



# SINGER INSTRUMENTS

A RESPONSIBILITY TO SCIENCE!



# PIXL. SERIES.

ULTRA-PRECISION MICROBIAL COLONY MANIPULATION



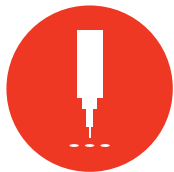
# ROTOR+ |



## PIXL

For laboratories and researchers aiming to streamline colony picking workflows by replacing often tedious and error-prone manual colony picking with ultra-reliable, precise, and traceable automation.

**Page 04**



## ROTOR+ PIXL

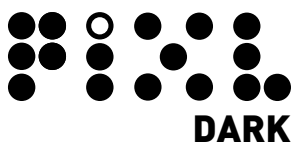
Designed for labs and researchers seeking increased screening power and throughput, ROTOR+ PIXL enables you to achieve remarkable >60-fold reductions in media, plates, and time compared to traditional screening in 96-well plates.

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*90% OF THE FUNCTIONALITY CAN BE LEARNT  
BY ANYBODY IN AS LITTLE AS 10 MINUTES.*



*THE PIXL SERIES OFFERS A RANGE OF SOLUTIONS  
DESIGNED TO STREAMLINE AND AUTOMATE COLONY  
PICKING WORKFLOWS TO SUIT YOUR LABORATORY  
REQUIREMENTS.*



## **PIXL DARK**

For those looking to integrate their colony picking workflows for walkaway automation, within anaerobic chambers, or to build on existing labware integrations to form automated work cells.

### **Page 16**

#### **PIXL Dark with Momentum**

An automation ready solution partnering the PIXL Dark with ThermoFisher Scientific's Momentum scheduling software and Spinnaker robotic arm to achieve fully walkaway colony picking.

### **Page 18**

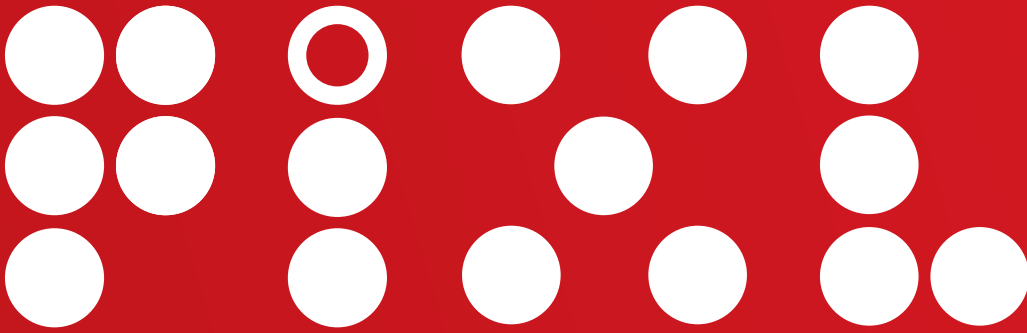


#### **PIXL Dark with Anaerobic Chamber**

Tailored for researchers who are manipulating anaerobic microorganisms. This solution addresses the special challenge of manually picking colonies in a chamber providing easy access to your colonies while our built-in UV light disinfects your working environment in between uses.

### **Page 24**





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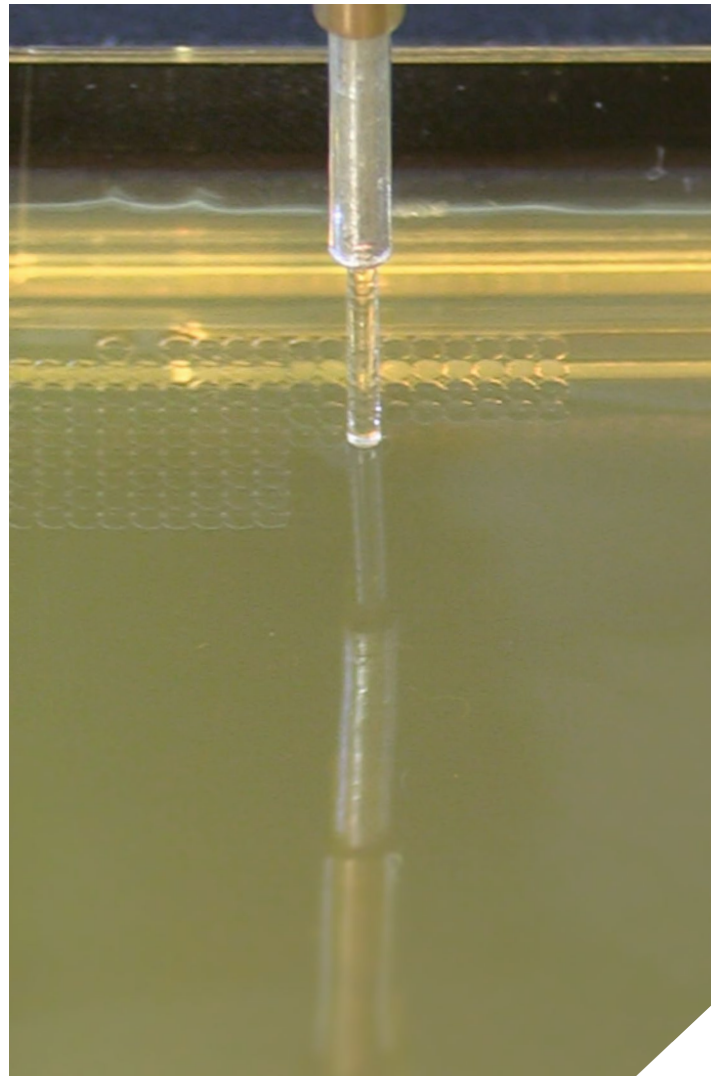
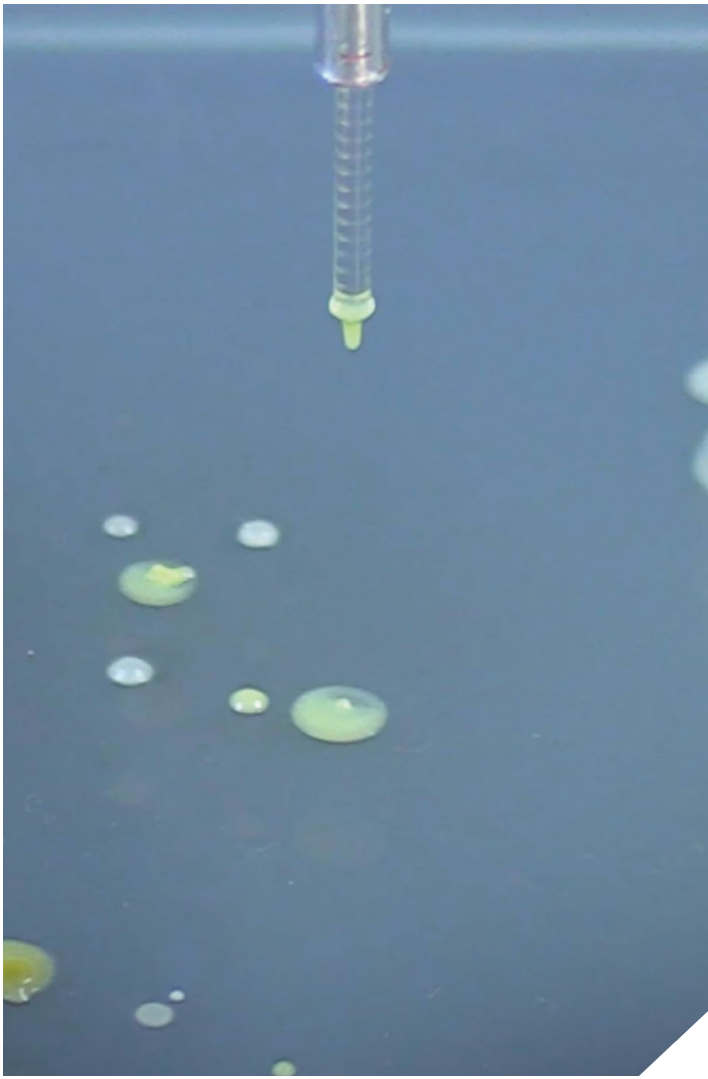
*DEVELOPED WITH LEADING  
SYNTHETIC BIOLOGY PARTNERS.*

# What is PIXL?



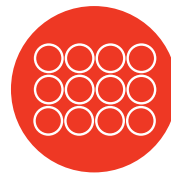
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If accuracy and reproducibility matter to your science, you need a precision instrument capable of picking every colony as meticulously as you would, without the niggles of cross-contamination. PIXL is an ultra-reliable and super-easy-to-use microbial colony picker. It automates imaging, colony recognition, colony selection, and picking; from Petri dishes to multi-well plates, eliminating stress and making data management a breeze.



## **PIXL USES SPECIALLY DEVELOPED PINPOINT PICKING TECHNOLOGY FOR A STEP-CHANGE IN RELIABILITY AND STERILITY.**

Pinpoint uses the freshly-cut end of a sterile PickupLine to transfer microbial colonies, eliminating the requirement for washing cycles and the associated chance of contamination, at a fraction of the cost of traditional tips. Load a single reel of PickupLine into PIXL to form up to 33,000 sterile, disposable tips. Its cutting-characteristics allow PIXL's precision blade to produce a tip perfect for picking bacteria and fungal colonies.

