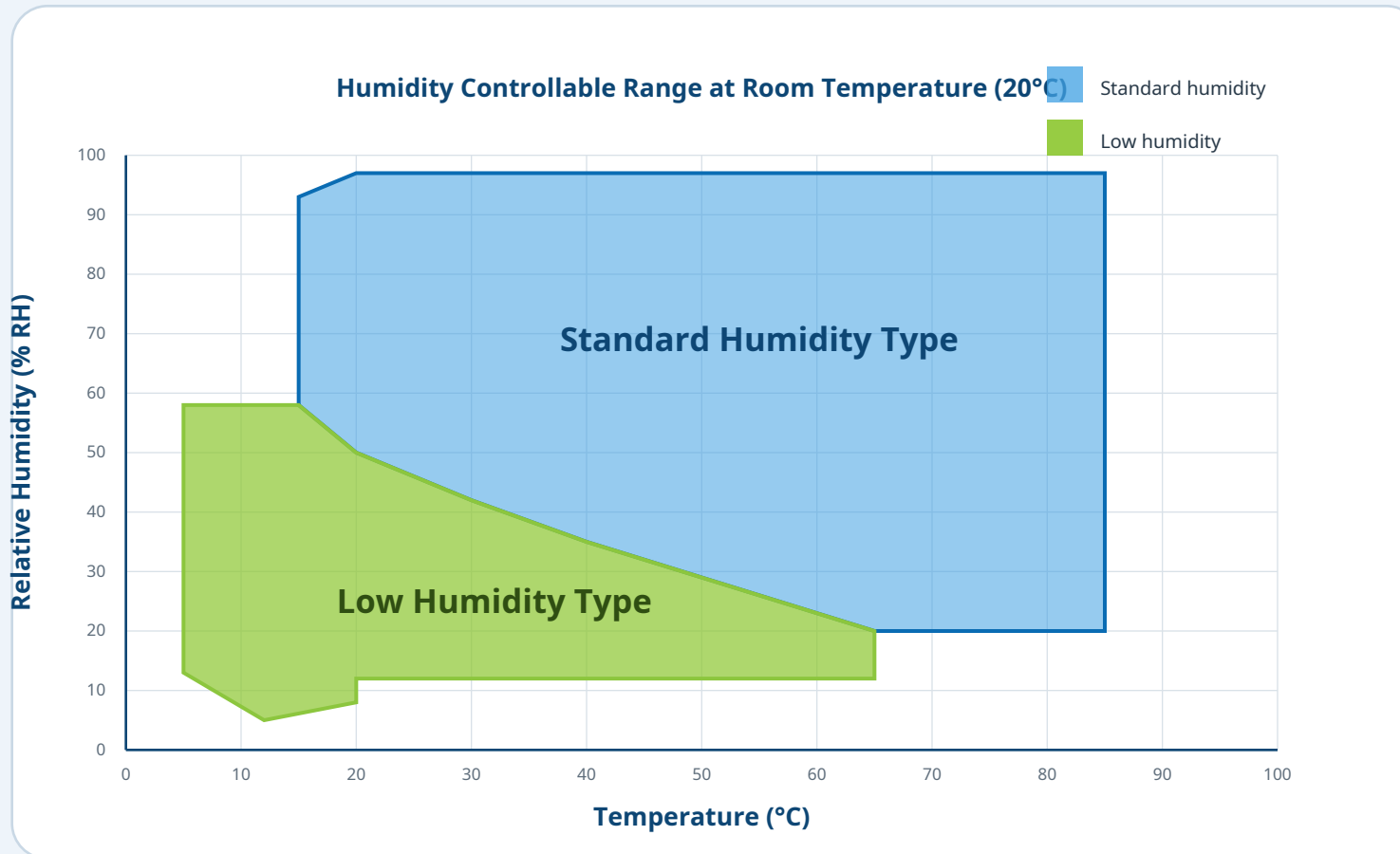
Item	Specification
Exterior material	Cold-rolled steel plate with baked paint finish
Optional exterior	SUS 304 stainless steel
Interior material	SUS 304 stainless steel
Thermal insulation	Rigid polyurethane foam
Refrigeration	Compressor refrigeration system; brand by configuration
Power supply	AC 220 V / 380 V, 50/60 Hz; confirm phase
Standard test port	1
Standard shelves	2

Technical Note

Published heating and cooling rates are catalogue values. Exact test conditions, sample loading and low-humidity operating points should be confirmed in the technical quotation.

