



Cathelco 

Evolution BWT system

Now testing for USCG Type Approval

Cathelco Evolution

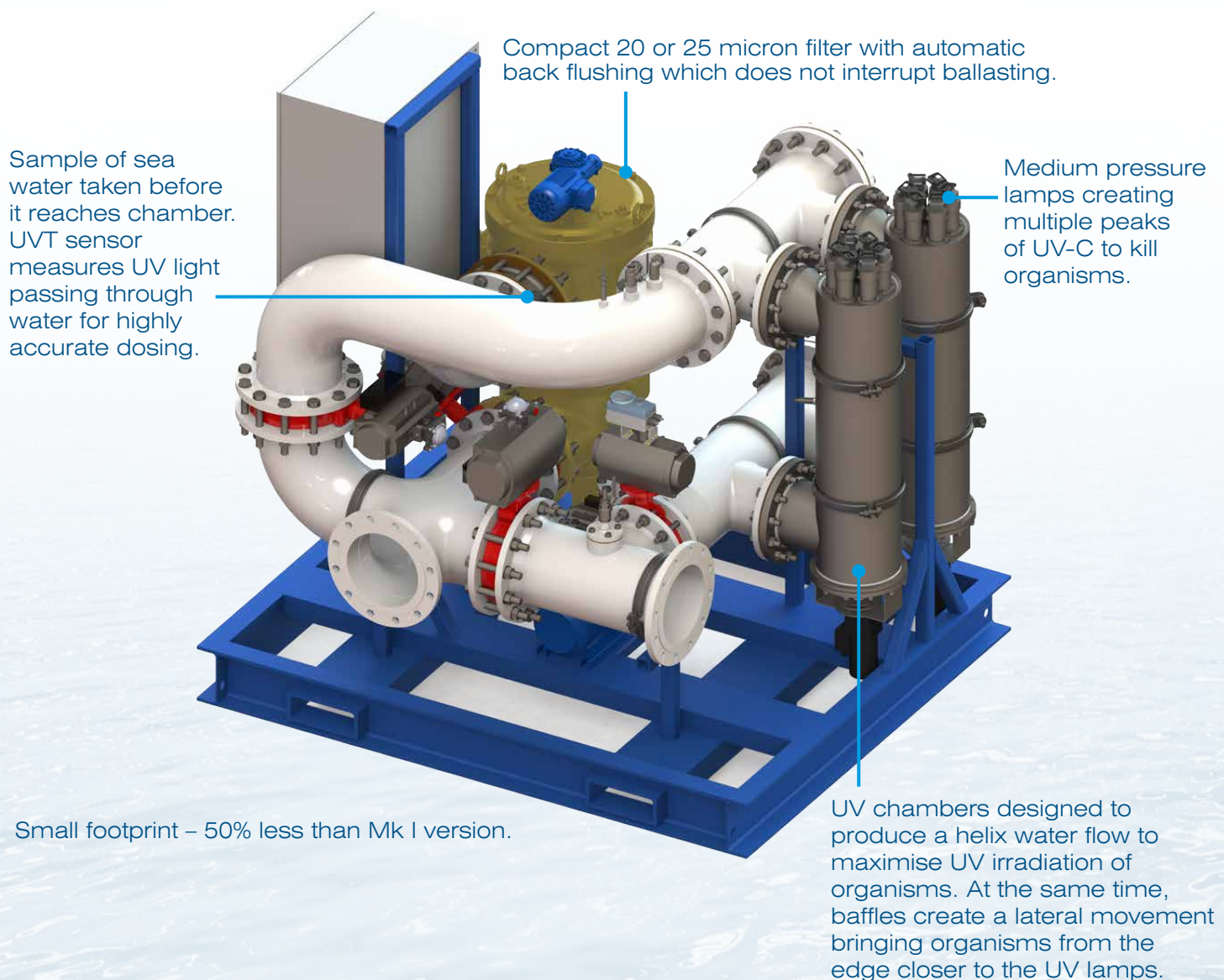
Saving power through precise adjustment

Aiming to be one of the first BWT systems to receive U.S. Coast Guard Type Approval, the Evolution system gives your fleet the freedom to trade anywhere in the world as it is effective in marine, brackish and fresh water.

The unique UVT sensor system ensures precise UV dosing according to the water conditions. Maximum power is only used when the circumstances demand and is reduced immediately afterwards.

With capacities from 34m³/h to 2,000 m³/h, the Evolution system is available skid mounted or in modular form for easy installation on both new builds and retrofits.

Cathelco Evolution combining economy, reliability and effectiveness.



Currently testing to the U.S. Coast Guard live/dead standard

Evolution - on target for launching in 2017

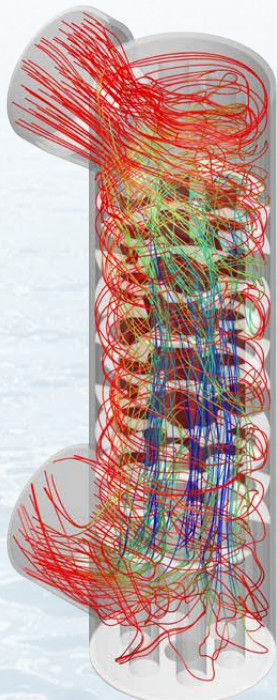
The Evolution system is currently being tested to the 'live/dead' standard demanded by the U.S. Coast Guard with the aim of gaining Type Approval by the 3rd Qtr of 2017.

