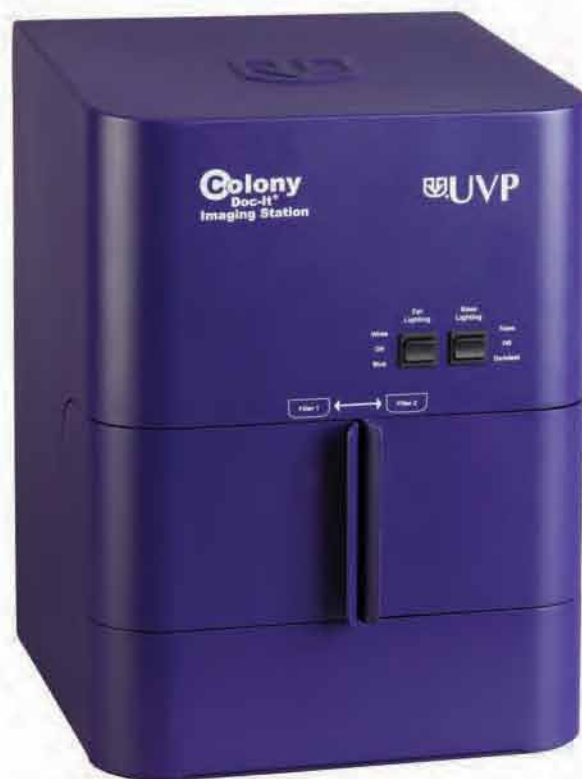
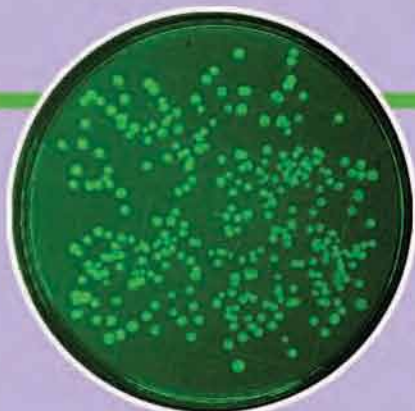


# ColonyDoc-It™ Imaging Station

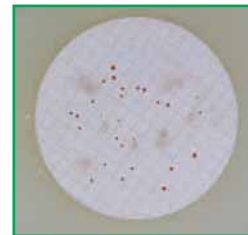
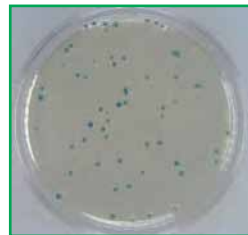
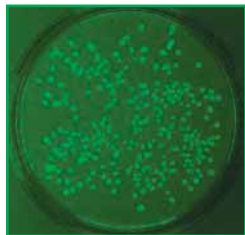
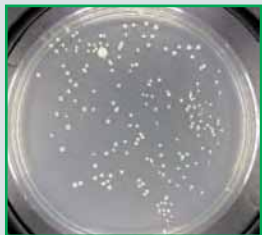


**Fast and Easy Automated  
Colony Counting**



BioImaging Systems for the Science of Life

# ColonyDoc-It™ Imaging Station



Capture colony images with the integrated high resolution digital color camera

Insert and select multiple emission filters

Position plate or filter, with sizes ranging from 33 - 50mm, in the easy access alcove

Minimize space requirements with the compact footprint

Quickly install the system

Select epi white or blue illumination

Define user templates to include counting parameters such as color differentiation

Attach the doors to create a darkroom environment needed to visualize GFP

Select darkfield or white light transillumination



**One ...  
two ...  
three  
Count!**

The intuitive user interface enables users to quickly capture and count colonies. Simply ...

- 1 Place the colonies in the station and turn on the appropriate light
- 2 Capture a high resolution colony image
- 3 Click a button to automatically count the colonies

It's that simple! Once the colony plate is illuminated, the software interface controls the camera for fast image capture. The start colony counting button enables one touch automatic colony counting.



See new and

# Quickly count colonies and generate detailed reports.

Station shown with doors attached (right) to create a darkroom environment. Software, loaded on the user's computer, controls the image capture and quickly counts all of the colonies.

## Capture the Colonies

The high megapixel digital color camera is integrated into the system to allow users to quickly capture the smallest details in colony samples. There is no need to adjust camera buttons, since the camera is controlled by the software. The auto focus feature enables fast image capture.

