

Eliminates on-board  
sea water system

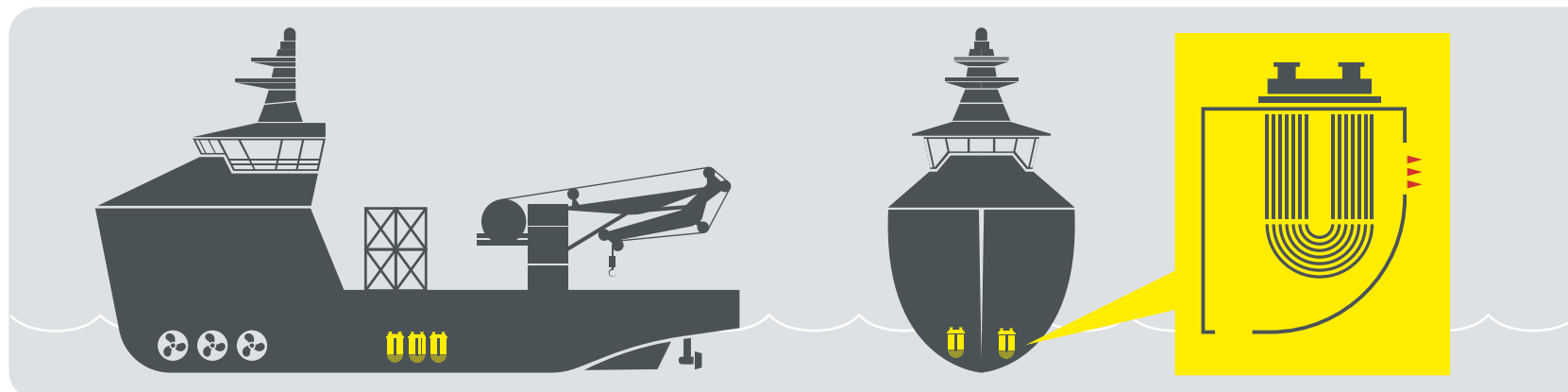
Anti-corrosive Materials.  
Can operate in icy condi-  
tions, silt or polluted waters

