

# EVE™ PLUS

Automated cell counter

## User Manual





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## **EVE™ PLUS User Manual**

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## Product contents

EVE™ PLUS is shipped with the following components.

Please check that all items listed below were shipped, receiving the instrument. If any items are missing or damaged, contact your local distributor or e-mail [sales@nanoentek.com](mailto:sales@nanoentek.com).

Automated cell counter

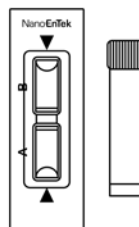
1 EA



Cat. No. EVE-MC2

Cell counting slides with 1.5 mL of Trypan blue (0.4%)

1 BOX (50 slides/box)



Cat. No. EVS-050

Power cord  
Europe/Korea, USA/Japan,  
Australia, UK, or China

1 SET



Wifi dongle

1 EA



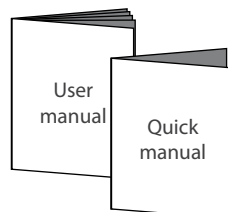
Adaptor

1 SET



User manual & Quick manual

1 EA



## **Product overview**

EVE™ PLUS Automated cell counter uses state-of-the-art optics and image analysis for automatic cell counting. EVE™ PLUS is a benchtop counter designed to measure cell count and viability (live, dead, and total cells) accurately and precisely, using the standard trypan blue and erythrosin B solution.

Using the same amount of sample that you currently use with the hemocytometer, EVE™ PLUS takes less than 1 second per sample for a typical cell count with manual focus option and is compatible with a wide variety of eukaryotic cells and provides information on cell size.

EVE™ PLUS is supplied with disposable EVE™ Cell counting slides that contain two enclosed chambers to hold the sample to allow you to measure two different samples or perform replicates of the same sample. The cell counting occurs in the central location on the counting slide and the volume counted is 0.4  $\mu$ L, the same as counting four (1 mm  $\times$  1 mm) squares in a standard hemocytometer.

\*NOTE: Use of Erythrosin B solution and the method mode is available with the upgraded EVE Plus.

## Features and benefits

- User-friendly, compact design for simple, fast, automated cell count and viability measurements within 1 second.
- It provides data on cell size and is compatible with various types of eukaryotic cells, regardless of whether the cell size is small or large.
- Measures cell concentrations ranging from  $1 \times 10^4$  to  $2 \times 10^7$  cells/mL and cells with sizes ranging from 5  $\mu\text{m}$  to 60  $\mu\text{m}$ .
- Provides the clumpy cell counting function to get more accurate results.
- Uses disposable cell counting slides that you can eliminate washing steps and cross contamination between samples with.
- Up to 500 test results are automatically saved in the DATA tab.
- Presents comprehensive data with graphical reports and as a .CSV (comma separated value) file for sample comparisons.



Front view

| Item               | Description                                                                                                                                                  |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ① LCD touch screen | Located in the front of the instrument contains buttons for all the functions needed and displays data from the cell count.                                  |
| ② Slide slot       | The slide slot is used to insert the EVE™ Cell counting slide containing the sample with trypan blue or erythrosin B solution into the counter for analysis. |

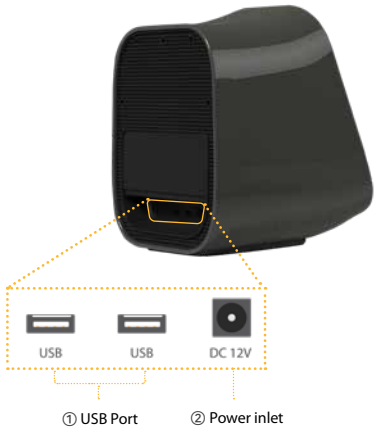
Side view

| Item                            | Description                                                                                                                                                                                                                                                |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ③ Image adjustment (focus) knob | The image adjustment (focus) knob is used to adjust the image quality to obtain better contrast between live (bright centers) and dead (dark blue centers) cells by manually. This is important to obtain accurate cell counts and viability measurements. |
| ④ USB port                      | The USB port allows you to transfer and save the cell count data and image to your computer for record keeping and printing purposes. Any other standard USB drive can be used for data transfer.                                                          |
| ⑤ Power button                  | To turn the power on and off, press and hold for 3 seconds. The unlighted status indicates that the instrument is off; the red status light indicates that the instrument is on.                                                                           |



Rear view

| Control buttons | Description                                                                                                                                                                                                       |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ① USB port      | The USB port allows you to transfer and save the cell count data and image to your computer for record keeping and printing purposes. Any standard USB drive can be inserted into the USB port for data transfer. |
| ② Power inlet   | Connect the counter to an electrical outlet using the supplied power cord and the appropriate plug, based on the electrical outlet configuration in your country.                                                 |



## Install EVE™ PLUS

1. After unpacking the instrument, place the instrument on a flat and dry surface.

2. Connect adaptor and power cord, then plug the power cord to EVE™ PLUS.

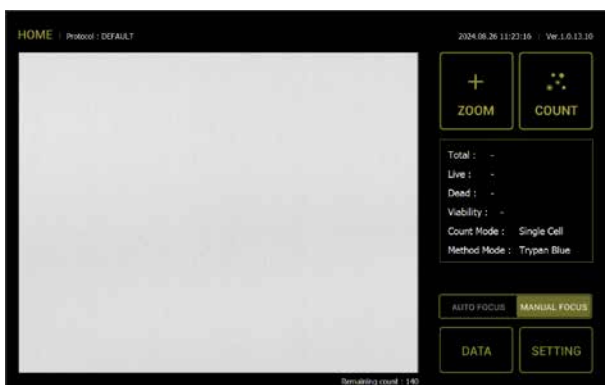


3. Plug the power cord into the electrical outlet. Be sure to use only the power cord supplied with your instrument. Powering the instrument with an unapproved power cord may damage the instrument.