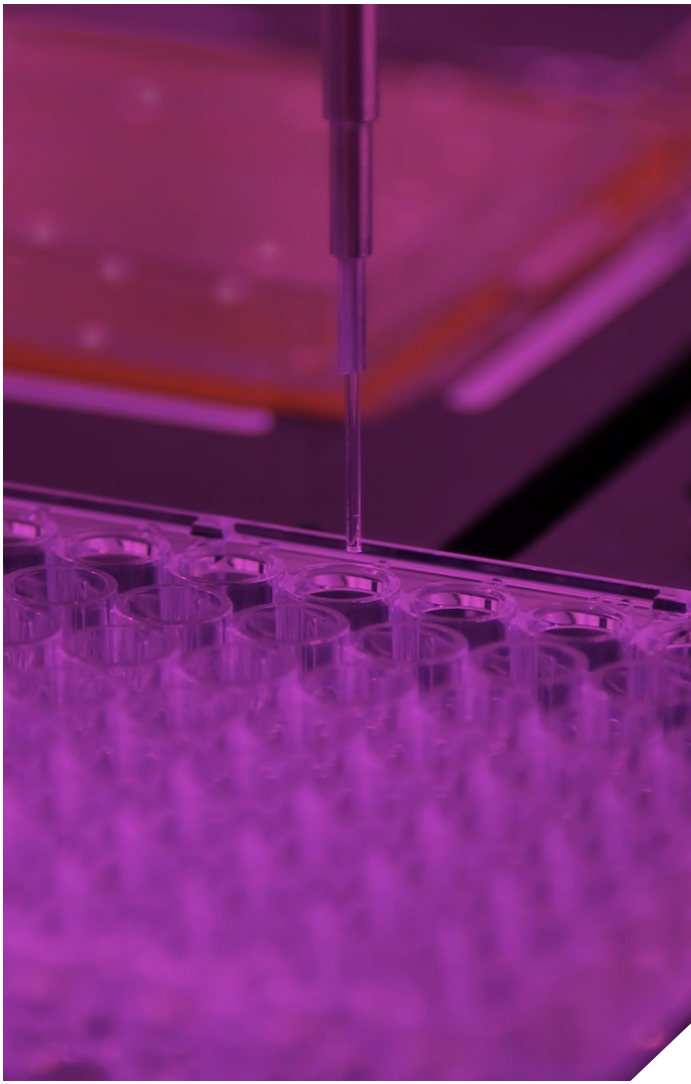


### **COLONY HIT PICKING**

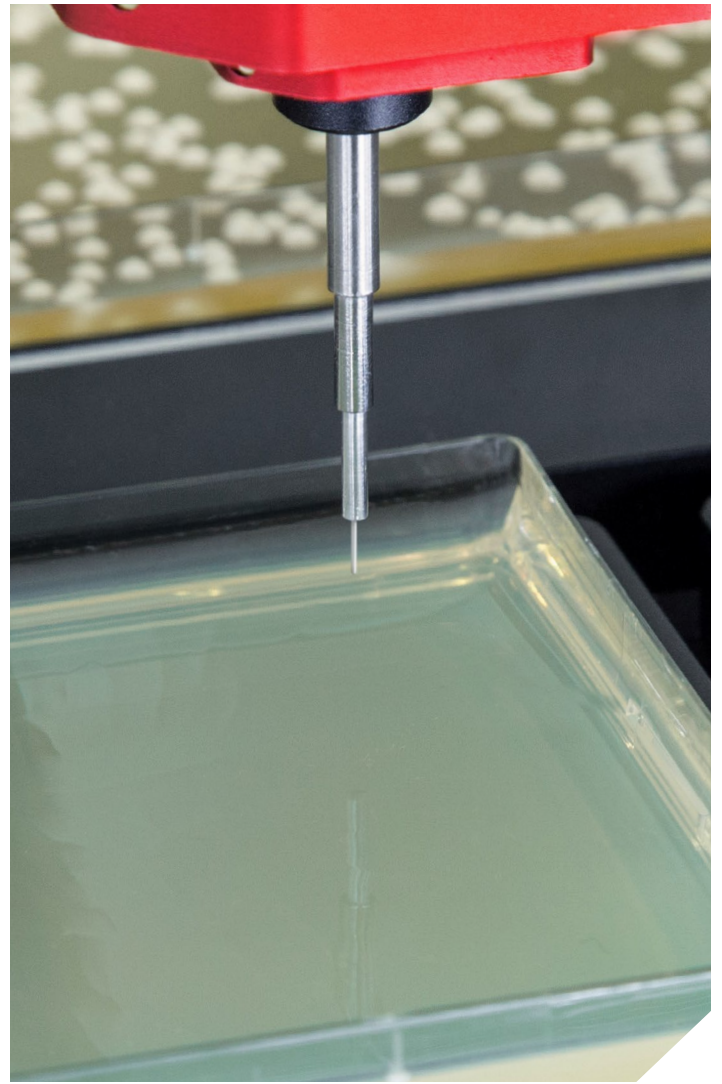
Cherry pick the hits that interest you from multiple source plates onto one target plate, or vice versa. With a transfer rate >99% and agar surface detection on every pick, PIXL will never miss your colonies.

### **COLONY STREAKING**

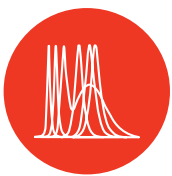
PIXL is able to streak or plate cells using a customisable protocol onto an agar plate, from liquid or agar sources, allowing the isolation of single colonies.



PIXL contains a scientific grade, colour camera and 6-channel, flat-field SpectraStar™ incident illumination to capture high-resolution colony images from Petri dishes and rectangular SBS plates. PIXL will automatically detect colonies, quantify phenotypes and allow target selection based on size, circularity, colour intensity, proximity, and fluorescence marker.



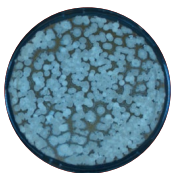
Pinpoint picking technology can cope with any variation in agar height, automatically. PIXL detects the surface and regulates the contact pressure for every pick. This ensures that every single colony on your plate is picked, without damaging, missing or splashing cells all over the place. The motors are accurate to 50 microns, to enable selection of even the smallest hits, and the picking profiles are adjustable to optimise for the most tenacious colonies.



## **FLUORESCENCE DETECTION**

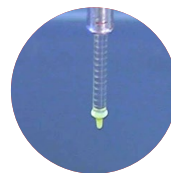
Turn on its fluorescent LEDs, insert the appropriate bandpass filter and PIXL will quantify and allow selection for wtGFP, sfGFP, mCherry, tagBFP, Venus and many other fluorescent markers.

# Why do I need **PIXL?**



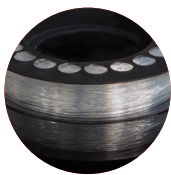
## **SCREEN AND COUNT COLONIES**

Filter by: size, fluorescent intensity, colour, circularity, proximity or brightness.



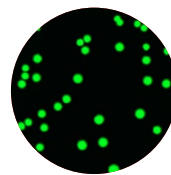
## **TRUST YOUR RESULTS**

Sustain close to 100% picking accuracy with precision agar surface detection on every pick.



## **MAINTAIN STERILITY**

Over 33,000 sterile, disposable tips in a single, low-cost PickupLine. No wash cycles needed.



## **DETECT FLUORESCENCE**

Six lighting channels for detection of wtGFP, sfGFP, mCherry, tagBFP and Venus markers.

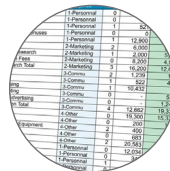


PIXL was developed in collaboration with leading synthetic biology incubators, SynCTI and SynbiCITE, and industrial partner SynthACE. All of whom were unhappy with existing colony picking options. We listened. We collaborated. We welcome: PIXL.



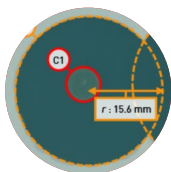
## TRAIN EVERYONE

Anybody can learn how to pick with PIXL in just a few minutes.



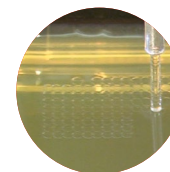
## TRACE EVERYTHING

Passworded profiles and automated experimental logging.



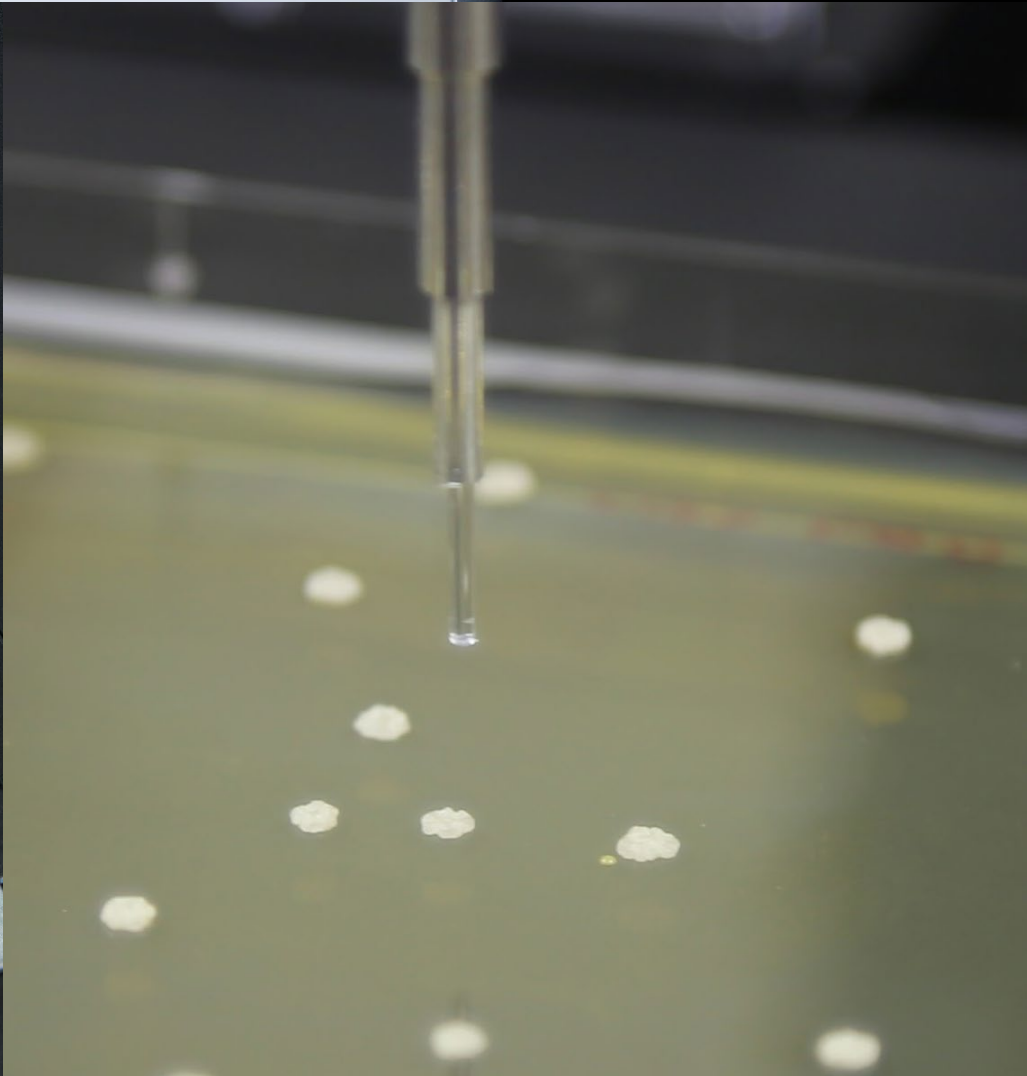
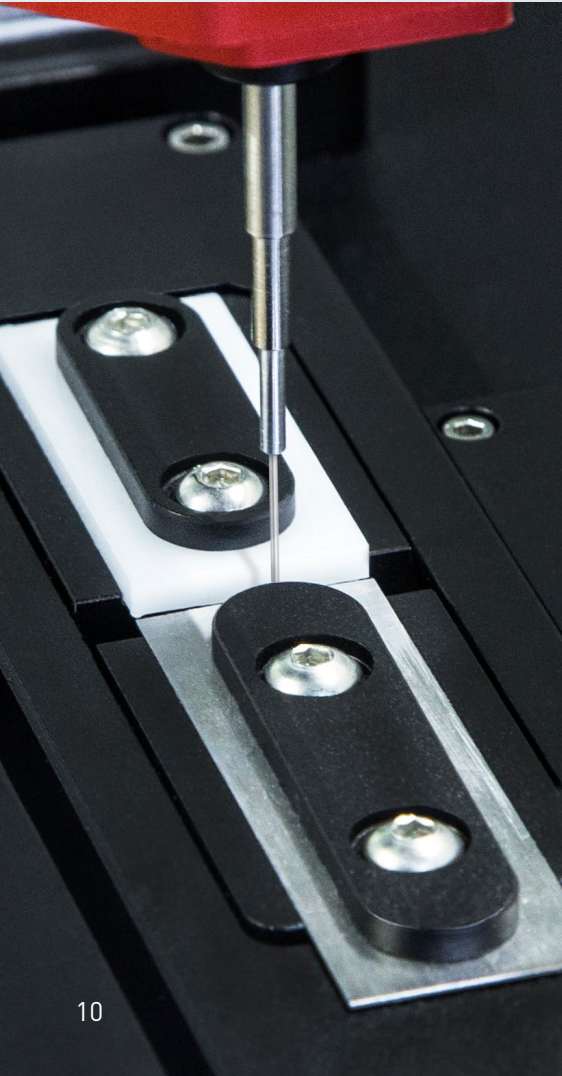
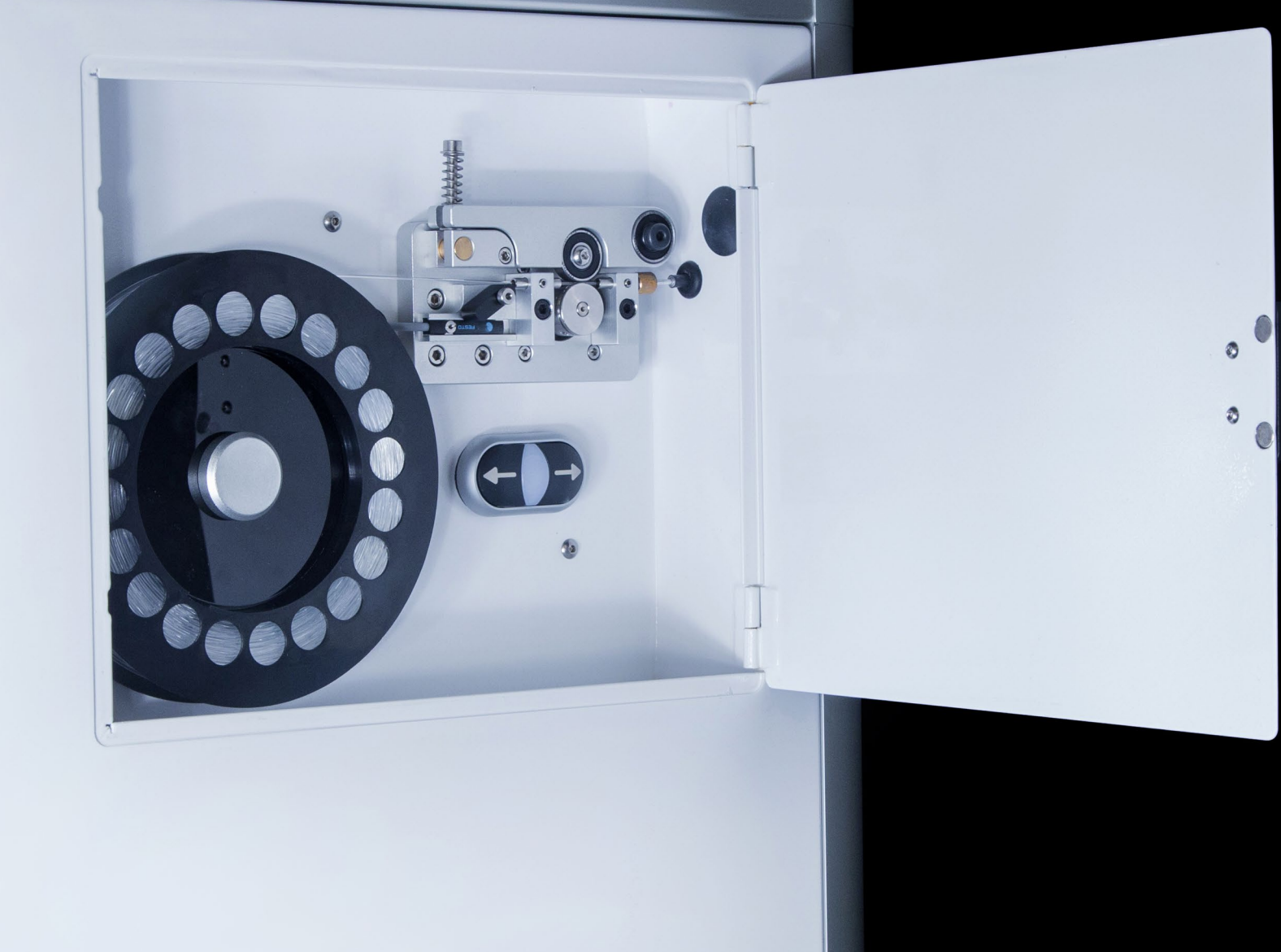
## ZONE YOUR SOURCE PLATES

