



An Ingersoll Rand Business



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ILC Dover has designed an environmental system that is not only deployable and safe, but also cost-efficient, spacious, lightweight, and capable of supporting activities in both LEO and on lunar and planetary surfaces. Designed for commercial space stations as well as Moon and Mars missions, inflatable space habitats are set to revolutionize lunar and planetary exploration. ILC Dover leads the design, systems engineering, manufacture and supports testing of the habitats on-site or at remote locations for its customers.

With a rich legacy in manufacturing soft goods, ILC Dover's expert team possesses a deep understanding of creating robust and resilient structures capable of withstanding extreme environments in space, on the lunar or Martian surface, and beyond. ILC Dover's proven systems and processes meet the stringent requirements of space habitation, ensuring the highest levels of quality, reliability, and safety, making it the leading developer of soft habitats for in-space and planetary use.

**Advanced Features of ILC Dover's Inflatable Habitats:**

- Lightweight and more compact to launch than a rigid habitat
- Expands to provide an area to live and work based on mission needs
- Provides protection from harsh space and planetary environments
- Capable of multiple operational pressures
- Suited for incorporation of structural health monitoring, internal hardware mounting and partition capability



Credit: Sierra Space

**Sierra Space's LIFE™ Habitat**

ILC Dover works collaboratively with customers to develop inflatable space habitats to best serve their needs and mission at hand. In partnership with Sierra Space, the innovative LIFE™ habitat was developed to launch on commercial launch vehicles with a 5-meter fairing and inflate in space to build a large space station, such as Orbital Reef, ultimately reducing operational costs and providing ample living space for future inhabitants.



- 27 feet in diameter
- Launches on a conventional rocket and inflates on-orbit to a large structure
- 300 cubic meters of pressurized volume
- Three floors of living and working area to support crews of 4-12
- Inflatable pressure shell layer composed of Vectran™ fabric weave for strength
- Outer layers composed of materials designed for orbital debris and thermal protection
- Closed-loop life support to enable long-duration missions

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