BLUE FOOT
unbreakable membranes ™

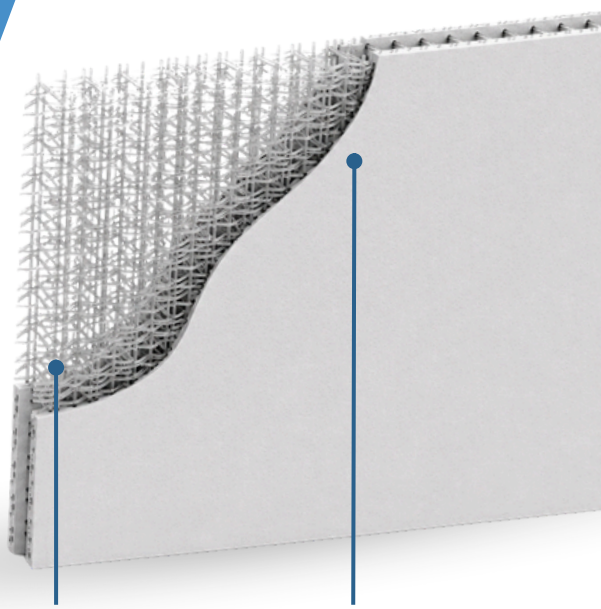
IPC® MEMBRANE TECHNOLOGY

Built for reliability

IPC® Flex Series | Technical Datasheet

BLUE FOOT's patented Integrated Permeate Channel (IPC®) membrane technology combines PVDF ultrafiltration layers with a non-compressible 3D woven support structure.

By casting the membrane layers directly into the support, weak interfaces and delamination risk are eliminated. The result is a robust, integrated membrane designed for effective backwashing up to 2 bar and reliable performance, even under demanding MBR conditions.



3D WOVEN SUPPORT
Non-compressible integrated support structure

MEMBRANE LAYER (0.04 µm)
Asymmetric ultrafiltration membrane layer

Key technical features

PVDF ULTRAFILTRATION MEMBRANE
Industry-proven material of choice for submerged MBR applications.

OPEN FLOW MODULE DESIGN
No top or bottom headers required, avoiding ragging and solids accumulation.

BACKWASH UP TO 2 BAR
Robust construction enables highly efficient backwashing even under challenging conditions.

EFFECTIVE CLEANING
Even flow distribution across the entire membrane surface for reliable physical cleaning and long-term performance.

IPC®- Integrated permeate channel

The membrane layers are cast directly into the 3D woven support, forming a single composite without bonded interfaces.

Integrated permeate channels allow even flow distribution throughout the membrane sheet, supporting effective backwashing, mechanical stability and reliable filtration performance.

Membrane technical specifications

PARAMETER	SPECIFICATION
Membrane type	Ultrafiltration
Nominal pore size	0.04 µm
Membrane material	PVDF
Membrane layer depth	> 600 µm
Membrane envelope thickness	3.8 mm
Structure	Integrated composite with 3D woven structure
Backwash pressure	Up to 2 bar
Preservative	Glycerol + conservation additive

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IPC® FLEX SERIES

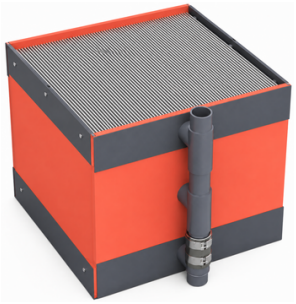
IPC® Flex modules

IPC® membrane sheets are integrated into standardized full-height and half-height modules for flexible system configuration and suitable for any tank height.

Both module types contain 73 IPC® membrane sheets and use the same proven membrane technology, connections and construction.

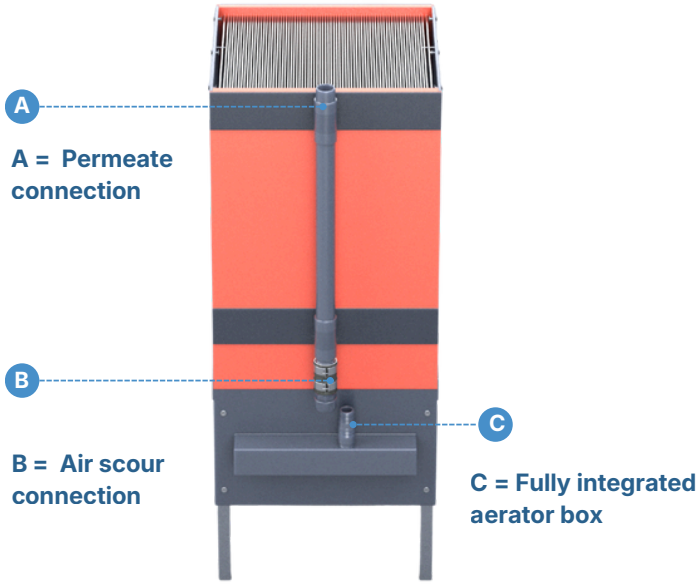
The half-height module provides 46 m² of effective membrane area, while the full-height module provides 97 m².

With a fully integrated aerator box, IPC® Flex modules deliver efficient aeration and reliable performance under varying conditions.



