

# DiluFlow<sup>®</sup>

Gravimetric dilutors for solid samples



The best solution for your dilutions!

interscience



## Our quality for your lab

- Full range of products for microbiological analyses
- Leadership for innovative products
- Worldwide distribution network
- Designed and Made in France



# BagSystem<sup>®</sup>

for the best sample preparation



## Why use a gravimetric dilutor?

DiluFlow<sup>®</sup> gravimetric dilutors enable the automatic dilution of the sample with perfect reliability. See the following advantages:

|   |  |   |
|---|--|---|
| <p><b>MANUAL DILUTION</b></p> <p><b>Step 1</b><br/>Weigh the sample</p> <p><b>Step 2</b><br/>Add manually the diluent</p> |  | <p><b>AUTOMATED DILUTION<br/>WITH DiluFlow<sup>®</sup></b></p> <p>Place the sample and start the dilution<br/><b>The appropriate quantity of diluent is added in a matter of seconds.</b></p> |
|---|--|---|

**Time-consuming** ■

**Inaccurate:** ■  
Direct impact on final result

**Not reproducible** ■

**Not secure:** ■  
The bag is not maintained

**Not automatically traceable** ■

■ **Quick:** 8 seconds\* for 225 mL

■ **Accurate:** < 1 % of sample weighing  
As little as < 1 % of dispensing (in standard or accurate mode)

■ **Reproducible**

■ **Secured:** The bag is maintained with BagOpen<sup>®</sup> bag opener

■ **Traceable:** with LIMS, printer or Excel<sup>™</sup>

\* Dilution time for a 25 g sample diluted at 1/10 on a DiluFlow<sup>®</sup> Elite with booster kit in fast mode

# Easy-to-use efficient & connected 3 models for optimal dilutions



DiluFlow®

DiluFlow® Pro

DiluFlow® Elite

|                   |   |   |                  |
|-------------------|---|---|------------------|
| Ultra low profile | ✓ | ✓ | ✓                |
| DripTray          | ✓ | ✓ | ✓                |
| Robotic arm       | - | ✓ | ✓                |
| Jumbo kit option  | - | ✓ | ✓ <sup>(3)</sup> |
| Programmable      | - | - | ✓                |
| Full traceability | - | - | ✓                |
| Up to 6 pumps     | - | - | ✓                |
| Multi-Dispensing  | - | - | ✓                |

## Superior quality

Watson Marlow™ pumps



## Traceability

Printer, USB stick<sup>(1)</sup>, Excel™, Open Office™, Libre Office Calc™, CSV, LIMS<sup>(1)</sup>



## Up to 6 diluents

With 4 extra connectable pumps<sup>(1)</sup>

IN COMPLIANCE WITH



## 304 L stainless steel casing

For easy cleaning and long-lasting



## Robotic arm<sup>(2)</sup>

Easy sample dropping  
Avoids contamination  
Saves time

Demo video  
Scan me!



## GeckoGrip

No more adhesive gums!  
Ultra adhesive, hygienic and long lasting  
**PATENTED**

## Ultra low profile

Perfect for a laminar flow  
Ergonomic: no more  
musculoskeletal disorders

## Kit booster

2 times faster

Only 30 cm!



## High accuracy weighing scale

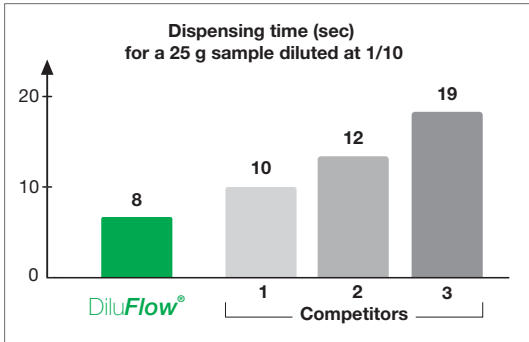
Weighing accuracy up to 99 %

## Removable DripTray

Easy to keep your DiluFlow® clean  
**PATENTED**

(1) Only on DiluFlow® Elite (2) Only on DiluFlow® Pro and DiluFlow® Elite (3) Only on DiluFlow® Elite 5 kg

