

Variables to consider:

1. Water Volume Measurement

a) How are you measuring your water? The most accurate is by weight.

1 liter of pure water = 1 kg = 1000 g = 2.2046 lbs

b) Water distillers are rated in US gallons, NOT Imperial Gallons.

1 US Gallon = 3.785 liters = 3.785 kg = 8.344 lbs = 0.833 Imp. Gallons

c) Most distilled water holding tanks do not completely drain from the tap.

Ensure this volume of water is included in your calculation by completely draining the tank or starting your production check with this volume pre-filled.

2. Line Voltage

The line voltage at the outlet where the distiller is connected should be checked with a voltmeter. Line voltage is often much less than expected, especially in rural areas. Line voltage will also usually drop off dramatically when the daily commercial load hits the grid

from approximately 8 am to 5 pm (often when the distiller owner is not home and unable to check the line voltage). Line voltage lower than the distiller rated voltage (on the serial plate) will drastically lower the water production.

3. Fill Water Temperature

The water used to fill the machine may affect the water production. Cooler fill water will take more time/energy to heat to the boiling point than hot water.

4. Ambient Air Temperature

Water distillers with cooling fans must have sufficient ventilation so that the boiled steam can be cooled and condensed into distilled water. Restriction of air flow (such as a closed cupboard) will result in a hot ambient air build up which will not allow all of the steam to

condense into distilled water and some water production may escape as steam into the atmosphere through the charcoal filter or volatile gas release vent. This steam loss can also occur in hot summer periods or very warm climates.

5. Heating Element and Boiler Cleanliness

As the water distiller removes impurities some of the impurities may cling to the boiler tank and the heating element. Any of this scale may build up around the heating element and actually insulate it, which will drastically decrease the thermal efficiency of the heating

element and require more time/energy to boil water, which will decrease the water production.

Distiller Performance Variables Explained

6. Altitude

The water distiller is rated at the altitude of the manufacturer, which is approximately 675 m (2214 ft) above sea level. Locations lower than this (closer to sea level) will have reduced water production due to the higher boiling point of water at higher atmospheric pressures at lower altitudes.

7. Operating Time, Warm-up Period & Suitable Storage

When checking the water distiller production, the start time should be when the first few drops of water have entered the charcoal filter canister. Do not start timing when the distiller turns on as it takes a few minutes for the heating element, boiler tank and water to

heat up. The distiller production rating does NOT account for this time, but rather the continuous production after the distiller is up to temperature. Ensure when checking production that you have suitable water storage for holding the amount of water that will be produced.

8. Manual Fill Boiling Tank Fill Level

When checking the water distillation production on manual fill water distillers, the amount of water initially poured into the boiling tank will affect the production. Water should be filled to the water level pin so that once the water is hot the maximum amount of water can be

distilled without having to heat up and refill. Under-filling the boiler will decrease the amount of water distilled. Again, the warm-up time should not be included in the production rate.

9. Boiling Tank Heating Element

Once all other factors have been eliminated or checked, have an authorized service center check that the proper heating element has been installed in your distiller. Always replace heating elements with the manufacturers supplied heating elements. Other elements are

available from hardware stores, home repair centers, etc. and look like the same element but they are almost always not the same. Even if the voltage and wattage are the same, they usually have different wattage densities and most likely different element sheath materials, which will result in premature heater burnout in continuous water distillation of raw water. These heating elements will also likely affect your water distillation capacity.

10. Combination of the above Factors.

Often a reduced water distiller's production is a combination of many or all of the above factors. To ensure maximum production from your water distiller, keep your water distiller clean and operate it in a well-ventilated area and use room temperature feed water where possible.