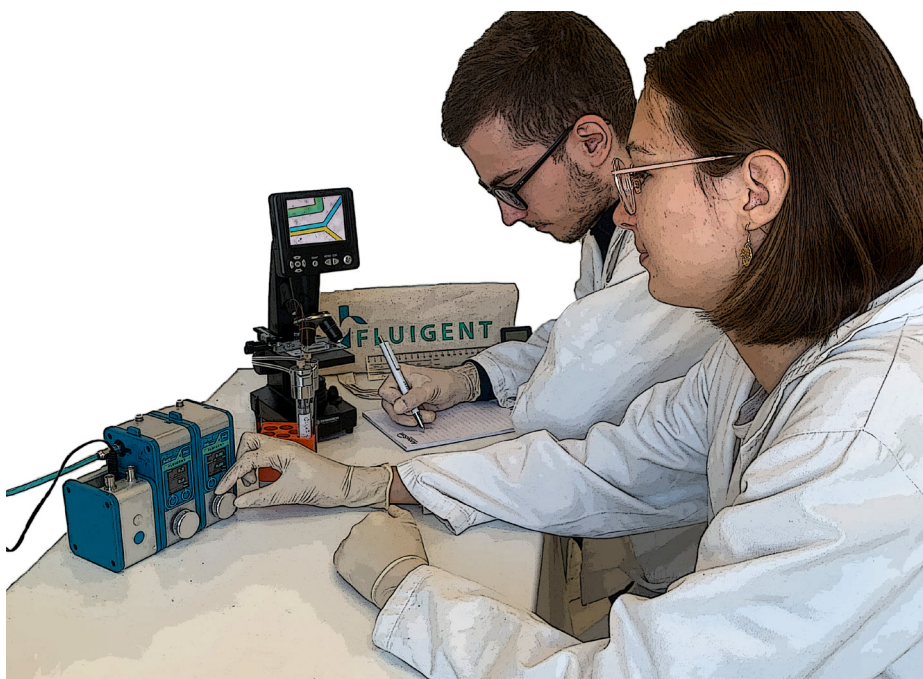


EDUCATIONAL PACKAGES

The Fluigent **Educational Packages** provide a **broad introduction to microfluidics** and its applications by familiarizing the user with general **microfluidic principles** and **microfluidic systems**.



DESIGNED TO OFFER A PERFECT LEARNING EXPERIENCE

- **Complete microfluidic setup** for starting experiments
- **Flexible offer** with 4 packages available
- **Up to 4 hours practical work** with solutions
- **A handbook** for an overview on microfluidics

These **ready-to-teach packages** are specifically handy for professors and teachers.

PRODUCT DATASHEET

DESCRIPTION

4 Educational Packages are available depending on the type of learning:

Educational Package - First level - Co-flow

A beginner package to discover microfluidics by experimenting visually a pillar concept of microfluidics: laminar flows.

Suited for: biologists, (bio)engineers, chemists, but also for high schools with scientific program.

1 hour guided experiments.

Educational Package - First level - Resistance

Master and take advantage of one powerful tool for optimizing your microfluidic experiments: the hydrodynamic resistance.

Suited for: physicists, (bio)engineer and fresh microfluidic users

1 hour guided experiments.

Educational Package - Second level - Co-flow & Resistance

Co-flow and resistance in a all in one package for a first overview on microfluidics.

Suited for: (bio)engineers, physicists, chemists

2 hours guided experiments.

Educational Package - Full course - Co-flow, Resistance, Droplets

Get the most complete overview, with experiments pushed to real-world applications: droplet generation.

Suited for: (bio)engineers, chemical engineering, physicists, biologists and researchers

4 hours guided experiments

Content from the Co Flow & Resistance Package.

Each package comes with a **specific and complete microfluidic setup**, a **theoretical handbook** on microfluidics, **practical works** with solutions, and **accessories**.

