



Disinfection



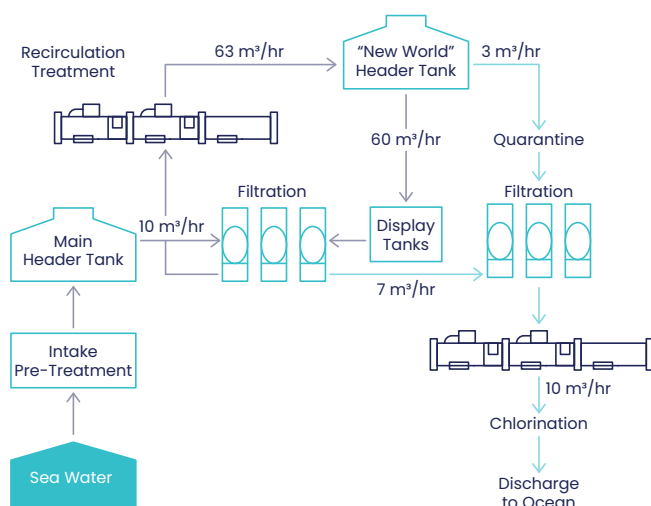
Aquaculture

Palma de  
Mallorca, Spain

# Delivering Water Biosecurity at Palma Aquarium Spain

## Background

In June 2007, Coral World International opened its newest and most advanced aquarium in Palma de Mallorca, Spain. With more than 30 years of experience in professional aquarium development, Coral World understands that water quality is a key factor in ocean settings, and maintaining this quality is an essential requisite for reproducing different habitats at Palma Aquarium. The New World section of the Palma Aquarium has 24 aquaria housing corals, anemones, invertebrates, sponges, small organisms, deep-sea animals, benthos species, and countless other creatures. The aquarium is supplied by seawater, with a recirculation flow rate of 63 m<sup>3</sup>/hr, make-up and effluent rate of 10 m<sup>3</sup>/hr, and UVT of 95%.



Simplified layout of Palma Aquarium's New World area

## The Solution

To ensure the required water quality, Coral World selected Atlantium's HOD™ (Hydro-Optic Disinfection) UV technology for its New World section.

The HOD UV system features the unique Total Internal Reflection (TIR) technology that recycles UV light energy, ensures homogenous UV dose distribution and provides superior power (kW) efficiency compared to traditional UV and achieves unprecedented micro-organism inactivation. As part of the aquarium's recirculation process, the HOD UV system maintains a low microbial load in the aquariums, protecting the New World population from severe microbial threats, including viruses, fungi, bacteria and parasites, and preventing disease outbreaks. These are major concerns, as the ecosystem within the aquarium is highly sensitive and must be protected carefully. Additionally, contamination can spread rapidly, infecting the entire aquarium.

Another major advantage of the HOD UV system is that it is very friendly to corals. Unlike other water treatment systems that can be very aggressive, the system has no detrimental effects on the corals in the display tanks. Since the New World aquarium houses fish from the Indian, Atlantic, and Pacific Oceans, measures must be taken to prevent any foreign bacteria from being introduced to the Mediterranean's natural ecosystem. By using Atlantium's HOD UV systems to treat the aquarium's effluent, Coral World is able to meet environmental regulations and protect its surroundings.

## Results

Atlantium's HOD UV systems form an integral part of New World's re-circulation and effluent water disinfection processes. Both applications use Atlantium's R-100 single-lamp system.

The HOD UV recirculation application maintains low microbial loads and protects the aquarium population, while its effluent treatment application minimizes the impact on the surrounding environment. The systems achieve superior microbial reduction, protect Palma Aquarium from parasite outbreaks, and ensure compliance with environmental regulations.

The impact of Atlantium's HOD UV system was quite evident when, after a short time without its disinfection, a parasite outbreak quickly developed on the fish in the aquarium's tanks. Once the disinfection was re-introduced, the parasite population returned to normal levels.

Atlantium HOD UV systems are able to effectively inactivate pathogens – while still being environmentally friendly, cost-effective, and not introducing any disinfection by-products into the aquarium. This is achieved by combining ultraviolet water disinfection technology with hydraulic and optic principles.

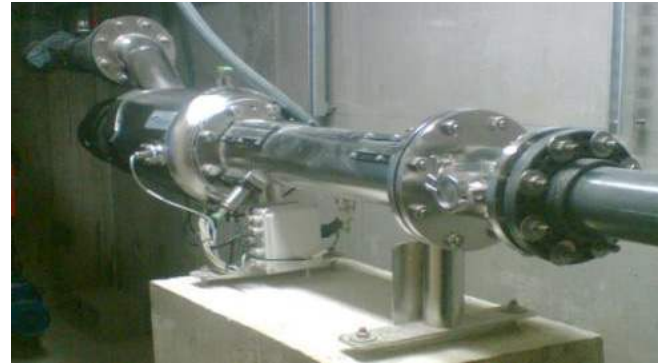
**The core of the HOD UV system is a large quartz tube that acts as an effective light trap, reflecting stray UV light back into the midsection of the unit using the concept of "Total Internal Reflection".**

**This creates a homogeneous uniform distribution of the UV light throughout the system's cross-section at a dosage that systematically achieves unprecedented micro-organism inactivation.**

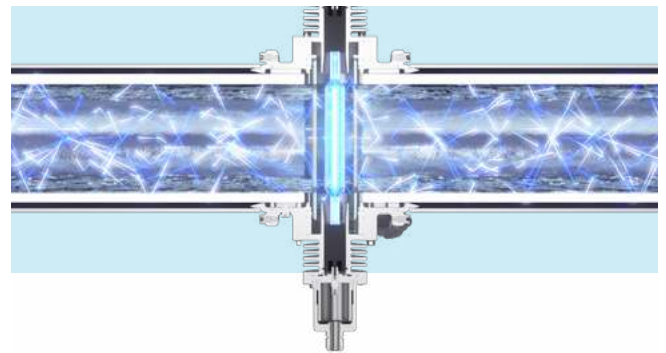


Atlantium's HOD™ system is vital to the health of our aquarium's fish population. We noticed that after a short time when Atlantium's system was off we rapidly developed an explosion in parasite numbers. We were extremely relieved that soon after we re-activated the system, the parasite numbers came under control again.

Aharon Miroz, Chief Curator for Coral World International



R-100 single lamp treating New World's effluent results



## About us

For more than two decades, Atlantium Technologies has helped to ensure water safety with its innovative HOD™ (Hydro-Optic Disinfection) UV technology and novel approach to performance, monitoring, and control. Atlantium's superior, environmentally friendly water treatment solutions ensure stable, efficient, and dependable production.

With thousands of full-scale installations for leading brands in various industries globally, we're committed to consistently meeting our customers' water quality needs, ensuring pure results.

