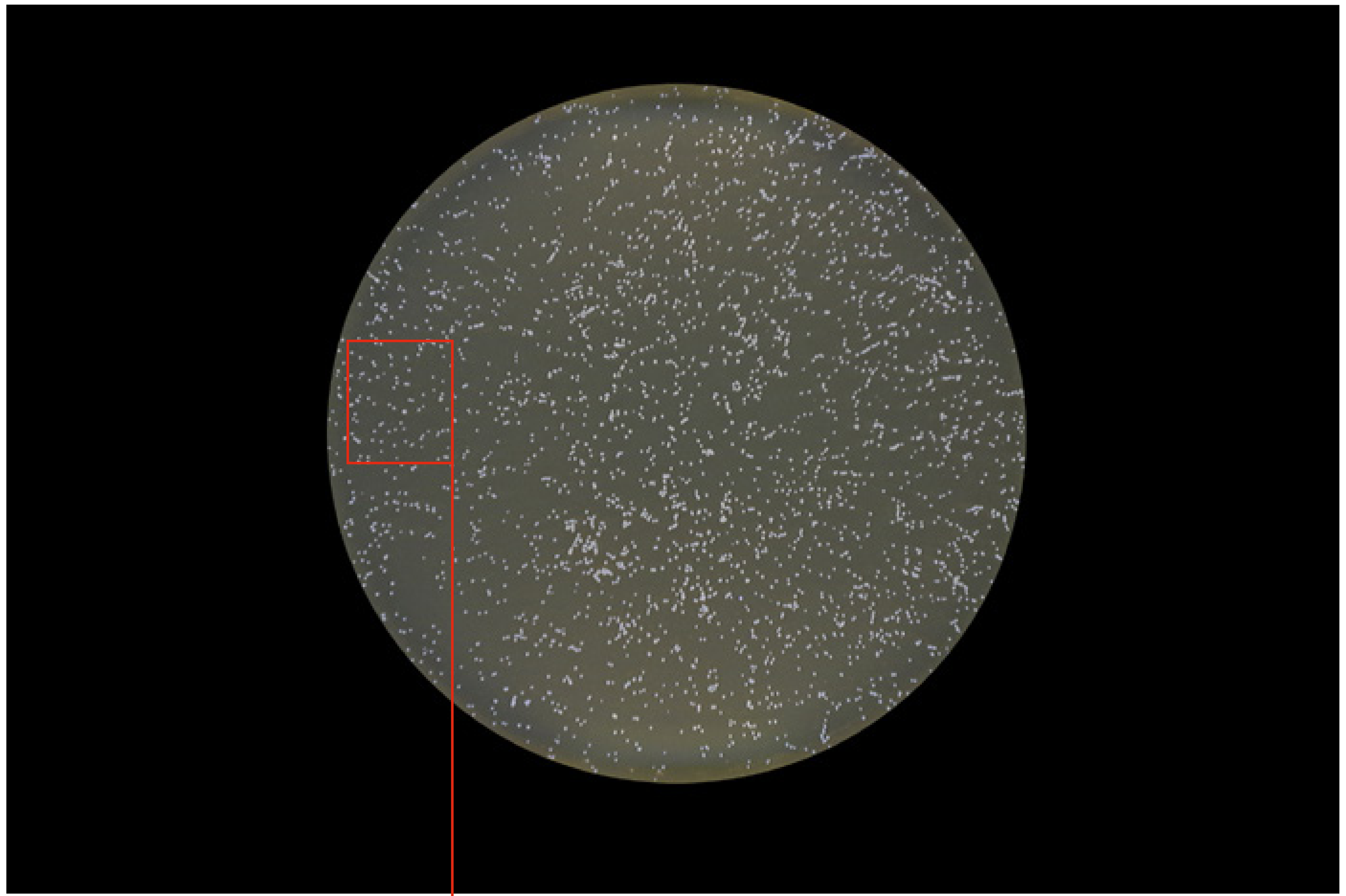
SINGER INSTRUMENTS
A RESPONSIBILITY TO SCIENCE!

