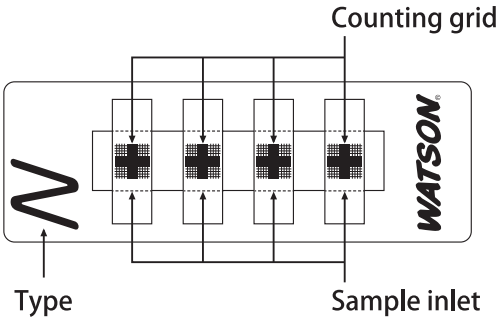
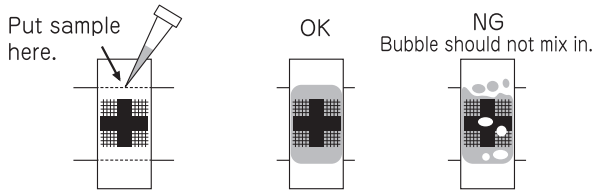
WATSON BIO LAB — User Instruction

Cell Counter Plate



How to use

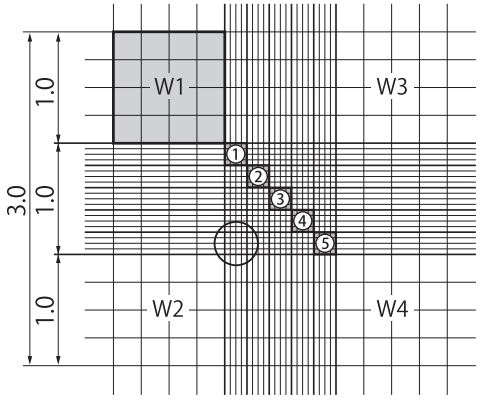
1. Pipette 6 μL sample from the sample inlet, slowly.
   ※Pipette 12 μL only for Fuchs Rosenthal type.
   *When injecting into the sample inlet is difficult, several times of pipetting is needed.



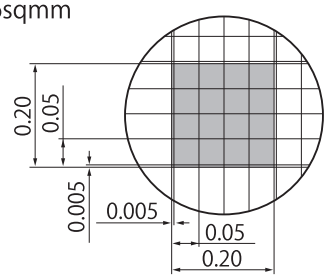
2. Set the plate on a microscope and keep it still for 2-3 minutes.
3. Count cells referring to a rule in "Cell Counting Method"
4. Calculate accoring to the method of each type.