The theoretical handbook

The handbook is a **4 hours theory manual** that allows to give **an overview of microfluidic principles**, and introduces the **main concepts of microfluidics**. It is common to all Educational Packages.

Introduction to microfluidics: History - applications


Microfluidic systems: Microfluidic chips - Flow controllers

Laminar flow: Laminar flow and diffusion definitions & theory – Mixing in microfluidics

Hydrodynamic resistance: Definition & Theory - Hydraulic-electric analogy

Droplet microfluidics: Droplet generation physics - Designs for generating droplets - Surfactants - Particle(s) encapsulation

Going further: particle encapsulation: Poisson law for precise cell encapsulation - Example

 CONCEPTS OF MICROFLUIDICS	TABLE OF CONTENT	
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PRODUCT DATASHEET

PACKAGES CONTENT

	First level - Co-flow	First level - Resistance	Second level - Co-flow & Resistance	Full course - Co-flow, Resistance, Droplets
Theoretical Handbook	✓	✓	✓	✓
Accessories	✓	✓	✓	✓
A-I-O Control software	—	—	—	✓
Digital microscope	✓	—	✓	✓
Co-flow microfluidic setup	✓	—	✓	✓
Resistance microfluidic setup	—	✓	✓	✓
Droplet microfluidic setup	—	—	—	✓
Experiments duration	1 hour	1 hour	2 hours	4 hours