4. When you are ready to use, start the EVE™ PLUS by pressing and hold 3 seconds the Power button.



5. When the instrument is turned on, the startup screen is displayed. Here you can proceed immediately to cell counting, set up the instrument for cell types, or adjust the parameter for cell counting.



## Activation code

To use the EVE™ PLUS for the first time, you need the activation code, which is in the EVE™ slide box enclosed with the instrument. Entering the provided code into the pop up window allows normal cell counting.



This code has a limit on the number of uses, and it is possible to use the counting function of 1000 times per code.

If the limit is exceeded, this popup window will reappear.

In this case, you must enter a new code from the new box.

\* This code is intended to provide accurate calculation results using correct consumables.

## Setting menu

Press SETTING from the startup screen to display settings.

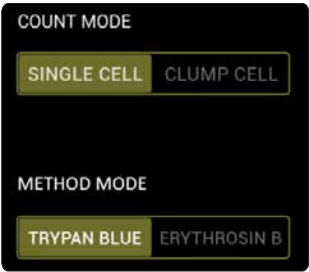
The setting menu allows you to set up the following:

- MODE to operate the instrument for cell count method (choose SINGLE CELL or CLUMP CELL in count mode) or solution (choose TRYPAN BLUE or ERYTHROSIN B in method mode).
- PARAMETER (see below and next page for details)
- CALIBRATION to calibrate the instrument image background level (page 12)
- UPDATE to install new firmware versions as they become available
- DATE to set up date and time (page 14)
- WIFI to connect to the internet to send results via mail



Mode

Select count mode and method mode for cell counting. Please choose counting mode (SINGLE CELL or CLUMP CELL) and method mode (TRYPAN BLUE or ERYTHROSIN B). SINGLE CELL refers to cells that exist individually, and counting is performed using the SINGLE CELL MODE.



CLUMP CELL refers to cells that do not exist individually but instead form clusters or aggregates. To ensure accurate counting, they must be imaged using the CLUMP MODE.

Parameter

1. Press PARAMETER from the setting screen to display parameters screen.

Parameter function allows you to change the image analysis algorithm for specific or mixed cell types, and the specific parameters must be determined empirically.



\*NOTE: Use of Erythrosin B solution and the method mode is available with the upgraded EVE Plus.

# Parameter

2. The parameters are described below:

**[Sensitivity]**

Sensitivity (refers to the contrast of the objects against the background). Adjusting the sensitivity higher makes instrument more sensitive to objects; useful for cells that do not stain well with trypan blue while adjusting the sensitivity lower makes the instrument less sensitive and is useful if there is a lot of background.

**[Minimum cell size]**

Minimum cell size is used to determine the low range of cell size to include in the measurement. The algorithm first identifies all objects, and calculates the average size (e.g., 15 µm). From the percent of average size setting, the algorithm calculates the smallest object size to include in the final measurement (e.g., 70% of 15 is 10.5 µm; 15-10.5 = 4.5 µm; 4.5 µm) would be the smallest particle included in the count. Adjusting the number up, increases inclusiveness thereby decreasing the lower cell size range (e.g., 50% of 15 is 7.5 µm; 15-7.5 = 7.5 µm).

**[Maximum cell size]**

Maximum cell size is used to determine the high range of cell size to include in the measurement. The algorithm first identifies all objects, then calculates the average size (e.g., 15 µm). From the percent of average size setting, the algorithm calculates the largest object size to include in the final measurement (e.g., 200%; 200% of 15 µm = 30 µm; 30 µm) is the largest cell size included in the measurement.

Circularity is used to determine the objects to include in the measurement based on roundness. Increasing the value from 80% requires objects to be more round for inclusion in the measurement. Decreasing the value from 80% allows objects to be less round. Adjusting this may be useful if the cell type is not particularly circular or perhaps oddly shaped.

**[Maximum cell size]**

After modifying any parameters, press APPLY button to make the changes.



To restore default parameters, press DEFAULT button.



3. Press NEW button to create a new protocol.



## Parameter

4. Type protocol name and user name in the appropriate fields, and press SAVE button again.

5. Once a protocol is saved, it is available for use at any time. Press LOAD button.

**LOAD**

6. The protocol appears in the protocol menu.

Use the up and down arrows to find your saved protocol.

To use the protocol, select one of protocol and press APPLY button.

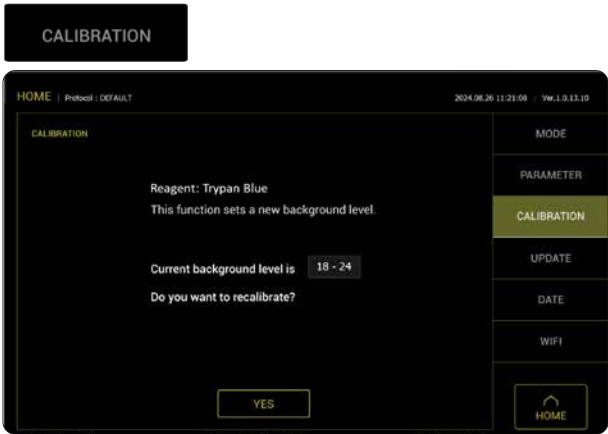
» Press DELETE button to delete protocol.

Press EDIT button to edit protocol.

Press CLOSE button to exit the screen.

