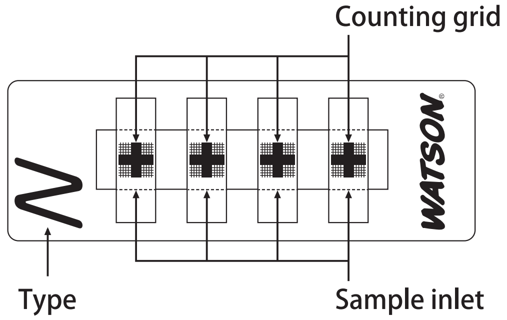
WATSON BIO LAB — User Instruction

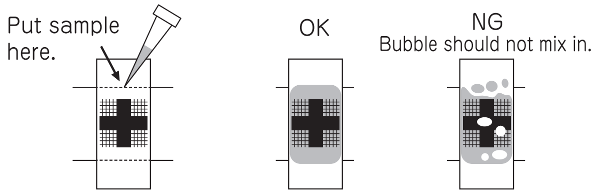
Cell Counter Plate



How to use

1. Pipette 6μL sample from the sample inlet, slowly.
   ※Pipette 12μL only for Fuchs Rosenthal type.

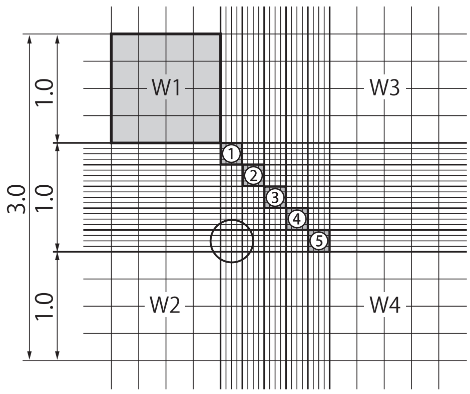
*If injection into the inlet is difficult, pipetting several times may be necessary.
Alternatively, gently shake after injection.



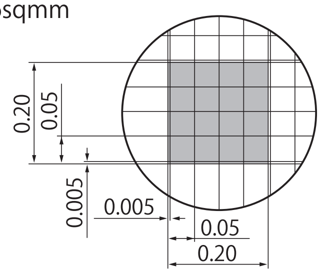
2. Set the plate on a microscope and keep it still for 2-3 minutes.
3. Count cells referring to a rule in "Cell Counting Method"
4. Calculate accoring to the method of each type.