Organise inoculation patterns and data output for traceability based on customisable source plate zones.



## COLONY STREAKING

PIXL is able to streak or plate cells using a customisable protocol onto an agar plate, from liquid or agar sources, allowing the isolation of single colonies.



# What is **PickupLine?**

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Singer Instruments have over thirty years of precision microbial cell and colony picking experience. Whether colony picking from high-density *E. coli* arrays, or tetrad dissection with single yeast spores, Singer Instruments are trusted by thousands of labs worldwide. We have learnt a lot about colony picking over the years, and have used this experience to develop PickupLine.

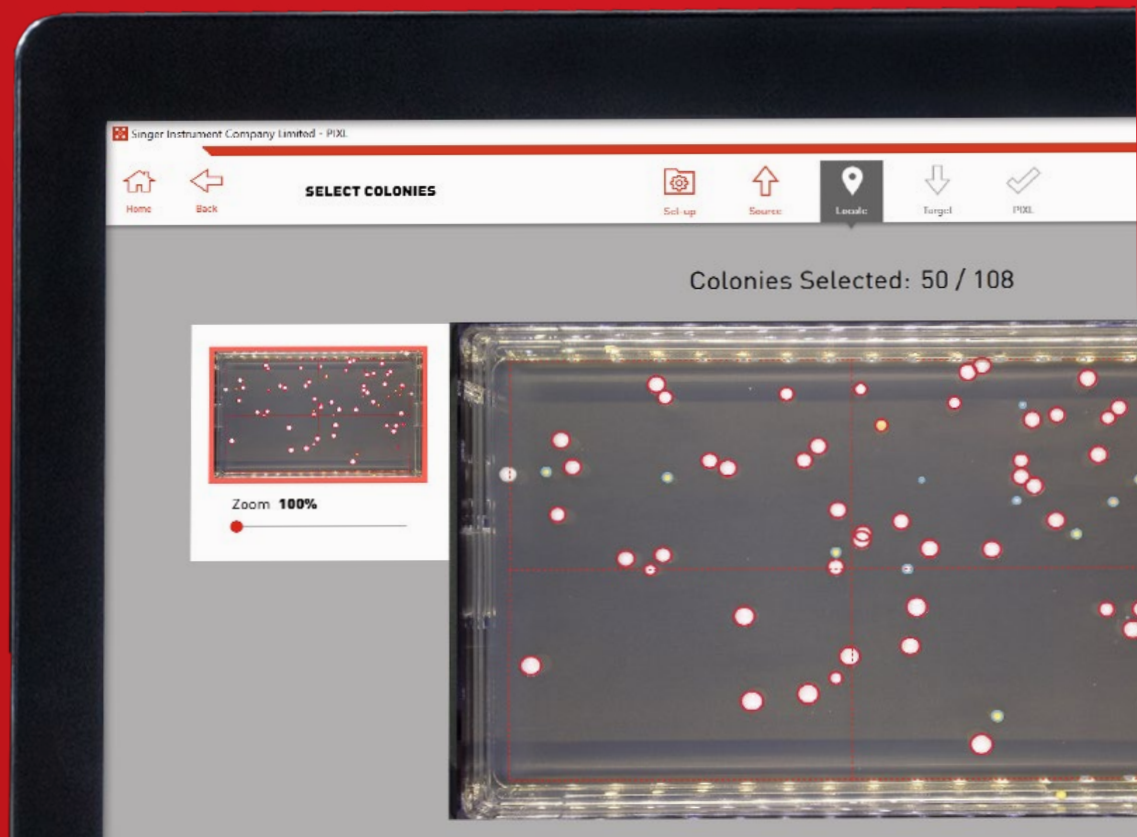
PickupLine is a 1mm $\varnothing$  bespoke polymer extrusion, available in sterile 200m reels. Load a single reel into PIXL to form up to 33,000 sterile, disposable tips. PickupLine comes gas sterilised, prepackaged in a sealed bag and is thermally sterilised again, just before picking. Its cutting-characteristics allow PIXL's precision blade to produce a tip perfect for picking bacteria and fungal colonies.

- Select up to 33,000 colonies with each PickupLine
- Complete sterility. Complete peace of mind.
- Tips optimised for microbial colony picking

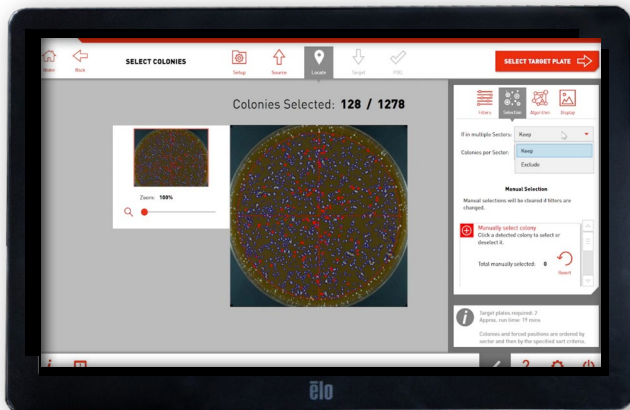


# Software

PIXL is incredibly easy to use. 90% of the functionality can be learnt by anybody in as little as 10 minutes, without instruction. The touch-screen interface will guide you through your workflow setup to get you picking the right colonies in minutes, and with ease.



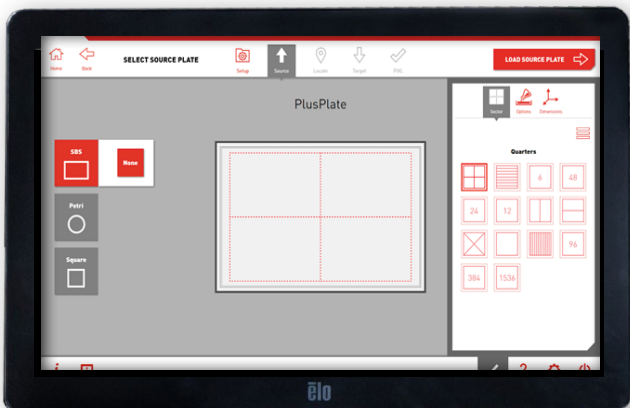
*OUR SOFTWARE ENGINEERS UNDERSTAND YOUR BIOLOGY!  
WE SPEND A LOT OF TIME WITH OUR COLLABORATORS  
TO MAKE SURE THAT OUR USER INTERFACE THINKS LIKE YOU DO.*



## YOU TOLD US THAT PIXL NEEDED TO:

- Be easy to use by anybody in the lab
- Adapt to your protocol
- Trace and export every plate, colony and parameter

We took this and implemented a user-first approach to PIXL's development, implementing a simple, 6 stage process for random colony picking:



## WORKFLOW SET-UP

1. Login - PIXL remembers the last used settings; stores templates and logs user actions and parameters.
2. Select Source Plate - Petri or PlusPlate. Pick from the whole plate or define sectors of interest.
3. Detect Colonies - Filter based on: size, colour, proximity, intensity, or circularity. Pick them all, or choose a sorted, or randomised subset.
4. Select Target Plate - Select number of replicates; on any density, in any pattern, agar or liquid.
5. Pick Colonies - Review your routine, estimated time and number of plates required, then press go and walk away.
6. Export Data - Export your routine, colony information and parameters as a CSV file.



*SINCE THE INTRODUCTION OF PIXL, OUR RESEARCH AND DEVELOPMENT TEAM HAS INNOVATED NEW PIXL WORKFLOWS, CATERING TO A BROADER RANGE OF COLONY PICKING PROTOCOLS.*

## **CENTRAL ZONE OF INHIBITION (BETA)**

PIXL facilitates the selection of a multitude of phenotypes and exports rich, time-stamped, experimental data, as well as publication quality images. With the addition of Zone of Inhibition, the number of zones detected, size of the primary colony, and radii measurements of the clearing zone are quantified automatically for each plate, making it easier to compare environmental colonies and their zones across plates in a way that is highly consistent and reproducible.

## **MALDI-TOF MS SAMPLE PREPARATION (ADD-ON)**

Manual sample preparation, particularly for a large number of samples, can be a time-intensive task. Automating MALDI-TOF MS sample preparation with PIXL can reduce sample processing times while maintaining accurate bacterial identification. See how MALDI-TOF preparation using PIXL was validated on our website [here](#).

