



Value creation
for customers

H&C SYSTEM

COMPANY PROFILE

H&C SYSTEM

HEATING & COOLING SYSTEM PROVIDER

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Trustworthy company with the best quality and system We will make a new leap forward to system Provider

Since 1993, H&C SYSTEM CO.,LTD has made a constant and a silent effort to contribute to electronics and semiconductor industry in which high-quality is required. Through technological innovation, R&D, and training as well as quality control for customer's satisfaction, we provide high-quality and best services in plan and development, design, manufacture, operation, and maintenance in the fields of environment simulation system, clean room installation, and equipment installation. We will preserve in our efforts to improve technical skills in leading industry, preparing for the 21st century. We will also improve communication channels in business, service, and engineering to have a close relation with our customers.



Chief Director	SUN JEA LEE
Location	220, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi-do, Korea
Homepage	www.hncsystem.co.kr



License

Constructing Industry License (Type Of Industry : Machinery Constructing)

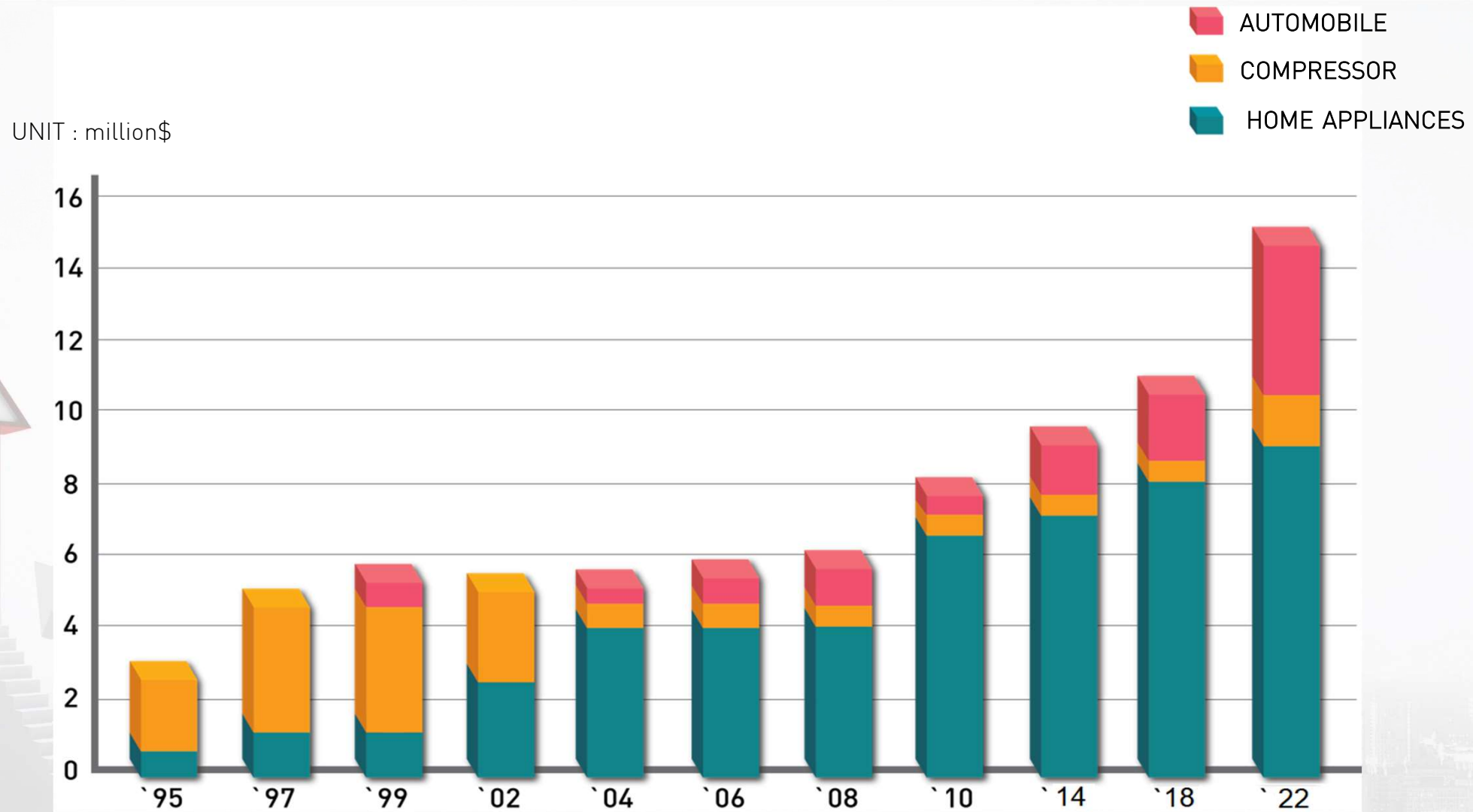
Main Business





























- 01 Design and construction of home appliance test equipment
- 02 Design and manufacture of compressor test equipment
- 03 Manufacture of automobile and the parts testing equipment
- 04 Manufacture of environment testing equipment
- 05 Manufacture and construction Of anechoic chamber
- 06 Manufacture and construction of clean room
- 07 Manufacture and construction of air purification system

Trustworthy company with the best quality and system We will make a new leap forward to system Provider

-
- 2021** ● H&C INDIA ESTABLISHED [JV COMPANY]
 - 2017** ● MOVED HEAD OFFICE TO SUWON
 - 2013** ● OPEN BRANCH OFFICE IN CHANGWON
 - 2009** ● PATENT FOR - HEAT EXCHANGER TESTER
- AIR FLOW MEASURING MACHINE
- PSY. TYPE CAROLIMETER
 - 2008** ● PATENT FOR - VACUUM CLEANER TESTER
- AIR PURIFIER TESTER
 - 2005** ● AWARDING FOR GOOD EXPORT
 - 2004** ● ISO 14001 REGISTERED
 - 2002** ● ISO 9001-2000 REGISTERED
OPEN BRANCH OFFICE IN THAILAND
 - 1998** ● CHANGED THE NAME OF COMPANY TO H&C SYSTEM CO.,LTD
 - 1995** ● ESTABLISHED 3S SYSTEM CO.LTD
REGISTERED AS OFFICIAL SUPPLIER FOR SAMSUNG, LG, DAEWOO etc





NO	CLASSIFICATION	PRODUCTS	NUMBER OF INTALLATION	CLIENT
1	HOME APPLIANCES	<ul style="list-style-type: none"> • PSY. CALORIMETER • BAL. CALORIMETER • REF. TEST CHAMBER • TV TEST CHAMBER • WASHING MACHINE TEST CHAMBER • ANECHOIC CHAMBER • (DE)HUMIDIFIER PERFORMANCE TESTER 	152	     
2	INDUSTRIAL	<ul style="list-style-type: none"> • MULTI. CALORIMETER • BUILDING MULTI. CALORIMETER • CHILLER TESTER • HEAT RECOVER VENTILATOR • HEAT EXCHANGER TESTER 	74	     
3	COMPRESSOR	<ul style="list-style-type: none"> • COMP CALORIMETER • MULTI TESTER • BENCH TESTER • SOUND CYCLE 	118	  
4	AIR PURIFICATION	<ul style="list-style-type: none"> • ROOM AIR CLEANER TESTER • VACUUM CLEANER PERFORMANCE TESTER 	36	  
5	ENVIRONMENT	<ul style="list-style-type: none"> • SOLAR SIMULATOR • ARTIFICIAL WEATHERING ENVIRONMENT CHAMBER 	42	  
6	AUTOMOBILE	<ul style="list-style-type: none"> • FUEL PUMP TEST EQUIPMENT • DIESEL FUEL HIGH TEMPERATURE RELIABILITY TESTER • A/C EVAPORATOR & CONDENSOR CALORIMETER • COMPRESSOR CALORIMETER • BATTERY DURABILITY TESTER • PRESSURE CYCLE TESTER 	59	      
7	OTHERS	<ul style="list-style-type: none"> • CONSTANT TEMP/HUMID CHAMBER • CLEAN ROOM • FAN TESTER 	178	
TOTAL			659	

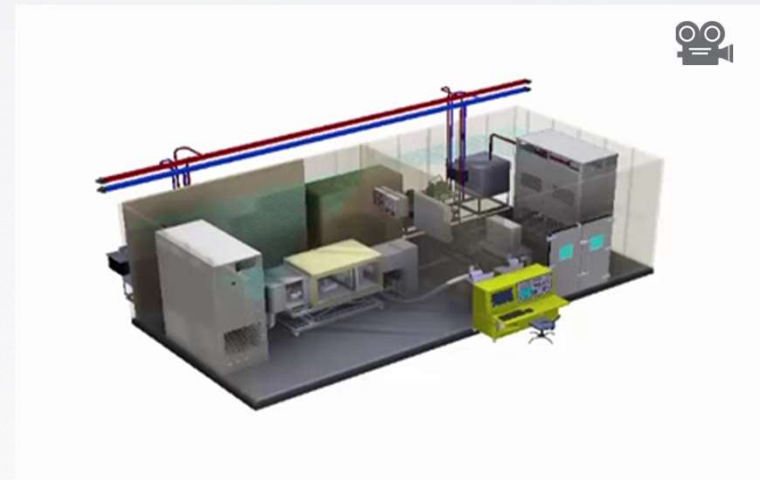
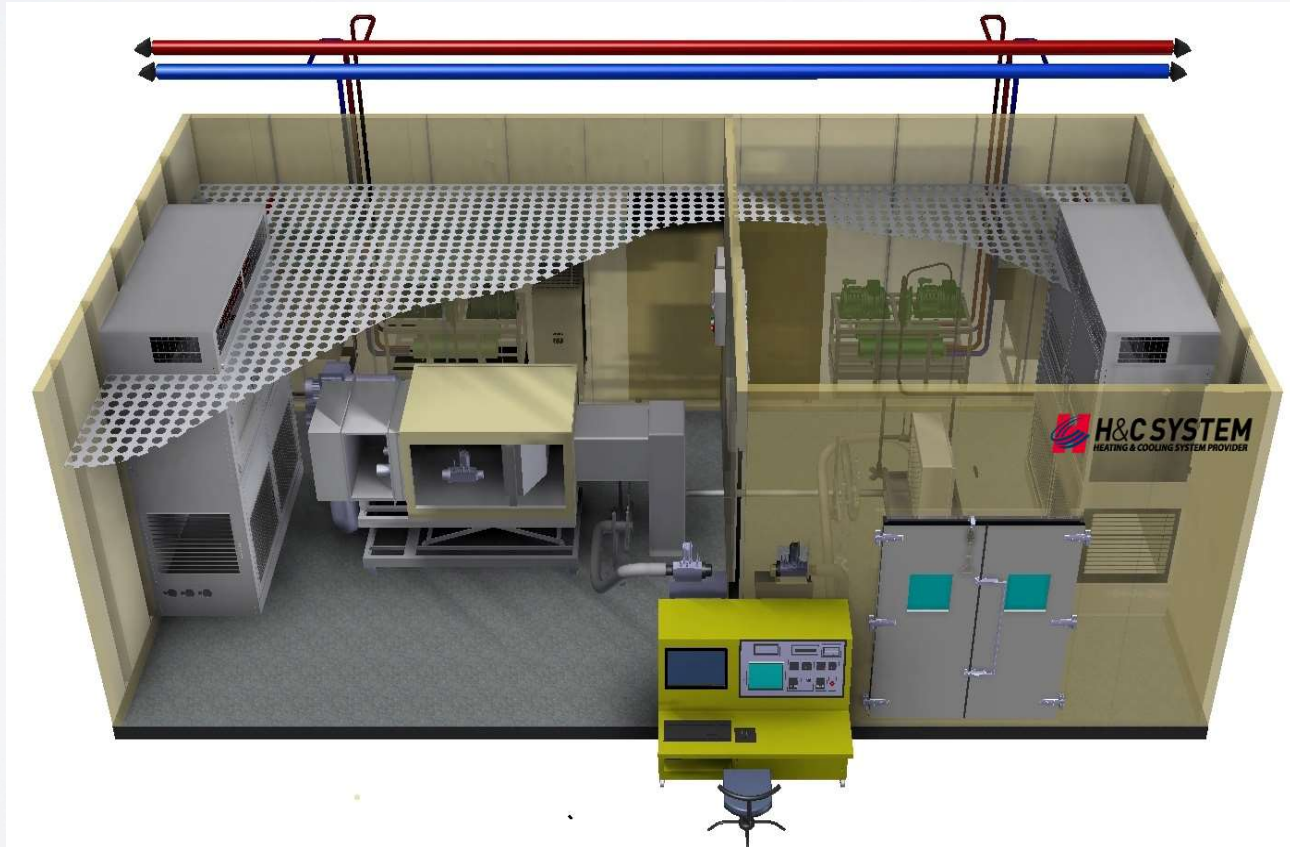
OVERSEAS BUSINESS

Value creation for customers



EGYPT | SAUDI | KAZAKHSTAN | INDIA | MALAYSIA | THAILAND | VIETNAM | INDONESIA | USA | MEXICO | ARGENTINA

NO	CLASSIFICATION	PRODUCTS	
1	HOME APPLIANCES	<ul style="list-style-type: none"> • PSY. CALORIMETER • BAL. CALORIMETER • REF. TEST CHAMBER • ANECHOIC CHAMBER • HEAT RECOVER VENTILATOR • HEAT EXCHANGER TESTER 	<ul style="list-style-type: none"> • ROOM AIR CLEANER TESTER • VACUUM CLEANER TESTER • WASHING MACHINE TEST CHAMBER • TV TEST CHAMBER • (DE)HUMIDIFIER TESTER
2	INDUSTRIAL	<ul style="list-style-type: none"> • MULTI. CALORIMETER • BUILDING MULTI. CALORIMETER • CHILLER TESTER 	<ul style="list-style-type: none"> • CONSTANT TEMP/HUMID CHAMBER • CLEAN ROOM • FAN TESTER
3	COMPRESSOR	<ul style="list-style-type: none"> • COMP. CALORIMETER • MULTI TESTER 	<ul style="list-style-type: none"> • BENCH TESTER • SOUND CYCLE
4	ENVIRONMENT	<ul style="list-style-type: none"> • SOLAR SIMULATOR • ARTIFICIAL WEATHERING ENVIRONMENT CHAMBER 	
5	AUTOMOBILE	<ul style="list-style-type: none"> • A/C EVA. & CON. CALORIMETER • INTERCOOLER TEST EQUIPMENT • FUEL PUMP TEST EQUIPMENT 	<ul style="list-style-type: none"> • RADIATOR TEST EQUIPMENT • BATTERY DURABILITY TESTER • PRESSURE CYCLE TESTER



TECHNICAL SPECIFICATION

ITEM	Control Range	
	INDOOR	OUT DOOR
TEMP RANGE	0°C ~ 50°C	-35°C ~ 60°C
HUMIDITY	25~95%	25~95%
DB, WB TEMP ACCURACY	±0.2 °C	
PRECISION	±1%	
REPEATIBILITY	±1%	

※ ABOVE CONDITION IS CHANGABLE

SYNOPSIS

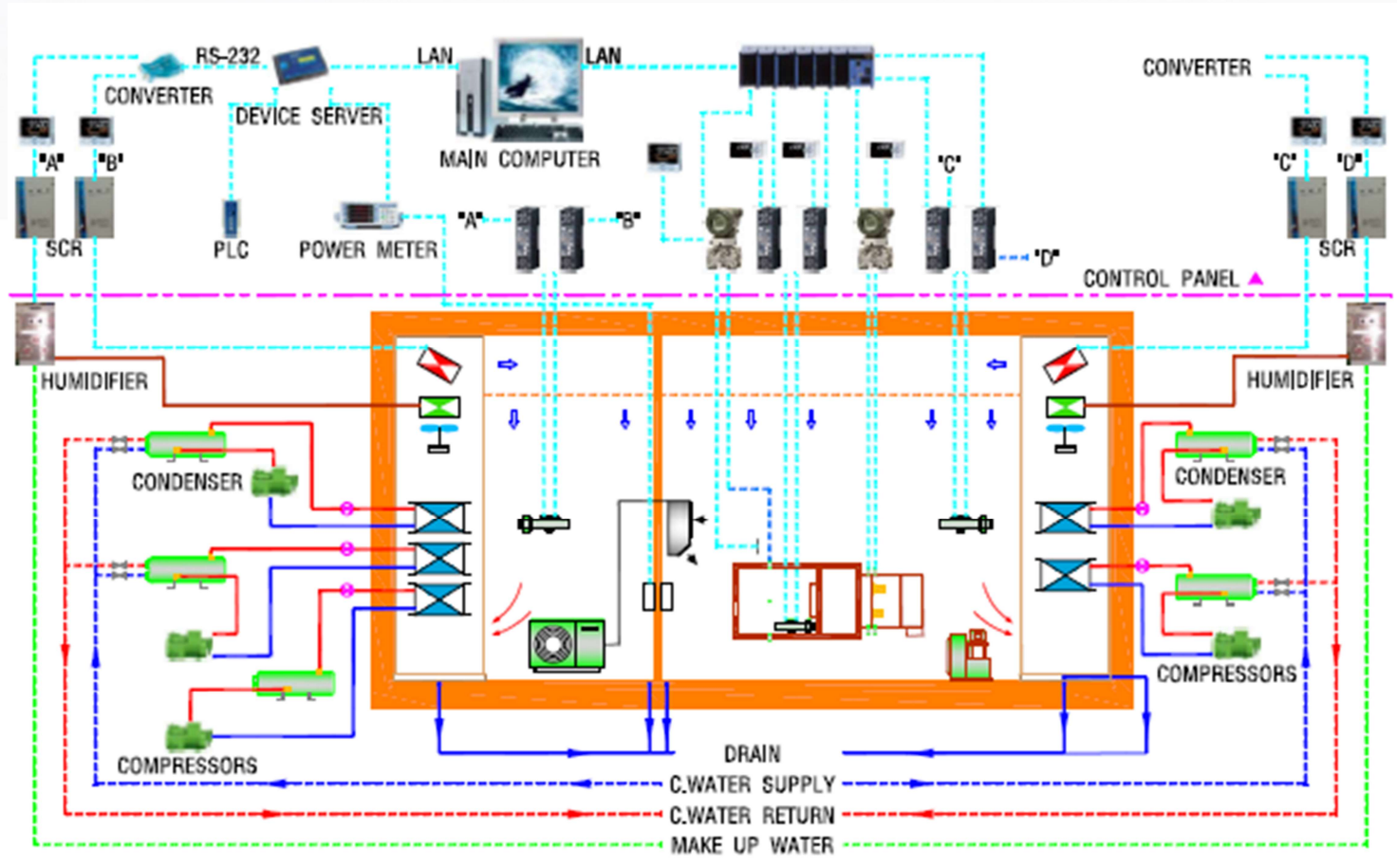
The calorimeter is designed to measure the performance of RAC, PAC and Unitary Air Conditioners

