TESTING

TESTA_e 120 TS

ARALAB TWO-ZONE TEMPERATURE SHOCK TEST CHAMBER

aralab

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EQUIPMENT DESCRIPTION

Two-zone structure; Samples can be switched in different temperature area through fast up-and-down movement of the basket.

Applied tests: high temp.test, low temp.test, temperature change test, thermal shock test

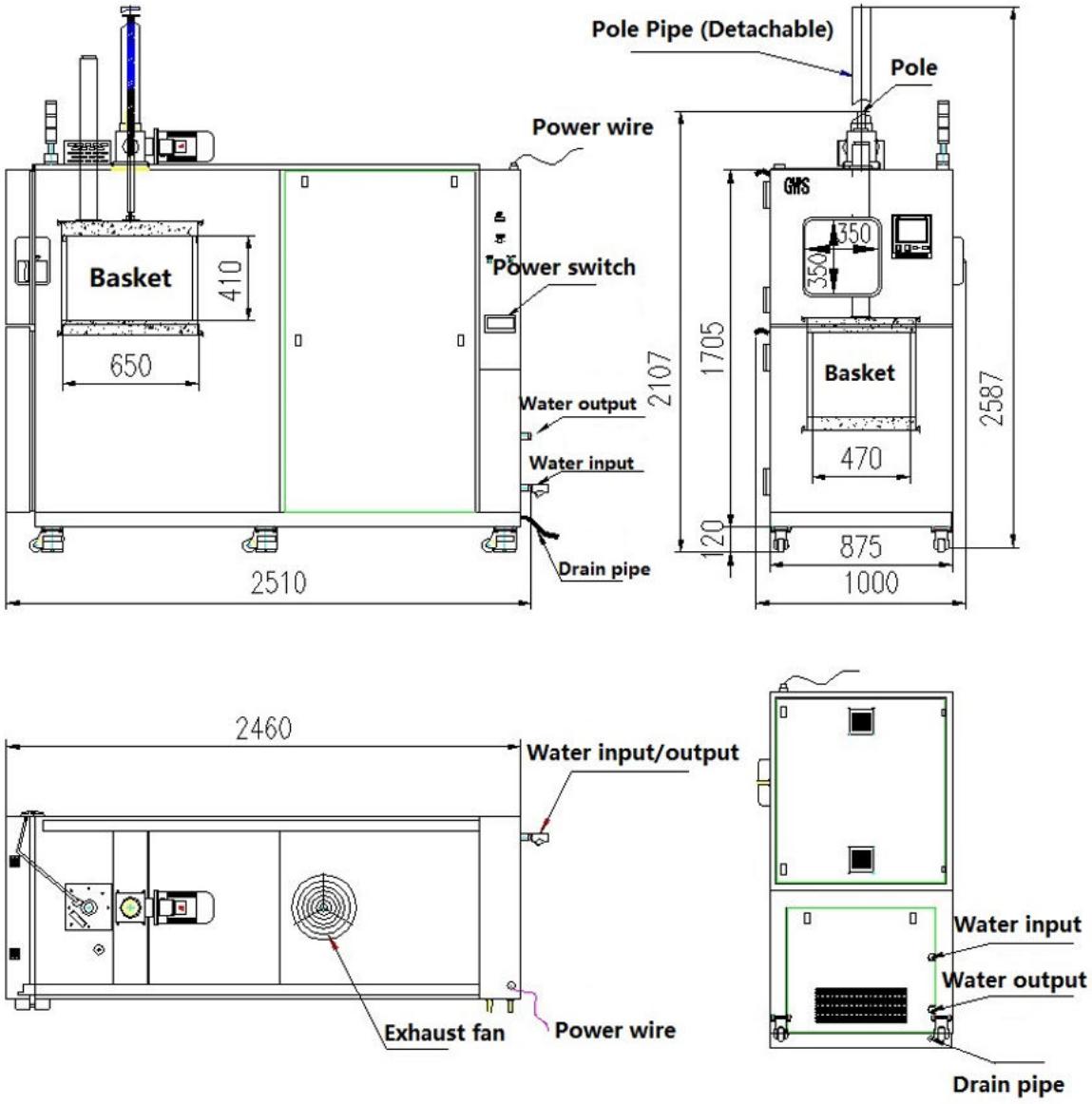
TECHNICAL SPECIFICATIONS

TESTA_E 120TS		
NORMINAL INTERIOR VOLUME (L)		About 120
TEST SYSTEM		2 zones basket moving up-and-down driven by a motor and a screw
HIGH TEMP. ZONE	TEMPERATURE RANGE	+60°C - 220°C/ (20~85) °C
	TEMPERATURE HEAT-UP RATE	≥ 14°C/ min
LOW TEMP. ZONE	TEMPERATURE RANGE	-80°C - +70°C
	TEMPERATURE HEAT-UP RATE	≥ 2°C/ min
	TEMPERATURE PULL-DOWN RATE	≥ 5°C/ min
TEST AREA (HANGING BASKET)	HIGH TEMP. EXPOSURE RANGE	+60°C - +200°C
	LOW TEMP. EXPOSURE RANGE	-70°C - +70°C
	TEMPERATURE FLUCTUATION	1°C
	TEMPERATURE DEVIATION	± 2°C (≤ 150°C), ± 3°C (> 150°C)
TEMP. RECOVERY PERFORMANCE	TEMP. RECOVERY TIME	≤ 5 min
	BASKET CHANGE-OVER TIME	≤ 15 sec
	TEST REQUIREMENTS	High temp. exposure: +150°C 30min Low temp. exposure: -55°C 30min Sample weight: 3 kg plastic packed IC (divided) in two sample baskets.
	RECOVERY CONDITIONS	Sensor position: at geometric center point inside the chamber; Cooling water temperature: + 25°C Power supply voltage: rated voltage

DIMENSIONS AND DRAWINGS

TESTA_E 120TS

EXTERNAL DIMENSIONS (HxWxD) (mm)		2.510 x 1.000 x 2.500
INTERNAL DIMENSIONS (HxWxD) (mm)		410 x 470 x 650



WATER REQUIREMENTS	Water temperature	+5°C~+30°C
	Water pressure	0.32 MPa~0.45MPa
	Consumption of cooling water	2.5 m³/h
	Heat release of cooling water	Maximum:15 kW
	Connection: Water inlet and outlet pipe	DN25, Internal screw thread x 1
	Discharge of condensate water and clean water	Φ12 mm hose connections
POWER SUPPLY	Power supply	C(380±38)V (50±0.5)Hz 3-phase four wires + protective grounding wire
	Rated power	15kW
	Rated current	30A
	Air switch	40A
	Users are required to provide air or power switches with appropriate capacity for equipment at the installation site, and the switch must be independently provided for this equipment	

EQUIPMENT DESCRIPTION

STRUCTURAL FEATURES

INSULATION ENCLOSING STRUCTURE

- Outer wall: two-sided galvanized steel sheet with plastic-sprayed surface
- Inner wall: SUS304 stainless steel plate
- Thermal insulating material for chamber body: polyurethane foam + glass wool.