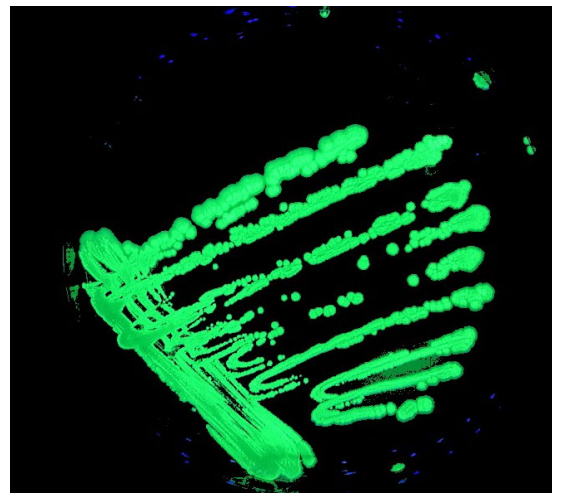
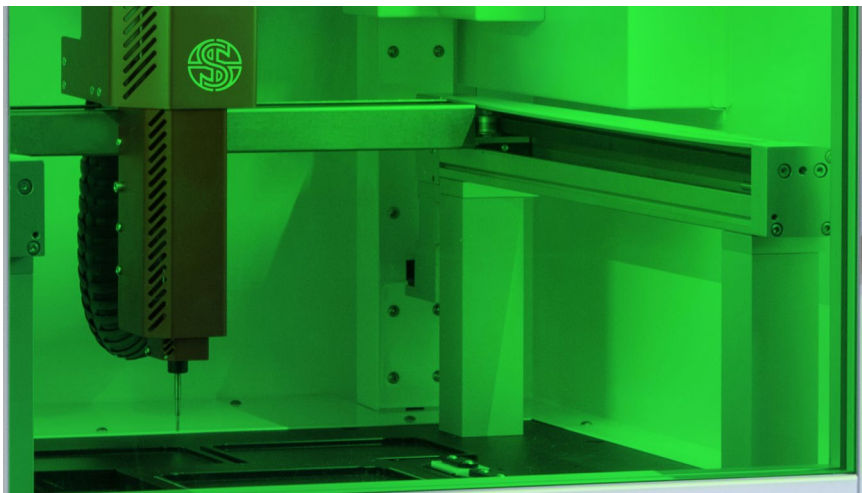
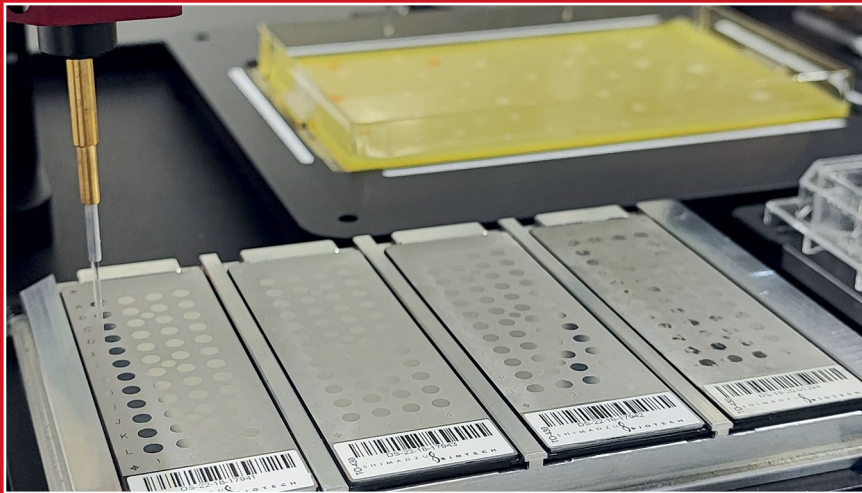
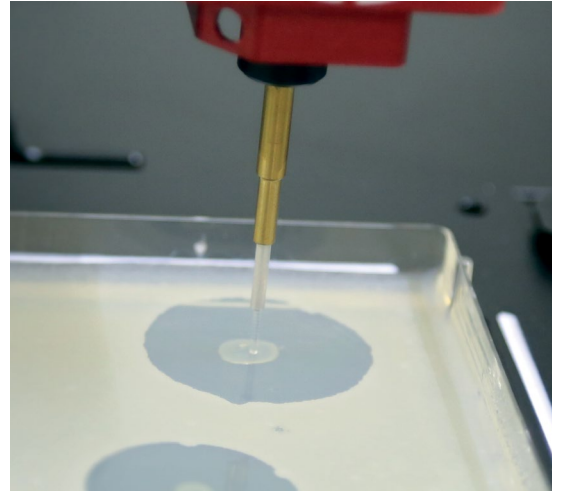
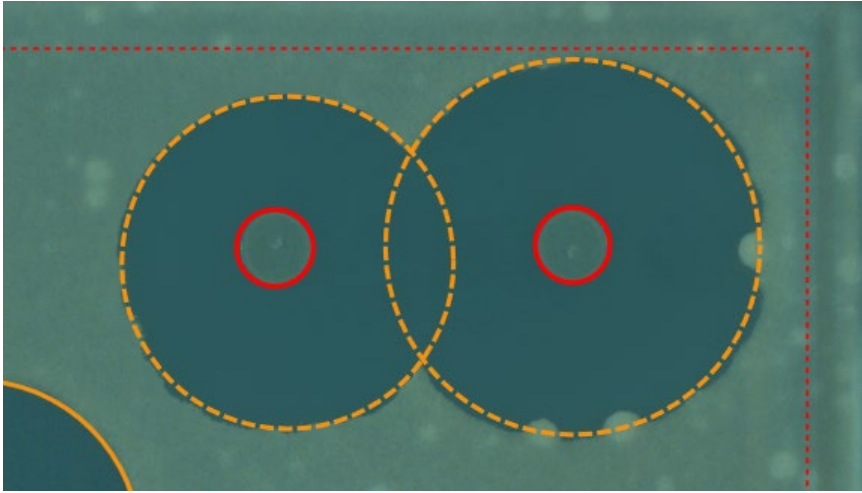
*PREPARE EACH MALDI-TOF SLIDE AUTOMATICALLY WITH 20 MINUTES OF WALKAWAY TIME.*

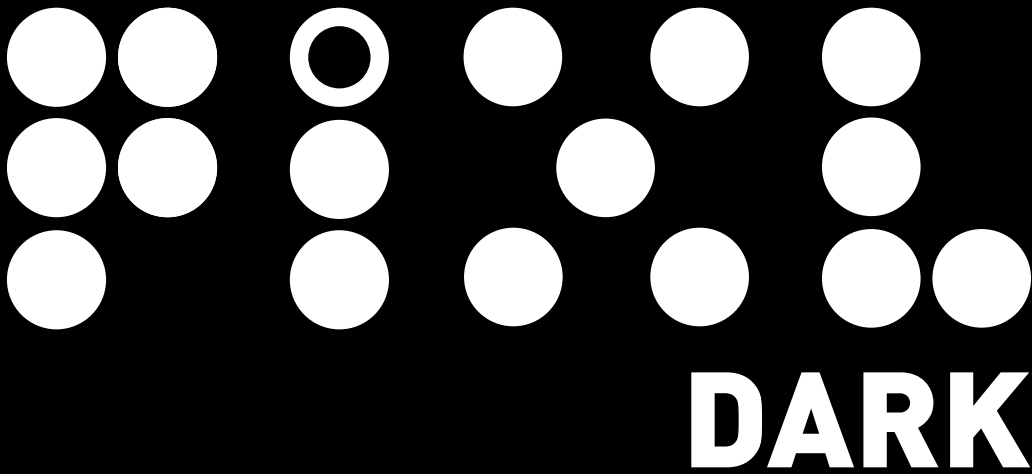
## **SPECTRASTAR™ LIGHTING**

Six SpectraStar™ lighting channels enable simultaneous colony detection across multiple fluorescent wavelengths, making experiments quicker and more cost-effective. PIXL will quantify and allow selection for wtGFP, sfGFP, mCherry, tagBFP and Venus as standard. This is not a microscope! It is a colony picker. As such it will not detect sub-cellular or low levels of expression.

PIXL's LEDs are configured as standard to emit: Blue, Cyan, Green, two intensities of Violet and White Light.

PIXL accepts standard 50mm filters. The filters can be manually inserted in front of the CMOS camera on a manual sliding mechanism. You can easily switch between all of your favourite lighting conditions to filter for the markers that interest you. To see if your preferred fluorescent marker is supported, please get in touch: [contact@singerinstruments.com](mailto:contact@singerinstruments.com).





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*EMPOWER RESEARCHERS WITH A TOOL  
THAT ENABLES THEM TO SPEND MORE  
TIME ON CRITICAL WORK.*



# What is **PIXL Dark?**

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Automate the picking of 437,760 colonies a month\*  
(\*Based on an average of 600 colonies picked per hour with precision technology and zero downtime)

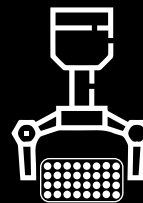
“THE ROBOTIC ARM HAS ALLOWED US TO FULLY AUTOMATE THE COLONY PICKING PROCESS, THUS FREEING UP OUR STAFF TO FOCUS ON OTHER THINGS.”

*Wilson Liu, Automation Engineer  
at Aether Biomachines.*



Q A E T H E R

# Manual to Automation



Tested with multiple integration providers, with excellent documentation, and an API provided with every unit, PIXL Dark is integration-ready from day one.

With successful collaborations with leading integration providers such as Biosero, PAA, and Megarobo, and our ongoing commitment to offer compatibility with various automation solutions, PIXL Dark is an automation-ready solution, tailored to meet your choice of provider.

**ThermoFisher**  
SCIENTIFIC



**MEGAROBO**

**PAA**

**BIO SERO**  
A BICO COMPANY



*MAXIMISE YOUR BENCH SPACE. PIXL DARK HAS A SMALL FOOTPRINT ENABLING IT TO FIT ON STANDARD LABORATORY BENCHES OR BE OPERATED WITHIN AN ANAEROBIC CHAMBER WITH EASE.*

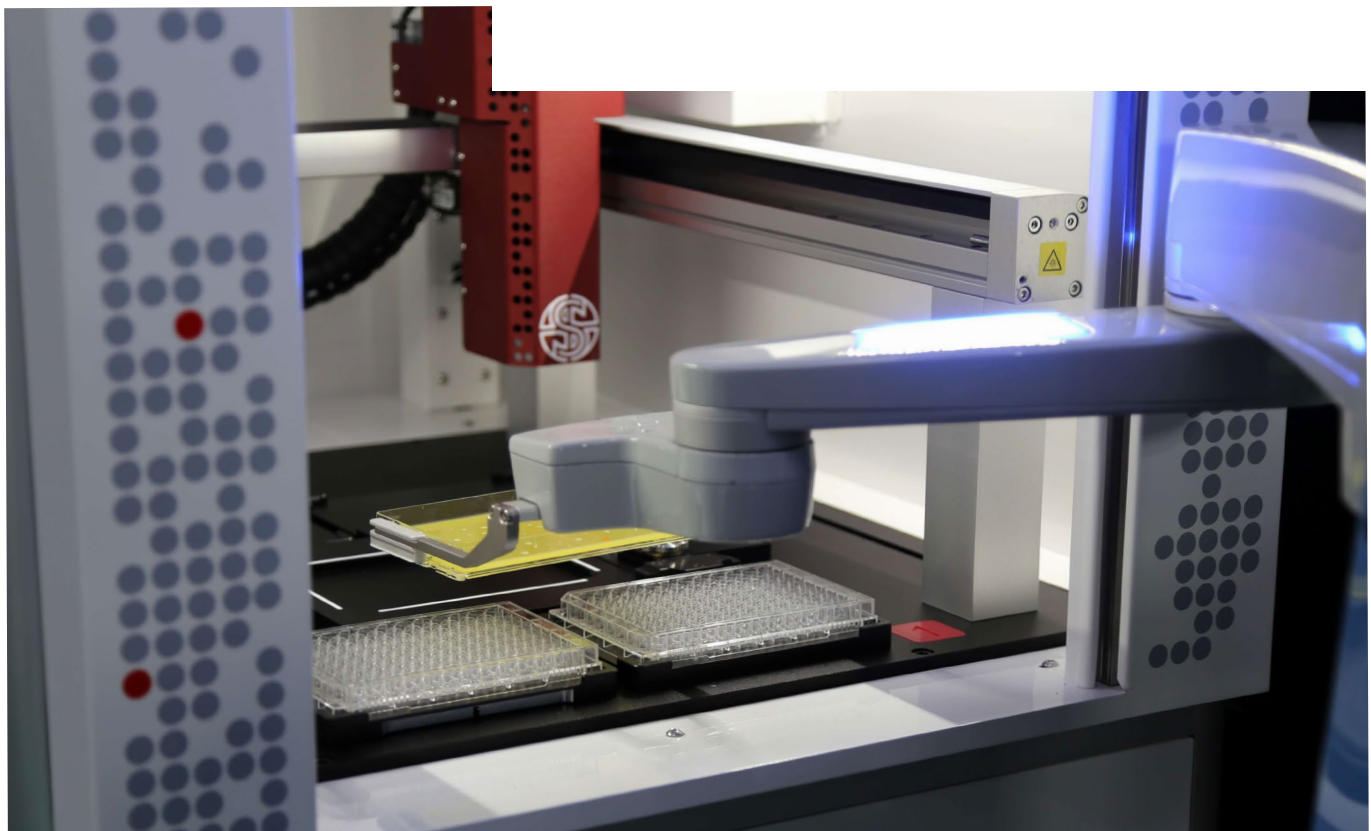
*SWITCH BETWEEN MANUAL OPERATION AND FULL WALKAWAY AUTOMATION WITH EASE.*



*DESIGNED FOR LABORATORIES THAT WISH TO FUTURE PROOF THEIR WORKFLOWS.*

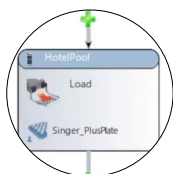
Automate your protocols with PIXL Dark and significantly enhance your colony picking capabilities. Compared to manual operation, which typically allows for up to 4,500 colonies to be picked per day during a typical 7.5-hour working day, the PIXL Dark offers the potential for even greater productivity, particularly when overnight runs are considered. With overnight runs, the PIXL Dark, as part of its around-the-clock integration with a robotic arm, can achieve a remarkable 14,400 colonies picked each day, showcasing the substantial benefits of automation for your laboratory.