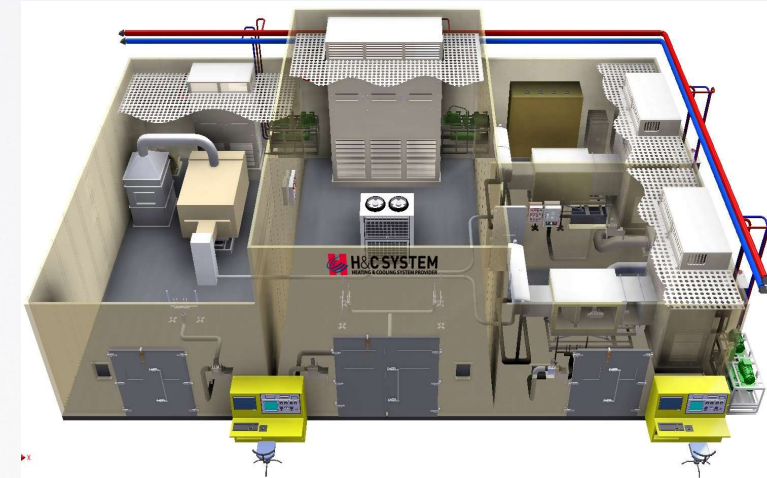
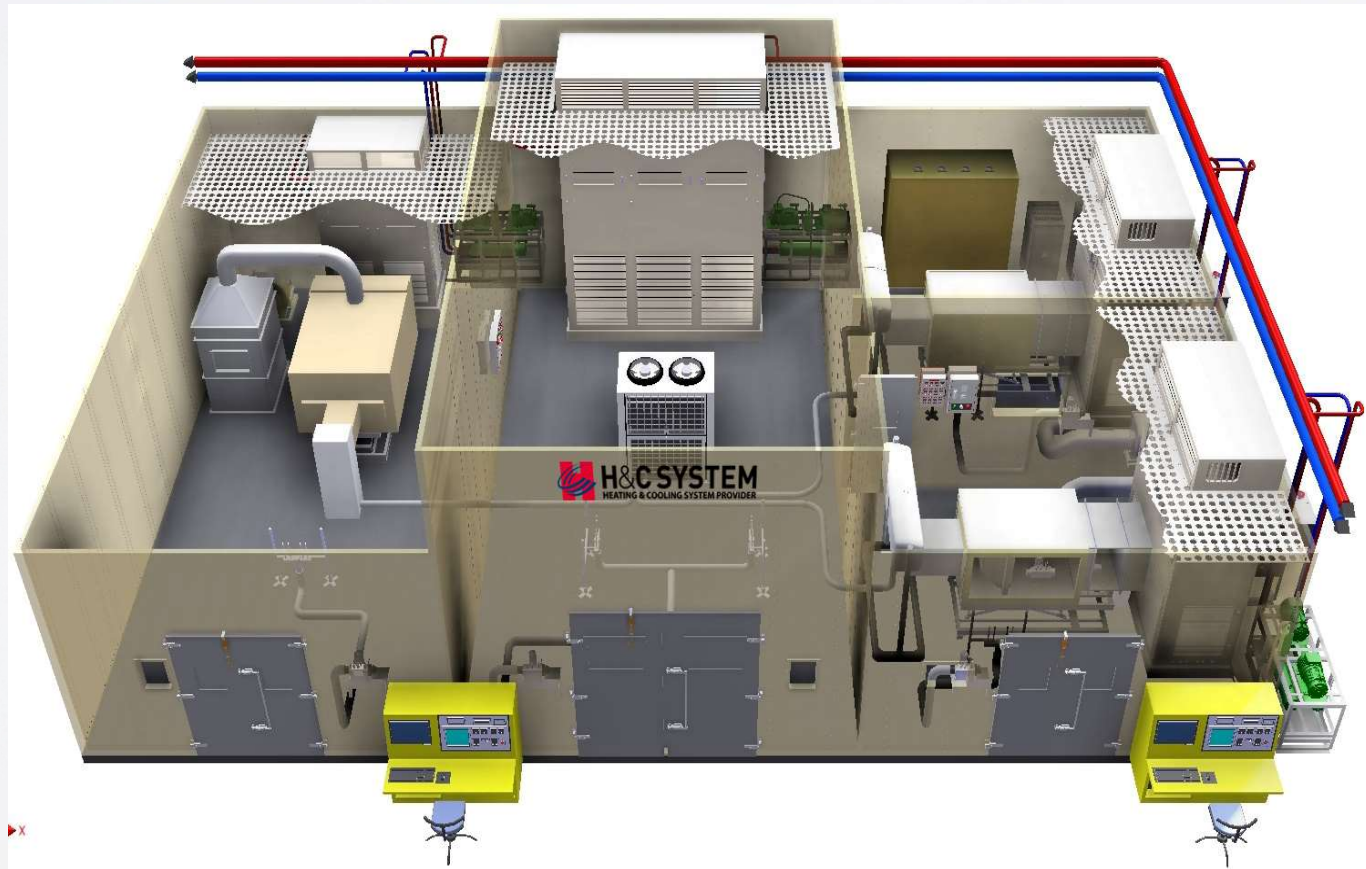
by the air enthalpy method in accordance with ISO 5151, JIS B 8615-1, ASHRAE 16, ANSI/AHRI STANDARD 210/240 standards.

The calorimeter is separated in two rooms and consists of Air handling unit , Receiving chamber, Nozzle chamber, Air sampling Unit, Humidifier and etc.

The critical factors for measure enthalpy of air are D/B, W/B and the velocity of air. Psycho boxes are installed in room and receiving chamber to measures D/B, W/B of the air in the room and discharged Air from test unit. Nozzle chamber is employed for measuring a velocity of air. Consequently, this system can be adopted with various purposes to measure cooling & heating capacity also measures various characters of air-con such as power consumption, voltage, frequency and an energy efficiency rate (EER) by measuring electricity supplied to the test unit.

SYSTEM DIAGRAM





TECHNICAL SPECIFICATION

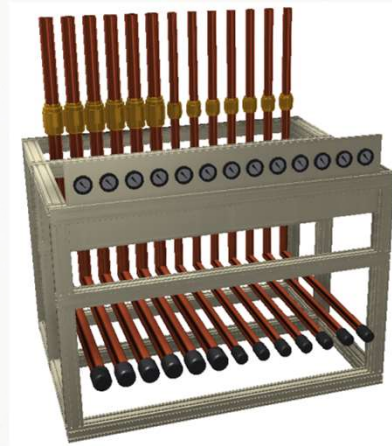
ITEM	CONTROL RANGE	
	INDOOR	OUT DOOR
TEMP RANGE	5°C ~ 50°C	-35°C ~ 60°C
HUMIDITY	25~95%	25~95%
DB, WB TEMP ACCURACY	±0.2°C	
PRECISION	±1%	
REPEATIBILITY	±1%	

※ ABOVE CONDITION IS CHANGABLE

SYNOPSIS

The calorimeter is designed to measure the performance of RAC, PAC and Unitary Air Conditioners by the air enthalpy method in accordance with ISO 5151, JIS B 8615-1, ASHRAE 16, ANSI/AHRI STANDARD 210/240 standards.

The calorimeter is separated in two rooms and consists of Air handling unit, Receiving chamber, Nozzle chamber, Air sampling Unit, Humidifier and etc. The critical factors for measure enthalpy of air are D/B, W/B and the velocity of air. Psychro boxes are installed in room and receiving chamber to measures D/B, W/B of the air in the room and discharged Air from test unit. Nozzle chamber is employed for measuring a velocity of air. Consequently, this system can be adopted with various purposes to measure cooling & heating capacity also measures various characters of air-con such as power consumption, voltage, frequency and an energy efficiency rate (EER) by measuring electricity supplied to the test unit.

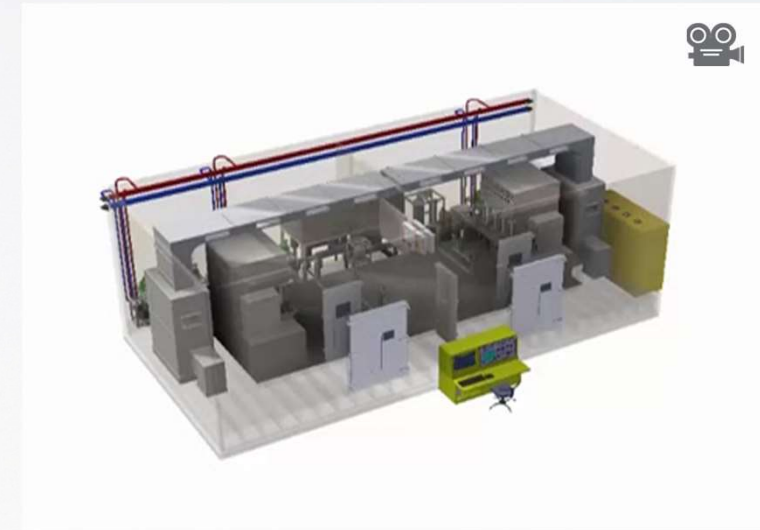
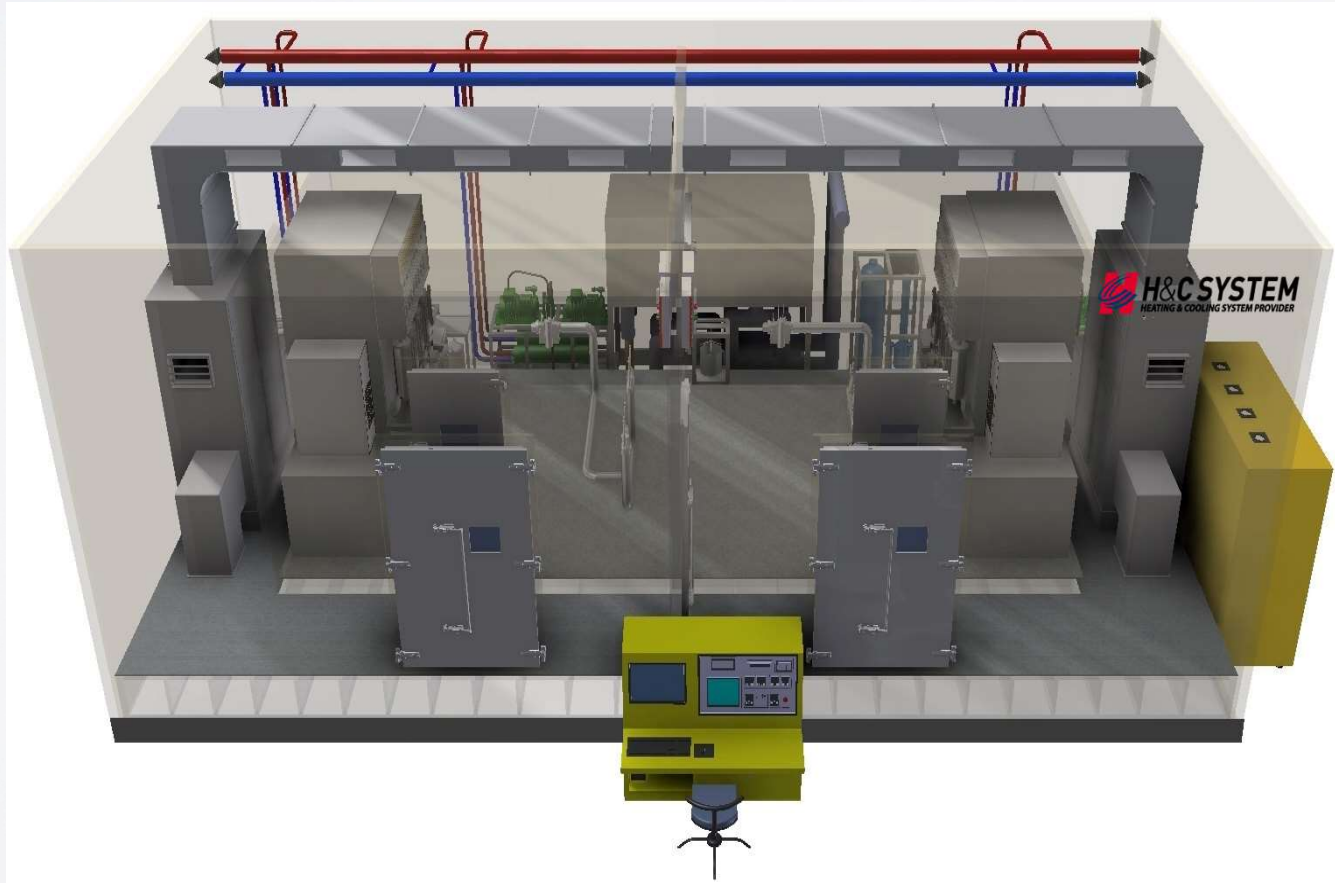


BUILDING MULT CALORIMETER is designed to increase the maximum vertical distance between the outdoor unit and the indoor units substantially to 100 m for measuring below ;

- (1) Retention of refrigerant oil in the compressor,
- (2) Performance reduction due to an increased pressure in the refrigerant pipe during heating, and
- (3) Reduction of the refrigerant head pressure in the indoor unit during cooling.

SYNOPSIS

The heating and cooling performances of system multi-air conditioner for various refrigerant flow rates with high-head and long-line conditions are experimentally investigated. The maximum head and tube length were 110 m and 1000 m. Field tests with indoor and outdoor temperature control is performed in a general office building.



TECHNICAL SPECIFICATION

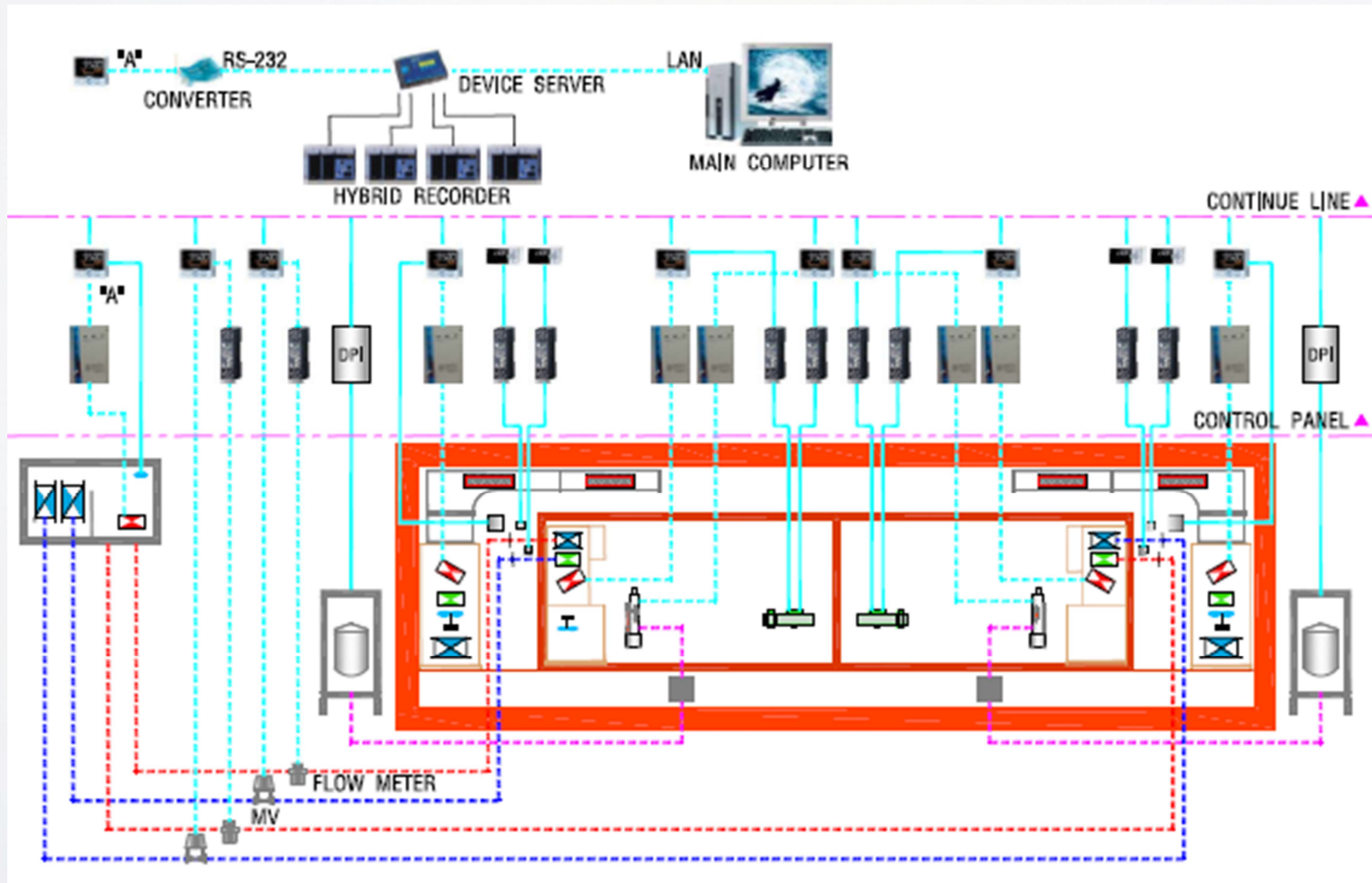
ITEM	CONTROL RANGE
CAPACITY	6 ~ 40k BTU
TEMPERATURE	5~50°C
HUMIDITY	30~80%
PRECISION	±1%
REPEATABILITY	±1%

