The possibilities are endless...

AN ISO 9001:2015 CERTIFIED COMPANY

((•)) KESAR®
TESTING SERVICES
CALIBRATION & VALIDATION EXPERTS
DESTINATION OF ACCURACY

AN ISO 9001:2015 CERTIFIED COMPANY

((•)) KESAR®
CONTROL SYSTEMS
TEMPERATURE & HUMIDITY EXPERT
MFG. OF PHARMA & LAB EQUIPMENTS

20 YEARS EXPERIENCE

SINCE 2010
CELEBRATING 10 YEARS OF EXCELLENCE

www.kesarcontrol.com

About us :

Established in the year 2007, **KESAR CONTROL SYSTEMS** is engaged in manufacturing of pharmaceutical and scientific equipments.

Our entire products are globally acclaimed for their excellent features such as durability, unique design and smooth operation.

A well laid infra structural set up with latest technological advancement has enabled us to meet the voluminous demand of customer's across the global. We have a team skilled professionals with ample industrial experience who carry out the whole manufacturing process.

Accentuating on quality and streamlining of manufacturing process, we stay ahead of our competitors by providing our clients with one stop solution for their requirements.

We manufacture all our equipments as per GMP / ICH guidelines and also Confirms MCA & US FDA requirements.

Who we are :

We have been working continuously in the field of manufacturing of Pharma and Lab equipments since Last Thirteen years.

A blend of young and truly professional enthusiasts driven by a desire to succeed, we take pride in our professionalism.

Our Values :

- Customers are our highest priority.
- Customers are most important to us.
- Valuing customer feedback.
- We never lose sight of our customers.
- We do business with integrity.
- We play to our strength & analyze our weaknesses.
- Exceed customer's expectation

What we do :

Kesar Control Systems apply continuous development technology tools to our needs as well as those of our clients. Hence we can offer better quality and more relevant products & services than what can be attained from other manufacturer. Our success lies in providing the best quality products with best manpower & services at the lowest price.

Our Mission :

To be the leading manufacturer of Temperature & Humidity base equipments Adopting advance techniques for enhancing quality & improving good performance. To provide best quality equipments and surpass customer expectation by offering 24 x 7 x 365 Services.

What Distinguish Us :

Our business is improving human life. All of our actions must be measured by our success in achieving this goal. Above all we value our ability to serve everyone who can benefit from the appropriate use of our equipments, thereby providing long lasting consumer satisfaction. We are committed to the highest standards of ethics and integrity. In discharging our responsibilities, we do not take professional or ethical shortcuts.
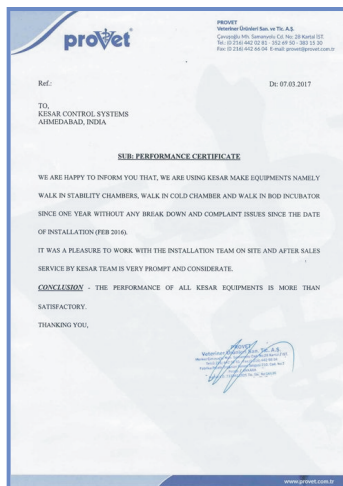
We strive to create an environment full of mutual respect, encouragement and team work. An environment that reward commitment and performance.

Our Commitment :

"In this spirit, **KESAR CONTROL SYSTEMS** is committed to become an indispensable element for Pharmaceutical Industry and therefore we must as a team, continuously improve our professional knowledge and skills. Each and every one of our employees in their own specialized area of employment has a vital role to play in achieving this goal."

Our Achievement

Our Team

Our Product Range

- Walk-in Stability Chamber
- Walk-in B.O.D. Incubator
- Photostability Chamber
- Walk-in Cold Chamber
- Hot Air Oven
- Vacuum Oven
- Muffle Furnace
- De- Humidifier

- Humidity/Stability Chamber
- B.O.D. Incubator
- Bacteriological Incubator
- Cold Chamber/Cooling Cabinet
- Vertical Auto Clave
- Deep Freezer
- Water Chiller
- Portable Humidity Chamber for Calibration Lab

Walk-in Stability Chamber

For Stability Study as per ICH Q1A(R2), ANVISA, ASEAN, WHO, MCA, USFDA etc...

Technical Specification :

Temperature Range	:	20°C - 60 °C
Humidity Range	:	40 %RH - 95 %RH
Accuracy	:	± 0.2 °C / ± 2.0 %RH
Uniformity	:	± 2.0 °C / ± 3.0 %RH
Suitable for	:	25°C & 60 %RH, 30°C & 65 %RH, 40°C & 75 %RH, 30°C & 75 %RH Specially designed chambers for Low Humidity conditions such as 25°C & 40 %RH, 40°C & 25 %RH , 30°C & 35 %RH

Models	Capacity in Liters	Internal Dimension In MM			External Dimension In MM			Rack Qty.	No. of Trays
		Width	Depth	Height	Width	Depth	Height		
GMP-WSC2553L	2553	1600	840	1900	1760	1000	2060	2	10
GMP-WSC3008L	3008	1600	940	2000	1760	1100	2160	2	10
GMP-WSC6480L	6480	1800	1800	2000	1960	1960	2160	4	16
GMP-WSC8000L	8000	2000	2000	2000	2160	2160	2160	4	20
GMP-WSC10000L	10000	2000	2500	2000	2160	2660	2160	6	24
GMP-WSC12000L	12000	2000	3000	2000	2160	3160	2160	6	40
GMP-WSC16000L	16000	2000	4000	2000	2160	4160	2160	8	40
GMP-WSC20000L	20000	2500	4000	2000	2660	4160	2160	8	48

NOTE : Extra Trays will provide on request as per capacity of chamber Other Sizes and Customize models are available on request.

Features

Touch Screen	Standby Cooling	PLC Control	Ethernet	Door Access	Alarms	Safety	Documents	Software	Mobile Alert	E-mail Alert

Inner View

dd/mm/yy	HOME SCREEN	HH:MM:SS

Display (HMI)

Control Panel

Refrigeration Unit

Features :

Low energy and Low water Consumption Equipments.

