

# Specification for Walk-in Room



**Model: KMH-6000S**

**Company: KOMEG Technology Ind. CO., Ltd**

**Compiling Dep.: Technology Department**

**I . Product Overview**

Able to accurately simulate a wide range of complicated natural environments, and is suitable for reliability test in industrial products. Meet GB5170.2.3.5.6-95 standard requirements of environmental testing equipment and test methods for the basic parameters of electric and electronic products under the condition of humidity, low temperature, high temperature, and constant heat.

**II . Application**

Applicable to environmental adaptability and reliability test in such industrial units as electronics, electrical appliance, battery, plastics, food, paper product, vehicle, metal, chemistry, building material, research institution, inspection and quarantine bureau, university etc..

**III . Features**

- GB-2423.2-2008(IEC68-2-2)Test B: High Temperature Test
- GJB360.8-2009(MIL-STD.202F) High Temperature Life Test
- GJB150.3-2009(MIL-STD-810D) High Temperature Test
- GJB150. 4(MIL-STD-810D) Low Temperature Test
- GB2423.3-2008(IEC68-2-3)Test Ca: Constant Heat Test
- GB2423.4-2008(IEC68-2—30) Test Db: Damp Heat Alternative Test
- GJB150.9-2009(MIL-STD-810D) Damp Heat Test

<b>1.Energy-saving</b>	<ul style="list-style-type: none"> <li>● Bypass mode to adjust cooling capacity to achieve a constant temperature and humidity effectively</li> <li>● Apply plate exchanger as intermediate heat exchanger to the cascade refrigerating system, ensuring high effective.</li> </ul>
<b>2.Easy operation</b>	<ul style="list-style-type: none"> <li>● Using company owned brand KOMEGB KM-5166 LCD touch screen controller with PID control parameters setting;</li> <li>● Flexible approach for data collection and recording</li> </ul>
<b>3.High reliability</b>	<ul style="list-style-type: none"> <li>● Key parts are imported to ensure service life and high reliability</li> </ul>

**IV.Main Technical Index**

Water-cooled.

The above specifications measurement in the environment temperature at + 25 °C without load

**1. Temperature**

1.1 Temp. range	-65°C ~ +100°C
1.2 Temp. deviation	≤±2.0°C
1.3 Temp. fluctuation	±0.5°C
1.4 Temp. uniformity	≤2.0°C
1.5 Heating and cooling rate	Heating up rate: from -65°C to +100°C non linear 2°C/min no load Cooling down: from +100°C to -65°C non linear 1°C/min no load
<b>2. Humidity</b>	
2.1 Humidity range	20%R.H~98%R.H
2.2 Humidity range	
2.3 Humidity deviation	±3.0% RH (>75%RH) ±5.0% RH (≤75%RH)
2.4 Humidity fluctuation	±3.0% RH (no-load)
2.5 Humidity uniformity	±2.0% RH
Temperature and humidity performance test is in accordance with the relevant provisions of the IEC60068 -3 standard measurement; sensor placed in the unit outlet.	
<b>V. Body Structure</b>	
Overall structure and chamber is composed of three parts as below. Insulation box, separate refrigeration units, and electrical control cabinet.	
1. Body dimensions	Workplace volume: W 1500 × H 2000 × D 2000 mm Exterior size: W 3050 × H 2410 × D 2200 mm (about)


2. Insulation Box	<ul style="list-style-type: none"> <li>※ wall material: high-quality carbon steel with static color spray</li> <li>※ inner wall material: SUS304 # matte stainless steel plate</li> <li>※ Insulation materials: rigid polyurethane foam insulation layer + glass fiber.</li> </ul>
3. Door	Double door, heating wire is installed at the door frames to prevent condensation at low temperatures
4. Inspection Window	With inspection windows installed on the door, multi-hollow electric insulation coated glass prevent condensation effectively
5. Lighting Device	1 PC 11W/AS220V installed in the inspection window
6. Heating	High quality nickel-chromium alloy wire electric heaters, Non-contact control mode(SSR)
7. Humidifier	Water basin heating and humidification method; Stainless steel sheathed heater; Heater control: no-contact control (SSR); Water level control device, heater anti-dry device.
8. Water outlet hole	Available for drain the condensate water
9. Cable port	φ100mm*1 located as close as floor with rubber stopper and stainless steel cover
10. Shelf for samples	No
11. Mobile Casters	Mobile Casters *4 with foot cups
12. Electric control box	Total power circuit breaker, over-temperature protection.
13. Water purifier	Pure water device, 1 pcs, please provide 1 ~ 2 kg/cm <sup>2</sup> tap water
14. Humidity sensor	Electronic humidity sensor