- Door material: Glass wool.

AIR CONDITIONING CHANNEL

- High temperature area: fan, heater
- Low temperature area: fan, heater, evaporator, temperature transducer

HIGH TEMP. CHAMBER DOOR

- Hinged door with the hinge at the left side (including lock)
- The door is equipped with an electric heating anti-sweat insulating glass observation window and lamp.
- The door frame is equipped with electric anti-sweat device.

TEST AREA (BASKET)

- Material: SUS304 stainless steel plate
- Load capacity 35 KG in total (sample shelf and test area bottom plate)
- The lead rail of sample basket which is 20mm away from the basket which is used to add more sample basket. The maximum number of sample basket is 5.

DRIVEN DEVICE FOR BASKET

- The motor and the ball screw drive the basket to move up and down. The indicator light shows the position of basket and its direction.

OBSERVATION WINDOW

- One insulating glass observation window on the door of high temperature chamber. (W350×H350mm)

CABLE PORT

- Stainless steel oblong cable port: 80mmx1, at the top of the chamber.

ILLUMINATING LAMP

- LED lamp 4W, on the door of high temperature chamber.

STANDARD CONFIGURATION OF CHAMBER

ADJUSTING WHEEL

- 6 units, designed to support the test chamber.

BASKET

- 2 stainless metal baskets (width of net hole: 8mm) (Including 4 brackets, the maximum load of each layer: 4kg)

CABLE PORT COVER PLUG

- 2 units

AIR ADJUSTMENT SYSTEM

HEAT TRANSFER

- Heat transfer convection by air circulating

AIR CIRCULATION DEVICE

- Centrifugal fan

AIR HEATING

- Nichrome strip wire heater

AIR COOLING

- Evaporator cooling

REFRIGERATION SYSTEM

REFRIGERATION MODE

- Mechanical compression cascade refrigeration (Water cooled)

COMPRESSOR

- Mechanical compressor

CONDENSER

- Stainless steel brazed plate heat exchanger

EVAPORATOR

- Finned plate heat exchanger

REFRIGERANT

- R449a/R23 (ozone zero)

SAFETY

REFRIGERATION SYSTEM

- Overpressure of compressor
- Overheat of compressor
- Over-current of compressor
- Cooling water supply is under-pressure

TEST SPACE

- Door open protection of test area (basket), under operation:
- Mechanical and electronic devices lock the basket
- Protection device is provided around the basket to prevent the test sample from falling between the basket and the test chamber wall
- Adjustable over-temperature protection
- Thermal fuse of test space
- Chamber pressure balance protection