Construction :

- Pre-fabricated modular panel type construction with PUF insulation to be assembled on site with floor panels having extra reinforcement to sustain the movement and sample load inside the chamber.
- The inner working chamber is water & vapour tight high-grade stainless steel.
- Chambers are provided with effective air circulation system, heating & cooling systems and humidity generator system.
- Multi pane vacuum sealed observation glass window to view the samples without disturbing the test condition & human safety.
- Heavy duty solid stainless steel duly electro polished wire mesh/perforated type trays are provided which are easy to clean, time & efforts saving, also adjustable for convenience, along with detachable racks with adjustable angles.

Control Systems :

- 7" HMI with TFT LCD Colour touch screen with password protection for all parameter actual status monitoring of utilities like Sensor, Heating & Cooling System, Humidity System.
- Rotronic make 4-20mA sensors for better accuracy.
- PLC with auto tuning facility for accurate control of temperature and humidity conditions.
- Data Storage facility in HMI and PLC Both PLC'S Stored data transfer in software via Ethernet and HMI'S Stored data can be veiw obtain in PDF form through USB Drive.

Alarm & Safety :

- Temperature deviation & RH deviation Alarm
- Power Failure Alarm
- Continues open door alarm
- Temperature & RH Safety Cutoff
- Low water level Cutoff
- Auto change over Facility for RH Generator & Cooling System

Special Features :

- Special door lock is provided which can opened from inside even if locked from outside.
- Password Protected Door Access.
- Person trapped Emergency stop protection.

Software (21 CFR PART-11 Compliance)

- Log data, Event data, Audit Trail data, E-Records & E-signatures, Graphical analysis & Data acquisition.

Optional :

- Stand by Cooling System
- Stand by Humidity System
- Scanner (8 Temp. + 8 RH for Online Monitoring Purpose)
- Mobile Alert System
- Security Alarm System
- Chiller System
- Eco - Smart System

Humidity Chamber / Stability Chamber

PID Based Control System

HMI/PLC Based Control System

CE APPROVED

Technical Specification :

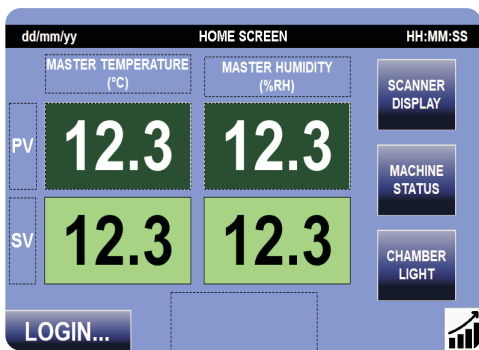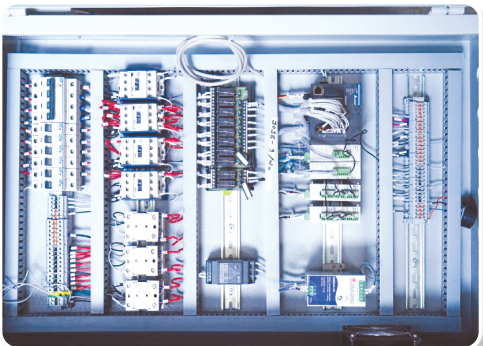|		
Temperature Range	:	20°C to 60°C
Humidity Range	:	40% RH to 95% RH
Accuracy	:	±0.2°C & ±2.0% RH
Uniformity	:	±2.0°C & ±3.0%RH
Suitable For	:	25°C & 60%RH, 30°C & 65%RH, 40°C & 75%RH, 30°C & 75% RH & also for low Humidity 25°C & 40%RH, 40°C & 25%RH , 30°C & 35%RH
Control System	:	PLC or PID Based

Models	Capacity in Liters	Internal Dimension In MM			External Dimension In MM			No. of Trays
		Width	Depth	Height	Width	Depth	Height	
GMP-SC227L	227	600	630	600	750	1140	1180	2
GMP-SC325L	325	600	630	900	750	1140	1490	2
GMP-SC400L	400	600	630	1060	750	1140	1650	3
GMP-SC500L	500	600	630	1325	750	1140	1910	4
GMP-SC600L	600	800	800	950	950	1340	1550	4
GMP-SC800L	800	800	800	1250	950	1340	1870	4
GMP-SC1000L	1000	800	800	1570	950	1340	2190	4

NOTE : Other Sizes and Customize models are available on request.

PHOTOSTABILITY CHAMBER

Technical Specification :

Temperature Range	:	20°C to 50°C
Accuracy	:	± 0.2°C
Uniformity	:	± 2.0°C
Control System	:	PLC or PID Based

Optional :

Humidity Range	:	40% RH to 85% RH
Accuracy	:	± 2.0% RH
Uniformity	:	± 3.0% RH

- As per ICH - Q1B For confirmatory studies, sample should be exposed to light providing an overall illumination of not less than 1.2 million lux hours and an integrated near ultraviolet energy of not less than 200 watt hour/ square meter to allow direct comparison to be made between drug substance & drug product.
- On line and actual study of UV & LUX Exposure.
- Automatic cycle cutoff after complete the study / test of UV & LUX.

Models	Capacity	Internal Dimension In MM			External Dimension In MM			Nos. of Light Bank
		Width	Depth	Height	Width	Depth	Height	
GMP-PSC227L	227Litres.	600	630	600	875	1150	1180	1
GMP-PSC400L	400 Litres.	600	630	1060	875	1150	1640	2

NOTE : Other Sizes and Customize models are available on request.

Features

Touch Screen	PLC Control	Ethernet	Alarms	Safety	Documents	Software	Mobile Alert	E-mail Alert

Features :

Low energy and Low water Consumption Equipments.

