



User Guide – Battery Usage (Current Draw)

Summary:

This information is intended to assist owners/buyers understand more about battery power used by a National Luna fridge or freezer. With the modern technology in variable speed compressors and controllers it is no longer possible to provide a single answer to the question – **“how much power does it use?”**

Now we have to refer to average compressor running power use and overall amp/hours in specified tests. Rarely do test cycles perfectly replicate the usage you may be giving your fridge.

Some of the variables include:

1. Outside temperature – during the day and then overnight
2. Where the fridge is located in your vehicle – direct sunlight, air conditioning on, etc.
3. Selected temperature you choose to run your fridge/freezer
4. How often and for how long you open the lid
5. How much warm food/drink you introduce, AND, when you introduce it

National Luna use the highest standards of insulation, door seals, efficient cool plate design, digital thermostats and other design criteria to keep compressor cycle times low and ensure overall battery consumption for given conditions is the best possible.

Danfoss Variable Speed Optimized Compressor

Danfoss BD35F variable speed compressors have been fitted to all National Luna models since early 2009. The variable speed nature of these compressors makes it very difficult to specify exact power usage, as with each change in speed the current also changes. It is best to think in terms of average power consumption as this better suits planning of battery capacity and duration.

The variable speed function optimizes performance and whilst in certain conditions for a short time it will use more amps than a fixed speed compressor – the higher speed will ensure the compressor runs for a shorter time to achieve better cooling performance with lower overall power usage than older technology. It also ensures performance reserves for very demanding conditions.

Terminology:

Compressor Average Current Draw - 2.5amps is the figure quoted for all National Luna models.

Actual instant current draw can range from 1.5amps to 6.5 amps (on 12v). Rarely does the compressor run at the highest speed for other than short periods.

Amp/Hour – This indicates the amps used per hour as an overall average for the specified test criteria and time frame. Where practical we provide a 24hr amp/hour rating showing the battery storage consumed over a full 24hr period with the fridge operating in the test cycle described.

Examples:

- 1.5 amp/hour would mean the equivalent of 1.5amp power draw for one hour
- 36 amp/hr for a 24hr test cycle would mean the total power used for one full day