SAMPLE PROTECTION

- Over-temperature protection of high temp. chamber
- Temperature too high/ low protection of low temp. chamber

TEST SAMPLE POWER SUPPLY CONTROL PROTECTION

- Relay contact control, AC240V, within 2A (contact is closed in normal operation; Contact will be opened when the equipment shuts down or fault. occurs)

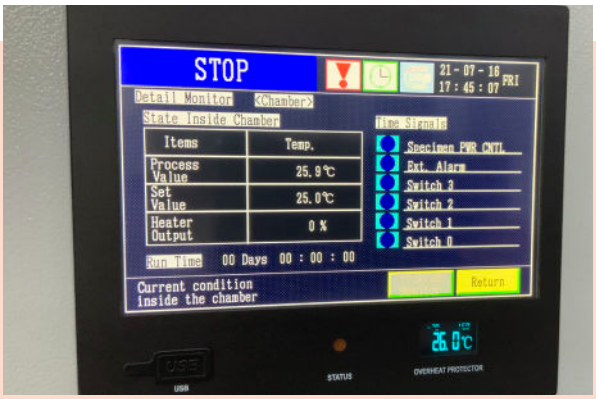
ELECTRICAL CONTROL SYSTEM

- General power supply phase sequence and default phase protection relay;
- Leakage breaker for power supply; Specimen power supply control terminal and external alarm output terminal;
- General power supply phase sequence and default phase protection;
- Power leakage protection

CONTROLLER

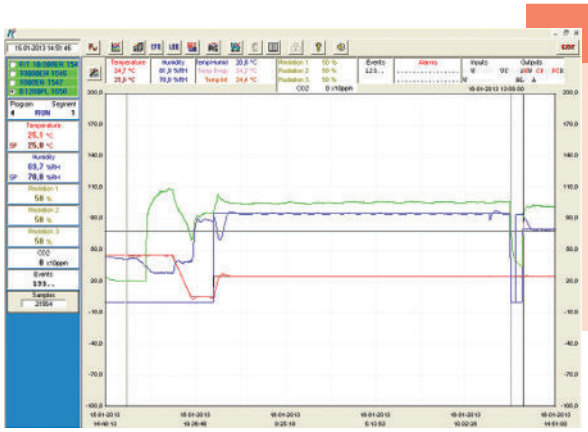
CLIMAPLUS

Set & Display	7 inche, 800*480 dot matrix, TFT color LCD display Touch-screen controller English menus
0perating mode	The Controller provides operating modes as follows. Single test chamber working mode: • The high temp. chamber or low temp. chamber can be used as a single temperature chamber. Temperature shock working mode: • regular working mode: By setting a pre-set temperature slightly higher than the setting temperature, preheating the high temp. chamber or precooling the low temp. chamber to make the sample adapt to the test temperature more quickly. • time optimization working mode: This mode further optimizes the circulating time, besides preheating the high temp. chamber or precooling the low temp. chamber, the temperature zone is controlled by an additional offset value until the actual test zone temperature reaches a user-defined tolerance zone. Once the temperature is among the tolerance zone, user can control when it returns to the set temperature point. • energy saving working mode: The no-load temperature test area in the long-term stagnation stage may be set to the energy saving mode in which the temperature of the area is close to the ambient temperature. So energy consumption is avoided during this period.
Interfaces	USB interface: external storage of measurement data and program Ethernet interface:100/10M network interface to connect the network or connect the user's computer



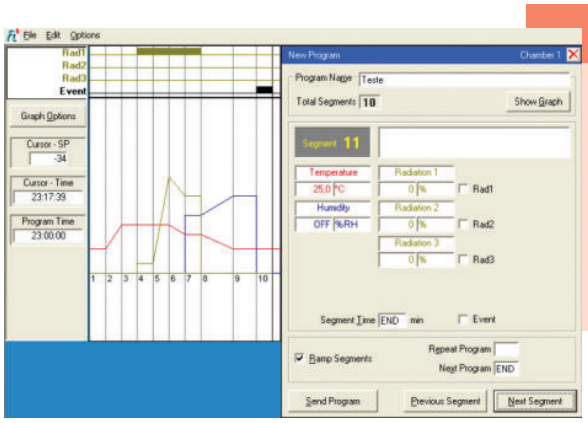
FITOLOG SOFTWARE

The FitoLog software pack is a set of applications designed to facilitate the monitoring and programming and data from the FitoClima chambers. It consists of 3 applications: **FitoLog**, **FitoLogView** and **FitoProgram**.



FITOLOG

Records and displays in real time all data and details related to the set-points, running variables and equipment behaviour.



FITOPROGRAM

This application simplifies the creation of programs and its integration on the chamber ClimaPlus controller. Up to 20 programs, each with 50 segments, can be designed and linked to create detailed environmental profiles and simulations.

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Control the environment

Your own climate