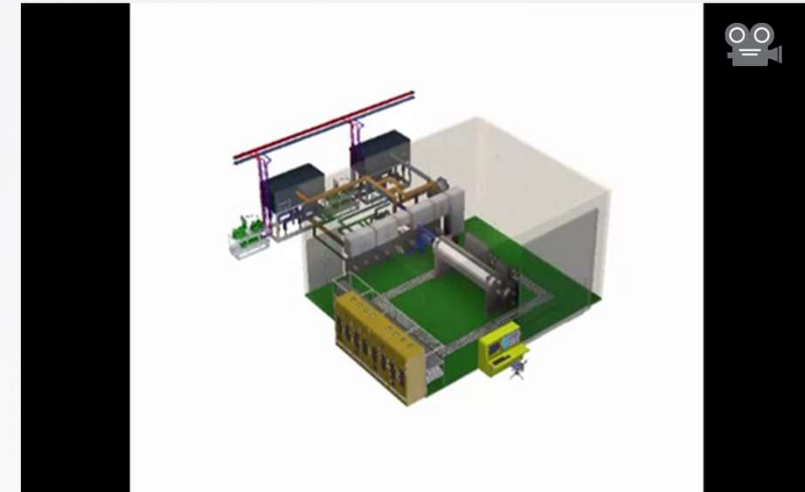
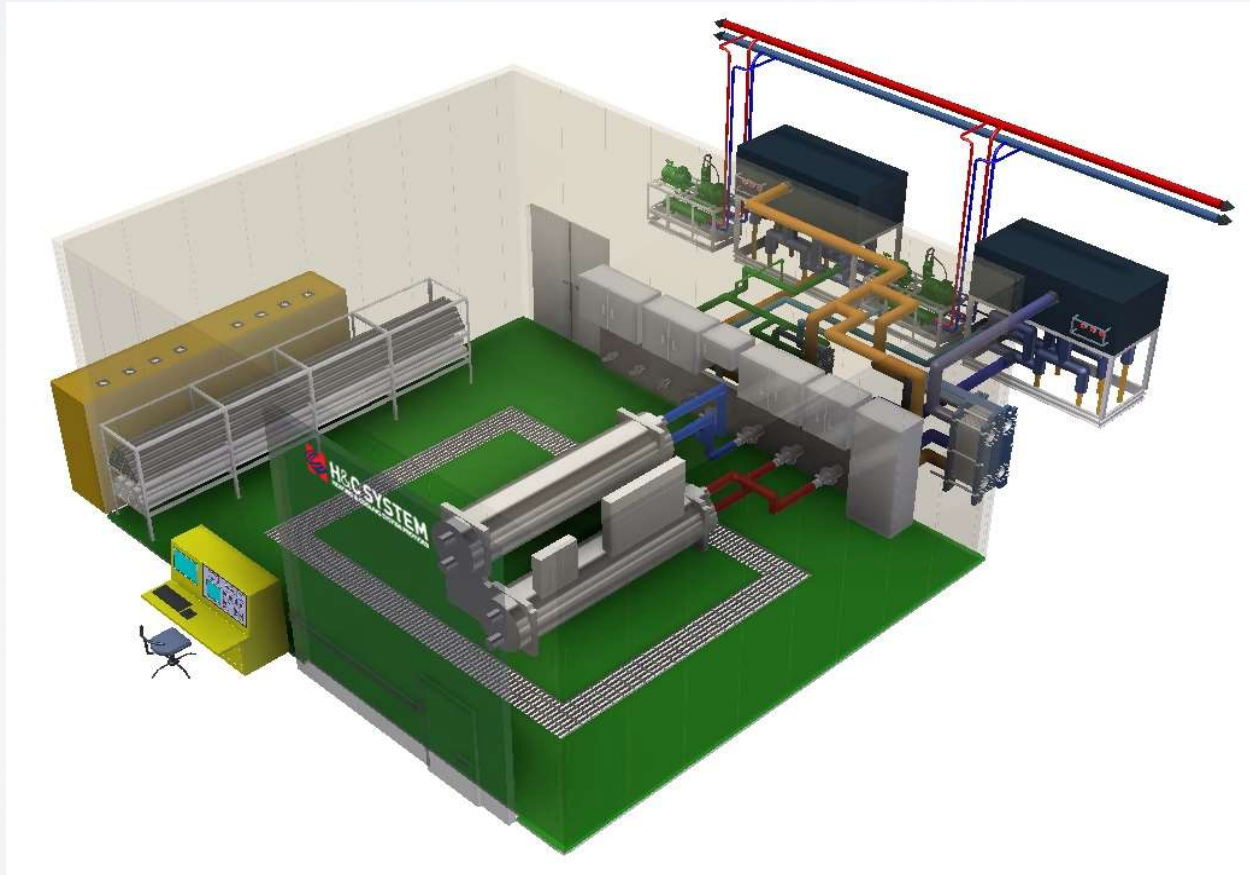
※ ABOVE CONDITION IS CHANGABLE

SYNOPSIS

The calorimeter is to measure cooling or heating capacity of Air-conditioner by measuring electricity and a amount of water to sustain same temperature and Humidity in the room when test unit discharges hot or cold air. It's required to build Outer-chamber surrounding out Inner-chamber in order to minimize the heat losses from Inner chamber. In addition, the amount of condensed or humidified water is measured because the latent heat of water has an effect on thermal equilibrium. ISO standards stipulate the difference of cooling & heating capacity in Indoor and outdoor must be within $\pm 4\%$. Relative standards are ISO 5151, ARI STANDARD 210/240, ISO 15042, ASHRAE 16.

SYSTEM DIAGRAM





TECHNICAL SPECIFICATION

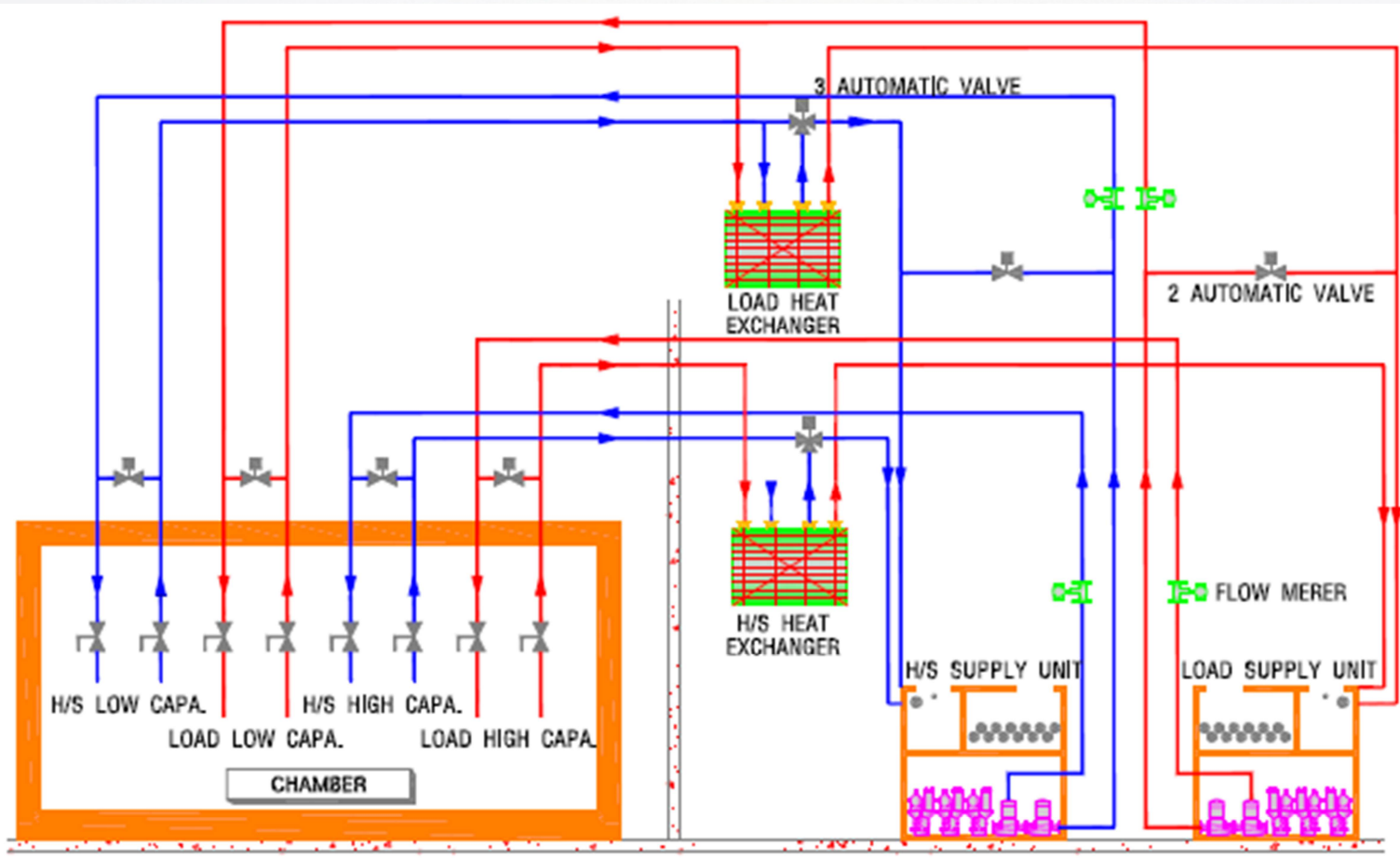
ITEM	CONTROL RANGE
CAPACITY	100 ~ 3,000RT
TEMPERATURE	5~50°C
PRECISION	±2%
REPEATIBILITY	±2%

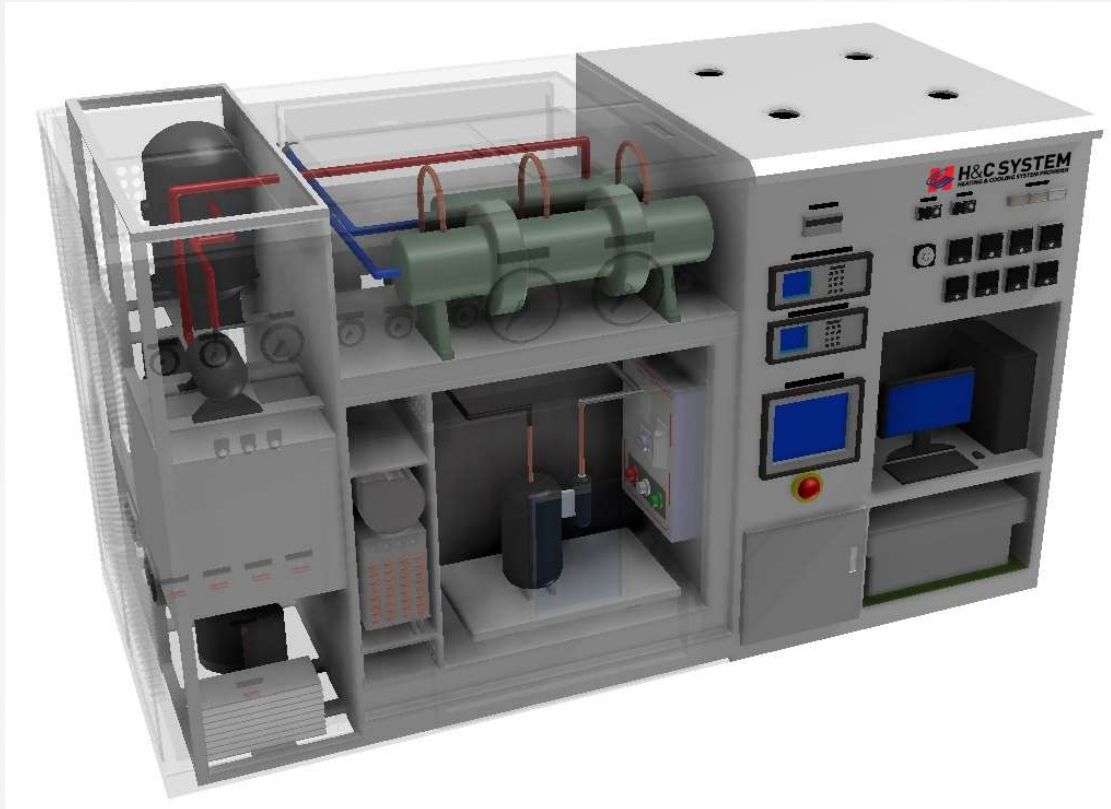
※ ABOVE CONDITION IS CHANGABLE

SYNOPSIS

For measuring energy efficient rate, cooling & heating capacity of air-cooled or water-cooled chiller, it's designed to control the temperature and the flow of water which is supplied to chiller. Chiller tester consists of constant temperature water tank, pump, control and power panel. Relative standards are KS B 6275, ARI 550 590, SHRAE 30, NR GT 101, NR GT 102, NR GT 103.

SYSTEM DIAGRAM





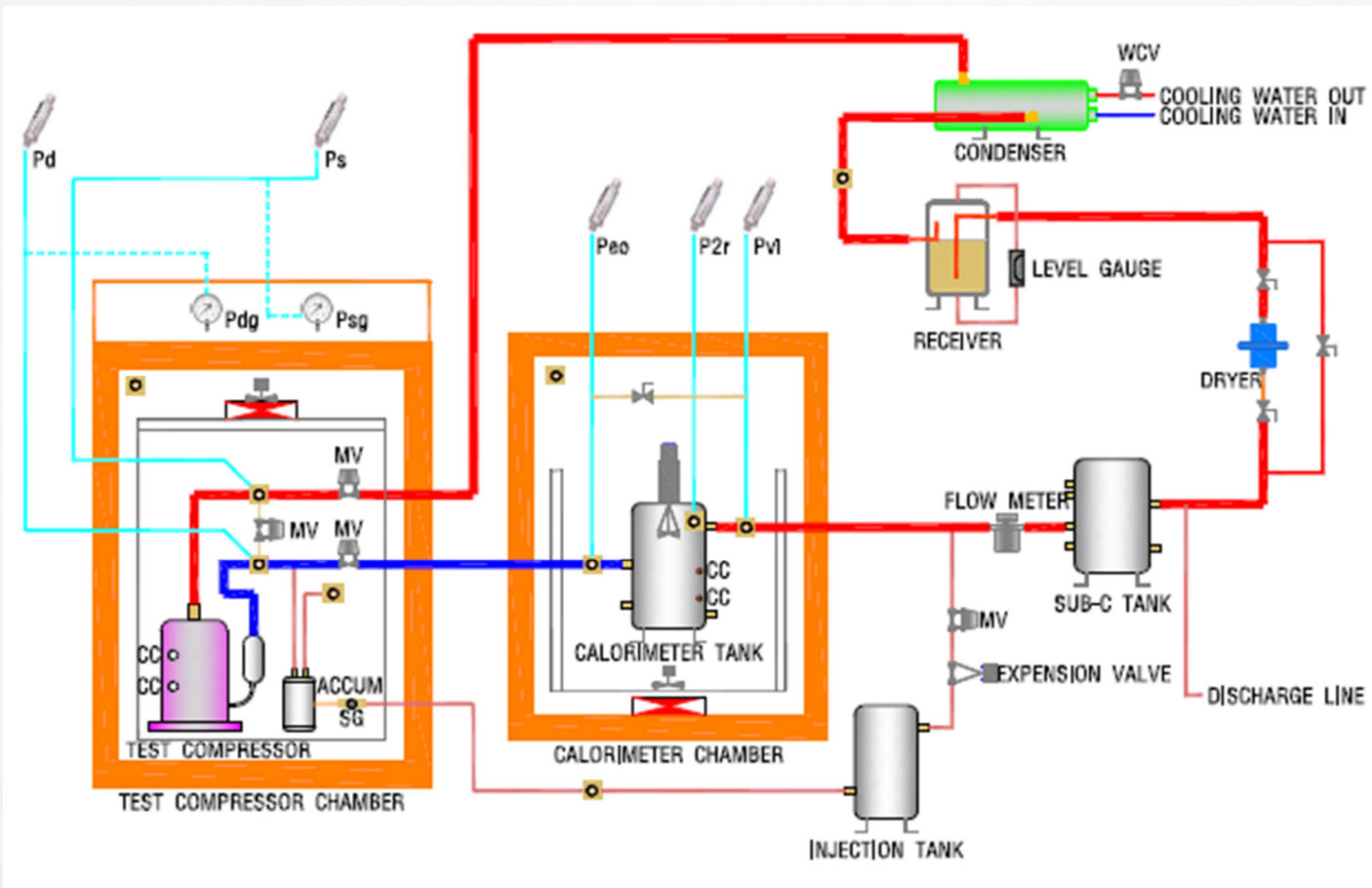
TECHNICAL SPECIFICATION

ITEM	Control Range	
	RE COMP	RO & SC COMP
Discharge Pr	4.1~13.96 kgf/cm2G	20.8~41.35kgf/cm2G
Suction Pr	-0.55~2.82kgf/cm2A	5.34~10.14kgf/cm2A
Exp. Inlet Te	32.0~35.0±0.2°C	46.1~55.5±0.2°C
Calori Outlet Te	32.0~46.0±0.2°C	18.3~25.0±0.2°C
Comp. Ambient Te	32.0~43.0±0.3°C	35.0~43.0±0.3°C
Calori. Ambient Te	32.0~35.0±0.3°C	20.6~35.0±0.3°C

SYNOPSIS

Comp. Calorimeter is designed to measure cooling capacity of Reciprocate, Rotary and Scroll types of compressors. There are various methods to test compressors such as 2nd refrigerant method, Refrigerant gas measuring method, Refrigerant liquid measuring method. In general 2nd refrigerant method is adopted for the measurement because of the precise accuracy. As refrigeration cycle with test unit of compressor is fully formed in the calorimeter, the temperature in Evaporation Tank comes to be going down because refrigerant gas is expended in Evaporator. While temperature goes down, electricity is supplied to heaters in Evaporation tank to sustain the temperature of 2nd refrigerant and finally get to be in thermal equilibrium. Cooling capacity of compressor can be calculated with the amount of electricity and the data of refrigerant gas flow. The relative standards are KS B ISO 917, S-B 6365/JIS-B 8606, KS-B 6366/JIS-B 8608, KS-B 6226/JIS-B 8600, ASHRAE Standards 23-78.

SYSTEM DIAGRAM





HBP MULTI TESTER

In accordance with EN60335-1.2, UL 335-1.2 standards, this is equipment for testing voltage fluctuation, overload, OLP & PTC matching, Starting voltage current of compressor.



SOUND CYCLE

Composite operation cycle for compressor and install test unit in Anechoic room to measure sound, vibration characters of compressor.



HBP LIFE TESTER

In accordance with EN60335-1.2, UL 335-1.2 standards, this is Test actual field condition and endurance of compressor



LOCKED ROTOR TESTER

Test coil winding temperature and accessories safety while restricting motor motion.