IPC® Flex half-height module

IPC® FLEX MODULE SPECIFICATIONS	
Module materials	PVC, PU, SS316L
Permeate connection (A)	PVC - DN65 - ∅ 75 mm
Air scour connection (B)	SS316L - DN40 - ∅ 48 mm



IPC® Flex full-height module, with aerator

IPC® FLEX TYPICAL OPERATING PARAMETERS	
FILTRATION	
Flux	20 - 40 l/m².h (max. 60)
TMP	-20 to -500 mbar
MLSS	4 - 15 g/l
Operating temperature	1 to 40°C
pH range	2-11 (max. 30°C)
BACKWASH	
Flux	40 - 120 l/m².h
TMP	+50 to +1000 mbar (max. 2000)
AERATION	
Membrane diffuser	medium size bubble aeration
Airflow	45-60 m³/h per stack

TYPICAL CLEANING GUIDELINES	
Physical cleaning	Aeration and backwash
CHEMICAL ENHANCED BACKWASH (CEB) *Cleaning via permeate channel*	
NaOCl	500 – 2000 ppm[1] pH 10.0 - 10.5 0.5 - 6 h soak[1] 1-12 times per year[1]
Citric acid	0.5-2.0%[1] 2-6 h soak[1] 2-4 times per year[1]
[1] *Depending on application*	
Chemical stability	1,000,000 ppmh NaOCl @ pH < 11

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IPC® Flex stack configurations

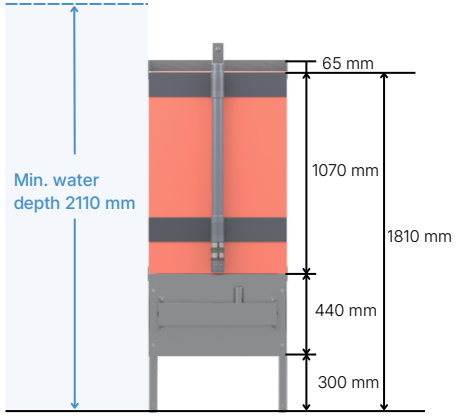
MULTIPLE CONFIGURATIONS
ONE COMPACT FOOTPRINT

The IPC® Flex is available in different stack heights to fit your capacity requirements.

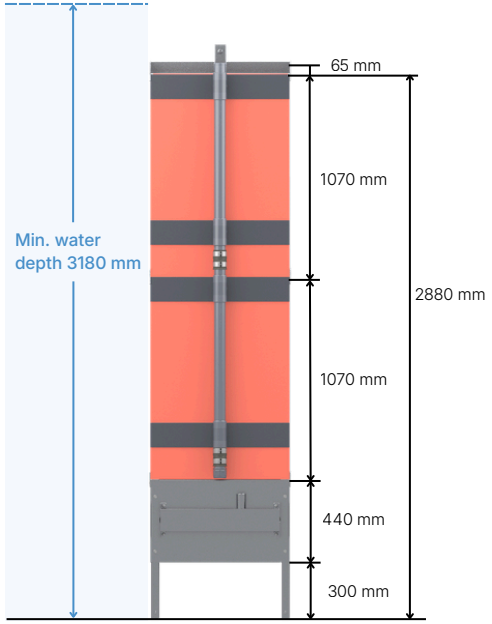
COMPACT FOOTPRINT
All stack configurations share the same installation footprint of 0.61 m².

SCALABLE TO YOUR NEEDS
Full-height and half-height modules enable multiple stack configurations to match installation constraints and capacity requirements.

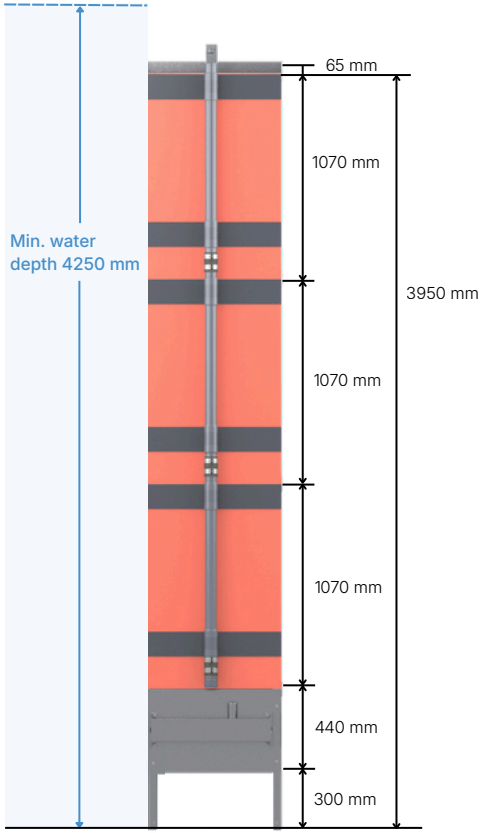
PROVEN PERFORMANCE
Engineered for reliability, durability and long-term performance.



