

ENVIRONMENTAL MONITORING

The Environmental Monitoring Solution

Macrolab II EMMA



Information brochure (2022)



Shape the future of environmental monitoring



MacroLab II EMMA is dedicated to the **Microbiological Environmental Monitoring**.

Petri Dishes: handle plates of every supplier
Ø 55mm, Ø 90mm, locking lid – standard lid.

Our (patent-pending) optics system captures ultra-precise images and uses artificial intelligence to analyze your samples. Perfect for environmental monitoring assays.

This unique optical acquisition system allows to acquire high resolution image of **100% of plate surface**, including the edges on the border (meniscus) enable to detect **any** colony on the Petri Dishes (ensuring NO False negative).



Book your free demonstration at microtechnix.com



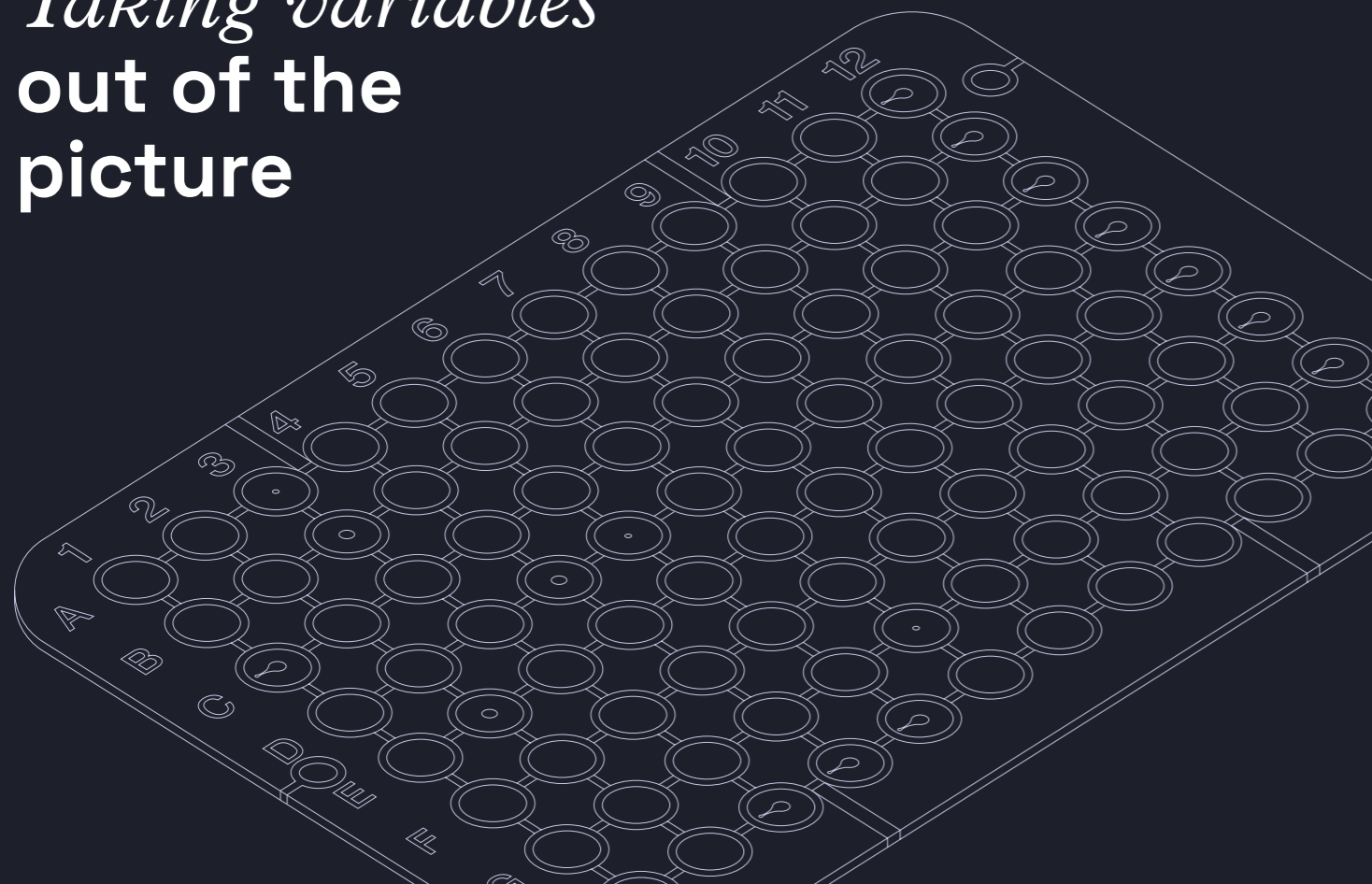
MacroLab II EMMA: The Environmental Monitoring Solution.