LBP MULTI TESTER

In accordance with EN60335-1.2, UL 335-1.2 standards, this is equipment for testing voltage fluctuation, overload, OLP & PTC matching, Starting voltage current of compressor.



LBP LIFE TESTER

In accordance with EN60335-1.2, UL 335-1.2 standards, this is Test actual field condition and endurance of compressor



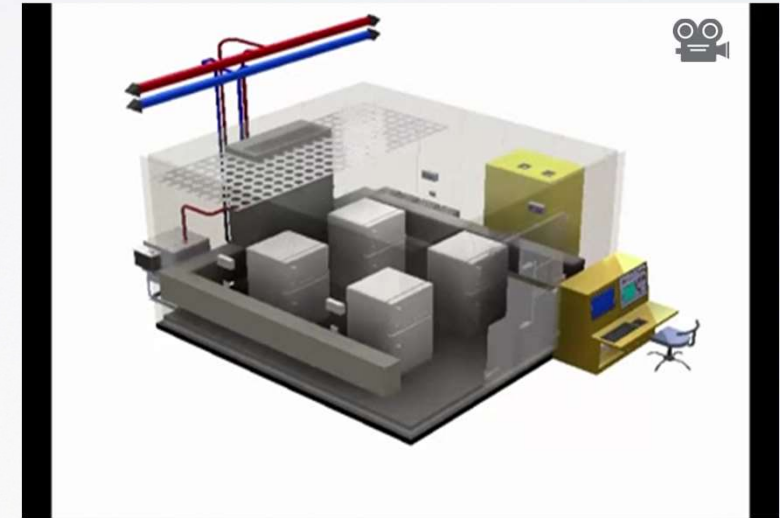
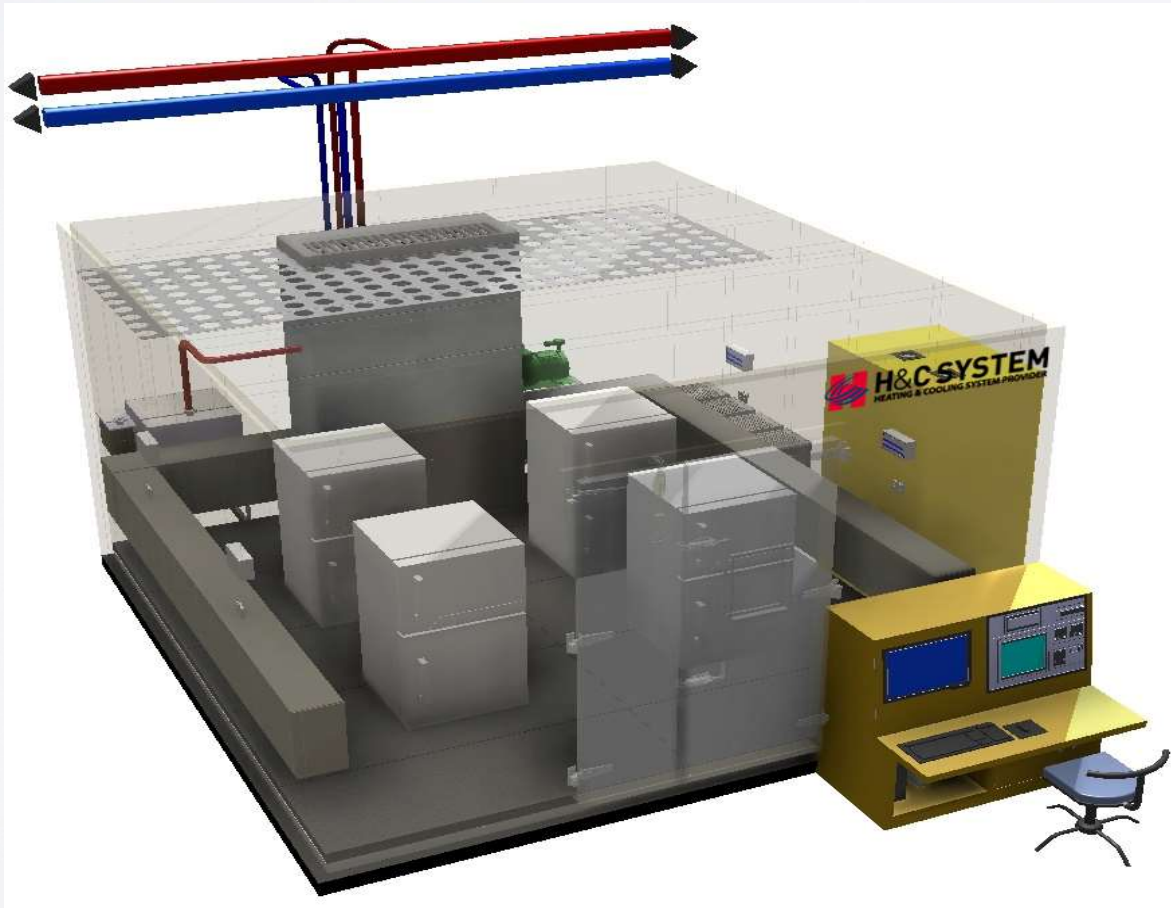
SOUND CYCLE

Composite operation cycle for compressor and install test unit in Anechoic room to measure sound, vibration characters of compressor.



LOCKED ROTOR TESTER

Test coil winding temperature and accessories safety while restricting motor motion.



TECHNICAL SPECIFICATION

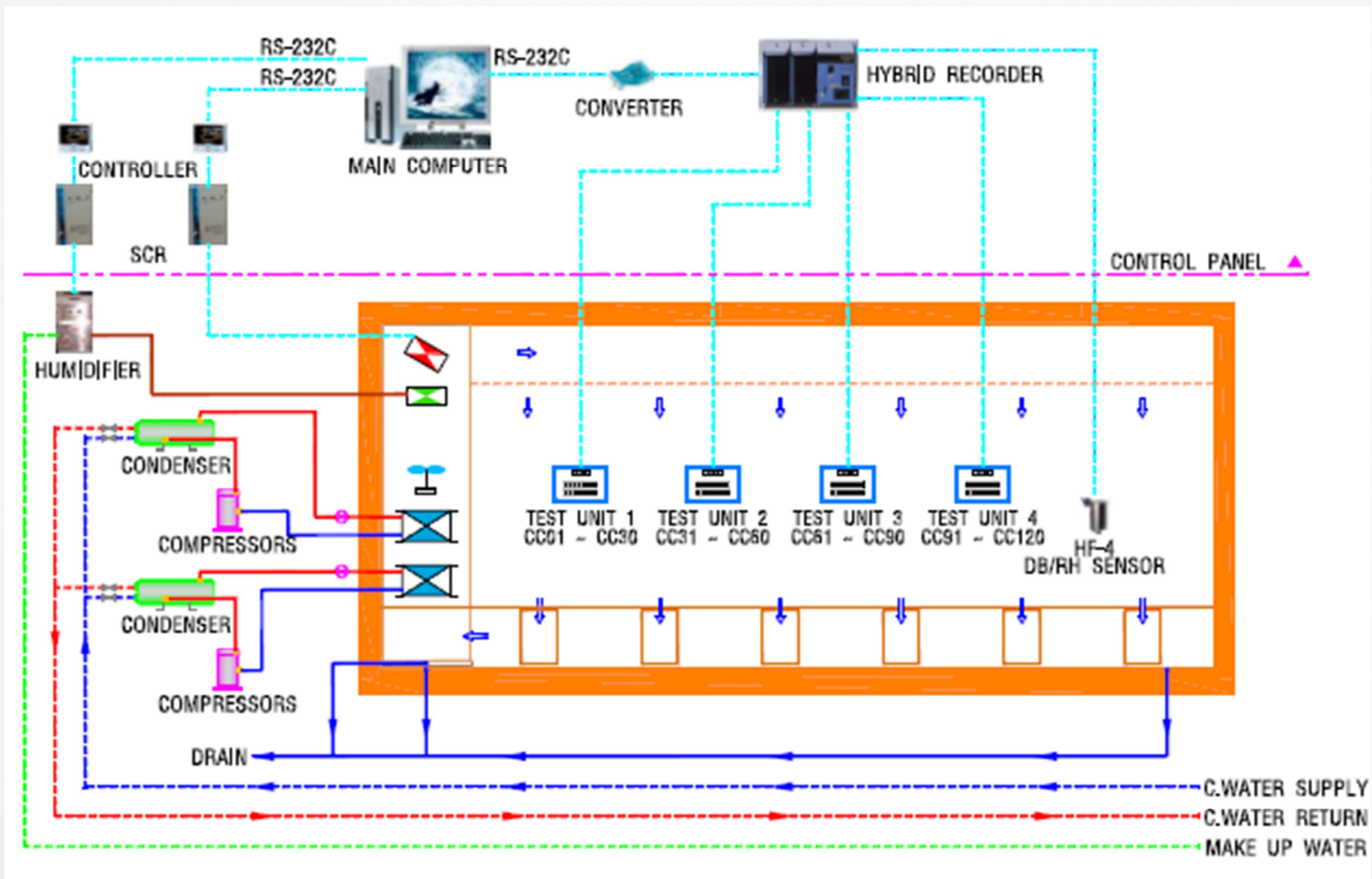
ITEM	CONTROL RANGE
Temperature	-40°C ~ 80°C
Humidity	30~90%
Air velocity	0.25m/s
Temp Uniformity	±0.3°C

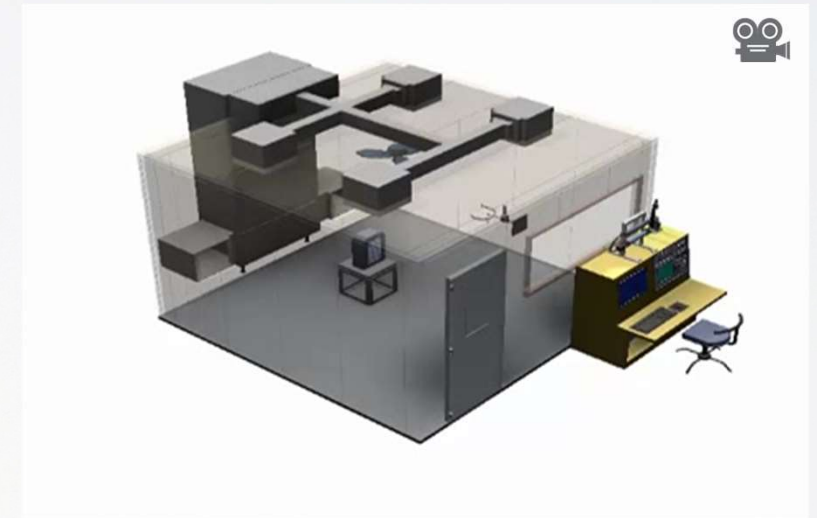
※ ABOVE CONDITION IS CHANGABLE

SYNOPSIS

This equipment is to test and evaluate power consumption, cooling performance, temperature uniformity of various refrigerator such as residential, commercial and showcase type. It's consisted of Refrigerator unit, humidifier, power supplier and AHU. The relative standards are KS B ISO 7371, KS B 6031, KS B 6367, ISO 8561, UI_471_2003, ISO 8561_1995E, EN 441

SYSTEM DIAGRAM



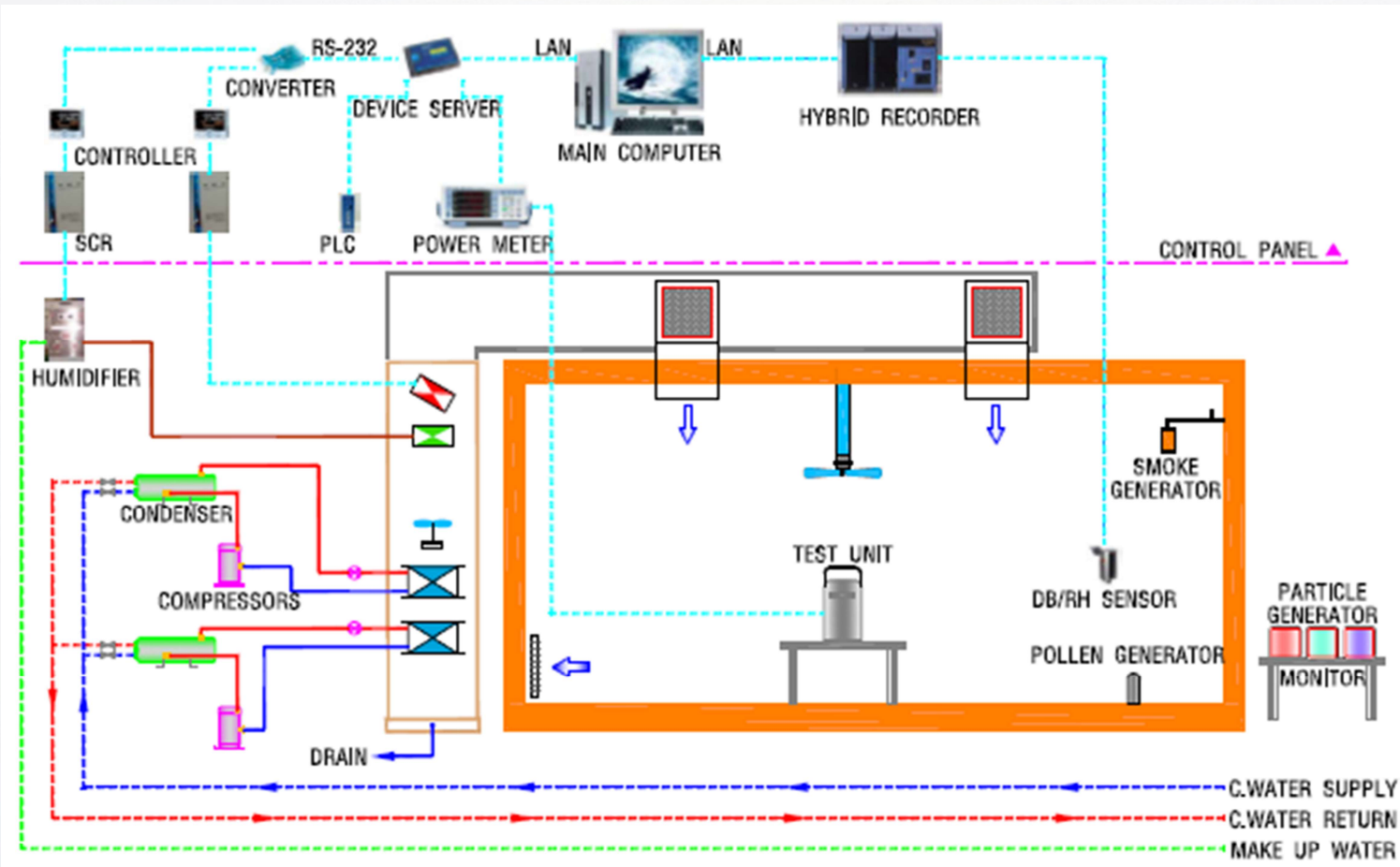


30m³ CHAMBER :The chamber is designed to measure of the delivery of contaminant free air(CADR) by a portable household room air cleaner. The walls must be painted with a washable latex semi-gloss paint. The environmental control system consists of humidifiers, a HEPA filter, blowers, supply dampers and return dampers. The final results are expressed in terms of a CADR rating for each of three contaminants used (smoke, dust, and pollen). These contaminants are used to simulate various sizes of particles that would typically exist in a home.

SYNOPSIS

In accordance with the standards of ANSI/AHAM AC-1-2002, ANSI/ASHRAE STANDARD 52.1 & 52.2, KS C 9314, SPS-KACA002-132, JIS C 9615, , it's designed to evaluate the performance of air cleaners such as rated fine dust removal rate, rated fine dust collection efficiency, power consumption and etc by measuring clean air delivery rate under control of temperature, humidity and airflow. In general, temperature & humidity is set to be $23\pm 5^{\circ}\text{C}$ & $55\pm 15\%$.

SYSTEM DIAGRAM





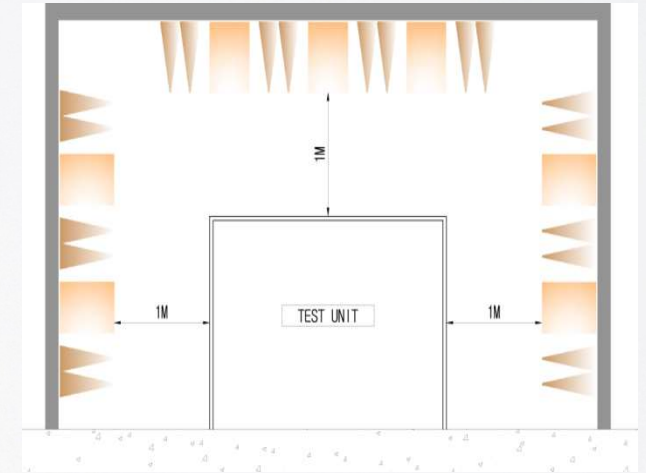
THE DUCT FOR MEASURING FILTERS' FINE DUST REMOVAL CAPACITY TEST

Solid potassium chloride(KCS) is used as test particle. KCS is mixed with water at the ratio of 700ml water and 7g KCS. Sub-Micron particle is generated by spraying KCS solution. The median diameter of particle must be under $0.3\mu\text{m}$. The test particle is forced to flow through the duct after test unit is installed in the middle of duct. Filter's fine dust removal capacity can be calculated by measuring particle concentrations at two points of upper and downstream.



THE CHAMBER FOR NOXIOUS GAS REMOVAL RATE TEST

8m³ size of sealed chamber is employed for Noxious gas removal rate test. Regulated noxious gases are Ammonia(NH₃), Toluene (C₆H₅CH₃), Formaldehyde(HCHO). Ceiling mixing fan is installed for the uniformity of the gases. Gas concentration must be controlled by Gas generator. For Noxious gas removal capacity test, firstly the gas is filled in the sealed chamber till the concentration reaches to 20~25ppm. Then, the concentration is measured every 10~30 minutes at test unit's outlet.



NOISE TEST

It's required to place test unit in anechoic chamber to perform noise test. Then the noise is acquired by measure noises at 5 points surrounding test unit.