# Unique features



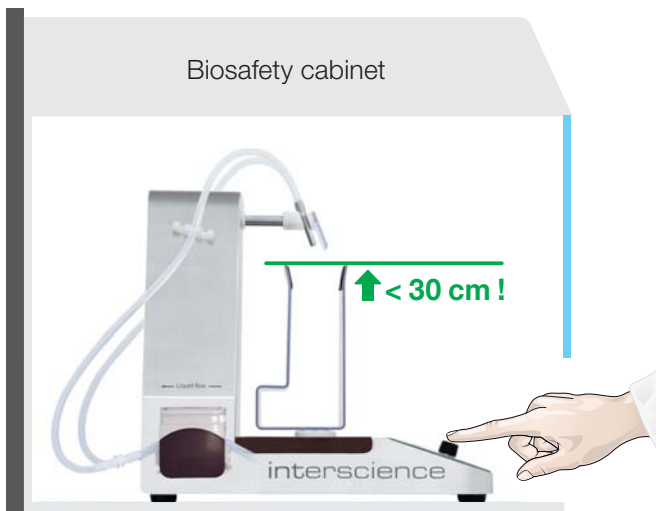
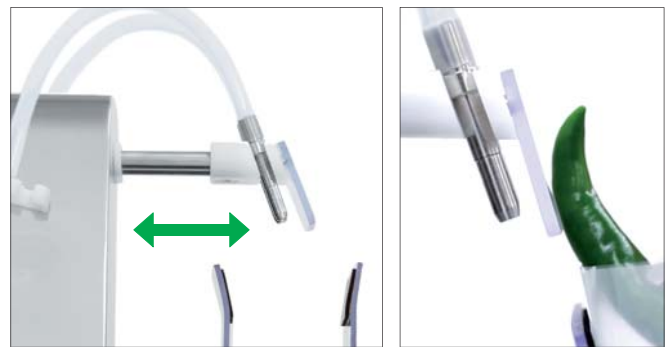
## World's fastest dilutor:

With a booster kit, the DiluFlow® are the fastest dilutors on the market. Only 8 s<sup>(3)</sup> to dispense 225 mL!

## Robotic arm<sup>(2)</sup> & nozzle protection plate

The robotic arm enables you to drop the sample safely and easily without contamination risks. Tested more than 1.3 million times, its reliability is guaranteed.

The protective plate protects the nozzle from any contact with the sample.



## Ultra low profile

The DiluFlow® have the lowest bag opening on the market, less than 30 cm!

This allows a better comfort and ergonomics, especially when you use the DiluFlow in a biosafety cabinet.

## GeckoGrip gripping system

Inspired by a gecko's paw, this new GeckoGrip material will hold the bag without pressing hard. GeckoGrip sticking properties apply in dry and wet surfaces.

GeckoGrip long lasting material can be washed with soap and alcohol.

**PATENTED**





## LightCode

An intuitive indicator of the status of the DiluFlow®. The degree of accuracy of the finished dilution is displayed: green > 98 %, orange > 95 % or red < 95 %. It will also turn blue if the scale is not stable, thus telling you to wait for stabilization.



**Green:**  
Accuracy > 98 %



**Orange:**  
Accuracy > 95 %



**Red:**  
Accuracy < 95 %



**Blue:**  
Scale stabilizing

## DripTray

In case culture media is spilt on the unit, the new patented DripTray can be removed to be rinsed, avoiding a tedious cleaning of the unit.

**PATENTED**



## Multi-Dispensing<sup>(1)</sup>

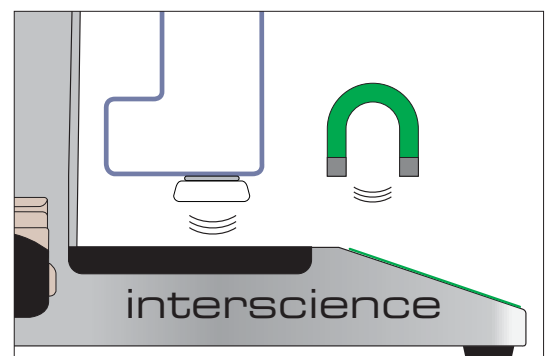
This unique patented mode allows you to serially dispense in small containers such as 9 mL tubes, without having to weigh each tube, by doing just one calibration on the scale.