Create a fully automated colony picking workflow or, integrate your colony picking operation with existing upstream or downstream processes, to build a fully automated workcell.



# How does PIXL Dark work with **Momentum?**

PIXL Dark enables you to filter and pick individual hits of interest and generate new libraries; ThermoFisher Scientific's Momentum allows you to build, schedule, and execute custom workflows.



## **DRAG AND DROP WORKFLOWS**

Simple construction of workflows using the easy-to-use flow chart style editor.



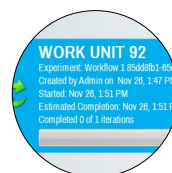
## **DYNAMIC EVENT SCHEDULING**

Run multiple workflows unattended, prioritise batches in real time



## **RUN SIMULATIONS**

Optimise and test your workflow before you start.

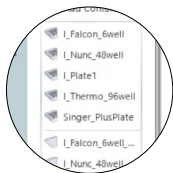


## **REMOTE NOTIFICATIONS**

Get workflow progress sent straight to your inbox. Customise which level of user receives certain notifications. Stay up to date and in control with the automated set-up from your desk, enabling you to deal with issues before they develop.

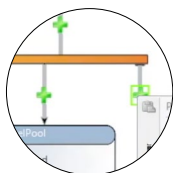
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Singer Instruments have an integration partnership with ThermoFisher Scientific Momentum to enable users to establish walkaway colony picking workflows with ease. Eliminate the headache of driver development by choosing to use PIXL Dark with Momentum, an automation-ready module designed to help you get your workflow up and running from day one.



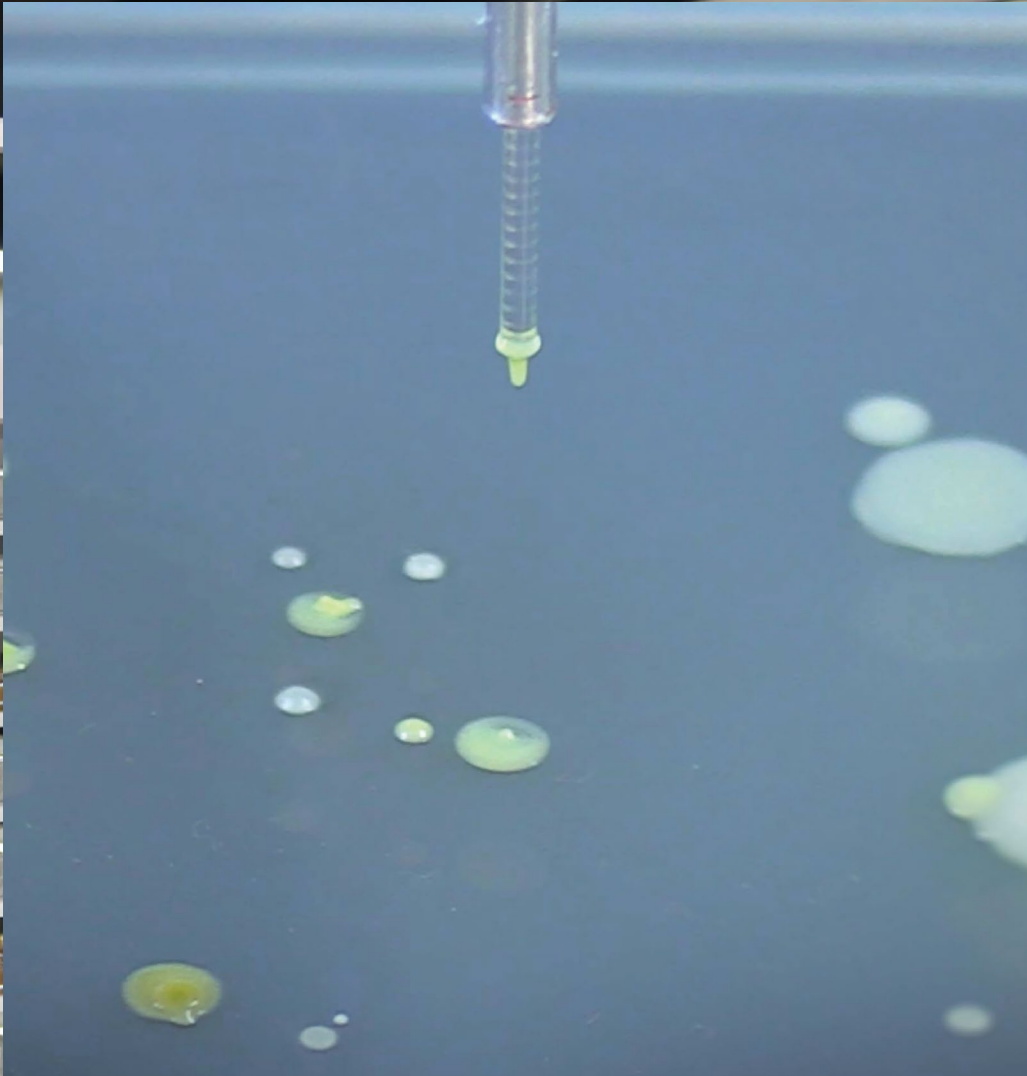
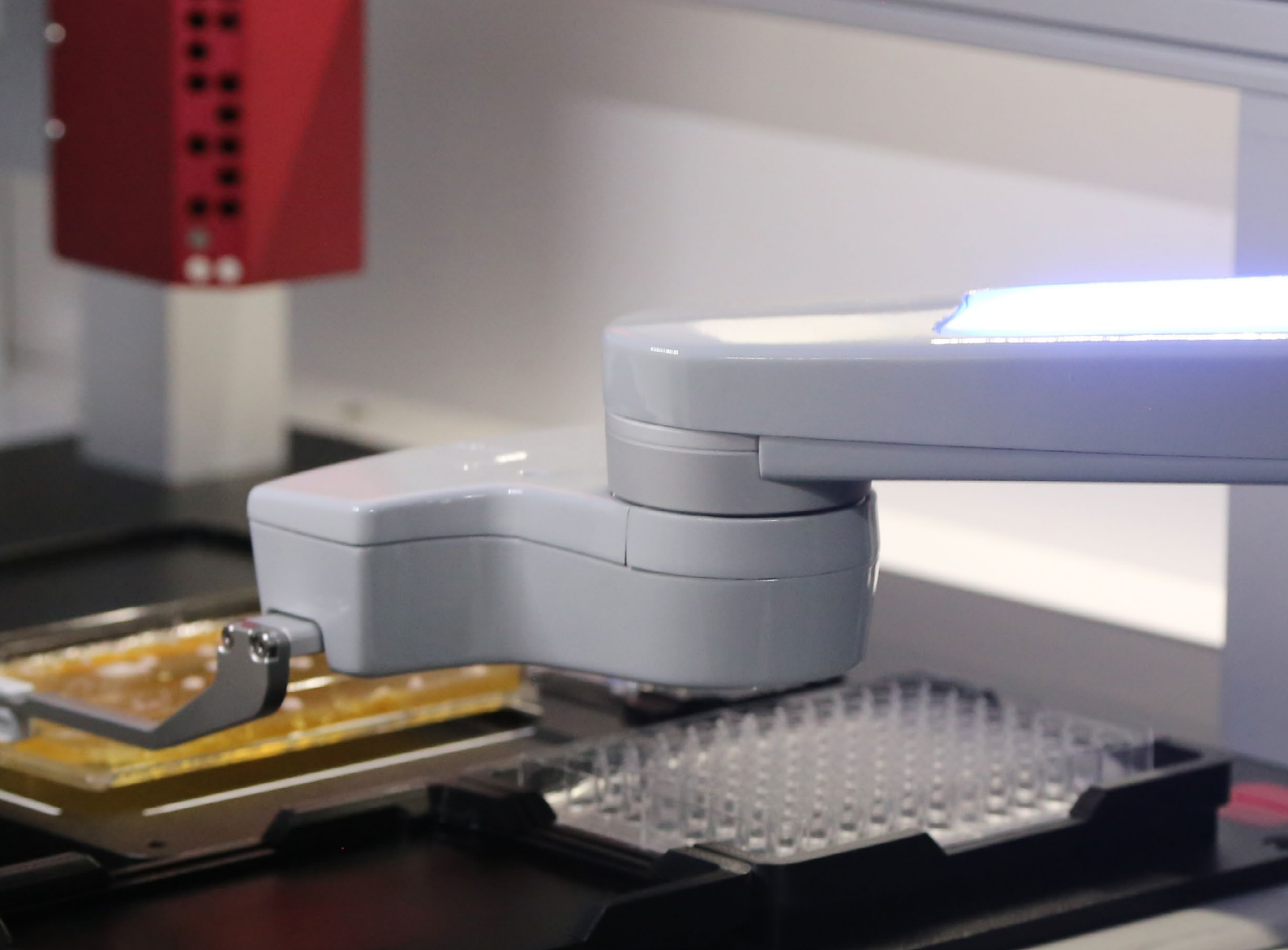
## **FLEXIBLE PLATE HANDLING**

Supports SBS format microplates and deep well plates with a typical capacity of 60-120 plates.



## **FLEXIBILITY TO GROW**

When your workflow grows, the system can grow with you. Momentum is compatible with thousands of laboratory devices with existing drivers to support automated plate sealing, liquid handling, incubation, and more.



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# What is **Spinnaker** **Robotic Arm?**

The Spinnaker robotic arm facilitates the movement of source and target plates to automate your colony picking workflows. While plates are in use the Spinnaker arm takes care of de-lidding and storage and when finished re-lidding and returning the plate afterwards compatible with random or sequential access storage. With an inbuilt barcode scanner the Spinnaker robotic arm will automatically scan each plate to consistently identify your plates and to facilitate full data traceability. With automatic collision detection recovery the Spinnaker robotic arm will correct itself for location discrepancies.

*BUILD YOUR WORKFLOWS, LOAD YOUR PLATES,  
PIXL WITH MOMENTUM WILL HANDLE THE REST.*



# **PIXL Dark with Anaerobic Chamber**

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PIXL is an easy-to-use and ultra-reliable colony picker with a small footprint that doesn't rely on compressed air making it the ideal choice for anaerobic research. Ensure environmental maintenance in your lab is more cost effective and less time-consuming using PIXL Dark with Anaerobic Chamber.





# Case Study

**WILMAR INTERNATIONAL  
LIMITED, ASIA'S LEADING  
AGRIBUSINESS GROUP.**

“WE ARE SCREENING FOR STRAINS THAT COULD BE USEFUL EITHER AS PRODUCTION STRAINS OR AS PROBIOTICS. WE HAVE USED PIXL TO SPOT OUR STRAINS ON 96 WELL AGAR PLATES FOR ASSAYING.”

