



## **SPECIFICATION**

### **Laboratory Autoclave**

#### **1. Scope**

This Specification describes the requirements for a Laboratory Autoclave.

#### **2. Definitions, Acronyms, and Abbreviations**

The following definitions, acronyms, and abbreviations shall apply throughout this Specification unless defined otherwise hereinafter:

- IAEA shall mean International Atomic Energy Agency
- PBGL shall mean Plant Breeding and Genetics Laboratory in Seibersdorf, Austria

#### **3. Requirements**

##### **3.1. Functional and Performance Requirements**

The System shall meet the following functional and performance requirements:

3.1.1. The Laboratory Autoclave shall serve for sterilization of liquids, culture media, instruments, glassware, plastics, pipette tips, waste such as contaminated media and other laboratory items. It shall have the chamber capacity of minimum 160 Liters. The autoclave shall be either a horizontal, tabletop and front-loading type or vertical top-loading type.

##### **3.2. Technical Requirements**

The System shall meet the following technical requirements:

- 3.2.1. An internal chamber volume of minimum 160 Liters
- 3.2.2. Front loading, horizontal, or vertical, top-loading
- 3.2.3. Manual control panel
- 3.2.4. Flexible temperature load sensor
- 3.2.5. Integrated steam generator
- 3.2.6. Internal heating elements within the autoclave chamber
- 3.2.7. Automatic demineralized water feed for steam generation
- 3.2.8. Automatic waterfilling and draining system
- 3.2.9. Rapid cooling for efficient and safe cooling of liquids
- 3.2.10. Rapid drying for solids
- 3.2.11. Prevention of load deformation, cracks or spills
- 3.2.12. High precision sterilization control system
- 3.2.13. Independent temperature and pressure monitoring
- 3.2.14. Cycle information recovery in the case of power failure or cycle interruption
- 3.2.15. Alert system (door and fail)



3.2.16. Door Safety preventing the operator from opening the door when chamber is pressurized and until the temperature is below a specified safe level

3.2.17. The autoclave shall be designed for easy servicing allowing maintenance access to all components

3.2.18. EU safety class

3.2.19. Nominal voltage 230 V

3.2.20. Current 2.7 (A)

### 3.3. Optional Technical Requirements

3.3.1. Rapid cooling reducing cooling time by 75%

3.3.2. Pressure drops prevention

3.3.3. Efficient Air Removal by Optional Vacuum System

3.3.4. Password protection

3.3.5. Timer for starting programs

3.3.6. Special program for waste sterilization with pulsed heat-up for more efficient air exhaust

3.3.7. Programmable automatic door-opening on completion of program

3.3.8. Vacuum system for sterilization of solids and waste materials in disposal bags

3.3.9. Temperature holding function for liquids after program finished

3.3.10. Stainless steel wire baskets and containers for the offered autoclave

3.3.11. A maintenance contract with an annual maintenance visit

## 4. Marking

The System shall have all safety markings in English language.

## 5. Packing

The System, for the shipment by sea, land and/or air to the IAEA, PBGL laboratories in Seibersdorf, shall be packed in accordance with international standards that are applicable for the shipment by air of this kind of equipment.

## 6. Quality Requirements

6.1. The System shall be manufactured, shipped and installed in accordance with the Contractor's ISO quality assurance system or an equivalent quality assurance system.

6.2. The Contractor shall document the compliance with this quality assurance system.

## 7. Testing and Acceptance



- 7.1. The System, prior to shipment, shall be tested for conformance of the System with manufacturer's performance specifications and the minimum requirements specified herein.
- 7.2. The System, after installation, shall be tested by the Contractor together with the PBGL to demonstrate that the performance meets the manufacturer's performance specifications and the minimum requirements specified herein as determined by the IAEA.
- 7.3. The results of the testing of the System shall be documented by the Contractor in an acceptance protocol that shall be signed by the PBGL.

## 8. Installation and Training

- 8.1. The Contractor shall install the System, water connections and air pressure at PBGL laboratories in Seibersdorf.
- 8.2. The Contractor shall provide training to a maximum of five (5) PBGL staff. Commissioning by service technicians shall include instruction of the user including basic instructions, operation of the device, security and safety issues while operating the equipment and programming of the equipment.

## 9. Deliverable Data Items

The Contractor shall provide two (2) complete sets of operation and servicing manuals and technical drawings in the English language.

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