FR100 Brochure and Design Guide

DC Chest Refrigerator/Freezer for off-grid homes, cabins and mobile merchants

Maximum Efficiency

- Direct DC operation eliminates wasted inverter energy
- Chest-style design and extra-thick insulation keeps the cold in and reduces compressor run time

Flexible

- Can be powered with a 12 or 24 V battery (auto detection)
- Wide temperature thermostat allows every unit to run as a refrigerator or freezer (temperature setting is defined by user)

Low-Maintenance

- Maintenance free, brushless DC compressor
- Low-frost system reduces formation of condensation and ice
- Sturdy integrated handle

Simple Design

- Direct DC operation from battery, no costly inverter required
- Lock on lid standard
- Environmentally-friendly refrigerant

Technical Data

Type	**FR100**
System Voltage	12 / 24 V auto recognition
Temperature Range	-18* to +8 °C / -0.4* to +46.4 °F
PV Panel Size	70 W
Energy Consumption at +21 °C / +70 °F	108 Wh / day (fridge**), 553 Wh / day (deep-freezer**)
Energy Consumption at +32 °C / +90 °F	181 Wh / day (fridge**), 659 Wh / day (deep-freezer**)
Content (Net Capacity)	104 L
Refrigerant	R600a
Ambient Temperature	+10 to +43 °C / +50 to +104 °F
Door Type	Top opening
Cabinet Dimensions (WxHxD)	685 x 850 x 590 mm / 27 x 33.5 x 23.2 in
Inner Dimensions (WxHxD)	505 x 640 x 375 mm / 19.9 x 25.2 x 14.8 in
Battery Compartment Dimensions (WxHxD)	n/a
Weight	29 kg / 64 lbs
Warranty	2 years

* Up to +38 °C / +100 °F ambient temperature.
** Measured at +8 °C / +46.4 °F (fridge) and -18 °C / -0.4 °F (deep-freezer) temperatures.

Applications

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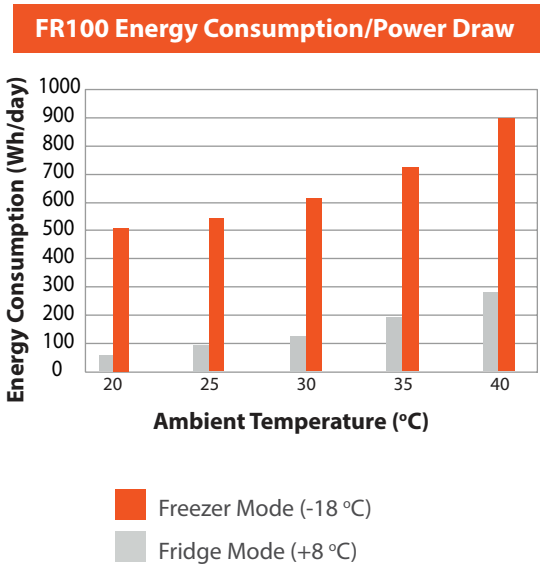
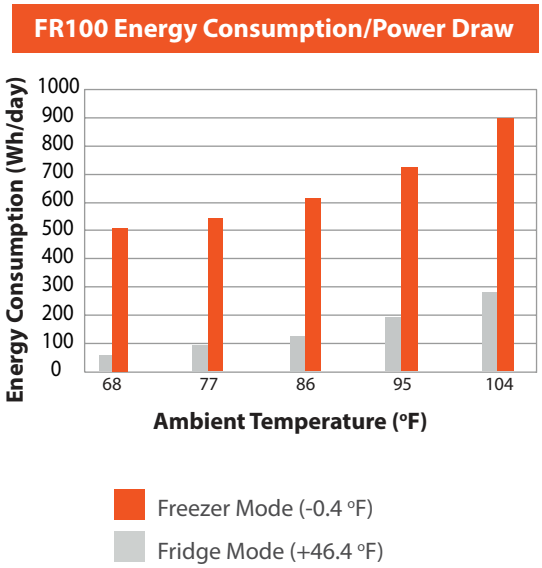
Version: 2019-11-19

Design your FR100 system in 3 easy steps

1 Use the ambient temperature (°C/°F) to determine the estimated power draw of your refrigerator/freezer system*





2 Using your estimated power draw value, find the recommended solar array from the chart below (assuming a solar irradiation of >3 kWh/m²/day)*

Power Draw (Wh/Day)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
Recommended Solar Array (Wp)	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450

3 Determine the recommended battery capacity for your system using the solar array value suggested above*

Solar Array (Wp)	50	75	100	125	150	175	200	225	250	275	300	325
Battery Capacity (Ah)	50	100	150	150	200	250	300	350	400	450	550	600

Disclaimer: This guide should be used as an estimation tool. Location parameters, array tilt, & azimuth should be factors when finalizing a solar system design.

**Data per standard ASHRE test conditions: Constant ambient temperature with no product inside and no door openings. Energy usage will increase when adding warm product or repeated door openings. Increasing the solar array size and battery storage may be required for each consumer's specific applications.*

Version: 2019-11-19