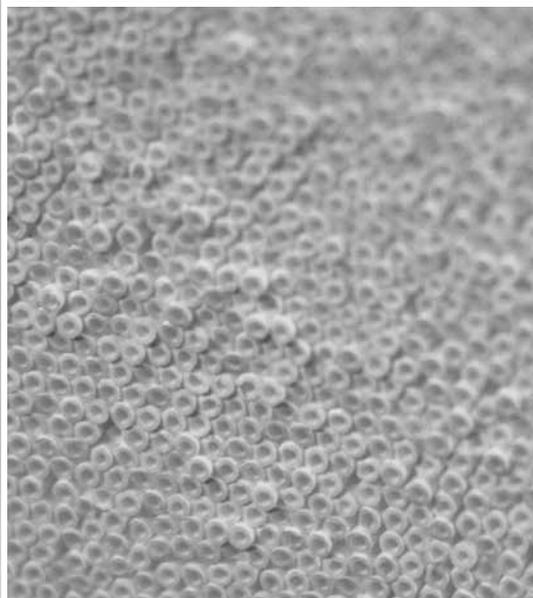


AQUADYN® Ultrafiltration Modules

For Surface Water Treatment



MICRODYN-NADIR GmbH
Kasteler Straße 45
65203 Wiesbaden / Germany
Phone: + 49 611 962 6001
info@microdyn-nadir.de
www.microdyn-nadir.com



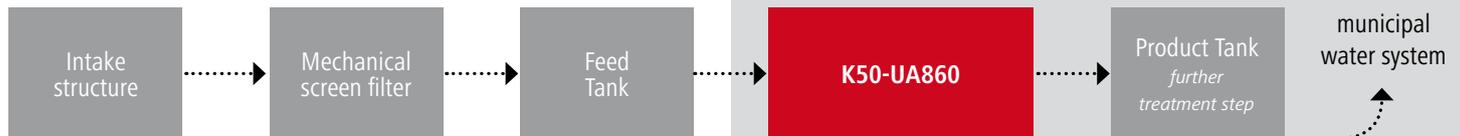
MICRODYN
NADIR

ADVANCED SEPARATION TECHNOLOGIES

AQUADYN® Ultrafiltration Modules

For Surface Water Treatment

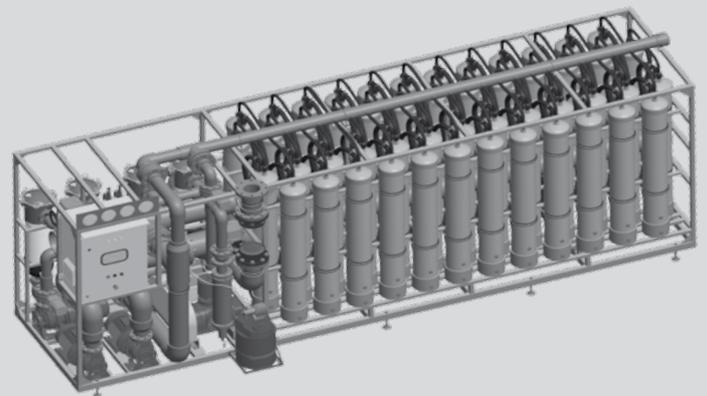
As most of the islands of the Philippines still rely on water procurement through deep wells, volatile water supply due to wells running dry is a major issue in these areas. To overcome this challenge the first surface water treatment plant has been in operation in Kalibo, Aklan in the northwestern part of the Island Panay since May 2015. This water treatment plant is equipped with 500 AQUADYN® UA860 ultrafiltration modules by MICRODYN-NADIR and has a total membrane area of 22,500 m².



This project involved a variety of challenges, however, the main goal was to provide a cost effective and robust system in order to ensure a steady water supply. To design a compact solution that will allow for future capacity extension was another key requirement.

The modules are operated with a constant flux rate of 50 LMH. Due to the modular design and complete automation it is possible to quickly adjust the number of modules in operation to match the actual water demand of up to 10,000 m³/d. The water intake of the plant is sourced from a nearby river. After passing a mechanical screen filter the water passes 100 µm bag filters. These cleanable and reusable bag filters serve as pre-treatment step to the ultrafiltration. After passing the ultrafiltration step the water is collected in a product tank and is fed into the municipal water system after one additional treatment step. Thanks to the implementation of 500 AQUADYN® UA860 modules the water treatment plant meets and fulfills the needs of the municipal water districts vision to install a state-of-the-art water treatment system in order to supply Kalibo Water District with safe and continuous water. The smart plant design not only enabled a significant improvement of the overall site conditions but also optimizes the daily system operations and costs.

AQUADYN® modules are encased ultrafiltration hollow fiber membrane modules which effectively reduce microorganisms and suspended solids from water. The AQUADYN® series offers a comprehensive range of filtration modules for a wide spectrum of applications. Moreover, the AQUADYN® UA (PAN) modules is superior in its hydrophilic property compared to most other polymeric materials. The enhanced hydrophilic property improves the wettability and reduces operating pressure. Additionally, it makes the membrane more resistant to fouling; resulting in less cleaning cycles and reduced chemical usage.



ADVANTAGES

- » 50% smaller footprint compared to conventional coagulation, flocculation and sand filter
- » OPEX optimization due to lower energy consumption
- » no use of chemicals
- » compact system
- » constant effluent quality
- » robust and durable modules

Project specifications

	Feed Water*	Effluent
Turbidity	~ 1500 NTU	~ 0.2 NTU
TSS	3000 mg/l	< 1 mg/l

Plant design (UF)

Commissioning	May 2015
System	ULTRA-FLO K50-UA860
Module type	AQUADYN® UA860
Amount of modules	500
Total membrane area	22,500 m ²
Capacity	625 m ³ /h
Energy consumption	~ 0.5 kW/m ³

*Note: Feed to mechanical screen filter