# Calibration

1. Press SETTING and then press CALIBRATION button.

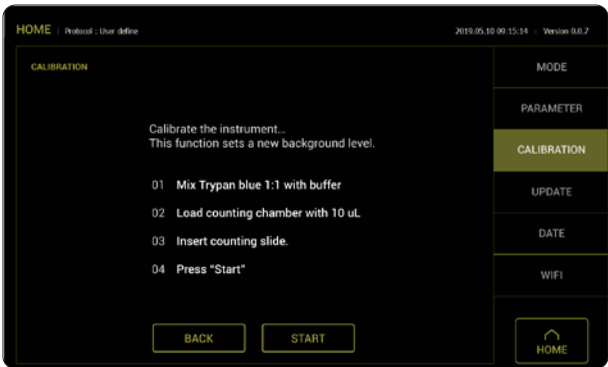


2. Check the current background level and press YES button to recalibrate.



3. To recalibrate the EVE™ PLUS, mix 10 µL trypan blue or 10 µL erythrosin B solution with 10 µL of a standard buffer, (in a 1:1 ratio) such as cell culture media. Mix thoroughly.

Before recalibration, match the solution and METHOD MODE in MODE menu.





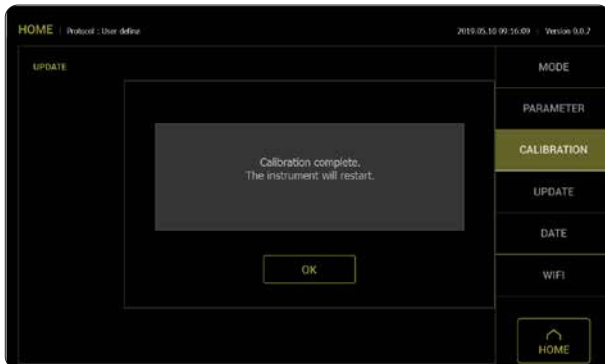
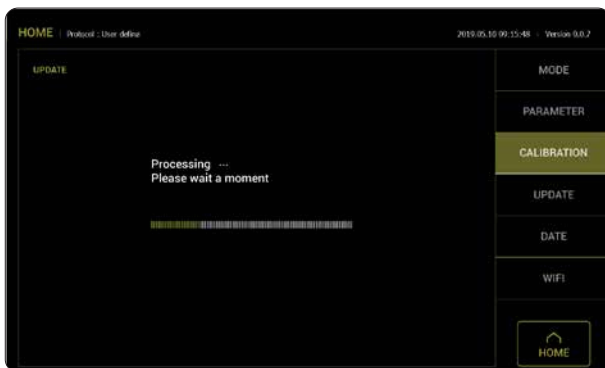
## Calibration

4. Load 10  $\mu\text{L}$  of the sample mixture onto the EVE cell counting slide and insert in into the slide slot. Press START button.



5. After calibration is completed, press the OK button to restart the instrument and proceed to cell counting.

There is no need to recalibrate each time the instrument is turned on.

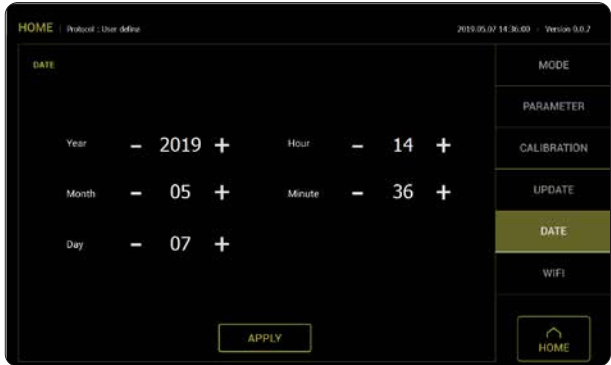


## Date

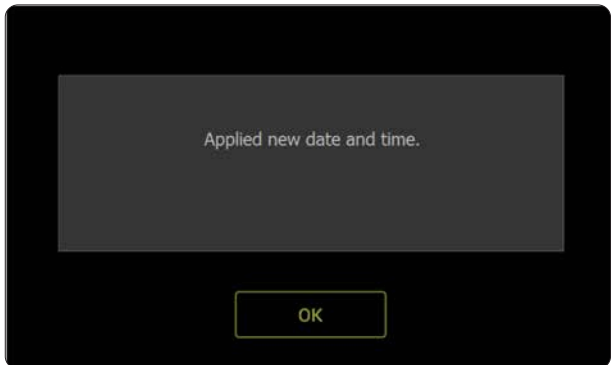
1. Press SETTING button and then press DATE button.



2. The Date/Time properties screen is displayed. To select the year, month, day, hour and minute, using the plus and minus button select the number.



3. Press APPLY button to make the Date/Time changes.



4. Press OK button to exit the screen.



The updated Date/Time is displayed on the top of the window. Once the date/time is set, there is no need to set it each time the instrument is turned on.

## **Recommend actions**

### **To obtain the best results, follow these recommendations:**

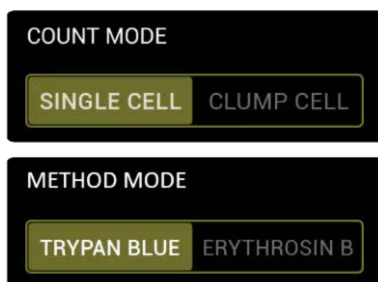
1. Wear protective gloves during sample handling.
2. Do not touch the optical surfaces of the EVE™ Cell counting slides. Hold the cell counting slides by the edges.
3. Use the EVE™ PLUS at room temperature only (5 - 40 °C).
4. For accurate viability count results, ensure the counting area is covered with cell suspension and count cells within 3 minutes of mixing the cells with trypan blue solution as trypan blue is toxic to cells. Alternatively, Use the Erythrosin B solution that less toxic to the cell.
5. For best data with biological samples, we recommend counting at least two samples and taking an average.
6. The calibration completed EVE PLUS will be supplied. If necessary, re-calibrate your instrument. And recommend the recalibration when change the METHOD MODE (page 12).
7. The EVE™ PLUS storage holds up to 500 data. If need a test report, save the data to the USB drive whenever you want. You may transfer the data to your PC, using the USB drive as described in transferring data to a PC (page 29).
8. After using EVE™ PLUS, appropriately dispose slides as biohazardous waste.
9. For accurate viability count results, do not reuse the cell counting slides. And when the sample injected onto the slide start to dry, do not use it.