PHENOBOOTH™

Colony Counting with powerful analysis software

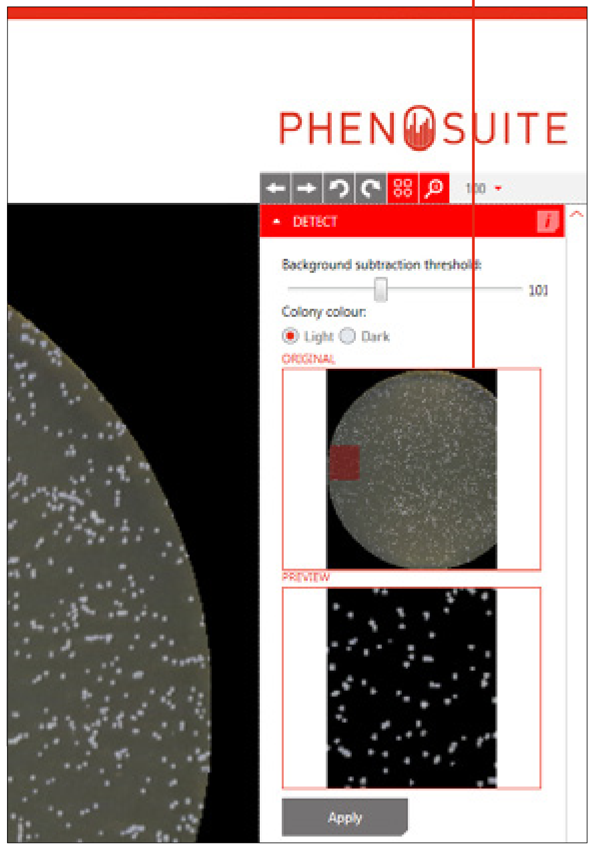
ACCURATE
COMPACT
FAST

Counting *E. coli* colonies is easy. Counting pseudo-invisible, sausage-shaped colonies and excluding yellow circular ones isn't. Oh wait, yes it is, I have a PhenoBooth.



WHAT IS IT? The PhenoBooth Colony Counter is a fast, super-easy to use, closed-chamber Colony Counter for imaging and analysis of colonies on agar.
It uses a scientific-grade camera with 5MP plate resolution, and 4-channel, flat-field SpectraStar™ incident and transmission illumination to capture high-resolution colony images from Petri dishes and SBS plates.

HOW DOES IT WORK? Insert a Petri dish with visible bacteria, yeast or other microorganism into the input tray; select your preferred wavelength; autofocus and capture your plates in seconds. Using the touch-screen MCI, filter for properties of interest just once; hit 'Batch Analyse' and walk away as PhenoBooth automates the tedious analysis across all of your plates with a single click.
Colonies can be filtered by size, circularity, colour and brightness. Applications include Colony Counting, Growth Curves, Fluorescence (BFP/GFP/YFP/mCherry*) Detection, Serum Bactericidal Assay, Opsonophagocytic Killing Assay, Spiral Plate Analysis, Single Radial Immunodiffusion and Ames Testing.
Automatically export your images and .CSV files.



Removing background of the image and detecting colonies

WHY DO I NEED IT?

- Pick the hits that interest you – Filter colonies by: size, colour, circularity and brightness.
- Detect fluorescence – 3 SpectraStar™ incident illumination channels: white, blue and ultraviolet and 1 transmission channel. Cyan available instead of ultraviolet
- Count with confidence – Smallest detectable colony >= 90µm.
- Stop wasting effort – Nothing compares. *E. coli*, fungi or phage plaques: detect it all.
- Remove variables – Batch processing and analysis of your plates with a single click.
- Future-proof your lab – Upgrade PhenoBooth with advanced software packages such as Colony Picking or Screening.

*mCherry available with PhenoBooth Cyan model.

"THE PHENOBOOTH IS EXTREMELY QUICK AND EASY TO USE. ITS OUTSTANDING IMAGE QUALITY MAKES IT AN INVALUABLE TOOL FOR COLONY IMAGING."

- Gudjon Olafsson
MRC National Institute for Medical Research

TOUCH-SCREEN
15.6" touch-screen MCI for colony counting and analysis software.

BACK LIGHT
Integrated SpectraStar™ light for high-fidelity, transmitted light images.