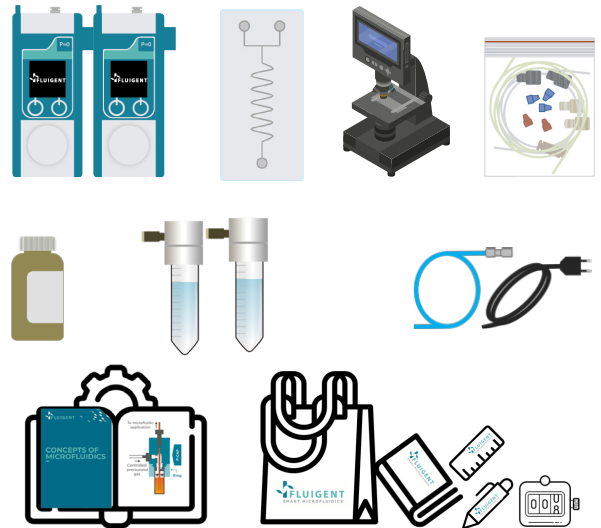
DETAILED CONTENTS

Educational Package - First level - Co-flow

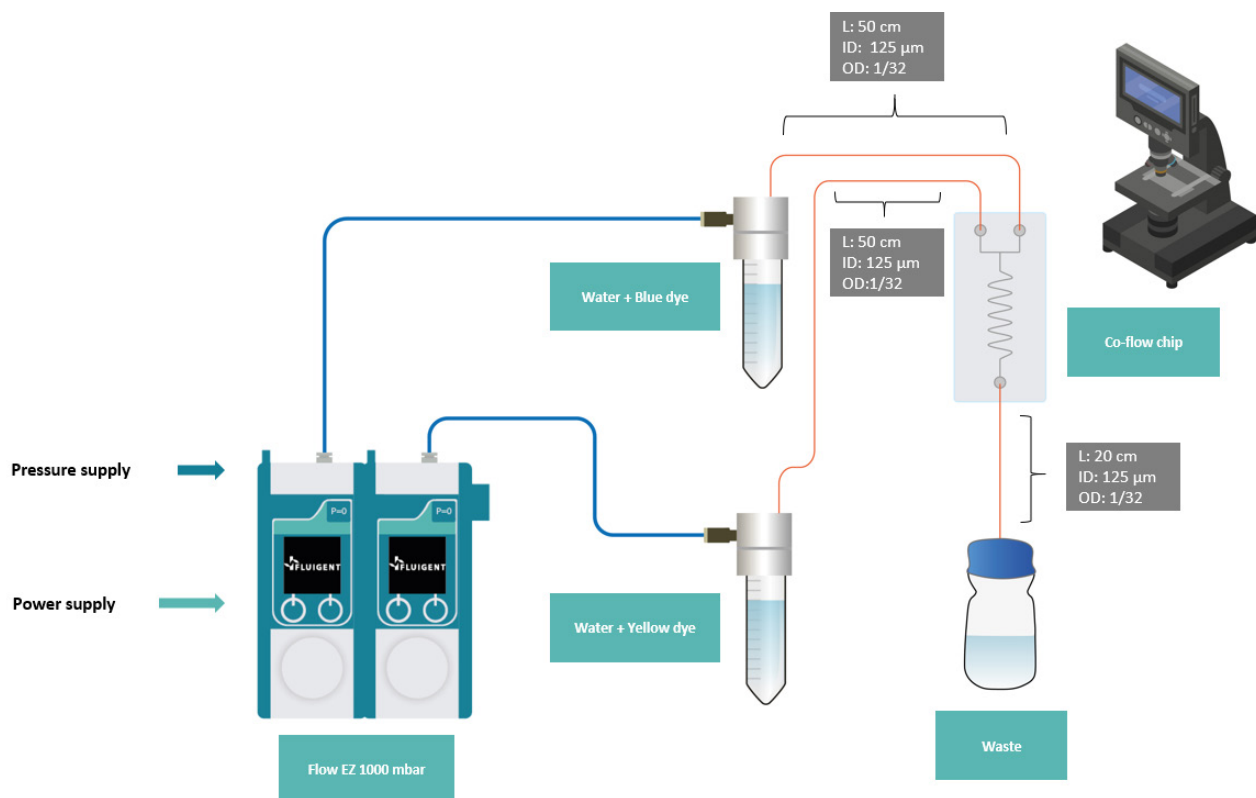
ref: SEDUC-COFLOW

Content

- 1* LineUP SUPPLY KIT
- 2* Flow EZ 1000 mbar
- 2* PCAP 15 mL
- 3* Co-flow chip
- 1* tubing & fitting kit
- 1* Microscope with SD memory card
- 1* dye solutions
- 1* Printed Handbook
- 1* Exp. Leaflet Co-flow
- 1* Accessories (tubing cutter, pen, notebook, counter, ruler ...)