THE TYPES OF AIR CLEANER TESTER



VACUUM CLEANER DUST EMISSION MONITORING SYSTEM

Monitoring fine dust emission according to KS and IEC standard Fine dust generator, Sealed chamber, Particle counter Air flow monitoring inside chamber, Newly standardized on Feb 2009 Regulation : Fine dust emission below 0.2mg



ENVIRONMENTAL AIR MONITORING SYSTEM

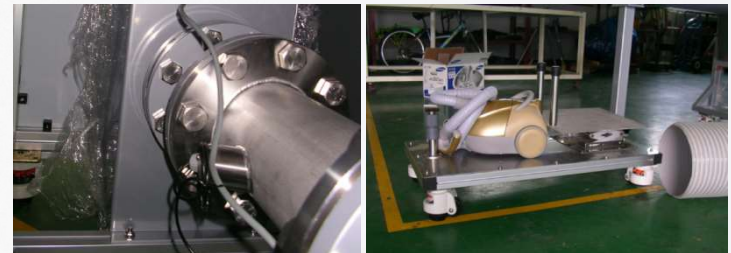
Vacuum rate, Air flow, Power consumption, Air flow is monitored by ultrasonic flow meter



ASTM AIR FLOW MEASURING SYSTEM

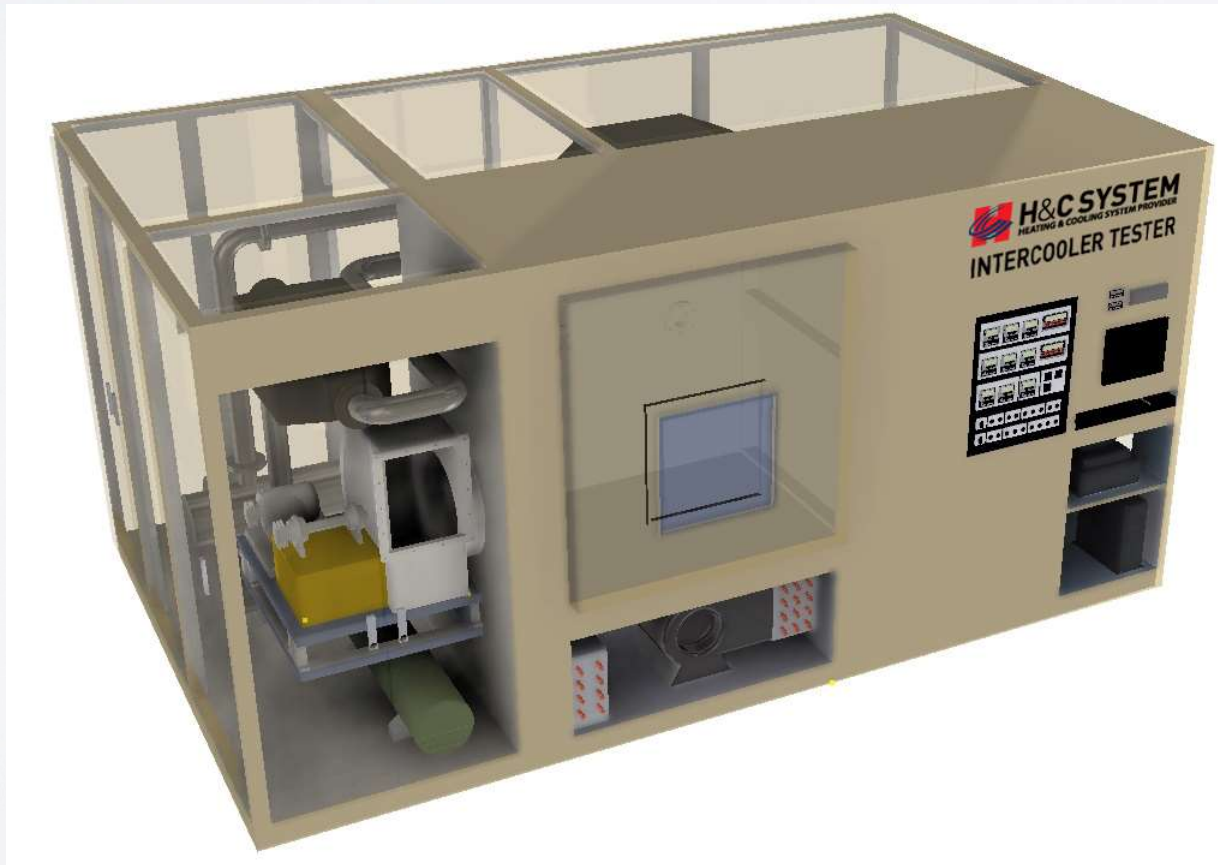
Fine dust emission monitoring system according to ASTM standard.

- ▶ Applied particle : Potassium (KCL)
- ▶ Inner air flow: 1,000cfm



SYNOPSIS

In accordance with the standards of KS C IEC 60312, ASTM F 1977-04, Dust emissions measurement system of vacuum cleaner is used to accurately measure objective dust emissions by this process; vacuum clean built-in chamber inhale particles from the experimental particle after the test, and the particle measurement part is installed in exhaust duct measure particle coming out of the vacuum cleaner.



TECHNICAL SPECIFICATION

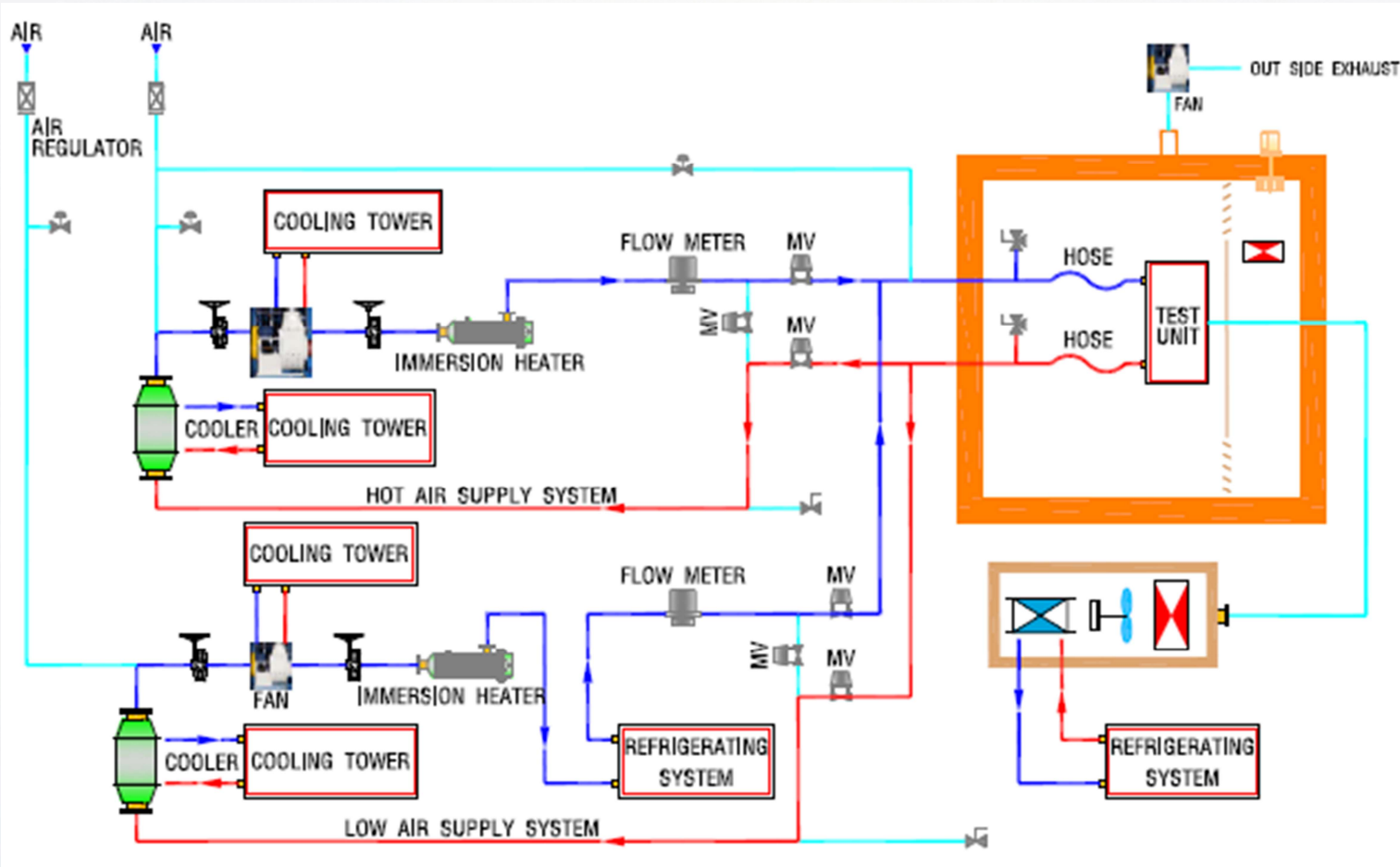
ITEM	CONTROL RANGE
HOT AIR Temp	RT ~ 250°C
LOW AIR TEMP	RT~200°C
AIR FLOW	0 ~ 850 kg/h
FLOW ACCURACY	± 3 %

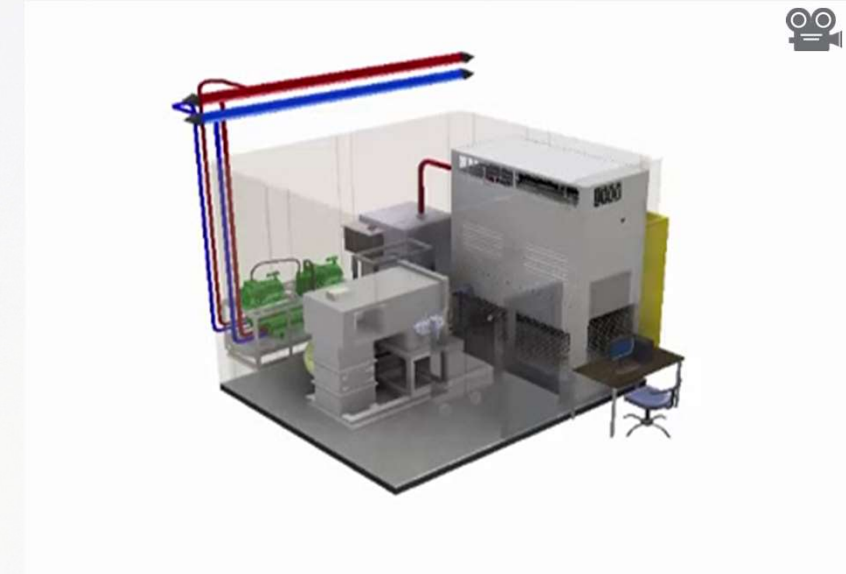
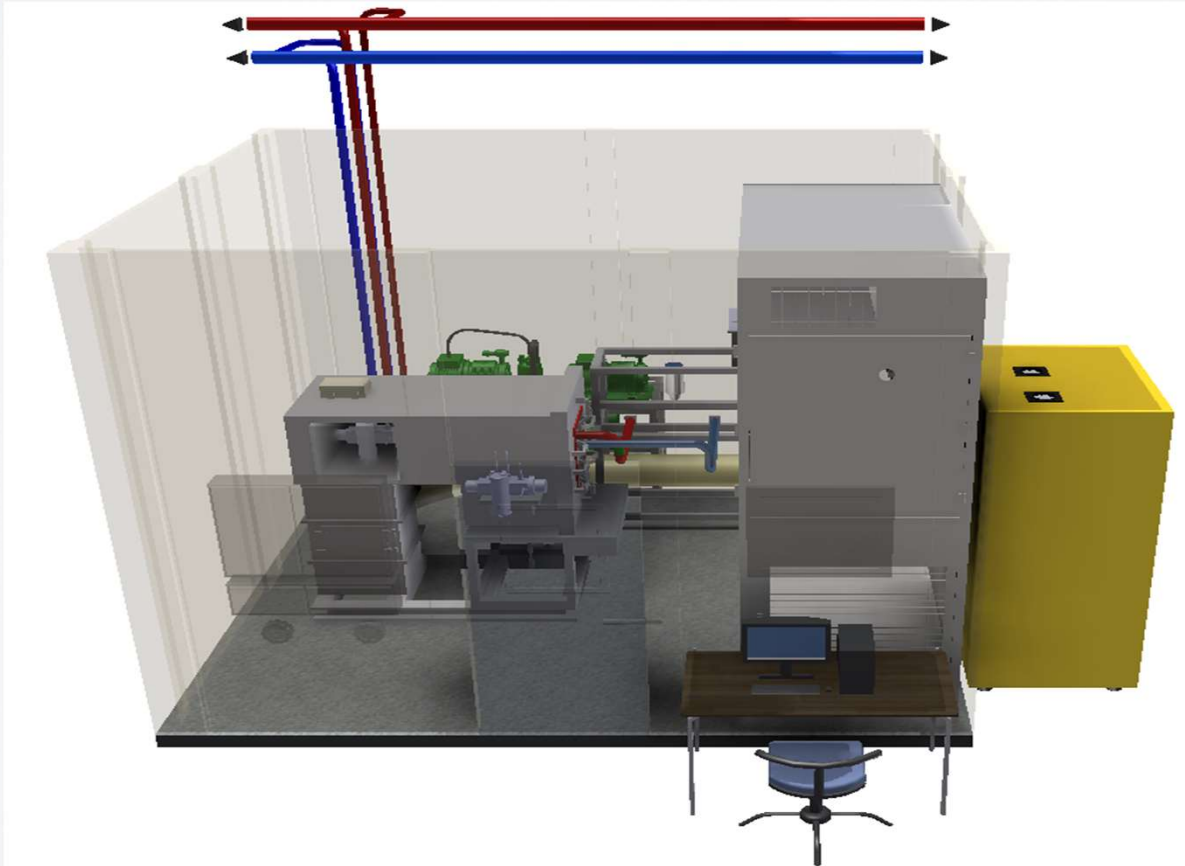
※ ABOVE CONDITION IS CHANGABLE

SYNOPSIS

It's designed to test the durability against thermal shock to automotive intercooler by respectfully supplying high & normal temperature air to inside of intercooler. This equipment consists of test chamber, hot air supply system, low air supply system, control & power panel and computer system. Required technical specification is decided by their own regulations of automotive manufacturers.

SYSTEM DIAGRAM





Controlled items are as follows.

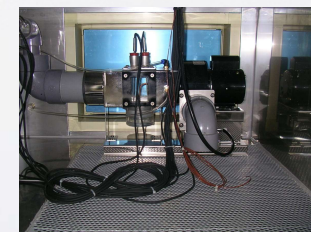
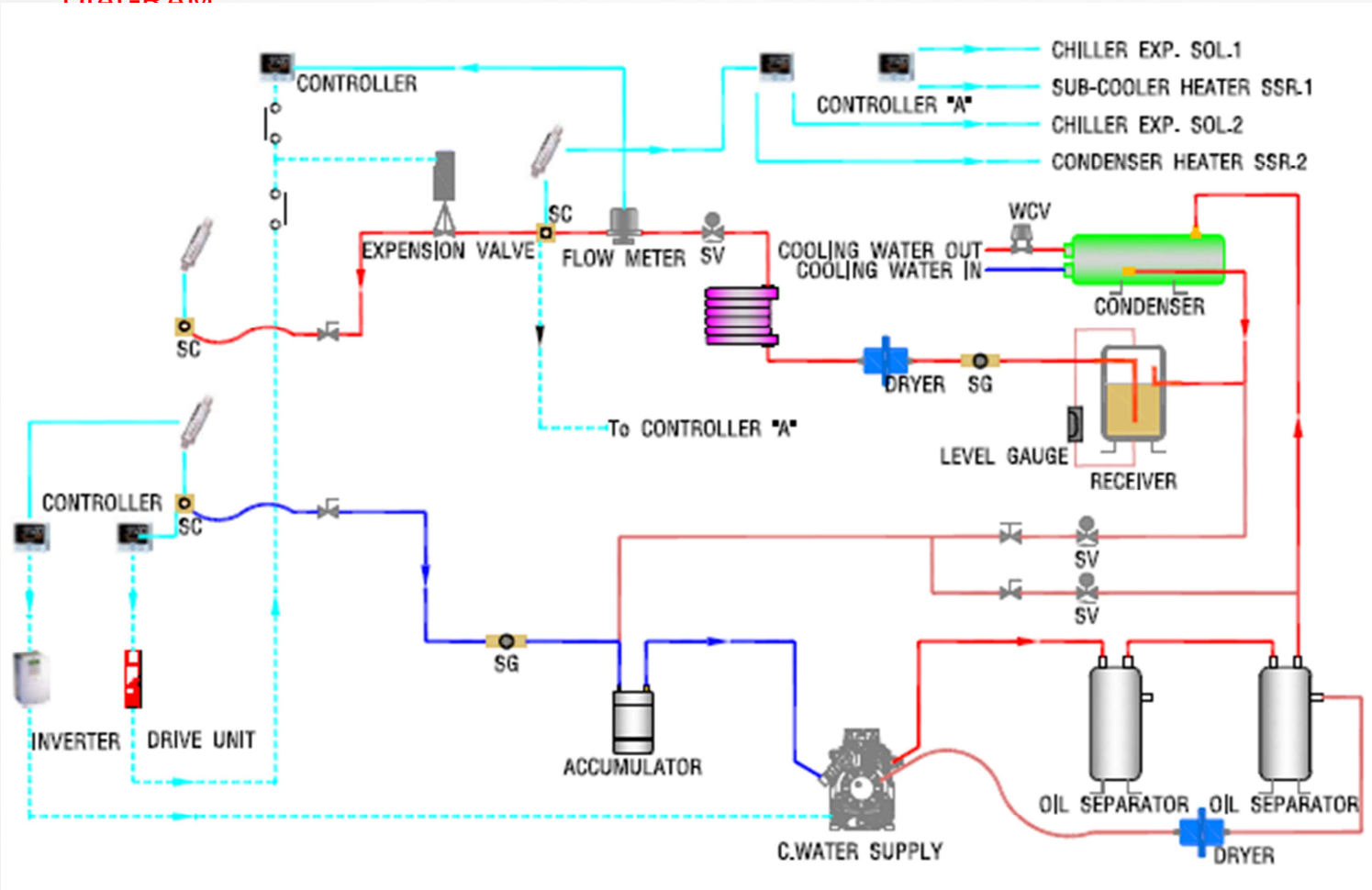
1. Temperature at Inlet of TXV, EVA/CON
2. Pressure at inlet of TXV, EVA/CON
3. Refrigerant flow