Construction :

- Constructed and fabricated on fully automatic CNC machines. Chamber Interior is fabricated of stainless steel with dull/mirror finish & exterior is of stainless steel for GMP Model / G.I. Powder coated for standard Model.
- The inner working chamber is water & vapour tight high-grade stainless steel. All seams are arc-welded & passivity for strength & durability.
- Chambers are provided with effective air circulation system, heating & cooling systems and humidity generator system.
- Double Door : Inner full viewing glass door and outer door insulated with lock and key arrangement. Inner& outer doors are sealed by silicone sponge rubber gasket.
- Control panel with electrical switch gear and refrigeration system mounted on top for easy service accessibility.
- Equipment mounted on heavy castor wheels for easy movement.
- Heavy duty solid stainless steel duly electro polished wire mesh/perforated type trays are provided which are easy to clean, time & efforts saving, also adjustable for convenience.

Control Systems :

Option 1 : (PID controller based)

- Microprocessor based PID controller with auto tuning for accurate control of temperature and humidity conditions.
- Rotronic make 4-20mA sensors for better accuracy / Pt100 Sensor for Temperature & Direct % RH electronic capacitance type humidity sensor.
- Data Storage unit facility to store data and to print directly on printer or transfer to software with Date, Time, SV, PV, Door Open/Close, Power On/Off remarks.
- Safety : Temperature & Humidity High / Low Alarm, Temperature very High / Low cut off, Water level low cut off.
- Software (21 CFR PART-11 Compliance) :
  Log data, Event data, Audit Trail data, E-Records & E-Signatures, Graphical analysis & Data acquisition.

Option 2 : (HMI + PLC controller based)

- 4.3" HMI with TFT LCD Colour touch screen with password protection for all parameter actual status monitoring of utilities like Sensor, Heating & Cooling System, Humidity System)
- Rotronic make 4-20mA sensors for better accuracy.
- PLC with auto tuning facility for accurate control of temperature and humidity conditions.
- PLC system for auto changeover of standby systems.
- Data Storage unit facility to transfer the data to software via Ethernet for web based online remote monitoring with Date, Time, SV, PV, Door Open/ Close, Power On/Off remarks. Direct report printout provision from HMI.
- Safety / Alert :
  Temperature & Humidity High / Low alarm, Temperature & Humidity High / Low cut off, Low water level cut off, Auto change over for standby systems.
- Software (21 CFR PART-11 Compliance) :
  Log data, Event data, Audit Trail data, E-Records & E-Signatures, Graphical analysis & Data acquisition.

Optional :

- Software (21 CFR PART-11 Compliance)
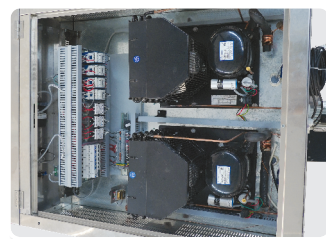- Stand by Cooling System
- Stand by Humidity System
- Scanner (4 Temp. + 4 RH for Online Monitoring Purpose)
- Mobile Alert System
- Security Alarm System

Front Control Panel View

Top Panel View

Reserve Boiler Tank

BOD Incubator/ Bacteriological Incubator

BOD Technical Specification

Temperature Range : 5°C to 60°C
Accuracy : ± 1.0°C
Uniformity : ± 2.0°C

Bacteriological Technical Specification

Temperature Range : 10°C above ambient to 60°C
Accuracy : ± 1.0°C
Uniformity : ± 2.0°C

Cold Chamber
Technical Specification

Temperature Range : 2°C to 8°C
Accuracy : ± 1.0°C
Uniformity : ± 3.0°C

Features of Incubator & COLD Chamber :

- Constructed and fabricated on fully automatic CNC machines. Chamber Interior is fabricated of stainless steel with dull/mirror finish & exterior is of stainless steel for GMP Model / G.I. Powder coated for standard Model.
- The inner working chamber is water & vapour tight high-grade stainless steel.
- All seams are arc-welded & passivity for strength & durability.
- Chambers are provided with effective air circulation system.
- **Double Door :** Inner full viewing glass door and outer door insulated with lock and key arrangement. Inner and outer doors are sealed by silicone sponge rubber gasket.
- Control panel with electrical switch gear and refrigeration system mounted on top for easy service accessibility.
- Equipment mounted on heavy castor wheels for easy movement.
- Heavy duty solid stainless steel duly electro polished wire mesh/perforated type trays are provided which are easy to clean, time & efforts saving, also adjustable for convenience.

BOD PID Based

PID CONTROLLER BASED & HMI / PLC CONTROL BASED

Model	Inner Moc	Outer Moc
GMP Model	S.S.304 / S.S.316	S.S.304
Trays Moc : S.S.304 Perforated Type **Note :** Extra Charges will be applicable for Extra Tray		

BOD / Bacteriological Incubator Models	COLD Chamber Models	Capacity in Liters	Internal Dimension In MM			External Dimension In MM			No. of Trays
			Width	Depth	Height	Width	Depth	Height	
GMP-BOD227L	GMP-CC227L	227 liters	600	630	600	750	1065	1180	2
GMP-BOD325L	GMP-CC325L	325 liters	600	630	900	750	1065	1490	3
GMP-BOD400L	GMP-CC400L	400 liters	600	630	1060	750	1065	1650	4
GMP-BOD500L	GMP-CC500L	500 liters	600	630	1325	750	1065	1910	4
GMP-BOD600L	GMP-CC600L	600 liters	800	800	950	950	1265	1550	4
GMP-BOD800L	GMP-CC800L	800 liters	800	800	1250	950	1265	1870	5
GMP-BOD1000L	GMP-CC1000L	1000 liters	800	800	1570	950	1265	2190	5

NOTE : Extra Trays will provide on request as per capacity of chamber Other Sizes and Customize models are available on request.

Deep Freezer & Ultra low Deep Freezer

KESAR ®
CONTROL SYSTEMS
TEMPERATURE & HUMIDITY EXPERT

Features

- Fabricated on fully automatic CNC machines.
- PUF insulation has thickness 100 MM thickness.
- The inner working chamber is water & vapour tight high-grade stainless steel.
- All seams are arc-welded & passivity for strength & durability.
- Hermetic compressors build on cascade system with CFC free refrigeration.
- Equipment mounted on heavy castor wheels for easy movement.
- Heavy duty solid stainless steel duly electro polished wire mesh/perforated type trays are provided which are easy to clean, time & efforts saving, also adjustable for convenience.

