

IMAGE ACQUISITION & ANALYSIS

# Revolutionizing Microbial QC in GxP facilities

## EMMA



General brochure



*Shape the future*  
**Automate your  
environmental monitoring  
and bioburden workflow**



INTRODUCTION




EMMA is revolutionizing the world of microbial environmental monitoring thanks to its high-end components, housed in a modular benchtop format that scales with your needs.

An in-house developed patent-pending optical system guarantees complete acquisition of 100% of the Petri dish surface **with the lid on**. In combination with an integrated barcode reader and a software platform that is 21 CFR part 11 compliant, EMMA is ready to take your digitization & your data integrity to the next level.

EMMA is available in 3 different configurations:

- ✓ **EMMA – Focus on Digitization**
- ✓ **EMMA RL – Automate your digitized workflow**
- ✓ **EMMA – High throughput automation & digitization**

 Interested in modernizing your microbial environmental monitoring procedures? [The EMMA series](#) streamlines the process, accommodating any throughput while seamlessly integrating into your existing workflow.



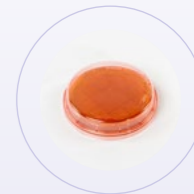
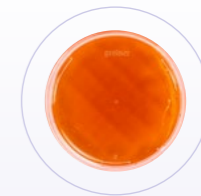
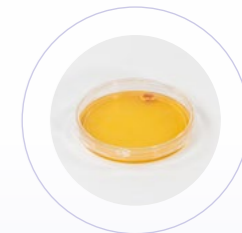
PRODUCT HIGHLIGHTS

## The EMMA series is designed to digitize and automate your microbial environmental monitoring initiative.

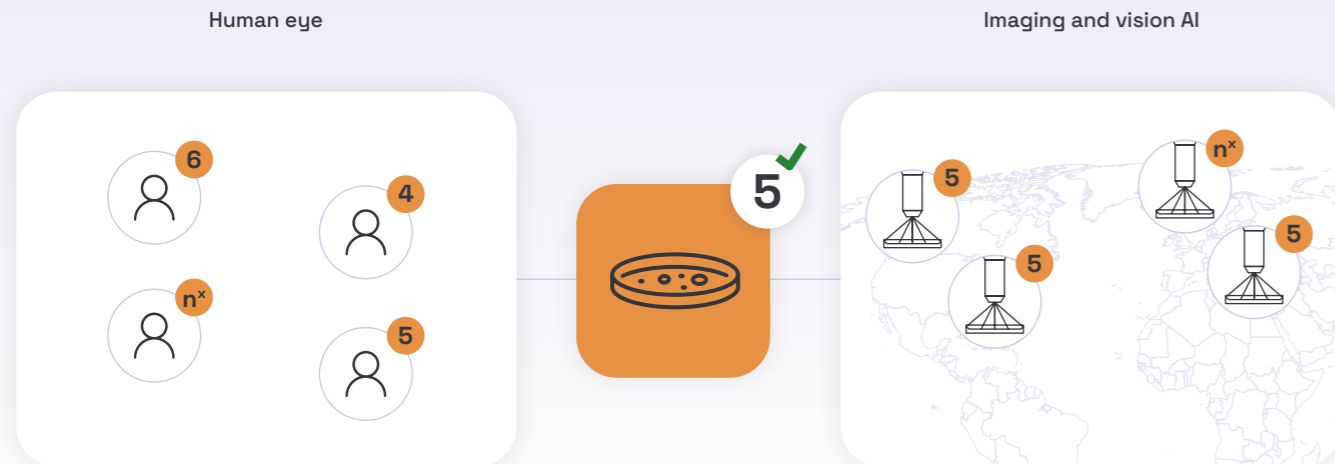
It guarantees data integrity straight out of the box, ensuring alignment with present and forthcoming regulatory standards.

