SPECIFICATION

Industrial washing unit for larval diet trays

1. Scope

This specification describes the requirements for an Insect Larval Diet Tray Washing Machine (System) for use by the IAEA Insect and Pest Control Laboratory (IPCL) located in Seibersdorf, Austria.

2. Definitions, Acronyms, and Abbreviations

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

LDTWM – Larval Diet Tray Washing Machine

mm – Millimetres

l/h – Litres per hour

IPCL – Insect Pest Control Laboratory

°C – Degrees Centigrade

PVC – Polyvinyl chloride

3. Specification Requirements

The System shall meet the following requirements:

3.1.1. The System shall be a high-performance continuous cleaning line for washing and disinfection with capacity of 150 trays per hour (trays dimensions 450 mm wide x 750 mm long x120 high mm);
3.1.2. The System shall clean the trays arranged upside down in either a longitudinal or a transverse position;
3.1.3. The System shall have an automatic regeneration of the washing solution by means of a two-stage filtration system;
3.1.4. The structure, cladding and gensets built into the system shall be made of stainless steel;
3.1.5. The System shall be easy to clean and maintain based on spacious door access;
3.1.6. The System shall have a belt width between 850mm to 1000mm and a passing height between 450mm to 600mm;
3.1.7. The System shall have a maximum length of 3500mm;
3.1.8. Compatible with the IAEA IPCL building electrical system and conforming to the electrical standards applicable to general mains powered equipment in Austria (230V/1ph, 400V/3ph);
3.1.9. Shall have an operator station; and

3.1.10. The System shall allow to have a washing temperature range between 25°C and 70°C.

3.2. Operational Constraints

The System shall meet the following operational constraints requirements:

3.2.1. Operate within the available space of the IPCL building room PP05 as detailed in Fig.1. Remaining room area will be used for stock dirty trays and washing materials and supplies. The following building/room information shall be taken into consideration:

3.2.1.1. Door 1: Width = 1550mm; Height = 2120mm. Direct entrance from outside building loading area;
3.2.1.2. Door 2: Width = 1500mm; Height = 2100mm;
3.2.1.3. Door 3: Width = 1500mm; Height = 2100mm;
3.2.1.4. Corridor, inside building: Width = 2000 to 2010mm; Height = 2100mm limited by corridor doors.

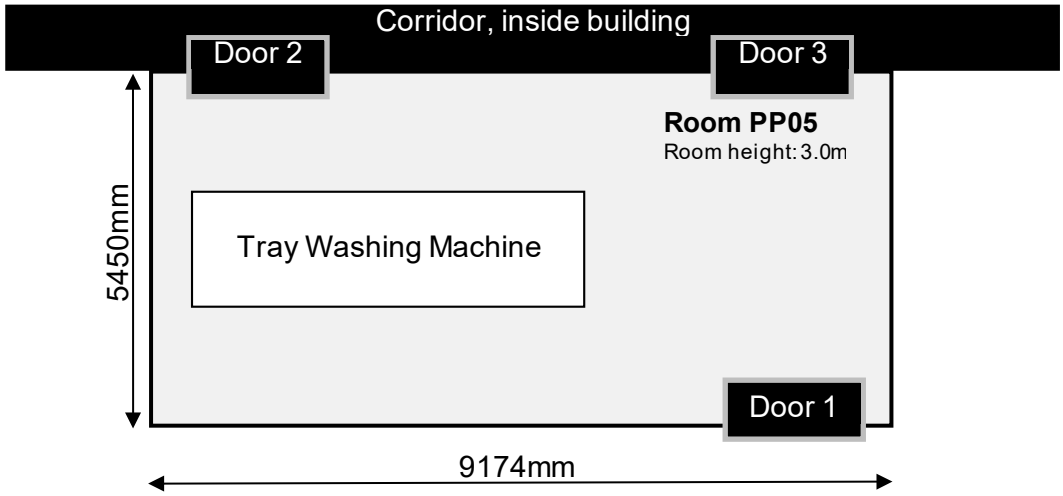

Fig. 1 – Room plan PP05

3.3. System Material Requirements

The materials used for the production of the System shall meet the following requirements:

3.3.1. The System will be used for washing insect larvae diet trays which follow standards for food preparation, hence the System shall be constructed of stainless steel;
3.3.2. Stainless steel shall also be used for the support structure as the System will operate in an environment where low concentrations of acid are used;
3.3.3. The System shall have additional protection on high impact and frequent use surfaces; and

3.3.4. The entire System shall be made of stainless steel or with exemption of the conveyor belt made of PVC.

3.4. Safety System

The System shall meet the following safety requirements:

3.4.1. Mechanical equipment safety systems suitable for laboratory operations including, without limitation, mechanical lockout devices, audible warning systems, and interlocks.

4. Marking

The System shall meet the following marking requirements:

4.1. Equipment nameplate per item of equipment with the following inscriptions, model, manufacturer's details, installed motor capacity, and safety information.

4.2. All markings (including safety markings) shall be in English language.

5. Packing

5.1. The System, for the shipment to the IAEA, shall be packed in accordance with international standards that are applicable for the shipment by air of this kind of equipment.

5.2. Certification of packaging materials and overpacks (where applicable) shall be sent to the end user prior to shipment.

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.

6.3. The System shall have a minimum design life:

6.3.1. Mechanical components - 10 years;

6.3.2. Electrical components - 10 years;

6.3.3. Structural components - 15 years; and

6.3.4. Frequent use surfaces - 5 years.

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 IAEA 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 IAEA.

8. Installation and Training

8.1. The Contractor shall install the System at IAEA, Insect and Pest Control Laboratory located in Seibersdorf, Austria.

8.2. The Contractor shall provide one day training for up to four (4) staff of the IAEA in the operation and maintenance of the System at the IAEA's location immediately after the installation of the System.

9. Support

9.1. The System shall be supplied with a comprehensive warranty including labour, spare parts, tooling, and transport, valid for one (1) year from the date of the acceptance protocol signed by the IAEA as specified in section 7.3 above.

9.2. At the request of the IAEA, following the warranty period, the Contractor shall provide two (2) years of maintenance support.

10. Deliverable Items

The System shall satisfy the following deliverable items:

10.1. Report confirming that the System is produced and installed to ISO standards, and in accordance with requirements in section 7.1 and section 7.3 above, in Adobe PDF format.

10.2. Installation, Operation, Service, and Maintenance Manual, in the English Language, in Adobe PDF format and printed bound folders (4 duplicates in total).

10.3. Recommended spares list in Adobe PDF format.

11. Lead Time

The System should be delivered to the IAEA facility within five to six (5 – 6) weeks after an order placement with the aim to meet the intended objective for acceptance by 15 of July 2019.