

# DiluFlow<sup>®</sup>

Gravimetric dilutors for solid samples



The best solution for your dilutions!

interscience



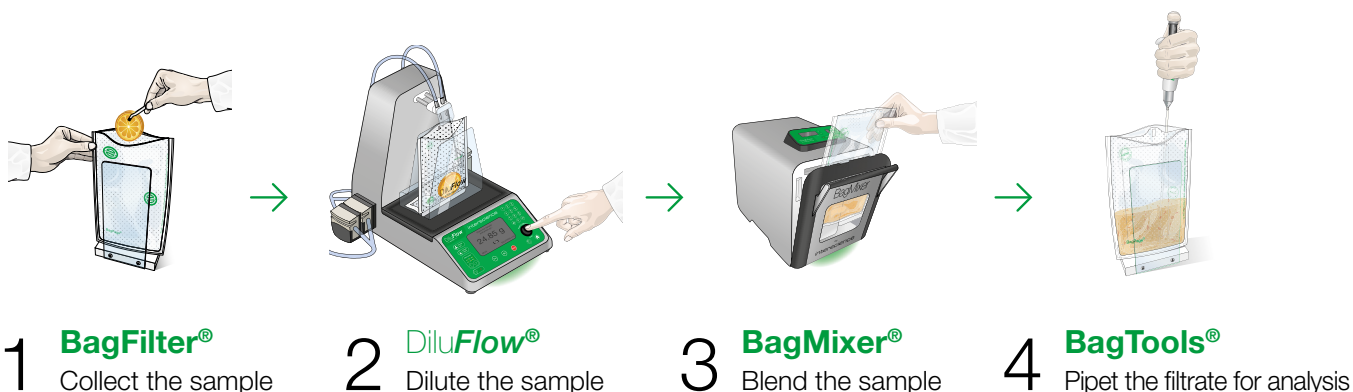
## Our quality for your lab

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



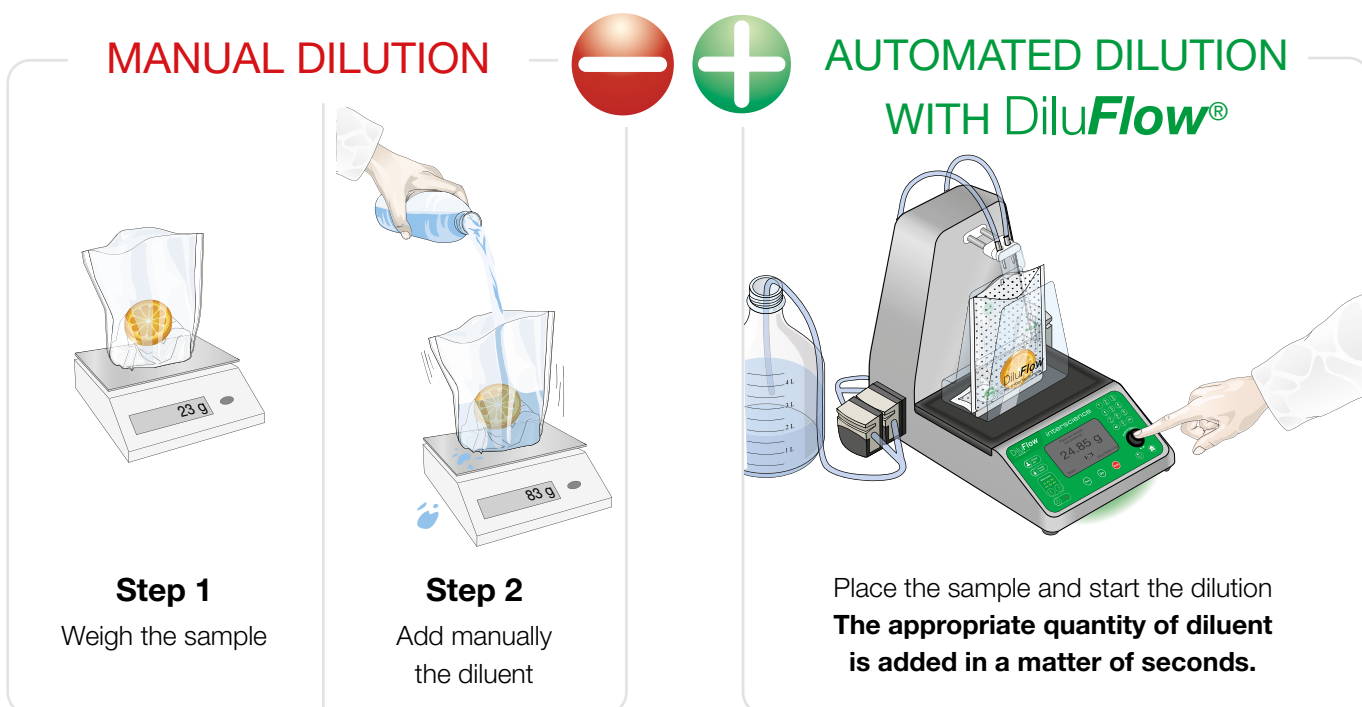
# BagSystem®

for the best sample preparation



## Why use a gravimetric dilutor?

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



**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® bag opener

■ **Traceable:** with LIMS, printer or Excel™

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

