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AIPLAK

Real-time
digital microbiology

The AIPLAK revolutionizes laboratory workflows by integrating advanced incubation with a fully digitalized process and automated sample sorting. It can be further enhanced with additional AI algorithms to automatically segregate samples and/or trigger alerts upon detecting growth.

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Its compact, modular design with independent incubation chambers and *dual image capture* optimizes workflow management by prioritizing samples based on their criticality.

Processes
covered

Automated Incubation

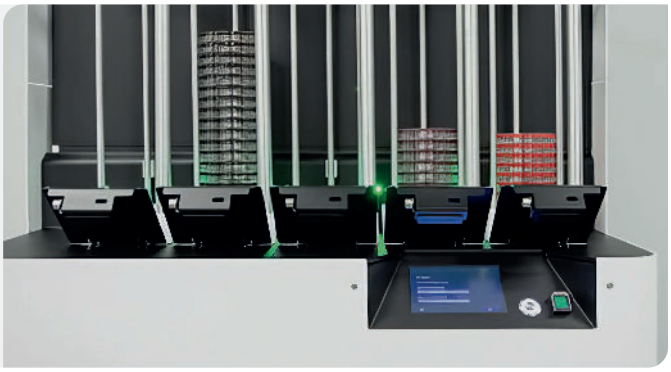
AIPLAK offers modular, efficient, and accurate incubation through a dual incubation chamber system. These chambers are fully customizable to align with laboratory protocols, enhancing flexibility and precision in the incubation process while ensuring optimal performance across various applications.

Digital microbiology

A specialized desktop application that ensures efficient data management, error reduction, and full workflow digitization. Designed to meet various laboratory needs, it digitally manages and identifies samples, enhancing efficiency by eliminating physical contact and optimizing processes for greater precision and productivity.

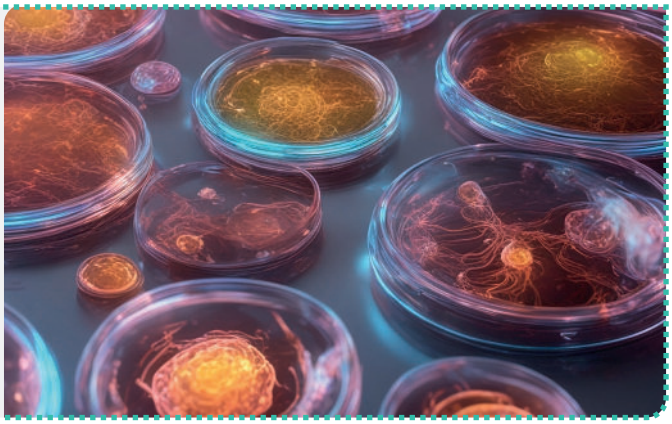
Samples output sorting

After the analysis is performed by the technician through the graphical interface, samples are either discarded into the waste bin or sorted and placed in the output carousels. The sorting order can be configured by the laboratory through the system settings. This arrangement facilitates the transfer of samples to subsequent interpretation processes.



AI modules*

Incorporate various artificial intelligence modules into your laboratory operations to optimize technician utilization for higher-value tasks. Sener's AI Modules platform provides algorithms tailored to your consumables and workflow, including continuous growth monitoring, alarm generation, growth/no-growth segregation, among others.



AI Modules optional

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6 reasons for *choosing AIPLAK*

Understanding the need for innovative solutions that make tasks easier and more efficient, AIPLAK is designed to support smooth operations, minimize disruptions, and help laboratories maintain reliable and consistent results while improving overall workflow.

Smart incubation

AIPLAK provides high-quality and customizable incubation with precise temperature and environmental control, ensuring optimal conditions for samples.

Compact design

AIPLAK is the most compact system, requiring minimal space in the laboratory, as it does not require perimeter clearance around the entire instrument.

Modularity and flexibility

Connected to AUTOPLAK or as standalone system, 2-independent incubation chambers and dual imaging system, everything to meet different laboratory needs and processes, with optional features to enhance functionality.

Digital Microbiology

Complete digitization of samples readings during and after incubation to facilitate decision-making by the laboratory, with the option to complement the system with supplementary artificial intelligence algorithms for advisory support.

