Aquaporin Inside™ HFFO 2 - Standard Test Setup

MODULE SPECIFICATIONS	
Aquaporin Inside™ coating:	On lumen side of fiber
Active area (lumen side/shell side):	2.3 m²
Inner diameter of fibers:	195 μm
Module dimensions:	300 mm long, 70 mm in diameter
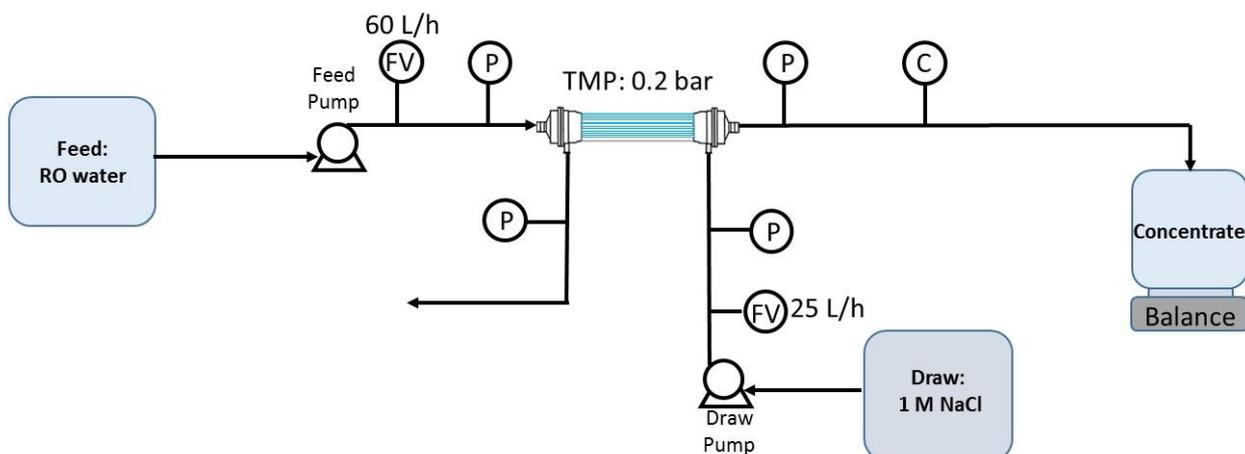
Schematic description of the applied single-pass testing method used in testing of 2.3 m² modules; FV - flow meter, P - manometer, C - conductivity meter, TMP - transmembrane pressure.

Feed out-flow from the module was calculated and subtracted from the feed in-flow the module in order to calculate flux through the membrane according to eq. 1.

$$J_w = \frac{\dot{Q}_{Feed} - \dot{Q}_{Concentrate}}{A} \qquad (1)$$

where:

J_w	is water flux (L/m²h)
$\dot{Q}_{Feed}$	is flow rate of feed (L/h)
$\dot{Q}_{Concentrate}$	is flow rate of concentrate (L/h)
A	is membrane area (m²)

Conductivity of the concentrated feed solution was measured in order to calculate reverse salt flux according to the eq. 2.

$$J_s = \frac{\dot{Q}_{Concentrate}}{A} \kappa \cdot B \qquad (2)$$

where:

J_s	is reverse salt flux (L/m²h)
$\dot{Q}_{Concentrate}$	is flow rate of concentrate (L/h)
A	is membrane area (m²)
κ	is conductivity (μS/cm)
B	is proportionality coefficient (0,5362 μS/cm per 1 mg/L of NaCl)