PID CONTROLLER BASED & HMI / PLC CONTROL BASED

Temperature Range	Accuracy	Uniformity
- 5°C to - 20°C	± 1.0°C	± 5.0°C
- 20°C to - 40°C	± 3.0°C	± 5.0°C
- 50°C to - 80°C	± 3.0°C	± 10.0°C

Model	Inner Moc	Outer Moc
GMP Model	S.S.304 / S.S.316	S.S.304

Trays Moc : S.S.304 Wire mesh Type / Perforated Type **Note :** Extra Charges will be applicable for Extra Tray

Optional Features

- Stand by Refrigeration System (For -20°C & -40°C PLC Model)
- Mobile Alert System
- Security Alarm System

Dual Chamber

Size of Deep Freezer -20°C & -40°C

Capacity in Litres	Inner Size in MM (W x D x H)	Outer Size in MM (W x D x H)
100 liter	450 x 450 x 500	700 x 650 x 1250
200 liter	600 x 600 x 600	850 x 800 x 1350
324 liter	600 x 600 x 900	850 x 800 x 1650
400 liter	600 x 630 x 1060	850 x 830 x 1910
600 liter	800 x 800 x 950	1050 x 1000 x 1800

Size of Ultra low Freezer -80°C

Capacity in Litres	Inner Size in MM (W x D x H)	Outer Size in MM (W x D x H)
100 liter	450 x 450 x 500	710 x 710 x 1560
200 liter	600 x 600 x 600	860 x 860 x 1700
324 liter	600 x 600 x 900	860 x 860 x 2000
400 liter	600 x 630 x 1060	860 x 890 x 2260
600 liter	800 x 800 x 950	1060 x 1060 x 2150

Dual Chamber Size

Modle	Capacity	Temp. Range	Inner Size in mm	Outer Size in mm	No. of Tray
GMP-DCC/U90/L90	90 Liter Upper	2 - 8°C	450 x 450 x 450	750 x 900 x 1800	2
	90 Liter Lower	-20°C	450 x 450 x 450		2
GMP-DCC/U200/L100	200 Liter Upper	2 - 8°C	600 x 600 x 600	850 x 1050 x 1900	2
	100 Liter Lower	-20°C	600 x 600 x 300		2
GMP-DCC/U200/L200	200 Liter Upper	2 - 8°C	600 x 600 x 600	850 x 1050 x 2200	2
	200 Liter Lower	-20°C	600 x 600 x 600		2

Hot Air Oven

Technical Specification :

Temperature Range : Ambient +10°C to 300°C
Accuracy : ± 2.0°C
Control System : Operation through digital PID controller with inbuilt cycle timer auto cutoff.
Uniformity : Upto 150°C : ±5.0°C & 150°C to 200°C / 300°C : ±10.0°C

- Double walled interior and exterior S.S. 304 / 316 with matt finish insulated with high grade glass wool insulation.
- S.S. Wire Mesh Trays with adjustable Support. • Forced air circulation for uniform temperature.

Models	Capacity in Liters	Internal Dimension In MM			External Dimension In MM		
		Width	Depth	Height	Width	Depth	Height
GMP-OV43L	43	350	350	350	660	790	520
GMP-OV73L	73	350	350	600	660	790	1090
GMP-OV90L	90	450	450	450	750	850	930
GMP-OV120L	120	450	450	590	750	850	1080
GMP-OV200L	200	600	600	600	900	1030	1080
GMP-OV325L	325	600	630	900	900	1060	1400
GMP-OV400L	400	600	630	1060	900	1090	1550
GMP-OV600L	600	600	800	1250	900	1275	1735

Vacuum Oven

Technical Specification :

Temperature Range : Ambient +10°C to 200°C
Accuracy : ± 2.0°C
Vacuum Range : More than -700mm of Hg.
Control System : Operation through digital PID controller.

- Double walled interior and exterior S.S. 316 / 304 with matt finish insulated with high grade rock wool insulation.
- Door with glass window, silicone gasket & positive latch to maintain seal at all vacuum Levels.

Round Vacuum Oven

Sr. No.	Working Chamber Size Dia x Depth (in inch)
1	9" x 12"
2	12" x 15"
3	15" x 18"

Rectangular Vacuum Oven

Sr. No.	Working Chamber Size Dia x Depth (in inch)
1	12" x 12" x 12"
2	20" x 20" x 21"

Muffle Furnace

Technical Specification :

- Furnace finds application in Industries & Laboratories for Ashing, Heat treatment, Ignitiontest, Gravimetric analysis, Determination of volatile and suspended solids & Cement testing.
- Heavy gauge Mild Steel construction for durability having powder coating finish.
- Outer Casing Made from Stainless Steel - 304 grade in all GMP Models.
- Un-exposed long lasting KANTHAL A-1 heating elements.
- Light Weight, Ceramic Fiber Wool insulation of High quality to give maximum thermal efficiency.
- Temperature controlled by Dual Display Microprocessor based PID Temperature Controller.
- Temperature Sensor: "K" Type (Cr/Al) Thermo couple sensor.
- Working Temperature Range: 400°C to 1050°C or 400°C to1150°C
- Temperature Control Accuracy : + 3°C.
- Operates on 230 Volts AC Single phase 50Hz.
- **Two models :** (1) Muffle For 1050°C (2) Refractory for 1150°C

Sizes :

Models	Inner Size Inch	Capacity (In Ltrs)	Rating Watts
GMP - MF2L30	4" X 4" X 9"	2.30	2000 W
GMP - MF4L25	5" X 5" X 10"	4.25	2500 W
GMP - MF6L75	6" X 6" X 12"	6.75	3500 W
GMP - MF12L	8" X 8" X 12"	12.00	4500 W
GMP - MF24L	9" X 9" X 18"	23.80	7000 W