- ✓ 21CFR part 11 compliant
- ✓ ALCOA+ principles
- ✓ 100% of the Petri dish surface imaged
- ✓ Imaging with lid on
- ✓ Barcode reader integrated
- ✓ Software designed around 4-eyes principle

▶ [Learn more about the workflow on microtechnix.com](https://www.microtechnix.com)



# Taking variables out of the analysis



Imaging and vision AI allow for reproducible analysis and enumeration.  
[Learn more about vision AI.](#)

## The optics

Microtechnix has innovated a novel (patent-pending) optical system for EMMA, guaranteeing the imaging of Petri dish walls with the lid securely in place. Through the integration of a high-resolution camera and a specialized lens, it enables the capture of the entire Petri dish surface, encompassing its walls, while maintaining the lid's position. This method yields high-quality images suitable for subsequent analysis by either an operator or a trained AI model.



PRODUCT HIGHLIGHTS



### Image quality

Patent-pending optical acquisition system ensuring reproducible high-end image quality



### Consistency

An in-house developed RGB calibration ensures consistent and reproducible image quality



### True representation

Covering 100% of the Petri dish surface, including the walls.

## RGB calibration

The EMMA series uses mean red, green and blue density values to ensure perfect calibration. The RGB calibration is performed without reference standards or QC calibration tools. A standard calibration file is available to ensure full reproducibility of the imaging parameters used in experiments today and in the future.



## Consistency

The RGB calibration parameters apply universally across all Microtechnix systems, ensuring consistent imaging capabilities on every platform. Cross-validation has never been simpler.

## No compromise

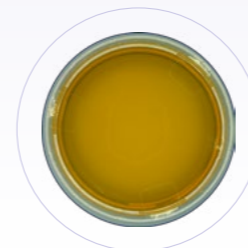
High-end optics and camera components were selected to ensure the highest-quality images of your Petri dish content, with the lid securely in place.

PRODUCT HIGHLIGHTS

PRODUCT HIGHLIGHTS

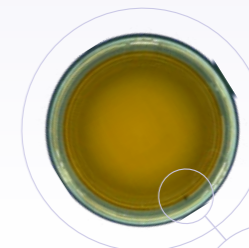
## Seeing the full picture

Our patent-pending optics offer a comprehensive view: capturing 100% of the Petri dish surface without necessitating lid removal. Unlike conventional camera methods such as telecentric or pinhole lenses, which only display the flat bottom of the Petri dish when the lid remains on—leading to significant information loss—Microtechnix has innovated a new optical system. Built upon a hole inspection lens, this system seamlessly captures both the flat bottom and the vertical walls of the Petri dish in a single image, all without lid removal.



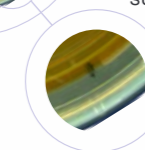
### Telecentric optical system

Image up to 97,5% of the Petri dish surface



### Microtechnix proprietary optical system

Image 100% of the Petri dish surface, including the lateral walls



Same Petri dish, different outcome.

Learn more about the optical advantage on [microtechnix.com](https://www.microtechnix.com)

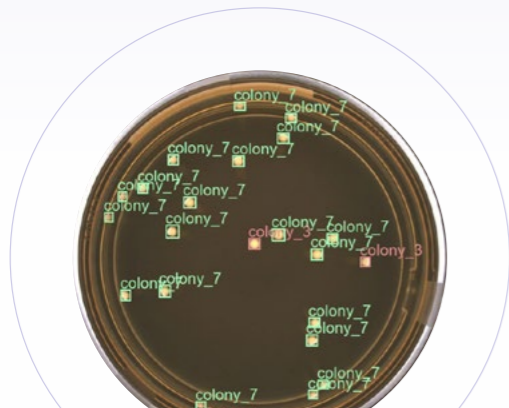
## EMdi system & viewer

The purpose-built, in-house developed EMdi software manages every aspect from planning your run to image acquisition and analysis. Easily set up a routine and have it analyzed by your expert. Ready to upgrade with AI? Our EMdi assistant and automation AI-model upgrades are available to assist 1 operator to achieve the 4-eyes principle.



