RINI TECHNOLOGIES

FORT DIX FUTURE FORCE WARRIOR

407/359.7138 • www.rinitech.com

DESCRIPTION:

The FFW-CS chills and circulates cool water through a tube-type heat-transfer garment. The chilled circulating fluid in the tubing network transfers metabolic heat from the Warfighter's body and rejects it to the ambient environment via its condenser.

SPECIFICATIONS:

- **Cooling Power:**
  ≥ 120 Watts in a 100°F environment
- **Electrical Power Consumption:**
  ≤ 50 watts (time weighted ave.)
- **Weight:**
  4.0 lbs (excluding power source)
- **Volume:**
  1.5 liters
- **Coolant Fluid Temperature:**
  70°F
- **Refrigerant:**
  R134A
- **Cylindrical design**

STATUS:

The Future Force Warrior Cooling System is being developed under Natick Soldier Center's Micro-Climate Cooling Program. A fully functional demonstration prototype Cooling System is expected in mid 2008.

Test of Microclimate Cooling Unit with Future Force Warrior combat ensemble at Fort Dix on July 12, 2007.

Operational missions, preparedness, prevention and response to catastrophic events are performed by Warfighters employing heavy protective gear that is cumbersome and creates an extremely hot "micro-environment" for the user. This in turn results in heat stress which has been shown to cause serious injury and death. RTI's Micro Climate Cooling System (MCCS) addresses this serious issue using a vapor compression cycle to chill water to 70F. Chilled water then circulates cool water through a tube suit heat-transfer garment. The water is warmed as it pulls heat from the wearer. The heat is then rejected to the ambient environment via a forced air condenser. The net benefit of the MCCS is to maintain core body temperature for the Warfighters during strenuous activity while in hot ambient conditions; in turn, this will extend mission duration and operational effectiveness. The MCCS was recently tested at Fort Dix, the soldier ran 0.5 mile without cooling unit and then with cooling unit to determine the cooling effect. The tests at Fort Dix were performed utilizing the Future Force Warrior ensemble.

The results of the test are clearly embodied in a soldier's comments after completing the test:

"Cooling capacity is right on….awesome job. I am a big fan…I like how cool it is, I really do. I'm not giving this back; I am taking it home with me"

®2007 RINI Technologies. All rights reserved. Specifications are subject to change without notice. DCN #COV001