Auto Clave (Vertical Type) Models only
FULLY AUTOMATIC WITH FO VALUE FACILITY & RADIAL LOCK DESIGN

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Technical Specification :

- Vertical Autoclave widely used in Microbiology Laboratory, Waste treatment Plant, Pharma QC / QA / R & D and all applications requiring sterilization.
- Double walled construction with Inner chamber (boiler) made of SS 304 grade(16 SWG Sheet) and Outer shell of SS - 304 grade, micro polish.
- The Boiler and outer shell is provided with air insulation.
- Lid is made of die pressed Thick Stainless Steel plate & is equipped with Pressure gauge, Steam release / Exhaust valve & spring loaded safety valves & 1/2" BSP Port fitted with coupling for validation purpose.
- Foot lifting arrangement for the lid.
- Fully Argon welded to avoid steam and pressure leakage.
- Heavy duty industrial flange heaters.
- Full sterilization cycle including Air purging, Sterilizing hold time, Cycle end with release/exhaust of pressure.
- Microprocessor based Controller with time and temperature programmable by user.
- **Timer Range** : 1 - 99 Minutes. ● **Temperature Sensor** : PT - 100.
- Low water level alarm with heater cut off.
- Perforated basket made of Stainless Steel sheet - 304 grade.
- Operates on 230 Volts AC Single phase 50Hz.

Optional features :

- Digital Controller cum data logger with Software F0 value with USB data converter & cable with Fully Automatic having all the feature of low level water cut off feature, purging system, timer, & releasing of the steam after completing the sterilization of the cycle.
- Pressure Transducer with Pressure Data in Software.

Size & Models :

Models	Size (DIA x HT)		Rating	Capacity (Ltrs.)	No. of Bsket
	INCH	CM			
GMP - AC52L	14 Ø x 22 Ht	35 Ø x 55 Ht	3000 W	52	1
GMP - AC75L	16 Ø x 24 Ht	40 Ø x 60 Ht	4000 W	75	1
GMP - AC100L	18 Ø x 26 Ht	45 Ø x 65 Ht	4000 W	100	1
GMP - AC110L	18 Ø x 28 Ht	45 Ø x 70 Ht	4500 W	110	2
GMP - AC120L	18 Ø x 30 Ht	45 Ø x 75 Ht	5000 W	120	2
GMP - AC180L	22 Ø x 30 Ht	55 Ø x 75 Ht	6000 W	180	2
GMP - AC215L	22 Ø x 35 Ht	55 Ø x 90 Ht	7000 W	215	2

Multi Channel Scanner :
(4 / 8 / 16 Channel)

Technical Specification :

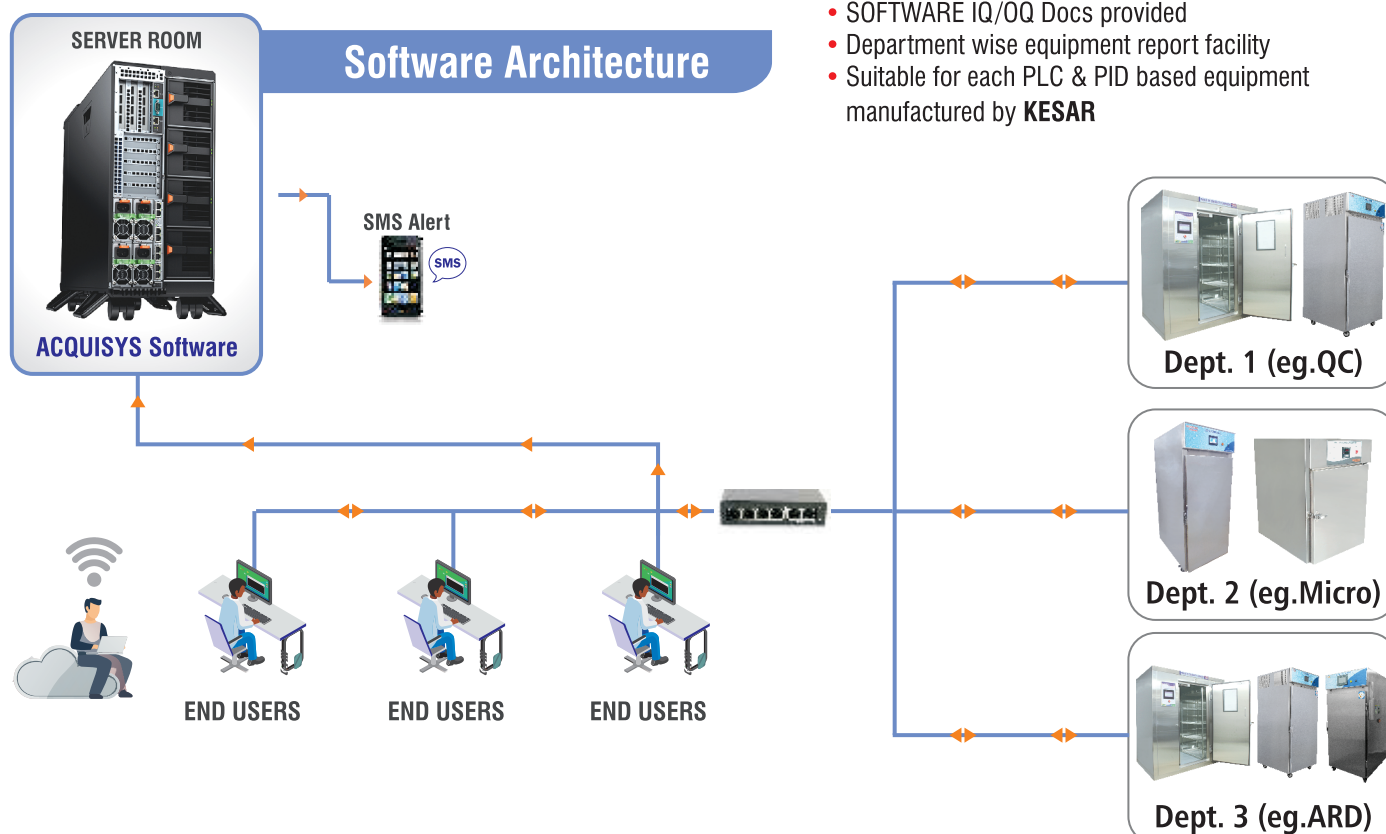| No. of Channels	4 / 8 / 16 Channel
Display	128 x 64 alphanumeric graphical display
Sensor Input	Temperature : RTD Pt - 100 and PT - 1000 (0 to 400°C)
	Thermocouple : 2 types (J type : 0 to 850°C, K type : 0 to 1300°C)
	Linear Inputs : 4mA - 20mA , 0mA - 20mA 0 - 1 V, 0 - 5 V, mV Can Support
	Humidity RH : 0 -1V, 0 - 3.3V (3 wire), 4mA - 20mA
Alarm	Common Alarm for all channels
Communication port	RS 485 to 232 (Pc communication) or Ethernet (Tamper proof data with 21cfr part 11 compliance software.)
Print features	1. Date wise data recovery 2. Page wise data recovery
Printer supported	EPSON LX - 300+ (Dot Matrix) with provided printer cable
Scan time	1 to 255 minutes interval time
Memory capacity	up to 3000 records
Audio Indication	For Critical condition and Memory full condition
Supply voltage	110/230 VAC - 50/60 Hz
Size	96mm x 96mm x 65mm