Everything is **fully integrated in the system:** including camera, computerized components, touchscreen. The same instrument for taking the picture, reading the plate and giving/recording results. No additional PC or software needed:

- ✓ **AI allows powerful online analysis** (directly after image acquisition)
- ✓ **Image acquisition with lid** (to avoid contamination)
- ✓ **discriminate biological samples out of a label or written “marker pen” on all type of media** (TSA, brown, red,...)
- ✓ **Differentiation of Mold and bacteria colonies**
- ✓ **Data integrity with sample identification and audit trail** (21 CFR part 11 compliant)
- ✓ **Reporting and possibility to connect to the EM software** (Novatek, Moda, LIMs,...)

PRODUCT HIGHLIGHTS

Taking variables out of the picture



PRODUCT HIGHLIGHTS

Environmental Monitoring Application

The MacroLab II EMMA is a powerhouse in the world of environmental monitoring. The EMMA—Environmental Monitoring MicroTechniX Apparatus—combines a unique, patent-pending optical system with powerful artificial intelligence software to raise the efficacy and efficiency of your assays to new levels.



Integration

Fully integrated in the system,
No additional PC or software needed.



Differentiation

Differentiation of Mold
and bacteria colonies.



Reporting

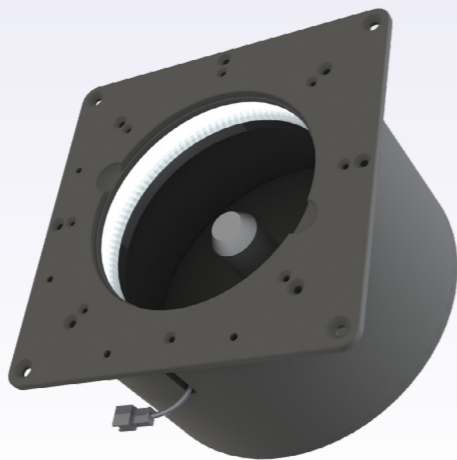
and possibility to connect
to the EM software.

The optics

MicroTechniX developed an entirely new optical system for the MacroLab II EMMA. In fact, the optics will be under review by the patent office until later in 2022. At that time, we will be able to disclose more of the unique benefits the system offers you.

Identical acquisition system (Optical & camera) and same Artificial intelligence for the reading of the results.

All pictures, set-up & validation performed on Macrolab EMMA can be transferred easily to upgrade AI on the ScanLab EMMA for a full automated system. All your efforts to integrate and validate this new technology are preserved.



