easySpiral Dilute®
The world’s first automatic diluter & plater

A revolution in serial dilutions!

interscience
Our quality for your lab

- Designer and manufacturer for microbiology
- R&D leadership for innovative and reliable products
- Worldwide distribution network in more than 90 countries
- Made in France

Spiral® method:
35 years experience

The Spiral® method was designed in 1973 to automate the routine work of bacterial enumeration by Dr. Ed Campbell, researcher at the FDA (Food & Drug Administration). With François Jalenques, friend and founder of interscience, they patented an updated method in 1992.

Since then Spiral® automatic platers have been a reference for applications in food microbiology, medical bacteriology, research on food preservatives or cosmetological factors in compliance with the NF V08-050, NF V08-034, ISO 7218, ISO 4833-2, ISO 15189, FDA BAM and AOAC 977.27 standards.

Today interscience is proud to launch the 4th generation of Spiral® platers with easySpiral Dilute®: the world’s first automatic diluter & plater.
interscience is proud to introduce easySpiral Dilute®, a 2-in-1 automatic diluter and plater, which allows you to do 5 x 1/10th serial dilutions. It will then automatically plate on 1 single Petri dish, with a countable range from 30 to 1 x 10^12 countable CFU/mL.

No more manual dilutions and plating is automatic!

1. Place your sample in the beaker
2. The easySpiral Dilute® will automatically dilute the sample up to 5 times
3. The easySpiral Dilute® will automatically plate the sample on a Petri dish up to 1 x 10^12 countable CFU/mL

Why use an automatic diluter & plater?

easySpiral Dilute® allows you to save 50% on consumables and 50% on your time.

Comparison between manual and automatic method below.

Example of 50 samples: Dilution: 10^{-7}  
Plating: 10^{-6}, 10^{-5} and 10^{-7}

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<table>
<thead>
<tr>
<th></th>
<th>Manual method</th>
<th>Automatic method</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSUMABLES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dilution</td>
<td>400 tubes</td>
<td>350 beakers</td>
</tr>
<tr>
<td>Plating</td>
<td>350 pipet tips</td>
<td>150 Petri dishes</td>
</tr>
<tr>
<td>TIME</td>
<td>10h10</td>
<td>5h50</td>
</tr>
</tbody>
</table>
Key features

**Compact**
40 cm wide, can be used inside and outside a laminar flow
Stainless steel housing

**High precision**
Glass syringe typical accuracy of 0.5 %
No more pipet calibration

**Automatic disinfection**
Overflow technology cleaning system
No cross contamination

**One-touch plating**
Choose from 4 plating modes
Plate on 55, 90 and 150 mm Petri dishes

**High speed automation**
Fast rotating arm
1 disinfection, 5 dilutions and 1 plating in 134 s

**Easy serial dilutions**
Choose your dilution factor
Do $10^5$ dilution or more automatically
No more 9 mL tube preparation

**Cleaning autonomy**
2 fully autoclavable bottles
(disinfectant & diluent) and connectors

**PATENTED**
How does it work?

1. Dilution cycle

1. Sample intake
2. 0.5 mL of sample is deposited
3. 4.5 mL of diluent is added to the sample and mixed

The above dilution cycle is repeated for the next serial dilution.

1. 0.5 mL of 10⁻¹ diluted sample intake
2. 0.5 mL of 10⁻¹ diluted sample is deposited

Dilution cycle can be repeated as many times as you wish.

2. Plating cycle

**Constant mode**
- Homogenous surface deposition
- 50 µL, 100 µL, 200 µL, and USB programmable

**Exponential mode**
- Decreasing surface concentration
- 50 µL, 100 µL, 200 µL, and USB programmable

**Circle mode**
- 3 or 6 surface dilutions on 1 Petri dish
- 10 µL inner circle, 16 µL middle circle, and 25 µL outer circle

**Pour mode**
- Homogenous deposition in pour plate mode
- 50 µL, 100 µL, 200 µL, and USB programmable

**Examples:**
- Before incubation: Homogenous surface deposition
- After incubation: Easy colony counting: No colonies on the edge of the Petri dish

Easy colony counting: No colonies on the edge of the Petri dish
Counting on Petri dish from 30 to 1x10¹³ CFU/mL
Savings on Petri dishes
Easy colony counting for invasive colonies. Pharmacopoeia compliant

* In pour mode, easySpiral Dilute® deposits one sample drop at the bottom of an empty Petri dish. Then, the user adds the molten agar on top and homogenizes it with the sample.

How to count?

**Manual colony counting**

**Automatic colony counting**

Scan® 100
with Spiral® counting grid

or

Scan® 300
Scan® 500
Scan® 1200
Scan® 4000
The accuracy of easySpiral Dilute® is high: 0.5%. How can I check it?

It is easy and automatic.
Test of the deposited volume during plating:
Press on the plating volume test button. This function will fill a previously weighed beaker with 500 µL. Weigh the distributed volume to check the results.
Test of the volume of the dilutions:
Press on the dilution volumes test button. This function will fill 2 previously weighed beakers: one with 0.5 mL and the 2nd one with 4.5 mL. Weigh the distributed volumes to check the results.

Questions

What is special about the easySpiral Dilute®?

easySpiral Dilute® is the only 2-in-1 equipment on the market making automatic serial dilutions and standardized plating.

I usually dilute 1 mL to 1/10 and the easySpiral Dilute® uses 0.5 mL to 1/10. Is easySpiral Dilute® as precise with a volume divided by 2?