Stack IPC Flex 1

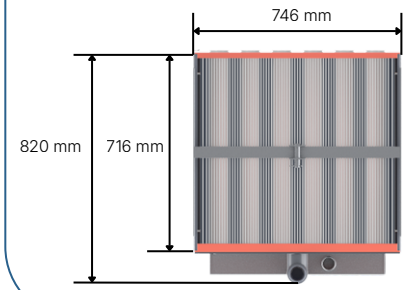


Stack IPC Flex 2



Stack IPC Flex 3

FOOTPRINT
0.61 m²



STACK	NET MEMBRANE AREA (m²)	DIMENSIONS			WEIGHT DRY (kg)	REQUIRED MIN. WATER DEPTH (mm)
		LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)[1]		
Stack IPC Flex 1	97	746	716	1810	225	2110
Stack IPC Flex 1.5	143	746	716	2340	315	2640
Stack IPC Flex 2	194	746	716	2880	400	3180
Stack IPC Flex 2.5	240	746	716	3410	490	3710
Stack IPC Flex 3	291	746	716	3950	575	4250

STANDARD AERATOR BOX
Dimensions: 736 (L) x 790 (W) x 740 (H)
Dry weight: 48 kg

MODULE WEIGHT
Max. wet weight per module: 500 kg

[1] *Including aerator box, excluding lifting device*

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IPC® Flex stack components

The exploded view illustrates the main construction components of the IPC® Flex stack.

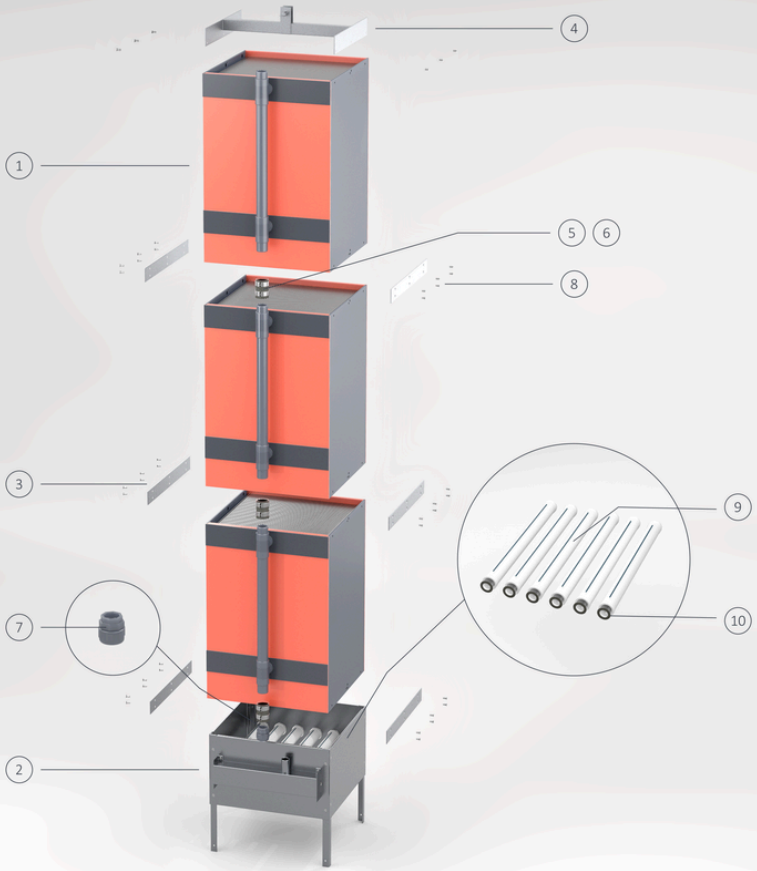
Standardised components are used throughout the IPC® Flex Series, simplifying assembly, maintenance and spare part management.

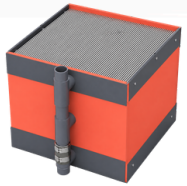
The table below lists component quantities for each stack configuration, including the intermediate Flex 1.5 and Flex 2.5 configurations.

POS.	DESCRIPTION	FLEX 1	FLEX 1.5	FLEX 2	FLEX 2.5	FLEX 3
1	**Module IPC Flex**	1	1	2	2	3
1A	**Module IPC Flex 0.5**	-	1	-	1	-
2	**Aerator Flex**	1	1	1	1	1
3	**Holding plate standard Flex - SS316L**	2	4	4	6	6
4	**Lifting device standard Flex - SS316L**	1	1	1	1	1
5	**Rubber sleeve Flex - DN65**	-	1	1	2	2
6	**Sleeve clamp - SS316L - DN65 (110 mm)**	2	4	4	6	6
7	**Bottom plug Flex with sleeve - DN65**	1	1	1	1	1
8	**Bolt - SS316L - M8x1,25 (16mm) - Allen key**	18	30	30	42	42
9	**Aeration pipe for Aerator Flex**[1]	6	6	6	6	6
10	**Aerator tube gasket**[1]	6	6	6	6	6

[1] *Components of the Aerator Flex.*

EXPLODED VIEW - STACK FLEX 3





REFERENCE COMPONENT - ITEM 1A
Module IPC Flex 0.5