Powering Portable Refrigerators

Over the past few years there have been some tremendous advances in portable fridge technology. This primer gives you some info on ways to power them when you are out and about.

For most people, the decision on how to power a portable fridge will depend on how much gear and weight you can carry, and how long you will be away from 240v mains or vehicle power.

All our portable fridges can be powered by 12v, either by the included cigarette lead connected to a vehicle or cigarette socket in a battery box, by an optional high-current (Anderson-type) lead **GH1615** that can be connected to a battery box, or by an optional **GH1628** 240v mains adapter.



Some of our fridges can accommodate an internal battery and have a solar panel connected directly to them, to minimize weight and maximize portability.


As there are a few different battery types, we will cover some working combinations to suit different use-cases.

Lightest weight for one-day use:

If you just want to keep stuff cool for a day, consider our battery-powered fridges that can take an optional internal Lithium battery and optional solar panel. The batteries weigh less than 1Kg, are stored in the fridge, and the solar panels are under 4Kg, and just 50cmx50cm in size when folded.


The fridge charges the internal fridge batteries whenever the fridge is connected to external power (100w Solar Panel, 12v, or 240v mains power). Your vehicle can charge the internal battery and power the fridge on the drive to the campsite, and the fridge will keep running on the internal battery when you unplug it from the vehicle.

GH2049 5.2Ah

GH2051 7.8Ah

GH2053 15.6Ah

The batteries are available in different capacities, with run times from 1-2 hours (cheapest) to 5-6 hours (more expensive). The run-time depends on how low a temperature you set the fridge to, as the compressor will have to run more frequently when the fridge is set to below-zero temperatures.

You can extend the run time of the internal battery by connecting a **GH2015** 100w solar panel directly to a solar-compatible fridge. The panel can keep an already-chilled fridge running during the day.

The solar panel carry handles can be easily slung over a fridge tow-handle for transport.

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Long run time/off-grid/cheapest:

The hardware listed below will allow you to run a portable fridge of any type off-grid indefinitely, provided the sun is shining! Total cost is roughly the same as the **GH2053** 15.6Ah internal fridge battery and **GH2015** solar panel hardware, and provides a much longer run time, for a higher weight penalty.

PWM 20 Charge controller with High input leads
MP3772

Rovin 12V 160W Folding Solar Panel
ZM9183

Powertech Battery Box with Power Accessories
HB8504

12V 100Ah AGM Deep Cycle Battery V2
SB2560

This setup will have excess power available for other 12v equipment, such as 240v inverters to power mains devices. The solar panels should output at least twice the current draw of a running fridge during good sunlight hours.

The battery box has USB ports to charge portable devices and all connections are plug-n-play, via robust high-current 50Amp connectors.

This setup is fairly heavy and you may require a camping tow-trolley to transport it to your camping spot – the 12v battery + box will be ~30Kg, and the solar panels and charge controller will be another ~12Kg. The solar panel kit is 70x70cm in size when folded.

Longest run time/off-grid:

Change out the **SB2560** AGM Lead-Acid battery in the previous hardware list for a **SB2216** Lithium 120Ah 12.8v battery and you will save nearly 17kg in weight to cart around, as well as extending the run time of the setup, albeit for a higher purchase cost.

12.8V 120Ah Lithium Deep Cycle Battery
SB2216

PWM 20A Solar Charge Controller with high-current connector leads
MP3772

Rovin 12V 160W Folding Solar Panel
ZM9183

Powertech Battery Box with Power Accessories
HB8504

You will be able to power any portable fridge indefinitely in good sunlight with this hardware, and provide up to 50Amps of continuous power to other devices, such as 240v mains inverters.

The battery + box will weigh under 14Kg, and the solar panels and charge controller will be another ~12Kg, so you should be able to carry both of them by their handles.

The Lithium battery in this setup can also be discharged more deeply than the **SB2560** AGM battery, which is recommended to discharge no more than 60% between charges.

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