Dual-protocol algorithms

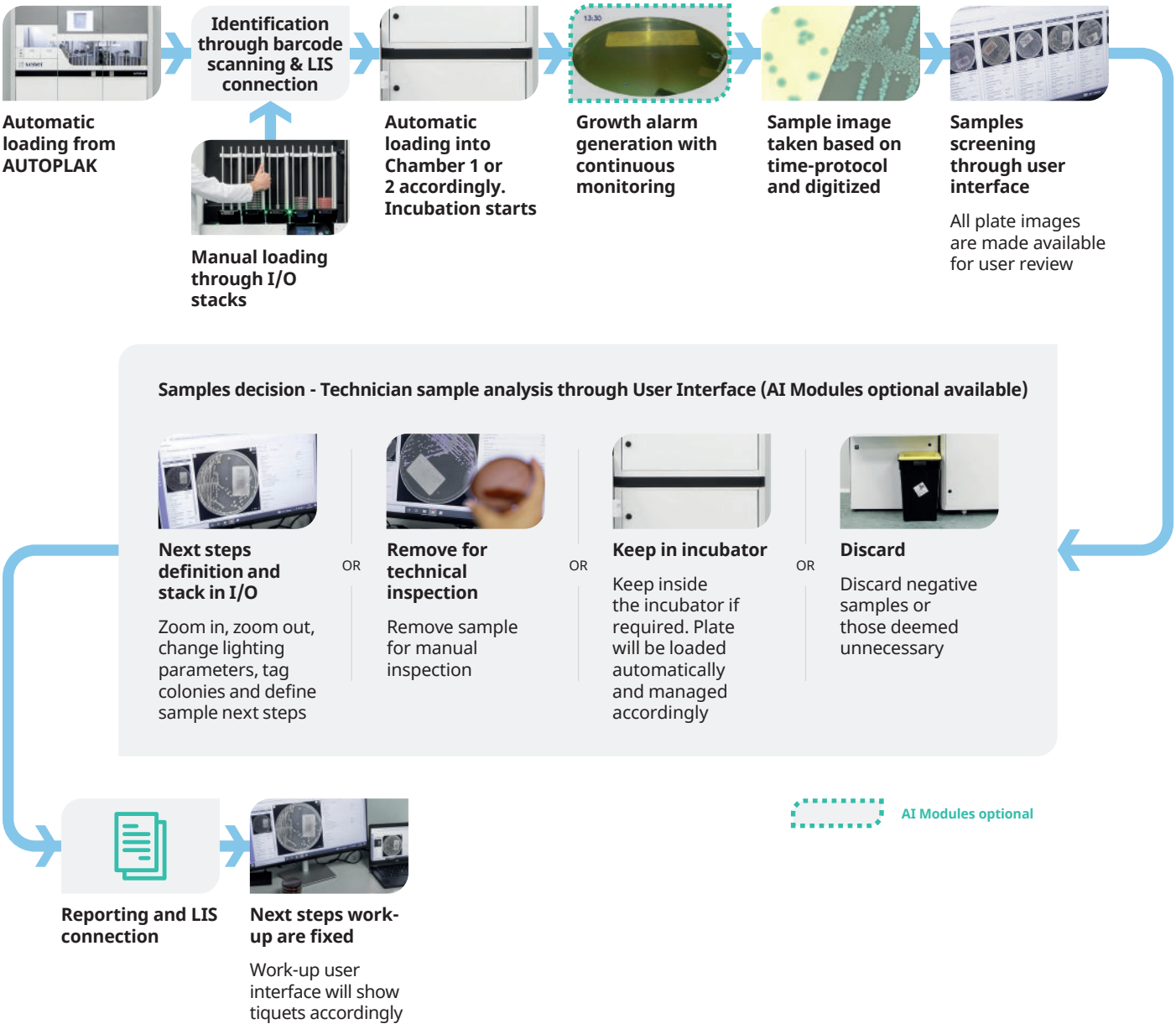
The AIPLAK system is scalable with numerous algorithms, enabling sample management through time-based and growth-based protocols, thanks to its continuous growth monitoring system.

Quick to install and ergonomic

AIPLAK is quickly installed without disrupting laboratory workflows and is optimized for ergonomic use.