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



DiluFlow®

DiluFlow® Pro

DiluFlow® Elite

DiluFlow® Elite 1 kg

Ultra low profile	✓	✓	✓	✓
DripTray	✓	✓	✓	✓
Robotic arm	-	✓	✓	✓
Jumbo kit option	-	✓	✓ <sup>(8)</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™, 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

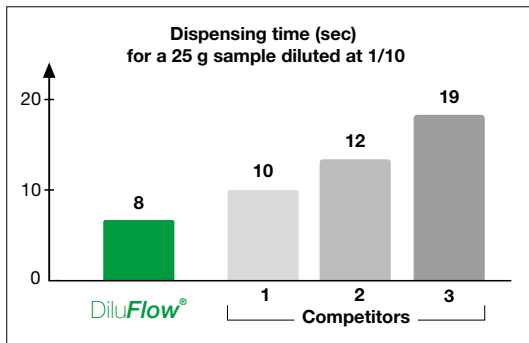
Weighing accuracy up to 99 %

## 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



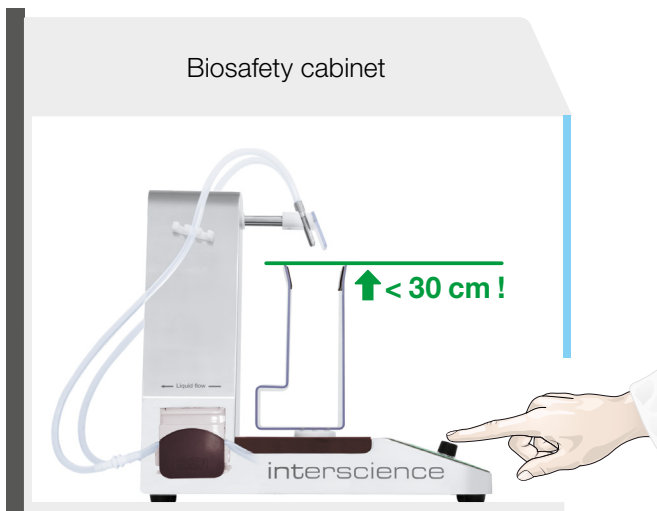
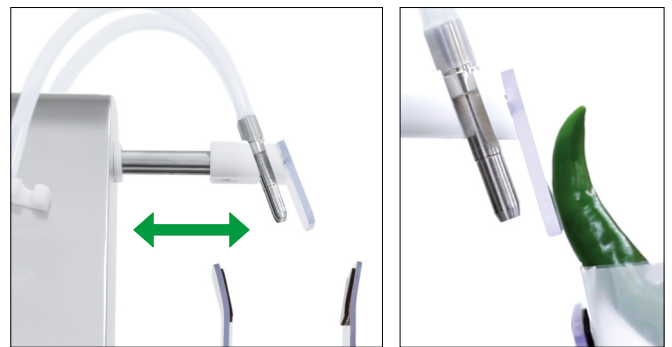
## World's fastest dilutor:

