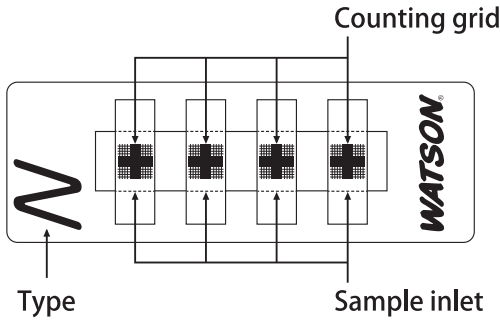


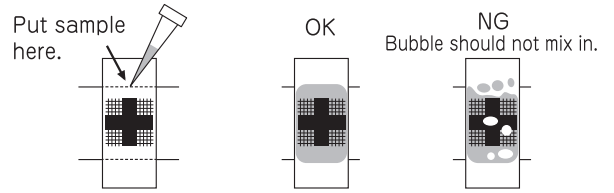
# Cell Counter Plate



## How to use

1. Pipette 6 $\mu$ L sample from the sample inlet, slowly.  
 ※Pipette 12 $\mu$ L only for Fuchs Rosenthal type.

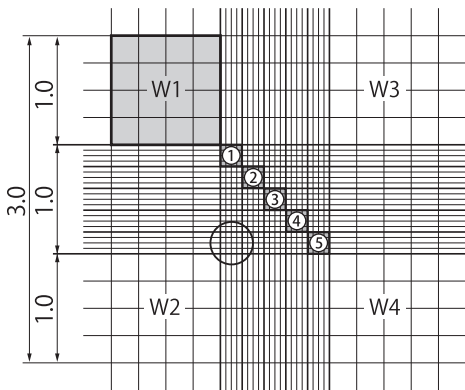
\*If injection into the inlet is difficult, pipetting several times may be necessary. Alternatively, gently shake after injection.



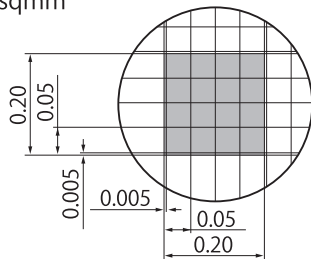
2. Set the plate on a microscope and keep it still for 2-3 minutes.
3. Count cells referring to a rule in "Cell Counting Method"
4. Calculate according to the method of each type.