Web based Software (AcquiSys)

CE APPROVED

SOFTWARE NAME : "ACQUISYS"
KESAR CONTROL SYSTEMS

Silent Features of "ACQUISYS" Software

- Meets all 21 CFR part 11 requirements
- Ethernet communication with PLC
- Secured audit trail with date and time stamp (users, equipments, all events/alarm, SMS)
- Real time analysis & graphical analysis
- All connected equipment's utility status, process parameters & active alarms can online observed by software
- Auto & manual backup with restore data facility
- No limit for user account creation
- Forced password change on first time login
- Frequency based password expiry
- Account block with 3 wrong login attempt (unlock only by administration)
- 8 to 20 alphanumeric password length
- Online downloading for all stored data of PLC, such that master data, scanner data, mkt calculation, event/alarms, master graph & scanner graph
- GMP-compliant, tamper proof reports of measured data
- E-signature Facility for all Reports
- Report header and footer with logo can customize
- Auto time synchronize facility
- Time of auto log off in idle condition of PC (10 MINS LATER)
- Password reset server email configuration
- SOFTWARE IQ/OQ Docs provided
- Department wise equipment report facility
- Suitable for each PLC & PID based equipment manufactured by **KESAR**

Software Architecture

SERVER ROOM

ACQUISYS Software

SMS Alert

END USERS   **END USERS**   **END USERS**

Dept. 1 (eg.QC)

Dept. 2 (eg.Micro)

Dept. 3 (eg.ARD)

www.kesarcontrol.com

Ethernet Communication:

- High-speed data transfer
- Significantly faster than serial(RS-485)communication
- Global standard for communication protocol
- No need for a separate PC interface
- Data Operations from any PC over the LAN

Touch Screen Display

- All operations through a Color touch screen display (HMI)
- PLC IP Address setting
- Component Working Hours
- Standby system change over
- Password protection for set values and calibration mode
- Alarms recordings

Touch Screen Door Access System

- Password-based Door access control
- Biometric Door access control (optional)
- Restricts access to unauthorized persons

Mobile Alert System

- Time of Alarm transmission
- Name of Equipment
- Transmitted Message (Equipment Name,
   Alarm time, Type of Alarm & Limits)

Standby Humidity & Cooling Systems

- Completely ready-to-use systems
- Automatic switch-over upon failure of primary systems
- Switch-over also upon detection of Internal faults
- Scheduled & manual change-overs
- Recording of all change-overs in the software

Complete Range of Alarms

- Temperature & Humidity Deviations
- Door Opening
- Water level low
- Component Failure
- Power Failure
- Communication Failure

Alarm Transmissions

- To Software
- To Remote Location (such as Security Gate)
- Through detailed SMS Notification
- Locally at equipment (audio-visual indication & on the display)

Safety

- Temperature Overshoot/Undershoot
- Humidity Overshoot
- Low water-level
- Delay Timer to safeguard the Compressor
- MCB for over load protection
- Standby Controlling Sensor upon failure of Primary
- Special door lock is provided which can opened from inside even if locked from outside
- Emergency stop protection
- Person trapped protection

Multiple Sensors

- 4 Channel Scanner for Standalone Chamber
- 8 Channel Scanner for Walk in chamber
- Helps study the distribution of conditions in the different locations of the chamber
- Works as an auto-validation in continuous operation
- Easy detection of drift in the sensors

Documentation & Training

- DQ, IQ, OQ, PQ & SOP & SMP
- Calibration Certificates
- Test Certificates
- GA & Electrical Drawings
- MOC Test Certificates
- Training to end-users

Audit Support

- Quick Resolution to NCs
- Justification to Excursions
- On-site support
- Remote support via Team Viewer
- Documentation

Portable Dehumidifiers (Refrigerated)