With a booster kit, the Dilu**Flow**® 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 Dilu**Flow**® 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 %

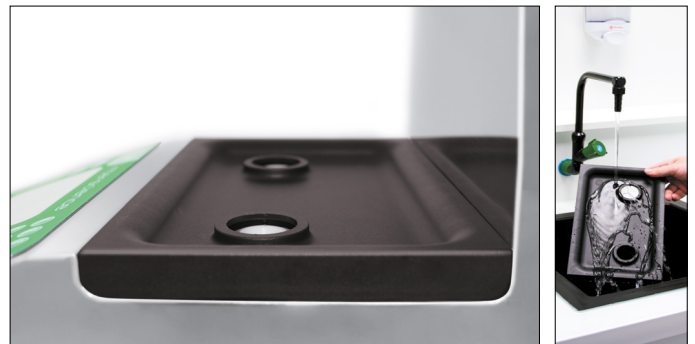


**Blue:**  
Scale stabilizing

## 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>

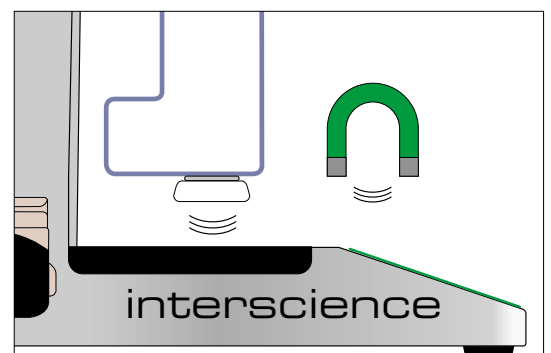
This unique patented mode allows you to serially dispense in small containers such as 9 mL tubes, without having to weigh each tube, by doing just one calibration on the scale.

**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.

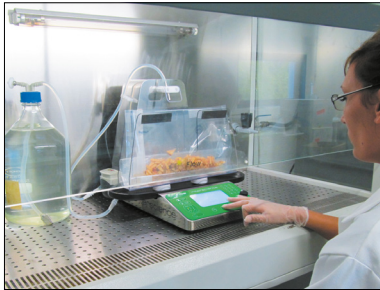
**PATENTED SHAPE**



(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.

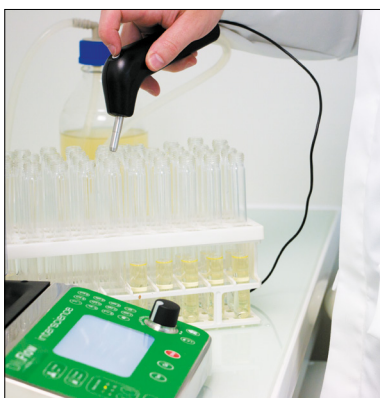
We looked at all dilutors on the market and most of them looked far too complex to use or too sophisticated.

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.

