



Running Contract Details	
Equipment Name	Decontamination Autoclave
Running Contract Valid Till	11-04-2026
Tender Ref No	KMSCL/EP/T524(R)/8G/2024
Tendered Quantity	4
Supplier Name	M/s HiContainments International Pvt Ltd
GST No	29AAECH6711Q1Z0
Installation & Delivery Period	8 Week(s)
Up-time / PM vist	95% & 4 Visits per year
Warranty period	3 Years

Supplier`s Details		
Address	Contact Details	
Plot No.24 Bhagalaxmi co-op society P&T Colony Trimulgherry Secunderabad-500015	Contact Person	Mr B Venkata Ramana
	Phone	
	Mobile No	8886869988
	Email	sales@hicontainments.com

Item-wise Price Details							
#	Item Details	Unit Rate (Incl.all taxes & charges)	Service Charges (Through KMSCL)	Grand Total			
1	<b>Decontamination Autoclave</b> <i>Model &amp; Make : 450x450x900mm /M/s Gemerik</i>	2407200 Incl.GST :18%	168504	2575704			
		<b>2407200</b>	<b>168504</b>	<b>2575704</b>			
Annual / Comprehensive Maintenance Charges (Exl.Tax)							
Rate	4 <sup>th</sup> Year	5 <sup>th</sup> Year	6 <sup>th</sup> Year	7 <sup>th</sup> Year	8 <sup>th</sup> Year	9 <sup>th</sup> Year	10 <sup>th</sup> Year
Decontamination Autoclave							
Labour	60,000.00	60,000.00	70,000.00	70,000.00	90,000.00	1,00,000.00	1,20,000.00
Comprehensive	1,40,000.00	1,40,000.00	1,50,000.00	1,60,000.00	1,70,000.00	1,70,000.00	1,90,000.00

### **Other terms & conditions**

1. The supplier shall execute an agreement with the purchaser as per tender conditions (agreement format is given in the tender document).

2. The supplier shall submit performance security amounting to 5.00% of the value of the supply order.
3. The labour & comprehensive charges of equipment after the completion of warranty period is finalized by KMSCL as mentioned above.
4. Since discount rate is not applicable for equipment under Running Contract of KMSCL, purchase/supply order can be issued directly to supplier at the given rate with tax & other charges (exclusive of KMSCL service charges).
5. If purchase/supply order is issued directly to the supplier, KMSCL service charge need not be paid. But the copy of the said order may be forwarded to KMSCL for information.

## **Technical Specification**

### **Equipment :Decontamination Autoclave**

#### **Equipment: Decontamination Autoclave**

- I. The autoclave shall be rectangular, steam operated, high pressure high vacuum, double door suitable for horizontal loading of waste. Size of the autoclave should not exceed 450\*450\*900mm (length\*breadth\*depth) which should be suitable for the site. The autoclave shall be free standing type. The autoclave should be complete with a compatible inbuilt steam generator. Stand of SS make should be provided if needed. Decontamination autoclave of BSL3 shall be placed on the non contained side. Service panel, steam boiler and valves should be on the non contained side so that the service team shall not enter on the lab side. Flow of waste is from the contaminated side to the non-contaminated side.
- II. All internal piping and valves should be included.
- III. Capacity of the autoclave: 150 - 200L
- IV. **CONSTRUCTION**