Model	KCSDH 100	KCSDH 150	KCSDH 200
Moisture Extraction Capacity	@30° C & 80 % RH 100 Liters /day	@30° C & 80% RH 150 Liters / day	@30° C & 80% RH 200 Liters / day
Coverage Area (Non A.C.)	800 Sq Ft / 8000 ft^3	1200 Sq Ft / 12000 ft^3	1600 Sq Ft / 16000 ft^3
Moisture Extraction Capacity	@23° C & 60% RH 50 Liters / day	@23° C & 60% RH 75 Liters / day	@23° C & 60% RH 100 Liters / day
Coverage Area (A.C. w/o AHU)	400 sq. ft / 4000 ft^3	600 sq. ft / 6000 ft^3	800 sq. ft / 8000 ft^3
Body Material	SS 304 / GI	SS 304 / GI	SS 304 / GI
Humidity Control & Display	Up to 25% RH	Up to 25% RH	Up to 25% RH
Water Collection Tank	20 Liter	23 Liter	25 Liter
Compressor	Recip	Recip	Recip
Refrigerant	R 22	R 22	R 22
Power	440 / 220V AC, 50Hz	440 / 220V AC, 50Hz	440 / 220V AC, 50Hz
Noise Level	70 dB	70 dB	70 dB
Direct Drain Facility	Yes	Yes	Yes
Prefilter	Yes	Yes	Yes
Castor Wheel	Yes	Yes	Yes
Dimension(inch) (L x D x H)	21.5 x 20.5 x 39	21.5 x 20.5 x 39	21.5 x 20.5 x 39

Other Sizes and Customize Models are Available on Request.

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((·)) **KESAR**®
CONTROL SYSTEMS
TEMPERATURE & HUMIDITY EXPERT

PORTABLE CALIBRATION HUMIDITY CHAMBER

TECHNICAL SPECIFICATIONS

Parameter	Temperature	Humidity
Range	5°C To 50°C	15%RH To 90%RH
Accuracy	±0.2°C	±0.5%
Uniformity	±1°C	±1%
● **LOW TEMP & HUMIDITY SET POINTS :**	● 25°C Temperature - 15% RH ● 20°C Temperature - 40% RH ● 25°C Temperature - 20% RH ● 30°C Temperature - 35% RH ● 20°C Temperature - 25% RH ● 40°C Temperature - 25% RH	
● **Construction (Both Construction Given)**	1. **GMP Model** : Interior & Exterior body made of Stainless Steel 304. 2. **Standard Model :** Interior body made of Stainless Steel 304 & Exterior body made of MS **(CRCA)** Powder Coating. Inner glass door will be provided.	
● **Insulation**	Double walled PUF insulation 50 mm modular panel.	
● **Control System**	Digital Indication for temperature / Humidity PID Controller.	
● **PID**	Digital indication for temperatures and Humidity.	
● **Temperature Sensor**	Temperature PT 100 Sensor will be provided.	
● **Humidity Sensor**	Humidity Sensor will be provided.	
● **Cooling System**	Compressor make "EMERSON" fitted with ISO-9001 certified ozone friendly hermetically sealed compressor charged with CFC / HCFC free refrigerant, complete with air cooled condenser, fan motor, drier, capillary with complete compressor accessories.	
● **Humidity System**	By steam injection method.	
● **Heating System**	Long lasting (S.S) tubular fin type heating elements stainless steel.	
● **Power Supply**	Mains supply 230V AC, 50Hz Single phase.	
● **Air Circulation**	Forced air circulation for uniform temperature & Humidity.	
● **Trays**	Perforated stainless steel (SS 304).	
● **Boiler Tank**	Complete set made of SS including accessories like float switch, float valve and Humidifier Heaters.	
● **Weight**	Approx. 50 KG	

SIZE & MODEL

MODEL	CAPACITY		INNER CHAMBER SIZE W x D x H MM	EXTERNAL CHAMBER SIZE W x D x H MM	TRAY SIZE (MM)	NO. OF TRAY
KCS / PCHC / 22 L	-	22	300 X 250 X 300	760 X 460 X 490	290 X 240	1

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Destination of Accuracy

KESAR
TESTING SERVICES
CALIBRATION & VALIDATION EXPERTS

VALIDATION

CALIBRATION

QUALIFICATION

What is Calibration ?

Calibration is an activity of Checking or Correcting, Unit Under Calibration by comparing with Standard and taking the result within acceptable tolerance.

Example :

It is clear that a car has to be regularly maintained and brought in for roadworthiness test at least once a year. It is the law. We are also aware that this ensures our safety and that the car will serve us throughout its lifecycle.

It is, clear to everyone that a measuring instrument, too, needs maintenance, servicing, technical examination, etc., even if it is not broken.

As is the case with the usual wear and tear of the car's brakes, spark plugs and other parts, components of measuring instruments also age. With time and use, especially incorrect use or misuse, the capabilities of instruments deteriorate.

Why Calibration Required?

Correctly performed calibration increases productivity, optimizes resources, and assures consistency, comparability and compatibility of products and services, as well as their acceptability anywhere in the world.

What is Uncertainty of Measurement?

Uncertainty of measurement is the doubt that exists about the result of any measurement.

In another way, In metrology, measurement uncertainty is a non-negative parameter characterizing the dispersion of the values attributed to a measured quantity.

Note : Better Uncertainty of your instruments' make more less doubt in your mind.

Why Calibration from us?

We provide our better & prompt responsive services, better standards & with skilled employee to do Calibration and maintenance of your instruments.

We have facilitate for In-House & Onsite Calibration.

Capability for both In-House & Onsite Calibration

VALIDATION

CALIBRATION

QUALIFICATION

Calibration Facilities as per Disciplines

ISO / IFC 17025 : 2017 Accredited (by NABL) Calibration Services

At our Laboratory		At Customer Site	
Instrument Name	**Range**	**Instrument Name**	**Range**
Temperature Sensor (with/without Indicator) (RTD, T/C)	(-95 to 1200)°C	Temperature Sensor (with/without Indicator) (RTD, T/C)	(-95 to 1200)°C
Humidity Sensor (with / without Indicator)	(15 to 95)% RH	Dry Temperature Bath	(-95 to 1200)°C
Glass Thermometer / Temperature Gauge	(-30 to 250)°C	Liquid Temperature Bath	(-30 to 250)°C
Dry-wet Thermometer, themrohygro meter, Temp. & Humidity Data Loggers	As per Specs.	Stability / Humidity Chamber, Incubators, Cold Chamber Deep Freezer, Refrigerators, Oven, Furnace, Autoclaves	(-95 to 1200)°C
(Pressure / Vacuum / Compound) Gauges	(-0.85 to 700) bar	(Pressure / Vacuum / Compound) Gauges	(-0.85 to 700) bar
(Pressure / Vacuum) Transmitter, Pressure Switches	(-0.85 to 20) bar	(Pressure / Vacuum) Transmitter, Pressure Switches	(-0.85 to 20) bar
Infrared Thermometer	(50 to 500)°C		
Dry Temperature Bath	(-95 to 1200)°C		