## VI. Cooling System

1. Working mode	Mechanical compression refrigeration
2. Compressor	Germany Bock Semi-hermetic Compressor with low noise
3. Evaporator	Fin-type multi-stage automatic load capacity adjustment, No frost in long-term use of low temperature and humidity conditions
4. Condenser	Shell and Tube condenser(water-cooled)
5. Refrigerant	Environmental-friendly refrigerant: R404A,R23
6. Other accessories	Use internationally-known brand, such as high precise expansion valve, oil

	extractor, dryer and many other accessories.
7.Refrigerant flow control	Adjust energy consumption output and control automatically to the refrigeration system.
8.Refrigeration Technology	<p>※ Nitrogen welding, two-stage rotary vane vacuum pump, ensure that the internal cooling system clean and reliable.</p> <p>※water tray located at the bottom of the compressor to ensure condensate water drain through pipe freely at the rear of the chamber.</p>

**VII. Control System**

1. Temp. &Humidity Tester	High precision DIN class A, dry ball $\phi$ 4.8mm SUS # 304 PT 100 $\Omega$ .
2. Controller	<p>KOME G Technical Programmable KM-5166 TFT Touch Screen Controller with PID control</p> 
3. Display function	Temp.& humidity Setting (SV) Practical (PV) value can be displayed directly Execution of the program can display numbers, paragraphs, remaining time and cycles, running time display, Program editing and graphic curve display, Fixed or program operation status display, 7-inch TFT display screen.
4. Display resolution	Temperature: $\pm 0.01^{\circ}\text{C}$ ; Humidity: $\pm 0.1\%$ ; Time: 1min.
5. Setting range	<p>Temperature can be adjusted based on the working temperature of the equipment (the upper limit:+5<math>^{\circ}\text{C}</math>, the lower limit:-5<math>^{\circ}\text{C}</math>)</p> <p>Temperature condition:-100~200<math>^{\circ}\text{C}</math></p> <p>Humidity condition:0~100 %RH</p>
6. Operating mode	Programmable running, constant running and booking boot
7. Set way	Touch Mode Input
8. Interface	<p>Data collection and curve display when connected with a computer</p> <p>Can be used as monitoring and remote control system</p> <p>Multi machines synchronization control available</p>

9. U Disk Memory Card	1G-8G available for downloading historical curve and data, pluggable
10. Record way	RAM with battery protection, setting (SV), Practical(PV) and sampling time can be saved; Maximum historical data and curve memory storage is 90 days (when the sampling time is 1 min)
11. Power off memory	Power recovery mode can be set as hot start, cold start and stop
12. Pre-set function	Boot time can be set freely and machine runs automatically when turning on power
13. Software environment	Windows2000 or Windows XP operating system
14. Network Connection	Can be connected to Ethernet via professional software, Remote control & assistance function and data collection can be achieved through network, Multi machine can be controlled simultaneously
15. Function	Fault alarm and cause handling prompts, power failure protection, the temperature upper and lower limit protection, timer function (automatic start and automatic stop running), self-diagnostic function.

**VIII. Electrical Control System**

1. Control cabinet	A. Emergency stop switch B. Power switch C. Over-temperature protection D. RS-485 interface
2. Protection System	A. Heater protection switch if no water B. Humidifier protection switch if no water C. Heater over-current circuit breaker D. Humidifier over-current circuit breaker E. Circulating fan over-current overload protection F. Compressor high voltage protection switch G. Compressor overheat protection switch H. Compressor over-current protection switch I. Over-voltage under-phase protection switch J. Circuit Breakers K. Leakage switch L. Low humidifier protection M. Water tank low water level warning Controller noise isolation protection

	O. Zero-crossing gate fluid power controller
3. Alarm indicator	Equipment stops running and sends audible alarm when the above protection appears, meanwhile, fault, causes and solutions will be displayed on the screen.









**IX. Installment & Using Condition**










1. Ambient temp. and humidity	5 ~ 35°C
2. Power	AC 3 $\psi$ 4W 380V 50Hz (R, S, T, N plus ground) (voltage fluctuation $\cong \pm 10\%$ )
4. Grounding	Grounding resistance $\cong 4\Omega$

P.S.

1. Please equip the above power demanded to the terminal box of the machine control, user must prepare an exclusively no-fuse switch for the machine.
2. The above water source demand to match to the host machine and connected the host.
3. Please confirm whether it can enter the door or access elevators.
4. This offer is only the price of the machine, do not contain power cord outside the machine, gas supply, cooling towers and piping engineering cost.

**Main material list**

Name	Brand	Remarks
Compressor	Germany GEA Bock or Bitzer compressor	 
Oil separator	American Emerson	
Plate heat exchanger	GEA	
press switch	Denmark DANFOSS, Saginomiya	
Condenser	Guangzhou Yongqiang,	
Evaporator	Yongqiang	
Dry filter	Denmark DANFOSS	

Capillary tube	KOME G	
Expansion valve	Denmark DANFOSS	
Magnetic valve	SAGLNOMLYA or Nickideu /DANFOS	
Controller	KOME G	
Residual current circuit breaker	French Schneider	
AC contactor	French Schneider	
Thermorelay	French Schneider	
Phase sequence relay	Carlo Gavazzi	
Time relay	Autonics, Omron	
AC relay	French Schneider	
Solid-state relay	Carlo Gavazzi	