

# Life Saver

LifeSaver unit consists of wave energy converter, commercially available GPS-enabled emergency position indicating radio beacon and high quality US-made portable reverse osmosis desalination system.

Life at sea is full of adventure, challenges, experiences and immense satisfaction. However, the ocean does not forgive carelessness, unpreparedness and arrogance.

LifeSaver is designed to supply electric power and fresh drinking water mainly to lifeboats, liferafts, sailing boats and yachts by harnessing renewable energy of ocean waves.

For emergency situations the unit is also equipped with a GPS-enabled emergency position indicating radio beacon.

The device is similar in shape and size to a standard lifesaver.

LifeSaver wave energy converter is a reliable, inexpensive and efficient system, that can be easily deployed from a lifeboat, liferaft, sailing boat, yacht, or any other maritime vessel. The system contains no expensive or complex parts, lubricants, high precision hydraulics or air pumps, everything that makes other systems more expensive, vulnerable to destructive forces of nature and potentially hazardous.



LifeSaver system is wave direction neutral and operates across a variety of wave heights and periods.

It can also be deployed, if so required, at the remote locations, including islands, off-grid shore communities, naval installations, as well as disaster affected areas.

## LifeSaver is a castaway's ticket back home

Portable Emergency Seawater Desalination Watermaker 150 GPD | 560 LPD is a reliable US-made seawater desalination system.

The super quiet watermaker features automatic operation and is easy to use with a Start and Stop control. All components are protected within the waterproof case.

Water TDS	< 50,000 ppm
Recovery	30%
Rejection	98% Average
Temperature	25° Celsius
Pressure	>10 psi
Electrical	110V/220V/380V/460V
Frequency	50Hz/60Hz Single or 3 Phase



LifeSaver wave energy conversion technology utilizes finite depth of ocean waves and drag force of water. Motion of water beneath the surface decreases exponentially with depth. No matter how violent wave action is on the surface, water at a depth of one-half wavelength  $L/2$  (wave base) and below is motionless.

LifeSaver wave energy converter comprises two bodies, (1) floating device with turbine and generator and (2) suspended from it fully submerged dynamic brake. The submerged body is held at a depth of around one-half wavelength, where the water is motionless.

The technology utilizes the water resistance (drag) that opposes the motion of the submerged dynamic brake thru the stationary water at the depth below the wave base. Drag forces act in a direction opposite to the oncoming water flow velocity.

As the wave rises the dynamic brake prevents the buoyant body from moving upward with the rising wave, therefore forcing the stream of water through a turbine until a wave reaches its crest. As the wave falls, the buoyancy force pushes the buoyant body to the surface, therefore forcing the water stream through a turbine in the opposite direction.

This up and down flow of water causes rotation of the bladed turbine rotor. The turbine is equipped with specially designed pivoting blades (patent pending), resulting in unidirectional rotation of the turbine's rotor regardless of the direction of vertical movement of the turbine.

Rotation is transmitted to an electric generator installed on the buoyant body. Generated electricity is then delivered to a desalination unit via cable.