NIJHUIS HIGH RATE i-DAF
DAF applications above 1000 m³/hr / 25 MLD
Currently, **efficient solid and phosphorus removal solutions** for sea, surface, and wastewater are a major theme in the industrial and municipal water treatment markets. Additionally, the rise of membrane filtration technology applications has presented companies with new challenges: to minimize costs (membranes and energy) and system failures.

The ‘High Rate i-DAF’ is a SMART solution that guarantees maximum and efficient solids removal, taking pre-treatment technology to the next level. Especially for the purification of sea and surface water above 1000 m$^3$/hr / 25 MLD, pre-treatment solutions have to be compact, robust, stable and modular at the same time.

Our customers benefit from three major **intelligent improvements** compared to conventional DAF and alternative pre-treatment:

1. **High quality membrane feed water** due to robust and reliable removal of solids.
2. **Lower CAPEX**
   - Low civil cost due to compact and small footprint.
   - Standardized production of material.
3. **Lower OPEX**
   - Low energy consumption.
   - Low sludge treatment cost by enhanced sludge thickening.

**APPLICATIONS**
- Desalination pre-treatment
- Drinking water preparation
- Process water production
- Wastewater treatment
- Industrial zones
- Sewage water treatment - carbon harvesting
- Sewage water treatment - tertiary P removal

**DRIVERS TO DETERMINE DAF UNIT APPLICATIONS**
The Dissolved Air Flotation technology (DAF) has proven to be very successful as a pre-treatment step. Nijhuis flotation systems have been developed since the 1970s and our units stand out as the best in their field.

To determine the unit application, several drivers will be taken into account to execute the unit in stainless steel, (super)duplex or concrete:

- Transportation;
- Flexibility;
- Footprint;
- Water capacity.

**CUSTOMER BENEFITS**
1. Lower energy consumption (up to 30%) due to the patented non-clogging Nijhuis fine bubble i-AERATION system
2. With plate pack technology, the footprint will be reduced up to 75% (in comparison to flotation units without plate packs)
3. Reduced sludge disposal cost by Nijhuis smart level control
4. Operational flexibility by anticipating on fluctuating flows
5. Maximum protection of any post-treatment
6. Execution possibilities, depending on the application:
   - Concrete: optimized corrosion resistance
   - Stainless steel / (super)duplex: modular and transportable units
Nijhuis High Rate i-DAF References

Singapore, 800 m³/hr / 20 MLD, Tank Farms

Saudi Arabia, 875 m³/hr / 21 MLD, Industrial Zone Wastewater

Singapore, 1000 m³/hr / 24 MLD, Tank Farms

Singapore, 1200 m³/hr / 29 MLD, Petrochemical

China, 1400 m³/hr / 34 MLD, Refinery

Brno Czech rep., 1625 m³/hr / 39 MLD, Metal Processing
Nijhuis High Rate i-DAF References

Corsica France, 1675 m$^3$/hr / 40 MLD, Municipal post-MBBR

U.S.A., 2000 m$^3$/hr / 48 MLD, algae removal

Middle East, 4,000 m$^3$/hr / 96 MLD, Refinery
Pre-treatment (picture showing one module)

Egypt, 60,000 m$^3$/hr / 1440 MLD, Industrial Zone
Pre-treatment (4x stainless steel units) and activated sludge flotation (16x concrete units)

Singapore, 15,000 m$^3$/hr / 360 MLD, Desalination Pre-treatment