PRODUCT HIGHLIGHTS

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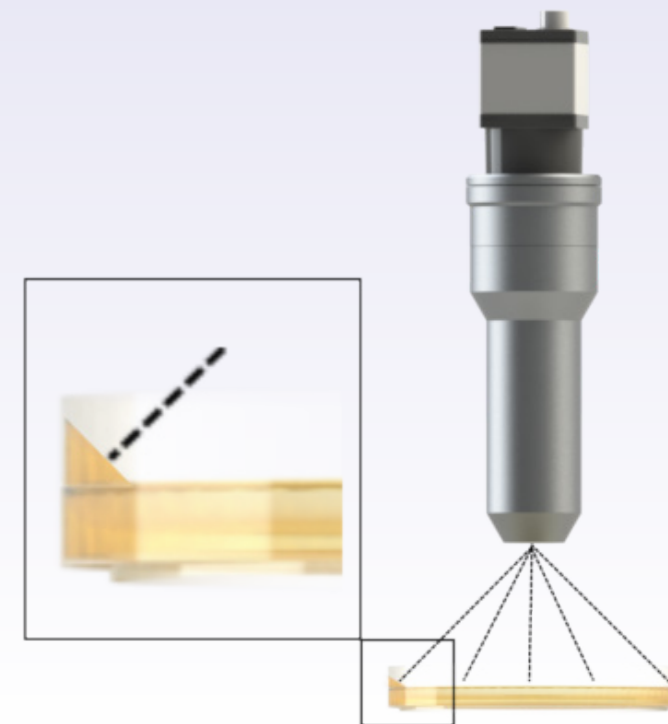
The optic advantage

Microtechnix developed **EMMA optics** to mainly acquire an image covering **100% of Petri Dishes surface.**

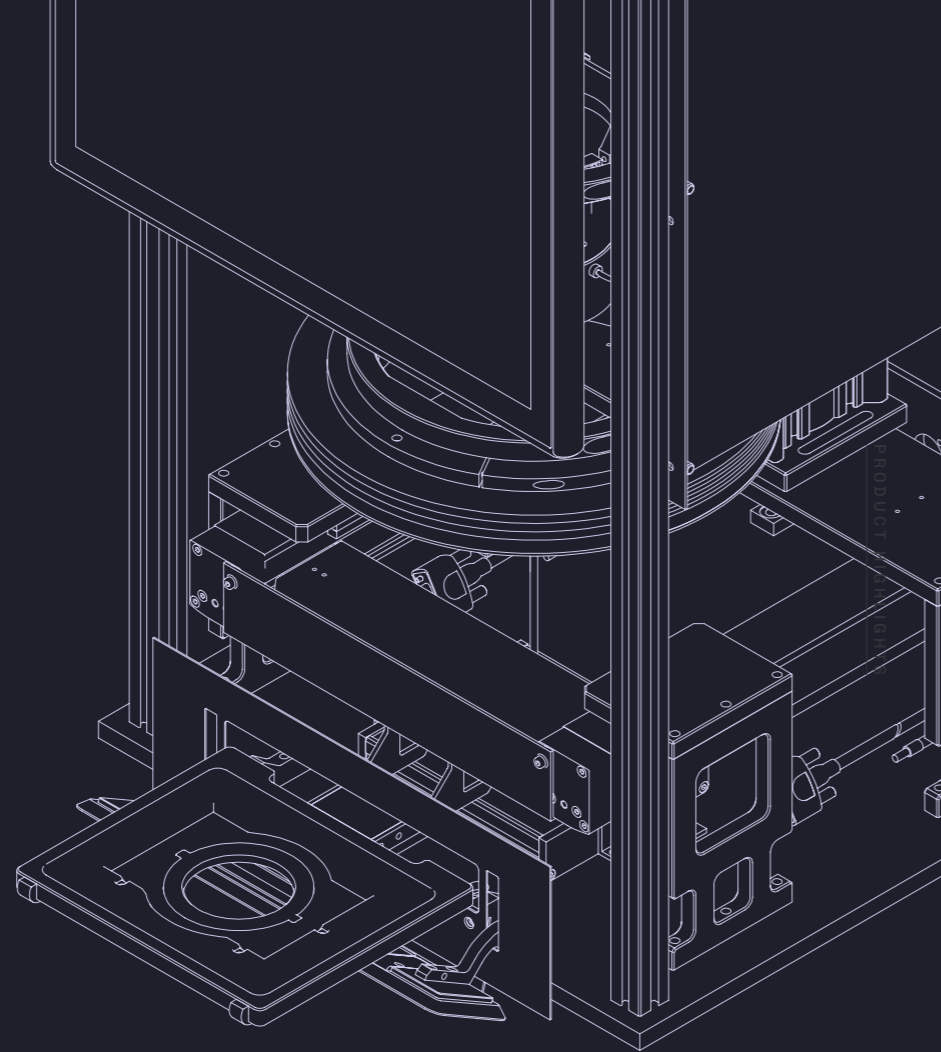
Meaning that even a contaminant (bacteria colony, mold,...) that grew on the **meniscus** (edge/border of PD) is “seen” by the MacroLab EMMA.