N 【Neubauer Improved】

177-112C

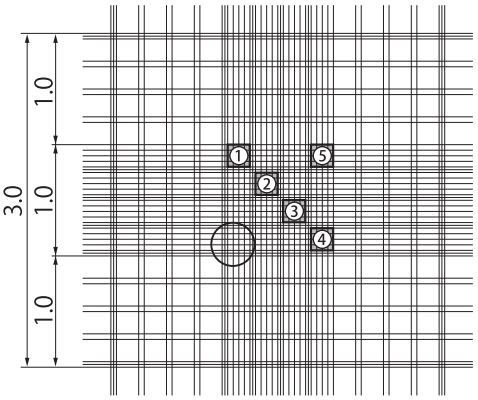


1/10mmdeep, 1/400 & 1/16sqmm

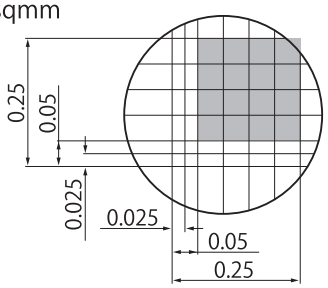


B 【Burker-Turk】

177-212C

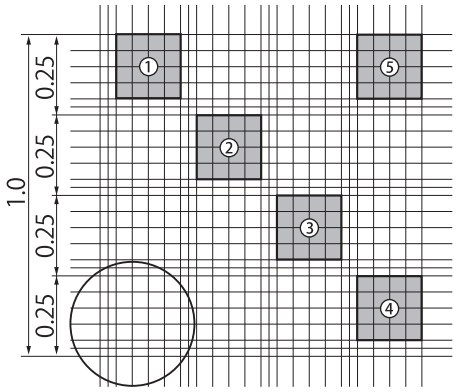


1/10mmdeep, 1/400 & 1/25sqmm

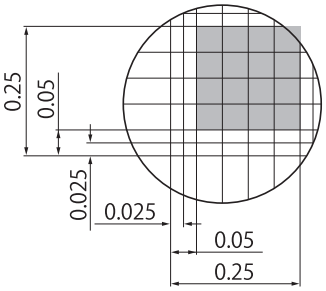


T 【Thoma】

177-312C

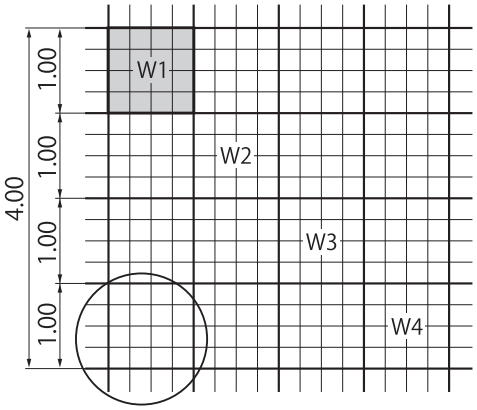


1/10mmdeep, 1/400sqmm

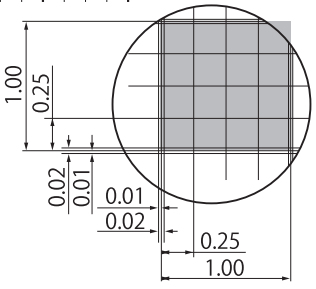


F 【Fuchs Rosenthal】

177-512C



1/5mmdeep, 1/16sqmm



Cell Counting Method

■To count large cells such as cultured cells.

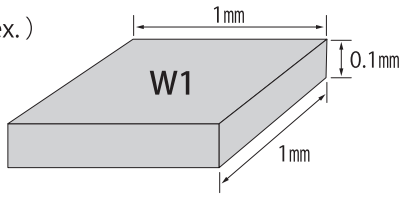
Leukocyte count **A** per 1 μL is calculated by formula below, when cell counts in large compartments W1,W2,W3,W4 (each amounts to 16 midium complatments) average to be **a**.

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

※Adjust so that the count in a large compartment (16 midium compartments) is around 100.

Large compartment dimension

ex.)



A cube of 1㎜ × 1㎜ × 0.1㎜

The volume of a large compartment (16midium compartment) is 1㎜ × 1㎜ × 0.1㎜ = 0.1㎜^{3} = 0.1 μL
When cell count average over W1～W4 is a, the cell count per 0.1 μL of the liquid used for counting is **a**.

Therefore, cell count **A** per 1 μL of the original liquid is

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

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

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

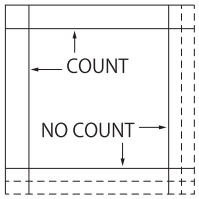
■To count small cells such as yeasts, blood cells, etc.

Count cells in each compartment ①,②,③,④,⑤(the total amounts to 80 minimum compartments) and sum up.
Blood cell count **R** per 1 μL is calculated by the formula below when the total blood cell count summed up is **r**.

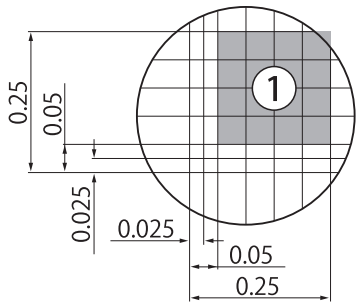
$$R = r \times 50 \times \text{Dilution Rate}$$

※A gap between the cell counts of any 2 midium compartments (16 minimum compartments) must not exceed 20.
※Any set of 16 minimum compartments can be taken as a midium compartment ①～⑤, but they need to be well spread.
※ (1) In case of triple lines, use the most inner line.
(2) Count cells on the top and left lines. Cells on the bottom and right lines are not to be counted.

ex.)



ex.)



The volume of a cube 0.2㎜ × 0.2㎜ × 0.1㎜ is
4×10^{-3}㎜^{3} = 4×10^{-3} μL
Sum up the cell counts in ①～⑤.
→ It amounts to the cell count in $5 \times 4 \times 10^{-3}$ μL.
When the total cell count of ①～⑤ summed up is **r** .
the cell count in 2×10^{-2} μL is **r** .

Therefore, cell count **R** per 1 μL of the original liquid is

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

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

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

Something Different.
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