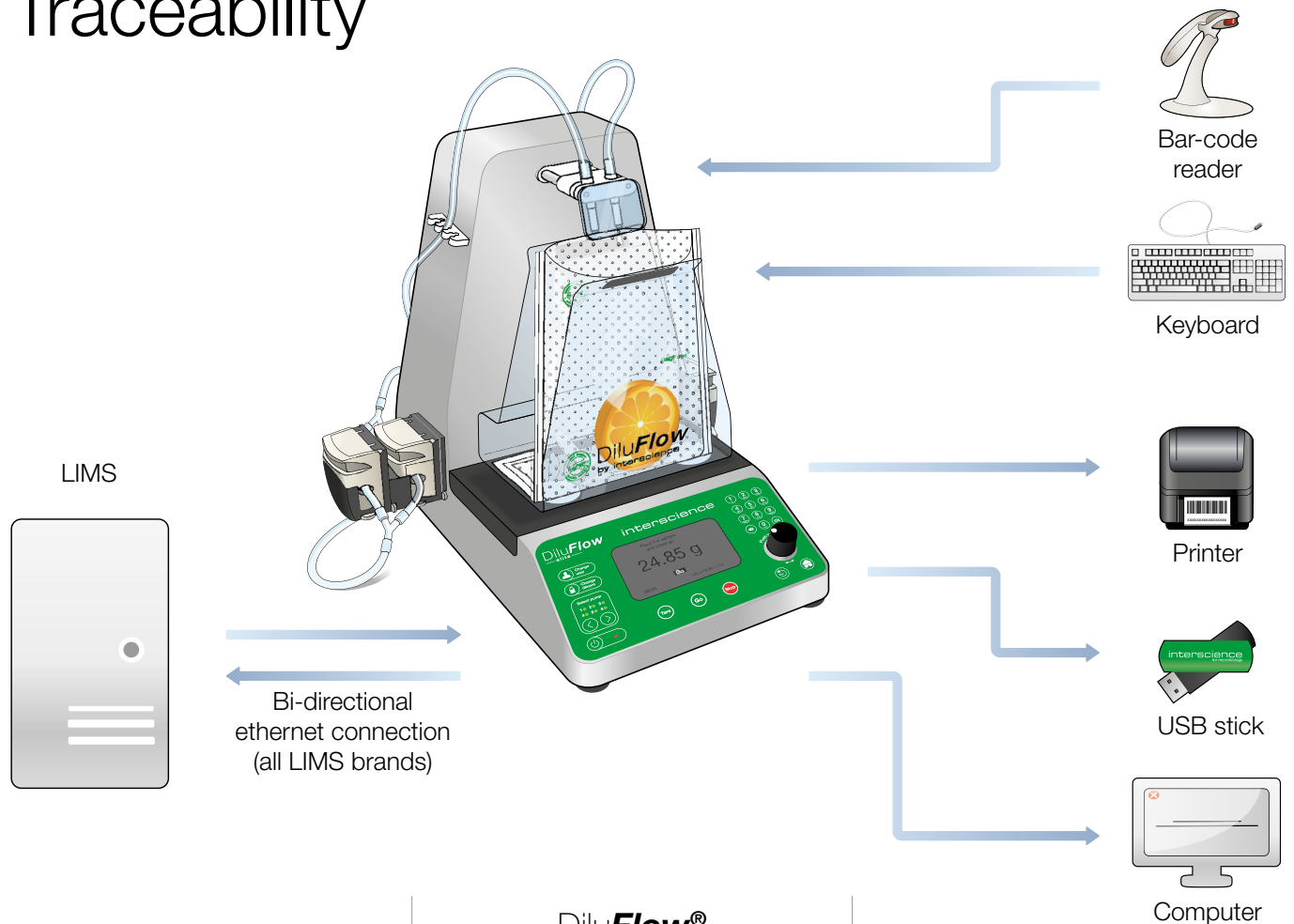
With the DiluFlow® Elite, you just put the first tube on the platform and the calibration is automatic. You can then directly distribute the doses in the tubes with the HandyGun, without having to weigh each tube. It is as if I had 3-in-1 equipment: a peristaltic pump, a scale and a dilutor!



