



Colony counting and zone measuring
Automated imaging





COLONY COUNTING & ZONE MEASURING


An automated system for all your applications

Synbiosis is the manufacturer and supplier of the world's most popular automated colony counters and zone measurement systems. With over 25 years of experience, Synbiosis systems provide dedicated solutions for a wide range of applications. ProtoCOL 3 is the number one choice in the automated colony counting and zone measurement market.

ProtoCOL 3 is the next generation instrument for colony counting, zone measuring (inhibition and AST), membranes, PETRIFILM™ plates and a range of other applications including: Spiral plates, OPKA, SBA, Multi-sector, Multi-well, SRD and Ames. **ProtoCOL 3** enables plates of up to 150mm to be automatically read at the press of a button.

Designed for use across a wide range of applications, **ProtoCOL 3** will count colonies as small as 43 microns (0.043mm) or measure zones accurately to 0.5mm with a theoretical detection limit of 0.1mm.

ProtoCOL 3 has a unique LED lighting system configured for exceptional illumination of all sample types. High definition, colour images taken with a 1.4 mega pixel scientific grade CCD camera ensure that even the smallest colony can be seen and counted, while zone measurements are fast, accurate and reproducible.



**ADVANCED
AUTOMATION &
EFFICIENCY IN
MICROBIOLOGY**

ProtoCOL 3 is available with a mounted touch screen processor which enables ease of control while the easy-to-use software produces highly accurate results. Alternatively, **ProtoCOL 3** can be used with a new or existing stand-alone desktop or laptop computer via USB connection - no additional PCI cards are required.

ProtoCOL 3 comes inclusive with both colony counting and zone measuring ability. To extend its range of applications, inexpensive additional modules can be added to the software for Spiral, OPKA, SBA, Multi-sector, Multi-well, SRD and Ames as well as an optional bespoke statistics package. Results can be automatically transferred to Excel or a LIMS system. The system can also be used with 1D and 2D barcodes. All data generated is GLP/GMP compliant with a full audit trail and can be used to produce professional reports. Each system comes complete with 2 validation plates.

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PROTOCOL 3 SOFTWARE

Applications at the touch of a button

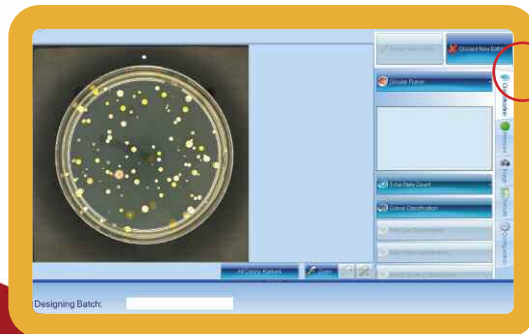
At the heart of every **ProtoCOL3** colony counting and zone sizing system is the innovative and intuitive **ProtoCOL3** software. Designed for maximum ease of use and with the needs of the busy microbiologist in mind, **ProtoCOL3** software easily guides the user to the appropriate functions for each application. The great variety of modern microbiology techniques are easily addressed by the flexibility of **ProtoCOL3** software.

- Modular design for application specific functionality
- Displays only those commands relevant to each operation
- Simple touch screen interface enhances productivity
- Images and data automatically saved with each measurement
- Installed SQL database facilitates LIMS connectivity
- Results can easily be exported to spreadsheets

PROTOCOL 3 -
A SOLUTION
FOR EVERY
MICROBIOLOGY
APPLICATION

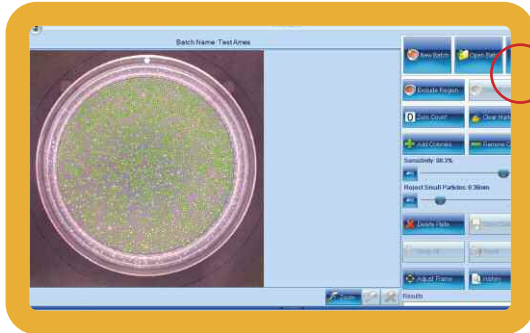
ProtoCOL3 has two methods of counting: Total Plate Count and Colour Classification. Total plate count gives a quick and accurate count. Colour classification allows colonies to be separated according to colour, size and shape. Colonies grown on membrane filters can also be counted with **ProtoCOL3** using the grid removal function.

Controls on the measure screen allow adjustments to be made on a plate by plate basis if required.