## Cell counting (Auto focus)

1. Press the power button to start the instrument.  
The Start-up screen is displayed.



2. EVE™ PLUS is set to the COUNT MODE and METHOD MODE used previously. If you want to change the COUNT MODE and METHOD MODE, use the MODE option in the SETTING.



3. Mix well the 10  $\mu$ L of your sample and the 10  $\mu$ L of 0.4% trypan blue or 0.05% erythrosin B solution. (in a 1:1 ratio)
4. Load 10  $\mu$ L of the sample mixture on EVE™ Cell counting slide (side A) using a pipette.  
The chambers on the slide are labeled “A” and “B” for easy tracking of your samples.



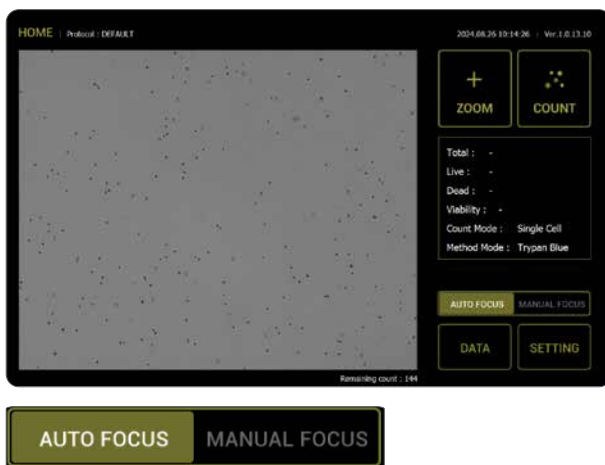
\*NOTE: Use of Erythrosin B solution and the method mode is available with the upgraded EVE Plus.

## Cell counting (Auto focus)

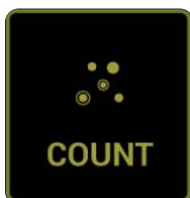
5. Insert the EVE™ Cell counting slide, sample side (side A) first into the slide slot until you hear a soft click. Each chamber is counted separately.



6. Before cell counting, press the AUTO FOCUS button.

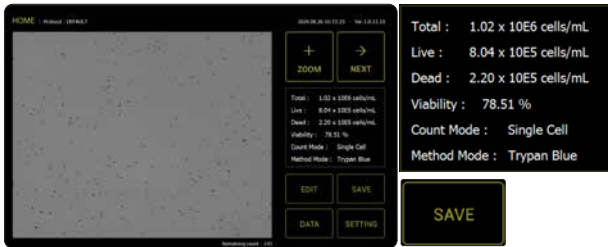


7. Press the COUNT button.



Cell counting  
(Auto focus)

8. Total cell counting and viability result are shown as below in 10 seconds.  
To save the data, insert a USB drive and press SAVE button (see page 29).



9. To see more details counting results on the screen, press the ZOOM button. Then, use the navigator can see detail count result and viability result with blue and red color circle.



10. To see more details on the data as well as graphical representation of the data, press the EDIT button (see page 28).



» Press the HOME button to return to the main screen.

## Cell counting (Manual focus)

1. Pressing and hold 3 seconds the Power button to start the instrument. The Start-up screen is displayed.



2. Mix well the 10  $\mu\text{L}$  of your sample and the 10  $\mu\text{L}$  of 0.4% trypan blue or 0.05% erythrosin B solution. (in a 1:1 ratio)

3. Load 10  $\mu\text{L}$  of the sample mixture on EVE™ Cell counting slide (side A) using a pipette.

The chambers on the slide are labeled "A" and "B" for easy tracking of your samples.



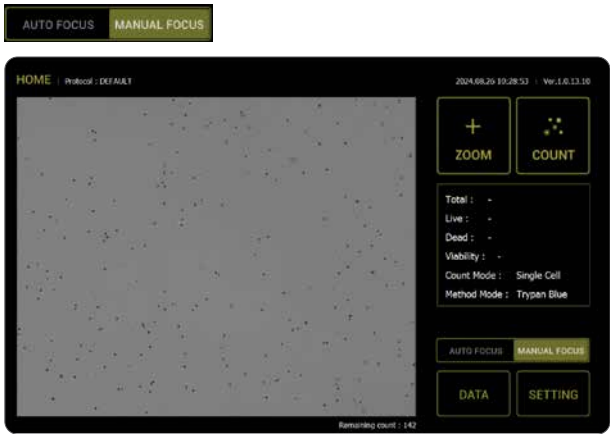
4. Insert the EVE™ Cell counting slide, sample side (side A) first into the slide slot until you hear a soft click. Each chamber is counted separately.



\*NOTE: Use of Erythrosin B solution and the method mode is available with the upgraded EVE Plus.

Cell counting  
(Manual focus)

5. Before cell counting, press the MANUAL FOCUS button.



6. For the correct focusing by pressing the ZOOM button. Select by pressing the location you like to see on the navigator. While viewing cells in the zoom mode, use the focus knob to adjust the image.



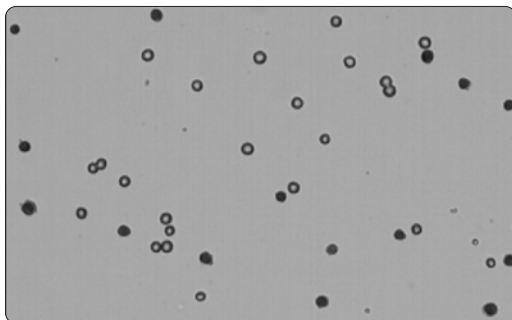
For the manual focus guide, see the following below image.