Detailed *workflow*

The AIPLAK system provides a fully integrated solution for the entire microbiological workflow. From incubation to digitization and sample management, it automates key processes to reduce manual handling and streamline laboratory operations. Whether operating as a standalone unit or connected to AUTOPLAK, AIPLAK ensures samples are efficiently incubated, imaged, sorted, and prepared for subsequent analysis. The system can also be enhanced with advanced AI algorithms, supporting intelligent decision-making and optimizing productivity throughout the workflow.



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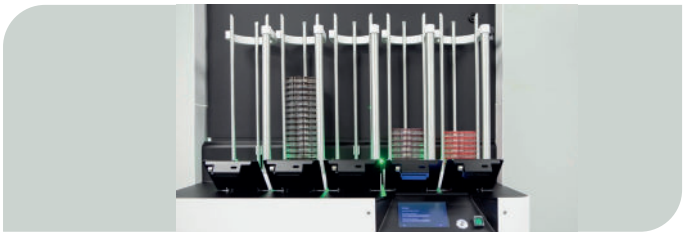
Advanced *features*

Stacks for loading/unloading



AIPLAK features 5 configurable stations for manual input or sample output after incubation. With a total capacity of 150 samples (30 per station), the system allows for flexible sample output configuration to streamline subsequent workflows.

Digital Microbiology

Aiplak digitizes the incubation and reading of samples in a rigorous and reliable way, ensuring precise control of conditions, consistent results, and full traceability throughout the analysis process, while reducing manual handling and potential human errors.

High quality image system

AIPLAK's main imaging system delivers high-quality images to assist the laboratory in making informed decisions, with the ability to detail colonies, perform zoom, and analyze features with precision.

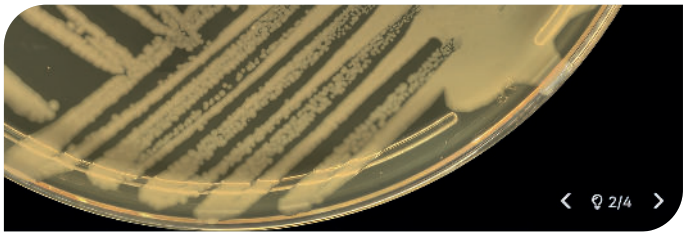
Double incubation chambers

AIPLAK features 2 independent and configurable CO_2/O_2 incubation chambers, offering the laboratory flexibility to integrate different types of protocols within the same automation line.

Discard workflow

AIPLAK features a simple and intuitive sample disposal system, allowing technicians to easily remove and discard samples once the analysis process has been completed, ensuring efficiency, safety, and smooth laboratory workflow.

Different lighting settings



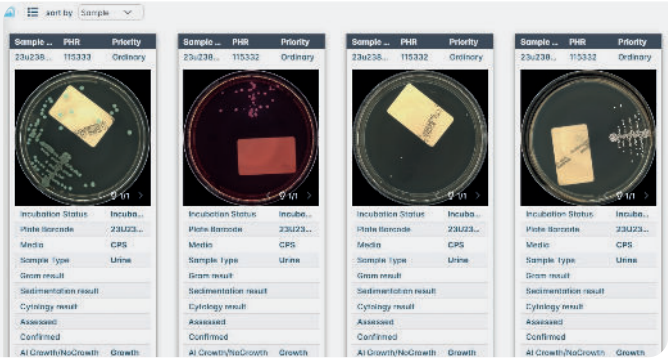
The system uses adjustable lighting configurations, enhancing sample visibility and contrast under different conditions, which improves accuracy in microbiological analysis.

Digital
Microbiology

This specialized desktop application ensures efficient data management and full digitization of laboratory workflows. It enables digital identification, tracking, and management of samples, reducing human error and eliminating manual records. By automating processes, the system improves accuracy, productivity, traceability, and overall operational efficiency while supporting high quality and precision standards.