■ Dominique, quality control engineer



# Traceability



	DiluFlow® DiluFlow® Pro	DiluFlow® Elite
<b>Available ports</b>	<p>Input for pedal    RS232 for printer    USB for PC connection</p>	<p>Ethernet    Jack    USB B    USB A</p>
<b>Data export to a printer</b>	<p><b>Sample number: 1227E-178-PA</b></p> <p>Operator: Jean Durant 02/12/2014 10:06:37 Pump: Right Theoretical: 290 g Actual weight: 290,61 Precision: 99,8 %</p> <p>* Printed via the supervision software</p>	<p><b>Numéro échantillon : 847610931</b></p> <p>24/04/15 15:16:05 Dernier étalonnage : 24/04/15 Opérateur: user 0 Appareil: 200453 Programme: 25g 1/10 dilution Lot: kf/1684 Taux de dilution : 1/10 Masse de l'échantillon : 25.32 g Masse réelle : 255.38 g 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-directional 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**













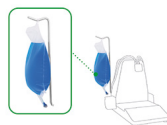
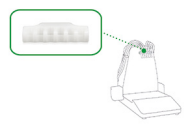
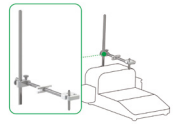
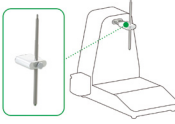
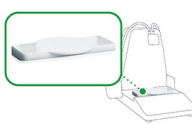









## DiluFlow® Elite

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 distribution arm, 1 drip tray 400, 1 or 2 pumps, 1 distribution assembly (GL45 - Ø 6.4 mm) per pump, 1 USB cable, 1 supervision software, 1 power cord, 1 BagOpen® 400 for dilutor, 1 user's manual, 1 conformity certificate / warranty card, 10 GeckoGrip, 1 pack of adhesive putty, blender bags samples.  
DiluFlow® Pro is delivered with 1 drip tray 400, 1 or 2 pumps, 1 protection for distribution nozzle, 1 distribution assembly (GL45 - Ø 6.4 mm) per pump, 1 USB cable, 1 supervision software, 1 power cord, 1 BagOpen® 400 for dilutors, 1 user's manual, 1 conformity certificate / warranty card, 10 GeckoGrip, 1 pack of adhesive putty, 1 Allen wrench, blender bags samples.  
DiluFlow® Elite is delivered with 1 drip tray 400, 1 or 2 pumps, 1 protection for distribution nozzle, 1 distribution assembly (GL45 - Ø 6.4 mm) per pump, 1 USB key, 1 USB cable, 1 power cord, 1 BagOpen® 400 for dilutors, User's Manual, 1 conformity certificate / warranty card, 10 GeckoGrip, 1 pack of adhesive putty, 1 Allen wrench, blender bags samples.