*Dr. Sandra Kittelmann*



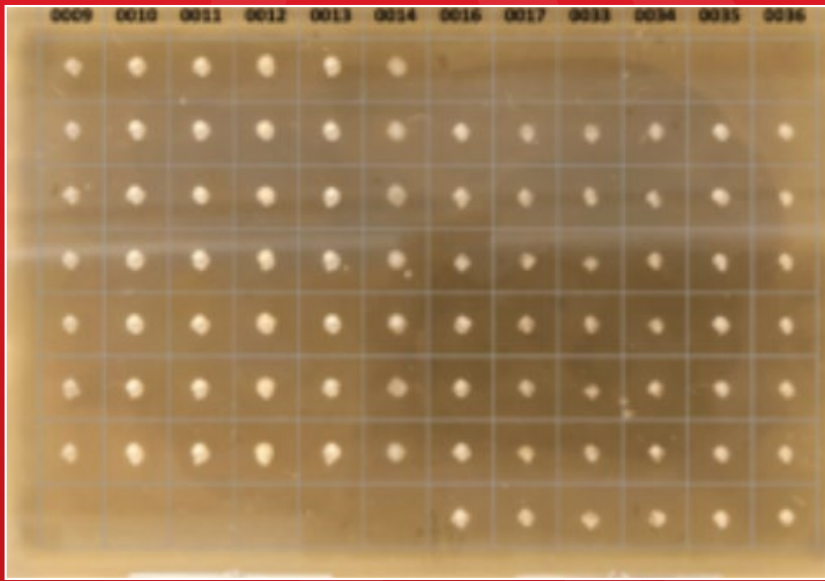
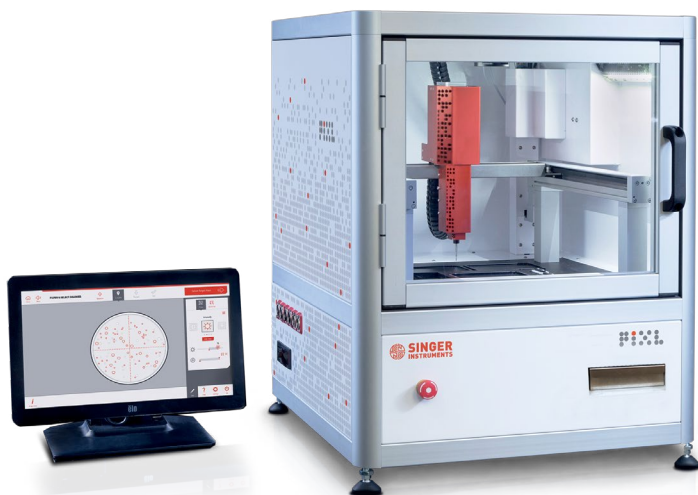
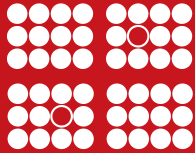


Figure 1. Showing Lactobacillus strains for antibacterial activity testing on MRS agar, on Singer Instrument's PlusPlate.

Photograph courtesy of Dr. Sandra Kittelmann, Wilmar International Limited.



[BOOK A DEMO ONLINE](#)



**ROTOR +**



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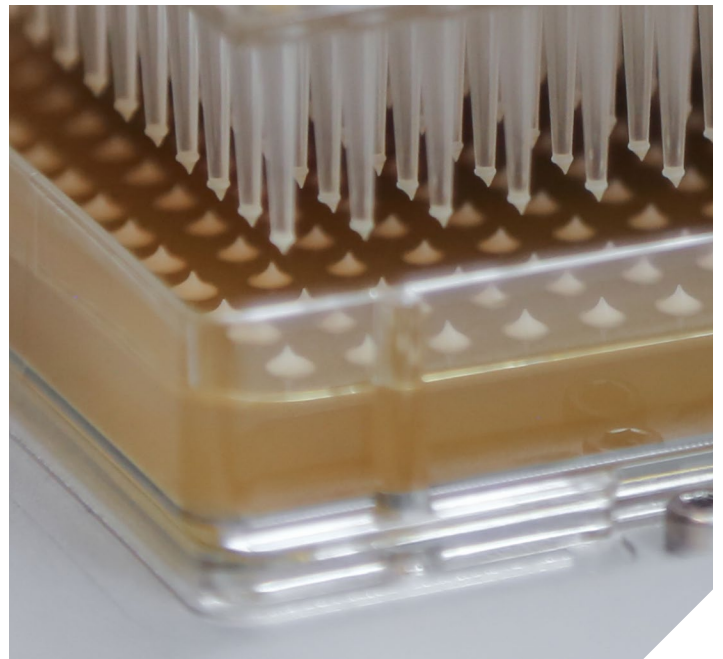
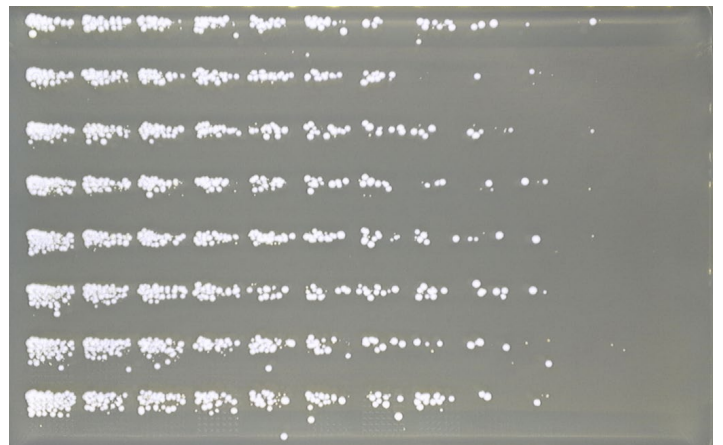
*HIGH-THROUGHPUT SCREENING.*

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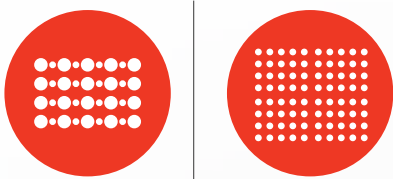
The microbial high-throughput screening powerhouses, ROTOR+ and PIXL, together enable researchers to drastically scale up their workflows. With increased screening power and precision colony transfer at ultra-high densities, researchers save months off their experimental time.

# Why do I need ROTOR+ PIXL?

ROTOR+ is a compact benchtop robot for easy, ultra-fast manipulation of high-density arrays of yeast, fungi, bacteria and algae. ROTOR+ uses sterile polymer replica plating pads to support liquid pinning to and from 96 and 384-well microtiter plates and agar pinning at densities of 96, 384, 1536, and 6144.



MORE THAN 10,000 CITATIONS SAYS ROTOR+ IS THE WORLD'S FAVOURITE MICROBIAL ARRAYING ROBOT.



## REPLICATE, MATE, AND RE-ARRAY

Plate replication can be achieved in under 25 seconds for agar-agar. ROTOR+ allows researchers to rapidly refresh collections on agar plates for reliable colony maintenance and media switching.

With agar-liquid or liquid-liquid transfer in under 30 seconds, ROTOR+ allows for quick inoculation of strains for downstream experimental workflows.

Mate yeast strains together with ease and reproducibility, maintaining full control of pressure, location, and working at far higher densities than would be possible if transferring manually by hand.

Automatically identify and filter colonies by phenotypic data to select colonies of interest for hit picking and re-arraying.

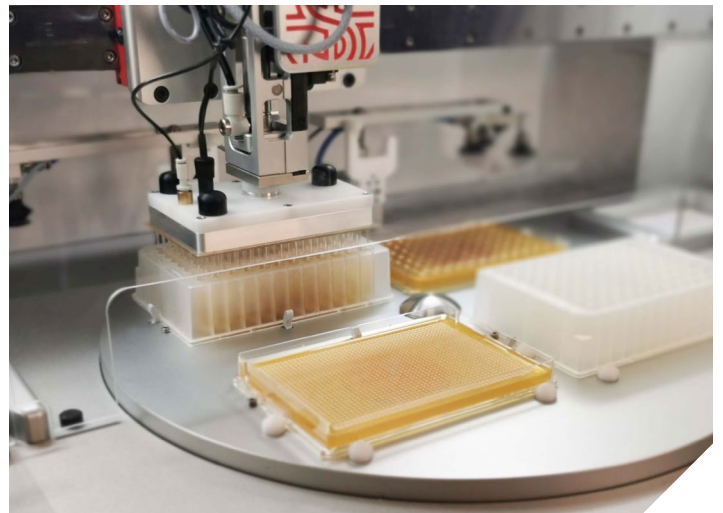
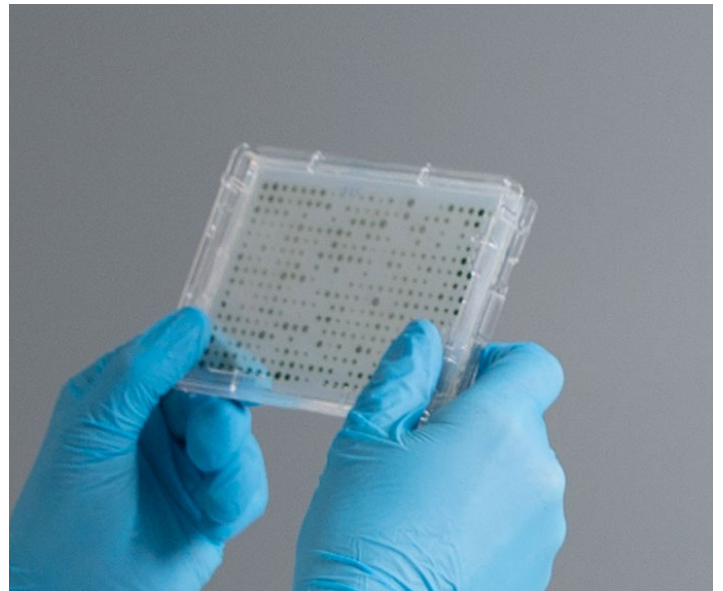
## HIGH-DENSITY PINNING



Cut experimental costs by 50% and drastically reduce experimental time by screening at 6144 density\* format using ROTOR+ while maintaining the same level of discriminatory power and quality as the 1536 format.<sup>(1)</sup>

\*Grow and analyse 6144 mutant colonies on a single agar plate.

*FOR SCALABILITY AND HIGH THROUGHPUT THE ROTOR+ HAS ALLOWED US TO PHENOTYPE THOUSANDS OF STRAINS, WHICH OTHERWISE WOULD NOT HAVE BEEN POSSIBLE.” PROF. JOSEPH SCHACHERER, STRASBOURG UNIVERSITY, CO-FOUNDER OF THE 1002 YEAST GENOMES PROJECT.*



(1) Bean, G.J., Jaeger, P.A., Bahr, S., Ideker, T. (2014) Development of Ultra-High-Density Screening Tools for Microbial “Omics”. PLOS ONE 9(1): e85177. <https://doi.org/10.1371/journal.pone.0085177>



## MIXING

The wet mix function allows the colony manipulating print head to stir in a planar motion. This ensures that the cells are evenly and consistently transferred from and to a liquid culture. Dry mixing is achieved by the colony manipulating print head scraping the agar surface in a custom set diameter. This enables transfer rates >99% across a range of microorganisms.

**BOOK A DEMO ONLINE**

# How does ROTOR+ work?

Dealing with thousands or even millions of colonies can be expensive and time consuming, not least daunting. You'll need an easily reproducible workflow and a team able to implement it flawlessly. To avoid spiralling costs, you'll also need to plan carefully how you use and store your media. ROTOR+ cleverly solves these issues by offering you the tools to drastically scale up your throughput, with only two basic items on your regular shopping list.