Space-saving in the  
machine room with  
low operational costs

## Engine & Generator Cooling Solutions

# BOX COOLER

## PRINCIPLE



## MARKETS

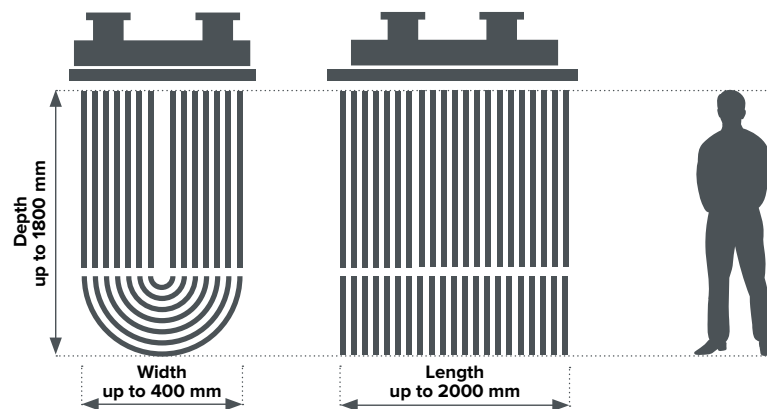


Marine



Power

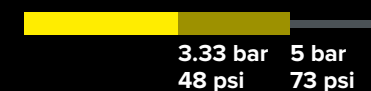
## DIMENSIONS



## DESIGN PARAMETER



### PRESSURE



● Design Pressure

● Test Pressure

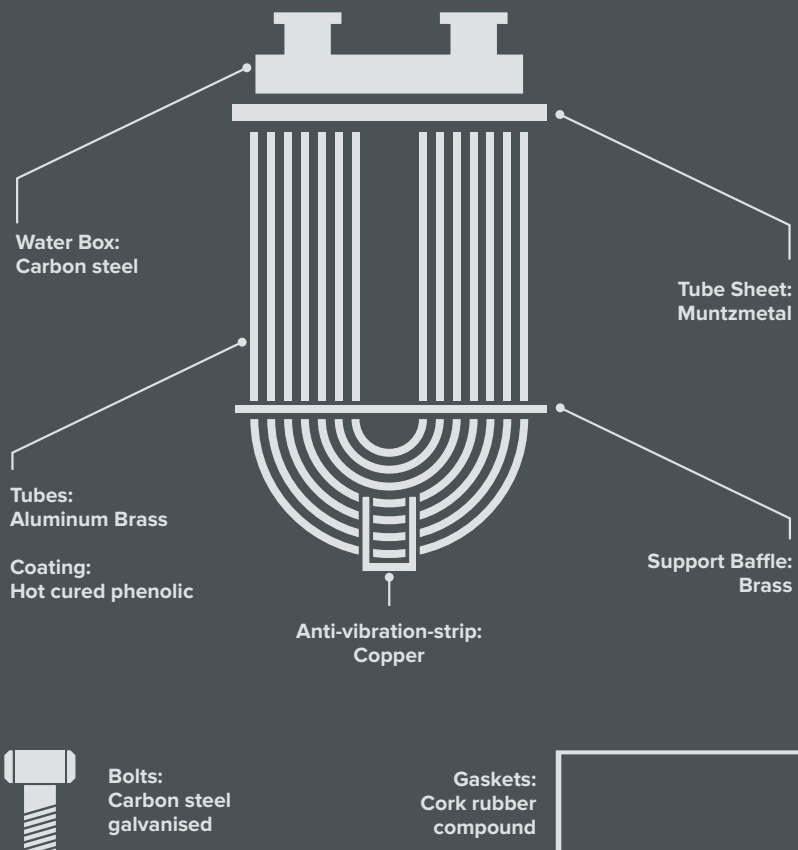


### DESIGN TEMPERATURE



Adapted data on request.

## MATERIALS



## TYPES AND VARIATIONS



Rectangular Box Cooler



Round Box Cooler



Stepped Box Cooler

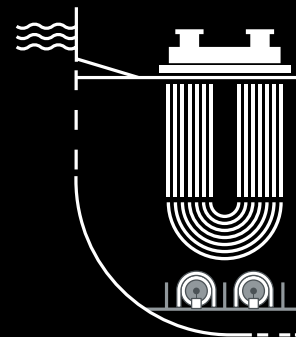
## ICAF SYSTEM

For sailing areas where biological fouling could be an issue, we can provide special anti-fouling systems.

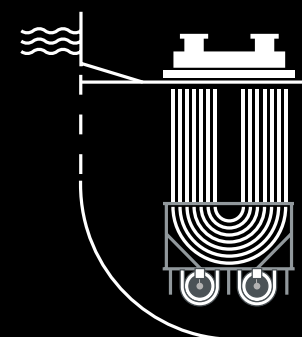
Kelvion focuses mainly on the so called ICAF-Systems. The impressed current Anti-Fouling system (ICAF) is a very effective way of preventing biological fouling. Anodes of pure copper are mounted under the box cooler in the sea chest. A constant current is applied between the anodes and the hull (mass), which causes copper to dissolve in the seawater. These Cu<sup>+</sup> ions create a continuous toxic environment preventing the settling of deposits.

We offer two different methods for installing the ICAF system:

Separate ICAF-System



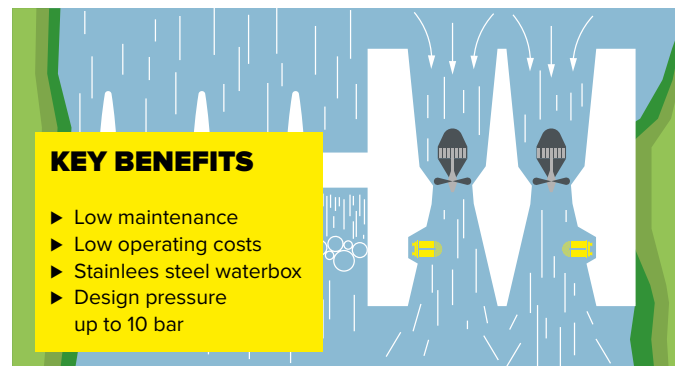
Integrated ICAF-System



## CLASSIFICATIONS

- ▶ **ABS** – American Bureau of Shipping
- ▶ **BV** – Bureau Veritas
- ▶ **CCS** – China Classification Society
- ▶ **CR** – China Corporation Register
- ▶ **DNV** – Det Norske Veritas
- ▶ **GL** – Germanischer Lloyd
- ▶ **IRS** – Indian Register of Shipping
- ▶ **KR** – Korean Register of Shipping
- ▶ **LRS** – Lloyds Register of Shipping
- ▶ **MROS** – Maritime Register of Shipping
- ▶ **NK** – Nippon Kaiji Kyokai
- ▶ **NSI** – Nederlandse Scheepvaart Inspectie
- ▶ **RINA** – Registro Italiano Navale
- ▶ **RRR** – Russian River Register
- ▶ **USCG** – United States Coast Guard

## POWERBOX EFFICIENT COOLING FOR HYDRO POWER PLANTS



### KEY BENEFITS

- ▶ Low maintenance
- ▶ Low operating costs
- ▶ Stainless steel waterbox
- ▶ Design pressure up to 10 bar

Our PowerBox is a passive cooling system for run-of-river hydro power plants – another application using the advantages of the box cooler.

It is installed in the plant's main water flow channel, totally submerged in the river water, which means that a heat exchanger shell and pumps are obsolete. The water simply surrounds the U-tube bundle and a forced flow on the outside is automatic, due to the water velocity in the channel.