

# Temperature & Humidity Chamber

## Low temperature type (-70 ~ 150°C / -40 ~ 150°C)

### General Temp. & Humid chamber with proven reliability and reproducibility

- **TH-KH** Ultralow temp. type (-70°C)
- **TH-G** Low temp. type (-40°C)

#### **TH-G-180**

with Wire Shelves 2ea, Φ50 Cable Port (standard), Recorder (option)



#### **Optimized Model Configuration**

- Various models optimized according to temperature and humidity control range and specialized functions.
- TH-KH Series (-70~150°C, 25~95%RH)  
Provides wide temperature control range.
- TH-G Series (-40~150°C, 25~95%RH)  
Representative model with proven reliability.

#### **Structural Functional Features**

- Stable humidity control ability with applying differentiated external humidification system and convenient maintenance for cleaning testing space.
- Excellent thermal insulation and sealing to ensure stable temperature and humidity reproducibility even for repeated test use.
- Proven reproducibility and reliability with structural design optimized for each capacity.
- The door part is a double-sealed structure that provides enhanced airtightness.
- Durability even after long-term repeated use has been verified by satisfying the door load test (SEFA standard).



## Use Convenience Features

- Efficient water supply and recirculation system minimizes water refilling even for long-term high-humidity tests.
- Drawer-type water tank structure makes refill the water easily at the front part.
- Possible structure to refill the water even during operation.
- Direct water supply system. (option)
- Easy observation of samples with tempered glass door with built in heating wire and LED lamp.
- Open/close door with latches on either side.
- Door handle with built-in key lock.
- Cable port (Ø50 mm) is included as standard, making it convenient to connect external equipment.
- Easy to clean as it is easy to remove refrigerator condenser grill, making it convenient to maintain efficiency of refrigeration.



Drawer-type water tank



Door handle and locking device

## Multifunction Control System

- 5.7-inch color touch display controller for convenient intuitive operation and checking of operation status.
- Save program information and back up the set values.
- Includes temperature and humidity auto-tuning.
- Highly reliable control through temperature calibration.
- PID zone subdivided into 6 zones for more precise control stability.
- RS-232 port (default) and RS-485 port (option) supported.
- Control and data processing by connecting up to 32 devices to PC at same time via RS-485 port.
- Convenient checking with useful graph display.



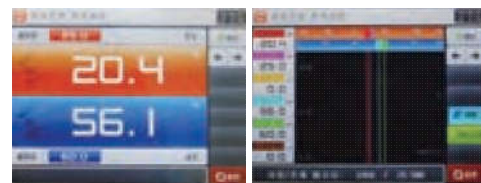
Cable port



Tempered glass window with wire heater and LED lamp

Description	No.
Pattern	120
Repeat time	999
Part repeat time	255
Max. segments / pattern	100
Available max. segments	1200
Programmable Process time / segment	999 hr. 59 min.

\* It is possible to set 100 segments per pattern, but the maximum number of segments is not 12,000 (120 pattern x 100 segment) but 1,200.

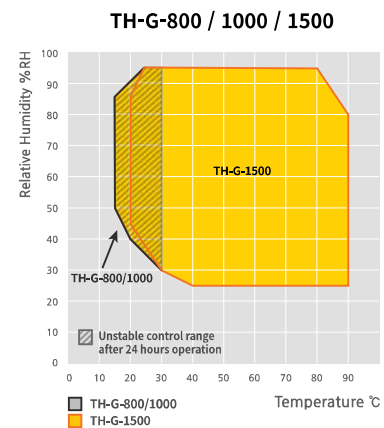
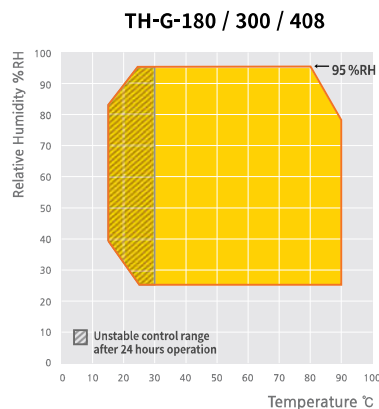
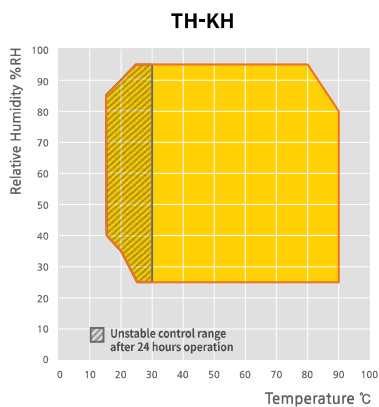
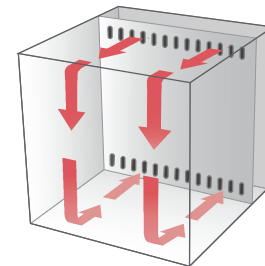