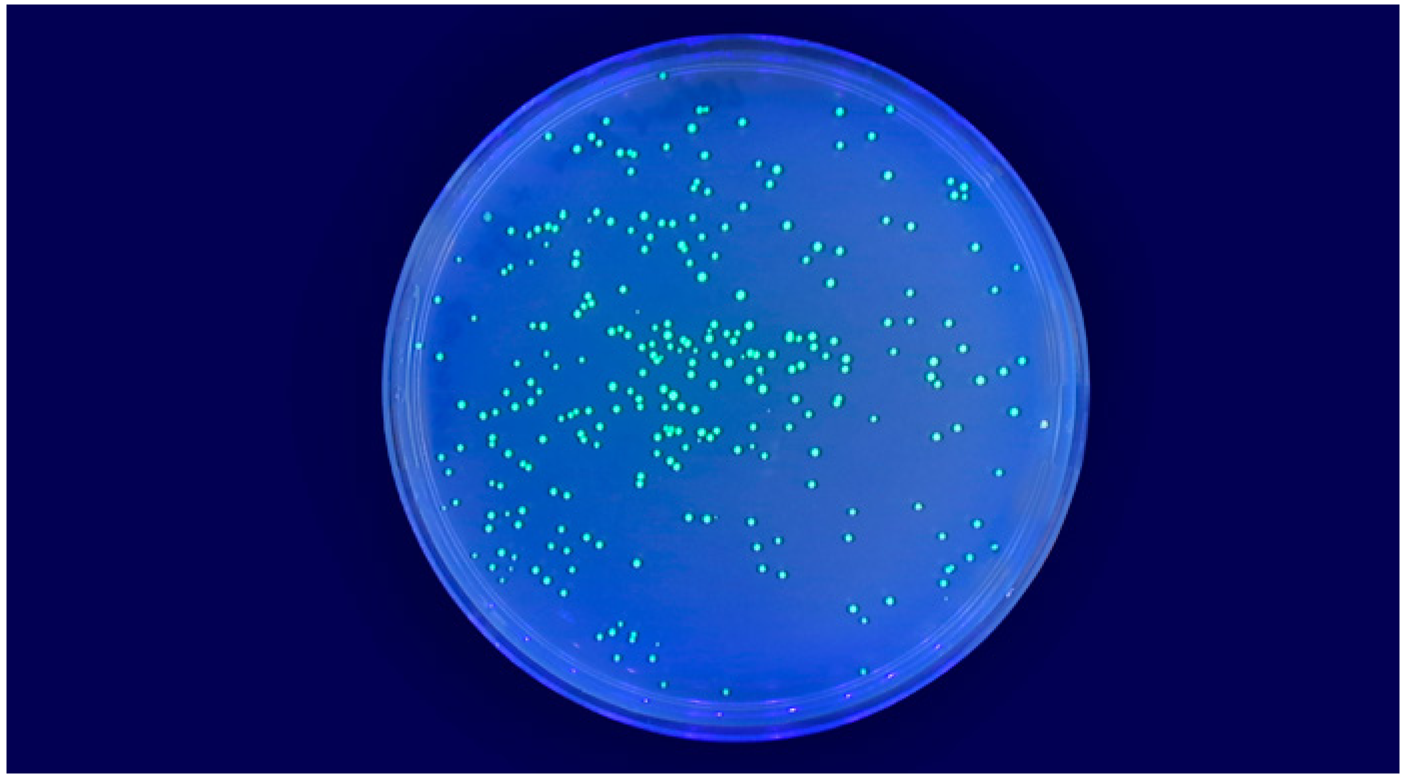
FILTER TRAY
PhenoBooth accepts two standard 25mm circular filters with a maximum height of 5mm

FUNCTION LIGHT
Light indicator to signal operation type.

INPUT TRAY
Rectangular SBS plate tray with optional petri dish adaptor.

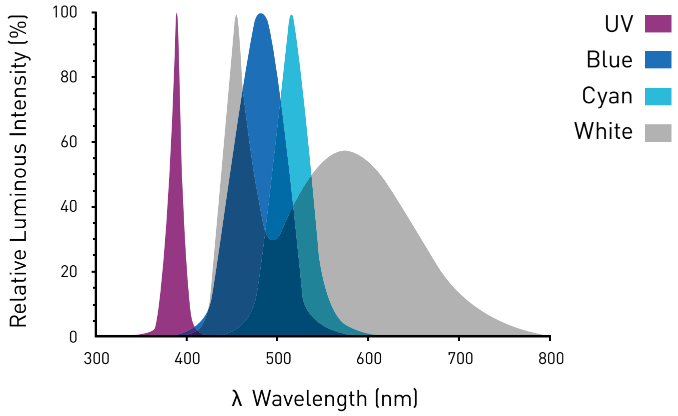
TOP LIGHT
Integrated SpectraStar™ light for high-fidelity, incident light images. White, blue and UV light options.