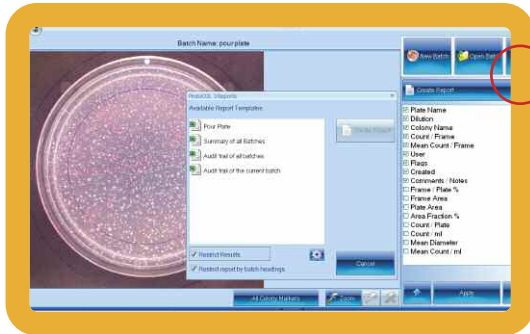




Zones are measured at the click of a button to an accuracy of 0.5mm with a theoretical detection limit of 0.1 mm.



Edit function for count and zone measurements allows plates to be adjusted if required, with a full audit trail to keep a track of any changes made.



Customisable reports produced in Excel* or OpenOffice.

*Excel licence required

PROTOCOL 3

Ease of use is the key

The ergonomic design of **ProtoCOL 3** makes it very comfortable and easy to use.

Processor

ProtoCOL3 Plus is supplied with a touch screen panel PC. **ProtoCOL3** requires connection to a stand-alone desktop or laptop computer.

Design

The ergonomic design has a small footprint and looks good in any laboratory or production environment.

Camera

An internal high resolution CCD camera captures high definition images and detects colonies as small as 0.043mm and zones to an accuracy of 0.5mm with a theoretical detection limit of 0.1mm.

Sliding doors

Two solid sliding doors can be positioned to eliminate external light.

Platform

The sample platform has interchangeable backgrounds (black, white, clear) for effective brightfield and darkfield exposure. Round plates from 55mm – 150mm can be used. Square plates up to 150 x 150mm can be viewed. For plates larger than this please contact us for further information.

Lighting

A unique lighting configuration using red, green and blue long-life LEDs give outstanding colour images with excellent contrast.

ProtoCOL3 offers 4 times the resolution of similar systems.

The innovative lighting system in **ProtoCOL3** exposes the plate to rapid bursts of red, green and blue light.

The resulting colour composite image has excellent definition and clarity with no chromatic aberrations.

An automated self calibration process ensures accurate colour definition with each exposure.

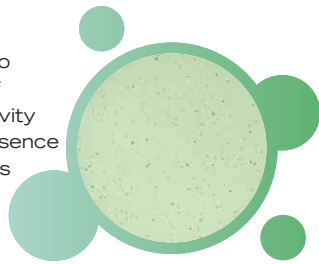


PROTOCOL 3 APPLICATIONS

Applications you can image with a ProtoCOL 3

Ames testing

The Ames test is used to determine the degree of probable mutagenic activity likely to occur in the presence of one or more chemicals



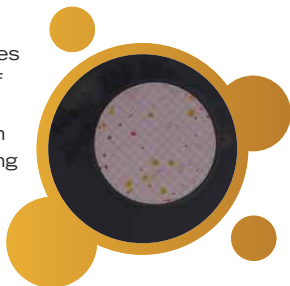
Antibiotic susceptibility test – AST

Antibiotic susceptibility is a term used to describe the sensitivity of bacteria to an antibiotic



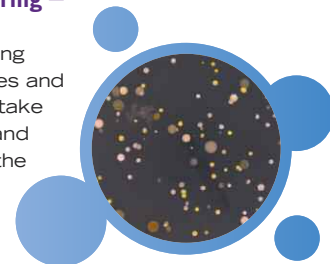
Bioburden membrane filtration

A Bioburden test determines the approximate number of microorganisms on or in a product prior to sterilisation and acts as an early warning system for possible production problems which could lead to inadequate sterilisation



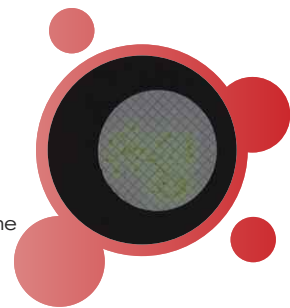
Environmental monitoring – Settle plates

Environmental monitoring describes the processes and activities that need to take place to characterise and monitor the quality of the environment



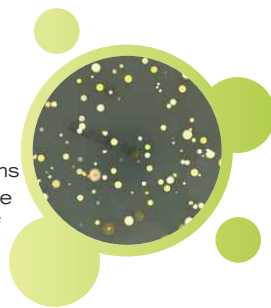
Microbial limits test – membrane filtration

Microbial Limits Test is designed to perform the quantitative estimations of specific viable microorganisms present in samples including membrane filtration