## Light Up the Colonies

When colony samples require different light sources, the ColonyDoc-It enables the easy selection of bright LED lighting. Select from one or multiple light sources:

- Darkfield light
- Epi and transillumination white light
- Epi blue light

The epi blue light and the optional GFP filter enable users to visualize GFP reporters.



## It's all About the Colonies

The innovative, compact design reduces laboratory space requirements. The station is versatile for multiple users and multiple colony applications.

- Plate alcove accommodates pour, spread and spiral plates and filters with sizes from 33 - 150mm
- Digital color camera has high megapixel resolution to capture high definition images
- User selected light sources illuminate a wide range of media
- Slide the filter selector to one of two positions; choose from a wide range of optional emission filters
- The removable door creates a darkroom environment when imaging colonies with GFP fluorescence

## Count the Colonies

The ColonyDoc-It software loads on the user's computer for camera control, image capture and colony counting. Fast automatic and accurate colony counting can be generated along with detailed statistics.

- Define parameters including color differentiation and filter by group or size
- Identify colonies as small as 0.08mm in diameter
- Perform zone sizing and spiral analysis
- Split, merge, add and delete colonies

Users can create templates allowing the same settings to be selected each time a new experiment is run. Then count from the template to quickly generate results.



See colonies in a whole new light with white light and fluorescent sources!



# Visualize the count!

## Extensive Software Functions

In addition to colony counting, the easy to use software offers many image enhancements, annotation and reporting tools.

- Save images in multiple file formats
- Export data to Excel or other programs
- Create macros for repeat experiments
- Supports compliance with 21 CFR Part 11

Results of the colony count are displayed and identify the classes, statistics, colonies and distribution of the analysis. The data shows critical parameters recognized in the colonies. Charts may be generated for the colony reporting the average diameter, area, perimeter and circularity of the colonies counted in the Petri dish.

Specific software capabilities are discussed below. These examples demonstrate the flexibility, accuracy and efficiency of the ColonyDoc-It Station.

## Sequential Capture

The station provides researchers with the ability to take images for analysis while the colonies are growing. Using the Macros function, the ColonyDoc-It captures images at user defined intervals. The sequentially captured images supply researchers with knowledge of the long-term effects of experimental factors on colony growth.

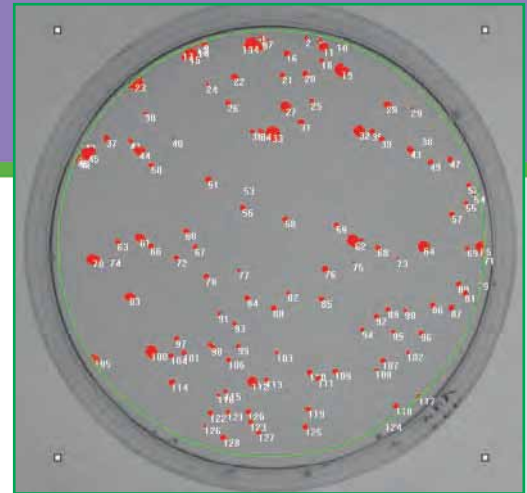
## Radial Diffusion Based Assays

The ColonyDoc-It has a number of features that enable radial diffusion (image shown to the right) or cup based enzyme and inhibition zone analysis. This includes a range of light sources, lighting modes and specialized software functions for imaging, numbering, and quantitating single zones as well as arrays and exporting to Excel. In addition, the high resolution camera is capable of detecting very small features with great accuracy. Radial diffusion based assays are versatile and have many applications. One such application is analyzing proteolytic enzymes in which area, perimeter and average diameter for samples can be identified.

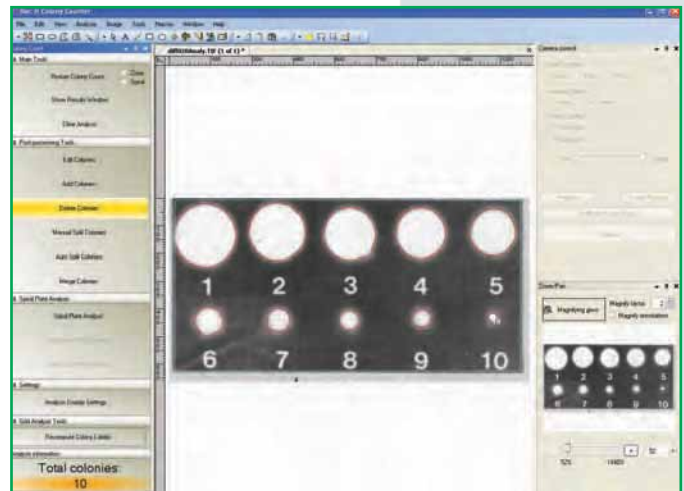
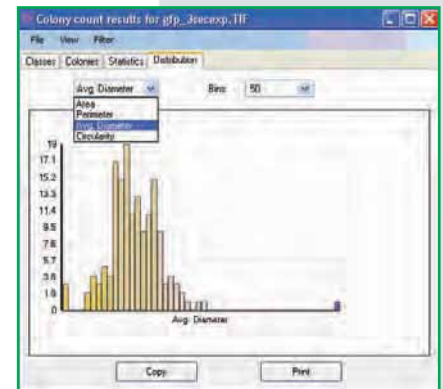
## Counting GFP Colonies