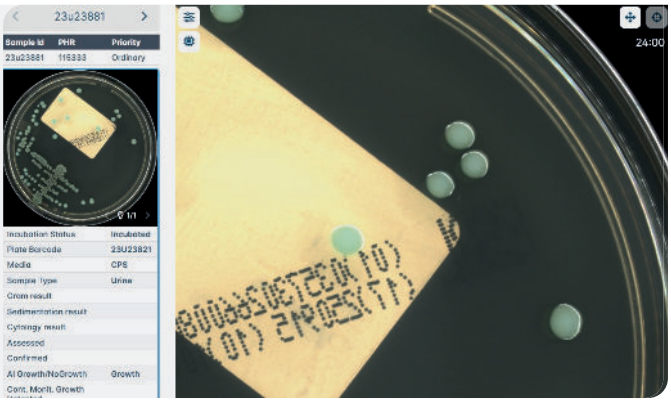
User friendly webapp interface

Interface designed to navigate easily and intuitively through all available features. It supports multiple users and profiles, providing personalized access and functionality according to each role. Clear, user-friendly experience that simplifies daily operations and enhances workflow efficiency.



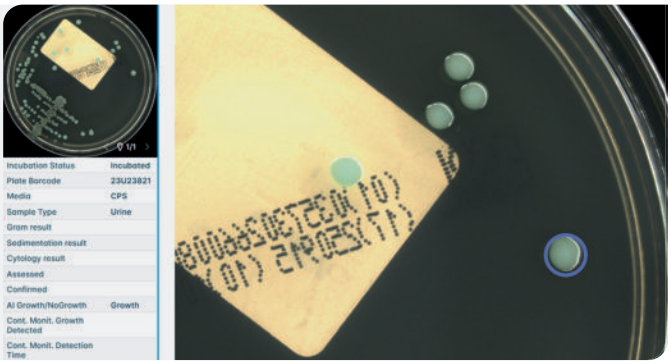
Zoom in/out with different lighting settings

Users can zoom in and out effortlessly while observing samples under different lighting conditions. This provides enhanced visualization and flexibility, enabling detailed inspection from multiple perspectives. Users can obtain a clearer and more comprehensive view, improving analysis accuracy and workflow efficiency.



Tag and define work-up processes*

Users can easily tag and define work-up processes, enabling clear identification and organization of each step. Assign labels, categorize procedures, and configure parameters according to specific protocols: ensure accurate tracking, simplify workflow management, and enhance overall efficiency in sample processing.



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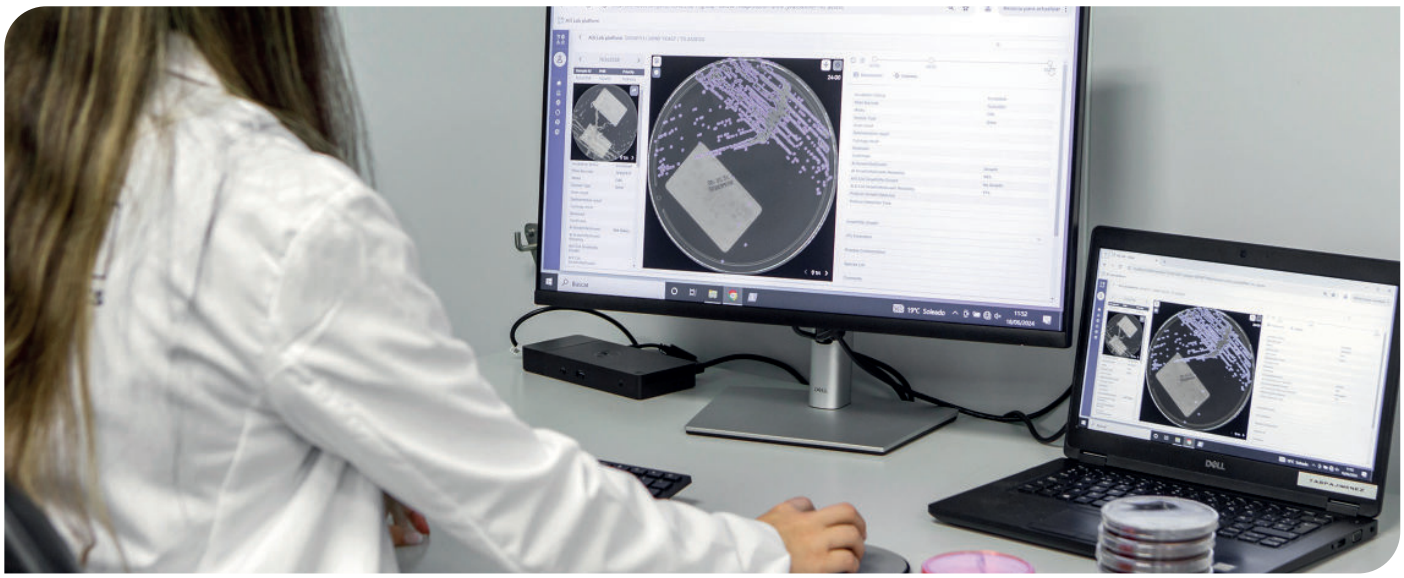
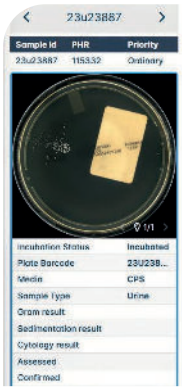
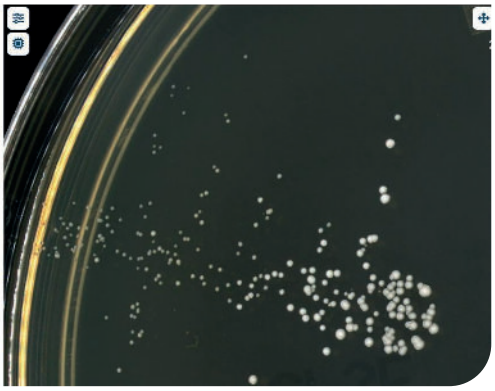
Aesthetic and Physical *Characteristics*