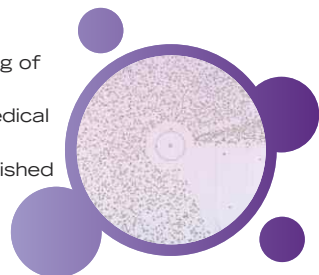
Microbial limits testing – pour plate

Microbial Limits Test is designed to perform the quantitative estimations of specific viable microorganisms present in samples. There are four methods for this test of which pour plate is the most common



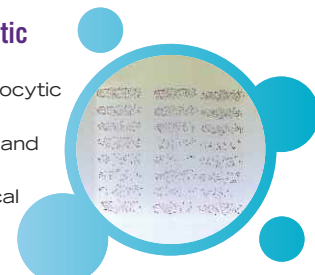
Multi-sector plates

Microbiological monitoring of the air in facilities where pharmaceuticals and medical devices are produced is essential and well established



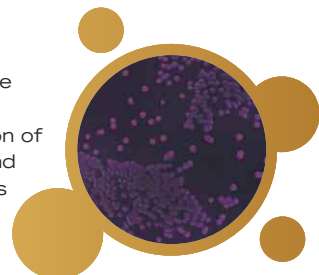
OPKA – opsonophagocytic killing assay

The in vitro opsonophagocytic killing assay (OPKA) is essential for developing and improving vaccines, particularly pneumococcal vaccines



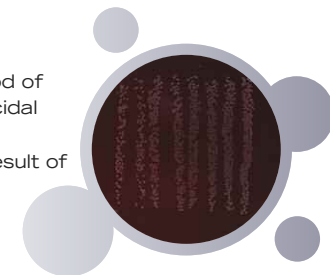
Preservative efficacy testing

Preservative efficacy testing is required for the assessment of the antimicrobial preservation of multiple-use cosmetic and pharmaceutical products



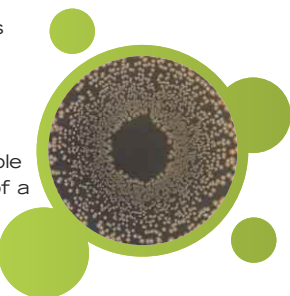
Serum bactericidal assay – SBA

Serum bactericidal assay- SBA is a method of measuring the bactericidal activity contained in a patient's serum as a result of antimicrobial therapy



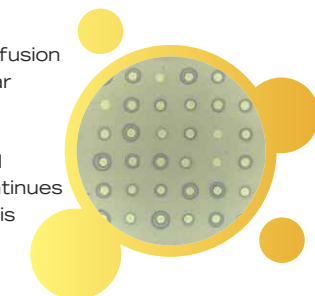
Spiral plates

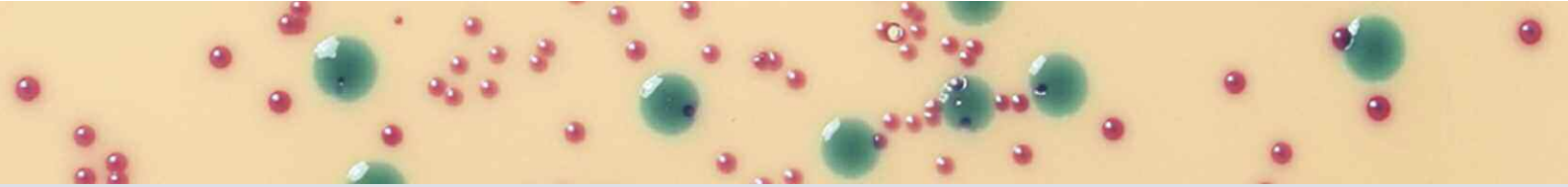
Spiral plate is an apparatus for the quantitative estimations of viable microorganisms present in samples. A logarithmically decreasing volume of sample is spiraled on the surface of a rotating Petri dish



Single radial immunodiffusion – SRD

SRD is based on the diffusion of antigen from a circular well into a gel containing antiserum. A circle of precipitated antigen and antibody forms, and continues to grow until equilibrium is reached





APPLICATION SPECIFIC SOFTWARE MODULES

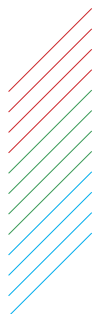
ProtoCOL3 is the perfect system for multiple applications in the food, water, clinical, pharmaceutical and health industries; the versatile **ProtoCOL3** options allow the user to customise the software to meet their application needs.