1. The chamber shall be constructed of heavy duty solid high quality SS of 316L or equivalent with full argon welding. The chamber material and construction shall meet ASME standards for unfired vessels. The chamber shall be duly reinforced with the help of carbon steel.
2. Sliding doors and jackets shall be constructed of stainless steel sheet of 304 grade. Doors must be provided with automatic safety locking and unlocking devices. All doors must be gasketed to ensure a high temperature seal.
3. Chamber and doors must be designed for working under positive pressures up to 31 psi at temperature up to 135 degree Celcius. The chamber floor should be slightly sloped towards an internal drain to facilitate drainage. Drain should be protected by a SS mesh. Sterilization temperature 121° C for 60 minutes.
4. The autoclave shall be insulated with 80 mm chloride free mineral wool or any latest alternative technology with industrial standards to minimize heat loss and restrict the skin temperature within reasonable limits so as not to cause burn due to accidental touch.
5. Pipes and fittings shall be of stainless steel and bronze. Valves shall be ball type, self cleaning type.
6. Key locked main power switches should be provided for additional safety and security.
7. The autoclave must be complete with a vacuum pump of required capacity. Should have low operating sound and should be mounted on a vibration isolator if needed.
8. The autoclave shall be complete with a steam generator compatible with the autoclave and with adequate capacity. The steam generator shall be fabricated from SS316L with industrial immersion heater of reputed make. Steam generator should have an insulation of up to 50mm thick chloride free mineral wool with rigid aluminium housing. Should have a low water alarm. All service panels and vacuum pump arrangements should be outside the containment area.
9. The immersion heaters shall be heavy duty type in stainless steel construction. The heater shall be of suitable capacity so as to give the required operating temperature and pressure in less than 30 minutes of switching it on and should be capable of maintaining the pressure and temperature thereafter during various load cycles of the autoclave.
10. The steam generators should have automatic pressure control and other safety features like low water cut off to safeguard heaters etc. The steam generator should be complete with all accessories, inlet, outlet, drain connections etc. Shall be electrical operated, shell and tube type and should be compatible with the autoclave.
11. Piping: All process valves should be SS and should be pneumatically operated piston valves for longer trouble free operations.
12. All hot pipes should be properly insulated. Solid silicon rubber ¼ ” thickness gasket is preferred (passive gasket design). Proper door gaskets to ensure pathogens shall not escape. Only after the chamber reaches atmospheric pressure does the door open. Unless the decontamination cycle is 100% complete, the containment side door shall not open.
13. The terminals and contractors should be housed in a tight cabinet and other electrical components should be directly mounted on to the sterilizer.
14. Air filter (HEPA ) should be provided for filtering the atmospheric air before entering the chamber.

15. The temperature sensor should be PT100 type sensors which conform to Class A of IEC 571 standard with an accuracy of 0.1°C. The pressure should have an accuracy 1% over the range 0-6 bar. 0-0.2? internal HEPA filter & external HEPA filter is required.

## V. Controls

1. The autoclave shall be fully programmable with a microprocessor and designed to control and monitor a wide variety of sterilizing cycles, depending upon the load to be sterilized. A manual operation facility shall also be provided as a standby in case of control failure.
2. The automatic control shall have following features (but not limited to) :
  - a. Audible alarms in case of any cycle interruption or cycle failure.
  - b. The autoclave should be equipped with a printer to record and print relevant information concerning operation during the cycle such as temperature, pressure, cycle time etc.
  - c. The control system should be self diagnostic and must provide a fault message to the operator.
  - d. Cycle parameters should be adjustable with the help of codes to prevent adjustments by non-authorized persons.
  - e. Display of 7 to 9 inches should be there.
  - f. Decontamination autoclave must be connected to the building management system (BMS) for efficient control and monitoring of the system.

## VI. Safety features :

1. The door should not be opened if the chamber is pressurized. Electromechanical door interlocking required.
2. Cycle should not start if the door is not closed properly. When the cycle fails from the non-containment side it should not open.
3. Pressure monitoring system should be available in the chamber.
4. Access to other functions such as setting parameters, calibration, maintenance etc should be restricted to authorized persons.

## VII. ACCESSORIES/SPARES

1. The Autoclave shall be complete with following accessories/spares :
  - a. Jacket Steam Valve, Chamber Steam Valve ,Safety Valve Exhaust to Drain, Pressure Reducing Valve, Jacket and Chamber Steam inlets, Moisture separator, Rupturing Disc, Non return valve sand strainers, Steam Filter, Solenoid Valve /s Vacuum break valve, Vacuum break filter, Compound Gauge, Pressure Gauge, Safety Valves ,Steam Trap, Digital Thermometer
  - b. Jacket drain valve, Electrical Control/Panel with printer to record cycle parameter at defined frequency. Jacket drain, chamber drain shall be connected with the kill tank system.

