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DUNMORE Aerospace Materials Protect LADEE Robotic Lunar Explorer

First Ever Space Laser Communication Package May One Day Replace Radio Waves

Bristol, Pa., September 9, 2013 – DUNMORE Corporation is protecting four science payload instrument packages carried aboard the Lunar Atmosphere and Dust Environment Explorer (LADEE) space mission and the spacecraft itself. DUNMORE's [multi-layered insulation \(MLI\) materials](#) defend electronics and other mission-critical technology from extreme temperatures between -195°F to more than 300°F (-125°C to +150°C) as the spacecraft travels to an orbit around the moon. In addition, DUN-SHIELD™ [electrostatic dissipative \(ESD\) films](#) protected all four payload instruments and other components during assembly of the spacecraft.

The LADEE mission is to study the thin lunar atmosphere and the movement of microscopic lunar dust particles through it. Scientists expect to gain a better understanding of tenuous atmospheres that also exist around asteroids, inner planets and moons of Jupiter, Saturn and the outer planets.

This mission heralds a number of firsts. The U.S. Air Force's Minotaur V ballistic missile, repurposed as a launch vehicle, carries a carbon fiber 850 pound reusable spacecraft designed and built at NASA Ames Research Center in California. The launch took place at the NASA Wallops Flight Facility, making it the first lunar mission to launch from Virginia. The Goddard Space Flight Center assumes responsibility for managing the science instruments on board and will host the first use of a high speed Lunar Laser Communications Demonstration (LLCD). The LLCD will pass optical signals to earth at speeds rivaling terrestrial high-speed fiber-optic data rates. If the demonstration is successful, the LLCD may be deployed to relay mission data as well and could lead to the eventual obsolescence of radio signals for future space missions.

DUNMORE's electrostatic dissipative films were used throughout the construction of the spacecraft to protect four key science payloads. In addition to the LLCD, an Ultraviolet and Visible Light Spectrometer (UVS), a Lunar Dust Experiment (LDEX) and a Neutral Mass Spectrometer (NMS) will collectively analyze the composition of the lunar atmosphere and the lunar dust it contains. DUNMORE's ESD films were used during construction to protect against contamination and damage due to unwanted static and triboelectric charges. DUNMORE's [polyimide films](#), layered together to manufacture [multi-layered insulation](#) blankets protect the NMS and UVS as well as various flight systems from the rigors of extreme temperatures in space.

The LADEE mission is not only characterized by a first-ever reusable robotic spacecraft design, an entirely new laser communication technology and the smallest budget yet achieved for a lunar flight, but it also connects the Ames, Goddard and Wallops Centers together in a cooperative venture that promises to become a model for future missions.

About DUNMORE

DUNMORE Corporation is a global supplier of engineered [coated and laminated films](#). DUNMORE offers film conversion services such as coating, metallizing and laminating along with contract film manufacturing. DUNMORE produces coated film, metallized film and laminating film substrates for the aerospace, photovoltaic, graphic arts, packaging, insulation, surfacing and fashion industries. DUNMORE is privately held, ISO 9001:2008 and OSHA VPP Star certified. For complete information on DUNMORE's products, services and industries served, please visit DUNMORE's website <http://www.dunmore.com/>.

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