N 【Neubauer Improved】

177-112C

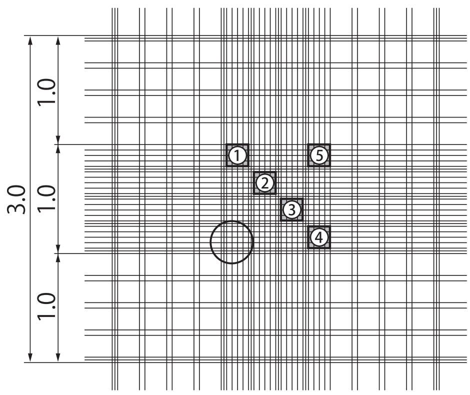


1/10mmdeep, 1/400 & 1/16sqmm

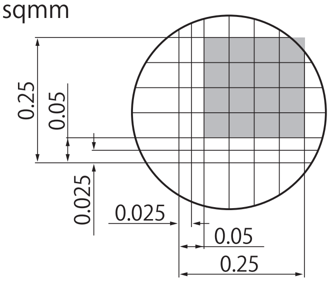


B 【Burker-Turk】

177-212C

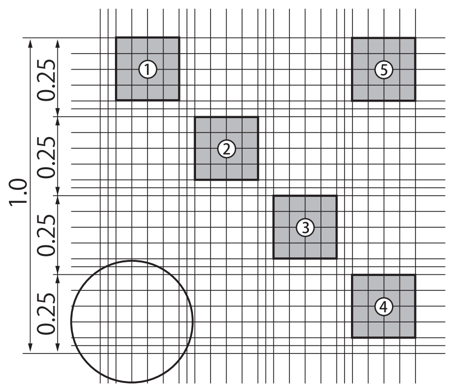


1/10mmdeep, 1/400 & 1/25sqmm

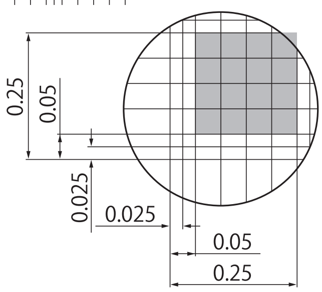


T 【Thoma】

177-312C

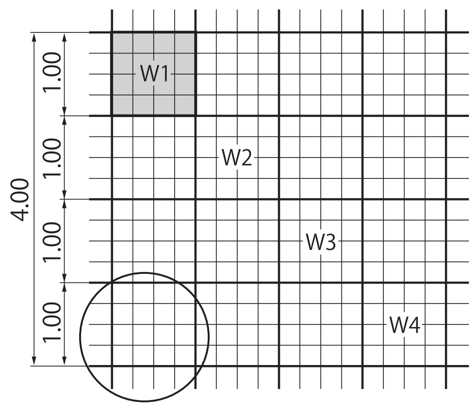


1/10mmdeep, 1/400sqmm

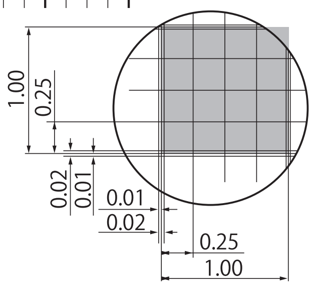


F 【Fuchs Rosenthal】

177-512C



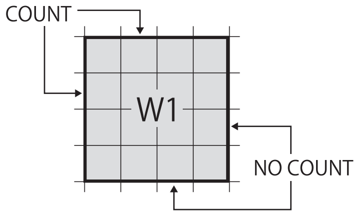
1/5mmdeep, 1/16sqmm



Cell Counting Method

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 × 10 × Dilution Rate

A : Count of cells in 1 μL of undiluted solution

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

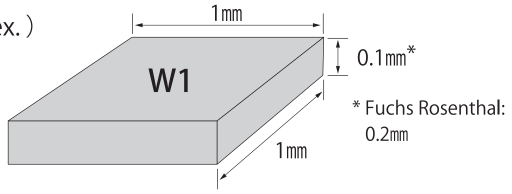
(Around 100 cells in each compartment is appropriate.)

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

A = a × 5 × Dilution Rate

W1 compartment is shaped as below

ex.)



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

The volume of the W1 compartment is,

1㎜ × 1㎜ × 0.1㎜ = 0.1㎜^{3} = 0.1μL

When cell count average over W1～W4 is **a** , the cell count per 0.1μL of the liquid used for counting is **a** .

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

A = {a / (1㎜ × 1㎜ × 0.1㎜)} × Dilution Rate

A = (a / 0.1μL) × Dilution Rate

A = a × 10 × Dilution Rate

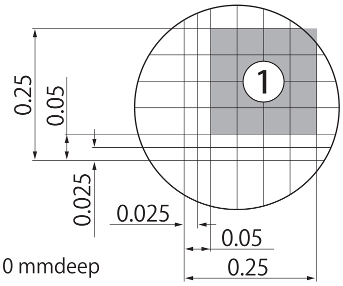
To count small cells such as yeasts, blood cells, etc.

R = r × 50 × Dilution Rate

R : Count of cells in 1 μL 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 ㎜, width 0.2 ㎜, and thickness 0.1 ㎜

The volume of the ① compartment is

4×10^{-3}㎜^{3} = 4×10^{-3}μL

The sum of the volumes ① to ⑤ is

→ $5 \times 4 \times 10^{-3}$μL = 2×10^{-2}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 1μL of the original liquid is

R = { r / (5× 0.2㎜× 0.2㎜× 0.1㎜)} × Dilution Rate

R = { r / (2 × 10^{-2}μL)} × Dilution Rate

R = r × 50 × Dilution Rate

Something Different.
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