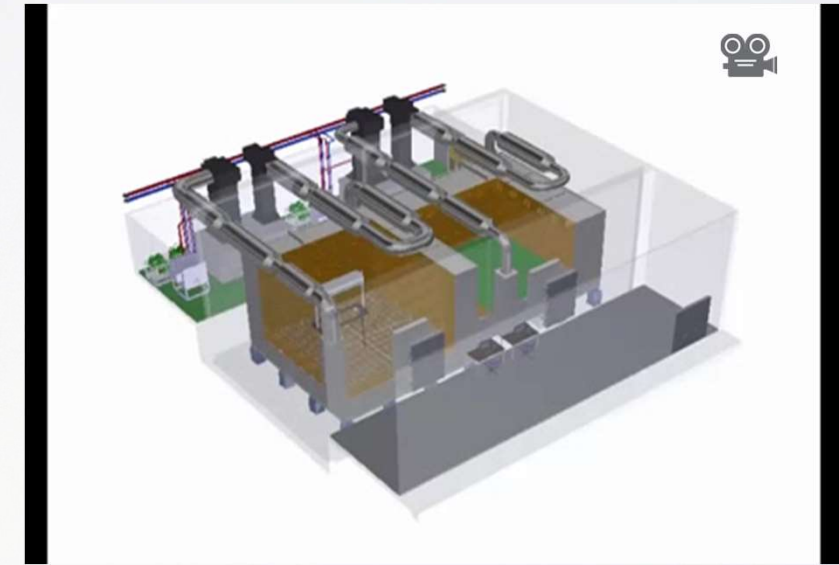
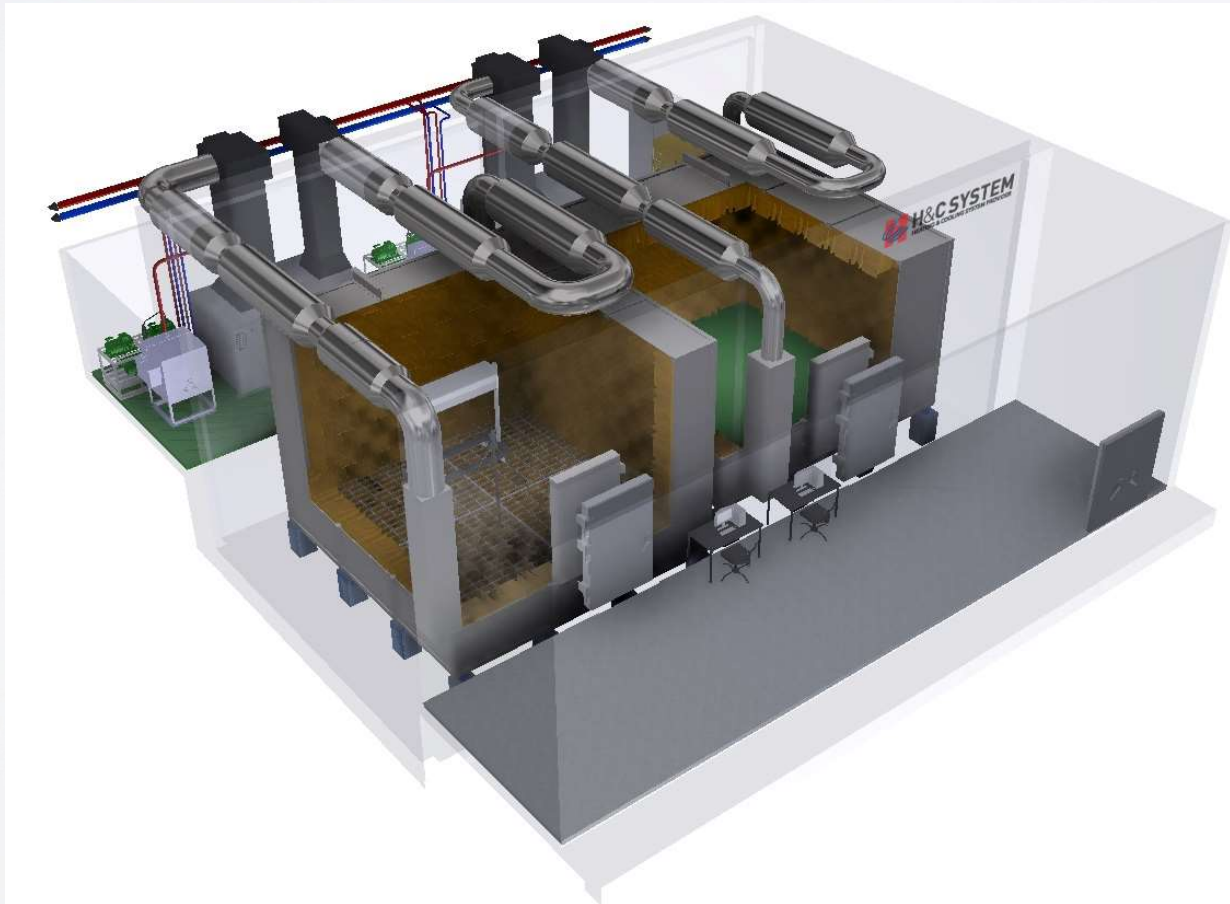
SYNOPSIS

In accordance with ASHRAE STANDARD 33, the calorimeter is designed to measure the cooling and heating capacity of Evaporator and Condenser and the differential pressure by controlling temperature, humidity in the room, Air flow rate and temperature of refrigerant.

The system consists of Test room, Receiving chamber, Air-handling unit, Refrigerant supply unit and others.

**SYSTEM
DIAGRAM**





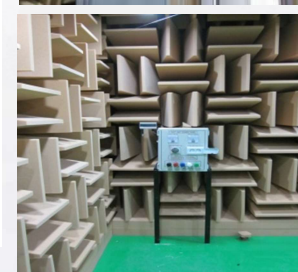
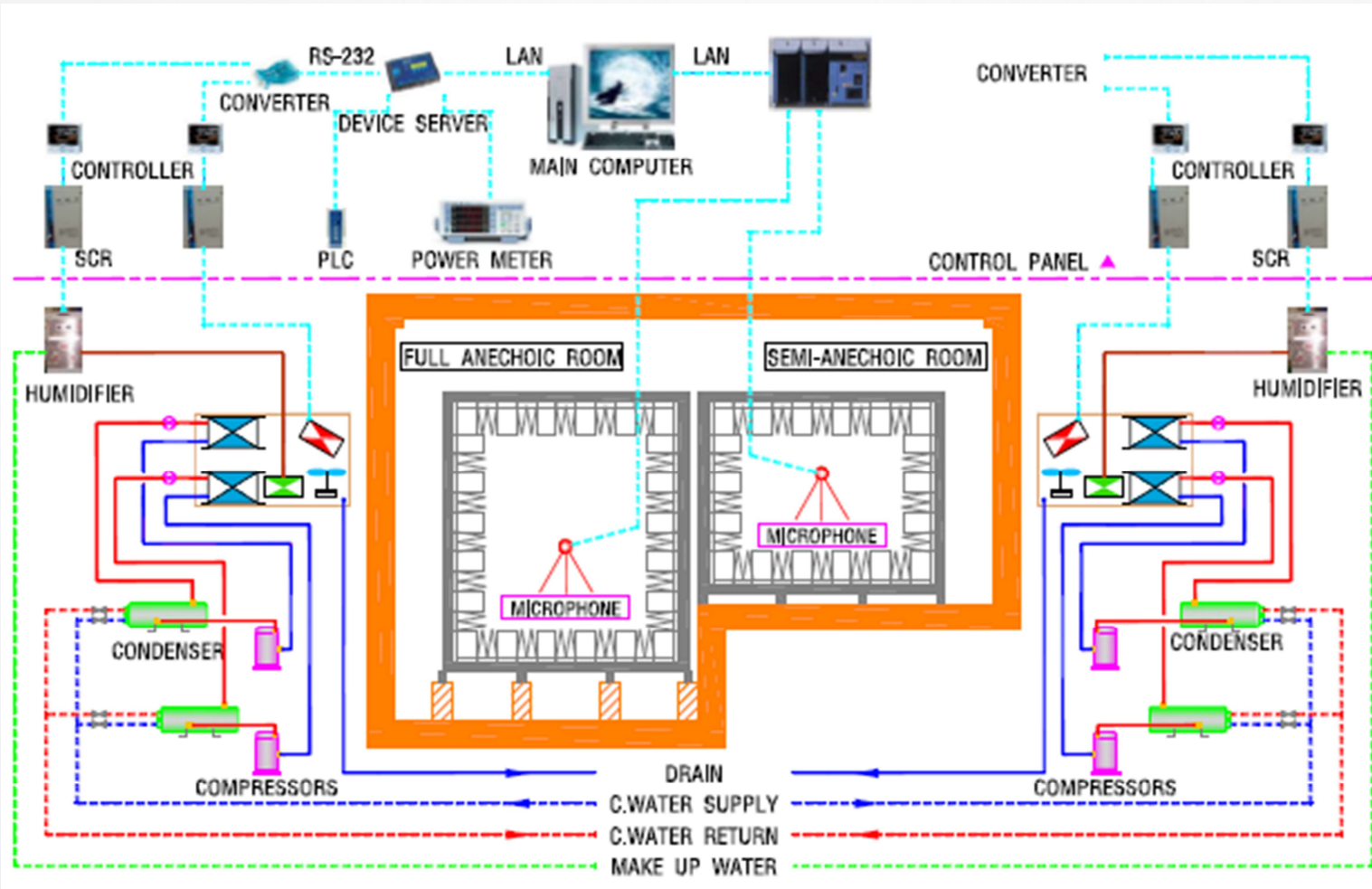
FEATURES

- ▶ **Cut-off Frequency** : 125 Hz
- ▶ **Background noise**
 - 15dB(A) - When AHU STOP
 - 18dB(A) - When AHU RUN
- ▶ **Wedge** : Polyester based urethane foam
(Density : 32Kg/m³)

SYNOPSIS

In accordance with ISO 3745, KS A ISO 3745, anechoic chamber is designed to measure sound characters of HVAC, home appliances and various parts. To test split type HVAC such as air conditioner, this chamber is composed by two different rooms. One is a full anechoic chamber and another is a semi anechoic chamber. In full anechoic chamber, it's required to affix sound absorbent wedge at all six sides; ceiling, floor, side wall to make free field without an interference reflex, diffraction of sound character. This chamber's sound reflex rate is almost "0". So, inside of chamber has character of non-reflex condition of free field. Anechoic chamber is divided by two categories; one is full anechoic and another is semi-anechoic chamber.

SYSTEM DIAGRAM





TECHNICAL SPECIFICATION

ITEM	CONTROL RANGE	
	INDOOR	OUT DOOR
TEMP RANGE	20~27°C	-40~60°C
HUMIDITY	10~20%	30~90%
AIR FLOW	200~ 2,000CFM	
PRECISION	±1%	

※ ABOVE CONDITION IS CHANGABLE

SYNOPSIS

In accordance with the standards of JRA 4038, JIS B 8628, ARI 1060 2001, it's designed to measure air flow rate, heat exchange efficient rate, electrical features, of heat recovery ventilator as well as the ventilated air amount.

The system is consisted of two rooms (Indoor and outdoor), Air handling unit, refrigerator, humidifier, Air flow measuring equipments, power supply system, Co2 generator, power & control panel and computer system.



TECHNICAL SPECIFICATION

ITEM	CONTROL RANGE
TEMP RANGE	10~80°C
HUMIDITY	30~90%
AIR FLOW	200~ 3,000CFM
TEMP PRECISION	±2%

※ ABOVE CONDITION IS CHANGABLE

SYNOPSIS

This equipment is to measure the performance of Heat Exchanger, Air-Conditioner. It controls temperature and humidity based on the standards such as ASHRAE,KS, JIS. It also measures various data on the refrigerant status and the flow change of the Heat exchanger. It consists of Indoor laboratory, Air Handling Unit, Refrigerator, Air flow measuring equipment, Hot & Cool water supply equipment, Refrigerant supply equipment, Power panel, Control panel, and Computer system.



SYNOPSIS

This equipment is to measure the power consumption and various performance of washing machine. It controls temperature and humidity based on the standards such as EN60456, SASO2692 standards. It also measures various data of washing machine and laundry. It consists of laboratory (1Room), Air Handling Unit, Refrigeration Machine, Hot water bath, chilled water bath, Power Supply Panel, Automatic Data Acquisition System, AC Power supply etc..



SYNOPSIS

A solar simulator (also artificial sun) is a device that provides illumination approximating natural sunlight. The purpose of the solar simulator is to provide a controllable indoor test facility under laboratory conditions, used for the testing of solar cells, sun screen, plastics, and other materials and devices. The IEC 60904-9 Edition2 and ASTM E927-10 standards [1] are a common specification for solar simulators used for photovoltaic testing. The light from a solar simulator is controlled in three dimensions: spectral content, spatial uniformity, temporal stability. Each dimension is classified in one of three classes: A, B, or C



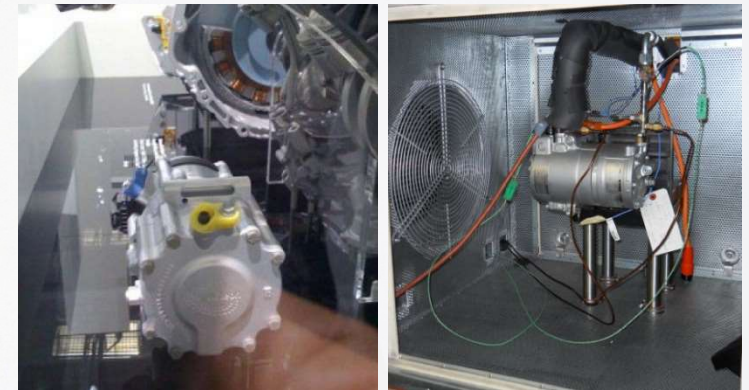
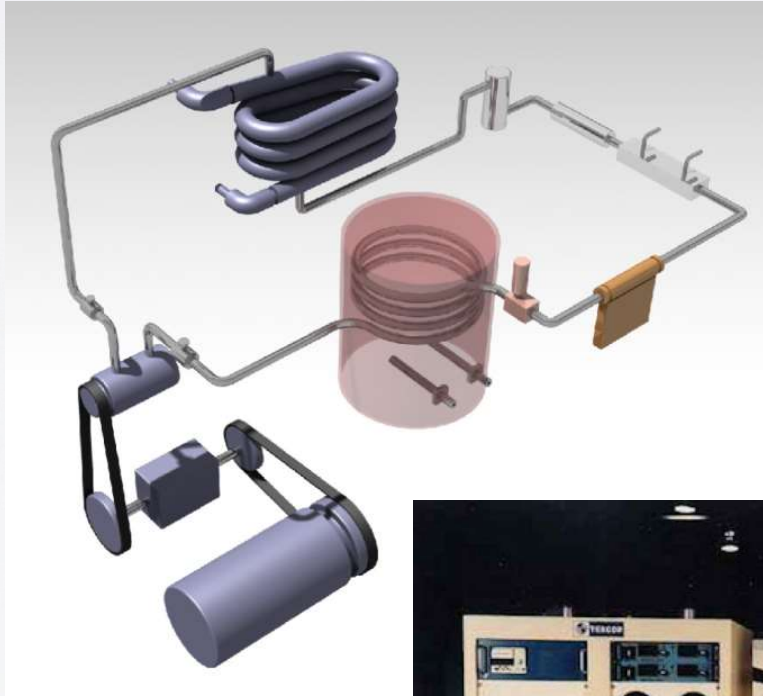
SYNOPSIS

It's designed to create artificial weathering condition of rainfall, snowfall, temperature, humidity, solar radiation. Normally, temperature is controlled in the range of -40°C ~ 80°C and humidity in the range of 0~100%. This type of chamber is normally used for durability and reliability life cycle test.

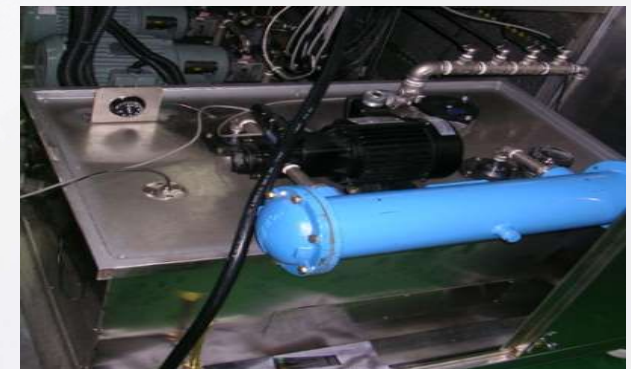


SYNOPSIS

whole-vehicle environmental test chambers are for extreme temperature testing with humidity and solar loading options. The chambers can be programmed to perform cyclic profiles such as Def Stan 00-35 and MIL-STD 810G. Typical tests performed in the chambers include: Hot and cold start tests, Heating and air conditioning performance evaluations, Windscreen/window defrost/demist tests, Functional, durability and structural assessment in extreme environments, Component and material performance assessments, Controlled thermal 'soaks' and solar radiation assessments

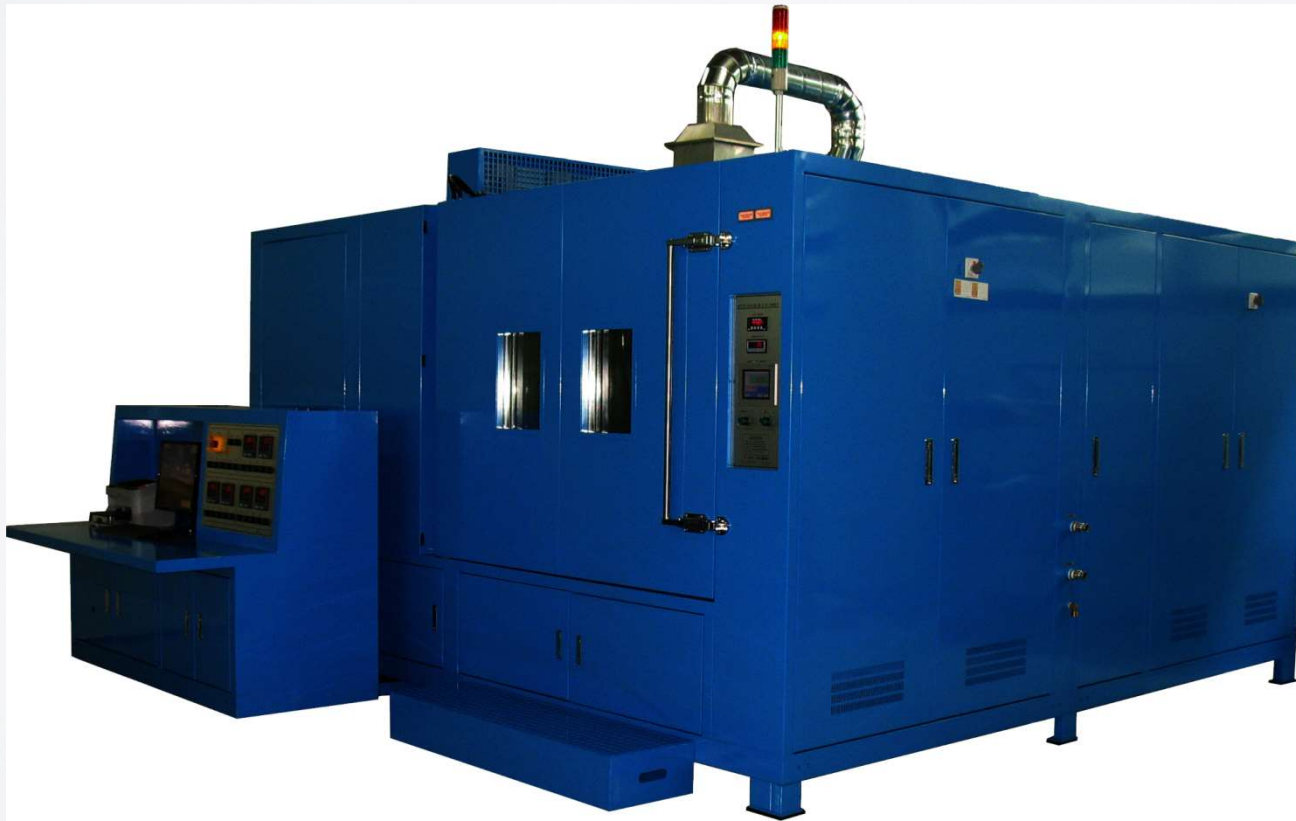


This equipment automatically judges the stability of temperature and pressure in refrigeration cycle and output data such as heat capacity, and calculate enthalpy. According to the capacity of compressor, the range of measurement is divided into three parts; 200kcal/h ~ 2000kcal/h, 500kcal/h ~ 8000kcal/h, 5000kcal/h ~ 20000kcal/h.