**PATENTED**

## Magnetic BagOpen®

The 2 points magnetic attachment of the **BagOpen®** guarantee a stable platform for better measuring accuracy, and provide a natural protection of the weight sensor when removing the bag.

**PATENTED SHAPE**



(1) Only on DiluFlow® Elite (2) Only on DiluFlow® Pro and DiluFlow® Elite (3) Dilution time for a 25 g sample diluted at 1/10 on a DiluFlow® Elite with booster kit

# Multiple ways to use a DiluFlow®

## ☞ The lab operators like the low profile of the DiluFlow® platform ☞



New standards make it necessary to work under a laminar flow for the dilution work, and this can create operational problems.

Our lab operators like the ultra-low profile of the DiluFlow® platform because they do not need to bend themselves anymore to insert the sample in the bag.

My DiluFlow® can handle up to 5 000 g load if you add the Jumbo kit option, to dilute in large bags. It is useful because you do not need to buy an extra machine for large samples.

■ Brigitte, lab technician

## ☞ The DiluFlow® Elite, in the 1 kg version, has an accuracy of 0.01 g ☞



In the cosmetics industry, the raw materials cost a fortune, sometimes more than 10 000 euros per kilo ! That is why we only work with small amounts, usually 1 g.

The DiluFlow® Elite, in 1 kg version, has an accuracy of 0.01 g, which enables us to get  $\pm 2\%$  weighing accuracy. Moreover we use the tongs platform option which are efficient pliers to hold our tubes, to directly place the tube under the liquid flow every time.

■ Dylan, lab manager

## ☞ Accurate, user-friendly and reliable... ☞



We analyze between 10 and 20 samples per day in our lab.

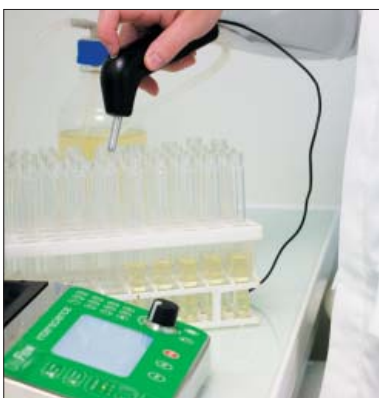
We looked at all dilutors on the market and most of them looked far too complex to use or too sophisticated.

We are now using a DiluFlow® which matches our requirements completely. The keyboard is really easy-to-use; only 2 keys to press for a dilution.

■ Alain, microbiological coordinator



## ☞ 3-in-1 equipment ☞



What I really like about my DiluFlow® Elite is the Multi-Dispensing function. I use it to fill 9 mL dilution tubes. Before that, I was using a peristaltic pump, but each time, I had to calibrate the pump with a weighing platform to get  $\pm 2\%$  accuracy.

