

iFLUX Sampler Technical sheet



The iFLUX Sampler is a patented Passive Flux Meter that provides simultaneous in situ determinations of mass and groundwater flux, both time-averaged target compounds.

Key applications

- Monitor groundwater flow and contaminant transport;
- measure over a longer period for a time-averaged result, a measure for exposure, excluding peaks (high or low), including underground dynamics;
- measure at multiple depths, identifying preferential pathways;
- determine the strength of source and plume zones to prevent risks to receptors.



Parameter	Groundwater flux	Mass flux
Measuring principle	Elution of tracer alcohols	cumulative adsorption on compound specific resin
Analysis	5 tracer alcohols	150+ contaminants, incl. 51 PFAS, CVOC, aromatics, TPH, 1,4-dioxane, (heavy) metals, nutrients, CSIA,...(see analytical packages).
Output	Darcy flux	contaminant mass flux
Measuring range	Approx. 2-400 cm/day	compound specific LOQ (see operating conditions)
Unit	cm ³ /cm ² /day	mg/m ² /day and µg/m ² /day (PFAS)

Operating principles

L'échantillonneur iFLUX, qui mesure le flux horizontal, est installé dans un puits de surveillance interceptant l'écoulement des eaux souterraines et capturant les composés d'intérêt pendant la période de surveillance.

Le flux d'eau est déterminé en mesurant l'élution des traceurs contenus dans la cartouche.

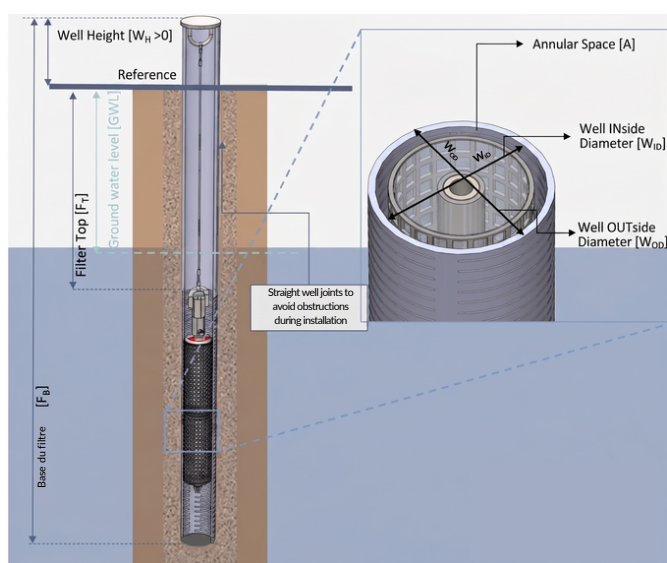
- Le flux massique est déterminé en mesurant la quantité cumulée de composés adsorbés. Pour chaque type de composé, des résines spécifiques sont sélectionnées et testées.

Dimensions

Well size	Standard size 63/51 mm (external/internal diameter) Custom sizes on request from 25 - 140 mm (internal diameter)
Cartridge & sampler length	Cartridge : 15 cm Max. 2 cartridges per sampler Samplers separated by hinge (10cm), rods (33cm/rod) or wire (custom) Custom sampler train for multilevel sampling and complete profile characterisation
Depth	Max. 80 m; depends on well conditions and groundwater level Samplers must remain submerged during measurement

Requirements

- Le puits doit être de bonne qualité pour garantir une installation correcte et des résultats de flux quantitatifs.
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- Notre échantillonneur standard s'adapte aux puits de 63/51 mm (diamètre externe/interne) ou peut être personnalisé sur demande pour d'autres types de puits.
- L'espace annulaire doit être minimisé pour éviter les flux de contournement.
- Il est recommandé d'effectuer des mesures à plusieurs niveaux par puits.
- Il est possible de combiner des cartouches pour différents composés.



Calibration

The flow field distortion (α) is considered in determining the aquifer's flux. This α depends on borehole diameter, well type, cartridge type, and hydraulic conductivity of the crossed media.

Model selection

To select the samplers for your campaign, it is important to collect information about the wells, preferred measuring depths and compounds of interest.



[Well info sheet
template](#)



[Analytical
package](#)

Design and used materials

The iFLUX Sampler is designed and tested to optimize flow through the sampler and achieve an optimal flux result.

Resins

Type	Compounds	LOQ (µg/kg dw)
GAC (Ag 0,1%)	tracer alcohols	2000-20000
PFAS specific resin	PFAS	2
organics resin	BTEX	500
organics resin	VOCs	500
organics resin	TPH	100000
organics resin	TPH (fractions)	25000
organics resin	PAH (individual compounds)	50
cationic resin	Heavy Metals (except Hg, As)	400-10000
specific cationic resin (Hg, As)	Heavy Metals (Hg)	50
specific cationic resin (Hg, As)	Heavy Metals (As)	2000
1,4-D specific resin	1,4-Dioxane	100
anionic resin	Nutrients (NO3--N, PO43--P)	100000
anionic resin	Nutrients (SO42-)	750000

Materials

all parts were analyzed and found to be PFAS-free

Parts	Material
Body	Polyamide and polypropylene
Filter sleeve	Mineral oil free polyester
Reusable metallic components	Ultrasonic cleaned stainless steel
Wiring	Stainless steel (disposed after use)

Installation



[Video:](#)
[How to install?](#)



[Installation and retrieval manual](#)



How to progress?

- Deliver all needed information by filling out the “well info sheet”
- You can install the iFLUX Sampler yourself.
- Follow the instructions in our “installation and retrieval manual”.