SYNOPSIS

PRESSURE CYCLE This equipment is designed to test possible leakage, various fatigue symptoms and durability for Eva core, Pressure switch, Condenser ass'y, Hose ass'y by giving hydraulic pressure shock to the test unit.



SYNOPSIS

It's designed to test the engine oil and transmission oil cooling system by controlling ambient temperature, battery Inlet temperature and coolant flow rate. It consists Test chamber, Coolant Supply system, Oil supply system, Control Panel, Computer system etc.



CLEAN ROOM**CLEAN ROOM**

A clean room is used extensively in semiconductor manufacturing, displays, biotechnology, precision instruments, optical instruments, photographic film, manufacturing and wrapping of instant foods and particular printing. The areas are classified according to the clean status such as contaminated area, semi purity area, purity area so that not to flow dust from outside to inside. In order to prevent backflow of air at each section and distribution of air space in between. It must be efficient using damper to maintain cleanness.

CONSTANT TEMP/HUMID CHAMBER **FAN TESTER****CONSTANT TEMP/HUMID CHAMBER**

In accordance with KS, ISO, IEC, JIS standards, it's designed to control temperature and humidity in the chamber with the purpose to measure the reliability and electrical characters for home appliances.

FAN TESTER

It's designed to test the performance of fan in the chamber in accordance with KS B 6311 and ANSI/AMCA 210-07 standards. Fan tester consists of air flow measurement equipment, damper & exhaust fan, control & power panel and program.



**ISO 9001
QUALITY CERTIFICATION**



**ISO 14001
ECO-MANAGEMENT CERTIFICATION**



특 허 증
CERTIFICATE OF PATENT

특 허 제 10-0873410 호 출원번호 제 2008-0070089 호
(PATENT NUMBER) (APPLICATION NUMBER) (2008년 07월 18일)
출원일 2008년 07월 18일
(FILING DATE:YYMMDD) (2008년 12월 04일)
등록일 2008년 12월 04일
(REGISTRATION DATE:YYMMDD)

발명의명칭 (TITLE OF THE INVENTION)
공기청정기의 집진성능 측정시스템

특허권자 (PATENTEE)
에이치앤씨 시스템(주) (131111-0*****)
경기 안산시 상록구 사사동 119번지

발명자 (INVENTOR)
이선재 (611225-1*****)
경기도 안산시 상록구 사사동 119번지

위의 발명은 「특허법」에 의하여 특허등록원부에 등록
되었음을 증명합니다.
(THIS IS TO CERTIFY THAT THE PATENT IS REGISTERED ON THE REGISTER OF THE KOREAN
INTELLECTUAL PROPERTY OFFICE.)

2008년 12월 04일

 **특 허 증**
COMMISSIONER, THE KOREAN INTELLECTUAL PROPERTY OFFICE

**CERITFCATE OF PATENT
AIR CLEANER PERFORMANCE TEST SYSTEM**



특 허 증
CERTIFICATE OF PATENT

특 허 제 10-0862201 호 출원번호 제 2008-0070096 호
(PATENT NUMBER) (APPLICATION NUMBER) (2008년 07월 18일)
출원일 2008년 07월 18일
(FILING DATE:YYMMDD) (2008년 10월 01일)
등록일 2008년 10월 01일
(REGISTRATION DATE:YYMMDD)

발명의명칭 (TITLE OF THE INVENTION)
진공청소기 분진방출량 측정시스템

특허권자 (PATENTEE)
에이치앤씨 시스템(주) (131111-0*****)
경기 안산시 상록구 사사동 119번지

발명자 (INVENTOR)
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INTELLECTUAL PROPERTY OFFICE.)

2008년 10월 01일

 **특 허 증**
COMMISSIONER, THE KOREAN INTELLECTUAL PROPERTY OFFICE

**CERITFCATE OF PATENT
MEASUREMENT OF AIR CONTAMINANTS
EMISSION PERFORMANCE TEST SYSTEM**



**CERTIFICATE OF PATENT
HEAT RECOVERY VENTILATOR
PERFORMANCE MEASURING SYSTEM**



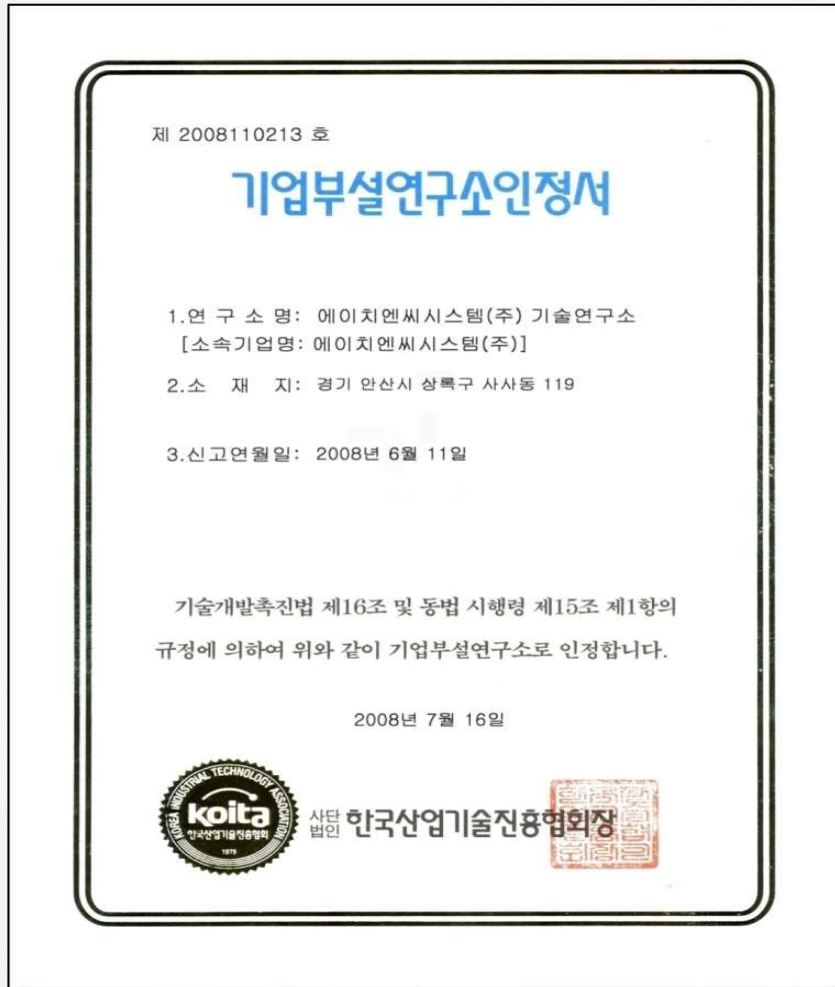
**CERTIFICATE OF PATENT
A.H.U HEAT EXCHANGE
PERFORMANCE TEST SYSTEM**



CERTIFICATE OF PATENT
A.H.U HEAT EXCHANGE PERFORMANCE
MEASURING SYSTEM



REGISTRATION OF TRADE MARK



CERITFICATE OF COMPANY R&D CENTER
FOUNDATION



INNOBIZ CERITFICATE
TECHNOLOGICAL INNOVATION ASSOCIATION
FOR SMALL & MEDIUM BUSINESS

EXPERIENCES AND PERFORMANCE

NO	DATE	ITEM	RANGE	CLIENT
1	2005.01	MULTI PSY.CALORIMETER	4 MULTI ROOM	LG ELEC.
2	2005.02	COMP BENCH TESTER	UP TO 60,000Btu/h	SAMSUNG ELEC.
3	2005.03	RE-COMP. CALORIMETER	50~350Kcal/h	LG ELEC.
4	2005.03	REFRIGERATOR. TEST LABORATORY	540L CLASS	TOSHIBA In Thailand
5	2005.05	PSY. CALORIMETER	65,000Btu/h	LGETH RAYONG
6	2005.06	HBP COMP. CALORIMETER	UP TO 1,000Kcal/h	LGEIL NOIDA
7	2005.08	PSY. CALORIMETER	10,000~80,000Btu/h	THAILAND STANDARDS. INS.
8	2005.1	AIR FRESHTESTER CHAMBER		TECHNO PARK
9	2005.11	HEAT EXCHNGERER CHAMBER		TECHNO PARK
10	2005.11	REFRIGERATOR. TEST LABORATORY	DISO TYPE 6SET X 2CH	LG ELEC.
11	2005.12	MULTI PSY.CALORIMETER	5 ROOM MULTI	LG ELEC.
12	2006.01	VACUUM CLEANER TESTER		TECHNO PARK
13	2006.02	PSY-TYPE CALORIMETER	5HP	LG ELEC.
14	2006.05	FILTER TESTER FOR MILITARY VEHICLE		SAMYANG CHEMICAL
15	2006.09	MULTI ROOM CHAMBER	20HP	LG ELEC.
16	2006.09	BAL. TYPE CALORIMETER	6HP	LGEIL NOIDA
17	2006.1	PSY-TYPE CALORIMETER	5HP	LG ELEC.
18	2006.1	REFRIGERATOR. TEST LABORATORY	DIOS TYPE 6SET X 2CH	LG ELEC.
19	2006.11	BALANCE CALORIMETER	10,000Kcal/h	LGEIL NOIDA
20	2006.12	MULTI PSY.CALORIMETER	5실 MULTI	LG ELEC.

EXPERIENCES AND PERFORMANCE

NO	DATE	ITEM	RANGE	CLIENT
21	2006.12	PSY-TYPE CALORIMETER	8HP	SAMSUNG ELEC.
22	2007.01	SCROLL-COMP. CALORIMETER	12HP	LG ELEC.
23	2007.01	SCROLL-COMP. LIFE TESTER	10HP	TECHNO PARK
24	2007.02	EVA. CALORIMETER FOR MILITARY VEHICLE	5HP	HCC
25	2007.02	AIR FRESHTESTER CHAMBER	3HP	ROK. MILITARY
26	2007.04	FILTER TESTER FOR MILITARY VEHICLE	15CMM	SAMYANG CHEMICAL
27	2007.04	PSY-TYPE CALORIMETER	20HP	SAMSUNG ELEC.
28	2007.04	MULTI TYPE PSY. CALORIMETER	4ROOM MULTI	TECHNO PARK
29	2007.04	R-134a RELIABILITY TEST CALORIMETER	100 ~ 500W	BUSAN UNIV.
30	2007.05	REFRIGERATOR. TEST LABORATORY	175 ~ 560Litter, 4SET	LGEIL PUNE
31	2007.07	PSY-TYPE CALORIMETER	4HP	SAMYANG CHEMICAL
32	2007.11	HUMIDIFIER TEST CHAMBER	4HP	SEO JIN CORP.
33	2007.12	CAC PSY-TYPE CALORIMETER	20RT	LGEIL NOIDA
34	2008.02	AEROSOL CHAMBER	3HP	WOONGJIN
35	2008.02	AREFLEXIA ENVIRONMENTAL CHAMBER	5HP	TECHNO PARK
36	2008.03	MULTI TYPE PSY. CAL(TR-7) UPGRADE	MULTI 3ROOM	CARRIER
37	2008.07	CONSTANT TEMP. HUMIDI. CHAMBER	1600Litter, 4SET	DAYONG E&B
38	2008.07	20HP MULTI TYPE PSY. CALORIMETER	20HP	LG ELEC.
39	2008.09	AIR COOLED CHILLER TEST CHAMBER	200RT	LG ELEC.
40	2008.09	CTV ELT CHAMBER	3HP	LGEIL PUNE

EXPERIENCES AND PERFORMANCE

NO	DATE	ITEM	RANGE	CLIENT
41	2008.12	AIR CON -QA RELIABILITY TEST CHAMBER	60HP	SAMSUNG ELEC.
42	2009.01	CAC PSY. CAL. MODIFICATION	10 ~ 50CMM	LGEIL NOIDA
43	2009.03	THERMAL POLLUTION ENVIRONMENTAL CHAMBER		TECHNO PARK
44	2009.04	BATTERY COOLANT RELIABILITY TESTER		HCC
45	2009.05	CLIMATIC CHAMBER		LG ELEC.
46	2009.06	PSY-TYPE CALORIMETER		MIRACO CARRIER
47	2009.06	SHIFTING WORKS EQUIPMENT		TECHNO PARK
48	2009.06	CONSTANT TEMP.HUMIDI. CHAMBER		LG ELEC.
49	2009.07	RO-COMP. SOUND CYCLE		LG ELEC.
50	2009.07	RO-COMP.CALORIMETER		LG ELEC.
51	2009.07	INTERCOOLER HEAT SHOCK TESTER		HCC
52	2009.08	WATER BATH SUPPLY EQUIPMENT		SAMSUNG ELEC.
53	2009.08	PSY-TYPE CALORIMETER		KOREA SCIENCE TECH. CORP.
54	2009.08	FLOODED TYPE EVAPORATOR TESTER		BUSAN UNIVERSITY
55	2009.12	REFRIGERATOR. TEST LABORATORY		LGEIL NOIDA
56	2009.12	COMP. CALORIMETER	150,000BTU/H	SAMSUNG ELEC.
57	2009.12	R-600 COMP. CALORIMETER		LG ELEC.
58	2010.02	WATER BATH FOR PSY-TYPE CALORIMETER		SAMSUNG ELEC.
59	2010.05	REFRIGERATOR. TEST LABORATORY		LGEIL PUNE
60	2010.06	FAN TESTER		SAMSUNG ELEC.

EXPERIENCES AND PERFORMANCE

NO	DATE	ITEM	RANGE	CLIENT
61	2010.07	MOBILE COOLANT SUPPLY SYSTEM		HCC
62	2010.07	PSY-CAL TYPE CALORIMETER		SAMSUNG ELEC. INDIA
63	2010.08	CYCLE SIMULATOR	20,000~300,000Btu/H	SAMSUNG ELEC.
64	2010.09	SC-COMP. BENCH TESTER		SAMSUNG ELEC.
65	2010.12	3ROOM PSY-CAL TYPE CALORIMETER	50HP	SAMSUNG ELEC.
66	2010.12	3ROOM PSY-CAL TYPE CALORIMETER	50HP	SAMSUNG ELEC.
67	2010.12	CAC PSY-CAL TYPE CALORIMETER	20HP	SAMSUNG ELEC.
68	2010.12	WATER BATH FOR PSY-TYPE CALORIMETER		SAMSUNG ELEC.
69	2011.01	PSY-CAL TYPE CALORIMETER	5HP	LGEIL NOIDA
70	2011.02	CIRCUITRY MULTI CALORIMETER CHAMBER	10HP	SAMSUNG ELEC.
71	2011.02	HOME MULTI PSY-CAL TYPE CALORIMETER	4HP	SAMSUNG ELEC.
72	2011.02	ENVIRONMENTAL CHAMBER	30HP	SAMSUNG ELEC.
73	2011.03	4ROOM PSY-CAL TYPE CALORIMETER	22HP	LGEIL PUNE
74	2011.04	4ROOM PSY-CAL TYPE CALORIMETER	50HP	SAMSUNG ELEC.
75	2011.04	STANDARD STRESS TEST CHAMBER	30HP	SAMSUNG ELEC.
76	2011.04	3ROOM PSY-CAL TYPE CALORIMETER	30HP	SAMSUNG ELEC.
77	2011.04	LOCKED ROTOR TESTER		SAMSUNG ELEC.
78	2011.05	REFRIGERATOR. TEST LABORATORY		LG ELEC.
79	2011.06	SHIFTING WORK FOR 4ROOM PSY-CAL.	50HP	LG ELEC.
80	2011.06	PSY-CAL TYPE CALORIMETER	5HP	LG ELEC. SAUDI.