## Cell counting (Manual focus)

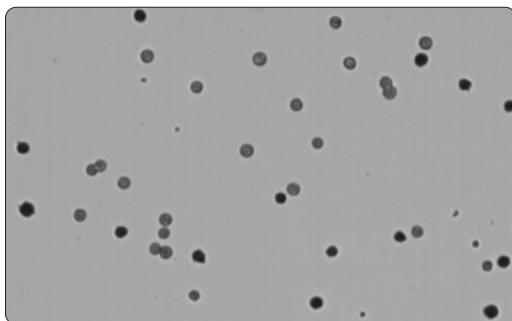
Optimize the image for analysis such that:



<Correct Image>

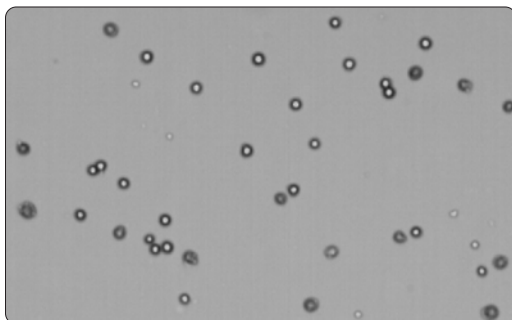
Live cells have bright centers and dark edges.

Dead cells have a uniform blue color throughout the cell with no bright centers.



<Incorrect Image 1>

Live cells have dark centers and are counted as the dead cells.



<Incorrect Image 2>

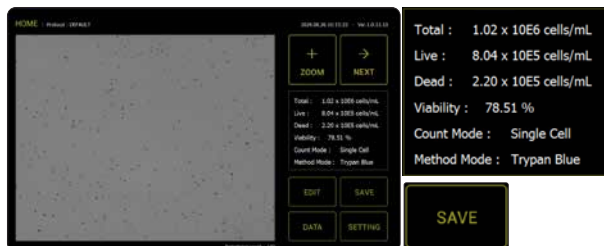
Dead cells have bright centers are counted as the live cells.

## Cell counting (Manual focus)

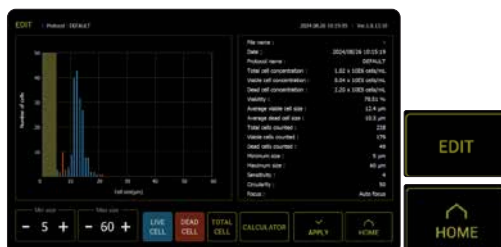
7. When you are satisfied with the image, press COUNT button.



8. Within 1 second to count each sample, and the cell count for live, dead, and total cells as well as percentage viability is displayed on the screen. To save the data, insert a USB drive and press the SAVE button (see page 29).



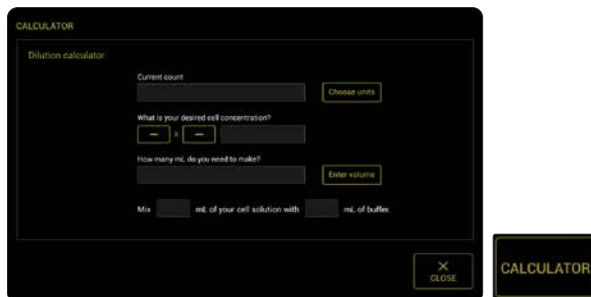
9. To see more details on the data as well as graphical representation of the data, press the EDIT button (see page 28).



» Press the HOME button to return to the main screen.

## Cell counting (Manual focus)

10. The CALCULATOR button allows you to quickly calculate adjustments to the cell suspension to obtain a desired concentration.



11. To count the cells in the other side of the slide (side B), remove the EVE™ slide after side A is counted by pushing in the slide slightly and then pulling the slide out. Turn the slide around and reinsert into the slide inlet and repeat the procedure.

12. EVE™ PLUS storage holds up to 500 data. If need a test report, save the data to the USB drive whenever you want. You may transfer the data to your PC, using the USB drive as described in transferring data to a PC (page 29).

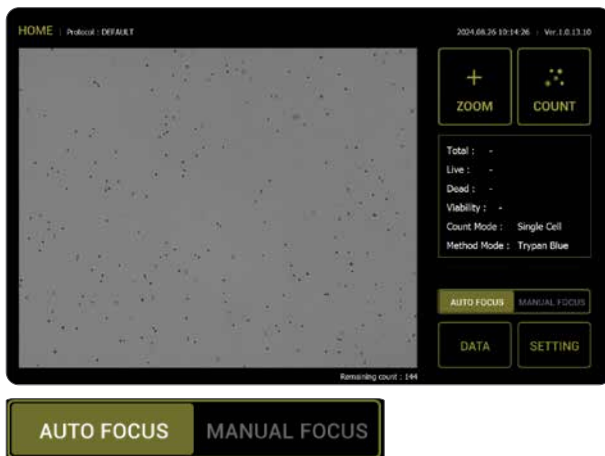
13. After recording or saving the data, remove and discard the slide appropriately as bio-hazardous waste.

14. At this point, the EVE™ PLUS is ready for another sample. If you are not using the instrument, press the power button to turn off the instrument.

» If the touch screen is not responding, you can turn off the instrument by pressing and holding the Power button for 3 seconds.

## How to use Test beads

1. Press the AUTO FOCUS button.



2. Press SETTING and then select SINGLE CELL on COUNT MODE and TRY-  
AN BLUE on METHOD MODE.

(if use the erythrosin B instead of trypan blue, select the ERYTHROSIN B on  
METHOD MODE.)



3. Put 10  $\mu$ L of beads to 10  $\mu$ L of 0.4 trypan blue or 10  $\mu$ L 0.05% erythrosin B  
solution, and mix well. Mix thoroughly by pipetting up and down.