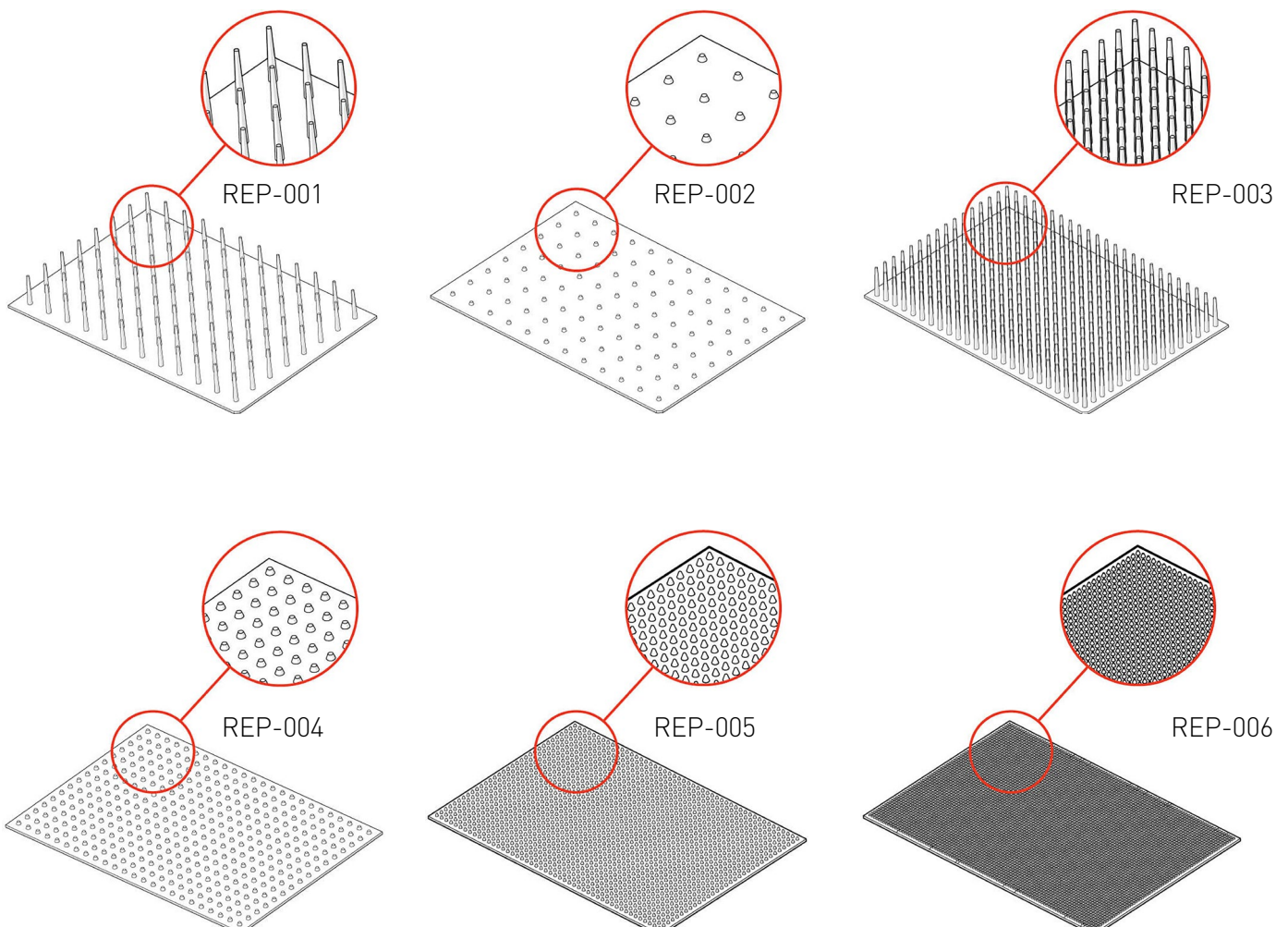
## 1. REPADS

Using Singer RePads - high-quality plastic replica-plating pads - combined with ROTOR+'s user-friendly interface, transferring colonies between a range of plates and densities becomes almost child's play. Ultra high-precision mechatronics enable a **maximum density of 6144** and beyond, far surpassing the limits of the best liquid handlers. [1]

Singer RePads are available in two pin lengths: short for agar-to-agar colony transfer and long for transferring cells in liquid culture. Our short-pin RePads come in a range of densities: 96, 384, 1536 and 6144. Our long-pin RePads are available in 96 and 384 format, allowing transfer from shallow and deep multi-well microtitre dishes.

## 2. PLUSPLATES

Singer high-quality PlusPlates, with increased plating area, are essential for precise replication at all densities. Singer RePads and PlusPlates come in gamma-irradiated packs. ROTOR+ will also accept multi-well, microtitre plates: Shallow and Deep Well Plates (96 and 384) and SBS standard trays, compatible with long-pin RePads.





## ROTOR+ ACCESSORIES



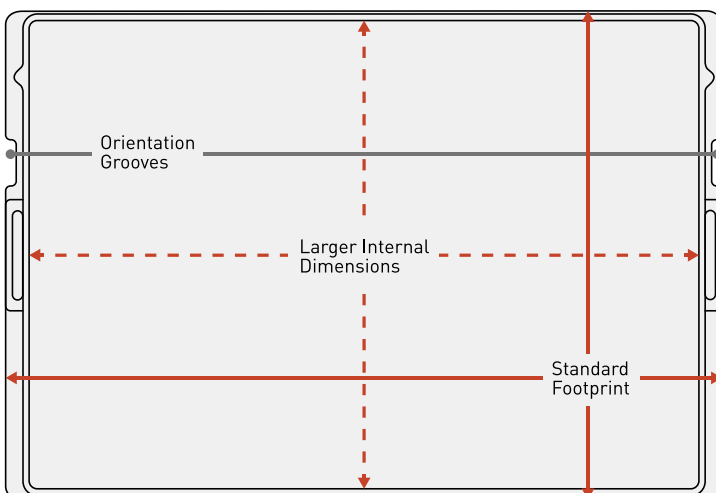
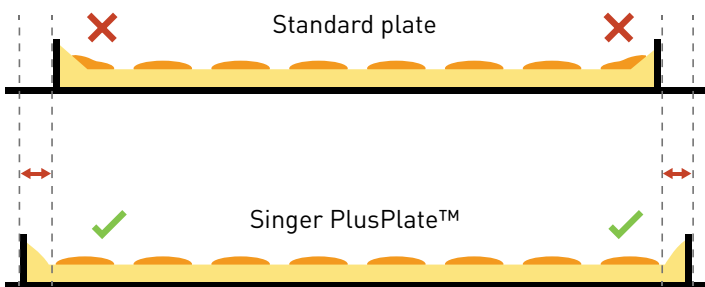
**AIR COMPRESSOR**  
CMP-002

**PAD HOPPER**  
HOP-002

**DUMP DRAWER**  
DDR-002

### PLUSPLATES

**PLUSPLATES**  
PLU-003



### REPADS

**96 LONG**  
REP-001

**1536 SHORT**  
REP-005

**96 SHORT**  
REP-002

**6144 SHORT**  
REP-006

**384 LONG**  
REP-003

**VARI START  
PACK**  
VSP-001

**384 SHORT**  
REP-004

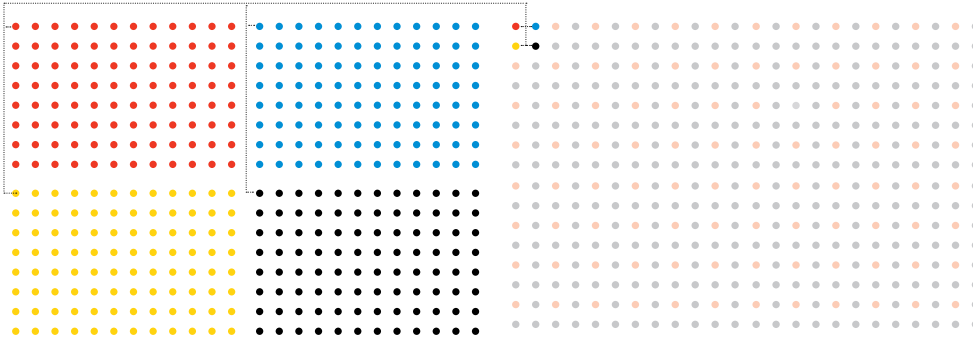
*(96 long x40, 384 long x40, 96 short x200, 384 short x200, 1536 short x200)*



# Pinning Features

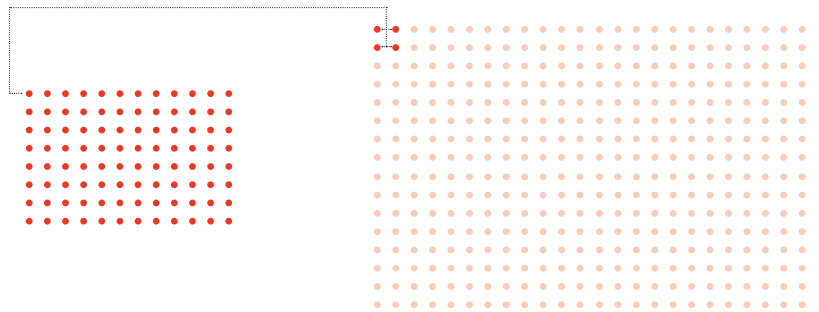
## PINNING EXAMPLES

1:4 Array 



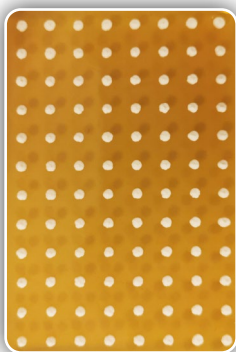
· 4x 96-density plates are combined onto 1x 384-density plate.

1:4 Single source 

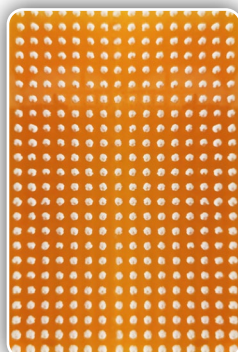


These protocols can be applied  
at all pinning densities.

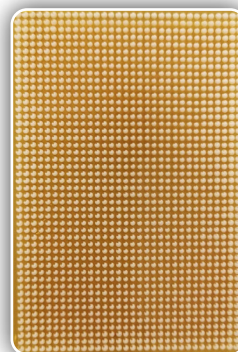
*THE POWER OF ROTOR+ IS UNPARALLELED. IT TAKES <25 SECONDS  
TO REPLICATE THE ENTIRE YEAST GENOME.*



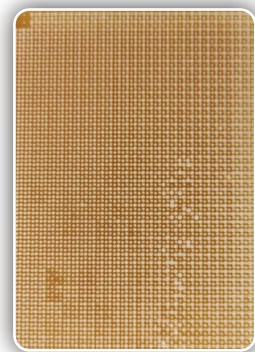
96-density



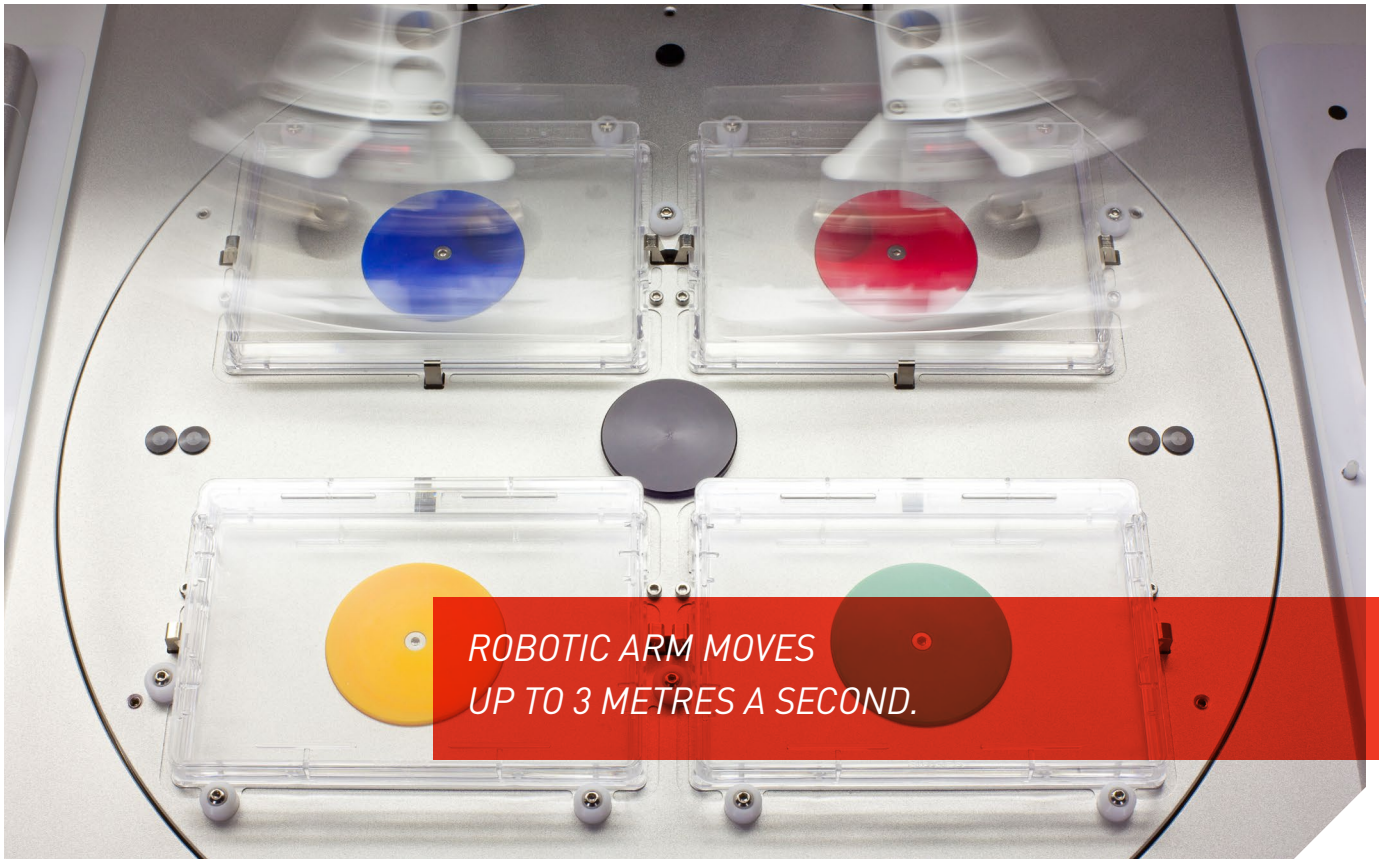
384-density



1536-density



6144-density



*ROBOTIC ARM MOVES  
UP TO 3 METRES A SECOND.*



*AGAR TO AGAR PINNING SPEED  
IS 25 SECONDS PER PLATE.*

*LIQUID TO AGAR PINNING SPEED  
IS 28 SECONDS PER PLATE.*

# Case Study

*HOW DR. KYLE LAUERSEN USES ROTOR+ PIXL TO AUTOMATE COLONY PICKING PROCESSES FOR GENETICALLY ENGINEERED ALGAE.*



[VIEW ONLINE](#)