Launch Batch Designer

Please select the type of batch you want to create:

- Ames Plate
- Dilution Series
- Multi-Sector Plate
- Multiwell
- OPKA
- Pour Plate
- SBA
- Spiral Plate
- Antibiotic Susceptibility
- Inhibition Zone
- Base on Existing Batch
- Create from Exported Batch
- Plate Configuration
- Cancel



FEATURES AND BENEFITS

High throughput capability suitable for production and large scale testing environments

ProtoCOL 3 is typically used when large numbers of plates need to be counted or measured rapidly and accurately. **ProtoCOL 3** is therefore perfect for high throughput applications. All counting and measuring functions are automatic with results instantly sent to the internal reporting system.

Colour imaging as standard

The unique LED lighting in the system gives full colour images. The colour classification feature of the **ProtoCOL 3** software allows for an infinite range of colour options on the same plate. A choice of sample holder is included for both light and dark backgrounds, depending on sample type.

Wide range of applications for versatility

The system can be configured for a wide range of plate types. These include pour plates, spiral plates, multi-well, SBA, OPKA, Ames, inhibition zones, AST and SRD. Plates up to 150mm can be used on the standard unit, while an optional external scanning device can be added should larger plates need to be processed.

Extensive report generation

One of the major benefits of an automated system is that reports can be generated within the device. **ProtoCOL 3** will produce reports that can easily be exported to Excel at the touch of a button.

Traceability of data

All the data generated has a full audit trail. All report generation is traceable and has an audit 'lock'. Data is CFR 21 compliant and the system can be connected to a LIMS if required.

High sensitivity

ProtoCOL 3 uses a highly sensitive CCD camera with a high resolution. Colonies as small as 43 microns (0.043mm) can be easily counted and zones can be accurately measured to 0.5mm with a theoretical detection limit of 0.1mm.





Please refer to
www.synbiosis.com
for all ordering information

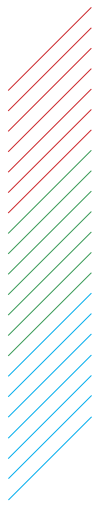


HOW TO ORDER

PROC3 Plus	ProtoCOL 3 automated colony counter and zone measuring system, with validation plates ProtoCOL 3 is an ergonomically designed imaging unit with dark screens to eliminate ambient light effects and improve imaging results. The unit contains a high resolution camera with red, blue and green LED lighting (patent pending) integrated to a processor and software. The software is accessed via a touch screen PC on the mounted unit and features on-screen commands, allowing users to intuitively set their system up in minutes. These settings can be saved to make analysing the same plate types at a later date, a quick one-touch process. Includes zone module for antibiotic susceptibility testing and inhibition zones and validation plates for counting and zone sizing
PROC3	As above, without PC
PROC3-SPIRAL-MOD	Counting software module for spiral plates, includes validation plate
PROC3-OPKA-MOD	OPKA software module for opsonophagocytic killing assay
PROC3-AMES-MOD	Ames software module for the Bacterial Reverse Mutation Test
PROC3-SECTOR-MOD	Multi-sector plates software module for counting on multi-sector plates, eg, air sample
PROC3-SBA-MOD	SBA software module for Serum Bactericidal Assay
PROC3-MWELL-MOD	Module for counting multi-well samples

PROTOCOL 3 SPECIFICATIONS

	ProtoCOL 3 	ProtoCOL 3 Plus 
Construction	Ergonomic housing constructed in high density foam Integral CCD camera and lens	Ergonomic housing constructed in high density foam Integral CCD camera and lens Mounted all-in-one PC
Light shield	2 sliding doors to prevent excessive ambient light	2 sliding doors to prevent excessive ambient light
Camera	1.4m pixel scientific grade CCD camera USB integral camera with f1.2 lens	1.4m pixel scientific grade CCD camera USB integral camera with f1.2 lens
Resolution	For standard 150mm petri dish, smallest detectable colony is 43 microns	For standard 150mm petri dish, smallest detectable colony is 43 microns
Imaging	3 channel capture for colour images	3 channel capture for colour images
Lighting	Unique 3 channel (red, green, blue) LED lighting (patent pending) Multi-array LED lighting (computer controlled) Lower lighting with upper reflective lighting for all applications	Unique 3 channel (red, green, blue) LED lighting (patent pending) Multi-array LED lighting (computer controlled) Lower lighting with upper reflective lighting for all applications
External connections	USB	Touch screen panel PC
Measurement modes	Colony counting and zone measurements	Colony counting and zone measurements
Count modes	Separation of touching colonies, exclusion areas, colour mode, shape mode, size mode	Separation of touching colonies, exclusion areas, colour mode, shape mode, size mode
Software	Win7 compatible	Win7 compatible
Database	SQL database stores all data and images	SQL database stores all data and images



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