USB 3.0
Connections for MCI interface.



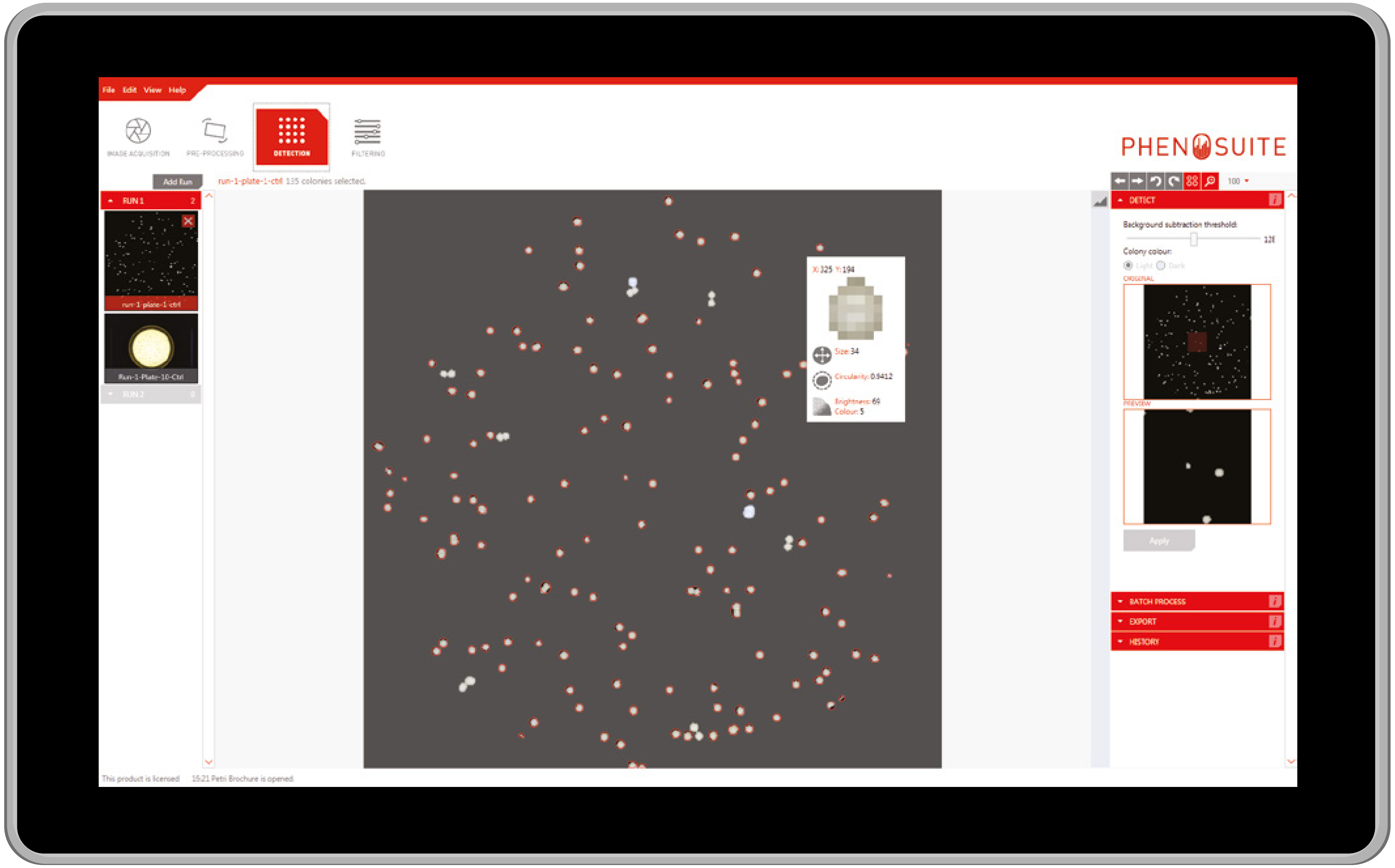
FLUORESCENCE The PhenoBooth can detect fluorescence. Screening for fluorescence on agar is advantageous because it is cost-effective and very high throughput (>6,000 colonies on an SBS plate). This is not a microscope! It is a macroscopic CCD imaging workstation. As such it will not detect sub-cellular or low levels of expression.