4. Load 10 $\mu$ L of sample mixture on EVE™ Cell counting slide (side A or B)  
using pipette. The two chambers of the slide are labeled “A” and “B” for easy  
tracking of your samples.

5. Insert the EVE™ Cell counting slide with beads into the slide port on the  
instrument, making sure that the sample side is inserted completely into  
the instrument.

6. Press COUNT button.



\*NOTE: Use of Erythrosin B solution and the method mode is available with the upgraded EVE Plus.

## How to use Test beads

7. The results will be displayed on the screen.



8. Check if the given range of Test beads and counted Dead cells are in the same range.

\* Given range of Test beads : approx.  $9.60 \times 10^5 - 1.44 \times 10^6$  beads/mL

\* Due to debris, live cells may be displayed

9. To count beads in the other side of the slide chamber (side B), remove the slide after side A is counted, turn the slide around, and reinsert into the slide inlet to repeat the counting procedure.

Check  
the image

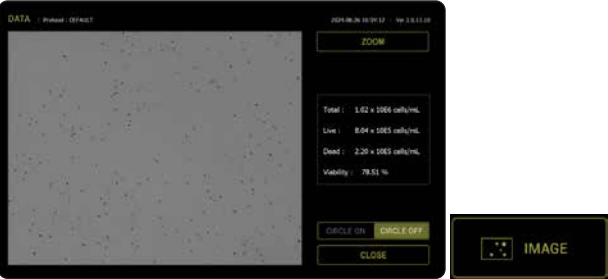
1. Push the DATA button to checking data lists.



2. Data lists and properties screen is displayed.  
When cell counting is done, all the information is automatically stored in the DATA and up to 500 lists can be stored.



3. After Choose result on the lists, press IMAGE button to check detail.



Check  
the image

4. To see more details counting results on the screen, press the ZOOM button.



5. Choose CIRCLE ON button to see detail counting result. Then, use the navigator can see detail count result and viability result with blue and red color circle.



6. Press CLOSE button to exit the screen.



## Edit the histogram

1. Choose result on the lists, then press HISTOGRAM button to check detail.



2. Determine the value for minimum cell size and maximum cell size using up and down arrow button.



» Minimum cell size is used to determine the low range of cell size to include in the measurement. The algorithm first identifies all objects, and calculates the average size. From the percent of average size setting, the algorithm calculates the smallest object size to include in the final measurement. Adjusting the number up, increases inclusiveness thereby decreasing the lower cell size range.

» Maximum cell size is used to determine the high range of cell size to include in the measurement. The algorithm first identifies all objects, then calculates the average size. From the percent of average size setting, the algorithm calculates the largest object size to include in the final measurement.

3. After modifying cell size, click APPLY button to make the changes.



4. Press BACK button to exit the screen.



5. You can check modified cell size graph and result will be apply on data lists.



## Data export (Report & image)

1. To archive your data or generate a printed report, insert USB drive into the USB port.
2. Save your data on the USB drive by pressing the SAVE button on the main screen and data menu.



- 2-1) SAVE button on the main screen.  
In case of save to USB immediately after cell counting.



- 2-2) SAVE button on the DATA tap.  
In case of save to USB through DATA tap lists.

3. Enter the file name using the keypad buttons displayed.



4. After press SAVE button, the image and the data report are saved in USB drive.

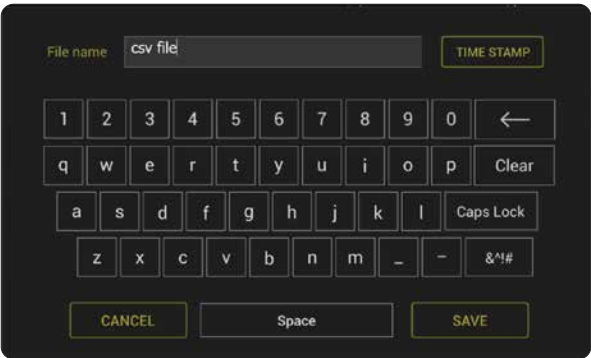
SAVE

**DATA export  
(CSV file)**

1. Save CSV file on the USB drive by pressing the SAVE DATA(.CSV) button on the main screen and data menu. The numerical data is also automatically saved as a .CSV file that can be opened with any spreadsheet program.



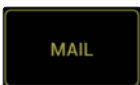
2. Enter the file name using the keypad buttons displayed on the save menu.



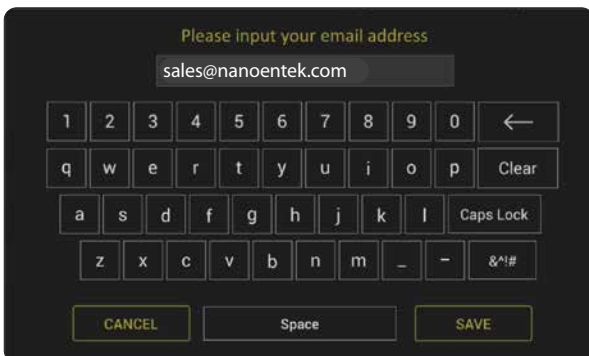
3. Transfer the USB drive to the USB port on your PC. You may open the .CSV file using a spreadsheet program.

## DATA export (Mail)

1. Push the MAIL button to transfer data.



2. Enter the file name using the keypad buttons displayed on the save menu.



\* To send data by e-mail, it is necessary to connect Wi-Fi.  
It can be set on Wi-Fi option in the SETTING menu.

## **Maintenance and cleaning**

Clean the surface of the EVE™ PLUS with a damp cloth.

To clean the LCD screen, turn off the EVE™ PLUS, disconnect the power cord, and clean the LCD screen with a soft cloth lightly moistened with LCD cleansing detergent. Cleaning the screen with excessive force can damage the LCD the screen. Wipe the screen dry immediately. Do not reuse the cell counting slides.

