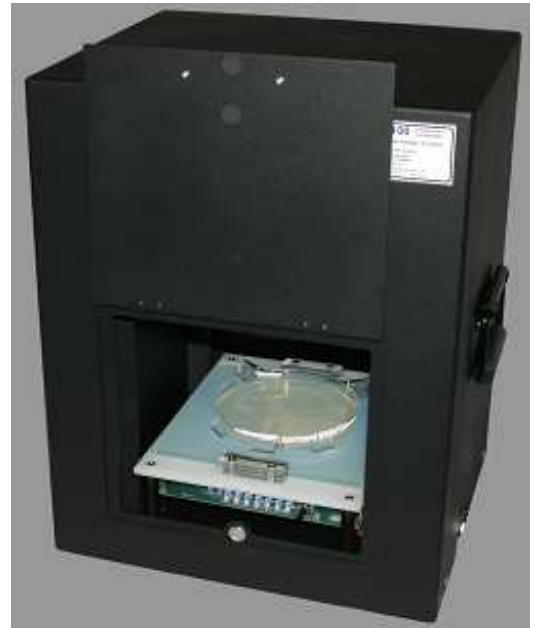


Rapid Automated Test & Evaluation Colony Counter (RATE/C²)

Biological field simulant testing produces hundreds of agar plates, each collecting samples of simulants present at regular intervals throughout the trial. To yield meaningful data, plates are then taken from the field to the laboratory to culture and count the collected simulants to determine the simulant quantity present at the system under test during the aerosol challenge.

Counting the plates manually is highly labor-intensive and time consuming. Automating the process is a must, especially considering the storage, retrieval, and accurate correlation of the colony counts to the timeframes in which they were collected.

Dycor Technologies Ltd. has developed the Rapid Automated Test & Evaluation Colony Counter (RATE/C²), a simple, compact, low-cost system purpose-built for outdoor biological agent stimulant field trials. RATE/C² meets the requirements of field or chamber operational test and evaluation challenges without the cost, size and specialized equipment related to typical biomedical plate counters on the market.



Operation

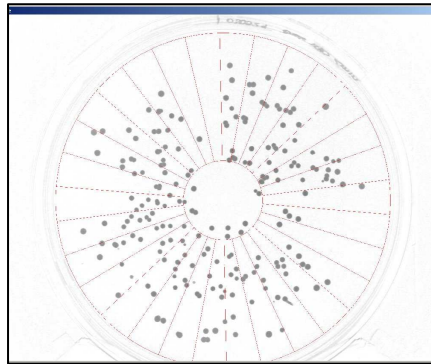
The agar plate is placed on a backlit platform, and is then digitally photographed, using a COTS Canon digital camera. The plate is segmented into 30 equal time sectors, allowing for specific correlation of cultures and the time of collection. Windows based light-density reading software, built on Labview's cell counting engine, is located on an attached PC (not included) and is used to automatically count the number of cultures per plate sector. This data can then be easily exported to Microsoft Excel or other databases.

Plate images are retained in a database, simplifying storage of data for chain of custody purposes. The PC can be outfitted with a barcode reader to enable the operator to quickly scan in the plate data from bar-coded plates. This data is then entered into the database to correlate a specific plate image to a specific time frame in the field event.

Custom Software Features

- Operator can adjust parameters for colony size, with minimum and maximum limits
- RATE/C² captures real-time video images of agar plates, to facilitate accurate sector alignment.

- RATE/C² stores JPEG images of each plate, allowing for modification of parameters and subsequent re-counting, without the need to access the original plates.
- A colony-counting option can be switched on in the saved image, to indicate which colonies have actually been counted.
- RATE/C²'s software is designed to count colonies only, ignoring contaminants
- Colonies are color-coded based on size.
- Time sector overlays are superimposed on plate images, allowing for correlation of colonies to time of collection, and sector-based counting.
- Variable masking is used to adjust the counting area to correspond with the area impacted by the slit of the slit-to-agar sampler.
- RATE/C² is capable of batch or real-time processing of data
- RATE/C² automatically exports processed data to csv format.
- RATE/C² has been field-tested with BG spores and *Erwinia Herbicola* vegetative cells.



Specifications

Dimensions	Width: 37cm, Height 47cm, Depth 32cm.
Weight	13 Kg
Power Requirements	100-240V (50/60 Hz), 25 Watts
Colony Sizes	0.5mm – 15.0mm, user selectable
Agar Plate Size	150mm (100mm optional)
Image Size	2592 x 1944 (5 Megapixels)
Image File Format	JPEG
Data Export Format	CSV
Computer Requirements	2.5GHz P4, 512MB RAM, Windows XP; contact Dycor for a list of supported video cards
Computer Interface	USB 1.1

For further information on the RATE/C² or any other Dycor products, please contact:

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