WAVELENGTHS The PhenoBooth is available in two different LEDs set-ups. The standard PhenoBooth includes UV, blue and white light. The PhenoBooth Cyan option includes cyan, blue and white light. Switch between the three emission lights with a simple click in the included software. Relative Luminous Intensity vs. Wavelength is shown below. UV: 50% intensity range from 375 - 400nm, with peak ~390nm. Blue: 50% intensity range from 465 - 475nm, with peak at 470nm. Cyan: 50% intensity range from 490 - 530nm with peak of 510nm.



Source: Cree, Vishay and Lite-on data sheets.

FILTERS The PhenoBooth accepts standard 25 x 5mm filters in a two-position filter cartridge. The filters can be selected on a manual sliding mechanism. You can easily switch between two of your favourite image modes.



COLONY COUNTING

COLONY SIZING

COLONY CIRCULARITY

CUSTOMISE SOFTWARE

COLONY COLOUR & FLUORESCENCE

SPECTRASTAR™ TOP & BOTTOM, HIGH-FIDELITY ILLUMINATION

AUTOMATIC DATA STORAGE & MANAGEMENT

SOFTWARE OVERVIEW

The PhenoBooth software uses Singer Instruments' signature easy-to-use interface to automatically and accurately count and measure many colony properties. The software is powerful yet flexible, offering a variety of custom-made packages to automate your entire analysis workflow. Dissatisfied with existing colony counting software? You'll love PhenoBooth!

ONE-CLICK COLONY ANALYSIS!

SOFTWARE CAPABILITIES

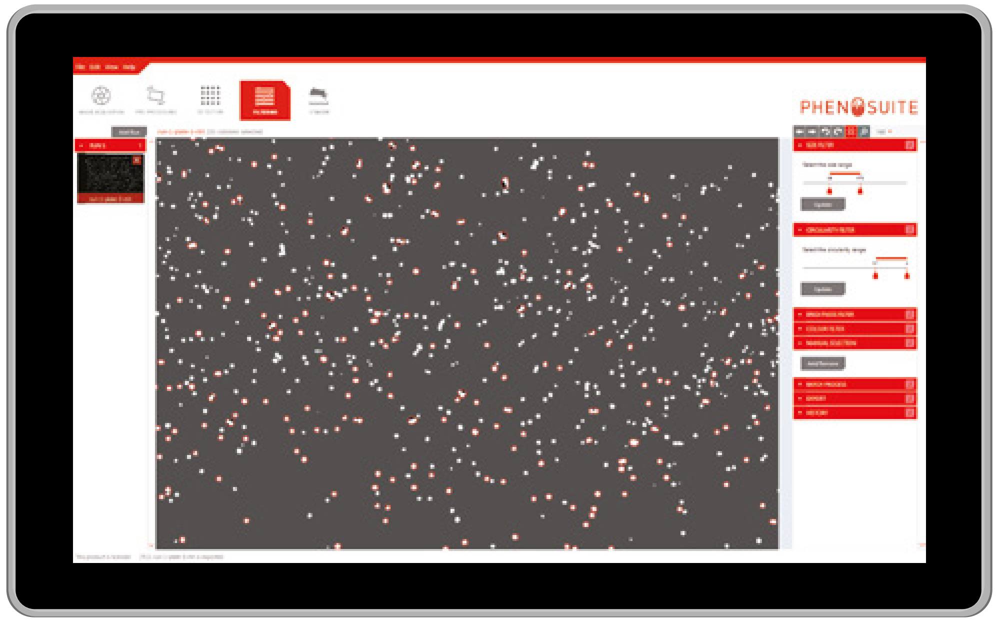
- Image acquisition up to 2800x1900.
- Full control of imaging parameters including: power, brightness, gain, exposure, hue, saturation, white balance (blue) and white balance (red).
- Image import, background subtraction and cropping.
- Petri dish or Rectangular PlusPlate compatible.
- Fluorescence: Image with UV and quantify size, colour, circularity and intensity.
- Colony separation >= 1 pixel.
- Automatic elimination of overgrown colonies.
- Adjustable filters to remove unwanted objects.
- Fully customisable colony detection.
- Automatic software updates (with a valid PhenoBooth licence).
- Export your results and meta data to .CSV.