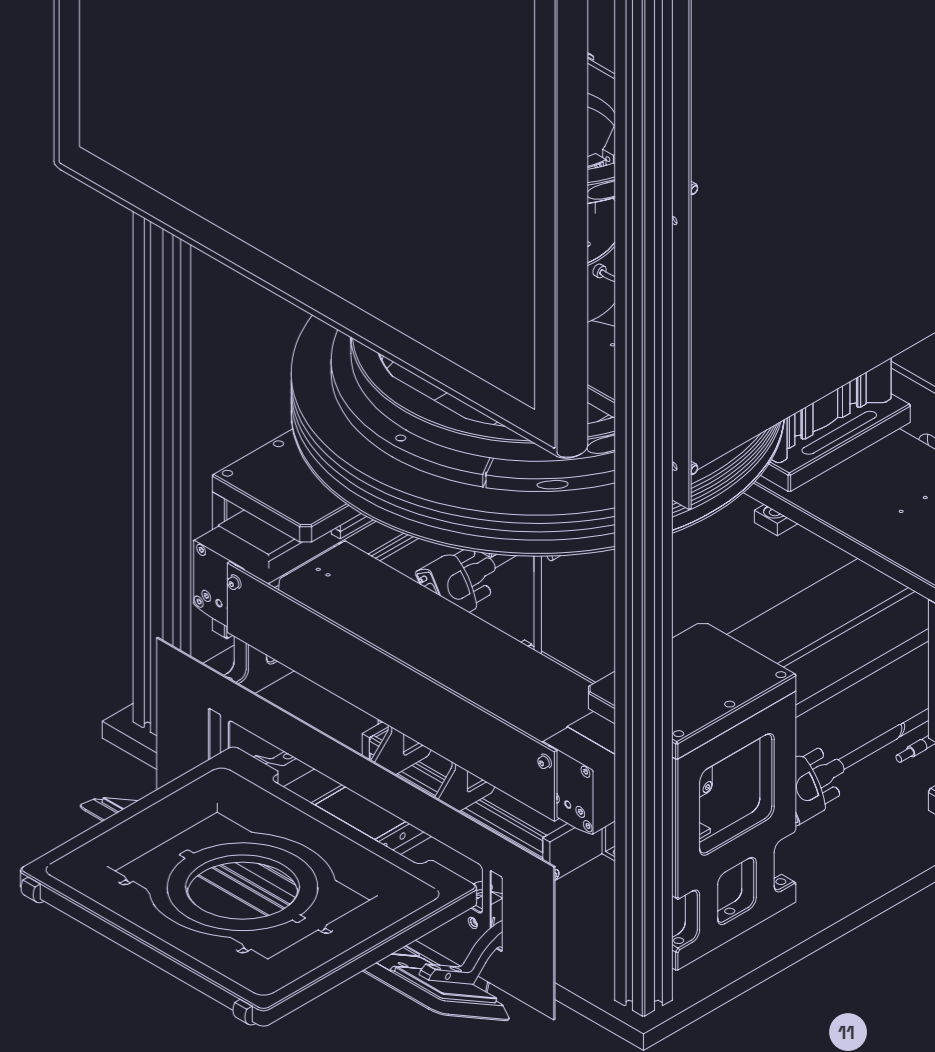
## Audit & validation

All our software is designed with ALCOA+ principles in mind and is fully compliant with 21CFR part 11. This ensures a full audit trail and straight forward validation process.



PRODUCT HIGHLIGHTS

# Simple and *robust* *engineering*



## Compatible with any type of plate

The automated drawer accommodates any type of Petri dish (55-90 mm) ensuring compatibility with touch and settle plates.



## Integrated barcode reader

The rotating platform in the drawer ensures accurate identification through barcode scanning on the side of the Petri dish, streamlining the recognition process with the integrated 2D barcode reader within the instrument.