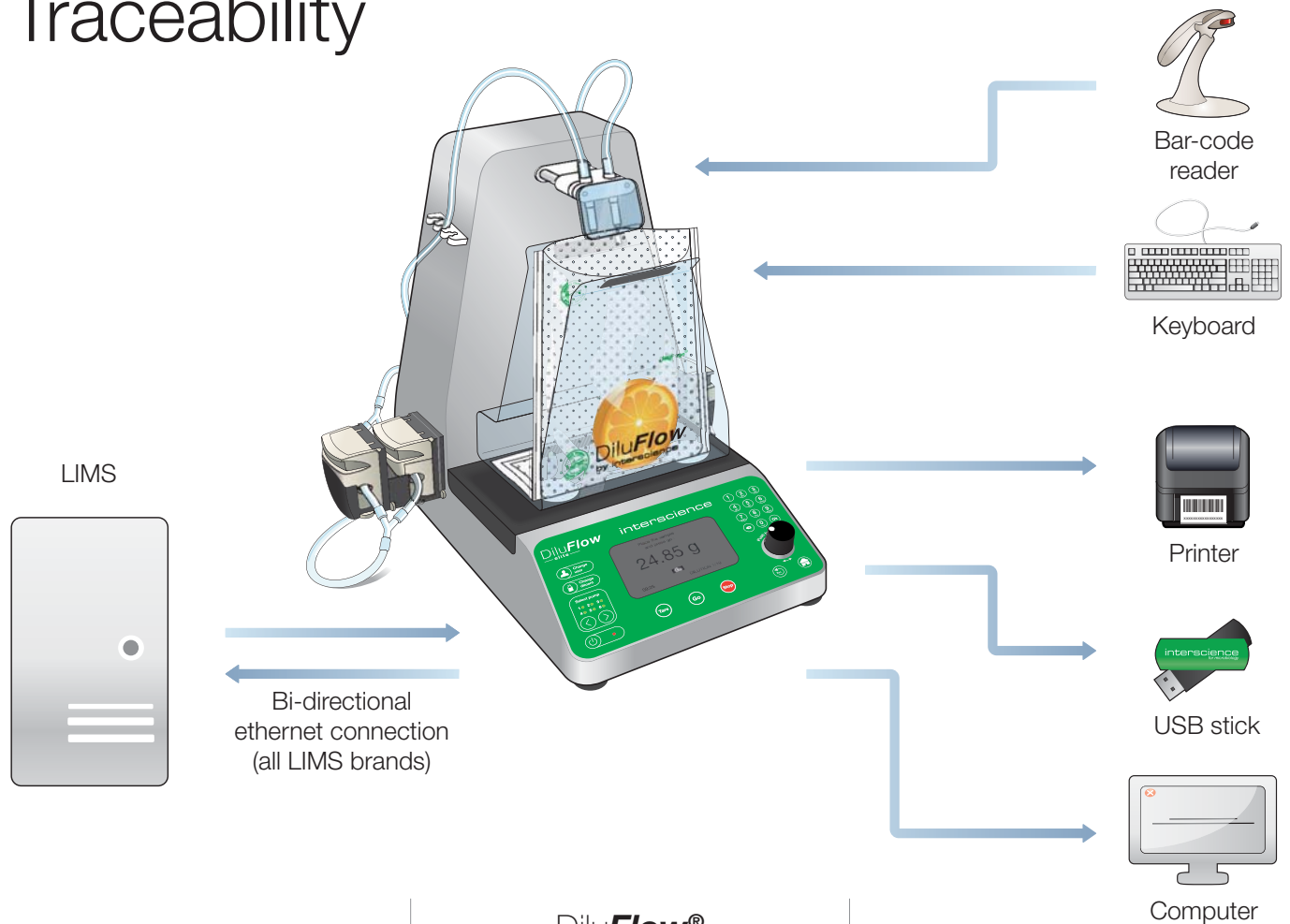
With the DiluFlow® Elite, you just put the first tube on the platform and the calibration is automatic. You can then directly distribute the doses in the tubes with the HandyGun, without having to weigh each tube. It is as if I had 3-in-1 equipment: a peristaltic pump, a scale and a dilutor!



■ Dominique, quality control engineer



# Traceability



|   | DiluFlow®<br>DiluFlow® Pro  | DiluFlow® Elite  |
|---|---|--|
| <b>Available ports</b>                                  | <br>Input<br>for pedal<br>RS232<br>for printer<br>USB<br>for PC connection  | <br>Ethernet<br>Jack<br>USB B<br>USB A   |
| <b>Data export to a printer</b>                         | <p>Sample number: 1227E-178-PA</p> <p>Operator: Jean Durant<br/>02/12/2014 10:06:37<br/>Pump: Right</p> <p>Theoretical: 290 g<br/>Actual weight: 290,61<br/>Precision: 99,8 %</p> <p>* Printed via the supervision software</p> | <p>Numéro échantillon : 847610931</p> <p>24/04/15 15:16:05<br/>Dernier étalonnage : 24/04/15<br/>Opérateur: user 0 Appareil: 200453<br/>Programme: 25g 1/10 dilution Lot: kf/1684<br/>Taux de dilution : 1/10<br/>Masse de l'échantillon : 25,32 g<br/>Masse réelle : 255,38 g<br/>Précision : 99,7 %</p> <p>* Printed directly from the DiluFlow® Elite</p> |
| <b>Import and export of computer &amp; network data</b> | <p><b>Traceability :</b></p> <ul style="list-style-type: none"> <li>• USB connection to computer and data export via the DiluFlow® supervision software</li> <li>• Excel™ file export from the supervision software</li> </ul>  | <p><b>Full traceability :</b></p> <ul style="list-style-type: none"> <li>• Data export to Excel™</li> <li>• Data export to USB key (CSV)</li> <li>• Bi-directionnelle connectivity to the LIMS by Ethernet</li> </ul>  |