SOFTWARE PACKAGE UPGRADES

If counting or scoring randomly distributed colonies is what you need, then PhenoBooth has this covered.

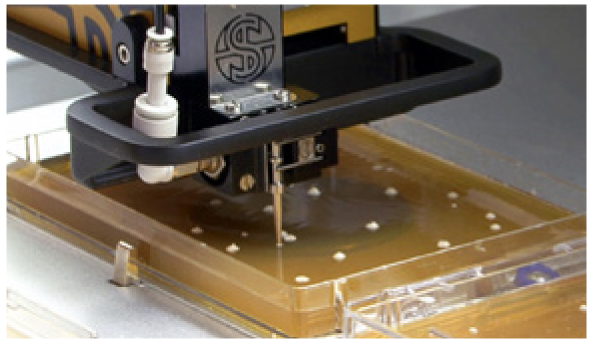
If you are interested in picking those colonies of interest, or if you are doing experiments that require advanced genetic or protein interaction screens analysis, then read on to learn about PhenoBooth's advanced software upgrades.

COLONY PICKING UPGRADE



OVERVIEW

The Colony Picking Package is a software upgrade for the PhenoBooth Colony Counter. It boasts micron precise coordinate export of randomly distributed colonies on agar rectangular PlusPlates or 90mm Petri dishes, for re-arraying in liquid or agar using The Stinger Colony Picker from Singer Instruments.



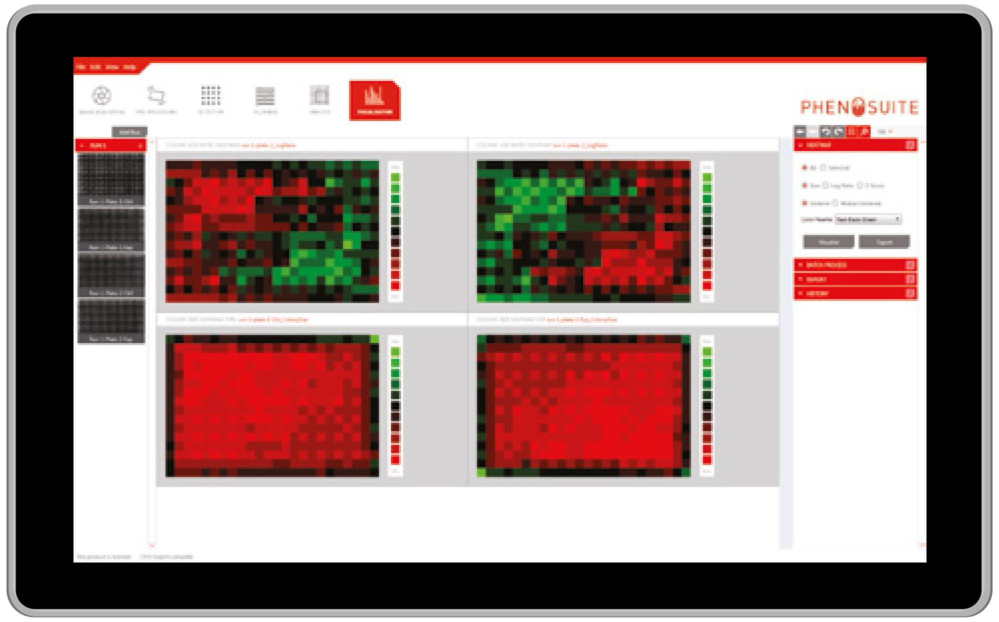
The Stinger picking the exported colonies

WHY DO I NEED IT?

- Pick the hits that interest you – Filter colonies by: size, fluorescent intensity, colour, circularity or brightness
- Don't compromise your research – Pick colonies with close to 100% accuracy
- Stop wasting effort – Filter colonies in your first image and batch apply settings to all others.
- Give yourself flexibility – Export a Stinger-ready colony picking routine, for colony transfer into liquid or agar SBS plates
- Get high-throughput – Pin to 96, 384, 1,536 and 6,144 density arrays
- Save time – Pin colonies to many plates using a single .CSV file
- Trust your results – The Stinger agar surface detection prevents missed colonies and cross-contamination 'splashing' of cells, both common problems when picking from uneven agar
- Automate your lab – Integrate PhenoBooth with The Stinger across a single network

