

Mars Exploration Rover

On each Mars Exploration Rover, the core structure is made of composite honeycomb material insulated with a high tech material called aerogel. This core body, called the warm electronics box, is topped with a triangular surface called the rover equipment deck. The deck is populated with three antennas, a camera mast and a panel of solar cells. Additional solar panels are connected by hinges to the edges of the triangle. The solar panels fold up to fit inside the lander for the trip to Mars and deploy to form a total area of 1.3 square meters (14 square feet) of three layer photovoltaic cells. Each layer is made of different materials: gallium indium phosphorus, gallium arsenide and germanium. The array can produce nearly 900 watt hours of energy per Martian day, or sol. However, by the end of the 90-sol mission, the energy-generating capability is reduced to about 600 watt hours per sol because of accumulating dust and the change in season. The solar array repeatedly recharges two lithium ion batteries inside the warm electronics box.

Source: Mars Exploration Rover Landings (January 2004)

<http://mars.jpl.nasa.gov/newsroom/pressreleases/pressreleases2004.html>