No false negative is allowed in Environmental Monitoring!

- ✓ **100% of surface analysed incl. meniscus**



Simple and *robust* *engineering*



Consistency

The calibration parameters you employ are saved in a digital file that's valid for your system and any other MicroTechniX hardware, anywhere in the world. Just send the digital file to another lab for complete consistency and the simple, smooth assay validation you've always dreamt of.

Microtechnix Calibration methodology of imaging systems ensures reproducibility and repeatability of the result on **each** system **AND** between systems. Consistency is then ensured overtime and between lab or operators.



Combined with analysis powered by artificial intelligence, MacroLab II EMMA ensures a reproducible and consistent reading of Petri dishes avoiding false negative in Environmental Monitoring.

Artificial intelligence

The MacroLab II EMMA uses artificial intelligence technology to raise the efficiency and efficacy of your assays. Exactly how does it work? The AI will recognise any agents of interest in your sample image. You then simply define each agent of interest. You tell the software whether an agent is anything from an air bubble to a bacterial colony. Or better yet, you tell it which specific type or sub-type of colony it is.

From your input, the AI creates a library of images for each type of agent you define. And it's quite an extensive library. The AI develops fifty or so deviations for each image you provide. These deviations may be based on geometry (turning the image upside down or



creating a mirror image, etc.), colour (brighter, darker, black-and-white, etc.), with pixels removed to suggest noise or occlusions in the image, or any number of other visual changes that are known to occur.

The AI compares future agents of interest with library images. If it achieves a certain degree of consistency in the images, it is able to accurately classify a new agent without any further input from you.

Welcome to the next level of automation in laboratory testing.

PRODUCT HIGHLIGHTS

TECHNICAL SPECIFICATIONS

Sample capacity	1 Petri Dish manually (This can be increased with automatic loading; please contact us to evaluate options)
Templates	✓ 1 image per sample ✓ Petri dishes \varnothing 55mm up to 90mm
Camera	✓ 5 megapixel camera to acquire high resolution images (Width 2048, height = 2448 and pixel size = $3.5\mu\text{m} \times 3.5\mu\text{m}$) ✓ Mounted on Microtechnix patent-pending lens
Measurements (W x D x H)	526 x 498 x 810 mm
Gross weight (without options)	50 kg
Ambient operational temperature	+6°C to +30°C
Max permissible relative air humidity	75% at 30°C
Type of plates accepted	Petri Dishes: handle plates of every supplier \varnothing 55mm, \varnothing 90mm, locking lid – standard lid
Interface	19" inch touch screen (IP65)
Data export	csv, .xls, .pdf, .mp4 video, .jpeg, .png, .bmp
Possibilities to enhance the capacity	External robot loaders
Accessories available	Barcode readers, Petri dish holders
Operating system	Windows 10
Software	Dedicated MTX Environmental Monitoring Application
Warranty	1 year warranty
Voltage and frequency	100-240Vac~/50-60Hz
Compliance	21 CFR Part 11; "ALCOA+" principle for Data Integrity

Our *mission*

At MicroTechniX, we are committed to providing innovative, user-friendly solutions that make life easier in your lab. Through our high-end components, we ensure a consistent level of quality and reliability that raises standards right across 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*

At MicroTechniX, we see a future in which the accuracy of lab results is heightened by automated image acquisition systems and intuitive applications. We believe that the greater accuracy, speed and reliability will raise standards, in the life sciences, and in numerous applications in the engineering and manufacturing industries. It will contribute to a general progression and development in scientific methods and protocols.

Let's build it *together*

We develop our products through co-creation. If your solution doesn't exist yet, we can build it together.

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