Prefer a dedicated high-throughput robot? Discover our new PIXL Precision Colony Picker.
singerinstruments.com/solution/pixl

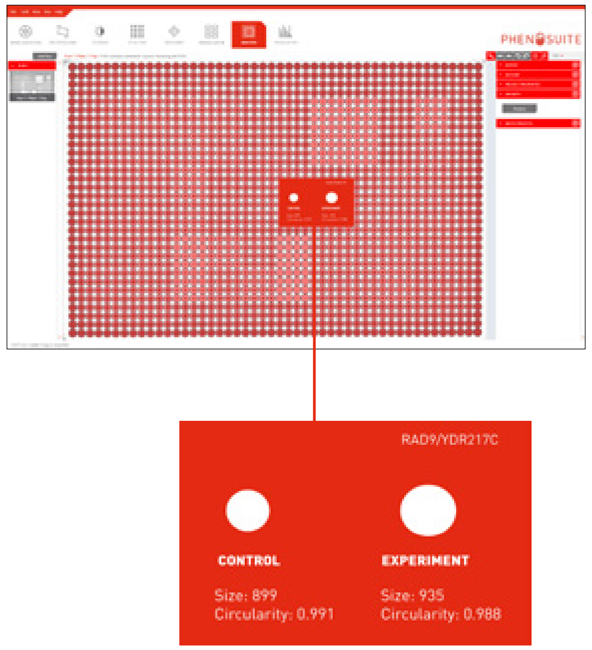
COLONY SCREENING UPGRADE



OVERVIEW

The Colony Screening Upgrade is a software package optimised for use with the Singer ROTOR Colony Replication Robot. It offers high-throughput quantitative analysis of your Synthetic Genetic, Yeast 2-Hybrid or Random Mutagenesis arrays — allowing your image analysis to keep up with your high-throughput pinning.

The Colony Screening upgrade also includes the new Web Application, offering new advanced analysis and visualisation of colony data sets exported from the PhenoBooth. It includes: new in plate and multi-plate normalisation options; boxplots and heatmaps; and more experimental design options based on all of your feedback.



WHY DO I NEED IT?

- Find the phenotypes that interest you – Screen colonies by: size, fluorescent intensity, colour, circularity or brightness
- Stop wasting effort – Image Pre-processing, Measurement, Analysis and Visualisation, with a single-click
- Detect hits in real time – Mouse over a colony and see its gene name and variation from control and replicates instantly
- Understand results faster – Inbuilt heatmap visualisations highlight growth differences between your control and aggregated experimental conditions
- Get the best results – Nothing compares. Detect every colony, every time at 96, 384, 1536 and even at 6,144 array densities
- Visualise change over time – Combine timepoints with our new Growth Curve Analysis template

TECHNICAL SPECIFICATIONS

HARDWARE SET-UP

STANDARD MODEL
PhenoBooth

STANDARD PRODUCT CODE
PHB-001

CYAN MODEL
PhenoBooth Cyan

CYAN PRODUCT CODE
PHB-002

TECHNICAL SPECS
Footprint:
- Width: 305mm
- Length: 305mm
- Height: 316mm

- Weight: 16kg
- Power: 100-200 VAC 50-60 Hz
- Max Power Consumption: 65w

CAMERA SPECIFICATIONS
- Scientific grade, HD CMOS
- 13MP (5MP plate resolution)
- Auto focus lens

TOUCH-SCREEN MCI
- 16:9 15.6" display
  4GB RAM
- Intel Haswell Core i5-4300U
- Microsoft Windows 10 Pro 64-bit

BOTTOM LIGHT
White

STANDARD MODEL TOP LIGHT
White, blue and UV

CYAN MODEL TOP LIGHT
White, cyan and blue

WARRANTY
1 year

SUPPORT

1-YEAR LAB SUPPORT LITE
SLS-001

1-YEAR LAB SUPPORT
SLS-002

1-YEAR LAB SUPPORT PLUS
SLS-003

PRODUCT NAME
PhenoBooth Software Licence

1 YEAR PRODUCT CODE
PSL-101

3 YEAR PRODUCT CODE
PSL-103

5 YEAR PRODUCT CODE
PSL-105

STANDARD SOFTWARE SET-UP

MODEL
PhenoBooth Colony Counting Package

PRODUCT CODE
PHS-001

LICENCES
- 3 user licences for 1 year (all 3 licenses start from the date of first activation)

UPGRADE SOFTWARE PACKAGES

COLONY PICKING PACKAGE
PHS-002

COLONY SCREENING PACKAGE
PHS-003

COMPLETE SOFTWARE PACKAGE
PHS-004

GET A QUOTE

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

ABOUT US

For over eighty years, Singer Instruments have been designing and manufacturing cutting-edge scientific research equipment.