Other Services

Calibration Service at our Laboratory		Calibration Service at Customer Site	
Instrument Name	**Range**	**Instrument Name**	**Range**
Flow Meter/ Transmitter, Rotameter, Laminar Flow, Orifice (Air / Gas Flow)	(10 ccm to 100 LPM)	Flow Meter/ Transmitter, Rotameter (Liquid Flow)	(0.3 to 1000) m³/h
Anemometer (Wind Speed)	(0.2 to 30) m/s	Tachometer / RPM Measurement / RPM Meter (RPM)	(10 to 90000) RPM
Timer / Stop Watch (Time)	10 s to 24 hr.	Timer / Stop Watch (Time)	10 s to 24 hr.
Power Meter (1ø ,3ø), Energy Meter	As per Specs	(AC/DC) Voltage, Current, Resistance	As per Specs
Weights (SS, Brass, CI)	E1,E2,F1,F2, M class	Temperature Controller / Indicator, Ampere / Voltage Meter	As per Specs
UV Meter, Lux Meter	As per Specs	Weighing / Electronic Balance	Class I, II, III, IV
Sound Level Meter / Measurement in Room	As per Specs	pH, Conductivity, ORP, TDS	As per Solution

Mapping		Validation	
Description	**Through**	**Description**	**Type of Test**
Room / Area Chambers, Incubators (walk In Type also) Cold Chamber, Deep Freezer, Refrigerator Ovens, Furnaces, Autoclave	Temperature Scanners Humidity & Temp. Scanners Temperature Data Loggers Humidity & Temp. Data Loggers	HVAC / AHU / HEPA Filter Bio Safety Cabinet Laminar Air Flow Pass Box Clean Room Validation PLC Validation Compressed Air Validation Sterilizer / DHS Validation	PAO Test NVPC Test Air Velocity Test Differential Pressure Smoke Study (Air Flow Pattern) Other related…

Qualification & Requalification			
Description	**Type of Qualification**		
Autoclave, Bio Safety Cabinet, Laminar Air Flow, Pass Box, Sterilizer / DHS Validation Any Laboratory Equipment	Design (DQ) Installation (IQ) Operational (OQ) Performance (PQ)		

Also Do other all type of instruments Calibration Services…
Also give Instrument Supply Service to our valuable Customer…

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Annual Maintenance Contract

Routine Maintenance :

Kesar Control Systems offers a comprehensive range of service tailored to individual requirements designed to suit different products and budgets. With over "20 years" experience in the pharmaceutical and related industries our engineers have an extensive knowledge of controlled environment products. Our service can also include inspections, maintenance, and repairs. We offer these services to customers without a full service contract as well as to customer with their one service terms. Our engineers not only correct defect. Replace wearing parts and install technological advances. They also generate a maintenance plan that is kept up to date.

Annual Maintenance :

- Free one time calibration (1 Hr) and validation (24 Hrs), three routine visit and three breakdown visit.
- We attend a complaint within 24 Hours.
- One source of your maintenance repair issues.
- Allows your staff to focus on higher priority operational issues.
- Comprehensive range of services.
- Solution for operational efficiency and plant criticality.
- Resolve minor problems by one phone call.
- Maintenance regimes tailored individual requirements.
- In additions, we include a 24 hrs x 7 days x 365 days per year emergency response, including technical support service you.

Calibration :

Kesar control systems regular calibration of control, induction recording system verifies and documents measurement equipment performance. This routine calibration is essential to ensure the accurate and repeatable performance of equipment. Kesar engineers are trained in single point calibration. All test matters are regularly calibrated to NIST standard.

To guarantee peak performance to your vital equipment. It is essential to set up regular calibration visits our service package. The frequency of calibration is normally undertaken on an annual basis year but some critical applications are calibrated bi-annually. Kesar offer a flexible approach, tailored to each individual customers needs.

- Correction to specifications
- Traceable results
- Reliable service undertaken within regulatory requirements
- Equipments setting optimized for performance
- Clear and concise certification documentation

Validation :

We offer a full on-site validation service for environmental rooms, chambers and all associated equipments (data logging systems, chart recorders etc...)
All reference standards are regularly calibrated by NIST accredited laboratories and are traceable to national standard.

Performance mapping tests can be executed for temperature, humidity and light distribution. All documentation is designed to show compliance with ICH guidelines and to meet FDA and state-of-the-art data acquisition system, **Kesar** have a long established reputation for helping client demonstrate compliance with regulatory authority, saving both time, money and preventing the occurrence of embarrassing audit visits.

Our Overseas Customers

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GDC Gulf DRUG Company · KriGen Pharmaceuticals LLC Changing Lives · BioSerene · Alidac Pharmaceuticals Limited · VETS PLUS, Inc. Global Animal Health

WHPL · NutraMed · Techno Drugs Ltd.

MPP GROUP llc · S.M. PHARMACEUTICALS Our Concern is to Save Lives · HESTER · Yash Life Sciences · Medmac Manufacturing Agricultural Chemicals and Veterinary Products Ltd

Our Valuable Customers

Cadila Healthcare Limited · LUPIN PHARMACEUTICALS, INC. · amneal PHARMACEUTICALS · torrent · CADILA PHARMACEUTICALS LIMITED · SANOFI · P&G

Piramal knowledge action care · CONCORD CONCORD BIOTECH LIMITED · NOVAGEN Healthcare Private Limited · इसरो isro · SUN · INTAS · PUNISKA HEALTHCARE

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and many more...

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NOTE : In our corporate policy of continuing product improvment, KESAR CONTROL SYSTEMS reserve the rights to change product specification without notice.

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