Green Fluorescent Proteins (GFP), shown in the image to the right, are employed as an easily detectable marker protein. When a bacterial colony is labeled with GFP for comparative study, incubated under protocol conditions, and viewed under blue light excitation, the GFP bacteria emits green light. The green light emission allows the researcher to visualize and distinguish the GFP labeled bacteria, which makes the distinction of GFP labeled cells from unlabeled cells simple and effective. The ColonyDoc-It is designed with an epi blue light (~470nm) excitation source and a GFP filter (optional) to optimize the enumeration of colony growth utilizing GFP.

*Visualize the count! Each colony counted is clearly numbered in the image.*

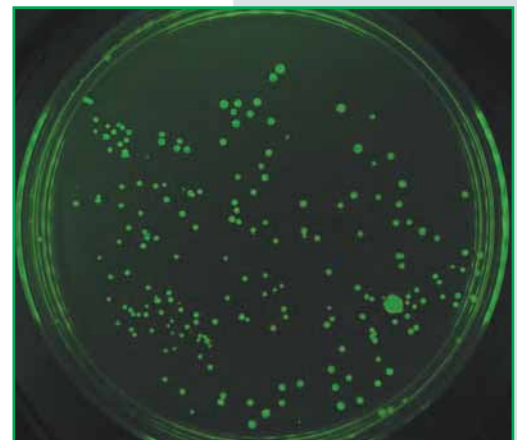


*The image to the right displays the colony distribution results in a graphical format.*



*Radial diffusion based assays.*

*Under epi blue light excitation (~470nm) and GFP filter, these E-coli colonies fluoresce green.*

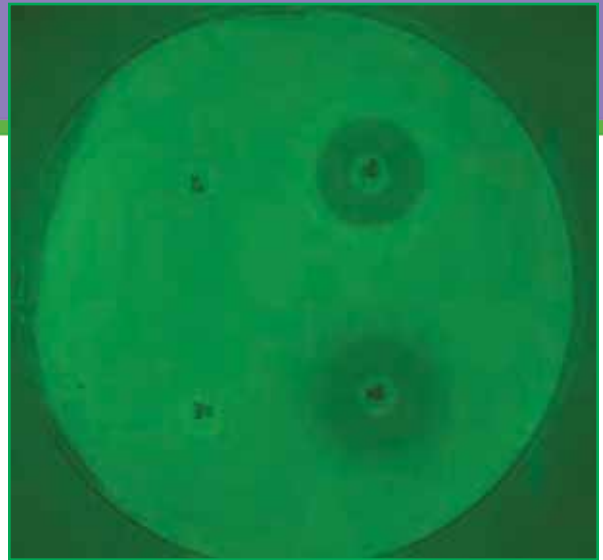


# Uses and Applications

The ColonyDoc-It Station addresses the need to quickly process and count colonies in clinical, research and microbiological studies including the following:

- Fluids and food contamination
- Molecular biology research
- Antibiotic testing
- Hygiene studies
- Pharmaceutical studies
- Environmental studies

*Antibiotic disks placed in a Petri dish with transformed E-Coli expressing GFP. Two inhibition zones captured with epi blue light excitation and GFP emission filter.*



## Inhibition Zones

The ColonyDoc-It Imaging Station provides an easy method to capture, count, and report sizing information for inhibition zones. By providing researchers with counting software, zone sizing in antibiotic testing is achieved simply and accurately.