Set-up overview



PRODUCT DATASHEET

Educational Package - First level - Resistance

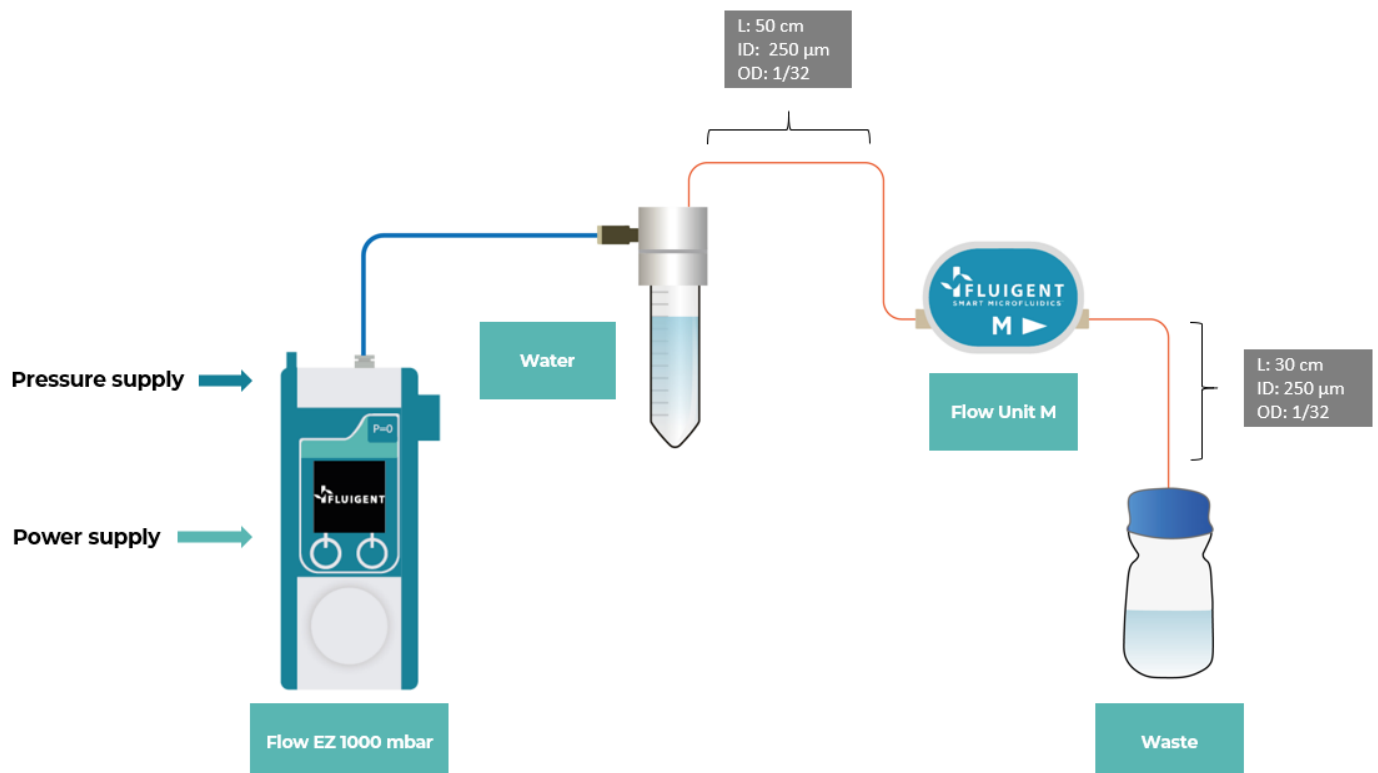
ref: SEDUC-RESIST

Content

- 1* LineUP SUPPLY KIT
- 1* Flow EZ 1000 mbar
- 1* PCAP 15 mL
- 1* Flow unit M
- 1* tubing & fitting kit
- 1* Printed handbook
- 1* dye solutions
- 1*Exp. Leaflet Resistance
- 1*Accessories (tubing cutter, pen, notebook, counter, ruler ...)



Set-up overview



Educational Package - Second level - Co-flow & Resistance

ref: SEDUC-RESITCOFL

Content

- 1* LineUP SUPPLY KIT
- 2* Flow EZ 1000 mbar
- 1* Flow unit M
- 2* PCAP 15 mL
- 3*Co-flow chip
- 1* tubing & fitting kit
- 1*Microscope with SD memory card
- 1*dye solution
- 1* Printed handbook
- 1*Exp. Leaflet Resistance
- 1*Exp. Leaflet Co-flow
- 1*Accessories (tubing cutter, pen, notebook, counter, ruler ...)



Please refer to the Co-flow and Resistance Packages for the setup overviews.