# How to order



## DiluFlow®

Single pump (3 kg)  
Double pump (3 kg)

**Ref 501 103**  
**Ref 501 203**



## DiluFlow® Pro

Single pump (5 kg)  
Double pump (5 kg)

**Ref 502 105**  
**Ref 502 205**















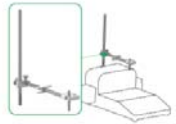
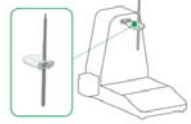
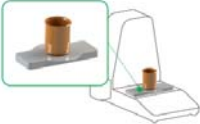
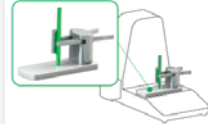






## DiluFlow® Elite

Single pump (1 kg)  
Double pump (1 kg)  
Single pump (5 kg)  
Double pump (5 kg)

**Ref 503 101**  
**Ref 503 201**  
**Ref 503 105**  
**Ref 503 205**

DiluFlow® is delivered with 1 dispensing arm, 1 DripTray 400, 1 or 2 pumps, 1 dispensing assembly (GL45 - Ø 6,4 mm) per pump, USB cable, monitoring software, power cord, 1 BagOpen® 400 for dilutors, user's manual, quick user guide, 10 GeckoGrip, free sample bags.  
DiluFlow® Pro is delivered with 1 or 2 pumps, 1 DripTray 400, 1 protection plate for tubing nozzle, 1 dispensing assembly (GL45 - Ø 6,4 mm) per pump, USB cable, monitoring software, power cord, 1 BagOpen® 400 for dilutors, user's manual, quick user guide, 10 GeckoGrip, free sample bags.  
DiluFlow® Elite is delivered with 1 or 2 pumps, 1 DripTray 400, 1 protection plate for tubing nozzle, 1 dispensing assembly (GL45 - Ø 6,4 mm (Elite 1 kg: Ø 3,2 mm)) per pump, USB stick, power cord, 1 BagOpen® 400 for dilutors, user's manual, quick user guide, 10 GeckoGrip, free sample bags.