Controller (5.7 inch)

Temp. & humid. graph

## ▣ Outstanding Safety

- Electronic over temperature shutdown system (advanced over temperature. (A-OT) limiter)  
Independent precision temperature sensor and controller for safer and more accurate over temperature shutdown.
- General over power shutdown system. (B-OT, backup over temperature limiter)  
A backup device for electronic system failure, mechanically preventing over temperature even when it occurs electronic errors.
- Ensures that the surface temperature is kept below 60°C.
- Low and empty water level alarm and automatic shut off.
- Door open warning and automatic shut off.
- Overcurrent and short circuit protection of device.
- Fuse installed for each heater for safety.
- Auto stop when operating current of compressor is overloaded.
- Auto stop when compressor is overheating.
- Auto shut off in case refrigerant pressure (high/low pressure) is abnormal.



## Specification

Model	TH-KH-180	TH-KH-300	TH-KH-408
<b>Interior dimensions</b>			
Chamber volume (L / cu ft)	189 / 6.7	302 / 10.7	408 / 14.4
Width (mm / inch)	500 / 19.7	600 / 23.6	600 / 23.6
Depth (mm / inch)	630 / 24.8	630 / 24.8	850 / 33.5
Height (mm / inch)	600 / 23.6	800 / 31.5	800 / 31.5
Quantity of shelves (standard/max.)	2 / 9	2 / 10	2 / 10
Distance of between shelves (mm / inch)	60 / 2.4	60 / 2.4	60 / 2.4
Max. load per shelf (kg / lbs)	20 / 44.1	25 / 55.1	25 / 55.1
Permitted total load (kg / lbs)	50 / 110.2	65 / 143.3	65 / 143.3
Cable port (∅, mm / inch)	50 / 2.0	50 / 2.0	50 / 2.0
Water tank capacity (L / cu ft)	15 / 0.5	15 / 0.5	15 / 0.5
<b>Weight (kg / lbs)</b>	320 / 705.5	385 / 848.8	410 / 903.9
<b>Temperature data</b>			
Range without humidity (°C / °F)	-70 to 150 / -94 to 302	-70 to 150 / -94 to 302	-70 to 150 / -94 to 302
Fluctuation (±°C / °F) <sup>1)</sup>	0.3 / 0.54	0.3 / 0.54	0.3 / 0.54
Variation (±°C / °F) <sup>1)</sup>	0.5 / 0.9	0.5 / 0.9	0.5 / 0.9
Heating time (-70°C to 120°C) (min)	70	70	70
Cooling time (20°C to -70°C) (min)	80	80	80
<b>Humidity data (※ Ref.: Temp./ Humid. control range graph)</b>			
Range (%RH)	25 to 95	25 to 95	25 to 95
Fluctuation (±%RH) <sup>1)</sup>	0.4	0.4	0.4
Variation (±%RH) <sup>1)</sup>	3	3	3
<b>Electrical data &amp; Ordering information</b>			
Electrical requirements (380V, 3ph, 50Hz, A)	10.1	10.2	10.2
<b>Cat. No.</b>	<b>AAHC3014K</b>	<b>AAHC3114K</b>	<b>AAHC3214K</b>

※ The above specifications are tested according to IEC 60068 standard.