Humidity Control Range and Configuration Selection

The chart below illustrates the published standard-humidity and low-humidity operating envelopes. Exact low-relative-humidity capability can depend on operating temperature and the selected dehumidification configuration.



Confirm required RH set points

Do not select a chamber only by the headline humidity range. Provide the exact temperature and RH operating points.

Review specimen heat load

Powered electronics can add heat to the working space. Approximate total heat load should be reviewed during chamber selection.

Match chamber volume to loading

Consider specimen size, sample quantity, shelves, cable routing and the free space needed for internal air circulation.

Selection Guidance

Choose the -20°C, -40°C or -70°C refrigeration configuration according to the actual minimum temperature specified by the test procedure. For low-humidity projects, confirm the exact operating points before quotation.

Temperature and Humidity Control Principle

The chamber coordinates refrigeration, heating, humidification, dehumidification and internal air circulation. Temperature and humidity sensors provide feedback to the controller, which regulates the relevant systems to maintain the programmed chamber conditions.



Closed-Loop Chamber Control

01

Program Test Conditions

Set temperature, humidity, dwell time and test sequence on the touchscreen.

02

Sensor Feedback

Temperature and humidity sensors monitor the working-space environment.

03

Automatic Regulation

The controller adjusts heating, cooling, humidification or dehumidification.

04

Air Circulation

Conditioned air is circulated through the chamber working space.

Typical Electronic Test Samples

PCB Assemblies

Control boards and electronic modules

Sensors & Connectors

Sensors, terminals and connection components

Optoelectronic Parts

Optoelectronic and semiconductor-related components

Automotive Electronics

Small sensors and control-related parts

IEC 60068 Test Method Compatibility and Safety

The chamber provides controlled climatic conditions for environmental reliability testing. Depending on the selected configuration and required profile, it may support test conditions associated with the following IEC 60068 methods.

IEC 60068-2-1

Test A: Cold

Specified low-temperature environmental exposure.

IEC 60068-2-2

Test B: Dry Heat

Specified high-temperature environmental exposure.

IEC 60068-2-30

Test Db: Damp Heat, Cyclic

High humidity combined with cyclic temperature changes.

IEC 60068-2-78

Test Cab: Damp Heat, Steady State

High humidity at constant temperature without condensation.

The chamber should not be considered automatically compliant with every IEC 60068 test method solely because it can generate temperature and humidity conditions. Confirm the applicable standard edition, test profile, specimen loading and chamber performance requirements before formal testing.

Published Chamber Protection Functions



Compressor overpressure protection



Compressor overheating protection



Overcurrent protection



Over-temperature protection



Equipment overload protection



Heater dry-running protection



Water shortage protection



Independent temperature limit alarm

Technical Inquiry and Expert Support

KINGPO can review your standard, electronic samples, chamber loading, temperature and humidity profile, powered-sample heat load and data requirements before quotation. This helps confirm the appropriate chamber volume and environmental configuration.

Please Provide the Following Information

- **Applicable standard:** IEC 60068 part, edition or internal test procedure
- **Sample type:** PCB assembly, sensor, connector, electronic module or other product
- **Sample dimensions:** Maximum specimen size and quantity per test batch
- **Temperature requirement:** Minimum / maximum temperature and profile
- **Humidity requirement:** Required RH set points or programmed humidity profile
- **Test profile:** Steps, dwell times, cycles and ramp requirements
- **Sample operating condition:** Powered / unpowered; approximate heat load if applicable
- **Test port and cable needs:** Power cables, thermocouples, communication cables
- **Data / documentation:** Data export, interface, technical documents or inspection records



Product Page



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Catalogue Note

Specifications are subject to final chamber configuration, test-profile review and project confirmation.