

Extravehicular Mobility Unit (EMU)

NASA/Hamilton Sundstrand/ILC Dover

The EMU provides a crewmember with life support and an enclosure that enables EVA. The unit consists of two major subsystems: the Life Support Subsystem (LSS) and the Space Suit Assembly (SSA). The EMU provides atmospheric containment, thermal insulation, cooling, solar radiation protection, and micrometeoroid/orbital debris (MMOD) protection.



The Simplified Aid For EVA Rescue (SAFER) provides a compressed nitrogen-powered backpack that permits a crewmember to maneuver independently of the ISS. Its principal use is that it allows a crewmember to maneuver back to the Station if he or she becomes detached from the ISS.







Suit Suit Layers

- 1 Thermal Micrometeoroid Garment (TMG). Cover: Ortho/KEVLAR[®] reinforced with GORE-TEX[®].
- 2 TMG Insulation. Five to seven layers of aluminized Mylar[®] (more layers on arms and legs).
- 3 TMG liner. Neoprene-coated nylon ripstop.
- 4 Pressure garment cover. Restraint: Dacron[°].
- 5 Pressure garment bladder. Urethane-coated nylon oxford fabric.
- 6 Liquid cooling garment. Neoprene tubing.

Suit's nominal pressure	0.3 atm (4.3 psi)
Atmosphere	100% oxygen
Primary oxygen tank pressure	900 psi
Secondary oxygen tank pressure	6,000 psi (30-min backup supply)
Maximum EVA duration	8 h
Mass of entire EMU	178 kg (393 lb)
Suit life	30 yr