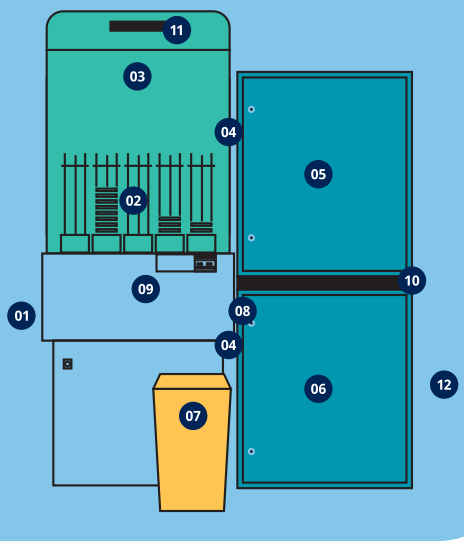






Physical

01	Connection to AUTOPLAK (optional)
02	Input / Output stacks
03	Main imaging system
04	Continuous monitoring imaging system
05	Upper incubation chamber
06	Lower incubation chamber
07	Rejection area
08	Individual sample unloading dock
09	Instrument technical user interface
10	Sample transfer line (for future variants)
11	Light status
12	External user interface station



General *specifications*

Dimensions	100cm D x 170cm W x 225 cm H
Weight	~900 kg
Clearance area	Only frontal 80cm
Electrical Power	220–240V Single Phase AC, 2000 W max, 50/60 Hz, 10A for 200–240 VAC operation
IP CEI 60529 degree of protection (For indoor use only)	IP 20
Noise level	LpA <65 dB (A)
Average and peak power	2000 VA / 2400 VA
Power plug	IEC C14 plug
Temperature (operating)	18°C to 27°C
Temperature (storage)	0C° to 40°C
Relative humidity	25% to 75% (without condensation)
HEPA	HEPA filtered-area
Degree of pollution	II
Maximum operating altitude	1500 m
Installation category	II
Operator interface	5” local touch screen, and web based HMI accessible from any Pc connected to the network
Interface LIS interface	Available upon request
Network	Ethernet 10/100/1000 MB
Operating system	W10
Capacity of plates Upper Chamber	420 plates
Capacity of plates Lower Chamber	420 plates
Total capacity	840 plates
Total capacity visible for continuous monitoring	312+312 plates
Processing capacity (average per hour)	See image system specifications
Certifications	CE, IVDR, UL, CSA and in compliance UNE-EN 61010-2-101: Safety requirements for in vitro diagnostic (IVD) medical equipment.