Usually the average accuracy for the 9 mL tubes filling and 1 mL pipetting is 2% with the need to calibrate and regularly check the pipets you are using.
easySpiral Dilute® has an average accuracy of 0.5% on 0.5 mL and 4.5 mL volumes because it works with a high precision Hamilton™ glass syringe in a liquid displacement circuit.
With volumes divided by 2, precision and repeatability are then much higher!

Which diluents can I use?

easySpiral Dilute® works with saline solutions (e.g.: Ringer’s solution, physiological saline).
Avoid using diluents with nutrients as they may cause contaminations. Bacteria only remain a few seconds in the beakers before being deposited on the Petri dish so using a saline diluent has no effect on the final enumeration.

It is however possible to use nutrient solutions as diluent in the semi-automatic “My Diluent” mode. In that case, fill in the beakers with 4.5 mL diluent before processing.

I need to make a 10⁻⁷ dilution. How can I do it?

The easySpiral Dilute® can do as many dilutions as you wish.
Do a 10⁻⁵ dilution, take the last beaker and place it as the mother sample and then proceed with a new automatic dilution sequence.
### Accessories & technical specifications

**easySpiral Dilute®** is delivered with 1 000 DB50 beakers, 1 blue dye for tests, 1 EnzyClean® liquid detergent, 1 syringe, 2 filters, 1 stylus, 4 connection kit for GL 45 bottle, 1 double connection kit for GL 45 bottle, Petri dish rings: 55, 90 & 150 mm, Spiral® counting grids: 90 & 150 mm, circle counting grids: 90 & 150 mm, power cord, user’s manual, monitoring CD-ROM software, USB cable.

<table>
<thead>
<tr>
<th><strong>Reference</strong></th>
<th><strong>414 000</strong></th>
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<tbody>
<tr>
<td>Petri dish diameter</td>
<td>55 mm, 90 mm and 150 mm</td>
</tr>
<tr>
<td>Syringe capacity</td>
<td>1 000 µL</td>
</tr>
<tr>
<td>Programmable dispensed volume (via USB)</td>
<td>from 10 µL to 1 000 µL</td>
</tr>
<tr>
<td>Preset dispensed volume</td>
<td>50 µL, 100 µL and 200 µL</td>
</tr>
<tr>
<td>Counting range</td>
<td>from 30 to 1x10^{12} CFU/mL</td>
</tr>
<tr>
<td>Plating modes</td>
<td>55 mm: constant, pour plate 90 mm: exponential (10^0), constant, circle (3 dilutions), pour plate 150 mm: exponential (10^0), constant, circle (6 dilutions), pour plate</td>
</tr>
<tr>
<td>Number of dilutions at 1/10^{n} for 1 cycle</td>
<td>5</td>
</tr>
<tr>
<td>1 disinfection + 5 dilutions + 1 plating of 1 dilution</td>
<td>134 s</td>
</tr>
<tr>
<td>1 disinfection + 5 dilutions + 1 plating of each dilution</td>
<td>234 s</td>
</tr>
<tr>
<td>Disinfectant autonomy</td>
<td>1000 (with 2 L bottles)</td>
</tr>
<tr>
<td>Diluent autonomy</td>
<td>63 cycles (with 2 L bottles)</td>
</tr>
<tr>
<td>Circle mode (patented)</td>
<td>3 dilutions on a 90 mm Petri dish 6 dilutions on a 150 mm Petri dish</td>
</tr>
<tr>
<td>Stylus disinfection system (patented)</td>
<td>inside and outside by Overflow technology</td>
</tr>
<tr>
<td>Pressure in the stylus</td>
<td>jusqu’à 8 bars</td>
</tr>
<tr>
<td>Successive plating capacity with the same sample</td>
<td>up to 20 Petri dishes (50 µL)</td>
</tr>
<tr>
<td>Traceability</td>
<td>excel™, datamatrix labels</td>
</tr>
<tr>
<td>Disinfection process</td>
<td>✔</td>
</tr>
<tr>
<td>Filling time and volume programmable via USB</td>
<td>✔</td>
</tr>
<tr>
<td>My Diluent key</td>
<td>✔</td>
</tr>
<tr>
<td>Sample mixing before dilution/plating</td>
<td>✔</td>
</tr>
<tr>
<td>Controlled by microprocessor</td>
<td>✔</td>
</tr>
<tr>
<td>Dimensions (w x d x h)</td>
<td>40 x 41.5 x 29 cm</td>
</tr>
<tr>
<td>Weight</td>
<td>16.4 kg</td>
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<tr>
<td>Power supply</td>
<td>100-240 V~ / 50 Hz to 60 Hz</td>
</tr>
<tr>
<td>Power</td>
<td>65 W</td>
</tr>
<tr>
<td>1 year guarantee (after registration)</td>
<td>✔</td>
</tr>
<tr>
<td>All stainless steel</td>
<td>✔</td>
</tr>
<tr>
<td>Made in France</td>
<td>✔</td>
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</table>

[![NF V08-050](image.png)](image.png) [![NF V08-034](image.png)](image.png) [![ISO 7218](image.png)](image.png) [![ISO 4832](image.png)](image.png) [![ISO 15189](image.png)](image.png) [![FDA BAM](image.png)](image.png) [![AOAC 977.27](image.png)](image.png) [![ISO 9001](image.png)](image.png) [![ISO 2002/96/EC](image.png)](image.png) [![WEEE](image.png)](image.png) [![RoHS](image.png)](image.png) [![MADE IN FRANCE](image.png)](image.png)