



## Water-Treatment Unit for Vehicle HVAC or Ground A/C

Today many militaries have defined a requirement of 3 days of logistics independence with an average of 10 liters (2.5 gallons) per soldier per day. Providing this water in the field is a difficult and dangerous logistical task. Modern combat vehicles and expeditionary bases are equipped with air conditioning (A/C) systems built to provide suitable living conditions for the operating forces. A/C systems condense the water naturally present in the humid air. The resulting water is currently considered to be waste and it is drained.

The Water Treatment Unit (WTU) takes advantage of this valuable resource by harvesting the water produced by A/C systems and purifying it to achieve high quality drinking water. Furthermore, the WTU can be connected to the A/C controller in order to increase and optimize the water production capabilities of the system without disrupting its main function, which is to moderate air temperature. The water produced by the A/C is passed through a filtration and sterilization system and through a mineralization filter that adjusts the acidity of the water and improves its taste and quality.



### HIGHLIGHTS

- Filters and purifies water produced by the A/C system and serves pure, fresh, and safe drinking water.
- Water production can be optimized for given temperature and humidity conditions by the unique Water-Gen control system. Water production does not interfere with the air cooling function of the unit.
- Water is dispensed at ambient temperature. The dispensing system is located on the unit or within the cabin of the vehicle. Cold water can be dispensed when integrating with the A/C's coolant system.
- Water quality meets TBMED 577 (USA), NATO STANAG 2136, World Health Organization (WHO), and Environmental Protection Agency (EPA) standards.

### GENERAL

- Simple installation in conjunction with any A/C unit on a vehicle or on the ground.
- Can be designed to any size system according to specifications.
- Water is stored in available water tanks or jerry cans, without the need for additional consumables.
- Water is kept continuously clean and sterile. Unique UV technology is used to diminish the growth and development of bacteria, algae, and viruses, ensuring water quality over time.
- Required minerals are added for taste and health.
- Designed to automatically overcome water freezing conditions.
- Dispensing unit serves water inside the vehicle cabin.

The WTU was honored as one of the six finalists at the 2011 DSEi Exhibition "Innovation Challenge" Awards

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## MAIN SPECIFICATIONS

1. Electrical requirements:
  - a. Vehicle unit: 28VDC, according to MIL-STD requirements.
  - b. Ground unit: According to requirements.
2. Working power:
  - a. Vehicle Unit: 100W
  - b. Ground Unit: According to requirements.
3. Dimensions (H x W x L)
  - a. Vehicle Unit: 202mm x 328mm x 378mm (8.0" x 12.9" x 14.8")
  - b. Ground Unit: According to requirements.
4. Noise level: 60 LpADB(A).
5. Water quality: Complies with TBMED 577 (USA), NATO STANAG 2138, 2885, WHO, and EPA.
6. Operator signals: On/Off.
7. Temperature:
  - a. Storage, shipment, non-operational temperatures: -20°C to 75°C (-4°F to 165°F).
  - b. Working temperatures: 7°C to 45°C (45°F to 115°F).
8. Electrical compatibility: As required by MIL-STD.
9. Life Span: 7 years.

## WATER PURIFICATION SEGMENT

1. Filtration elements:
  - a. Sediment filtration
  - b. Unique organic and chemical filtration
  - c. Unique UV Sterilization Unit
  - d. Mineralization element
2. Purification process:

Purification and storage of the produced water.

## WATER DISPENSING UNIT

1. Dispenser: Protected, mechanically operated.

Pouring is inside the perimeter of the vehicle.
2. Flow rate: 1.2Lit/min (0.3 gallon/min).

## MAINTENANCE

1. Unit sterilization: monthly
2. Filter replacement: 6 months
3. UV lamp replacement: 12 months

## W-HVAC

1. Full integration between the water treatment components inside the A/C structure. Applicable to upgrades and new installations.
2. Full integration offers:
  - a. Saving bulk and weight by installing the water treatment components inside the HVAC box.
  - b. Eliminating redundancy (physical installation, power protections, shock absorbers, etc.).
  - c. Improved water production using Water-Gen methods. The unique WTU control system can optimize and increase the water production capacity of the HVAC without affecting its cooling ability.
  - d. Self-cooling of the water by the HVAC system before pouring.



WTU1 Installed in the IDF "Namer"