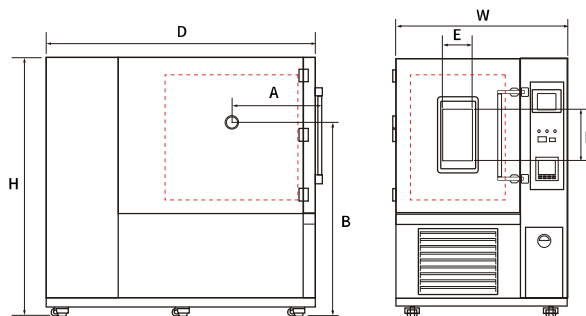
※ Permissible environmental conditions are 18 - 30°C (recommended 20°C), 85%RH or less, under 2000m above sea level.

※ The DI water condition is pH 6.2 - 7.2 and the electrical conductivity is less than 20µs/cm.

1) The set value is set under the conditions of 25°C, 60%RH.

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Cable Port, Shelves, Signal Lamp, Recorder, Water Purifier, Direct Water System, Inner Glass Door



## Dimension

Model	TH-KH-180	TH-KH-300	TH-KH-408
<b>W (mm / inch)</b>	1050 / 41.3	1150 / 45.3	1150 / 45.3
<b>D (mm / inch)</b>	1615 / 63.6	1615 / 63.6	1835 / 72.2
<b>H (mm / inch)</b>	1560 / 61.4	1760 / 69.3	1760 / 69.3
<b>A (mm / inch)</b>	550 / 21.7	550 / 21.7	670 / 26.4
<b>B (mm / inch)</b>	1225 / 48.2	1325 / 52.2	1325 / 52.2
<b>E (mm / inch)</b>	200 / 7.9	200 / 7.9	200 / 7.9
<b>F (mm / inch)</b>	330 / 13.0	330 / 13.0	330 / 13.0

## Specification

Model	TH-G-180	TH-G-300	TH-G-408	TH-G-800	TH-G-1000	TH-G-1500
<b>Interior dimensions</b>						
Chamber volume (L / cu ft)	189 / 6.7	302 / 10.7	408 / 14.4	800 / 28.3	1000 / 35.3	1450 / 57.1
Width (mm / inch)	500 / 19.7	600 / 23.6	600 / 23.6	1000 / 39.4	1000 / 39.4	1100 / 43.3
Depth (mm / inch)	630 / 24.8	630 / 24.8	850 / 33.5	800 / 31.5	1000 / 39.4	1000 / 39.4
Height (mm / inch)	600 / 23.6	800 / 31.5	800 / 31.5	1000 / 39.4	1000 / 39.4	1450 / 57.1
Quantity of shelves (standard/max.)	2 / 9	2 / 10	2 / 10	2 / 14	2 / 14	3 / 18
Distance of between shelves (mm / inch)	40 / 1.6	40 / 1.6	40 / 1.6	40 / 1.6	40 / 1.6	40 / 1.6
Max. load per shelf (kg / lbs)	20 / 44.1	25 / 55.1	25 / 55.1	40 / 88.2	40 / 88.2	40 / 88.2
Permitted total load (kg / lbs)	50 / 110.2	65 / 143.3	65 / 143.3	100 / 220.5	100 / 220.5	100 / 220.5
Cable port (∅, mm / inch)	50 / 2.0	50 / 2.0	50 / 2.0	50 / 2.0	50 / 2.0	50 / 2.0
Water tank capacity (L / cu ft)	15 / 0.5	15 / 0.5	15 / 0.5	15 / 0.5	15 / 0.5	15 / 0.5
<b>Weight (kg / lbs)</b>	320 / 705.5	385 / 848.8	410 / 903.9	620 / 1366.9	680 / 1499.1	860 / 1896.0
<b>Temperature data</b>						
Range without humidity (°C / °F)	-40 to 150 / -40 to 302	-40 to 150 / -40 to 302	-40 to 150 / -40 to 302	-40 to 150 / -40 to 302	-40 to 150 / -40 to 302	-40 to 150 / -40 to 302
Fluctuation (±°C / °F) <sup>1)</sup>	0.3 / 0.54	0.3 / 0.54	0.3 / 0.54	0.3 / 0.54	0.3 / 0.54	0.3 / 0.54
Variation (±°C / °F) <sup>1)</sup>	0.5 / 0.9	0.5 / 0.9	0.5 / 0.9	0.5 / 0.9	0.5 / 0.9	0.5 / 0.9
Heating time (-40°C to 120°C) (min)	60	60	60	70	70	90
Cooling time (20°C to -40°C) (min)	60	60	60	75	75	90
<b>Humidity data (※ Ref.: Temp./ Humid. control range graph)</b>						
Range (%RH)	25 to 95	25 to 95	25 to 95	25 to 95	25 to 95	25 to 95
Fluctuation (±%RH) <sup>1)</sup>	0.4	0.4	0.4	1	1	2
Variation (±%RH) <sup>1)</sup>	3	3	3	3	3	3
<b>Electrical data &amp; Ordering information</b>						
Electrical requirements (230V, 1ph, 50Hz, A)	25.2	25.6	25.6			
<b>Cat. No.</b>	<b>AAH80013K</b>	<b>AAH80023K</b>	<b>AAH80033K</b>	-	-	-
Electrical requirements (230V, 1ph, 60Hz, A)	25.2	25.6	25.6			
<b>Cat. No.</b>	<b>AAH80011K</b>	<b>AAH80021K</b>	<b>AAH80031K</b>	-	-	-
Electrical requirements (380V, 3ph, 50/60Hz, A)	9.1	9.2	9.2	12.2	12.2	15.5
<b>Cat. No.</b>	<b>AAH80018K</b>	<b>AAH80028K</b>	<b>AAH80038K</b>	<b>AAH80048K</b>	<b>AAH80058K</b>	<b>AAH80078K</b>