## Accessories

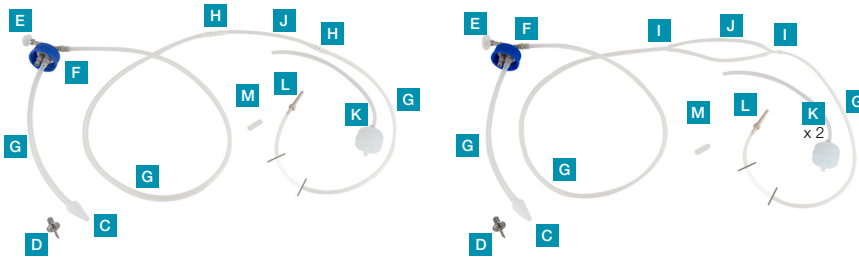
 <p><b>Printer</b> Thermal printer (RS 232 and USB output).</p> <p><b>Ref 410 150</b></p>	 <p><b>Foot pedal</b> For hands-free dispensing. Connection with a 3.5 mm Jack</p> <p><b>Ref 507 008</b></p>	 <p><b>Bar-code reader (1)</b> Bar-code reader (1D/2D)</p> <p><b>Ref 522 000</b></p>	 <p><b>Handy Gun (1)</b> Dispensing control with handy gun including electronic start button</p> <p><b>Ref 561 001</b></p>	 <p><b>Booster kit</b> Booster pump + 2 silicone tubings for pump part (20 cm each), inner Ø 6.4 mm + 2 "Y"</p> <p><b>Ref 511 000</b></p>	 <p><b>Pump module (1)</b> External module with single pump + 513 043: Dispensing assembly (GL45 - Ø 6.4 mm)</p> <p><b>Ref 505 007</b></p>
 <p><b>Jumbo kit (2)</b> BagOpen® 3500 + 3500 mL Drip Tray + anti-splash extension for nozzle holder + GeckoGrip</p> <p><b>Ref 505 006</b></p>	 <p><b>5L bottle (GL45)</b> GL45 glass bottle (5L), autoclavable</p> <p><b>Ref 513 001</b></p>	 <p><b>2L bottle (GL45)</b> Set of 3 GL45 glass bottle (2L), autoclavable</p> <p><b>Ref 413 002</b></p>	 <p><b>Independent stand for broth bags</b> Independent stand for 2 broth bags</p> <p><b>Ref 513 015</b></p>	 <p><b>Integrable stand for broth bags</b> Integrated to the unit, to hold one broth bag. Delivered with 4 screws + Torx screwdriver</p> <p><b>Ref 505 010</b></p>	 <p><b>6 nozzles holder (1)</b> Can hold up to 6 nozzles</p> <p><b>Ref 505 008</b></p>
 <p><b>Adjustable distribution system (3)</b> Ideal to fill various containers</p> <p><b>Ref 505 004</b></p>	 <p><b>Adjustable distribution system (4)</b> Ideal to fill various containers.</p> <p><b>Ref 505 005</b></p>	 <p><b>Weighing platform</b> To weigh and support a container. Not delivered with container.</p> <p><b>Ref 505 002</b></p>	 <p><b>Tongs platform</b> To hold a tube (Ø 10 to 60 mm). No delivered with tube.</p> <p><b>Ref 505 003</b></p>	 <p><b>BagOpen® 80/100 mL for dilutors</b> Bag holder for 80/100 mL bags for DiluFlow®</p> <p><b>Ref 505 014</b></p>	 <p><b>BagOpen® 400 for dilutors (stainless steel)</b> Stainless steel stand for 400 mL bags</p> <p><b>Ref 505 016</b></p>
 <p><b>Film for printer</b> Thermal transfer film</p> <p><b>Ref 410 130</b></p>	 <p><b>Paper for printer</b> Set of 2 thermal paper rolls for printer</p> <p><b>Ref 521 110</b></p>	 <p><b>Sticker for printer</b> Set of 2 rolls of 1000 stickers for thermal printer - Label size: 70 x 45 mm</p> <p><b>Ref 521 012</b></p>	 <p><b>Certified standard weight (500 g)</b> 500 g COFRAC calibrated weight, type F1</p> <p><b>Ref 513 005</b></p>	 <p><b>GeckoGrip</b> Set of 10 adhesives for DiluFlow® BagOpen® 400 and 3500</p> <p><b>Ref 505 009</b></p>	 <p><b>GeckoGrip</b> Set of 10 adhesives for DiluFlow® BagOpen® 80/100</p> <p><b>Ref 505 015</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

# Tubings

**A** Dispensing assembly


**B** Dispensing assembly for Booster Kit



- C** Tube weight
- D** Trocar
- E** PTFE filter
- F** Autoclavable GL45 stopper
- G** Silicone tubings
- H** Straight connectors
- I** Y connectors
- J** Tygon™ tubings for pump
- K** Tubings Tygon™ for pump with 0,2 µm filter
- L** Nozzles
- M** Protection cap