**Dr. Kyle Lauersen leads the Sustainable & Synthetic Biology (SSB) group, in the Biological and Environmental Science and Engineering (BESE) Division, at King Abdullah University of Science and Technology (KAUST). His research group aims to develop resource-efficient bio-processes involving genetically engineered algae to investigate solutions for a sustainable future.**

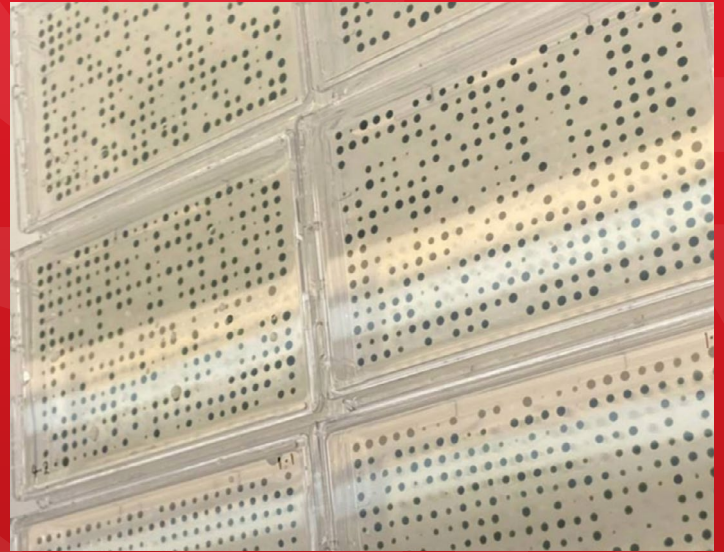
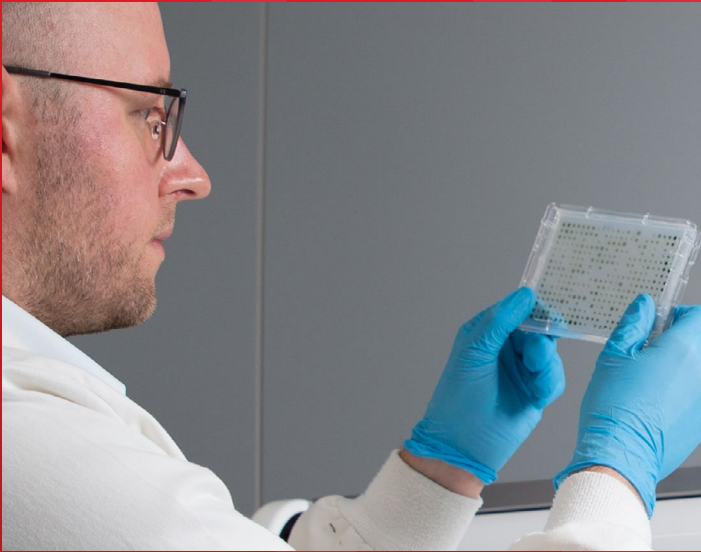
“Our previous workflows involved manual picking of transformed colonies with tooth-picks. As one can imagine, this is a very tedious process, and when there are 20 different plasmids to try, picking hundreds of colonies manually for each one can take a group of students several finger-breaking days.

The PIXL increases our throughput (and sanity) by over 8-fold. In addition to that, the standardisation of colony arrays made by the robot are far superior in quality and reproducibility than anything we could do by hand. We are able to reduce media use, as we can get many more colonies per plate area than by manual

picking. The maximum we trust ourselves to do by hand is 144 colonies per 13×13 cm plate, while the PIXL easily puts 384 colonies on its small rectangular plates.

Algal colonies are not simple to store by freezing, and we maintain our collections on agar plates which get refreshed bi-weekly or monthly. The ROTOR+ then allows rapid, clean, and reliable colony maintenance and media switching. Again, our normal workflow is to use the back of PCR plates as a stamp to transfer colonies from one agar plate to another.

This, obviously has its limitations, both in human error and the fact that only 96 colonies can be transferred at a time. The ROTOR+ removes all artisanal human error from the stamping process, while enabling much higher densities of colony transfer in any situation. It also allows rapid inoculation of 96/384 well liquid plates, using the long pins. This standardisation process also allows us to improve analysis of colony features statistically across a population already at the agar plate level.”



## EXTRA READING

Abdallah, Malak N., et al. "Combinatorial engineering enables photoautotrophic growth in high cell density phosphite-buffered media to support engineered *Chlamydomonas reinhardtii* bio-production concepts." *Frontiers in Microbiology* (2022): 1337.

[Click to read more.](#)

Gutierrez, Sergio, Gordon B. Wellman, and Kyle J. Lauersen. "Teaching an old 'doc' new tricks for algal biotechnology: Strategic filter use enables multi-scale fluorescent protein signal detection." *Frontiers in Bioengineering and Biotechnology* (2022): 1700.

[Click to read more.](#)

Yahya, Razan Z., et al. "Engineered production of isoprene from the model green microalga *Chlamydomonas reinhardtii*." *bioRxiv* (2023): 2023-01.

[Click to read more.](#)

## WEBINAR

*Chlamydomonas*: Unlocking discoveries in sustainable biotechnology. Recorded on 28th September 2022

What challenges do researchers overcome when genetically editing *Chlamydomonas reinhardtii*?

How to design transgenes that work with host cell machinery.

How *Chlamydomonas* can be a powerful biotechnological chassis.

**WATCH ON DEMAND NOW**

# ROTOR+ PIXL

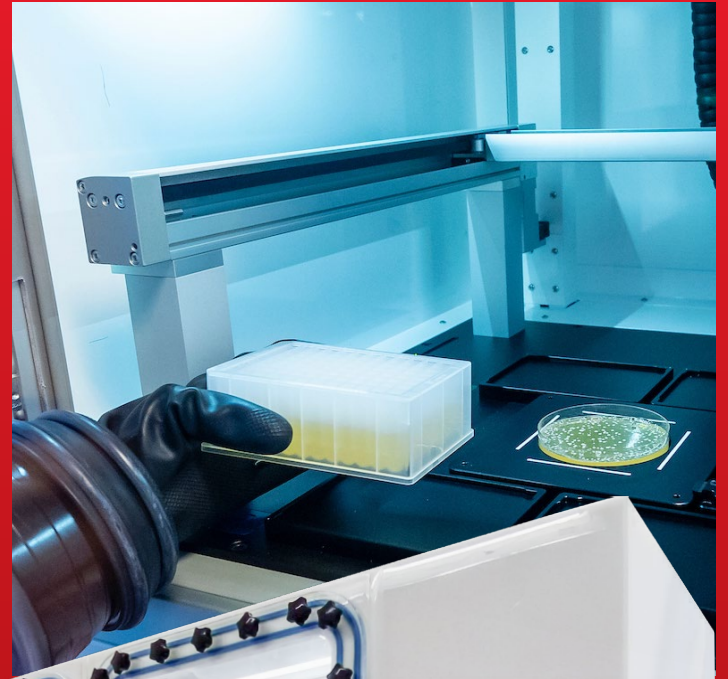
## Dark in Anaerobic Chamber

"I THINK THE PIXL IS A GREAT INSTRUMENT TO HAVE IN THE LAB IF YOU'RE DOING ANAEROBIC WORK, IT'S VERY EASY TO USE, IT'S FLEXIBLE, AND IT'S FAST."

*Mari Rodriguez Senior Scientist,  
at SNIPR Biome.*



[FULL INTERVIEW](#)

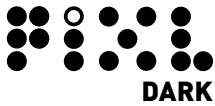


ROTOR+ PIXL is compatible with anaerobic chambers and tents allowing you to manipulate anaerobes at ultra high-throughput reliably in anaerobic conditions.

Get in touch to find out more information.

[CONTACT US](#)

[singerinstruments.com](http://singerinstruments.com)



### LIGHTING MODEL

1x White Channel & 5x Fluorescence Channels

### TECHNICAL SPECS

Footprint:

Height: 795mm

Depth: 721mm

Width: 640mm

Weight: 100kg

Power: 240VAC at 3 Amps, 100-240VAC

Compatible.Hz

Max Power Consumption: 65w

### CAMERA

5MP (2448 x 2048) Resolution

USB 3.0

2/3" Sensor

16mm Autofocus Liquid Lens

### MONITOR

21.5", 1080p Full HD, LED-Backlit LCD Monitor

Edge-to-edge glass display with anti-glare

### WARRANTY

1 year as standard

Average picking pressure

<9g/mm<sup>2</sup>

Transfer efficiency

Agar to agar: 99.78%

Agar compatibility

1.3% -> 2%

### PRODUCT CODE

PIX-001 and PIX-004

### INTERNAL PC SPEC

2.30GHz Intel 6th Gen Dual Core i3-6100U

Processor

-20 ~ 60 °C extend temperature operating

2.5" 32GB MLC SSD (0~70°C) - Can be upgraded to: 128GB / 256GB / 512GB

4GB DDR3 Memory

DC-PWR-MIOe – 9V-36V power module

### POWER REQUIREMENTS

240VAC at 3 Amps, 100-240VAC Compatible.

### MOMENTUM / SPINNAKER ROBOTIC ARM

### PRODUCT CODE

(USD) – SPK-001

(EUR) – SPK-002

### TECHNICAL SPECS

Footprint:

Depth: 343mm

Width: 1194mm

Height: 635mm

Weight: 25 kg (33.8 kg)

Power: 100–240 V auto-switching

### AXIS JOINT

Overall Height 800 mm (1583 mm)

Radius (reach) ±597 mm

Workspace Height (above mounting surface)  
-32–603 mm (-32–1353 mm)

All information is correct at the time of printing.  
Some revisions may be made as specifications are improved. For more information please contact:  
[contact@singerinstruments.com](mailto:contact@singerinstruments.com)



## TECHNICAL SPECIFICATIONS

# ROTOR+

### LIGHTING MODEL

White light and UV disinfectant light

### PRODUCT CODE

RT2-001

### TECHNICAL SPECS

Footprint:

Height: 750cm

Depth: 620cm

Width is 1610cm

Weight: 114.4kg

110-240V AC 50-60 Hz Power: 500W

Power connection at the right hand end (from front) via IEC cable (supplied)

### WARRANTY

1 year as standard

### AIR SUPPLY

Dry, oil-free, compressed air/nitrogen at min 4 bar (60 psi) max 10 bar (150 psi)

Consumption: 3 litres/min (0.1 CFM)

Air connects to left hand end (from front)

### TOUCH SCREEN MONITOR

1x Ethernet Port

2x USB Port

1x RS232 Serial Port

1x KB/MS/LAN2

Edge to edge glass with anti glare

### PINNING HEAD

Movement X-axis: 800mm

Movement Y-axis: 30mm

Movement Z-axis: 90mm

### PINNING SPEED

Agar to agar: 25 seconds per plate

Agar to liquid/liquid to agar: 28 seconds per plate

## SUPPORT OPTIONS

### 1-YEAR LAB SUPPORT

SLS-002

### 1-YEAR LAB SUPPORT PLUS

SLS-003

*ASK US ABOUT  
DISCOUNTS AVAILABLE  
FOR MULTI-YEAR  
PACKAGES.*



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