## Accessories

|   |  |   |  |   |   |
|---|--|---|--|---|---|
|  <p><b>Printer</b><br/>Prints all data<br/>Paper 521 110<br/>Labels 521 012<br/>Film 410 130<br/><b>Ref 410 150</b></p> |  <p><b>Foot pedal</b><br/>For hands-free dispensing. Connection with a 3.5 mm Jack.<br/><b>Ref 507 008</b></p>         |  <p><b>Bar-code reader (1)</b><br/>For total traceability of the samples.<br/><b>Ref 522 000</b></p>      |  <p><b>Handy gun (1)</b><br/>For high precision work and comfortable tube handling.<br/><b>Ref 561 001</b></p>          |  <p><b>Booster kit</b><br/>Accelerate the dispensing speed up to 225 mL/8 s.<br/><b>Ref 511 000</b></p> |  <p><b>Pump module (1)</b><br/>External module with single pump + silicone tubings for pump head (inner Ø 6.4 mm).<br/><b>Ref 505 007</b></p> |
|  <p><b>Jumbo kit (2)</b><br/>BagOpen® 3500 + 3500 mL DripTray + anti-splash nozzle<br/><b>Ref 505 006</b></p>          |  <p><b>5L bottle (GL45)</b><br/>5 L autoclavable bottle<br/><b>Ref 513 001</b></p>                                    |  <p><b>Independent stand for broth bags</b><br/>To easily store diluent bags.<br/><b>Ref 513 015</b></p> |  <p><b>Integrable stand for broth bags</b><br/>Integrated to the unit, to hold one broth bag<br/><b>Ref 505 010</b></p> |  <p><b>Trocar</b><br/>316 L stainless steel trocar for broth bags.<br/><b>Ref 513 020</b></p>          |  <p><b>6 nozzles holder (1)</b><br/>+ Protection nozzles<br/>Can hold up to 6 nozzles<br/><b>Ref 505 008</b></p>                             |
|  <p><b>Adjustable distribution system (3)</b><br/>Ideal to fill various containers<br/><b>Ref 505 004</b></p>          |  <p><b>Adjustable distribution system (4)</b><br/>Ideal to fill various containers<br/><b>Ref 505 005</b></p>         |  <p><b>Weighing platform</b><br/>To weigh and support a container<br/><b>Ref 505 002</b></p>             |  <p><b>Tongs platform</b><br/>To hold a tube (Ø 10 to 60 mm)<br/><b>Ref 505 003</b></p>                                |  <p><b>GeckoGrip</b><br/>Set of 10 adhesives for BagOpen®<br/><b>Ref 505 009</b></p>                   |  <p><b>PTFE filters 0.2 µm (Ø 25 mm)</b><br/>Set of 5 autoclavable filters for GL45 bottles<br/><b>Ref 513 023</b></p>                       |
|  <p><b>Nozzle</b><br/>Set of 5 stainless steel nozzles for tubings (inner Ø 4.8 to 8 mm)<br/><b>Ref 513 024</b></p>    |  <p><b>Nozzle</b><br/>Set of 5 stainless steel nozzles for tubings (inner Ø 1.6 to 3.2 mm)<br/><b>Ref 513 040</b></p> |  <p><b>Tube weight (Ø 6 mm)</b><br/>Set of 5 tube weights<br/><b>Ref 513 039</b></p>                     |  <p><b>Certified standard weight (500 g)</b><br/>500 g COFRAC calibrated weight, type F1<br/><b>Ref 513 005</b></p>     |   |   |

(1) Only on DiluFlow® Elite (2) Only on DiluFlow® Pro and DiluFlow® Elite 5 kg (3) Only on DiluFlow® (4) Only on DiluFlow® Pro and DiluFlow® Elite