The EVE™ PLUS does not need regular maintenance. To troubleshoot problems with EVE™ PLUS, contact technical support (page 41).

Do not perform any repairs or service on the EVE™ PLUS to avoid damaging the instrument.

## Trouble shooting

### Inaccurate cell count

| Problem                      | Solution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Sample handling</b>       | <ul style="list-style-type: none"> <li>• Do not insert the EVE™ Cell counting slide upside-down as this may introduce liquid into the instrument that could damage it.</li> <li>• Do not reuse the EVE™ Cell counting slides, as leftover dye from the previous reading may affect the next reading.</li> <li>• Do not use any other counting slides such as a glass hemocytometer with the EVE™ PLUS as it results in inaccurate cell count and may damage the instrument.</li> <li>• Ensure that the sample covers the entire counting area and the EVE™ Cell counting slide is inserted completely into the counter.</li> </ul> |
| <b>Low and high readings</b> | <ul style="list-style-type: none"> <li>• The EVE™ PLUS is designed to read samples from <math>1 \times 10^4</math> cells/ mL to <math>2 \times 10^7</math> cells/mL, with the highest accuracy between <math>1 \times 10^5</math> cells/mL and <math>4 \times 10^6</math> cells/mL.</li> <li>• If your sample is not in this range, you may need to dilute the sample or add more cells and read the sample again.</li> </ul>                                                                                                                                                                                                      |
| <b>Poor image quality</b>    | <ul style="list-style-type: none"> <li>• While viewing cells in the zoom mode, use the focus knob to adjust the image to ensure that live cells have bright centers, and dead cells have dark/blue centers.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Clumpy cell</b>           | <ul style="list-style-type: none"> <li>• Ensure the cells are not clumped.</li> <li>• To maintain instrument sensitivity, we recommend that you calibrate the counter each year as described on page 12.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                |

## Trouble shooting

### Saving and printing problems

| Problem                                   | Solution                                                                                                                                                                                                                                                                                             |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Incorrect USB drive</b>                | <ul style="list-style-type: none"> <li>• Use the USB drive supplied with the counter or an USB 2.0 drive as some types of USB drive are not detected or recorded by the counter.</li> <li>• Do not save too many files in a USB drive as the counter may slow down to read the USB drive.</li> </ul> |
| <b>Accidentally removed the USB drive</b> | <ul style="list-style-type: none"> <li>• Do not remove the USB drive or turn off the counter when updating.</li> <li>• Do not remove a USB drive when saving or reading data as it may damage the counter.</li> </ul>                                                                                |

### Instrument not updating software

| Problem                                                              | Solution                                                                                                                                                                                                                         |
|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>May be using a corrupted software file or a damaged USB drive</b> | <ul style="list-style-type: none"> <li>• Download a new version of the software on a different USB drive and try updating the software on the EVE™ PLUS. Contact technical support (page 41) if the problem persists.</li> </ul> |

## Warranty

NanoEntek warrants that EVE™ PLUS will be free from defects in material and workmanship for a period of one (1) year from date of purchase.

If any defects occur in EVE™ PLUS during this warranty period, NanoEntek will repair or replace the defective parts at its discretion without charge.

The following defects, however, are specifically excluded:

1. Defects caused by improper operation.
2. Repair or modification done by anyone other than NanoEntek or an authorized agent.
3. Damage caused by substituting alternative parts.
4. Use of fittings or spare parts supplied by anyone other than NanoEntek.
5. Damage caused by accident or misuse.
6. Damage caused by disaster.
7. Corrosion caused by improper solvent or sample.

For your protection, EVE™ PLUS being returned must be insured against possible damage or loss. NanoEntek cannot be responsible for damage incurred during shipment of a defective instrument. It is recommend that you save the original packing material in which the instrument was shipped. This warranty is limited to the replacement of defective products.

For any inquiry or request for repair service,  
Contact [sales@nanoentek.com](mailto:sales@nanoentek.com) or your local distributor.

## Product specifications

| Environmental conditions  |                            |
|---------------------------|----------------------------|
| Operating power           | 100 - 240V~, 1.5A          |
| Frequency                 | 50 / 60 Hz                 |
| Electrical input          | 12 VDC, 3.0 A              |
| Installation site         | Indoor use only            |
| Operating temperature     | 5 - 40 °C                  |
| Maximum relative humidity | 20 - 80 %                  |
| Altitude                  | ≤ 2,000 m                  |
| Transient category        | Installation categories II |
| Pollution degree          | 2                          |
| Degree of protection      | IPX0                       |

### EVE™ PLUS instrument

|                                      |                                                        |
|--------------------------------------|--------------------------------------------------------|
| Instrument type                      | Benchtop cell counter                                  |
| Counting time                        | < 1 second (manual focus)<br>< 10 seconds (auto focus) |
| Cell measurement range (cells/mL)    | $1 \times 10^4 - 2 \times 10^7$                        |
| Optimal measurement range (cells/mL) | $1 \times 10^5 - 4 \times 10^6$                        |
| Cell size range                      | 5 - 60 µm                                              |
| Dimensions                           | 274 (W) x 333 (H) x 274 (L) mm                         |
| Weight                               | 4 kg                                                   |

### EVE™ Cell counting slide

|                |                             |
|----------------|-----------------------------|
| Material       | Polymethy methacrylate      |
| Dimensions     | 25 (W) x 1.8 (H) x 75 (L)mm |
| Chamber depth  | 100 µm                      |
| Loading volume | 10 µL                       |



## Ordering information

The following products can be used with the EVE™ PLUS and are available separately from NanoEntek.