PRODUCT HIGHLIGHTS

TECHNICAL SPECIFICATIONS

	EMMA	EMMA RL	EMMA HT
Sample capacity	Single Petri dish	up to 200 Petri dishes	
Throughput	1 plate per minute	2 plate per minute	4 plate per minute
Consumables	Petri dish ø 55-90 mm from any vendor – any type of medium		
Camera	5MP HD camera		
Lens	Patent-pending hole inspection lens		
Footprint	50 X 50 X 42 cm	50 X 50 X 140 cm	50 X 84 X 140 cm
Weight	27 kg	52 kg	79 kg
Screen	22" inch touch screen		
Data format	.csv, .xls, .pdf, .mp4, .jpeg, .png, .bmp		
Accessories	Robot, base plate & holder with a load capacity up to 25 Petri dishes		
Operation system	Windows 10		
Software	EMdi software suite		
Warranty	1 year warranty		
Voltage and frequency	100-240Vac~/50-60Hz		
Compliance	21 CFR Part 11, ALCOA+ principles for data integrity		
Temperature	6-35°C		
Humidity	75% at 30°C		

## EMMA RL

EMMA RL offers a comprehensive solution for digitizing and automating your Microbiological Environmental Monitoring. This fully integrated and automated system includes a camera, barcode reader, computer and robot, ensuring seamless operation.

Here are some key features:

- ✓ Process and analyze up to 120 Petri dishes per hour
- ✓ Perfectly fit to analyze up to 1000 Petri dishes per day
- ✓ Efficiently sort positive Petri dishes in one stack, ready for identification
- ✓ Focus on data integrity to guarantee error-proof sample identification and audit trail compliance (21 CFR part 11 compliant)
- ✓ Integrated analysis tools for a streamlined workflow
- ✓ Ability to connect to existing Laboratory Information Management Systems (LIMS)
- ✓ Expanded sample capacity, enabling imaging and analysis of up to 200 Petri dishes
- ✓ Upgrade options include vision AI for enhanced automated analysis



## EMMA HT

Meet EMMA, our robots workhorse that can cover high throughput demands. This fully integrated and automated systems comprises of 2 EMMA units and one robot, enabling throughputs of up to 2000 plates per day.

Here are some key features:

- ✓ Process and analyze up to 240 Petri dishes per hour
- ✓ Perfectly fit to analyze up to 2000 Petri dishes per day
- ✓ Efficiently sort positive Petri dishes in one stack, ready for identification
- ✓ Focus on data integrity to ensure error-proof sample identification and audit trail compliance (21 CFR part 11 compliant)
- ✓ Integrated analysis tools for a streamlined workflow
- ✓ Ability to connect to existing Laboratory Information Management Systems (LIMS)
- ✓ Expanded sample capacity, enabling imaging and analysis of up to 200 Petri dishes per run
- ✓ Upgrade options include vision AI for enhanced automated analysis





# Product *range*

## 1 EMMA

- ✓ Single Petri dish
- ✓ Field upgradeable with robot



## 3 EMMA HT

- ✓ Up to 200 Petri dishes
- ✓ 4 plates per minute



## 2 EMMA RL

- ✓ Up to 200 Petri dishes
- ✓ 2 plates per minute



THROUGHPUT

A white arrow pointing upwards and to the right, indicating increasing throughput.

# Our *mission*

Our mission is to deliver cutting-edge, user-centric solutions that simplify everyday tasks. Leveraging top-tier components, we uphold a steadfast commitment to quality and reliability, setting new benchmarks within the industry.

The logo for Microtechnix, featuring the word "Micro" in orange and "technix" in black, with a stylized orange "x" that has a curved tail.

# Our *vision*

Our vision is a future where automated image-acquisition systems and intuitive applications enhance the precision of lab results. We anticipate that heightened accuracy, speed, and reliability will elevate standards not only within the life sciences but also across diverse applications in engineering and manufacturing industries. This advancement will catalyze a broader progression and evolution of scientific methods and protocols.

# Transforming microbial *quality control*

Ready to discover how Microtechnix can help to digitize and automate the microbial QC program in your GxP facility?

[www.microtechnix.com](http://www.microtechnix.com)

Contact us

## ADDRESS

Anthonis de Jonghestraat 14 A  
9100 Sint-Niklaas

## GENERAL CONTACT

info@microtechnix.com  
+32 3 646 41 45

## SALES

sales@microtechnix.com

Microtechnix