# Technical specifications

| Reference  | DiluFlow® 3 kg   |                 | DiluFlow® Pro 5 kg |                 | DiluFlow® Elite 5 kg   |                 | DiluFlow® Elite 1 kg                         |                 |
|--|--|-----------------|--------------------|-----------------|--|-----------------|--|-----------------|
|  | Single pump  | Double pump     | Single pump        | Double pump     | Single pump  | Double pump     | Single pump                                  | Double pump     |
|  | <b>501 103</b>   | <b>501 203</b>  | <b>502 105</b>     | <b>502 205</b>  | <b>503 105</b>   | <b>503 205</b>  | <b>503 101</b>                               | <b>503 201</b>  |
| BagOpen® height < 30 cm                          |  | ✓               |                    | ✓               |  | ✓               |  | ✓               |
| Patented removable DripTray                      |  | ✓               |                    | ✓               |  | ✓               |  | ✓               |
| BagOpen® with GeckoGrip                          |  | ✓               |                    | ✓               |  | ✓               |  | ✓               |
| Magnetic stand for BagOpen® (patented shape)     |  | ✓               |                    | ✓               |  | ✓               |  | ✓               |
| LightCode: color status LED                      |  | ✓               |                    | ✓               |  | ✓               |  | ✓               |
| Compatible with Booster kit                      |  | ✓               |                    | ✓               |  | ✓               |  | ✓               |
| 304 L stainless steel body                       |  | ✓               |                    | ✓               |  | ✓               |  | ✓               |
| Stainless casting electromechanical core         |  | ✓               |                    | ✓               |  | ✓               |  | ✓               |
| Robotic arm                                      |  | -               |                    | ✓               |  | ✓               |  | ✓               |
| Compatible with Jumbo kit                        |  | -               |                    | ✓               |  | ✓               |  | -               |
| Protection for tubing nozzle                     |  | -               |                    | ✓               |  | ✓               |  | ✓               |
| Up to 6 pumps                                    |  | -               |                    | -               |  | ✓               |  | ✓               |
| Patented Multi-Dispensing mode                   |  | -               |                    | -               |  | ✓               |  | ✓               |
| 32 editable programs                             |  | -               |                    | -               |  | ✓               |  | ✓               |
| Bidirectional connectivity                       |  | -               |                    | -               |  | ✓               |  | ✓               |
| Dilution 1 g at 1/10                             |  | -               |                    | -               |  | -               |  | ✓               |
| Resolution up to 200 g                           |  |                 |                    |                 | 0.01 g   |                 |  |                 |
| Weighing range                                   | 3 000 g  |                 |                    |                 | 5 000 g  |                 | 1 000 g                                      |                 |
| Maximum weight without support                   | 4 500 g  |                 |                    |                 | 7 000 g  |                 | 1 500 g                                      |                 |
| Weighing accuracy                                | 0 to 100 g: ± 0,05 g<br>100 to 3 000 g: ± 0,1%   |                 |                    |                 | 0 to 100 g: ± 0,05 g<br>100 to 5 000 g: ± 0,1%   |                 | 0 to 20 g: ± 0,01 g<br>20 to 1 000 g: ± 0,1% |                 |
| Dilution factor                                  |  |                 | 1/2 to 1/99        |                 |  |                 | 2 to 1000, editable fractions                |                 |
| Dilution accuracy                                | > 98 %   |                 |                    |                 | > 99 %*  |                 |  |                 |
| Dilution time for a 25 g sample diluted at 1/10  | < 9 s**  |                 |                    |                 | < 8 s**  |                 |  |                 |
| Dilution time for a 375 g sample diluted at 1/10 |  |                 | < 80 s**           |                 | < 75 s**   |                 |  |                 |
| Distribution time for 90 mL                      | < 7 s**  |                 |                    |                 | < 6 s**  |                 |  |                 |
| Distribution time for 225 mL                     | < 10 s**   |                 |                    |                 | < 9 s**  |                 |  |                 |
| Max number of pumps                              | 2 integrated   |                 |                    |                 | 2 integrated + 4 external  |                 |  |                 |
| Dilution/distribution mode                       |  |                 |                    |                 | Fast - Standard - Accurate   |                 |  |                 |
| Traceability                                     | Printer / Monitoring software (data export to Excel™, Open Office™, Libre Office Calc™, CSV, printer)  |                 |                    |                 | Printer / Export to Excel™ / CSV file export on USB stick / LIMS   |                 |  |                 |
| Exported data                                    | Sample weight / Total weight / Dilution factor / Dilution accuracy / Right or left pump + with monitoring software: Sample number / Name of operator / Date / Time |                 |                    |                 | Sample weight / Total weight / Dilution factor / Dilution accuracy / Diluent / Sample number / Diluent batch number / Date / Time / Last calibration date / Name of operator / Name of program               |                 |  |                 |
| Connection                                       | RS232 output for printer / USB output for computer / Jack output for foot pedal  |                 |                    |                 | 2 USB outputs (type A) to connect printer, keyboard, bar-code reader, USB stick / 1 USB port (type B) to connect a computer / Jack output to connect a food pedal / Handy gun / Ethernet connection for LIMS |                 |  |                 |
| Language   | English  |                 |                    |                 | English, French  |                 |  |                 |
| Weight   | 9,6 kg   | 12 kg           | 11,8 kg            | 14,2 kg         | 12,6 kg  | 14,8 kg         | 12,6 kg                                      | 14,8 kg         |
| Dimensions (w x d x h)                           | 31 x 44 x 38 cm  | 37 x 44 x 38 cm | 31 x 42 x 38 cm    | 37 x 48 x 38 cm | 31 x 42 x 38 cm  | 37 x 42 x 38 cm | 31 x 42 x 38 cm                              | 37 x 42 x 38 cm |
| Patents  | GeckoGrip system, Removable DripTray, Multi-Dispensing, Magnetic BagOpen® (patented shape)   |                 |                    |                 |  |                 |  |                 |
| In compliance with                               | ISO 7218 - ISO 6887-1 - FDA BAM (Bacteriological Analytical manual)  |                 |                    |                 |  |                 |  |                 |
| Warranty   | 1 year   |                 |                    |                 |  |                 |  |                 |

\* with booster kit in standard or accurate mode \*\* with booster kit in fast mode

Certified production:



Your local distributor

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