## VIII. Cycle Documentation And Network Communication:

1. The control should have an independent PLC to monitor, compare all critical parameters.
2. The control system continuously cross checks the sterilizer safety system and limits set as per EN 285 standards.
3. The sterilizer should have either RS232 or Ethernet port to facilitate connectivity for network applications.
4. Storage facility of more than 5000 cycles.
5. Sterilizer should be equipped with pre-programmed cycles > +5 nos
6. Program for Bowie Dick test should be included.
7. Vacuum cycle for garment decontamination is required. Cycle should start only when both doors are closed. The non-containment door is locked until the cycle completes.

## IX. Operating Standards

1. The vacuum autoclave shall give a minimum of three vacuum cycles to purge the autoclave of all the air.
2. Operating temperature shall be 121°C or 135° C, as per programmed cycle parameters, which will be discussed and finalized with the engineer.
3. The autoclave should completely kill the approved biological indicator at the maximum design capacity. Biological indicators shall be *Bacillusstearothermophilus* spores using vials or spore strips, with at least  $1 \times 10^6$  spore/ml. The steam condensate shall meet EUWFI Specifications.

## X. Installation and Testing

1. Installation: The autoclave shall be installed/mounted on a sturdy tubular stand of SS or as per cite requirement.

2. Hydraulic Test: The autoclave chamber shall be tested to 1.5 times of the working pressure, sterilization jacket to twice the working pressure. The test pressure will be maintained for a minimum of 2 hours.

The certificate should be submitted.

## **XI. Canopy Hood**

Canopy hood shall be provided above the loading and unloading doors of the Autoclave to capture steam vapour and heat generated by the equipment. The canopy hood on the containment side shall be ducted and connected to the HEPA filtered laboratory exhaust and on the non-containment side shall be ducted and connected to normal exhaust. The Canopy hood exhaust air capture velocity shall be minimum 50 fpm.

XII. All the items including the biological indicator and chemical indicators for test run should be supplied.

XIII. All the necessary certificates should be provided during the technical bid along with a detailed brochure. Heater coil and gasket should be included under warranty.

XIV. The bioseal after installation of the equipment around its sides should be included. Bioseal for chamber and door, bioseal for autoclave perimeter plate against wall are required to ensure no air enters into containment to the clean side.

XV. The material of manufacture should be able to withstand temperature and the pressure maintained in a BSL 3 lab for years .Any issues with material occurring should be replaced free of cost .

XVI. Pipeline Connection and valves (if any ) from the water supply line ,drain etc from the output provided inside the lab should be included. All the drain pipe should be permanently connected to the facility drain system.

XVII. The unit should be supplied with racks for loading and also for keeping the autoclaved reusable materials.

XVIII. On winning the bid, the vendor must coordinate with the civil work engineer and project consultant of the BSL3 lab and ensure the compatibility and integration of the supplied equipment and make necessary changes to the equipment dimensions if necessary. The dimensions of the autoclave are fixed in the design with closed tolerance; the manufacturer should match to the design. Bioseal shall be tested with smoke study after the installation.

## **XIX. Compliance:**

1. The product should meet the following provisions and standards: Europe EN285 for large autoclave.
2. The sterilizer should have European CE with MDD 93/42 EEC or US FDA Certificate.
3. Pressure equipment directives: PED 97/23 EC.
4. ISO 13485:2003 Quality system for medical devices.

XX. A detailed technical brochure of the equipment and necessary certificates should be attached in technical bid which is mandatory for selection. Site should be visited before participating in the tender for exact measurements

XXI. The details of the installed locations should be submitted during the technical bid.

## **Note:**

1. On winning the bid, the vendor must coordinate with the civil work engineer/project consultant of the BSL3 lab and ensure the compatibility and integration of the supplied equipment and make necessary changes to the equipment dimensions if necessary
2. If CDSCO (Central Drugs Standard Control Organization) certification is required for the import and marketing of the equipment, then the same shall be submitted along with the technical bid
3. Warranty exclusions if any shall be discussed at the time of prebid meeting else the tender condition as per clause 6.31.20 shall prevail