## N [Neubauer Improved]

177-112C

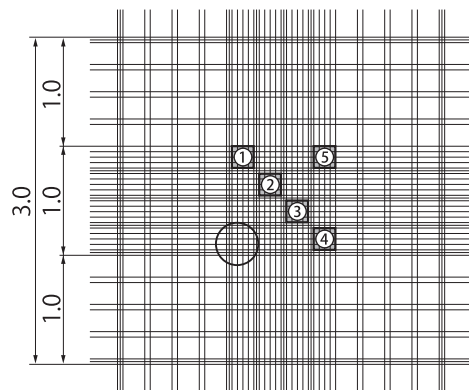


1/10mmdeep, 1/400 & 1/16sqmm

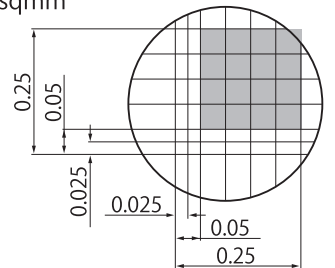


## B [Burker-Turk]

177-212C

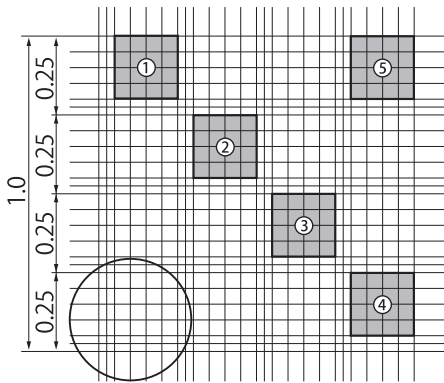


1/10mmdeep, 1/400 & 1/25sqmm

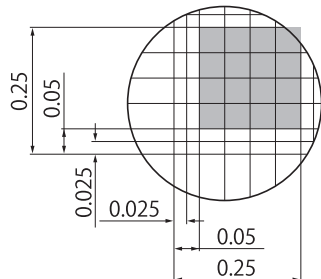


## T [Thoma]

177-312C

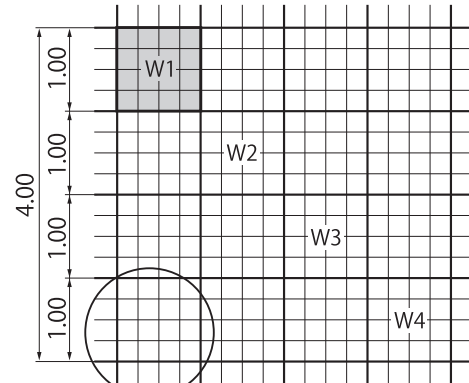


1/10mmdeep, 1/400sqmm

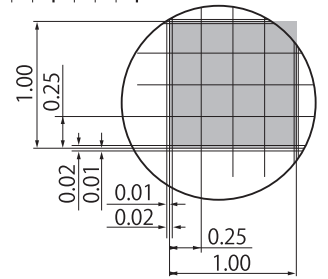


## F [Fuchs Rosenthal]

177-512C



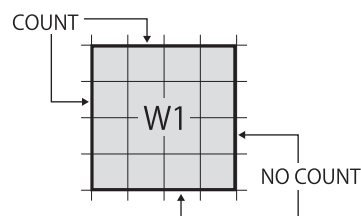
1/5mmdeep, 1/16sqmm



## Cell Counting Method

On the four-sided boundary, count only cells on the two adjacent sides.

ex.) W1 compartment of Neubauer Improved



### To count large cells such as cultured cells

$$A = a \times 10 \times \text{Dilution Rate}$$

**A**: Count of cells in 1  $\mu\text{L}$  of undiluted solution

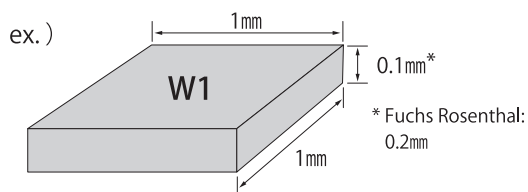
**a**: Average number of cells in compartments W1, W2, W3, and W4 in the figure on page 1

(Around 100 cells in each compartment is appropriate.)

\*In case of Fuchs Rosenthal, the following equation can be used due to the different thickness.

$$A = a \times 5 \times \text{Dilution Rate}$$

W1 compartment is shaped as below



A cuboid with length 1 mm, width 1 mm, and thickness 0.1 mm

The volume of the W1 compartment is,  
 $1\text{mm} \times 1\text{mm} \times 0.1\text{mm} = 0.1\text{mm}^3 = 0.1\mu\text{L}$

When cell count average over W1~W4 is **a**, the cell count per 0.1 $\mu\text{L}$  of the liquid used for counting is **a**.

Therefore, cell count **A** per 1 $\mu\text{L}$  of the original liquid is

$$A = \{a / (1\text{mm} \times 1\text{mm} \times 0.1\text{mm})\} \times \text{Dilution Rate}$$

$$A = (a / 0.1\mu\text{L}) \times \text{Dilution Rate}$$

$$A = a \times 10 \times \text{Dilution Rate}$$

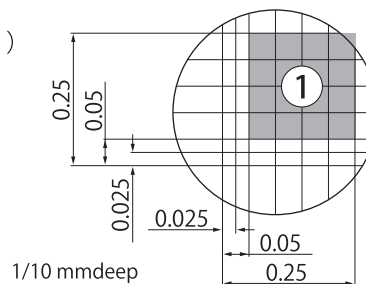
### To count small cells such as yeasts, blood cells, etc.

$$R = r \times 50 \times \text{Dilution Rate}$$

**R**: Count of cells in 1  $\mu\text{L}$  of undiluted solution

**r**: Total number of cells in compartments ①, ②, ③, ④ and ⑤ in the figure on page 1

ex.)



Volume of a cuboid with length 0.2 mm, width 0.2 mm, and thickness 0.1 mm

The volume of the ① compartment is  
 $4 \times 10^{-3}\text{mm}^3 = 4 \times 10^{-3}\mu\text{L}$

The sum of the volumes ① to ⑤ is  
 $\rightarrow 5 \times 4 \times 10^{-3}\mu\text{L} = 2 \times 10^{-2}\mu\text{L}$

When the total cell count of ①~⑤ summed up is **r**, the cell count in  $2 \times 10^{-2}\mu\text{L}$  is **r**.

Therefore, cell count **R** per 1 $\mu\text{L}$  of the original liquid is

$$R = \{r / (5 \times 0.2\text{mm} \times 0.2\text{mm} \times 0.1\text{mm})\} \times \text{Dilution Rate}$$

$$R = \{r / (2 \times 10^{-2}\mu\text{L})\} \times \text{Dilution Rate}$$

$$R = r \times 50 \times \text{Dilution Rate}$$

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