HRHT

Fully Automated Food Microbiology Station

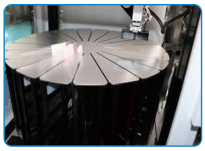
Overview

Designed for food microbiology tests, the workstation automates the entire process of sterile microbiology testing. It can process 20 samples at one time, up to 3 bacteria pouring methods and 1 spreading method can be performed. It solves the existing problems of testing time, sample quantity, sensitivity and operator contamination in traditional microbiology testing methods.

Application

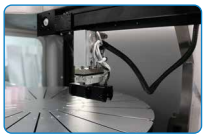
The system can automatically complete the determination of total colony count, coliform count, bifidobacteria test, Staphylococcus aureus test, Bacillus cereus test, Clostridium perfringens test, bifidobacteria test, lactobacillus test, Enterobacteriaceae test, Listeria monocytogenes test, molds and yeast counts, etc.

Components



Bag Opening

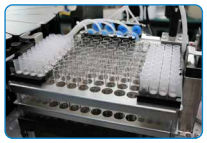
Code Scanning



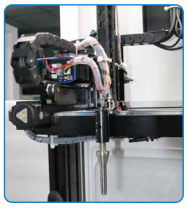
Robotic Arm

Liquid Flapping and Homogenizing

Gradient Dilution



Pipetting



Petri Dish Storage

Inkjet Printing

Bacteria Spreading

Agar Filling

Features

1

Fully automated design: with built-in standard sample preparation programs for multi-species bacteria testing, the instrument could complete the whole process automatically after the user places samples and consumables well (Petri dishes, tubes, etc.).

2

Code scanning module: automatically identifies the QR code/barcode on the sterile bag, enters sample information into the system, and determines the specific programs.

3

Petri dish storage module: up to 396 empty and agar-filled Petri dishes can be stored to meet the spreading and pouring method requirements.

4

Liquid flapping and homogenizing module: dilute the samples with 10 times liquid, then homogenize the sample by auto-flapping. The integrated heat-sealing function retains the original homogenizing liquid.

5

Gradient dilution module: perform 10, 100, 1000 times gradient dilution for 20 samples. Cross-contamination is avoided by adopting 5ml disposable pipette tips.

6

Agar thermostatic function: magnetic stirring and thermal insulation functions ensure agar does not solidify or deposit. The pipeline is easy to dismantle and sterilize.

7

Pipetting module: with high precision, cross-contamination is avoided by adopting 5ml disposable pipette tips.

8

Bacterial spreading module: rotary and uniform spreading for each sample by an individually soft spreading stick to avoid cross-contamination and increase efficiency. After spreading, the agar can be overlaid by the top medium.

9

Agar filling module: up to 3 kinds of agar can be filled and shaken, and multi-species bacteria can be performed in one test. Working under metal bath insulation, the filling tube is reusable and easy to dismantle to sterilize.

10

Robotic arm: 2 sets of high-precision robotic arms with intelligent control, the program centralizes the scheduling of all modules to improve test efficiency.

11

Inkjet printing module: inkjet prints the information on Petri dishes, which makes it easy to distinguish the sample, gradient, parallel sample and other information.

12

UV sterilization: UV sterilize the system to prevent airborne bacteria contamination.

13

Aseptic environment: a laminar flow hood is set on top of the equipment, and the internal micro-positive pressure of the system ensures aseptic.

14

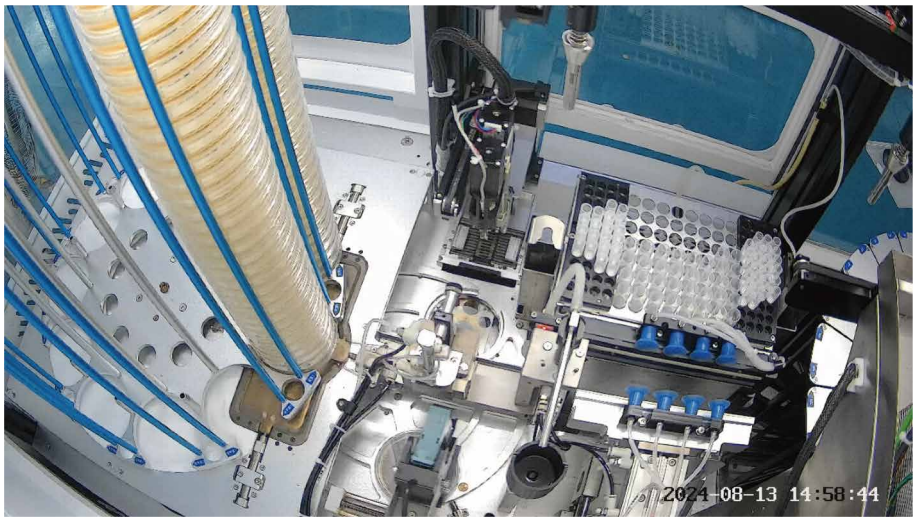
Multi-terminal remote monitoring: the software's main interface and real-time images of the internal operation can be remotely monitored through mobile phones and computer clients.

15

Multi-functionality: can be used individually for sample flapping, pipetting, gradient dilution, Petri dish filling and other routine laboratory operations.

HMI

Main Interface



Remote Monitor

Technical Parameters

Item	Technical Specification
Model	HRH-B20
Sample Throughput	20
Bacteria Throughput	3 pouring + 1 spreading assay (e.g., colony count, coliforms, mold yeast, aureus)
Petri Dish Capacity	396
Sample Processing	140 min (4 bacteria), 70 min (total colony & coliform)
Liquid Filling	‹1% RSD (n=25@250mL transfer volume by weight). Accuracy ±2%
Flapping Homogenize	3 ~ 12 squeezes/sec
Robotic Arm	Dual robotic arms, accuracy 0.1mm
Gradient Dilution	10/100/1000 times gradient dilution，5ml pipetting, Prec. ≤1%RSD (n=10@5mL), Acc. ±2%
Agar pouring	3 agar filling ports, which can work independently with the shaking module. Agar volume and shaking speed can be set
Pipetting	Volume ≤ 5ml. Precision ‹ 1% RSD (n=10 @ 5mL). Accuracy ± 1%
Air supply	30L, 5Bar
Power Supply	220VAC 50Hz
Weight	Approx. 400kg
Dimensions	1540mm×760mm×2200mm

Configuration

Host	1 set
Industrial Control PC	1 set
Air Pump	1 set
Dedicated Control Software	1 set
Φ6 PU Tube	3m
Dilution tube	100 ea
5ml Pipette tips	200 ea
90mm Petri dish	500 ea
Sterile sample bag	20 ea
Certificate, Warranty Card, User's Manual	1 set

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