| Cat. No. | Description                                         | Contents                                                                         |
|----------|-----------------------------------------------------|----------------------------------------------------------------------------------|
| EVS-050  | EVE™ Cell counting slide                            | <b>50 slides</b><br>100 counts, with 1 ea X 1.5 mL of trypan blue (0.4%)         |
| EVS-1000 | EVE™ Cell counting slide                            | <b>1,000 slides</b><br>2,000 counts, with 20 ea X 1.5 mL of trypan blue (0.4%)   |
| EVS-5000 | EVE™ Cell counting slide                            | <b>5,000 slides</b><br>10,000 counts, with 100 ea X 1.5 mL of trypan blue (0.4%) |
| EBB-001  | Test beads<br>Concentration(avg.) $1.0 \times 10^6$ | <b>1 mL</b>                                                                      |

## Safety precautions

### Review and follow the safety instructions below:

- Do not install the instrument in a humid place such as a greenhouse or an incubator to avoid a danger of electric shock. If water or other material enters the instrument, the adaptor, or power inlet, disconnect the power cord and contact a service person. For operating environment, refer to Product Specifications.
- Do not touch the main plug or power cord with wet hands.
- Always ensure that the power supply input voltage matches the voltage available at your location.
- This instrument is air-cooled and its surfaces may become hot during operation. When installing, leave a space of more than 10 cm (4 inches) around the instrument and do not place any objects between the instrument and walls.
- Do not install an instrument on a slant or a place prone to vibrations, which induces the risk of malfunction or damage of the instrument.
- Never insert any objects into the air vents of the instrument as this can result in electric shock, personal injury, and equipment damage.
- Plug the power cord firmly into the wall outlet and AC adapter.
- To avoid potential shock hazard, make sure that the power cord is properly grounded.
- Be sure to position the instrument such that it is easy to disconnect.
- Turn off an instrument before unplugging the power cord and/or moving the instrument.
- If an instrument is dropped or broken, disconnect the power cord and contact a service person. The warrant will be void in case of disassembly.
- Use only authorized accessories (adaptor, power cord, and USB drive).

### **WARNING**

*Class A equipment is intended for use in an industrial environment. In the documentation for the user, a statement shall be included drawing attention to the fact that there may be potential difficulties in ensuring electromagnetic compatibility in other environments, due to conducted as well as radiated disturbances.*

## Consignes de sécurité

### Examinez et suivez les consignes de sécurité ci-dessous :

- N'installez pas l'instrument dans un endroit humide comme une serre ou un incubateur pour éviter un risque de choc électrique. Si de l'eau ou tout autre matériau pénètre dans l'instrument, l'adaptateur, ou l'entrées d'alimentation, débranchez le cordon d'alimentation et contactez un technicien de service. Pour l'environnement d'exploitation, reportez-vous aux spécifications du produit.
- Ne touchez pas la fiche ou le cordon d'alimentation principale avec les mains mouillées.
- Assurez-vous toujours que la tension d'entrée d'alimentation correspond à la tension disponible dans votre endroit.
- Cet instrument est refroidi à l'air de sorte que ses surfaces peuvent devenir chaudes pendant le fonctionnement.
- Lors de l'installation de l'instrument, laissez un espace de plus de 10 cm (4 pouces) autour de cet instrument et ne placez aucun objet entre l'appareil et le mur.
- N'installez pas l'instrument sur une pente ou un endroit soumis à des vibrations, ce qui induit le risque de dysfonctionnement ou d'endommagement de l'instrument.
- N'insérez jamais aucun objet dans les orifices d'aération de l'instrument, car cela pourrait entraîner un choc électrique, des blessures chez les utilisateurs et des dommages d'équipement.
- Branchez le cordon d'alimentation fermement dans la prise murale et l'adaptateur secteur aussi.
- ur éviter un risque potentiel de commotion électrique, assurez-vous que le cordon d'alimentation est correctement mis à la terre.
- Assurez-vous de positionner l'instrument de telle sorte qu'il soit facile de débrancher l'instrument.
- Eteignez l'instrument avant de débrancher le cordon d'alimentation et / ou de déplacer l'instrument.
- Si l'instrument est cassé ou qu'il soit tombé, débranchez le cordon d'alimentation et contactez un technicien de service. Ne démontez pas l'instrument et la garantie sera annulée en cas de démontage.
- Utilisez uniquement les accessoires autorisés (l'adaptateur, le cordon d'alimentation, et le lecteur USB).

### WARNING

*Le produit de classe A est conçu pour l'utilisation dans un environnement industriel. Dans la documentation de l'utilisateur, la déclaration doit être incluse pour attirer l'attention sur le fait qu'il peut y avoir des difficultés potentielles pour assurer la compatibilité électromagnétique dans d'autres environnements, en raison des perturbations rayonnées et conduites par l'électricité.*

Safety symbols

The following symbols are found on the instrument and this document. Always use the equipment in the safest possible manner.

| Symbol                                                                              | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | Caution & Warning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|    | Protective earth (Ground)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|    | This instrument and consumables conforms to the EC declaration of conformity.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|    | <p>This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.</p> <p>These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.</p> <p>This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.</p> <p>Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.</p> |
|    | WEEE (Waste Electrical and Electronic Equipment) symbol indicates that this product should not be disposed of in unsorted municipal waste. Follow local municipal waste ordinances for proper disposal provisions to reduce the environmental impact of WEEE.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|  | This product conforms to UL61010-1/CSA C22.2 No. 61010-1 "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part I: General Requirements." Instruments bearing the TUV symbol are certified by TUV SUD America Inc to be in conformance with the applicable safety standards for the US and Canada.                                                                                                                                                                                                                                                                                                                                                                      |

## Technical support

Visit the our Website at [www.nanoentek.com](http://www.nanoentek.com) for:



- Technical resources, including manuals, FAQs, etc.
- Technical support contact information
- Additional product information and special offers.

**For more information or technical assistance, please call or email.**

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# *EVE<sup>TM</sup> PLUS*

NESMU-EVE2-001E (V.2.5)



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