

HOT & COLD TEST CHAMBER

IEC Make Hot & Cold Test Chambers (Climatic chamber / Hot And Cold chamber) are designed for testing ,treating and storage of product and material where controlling of climate is necessary . These chambers find applications in pharmaceutical, chemical, automobile, biotechnology, telecommunication, electronics, defence, medical equipment, universities, military applications, consumer goods.

Construction & Design Features

- Hot & Cold Test Chambers are Precisely Constructed and fabricated thereby giving consistency in performance-operation and an professional look.
- Unique air circulation system, refrigeration system, humidity system, full view observation glass door and trays.
- Foamed - in - place PUF insulation ensures temperature stability and reduced energy consumption.

Control Panel Features

- Microprocessor-based PID controller / Profile Controller with auto tuning option for accurate control of temperature and humidity conditions with printer interface module to store data with on line and off line printer option as per print time interval.
- Resistive type temperature sensor .
- A multipoint (4+4) temperature and humidity scanner with printer interface and PC interface facility for online mapping purpose.
- GSM mobile alert module to give malfunction SMS on three cell phones simultaneously.
- A PLC system for an auto changeover of standby systems and other event logging and monitoring purpose.
- Alternatively a Advance PLC system with touch screen display with all the above features incorporated. Network.

Safety Interlock Features

- Thermostatic safety system is provided as an additional safety feature.
- Dedicated Safety cut off system and chamber shut down in case of overshoot or undershoot of temperature with audio visual alarm.
- Hot & Cold Test Chambers are provided with safety cut offs and alarms at centralised alert & security gate area.
- Electrical Safety fuses for short circuit protection.
- Software logging for all the alarms and events.

Software Features

- 21 CFR part 11 USFDA compliant software with validation documents.
- GSM alarm system (mobile alert).
- All the events, utility, working status, all the alarms are logged in the software.
- Records in graphical and in tabular form.

Complete documentation with extensive DQ, IQ, OQ and PQ protocols as per the International guidelines .

Technical Data

- Standard Model(S): Inside S.S.304 with mirror polish & outside mild steel powder coated.
- GMP Model(G): Inside S.S. 316 with mirror polish & outside with S.S. 304 matt buff.
- Temperature Range / Accuracy : - 80°C to 200°C / $\pm 0.2^{\circ}\text{C}$ / 2°C

MODEL	CAPACITY CU.FT/LTRS	INNER SIZE
IEC-HC/90	3 / 90	45 X 45 X 45 CM
IEC-HC/165	6 / 165	70 X 50 X 50 CM
IEC-HC/280	10 / 280	90 X 55 X 55 CM
IEC-HC/324	12 / 324	90 X 60 X 60 CM
IEC-HC/440	16 / 440	90 X 70 X 70 CM
IEC-HC/600	21 / 600	120 X 70 X 70 CM
IEC-HC/800	28 / 800	120 X 80 X 80 CM
IEC-HC/1000	34 / 1000	150 X 90 X 70 CM

Optional Extras / Accessories

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| a) PLC based system: PLC with HMI touch screen grey monitor with 21 CFR Part 11 features |
| b) Magnetic door lock feature |
| c) GSM system: alarms sent to predefined mobile numbers |
| d) HMI: touch screen grey |
| e) Digital PID controller / Profile controller with printer interface to connect EPSON Dot matrix line printer. Print interval programmable, can print date, time, temperature |
| f) PC interface for above controller with software on CD & hardware or software with 21 CFR part 11 features |
| h) PC interface for above controller with software on CD & hardware |