# Space Rover Stats

## Curiosity

Size: 3m long

Power: 110W from plutonium-238

Expected Operating Time: 687 Earth Days

<http://www.jpl.nasa.gov/news/fact_sheets/mars-science-laboratory.pdf>

## Spirit & Opportunity

Size: 1.5m x 2.3m x 1.6m

Weight: 180kg

Power: 140W from fully illuminated solar arrays (Need 100W to move)

Have 2 8Ah rechargeable lithium ion batteries (11-16V each)

Operating Temperature: -40°C - 40°C

Average Mars temps: Day: 22°C Night: -99°C

Rover uses insulation, special paint, and heaters to survive cold nights

Operating Time: Spirit: 6/10/03 – 3/22/10 Opportunity: 7/7/03 - Present

<http://mars.nasa.gov/mer/mission/spacecraft_surface_rover.html>

<http://en.wikipedia.org/wiki/Mars_Exploration_Rover>

<http://mars.nasa.gov/mer/technology/bb_power.html>

<http://hobbiton.thisside.net/rovermanual/>

## Calculations:

8Ah \*12V = 96Wh -> Batteries power moving rover for roughly 2 hours

-> Batteries fully charge in roughly 1.4 hours in direct sunlight