Ref	Code	Designation	Quantity					
				DiluFlow®	DiluFlow® Pro	DiluFlow® Elite 5kg	DiluFlow® Elite 1kg	
505 012	L	Adjustable nozzles (L 23.5 cm - tubings Ø 3.2 mm)	5	•	•		•	
505 013	L	Adjustable nozzles (L 12 cm - tubings Ø 6.4 mm)	5	•	•	•		
505 017	M	Nozzle cap for trocar	10	•	•	•	•	
513 008	B	Booster kit dispensing assembly (GL45 - Ø 3.2 mm)	1	•	•	•	•	
513 009	G J I	Tubings + Y (Ø 3.2 mm)	5	•	•	•	•	
513 011	J	Tubings for pump (Ø 4.8 mm)	6	•	•	•		
513 016	G H J L M	Dispensing assembly for broth bags (Ø 4.8 mm)	1	•	•	•		
513 020	D	Trocar	1	•	•	•	•	
513 023	E	PTFE filters 0.2 µm (Ø 25 mm)	5	•	•	•	•	
513 024	L M	Nozzles (tubings Ø 4.8 - 8 mm)	5	•	•	•	•	
513 039	C	Tube weights (Ø 6 mm)	5	•	•	•	•	
513 040	L M	Nozzles (tubings Ø 1.6 - 3.2 mm)	5	•	•	•	•	
513 041	B	Booster kit dispensing assembly (GL45 - Ø 6.4 mm)	1	•	•	•	•	
513 042	G J I	Tubings + Y (Ø 6.4 mm)	5	•	•	•	•	
513 043	A	Dispensing assembly (GL45 - Ø 6.4 mm)	1	•	•	•	•	
513 044	G H J	Tubings (Ø 6.4 mm)	5	•	•	•	•	
513 045	A	Dispensing assembly (GL45 - Ø 3.2 mm)	1	•	•	•	•	
513 047	G H J	Tubings (Ø 3.2 mm)	5	•	•	•	•	
513 048	M	Nozzle cap (Ø 1.6 - 3.2 mm)	10	•	•	•	•	
513 050	A	Dispensing assembly with 0.2 µm filter (GL45 - Ø 6.4 mm)	1	•	•	•	•	
513051	B	Dispensing assembly + Y with 0.2 µm filter (GL45 - Ø 6.4 mm)	1	•	•	•	•	
513 052	K	Tubings for pump with filter 0.2 µm (Ø 6.4 mm)	2	•	•	•	•	
561 302	J	Tubings for pump (Ø 3.2 mm)	6	•	•	•	•	
561 304	J	Tubings for pump (Ø 6.4 mm)	6	•	•	•	•	
561 401	F	Autoclavable GL45 stopper + 0.2 µm filter	1	•	•	•	•	
561 403	H	Straight connectors (tubings Ø 6.4 - 8 mm)	6	•	•	•	•	
561 404	H	Straight connectors (tubings Ø 3.2 - 4.8 mm)	6	•	•	•	•	
562 401	I	Y connectors (tubings Ø 6.4 - 8 mm)	6	•	•	•	•	
562 402	I	Y connectors (tubings Ø 3.2 mm)	6	•	•	•	•	

# Complementary products




**BagMixer®**  
Lab blenders

Models (mL) :  
100/400/3500




**BagFilter®**  
Lateral filter bag

Models (mL) :  
400/3500




**BagPage®**  
Full-page filter bag

Models (mL) :  
100/400/3500




**BagLight®**  
Non-filter bag

Models (mL) :  
100/400/3500




**BagOpen®**  
Bag opener/holder

Models (mL) :  
80/100 - 400 - 3500




**BagRack®**  
Storage rack for bags

Models (mL) :  
80/100 - 400  
3500 (2/4 compartments)