No one understands the needs of microbiology researchers and yeast and bacteria manipulation better than Singers. From the automation of tetrad dissection using the MSM 400, to the ROTOR HDA personal omics robot, no one has done more to make microbiology accessible to all.

From its headquarters in the beautiful Exmoor National Park in Somerset, UK, Singer ships robotic systems and associated products internationally.

World-leaders in instrumentation for yeast and bacteria, Singer Instruments are working hard to make continual improvements to help assist the scientific community.

SINGER INSTRUMENTS

A RESPONSIBILITY TO SCIENCE!

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OUR DISTRIBUTORS

For a list of our distributors visit:
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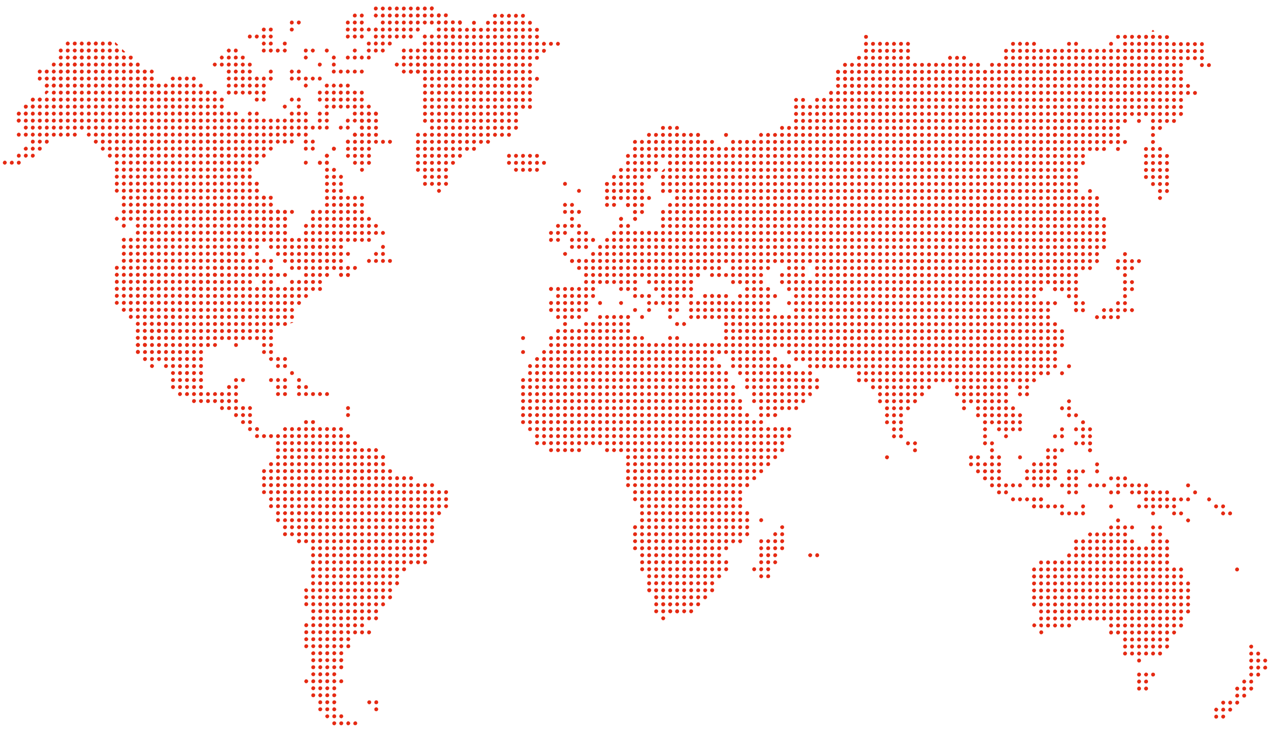

v2.5

/SingerInstruments