EXPERIENCES AND PERFORMANCE

NO	DATE	ITEM	RANGE	CLIENT
81	2011.08	REFRIGERATOR. TEST LABORATORY		LGEIL PUNE
82	2011.1	CONSTANT TEMP.HUMIDI. CHAMBER		KOOKMIN UNIV.
83	2011.1	1M3 TEST CHAMBER		WOONGJIN R/D
84	2011.12	SMAL SCALE AIR FLOW MEASURING UNIT		KITECH
85	2011.12	FIN TESTER FOR HEAT EXCHANGER		SAMSUNG ELEC.
86	2012.03	CONSTANT TEMP.HUMIDI. CHAMBER		LG EVN.
87	2012.03	CONSTANT TEMP.HUMIDI. CHAMBER		LG EAK.
88	2012.04	HERA EHS Real Environment Lab		SAMSUNG ELEC.
89	2012.04	Automotive Heat Exchanger Lab		Seoul University
90	2012.04	Multi 4-room 30HP chamber separation work		LG ELEC.
91	2012.05	Water heat source test equipment		KRAAC[Korea refrigeration & Air-conditioning Assessment Center]
92	2012.07	20RT HEAT PUMP test equipment		HIAIR KOREA
93	2012.08	1300RT water-cooled chiller test equipment		HIAIR KOREA
94	2012.09	REFRIGERATOR. TEST LABORATORY		LGEIL NOIDA
95	2012.10	ROTARY COMP. CAL	2,000~30,000BTU	LG ELEC.
96	2012.10	HBP~LBP BENCH TESTER		GS Caltex
97	2012.10	SC-COMP. BENCH TESTER(12SET)		SAMSUNG ELEC.
98	2012.10	REFRIGERATOR. TEST LABORATORY		LG EIL PUNE
99	2012.10	REFRIGERATOR. TEST LABORATORY * 3 NOS		LGEIL NOIDA
100	2012.11	REFRIGERATOR & WASHING M/C Test Laboratory		LG SOFT INDIA

EXPERIENCES AND PERFORMANCE

NO	DATE	ITEM	RANGE	CLIENT
101	2012.11	Washing M/C Test Laboratory		SAMSUNG ELEC.
102	2012.12	MULTI 4 ROOMS PSY-CAL	50HP	한국냉동공조센터
103	2013.01	REFRIGERATOR. TEST LABORATORY * 3 NOS		LGEIL NOIDA
104	2013.01	HEAT EXCHANGER TESTER		LENOX USA
105	2013.02	PSY. CALORIMETER	UP 15,000Kcal/h	햄시바
106	2013.02	PSY. CALORIMETER (2SET)	UP TO 36,000Btu/h	LG ELEC
107	2013.03	REFRIGERATOR. TEST LABORATORY		LG SOFT INDIA
108	2013.03	ROTARY COMP. BENCH TESTER	10SET TEST	SAMSUNG ELEC
109	2013.03	Compressor driving range tester	UP TO 70,000Btu/h	LG ELEC.
110	2013.04	PSY. CALORIMETER	UP TO 40,000Btu/h	LG-SHAKER
111	2013.04	REFRIGERATOR. TEST LABORATORY		LGIEL NOIDA
112	2013.05	HEAT EXCHANGER TEST CHAMBER		ADP AMERICA
113	2013.06	PSY.METRIC CALORIMETER	3,000~16,000Kcal/h	LGE SAUDIA
114	2013.07	ANECHOIC CHAMBER	W/M, REFRIGERATOR	LG SOFT INDA
115	2013.08	PSY.METRIC TYPE CALORIMETER	12Kw	SIRIM MALAYSIA
116	2014.03	PSY. CALORIMETER	10HP	LG ELEC
117	2014.04	HEAT RECOVERY EXCHANGER TESTER	250~2000CFM	KOREA GREEN RESEARCH ASSO
118	2014.05	RE -COMP. CALORIMETER	R134A(160kcal)	SAMSUNG ELECT
			R600(160kca)	
			R600(400kcal)	
119	2014.07	PSY. CALORIMETER	20K	SAMYANG CHEMICAL
120	2014.08	PSY. CALORIMETER	6HP	LGEIL PUNE

EXPERIENCES AND PERFORMANCE

NO	DATE	ITEM	RANGE	CLIENT
121	2014.08	CONSTANT TEMP.HUMIDI. CHAMBER	-30~70°C, 20~95%	KOREA CONSUMER AGENCY
122	2014.08	CONSTANT TEMP.HUMIDI. CHAMBER	18~30°C, 40~60%	LG ELEC
123	2014.08	REFRIGERATOR. TEST LABORATORY	770L x 4SET	ECHO ENERGY
124	2014.09	COMP.SOUND CYCLE	25k ~ 220k Btu/h(R-410a) 10k ~ 80k Btu/h(R-22)	SAMSUNG ELECT
125	2014.1	REFRIGERATOR. TEST LABORATORY	750L x 4SET	LG ELEC
126	2014.11	PSY. CALORIMETER	36K	LG ELEC
127	2014.11	CONSTANT TEMP.HUMIDI. CHAMBER	5~60°C	AIRMAJOR
128	2014.12	COMP.SOUND CYCLE	50~350kcal(R-134a)	SAMSUNG ELECT
129	2015.03	4 m ³ CHAMBER	4 m ³	SAMSUNG ELECT
130	2015.03	REFRIGERATOR. TEST LABORATORY	Below 770litter	ECHO ENERGY
131	2015.03	PSY. CALORIMETER	10HP	LG ELEC
132	2015.03	REFRIGERATOR. TEST LABORATORY	175~560L x 4SET	LGEIL NOIDA
-	-	-	-	-
134	2015.10	COMP.OPERATING CYCLE TESTER	70k~350k Btu/h	LG ELEC
135	2015.11	REFRIGERATOR. TEST LABORATORY	Below 1,100litter	CTK
136	2015.11	SCROLL COMP.LIFT TESTER		LG ELEC
137	2015.12	REFRIGERATOR. TEST LABORATORY	175~560L x 10SET	WALTON
138	2015.12	RO-COMP.CALORIMETER(2Cycle)	LBP Cycle : 200 ~ 1,000Btu/h HBP Cycle : 800 ~ 4,000Btu/h	SAMSUNG ELEC.
139	2016.01	PSY. CALORIMETER	10RT	PHILLPPINES CARRIER
140	2016.01	REFRIGERATOR. TEST LABORATORY	175~560L x 6SET	LGEIL SOFT

EXPERIENCES AND PERFORMANCE

NO	DATE	ITEM	CLIENT	ETC
141	2017	Refrigerator Heat Exchanger Test Lab.	LG Electronics in Changwon	
142	2017	Upgrading RE-Compressor Calorimeter	SAMSUNG Electronics	
143	2017	TR-2/TR-7/ 20Kw MULTI 3-rooms	CARRIER In Korea	
144	2017	Cloth-dryer Test Lab.	SAMSUNG Electronics	
145	2017	REFRIGERATOR. TEST LABORATORY	TUV Philippines	
146	2017	Upgrading RO-COMP. CAL. 6~40K to add INJECTION.	SAMSUNG Electronics	
147	2017	Shifting SAMSUNG Thailand TP-1 / TP-2.	SAMSUNG Thailand	
148	2017	PSY. Single 6th. Sample power line additional construction	LG Electronics in Changwon	
149	2017	30kw Water-source Heat Pump Test Laboratory	KCL [Korea Conformity Laboratories]	한국건설생활환경 시험연구원
150	2017	RAC.4 lab. Upgrade to add low temperature humidification test conditions.	LG Electronics in Changwon	
151	2017	R-134a COMP. SOUND CYCLE Upgrade	SAMSUNG Electronics	
152	2017	S-PIJ semi-hermetic cooling tower (65RT) & thermo-hygrostat production (10RT)/cold & hot water tank	SAMSUNG USA	
153	2017	RAC CHAMBER Removal [Scrap]	LG INDONESIA	
154	2017	R-134a Wide Range Calorimeter (50~350Kcal/h)	SAMSUNG Electronics	
155	2017	AIR CLEANER TEST LAB [8m3]	LG Houses	
156	2017	REFRIGERATOR TEST CHAMBER	R F L Bangladesh	
157	2018	5RT PSYCAL + REFRIGERATOR. TEST LABORATORY	IFB India	
158	2018	Thailand PSY. CALORIMETER 30K	SAMSUNG Thailand	
159	2018	REFRIGERATOR. TEST LABORATORY	LG SOFT India	
160	2018	20RT PSY CALORIMETER	EMERSON	

EXPERIENCES AND PERFORMANCE

NO	DATE	ITEM	CLIENT	ETC
161	2018	24Kw PSY. CALORIMETER (with Heat-exchanger Tester)	YG Technology	
162	2018	Refrigerant Supply System	Philippines CARRIER	
163	2018	Multi-room performance test equipment for TAC	Gyeongdong Navien	
164	2018	Replace TR4 Code Tester	오택 CARRIER	
165	2018	SC-COMP Bench Tester	SAMSUNG Electronics	
166	2018	Electro-motion Comp. Load Stand	LG Electronics in Changwon	
167	2018	Upgrade R134a HBP & QC5 (40~160Kcal/h)	SAMSUNG Electronics	
168	2018	SHIFTING : REFRIGERATOR TEST LAB * 3NOS	ECHO ENERGY	
169	2018	320CMM Code tester for Single 2 nd Lab (19 th In total)	LG Electronics in Changwon	
170	2018	Addition of R32 test function (sensor, ventilation system, S/W modification)	Philippines CARRIER	
171	2018	Air-cooled simplified reliability tester	SAMSUNG Electronics	
172	2018	Multi 14 th Lab Code-Tester	LG Electronics in Changwon	
173	2018	24kbtu/h PSY. Calorimeter	Youngintech Thailand	
174	2018	Compressor test production room atmospheric prevention facility installation work	SAMSUNG Electronics	
175	2018	R-290 & R600a Compressor Test Facility	SAMSUNG Electronics	
176	2018	Upgrade RAC 3 rd Laboratory	LG Electronics in Changwon	
177	2018	CMR chamber for housing environment test room	LG Electronics in Changwon	
178	2018	Replacement of VVVF 100KVA on the 1st floor of the experimental building	LG Electronics in Changwon	
179	2018	Gas Furnace Test Lab Construction	LG Electronics in Changwon	
180	2019	Re. Compressor durability test facilities	WALTON in Bangladesh	

EXPERIENCES AND PERFORMANCE

NO	DATE	ITEM	CLIENT	ETC
181	2019	Air Purifier Laboratory	ECL [Energy Certificating Laboratory]	
182	2019	RO-Compressor Calorimeter (4~30Kbtu/h)	SAMSUNG Electronics	1CYCLE
183	2019	30RT water tank for comp team	SAMSUNG Electronics	
184	2019	REFRIGERATOR TEST (6SET)	HIPHYSIX India	
185	2019	RE. Compressor Calorimeter (70~400W)	HIPHYSIX India	
186	2019	Heat Exchanger Laboratory	LG Electronics in Changwon	
187	2019	Additional installation of water heater test equipment	LG China	
188	2019	Addition of hot water testing equipment to the 10th multi-laboratory	LG Electronics in Changwon	
189	2019	11th multi-lab explosion-proof construction	LG Electronics in Changwon	
190	2019	AHU installation for anechoic chamber	SAMSUNG Electronics	
191	2019	Addition of heating multi-V for the 12th and 13th multi-laboratory	LG Electronics	
192	2019	Ambient and suction temperature improvement work for ultra-small capacity calorimeter	SAMSUNG Electronics	
193	2019	Filter air volume measuring equipment (5~25CMM)	ILSAN	
194	2019	50kbtu PSY.LAB(Thailand)	Winia-Dimchae	
195	2019	Scrap of the 200RT water-cooled chiller laboratory in Building B2.	LG Electronics in Changwon	
196	2019	R-290 Air-cooled simplified reliability testing equipment * 2NOS(25~100Kbtu/h)	SAMSUNG Electronics	
197	2019	24kbtu PSY.LAB	Bangladesh FAIR	
198	2019	Wind tunnel for fan tester	LG R&D Center	ACE
199	2019	Upgrade Multi-Chamber (Dehumidifier + A/C PSY. 25Kbtu/h)	LG Electronics Thailand	
200	2020	Air-cooled simplified reliability testing equipment.	SAMSUNG Electronics	

EXPERIENCES AND PERFORMANCE

NO	DATE	ITEM	CLIENT	ETC
201	2020	Water-to-water chiller test equipment (15~80RT)	LG Electronics in Changwon	
202	2020	R-600a Compressor Sound Cycle (50~350Kcal/h, 2cycle)	SAMSUNG Electronics	
203	2020	PSY&24kw heat exchanger LAB	KTL [Kora Testing Laboratory]	한국산업기술시험원
204	2020	Total heat exchanger certification evaluation system	KETI [Korea Electronics Technology Institute]	전자부품연구원
205	2020	Upgrade PSY.LAB to test Total heat exchanger 480~1,000CMH)	KCL [Korea Conformity Laboratories]	한국건설생활환경시험연구원
206	2020	QA 9th lab S/W and power meter replacement	LG Electronics in Changwon	
207	2020	Unitary Type Air-condition Test Laboratory (15RT)	LG Electronics in Changwon	
208	2020	Unitary Type Air-condition Test Laboratory (25RT)	LG Electronics in Changwon	
209	2020	Air-Purifier Test Laboratory	ECL	
210	2020	4-way auxiliary duct for performance measurement (P27, P28)	SAMSUNG Electronics	
211	2020	AWHP water bath (2Nos) and hot water bath(1Nos) for the 11th multi-laboratory	LG Electronics in Changwon	
212	2020	UPGARDE PSY.LAB [2 nd , 3 rd , 4 th]	LG Noida	
213	2020	UPGRADE REFRIGERATOR. TEST LABORATORY * 14NOS	LG Noida	
214	2020	PSY. CALORIMETER (I/D: 16,000Kcal/h, O/D: 4Kw)	Nawooel Korea	
215	2020	WASHING M/C Test Laboratory	LG Noida	
216	2020	5RT PSY. Laboratory	HIPHYSIX India	
217	2020	Heat Exchanger Chamber Ventilation System	ADP in USA	
218	2020	Air purifier performance evaluation system (30m ³)	BUSAN Techno-Park	
219	2020	Super large air purifier performance evaluation system (180m ³)	BUSAN Techno-Park	
220	2020	Air purifier performance evaluation system for ventilation	BUSAN Techno-Park	

EXPERIENCES AND PERFORMANCE

NO	DATE	ITEM	CLIENT	ETC
221	2020	60kbtu Air-conditioner Psy. Laboratory	PAY TYCOON	CJC
222	2020	WASHING MACHINE TEST LAB	Winia-Dimchae Thailand	
223	2020	COMP. BENCH TESTER (30k ~ 200kbtu/h, 4SET*1FRAME)	SAMSUNG Electronics	
224	2021	5RT PSY. CALORIMETER	RFL Bangladesh	
225	2021	REFRIGERATOR TEST.LAB (UUT 2EA)	Bangladesh DUET UNIV.	
226	2021	R-290 Compressor Test Laboratory (9~50Kbtu/h)	SAMSUNG Electronics	
227	2021	RAC #.4 Indoor Upgrade	LG Electronics	
228	2021	REFRIGERATOR TEST LAB * 2 NOS[UUT: 8EA each]	BSH India[Sanchit]	
229	2021	Complex laboratory for air clean ventilation materials and components	BUSAN TP	
230	2021	SC-Comp. Calorimeter(35~200K, include R-32)	SAMSUNG Electronics	
231	2021	REFRIGERATOR TEST LAB [UUT 8EA]	Global Appliances[Bangladesh]	
232	2021	30RT class constant temperature water tank	SAMSUNG Electronics	
233	2021	SAC Single #.7 10HP PSY.LAB	LG Electronics in Changwon	
234	2021	SAC Single #.5 5HP PSY.LAB	LG Electronics in Changwon	
235	2021	SAC Single #.610HP PSY.LAB	LG Electronics in Changwon	
236	2021	UPGADE REFRIGERATOR TEST * 4 NOS	LG SOFT India	Upgrade S/W, Recorder
237	2021	Semi-anechoic room air conditioning system for automobiles	DooWon Climate Control	NHS Engineering
238	2021	Ro-Comp. Reliability Test laboratory (10 ~ 80kbtu/h, R-290 only, 6ea)	SAMSUNG Electronics	
239	2021	Super large air purifier performance evaluation system (180 m3)	Incheon Techno-Park	
240	2021	SHOWCASE CDU CHAMBER	CARRIER in Korea	

EXPERIENCES AND PERFORMANCE

NO	DATE	ITEM	CLIENT	ETC
241	2021	SHOW CASE REMOTE CHAMBER	CARRIER IN KOREA	
242	2021	UPGRADE SHOW CASE REMOTE CHAMBER (NO.3rd LAB)	CARRIER IN KOREA	
243	2021	REFRIGERATOR TEST LABORATORY * 2NOS [UUT: 6EA]	IFB India	
244	2021	RAC No. 2 Chamber Automation Work	LG Electronics in Changwon	
245	2021	20RT Hydrothermal Source Lab Upgrade	Korea Refrigeration & Air-conditioning Assessment Center	
246	2021	Monitoring sensor installation work	Korea Refrigeration & Air-conditioning Assessment Center	
247	2021	COMP. BENCH TESTER (25,000 ~ 130,000Btu/h,4SET*2FRAME)	SAMSUNG Electronics	
248	2021	R-32 detection and ventilation system	CARRIER In Korea	
249	2021	Demolition of RAC Unit 3 code tester and new installation of 20CMM	LG Electronics in Changwon	
250	2021	Re-Comp. Calorimeter (50~300W)	Echo Energy	
251	2021	Demolition of R&D Building A, Multi No. 5 (4 rooms)	LG Electronics in Changwon	
252	2021	Multi-unit 11 AWHP and constant temperature water tank for hot water supply	LG Electronics in Changwon	
253	2021	P26/P31 Calorimeter Refrigeration Performance Upgrade	SAMSUNG Electronics In India	
254	2021	Re.Compressor Calorimeter (50 ~ 300 Kcal/h) - 3SET)	SAMSUNG Electronics In India	
255	2021	Re.Compressor Noise Measurement Cycle (50 ~ 300 Kcal/h, 2CYCLE)	SAMSUNG Electronics In India	
256	2021	Re.Compressor OQC Low Voltage Startup Cycle (50 ~ 300 Kcal/h)	SAMSUNG Electronics In India	
257	2021	PTHP & DX-DOAS Performance Evaluation System	Korea Refrigeration and Air-conditioning Industry Association	
258	2021	Efficiency testing device for heat recovery ventilation system with filter	Korea Refrigeration and Air-conditioning Industry Association	