*This plate demonstrates zone of inhibition. The illumination was supplied by the white light transillumination.*

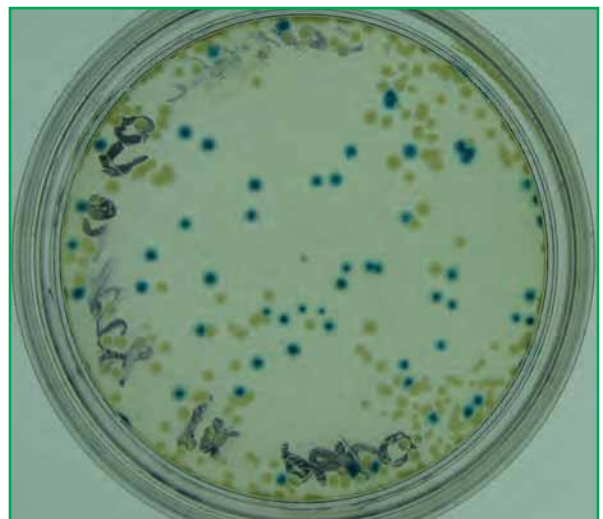


Researchers employ the characteristics of GFP (Green Fluorescent Protein) in inhibition zone measurements to clearly identify areas of sensitivity in bacteria. Like standard inhibition zone measurements, bacteria growth will be inhibited around the disk soaked in antibiotic. The susceptible area will show a clearing of GFP bacteria around the disk. The size of the area cleared of GFP bacteria can be measured to determine total susceptibility.

## Multicolor Colonies

Chromogenic agents assist researchers in identifying bacteria of specific metabolism by color. The chromogenic substrate X-Gluc is used in a variety of applications for the detection of the  $\beta$ -glucuronidase (GUS) enzyme. Upon reduction, X-Gluc produces a localized color, making it useful in identifying GUS gene presence. X-Gluc has reported applications in the detection of contaminated food samples such as meat, dairy, and shellfish products.

The ColonyDoc-It Imaging Station has the ability to differentiate between  $\beta$ -glucuronidase positive (blue) bacteria and negative (yellow) bacteria as shown in the image to the right. The software has specialized algorithms to distinguish among a large variety of colony colors for accurate counting.



*Multicolor colonies.*

# Fast and easy automated colony counting!

## Technical Support

UVP provides customers with support from a world wide network of Customer Service Representatives, Distribution Partners and Technical Support. Live, on-line technical assistance and training are available. Software support is available for the ColonyDoc-It software to ensure researchers obtain validated colony counting data.

## IQ/OQ Documentation

UVP offers Installation Qualification (IQ) and Operational Qualification (OQ) documentation for on-site installation and operation of the ColonyDoc-It Imaging Station that will enable scientists and researchers to easily comply with FDA and other regulatory bodies. The documents integrate Good Manufacturing Practice (GMP) and Good Laboratory Practice (GLP) requirements for equipment used to produce image analysis data and are consistent with 21 Code of Federal Regulations (CFR) Part 11. Contact UVP for details.

## Ordering Information

Description	UVP No.	Thomas No.
ColonyDoc-It Imaging Station	97-0539-01 (100-115V) 97-0539-02 (230V)	<b>1229X84</b> <b>1229X85</b>
Filter, GFP	38-0340-01	<b>1229X90</b>

**Station includes:** ColonyDoc-It Imaging Station, Digi Camera digital color camera\*\*, counting/capture software (compatible with Windows XP Pro SP2)

## Specifications

### Camera Specifications\*\*:

Megapixels: High resolution color  
Lens: 6x optical zoom, 4x digital zoom  
Image Resolution: Up to 4416 x 3312 pixels  
Bit Depth: 8 bit  
Interface: USB

### Darkroom Specifications:

Lighting: Epi white  
Transillumination white  
Epi blue  
Darkfield  
Filter: Two positions (filters optional)  
Dimensions: Physical: 13W x 12.5D x 17.5H in.  
(343 x 318 x 445mm)  
Shipping: 22.5W x 12.3D x 19.8 in.  
(572 x 312 x 503mm)  
Weight: Actual: 20 lbs. (9 kg)  
Shipping: 27 lbs. (12.3 kg)

### Software:

Colony Counting: Automated  
Image Capture: Software control  
Enhancement: Annotation, lines, etc.  
Reports: Detailed colony counting statistical reports are exportable to Excel

Computer and monitor sold separately. Contact UVP for ordering information.

\*\* Camera specifications subject to change without notice. Contact UVP for current camera specifications.

Contact UVP for information on BioImaging Systems that go beyond colony counting.



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