PRODUCT DATASHEET

Educational Package - Full course - Co-flow, Resistance, Droplets

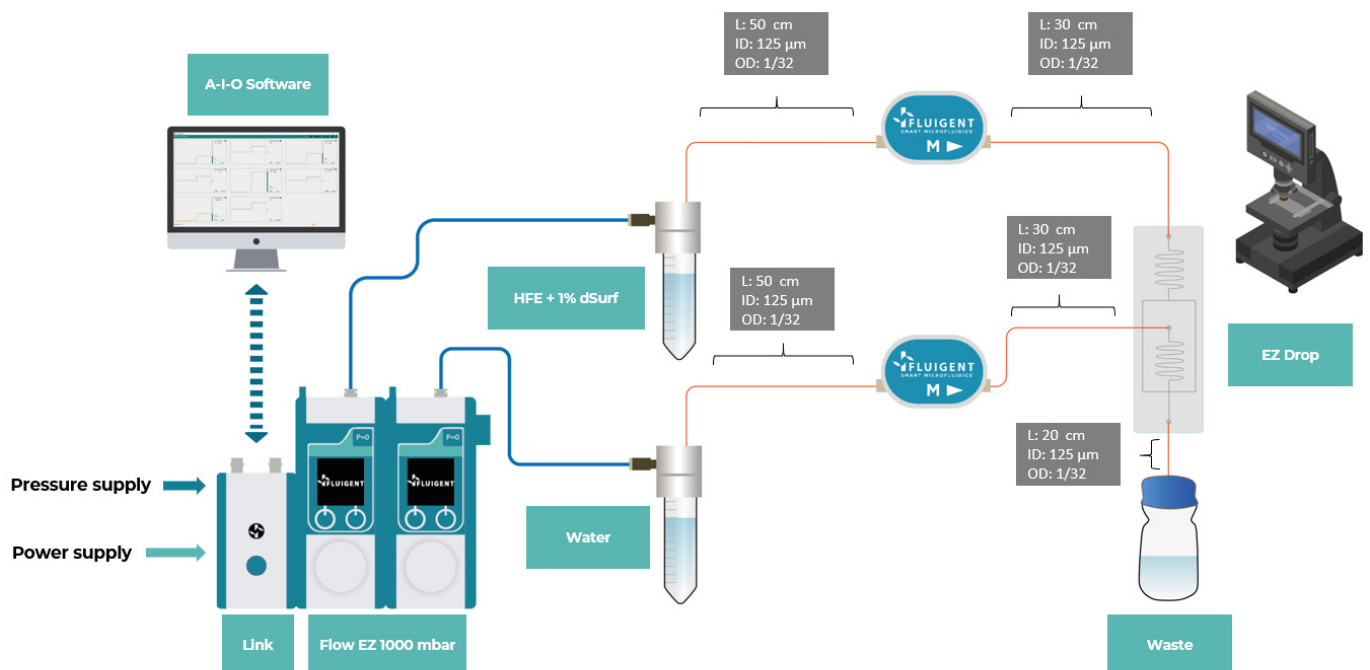
refW: SEDUC-DROPLET

Content

- 1*LineUP SUPPLY KIT
- 1*LINK
- 2*Flow EZ 1000 mbar
- 2*Flow unit M
- 2* PCAP 15 mL
- 3*Co-flow chip
- 3*EZ Drop chip
- 1* tubing & fitting kit
- 1*Microscope with SD memory card
- 1*dye solutions
- 1*dSurf 2% 12 mL
- 1*dOil 120 mL
- 1*microbeads bottle
- 1*A-I-O Software - PC connection
- 1* Printed handbook
- 1*Exp. Leaflet Co-flow
- 1*Exp. Leaflet Resistance
- 1*Exp. Leaflet Droplet
- Accessories (tubing cutter, pen, notebook, counter, ruler ...)



Set-up overview



SETTING-UP

Please refer to the Experimental leaflet specific to each package.

TECHNICAL SPECIFICATIONS

Flow control	
Pressure controllers*	Fluigent Flow EZ™ (1000 mbar)
Flow sensors*	Fluigent FLOW UNIT M

*Please visit www.fluigent.com for additional information

Droplet production**	
Dispersed phase	Distilled water
Continuous phase	dSurf (2% in 3M™ Novec™ 7500 fluorinated oil)
Droplet size range	15 µm to 100 µm diameter
Generation rate (frequency)	Up to 1 200 Hz
Coefficient of variation (CV)	2%

**Please visit www.fluigent.com for additional information

Fluid mixing	
Solution 1	Blue dye
Solution 2	Yellow dye

Imaging	
Microscope	BRESSER LCD Student Microscope 8.9cm (3.5")

Software	
Live control	Fluigent A-i-O