※ The above specifications are tested according to IEC 60068 standard.

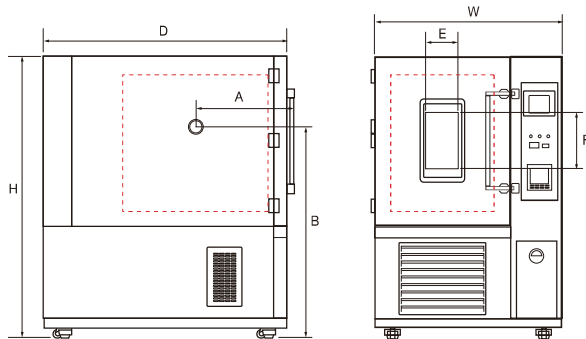
※ Permissible environmental conditions are 18 - 30°C (recommended 20°C), 85%RH or less, under 2000m above sea level.

※ The DI water condition is pH 6.2 - 7.2 and the electrical conductivity is less than 20µs/cm.

1) The set value is set under the conditions of 40°C, 75%RH.

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Cable Port, Shelves, Signal Lamp, Recorder, Water Purifier, Direct Water System, Inner Glass Door



## Dimension

Model	TH-G-180	TH-G-300	TH-G-408	TH-G-800	TH-G-1000	TH-G-1500
<b>W (mm / inch)</b>	1003 / 294.9	1103 / 434.3	1103 / 434.3	1503 / 591.7	1503 / 591.7	1503 / 591.7
<b>D (mm / inch)</b>	1139 / 448.4	1139 / 448.4	1359 / 535.0	1319 / 519.3	1519 / 598.0	2065 / 813.0
<b>H (mm / inch)</b>	1468 / 558.0	1668 / 656.7	1668 / 656.7	1968 / 774.8	1968 / 774.8	2007 / 790.2
<b>A (mm / inch)</b>	412 / 162.2	432 / 170.1	532 / 209.4	509 / 200.4	609 / 239.8	482 / 189.8
<b>B (mm / inch)</b>	1110 / 43.7	1246 / 49.1	1246 / 49.1	1465 / 57.7	1495 / 58.9	1500 / 59.1
<b>E (mm / inch)</b>	200 / 7.9	200 / 7.9	200 / 7.9	270 / 10.6	270 / 10.6	270 / 10.6
<b>F (mm / inch)</b>	330 / 13.0	330 / 13.0	330 / 13.0	330 / 13.0	330 / 13.0	330 / 13.0