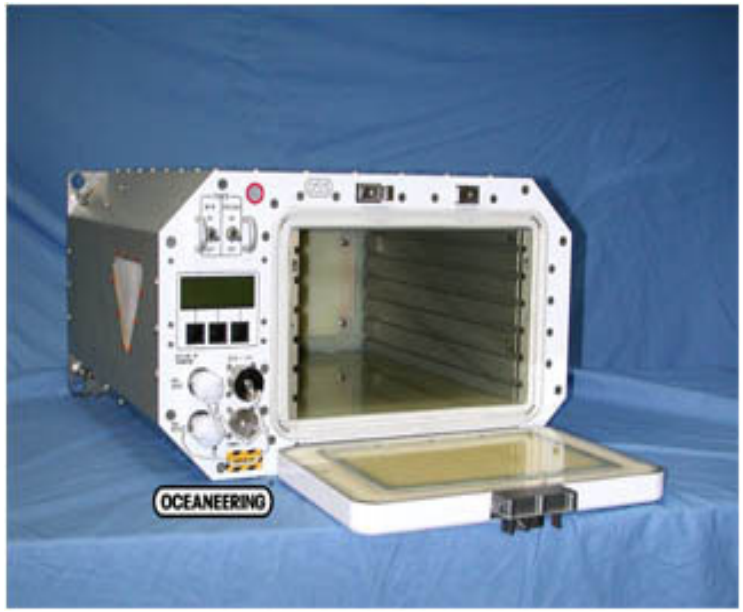
Advanced Thermoelectric Refrigerator/ Freezer/Incubator (ARCTIC)

Engineering Description



The ARCTIC will accommodate on-orbit cellular biotechnology experiments by providing an easily accessible temperature controlled storage chamber for temperature labile culture supplies and biological samples during transport from and to ISS and for on-orbit usage for storing samples obtained during experiment operations. This unit was developed by Oceaneering, which began developing refrigeration systems for space in the late 1980s. The ARCTIC is a second generation unit, with advances in insulation, heat pump technology, composite structure design, and advanced insulation and heating/cooling systems. These advances provide thermal and power performance advantages when compared to other systems.