



NextGen Environmental Chambers NG-EC 100,150,225,408,1000

The temperature and humidity [NextGen Environmental Chambers](#) feature a sturdy cabinet made of cold-rolled steel and stainless steel, with an insulation layer to prevent frost and dew. The cabinet includes independent temperature control, circulating air ducts, heaters, and cooling systems. It also has a manual, single-opening door with a constant temperature heating belt and a viewing window with moisture-proof lighting fixtures. The chamber uses mechanical compression refrigeration and high-quality refrigeration accessories. It has a 7" TFT colour touch screen controller with an extensive program capacity and various protection features. The equipment provides two stainless steel sample racks with adjustable spacing and a maximum load of 100kg.



NextGen Environmental Chambers Structure Features

Cabinet

- The cabinet includes independent temperature control with circulating air ducts, heaters, cooling systems, etc.
- Outer Wall: 0.059" cold-rolled steel plate with plastic-sprayed surface
- Insulation layer: 4" polyurethane foam + ultra-fine glass wool, to ensure that the outer surface of the test chamber does not frost or dew;
- Inner wall: 0.047" Stainless 304 #4 Stainless Steel Sheet;

Circulation Ducting

- The circulating air duct is set at the back on the interior of the chamber
- Motor, impeller, heater and evaporator are installed in order from top to bottom inside the air duct

Door

- Manual, single-opening door is set on the front of the chamber with quality hinges and door locks.
- A constant temperature heating belt is installed around the door. The heating belt is automatically turned on for defrosting depending on the ambient temperature.

Viewing Window

- Each door is equipped with a three-layer hollow electric vacuum glass observation window. The observation window automatically turns on the defogging function according to the ambient temperature to ensure a clear observation at any state.

Lighting

- The observation window is equipped with a set of moisture-proof lighting fixtures to ensure that the test pieces in the box can be clearly observed under any working conditions. The lamp has the function of automatically turning off to prolong the life of the bulb.



Test Hole

- 2" test hole with Side Access on the Chamber
- Test holes are equipped with custom accessories and flexible silicone rubber seals.

Sample rack

- The equipment provides 2 stainless steel sample racks with adjustable spacing and a max load of 100Kg.
- To maintain air pressure balance between the interior of the chamber and the external environment during the test, the box is provided with a set of air pressure balance windows.

NextGen Environmental Chambers Cooling System

Refrigeration Method

- Mechanical Compression Refrigeration;
- Compressor starts as needed and at a specific time if desired
- The controller works together with the solenoid valve to control the on and off refrigerant flow for cold balance control. This prevents cooling during heating, and heating during cooling cycles.

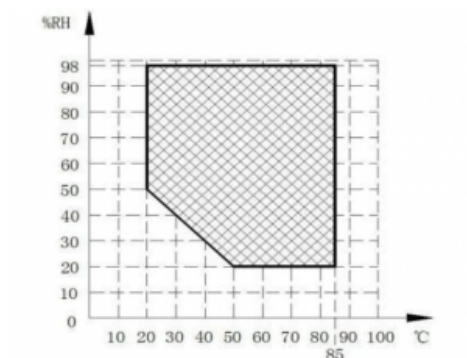
Cooling method

- Air-cooled
- Refrigerant
- High temperature class: R404A / R23, DuPont
- The above refrigerants are all environmentally friendly that meet international environmental protection requirements.

Reliability

The main refrigeration accessories are assembled with internationally recognized brands including France Tecumseh compressors, Denmark DANFOSS pressure controller, American EMERSON oil separator, American EMERSON or Italian CASTEL solenoid valve, etc. NextGen Material Testing is dedicated to providing a long-lasting solution and uses quality components on the chamber from top to bottom.

