

Corning® Cell Counter

Time-saving technology using the power of the cloud



CORNING

For years, the choice between manual and automated cell counting has been a difficult one. Manual cell counting can be accurate, but time-consuming and user-dependent. Automated cell counting is much faster and less user-dependent, but the cost of disposable counting slides can be an issue. A tough choice, but now there is an affordable solution.

The Corning Cell Counter is the first automated cell counter that combines the best of both worlds. It is:

- ▶ **Evolving** – periodic, seamless upgrades, added features, and improved functionality.
- ▶ **Accurate** – thanks to its cloud-based machine learning algorithm.
- ▶ **Improved resolution** – ability to accurately count as small as 4 µm (e.g., PBMC).
- ▶ **Low-cost** – works with common reusable glass hemocytometers. No consumables required.
- ▶ **Fast** – thanks to its online image processing.

Evolving

Cloud-based processing allows the cell counter to add features and functionality based on user needs, unlike static non-cloud-based cell counters. These updates are efficiently made available to all users at the same time.

Accurate Three-second Cell Counts

The Corning Cell Counter can perform a single cell count in less than three seconds**. This is much faster than most automated cell-counting systems. With traditional systems, the image analysis algorithms must be processed on a relatively small onboard computer. The Corning Cell Counter utilizes a cloud-based application by processing the captured images in the Microsoft Azure Cloud Computing Platform. This cloud computing ability means that it can analyze the images faster than any existing onboard processor can.

Higher Accuracy

This cell counter uses a cloud-based machine learning algorithm that manages thousands of parameters to provide accuracy without the need to define mammalian cell types. When Trypan Blue is added (Figure 1) the system can also detect cell viability. The Corning Cell Counter can resolve clusters of cells, which leads to accurate cell counts of “highly concentrated samples” (up to 1×10^7 cells/mL). The new multicount feature allows multiple images per sample thus increasing overall accuracy and reproducibility.

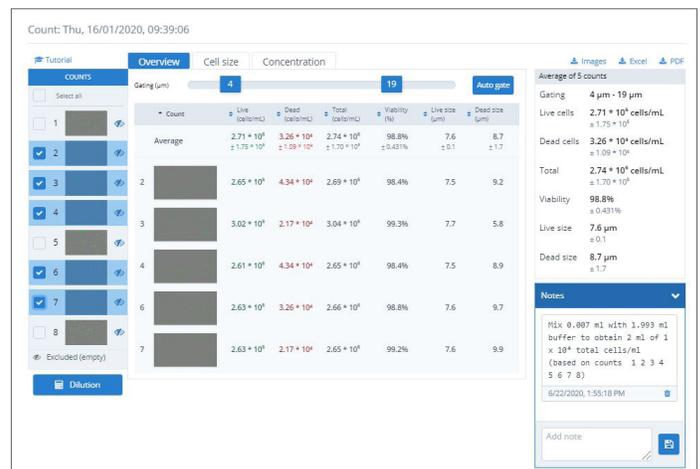


Figure 1. Results page after performing multiple counts. In the top left the sample name is displayed. Underneath this you can see the tutorial button, the counts taken of this sample, and the dilution calculator. The box on the top right contains details of the count. General information is displayed in the “Experiment” box, while notes can be added in the “Notes” box.

Improved Resolution

New algorithm allows resolution of mammalian cells as small as 4 μm without an equipment upgrade. For viability, the range is 5 to 70 μm and can accurately count PBMC and CAR-T cells.

Low Cost Like Manual Counting

This cell counter works with the provided counting chamber or a customer supplied hemocytometer with a 0.1 mm chamber height, enabling users to enjoy the benefits of automated cell counting without the cost of disposable slides. However, for high throughput needs, most major brands of disposable counting chambers are compatible with the Corning® Cell Counter.

Versatile

This cell counter's organoid counting software extension offers users the ability to collect three-dimensional data including orgs./mL and surface area outputs.

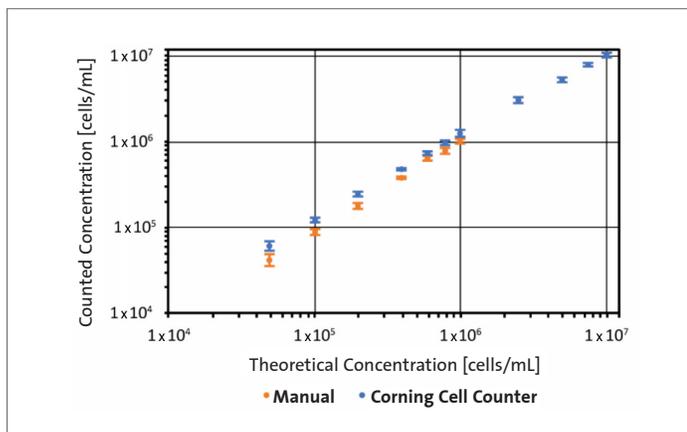


Figure 2. Different concentrations of C6 cells were counted manually and using the Corning Cell Counter (n = 3). In both cases, the count corresponds well with the theoretical concentration (error bars represent the standard deviation).