**BagClip®**  
Closing clip

Models (mL) :  
80/100 - 400 - 3500




**BagPipet® & BagTips®**  
Fixed volume pipet & sterile tips

**BagTips® Models:**  
Regular (19 cm)  
Jumbo (24 cm)



**BagSeal®**  
Thermal sealing unit

For bags  
up to 2000 mL



**PetriPile®**  
Petri dish storage stack

Models (ø) :  
55 - 65 - 90 - 150 mm

# Technical specifications

	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
Reference	501 103	501 203	502 105	502 205	503 105	503 205	503 101	503 201
304L stainless steel body		✓		✓		✓		✓
BagOpen® height < 30 cm		✓		✓		✓		✓
Removable drip tray (Patented)		✓		✓		✓		✓
BagOpen® with GeckoGrip system (Patented)		✓		✓		✓		✓
Magnetic stand for BagOpen® (Patented shape)		✓		✓		✓		✓
LightCode: color status LED		✓		✓		✓		✓
Compatible with Booster Kit		✓		✓		✓		✓
Stainless casting electromechanical core		✓		✓		✓		✓
Robotic arm		-		✓		✓		✓
Compatible with Jumbo Kit		-		✓		✓		-
Protection for tubing nozzle		-		✓		✓		✓
Up to 6 pumps		-		-		✓		✓
Multi-dispensing mode (Patented)		-		-		✓		✓
Powder mode		-		-		✓		✓
Weighing mode		-		-		✓		✓
Auto-tare function		-		-		✓		✓
24 editable programs		-		-		✓		✓
Bidirectional connectivity		-		-		✓		✓
1 g dilution to 1/10 <sup>th</sup>		-		-		-		✓
Resolution up to 200 g	0.01 g							
Weighing range	0.1 to 3000 g		0.1 to 5000 g			0.1 to 1000 g		
Max weight without support	4500 g		7000 g			1500 g		
Weighing accuracy	0 to 100 g: ± 0.05 g 100 to 3000 g: ± 0.1%		0 to 100 g: ± 0.05 g 100 to 5000 g: ± 0.1%			0 to 20 g: ± 0.01 g 20 to 1000 g: ± 0.1%		
Dilution factor	1/2 to 1/99				1/2 to 1/1000, customizable fractions			
Minimum weight required for dilution	5 g						0,5 g *	
Minimum weight required for distribution	5 g							
Dilution/distribution accuracy	> 99% in Standard or Accurate mode (in optimal conditions)							
Dilution time for a 25g sample diluted to 1/10 <sup>th</sup>	< 9 s (with Booster Kit in Fast mode)				< 8 s (with Booster Kit in Fast mode)			
Dilution time for a 375g sample diluted to 1/10 <sup>th</sup>	-		< 80 s (with Booster Kit in Fast mode)		< 75 s (with Booster Kit in Fast mode)		-	
Distribution time for 90 mL	< 7 s (with Booster Kit in Fast mode)				< 6 s (with Booster Kit in Fast mode)			
Distribution time for 225 mL	< 10 s (with Booster Kit in Fast mode)				< 9 s (with Booster Kit in Fast mode)			
Max number of pumps	2 integrated				2 integrated + 4 external			
Dilution/distribution mode	Fast - Standard - Accurate							
Language	English				French, english			
Voltage - Frequency	100-240 V~ 50-60 Hz							
Warranty	1 year							
Spare parts availability	10 years							
In compliance with	ISO 7218 - ISO 6887							
Traceability	Printer / Supervision software (export to Excel™ / OpenOffice™, CSV file, printer)				Printer / Export to Excel™ file / CSV file Export on USB key / LIMS			
Exported data	Sample weight / Total weight / Dilution factor / Dilution accuracy / Right or left pump + with supervision software: Sample number / Name of operator / Date / Time				Sample weight / Total weight / Dilution factor / Dilution accuracy / Diluent / Sample number / Diluent lot number / Date / Time / Last calibration date / Name of operator / Name of program			
Connection	RS232 output for printer / USB port for computer / Jack output for foot pedal connection				2 USB ports (type A) to connect a printer, keyboard, bar-code reader, USB key / 1 USB port (type B) to connect a computer / Jack socket to connect a foot pedal / Handy gun / Ethernet connection for LIMS			

\* with a recommended dilution factor of 10

Certified production:



Products made for INTERSCIENCE by Interlab, an ISO 9001 certified company.

Your local distributor

**interscience**

**PARIS**

Phone: +33 (0)1 34 62 62 61 - Email: info@interscience.com

**FRANKFURT**

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