NextGen Environmental Chambers Humidity Range Graph





NextGen Environmental Chambers Standard Features

Item	NG-EC100	NG-EC150	NG-EC225	NG-EC408	NG-EC1000
Internal Dimensions (W x H x D)	20" x 20" x 16"	20" x 24" x 20"	24" x 30" x 20"	31.5" x 33.5" x 24"	39" x 39" x 39"
External Dimensions (W x H x D)	25" x 68" x 52"	28" x 72" x 56"	35.5" x 75" x 60"	42.5" x 82" x 65"	51" x 91" x 81"
Temperature Range	-40°C to +150°C				
Temperature Fluctuations	≤±0.5°C (w/o anything in chamber)				
Temperature Uniformity	≤4°C (w/o anything in chamber)				
Temperature Deviation	≤±2°C (w/o anything in chamber)				
Heating Rate	+25°C to +150°C ≥40min (without load)				
Cooling Rate	+25°C to -70°C ≥80min (without load)				
Power Requirements	1 phase, AC220V, 50/60Hz, Approx. 4.5kW	1 phase, AC220V, 50/60Hz, Approx. 5kW	3 phase, AC380V, 50/60Hz, Approx. 9kW	3 phase, AC380V, 50/60Hz, Approx. 9.5kW	3 phase, AC380V, 50/60Hz, Approx. 14kW
Humidity Range	Temperature : +20°C to +85°C, Humidity : 20% to 98% RH				
Humidity Deviation	1、 ≥75%RH : ≤±3%RH 2、 ≤75%RH : ≤±5%RH				
Noise	≤75db - Measured 3 feet in front of the chamber door, at 4 feet in height				



NextGen Environmental Chambers Temperature Control

Temperature

- Temperature measurement: High-precision A-class PT100 platinum resistance sensor
- Temperature control

The controller collects the temperature sensor signal and automatically adjusts the heating power or refrigerant flow through the PID + SSR output to ensure that the air temperature in the chamber reaches a dynamic equilibrium.

- Heater: High-quality nickel-cadmium alloy wire heater driven by a non-contact zero-cross triggering solid state controller.

The water vapor condensation on the surface of the evaporator is achieved by the cooling capacity of the previous stage compressor. When the dew point temperature of the air in the chamber is lower than the surface temperature of the dehumidification evaporator, the water vapor in the air will condense on the surface of the evaporation coil.

NextGen Environmental Chambers Control System

Environmental Chambers Controller

- 7" TFT color touch screen controller
- Controller parameters:
 - Accuracy: temperature $\pm 0.1^{\circ}\text{C} + 1$ digit, humidity $\pm 1\% \text{ R.H} + 1$ digit
 - Resolution: temperature $\pm 0.01^{\circ}\text{C}$, humidity $\pm 0.1\% \text{ R.H}$
 - Temperature slope: 0.1 to 9.9 (Can be set)
 - Temperature input signal PT100x1 Sensor P.I.D control parameters: 9 sets of PID control parameters are automatically calculated
- Screen functions
 - Touch input, display temperature and humidity set value and measured value, various parameters of program operation, operation timing, equipment operation curve and history curve, fault prompt screen, with a adjustable screen brightness

Program Capacity

Available program groups: up to 250 saved patterns

Usable memory capacity: Up to 12500 segments

- Program editing adopts conversational style, with functions such as editing, clearing, inserting, etc.
- SEGMENTS time setting 0 ~ 540Hour59Min
- Record function

The controller can save the setting values, sampling values and sampling time of the equipment up to 90 days.

- Data stored in the controller can be called, analyzed, and processed using office programs such as Microsoft Excel
- Communication function

The control system can export the data saved by the device operation through the USB interface

- The control system can communicate with your computer through an RS232 connection or with the optional Ethernet interface.



NEXTGEN
MATERIAL TESTING

YOUR QUALITY TESTING CHOICE

NextGen Environmental Chambers Protection

- Chamber Over-Temperature Protection
- Heater Short Circuit Protection
- Humidifier Short Circuit Protection
- Fan Overload Protection
- Compressor Overpressure Protection
- Compressor Overload Protection
- Water Cut/Shortage Protection
- Electrical Ground Protection.

*** Request a [formal quotation](#) or send an e-mail to sales@nextgentest.com for the most up-to-date pricing and applicable discounts and incentives.**

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