Easy to Use

The Corning Cell Counter is easy to use. Simply connect the cell counter to your computer or tablet and start the application on your desktop. Place the loaded counting chamber on the stage. Focus on your cells and press the Count button. The simplicity of the cell counter allows anyone working in your lab to easily count cells without the need of extensive training.

Accessible Data Anywhere, Anytime

With the Corning Cell Counter, the report is instantly shown on your computer and sent to the cloud, enabling you to look up the analyzed image and cell count on your smartphone, tablet, or computer. Since all data is saved in the cloud, you can gain insight into the health and quality of your cell culture from one experiment to the next.

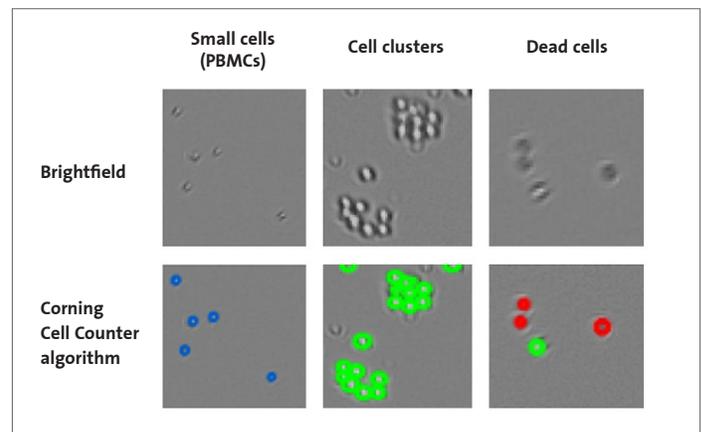


Figure 3. Algorithm processed images. The rows represent the Brightfield images and the Corning Cell Counter processed images. The columns (from left to right) represent samples that contain small cells, cell clusters, or dead cells, respectively.

Specifications

	Mammalian	Organoids
Counting range	5 x 10 ⁴ to 1.0 x 10 ⁷ cells/mL	5 x 10 ⁴ to 1.0 x 10 ⁷ cells/mL
Counting range	4 to 70 μm	20 μm to 200 μm *
Measurement time	<3 sec.**	<3 sec.**
Compatibility	Reusable and disposable counting chambers: 0.1 mm	Reusable and disposable counting chambers: 0.1 or 0.2 mm
Sample volume	10 μL	10 μL or 20 μL chamber permitting
Weight	1.0 kg	1.0 kg
Field of view	1.5 x 1.5 mm	1.5 x 1.5 mm
Magnification	200X	100X
Image resolution	2048 x 1536	1536 x 1536
Exported formats	PNG	PNG
Light source	LED	LED
Camera	5 MP CMOS	5 MP CMOS
Unit dimensions (L x W x H)	122 x 122 x 125 mm	122 x 122 x 125 mm
Operating environment	5°C to 40°C, 20% to 95% humidity	5°C to 40°C, 20% to 95% humidity
Algorithm version	-	<ul style="list-style-type: none"> ▶ Version 1 irregular morphology ▶ Version 2 spherical objects

*Size limits depend on dimensions of counting chamber, user can set limits in the application.

**Measured using a 73 Mbps download speed and a 20 Mbps upload speed. Actual speed can vary depending on the internet connection.

Ordering Information

Products may not be available in all markets.

Cat. No.	Description	Qty/Cs
6749	Corning® Cell Counter	1
480200	0.1 mm Corning Counting chamber	1
480201	0.2 mm Corning Counting chamber	1
6749-OC	Organoid counting software with 0.2 mm counting chamber	1
25-900-CI	Trypan blue 0.4%, 100 mL	1

Contact your local Corning Account Manager to request a demonstration of the Corning Cell Counter.

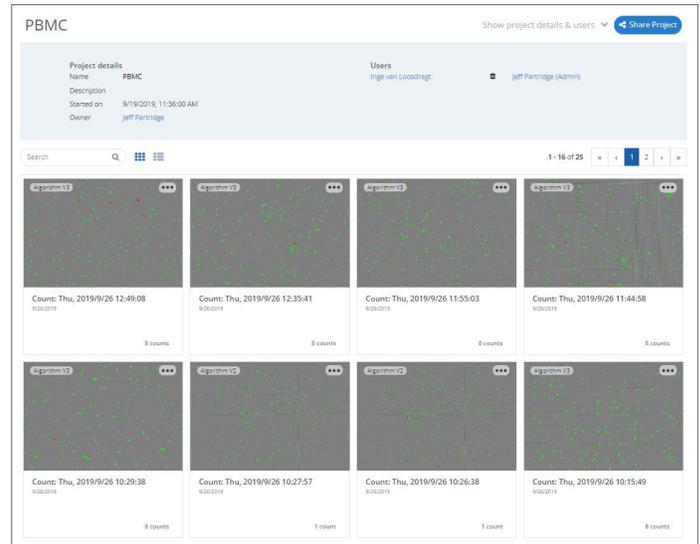


Figure 4. Your data is saved in the cloud and accessed by logging into portal.axionbio.com, unlimited storage.

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