Functional *specifications*

Media plate specifications*

Base diameter	87 mm <D <88 mm
Cover diameter	(d + 2 mm) <D <(d + 5.5 mm), subject to the following condition: (91 <D <92)
Plate height	14 mm <H <15.2 mm
Cover height	6 mm <H <8 mm

Incubation specifications

Total 2-chambers variant capacity	840 plates
Atmosphere	Each chamber is configurable: O2 or CO2
Temperature range	30 to 40ºC
Accuracy	+/-1ºC
Heat production	600 watts heaters on each chamber
Connection up to 4-incubators	(new variant)

Main Image system specifications

Camera	20Mpixels
Processing capacity	180 plates per hour
Light sources	Four independently configurable light sources, 3 front and one back lights
Backgrounds	Black and illuminated background

Continuous monitoring image system specifications

Camera	5Mpixels
Processing capacity	1600 plates per hour

User Interface specifications

UI	Web based HMI accessible from any Pc connected to the network, recommended 27” screen monitor

Plates Barcode specifications

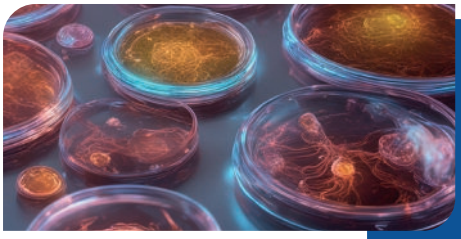
Default barcode	Bottom-printed by AUTOPLAK
Other standards	At request

* Same as AUTOPLAK

Enhance with *AI Modules*

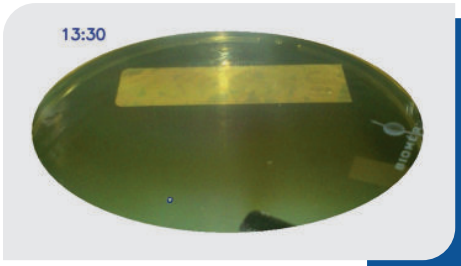
AIPLAK can be optimized by integrating a set of algorithms designed to improve efficiency and accelerate the diagnostic process for laboratory technicians. These algorithms operate across both imaging systems, enabling samples to be classified according to the presence or absence of growth, as well as to monitor microbial growth as it occurs and generate alerts once growth is detected.

Urine segregation module



AI-based algorithm designed to classify urine samples based on microbial growth, distinguishing between those that show bacterial growth and those that do not. The algorithm aims to streamline laboratory workflows, allowing technicians to make faster and more accurate decisions regarding sample processing and analysis.

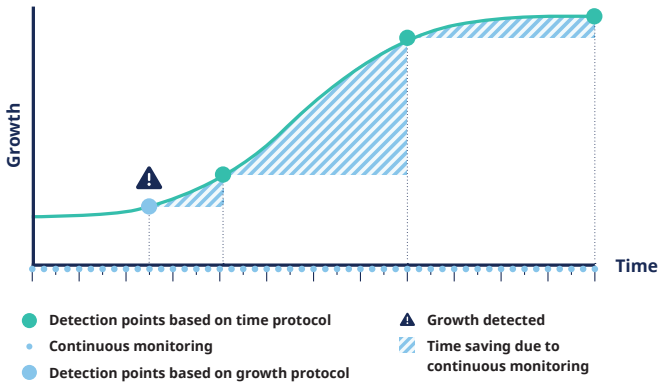
Growth alarm generation



With its advanced secondary imaging system, AIPLAK enables real-time growth monitoring, generating alerts and accelerating sample diagnostics. This innovative feature significantly shortens incubation times by providing continuous, detailed sample data, allowing for faster technical interpretation. These capabilities enhance laboratory efficiency and support quicker decision-making in critical microbiology workflows.

Dual Growth/Time protocol

AIPLAK system is the only system on the market equipped with 2 complementary imaging systems. A first continuous monitoring system that allows uninterrupted monitoring of sample growth, being capable of generating alarms as soon as growth is detected in the sample. The second system captures the overhead image, digitizing the sample and executing artificial intelligence algorithms to assess on the characteristics of that growth. This advanced platform that combines time-based and growth-based management protocols, provides the laboratory with a unique tool to address emergency situations, to efficiently optimize workflow processes thus contributing to a more effective operation and accelerated results in the laboratory.



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AIPLAK as part of our *complete solution*, Ai5 Lab

Discover how to enhance microbiology lab workflows:

www.sener.com

It’s not just about automation;
it’s about *adding value* through automation.

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