

# Ecovitae-M2W-30 (machine2water)®



2013

















#### ECOVITAE-M2W-30 machine2water ® CHARACTERISTICS

### Dear Sir/Madam

Greenimpact, Unipessoal Lda., hereby submit the Atmospheric Water Generator (Ecovitae-M2W-30 machine2water ®). It is an innovative device for the production of water, using a recent and more sophisticated technology available in the industry today, the reverse osmosis. The M2W ® was designed with one goal in mind, producing a maximum amount of high quality drinking water, using minimal electricity.

# 1. Operation Principle

With the help of a special cooling system of high efficiency, the device draws moisture from the air, condensing it and turning it in water. This will be referred to a filtration system and disinfection, thereby obtaining a clean, fresh water and suitable for human consumption.

The Ecovitae-M2W-30  $\circledR$  is a device that depends on the humidity and temperature, where its ability optimal operation occurs with a rate of relative humidity of 60% and between 23  $\degree$  C and 29  $\degree$  C temperature, but can act as 35% relative humidity in the air and from 8  $\degree$  C temperature.

# 2. Treatment description

#### 2.1. Schematics

The image of the treatment regimen included in Ecovitae-M2W-30 ® is in chapter 5.

## 2.2. Process and filters used

At the air entrance, there is a first anti-static filter through which air passes before being condensate and transformed into water, to prevent the entrance of small particles and dust into the equipment. Next, in the tank for condensed water there is a charcoal filter that removes internal chlorine compounds, flavors and odors.

Again after the tank, the water will pass through a series of activated carbon filters with silver treatment, removing the lead and chlorine compounds, besides possessing bacteriostatic action, to inhibit a bacterial growth. In reverse osmosis membrane, the water is purified by removal of chemical contaminants (iron chloride, nitrate, limestone) heavy metals or pesticides. The tuning treatment is given by the disinfection by ultraviolet radiation (UV), being a process by which destroy bacteria, virus and does not contribute to the toxic compounds.

At the end, a filter mineralizer restores water minerals needed by the body, such as calcium, magnesium, sodium and potassium.

















# 3. Technical specifications

Dimensions (cm)	111 (Alt.) x 54 (Larg.) x 40 (Prof.)
Weight (Kg)	48
Voltage	220 – 230 Volt AC
Frequency	50 – 60 Hz
Electricity consumption	650 W
Heating consumption	500 W
Hot water temperature	> 85°C
Cold water temperature	<6°C
Water storage capacity	20 dm <sup>3</sup>
Production capacity	36 dm <sup>3</sup> /24h
Optimal temperature of operation	23°C <t <29°c<="" td=""></t>
Optimal level of humidity	60%
Sound level	< 35 dB
Water quality Coefficient	Degree of turbidity < 1
	Total hardness ≈ 1mg/dm³
	Cor < 5
	pH ≈ 6,56

# 4. Maintenance

To ensure the continued production of high quality purified water, it will be required to regularly replace the filters. So:

- 1. The anti-static filter does not need to be regularly replaced, only needs to be washed with water.
- 2. Replace the charcoal filters in the supply reservoir twice a year.
- 3. Change the other filters twice a year
- 4. Change the Reverse Osmosis membrane for each 6000 liters of water produced, or in 3 years.

















# 5. Equipment lay-out



# **IDENTIFICATION OF COMPONENTS**

- 1. Condensing coils
- 2. Water filters (activated carbon with silver treatment)
- 3. Reverse osmosis / RO filter
- 4. The ultraviolet lamp (UV) and the remineralizer filter are at the top

















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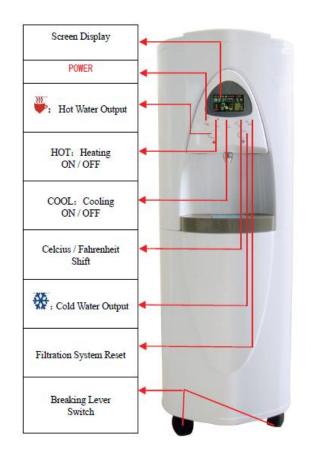
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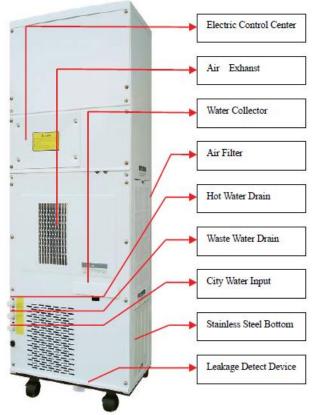




























### ECOVITAE-M2W-30 machine2water ® WATER GENERATOR/DISPENSER



This equipment consists of a self-contained water generator which provides hot water, natural and cold, processed by an integrated system of reverse osmosis filtration and purified by ultraviolet (UV) from the air, thereby eliminating the drawback of network connections to the water distribution system.

### Characteristics of the filters and the filtration process

At the air admission, there is a first anti-static filter through which air passes before being condensate and transformed into water, to prevent the entrance of small particles and dust into the equipment.

Next, in the tank for condensed water there is a charcoal filter that removes internal chlorine compounds, flavors and odors after the condensation of water.

In the next step, the water is filtrated by a filtration sediment 1 µm cartridge.

In the following step, then the water is processed through a dual-stage filtration through activated carbon filters with silver treatment to remove the lead, chlorine, organic compounds, flavors and odors, besides possessing bacteriostatic action, to inhibit a bacterial growth.

In reverse osmosis membrane, the water is purified by removing / removal of chemical contaminants (iron chloride, nitrate, limestone), heavy metals, pesticides and other contaminants of size to 0.0001 micrometers.

















The tuning treatment is given by the disinfection by ultraviolet radiation (UV), being a process by which destroy bacteria, virus and does not contribute to the toxic compounds.

In the end, adding a filter (mineralization) improves the taste of water through the introduction of essential minerals to the Human Body (Ex: Calcium, Magnesium, Sodium, Potassium, among others).

The maintenance of equipment is associated with the longevity of the filters, and must be carried out 3-6 months, with the exception of the osmosis membrane Reverse (RO) whose durability is 12-24 months, the UV lamp has a durability approximately 5000 hours. (Note: the longevity & performance of the filter cartridge depends on the use and level of the water contamination)