The new system will supersede the Cathelco Mk I system which holds IMO Approval and AMS Certification based on organisms being viable/unviable. The independent laboratory appointed to supervise the USCG Type Approval testing programme for the Evolution is Lloyds Register.

Shipboard testing will commence in July/August 2016 and it is anticipated that all of the test results will be submitted to the U.S. Coast Guard for approval by the end of the 1st Qtr 2017.

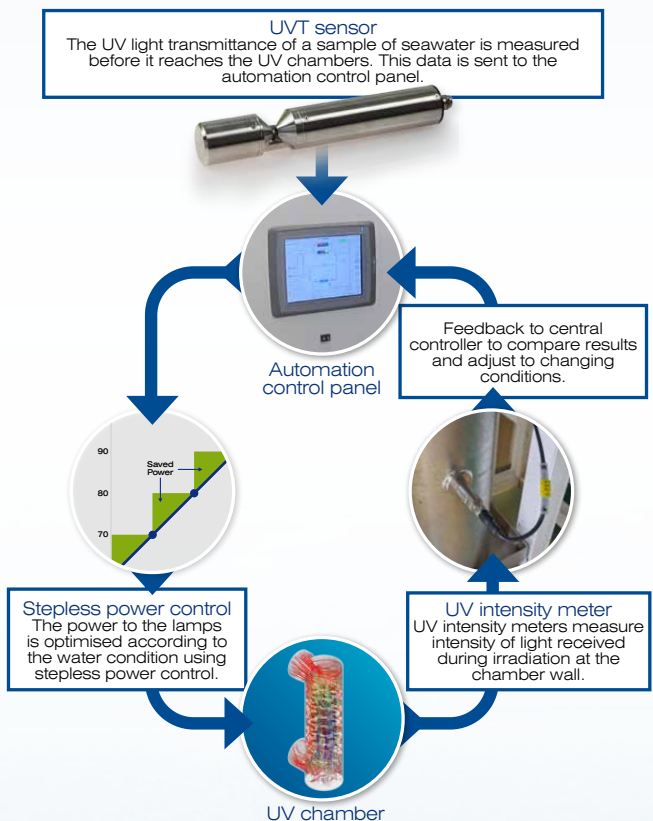
Enhanced UV chamber design

The chamber has been re-designed to increase the level of irradiation to meet the 'live/dead' standard, whilst other improvements extend the exposure time with the sea water. In addition to creating a helix flow as the water enters the chamber, its path will be interrupted to cause a lateral movement. This will bring organisms from the edge of the flow closer to the light emitted from the UV lamps in a repeating cycle as the water passes along the chambers.



Computer simulation of flow through Evolution UV chamber. Sea water flows in a helix to increase the exposure time with the UV light. At the same time, baffles interrupt the flow bringing organisms from the edge closer to the UV light source.

Precise adjustment to different sea water qualities



The unique Cathelco UVT sensor system has already proved its value in precisely adjusting the UV dose to changing water qualities. This is achieved by sampling sea water before it reaches the UV chamber and measuring the amount of UV light actually passing through it. This works in conjunction with UV intensity meters which are mounted on the chamber and measure the intensity of light which is received.

Combined with stepless power control, all of these features ensure that power is not used excessively, only the amount needed to meet the 'live/dead' standard.

Less pressure demand on pumps

The pressure loss with the Evolution is just 0.6 bar at 250m³, resulting in less pressure demand on the ballast pumps.

Easy switch over - IMO to US waters

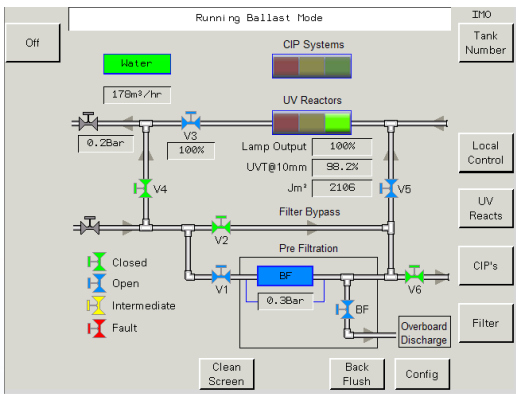


When vessels are sailing towards US waters or within them, crew simply have to press the 'US button' when ballasting/de-ballasting and the system automatically reconfigures to meet the U.S. Coast Guard regulations.

Footprint 50% smaller

The footprints of the skid mounted systems are more than 50% smaller than their predecessors even when the control panels are included. The reduction in size has been achieved by mounting the UV chamber vertically, simplifying the pipework arrangement and introducing the CIP wiper system.

Easy, intuitive control system



The control system on the Mk I system has proved popular with ships' engineers and will be carried over to the Evolution. With easy to read schematics showing sea water routing, read outs showing the transition state of valves as well as instant information from sensors, engineers can easily see how the system is performing.

CIP wiper system

The UV lamp sleeves are automatically cleaned after every ballasting/de-ballasting operation using an efficient wiper system.

Conforms to EU Low Voltage Directive

For safety, the Evolution system conforms to the EU Low Voltage Directive. The lamps have voltages which are well within the limit of 1000 volts, avoiding the need for additional safety measures.

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