



FR Series 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

Simple Design

- Built-in battery compartment and controller mounting area
- Direct DC operation, no costly inverter required

Applications



Technical Data

Type	FR170MP	FR240MP
System Voltage	12/24 V auto recognition	
Temperature Range	-12 °C* to +6 °C	
PV Panel Size (typ. max.)	80/160W	100/200W
Energy Consumption at 70 °F/21 °C	97 Wh/day (fridge), 296 Wh/day (freezer)	104 Wh/day (fridge), 398 Wh/day (freezer)
Energy Consumption at 90 °F/32 °C	166 Wh/day (fridge), 440 Wh/day (freezer)	218 Wh/day (fridge), 552 Wh/day (freezer)
Content (Capacity)	170 L	240 L
Refrigerant	R-134a	
Door Type	Top opening	
Color	White	
Cabinet Dimensions (WxHxD)	914 x 755 x 680 mm / 36 x 29.7 x 26.8 in	1145 x 850 x 690 mm / 45 x 33.5 x 27.2 in
Inner Dimensions (WxHxD)	671 x 670 x 436 mm/ 26.4 x 26.4 x 17.2 in	900 x 671 x 440 mm/ 35.4 x 26.4 x 17.3 in
Battery Compartment Dimensions (WxHxD)	250 x 200 x 220 mm/ 9.8 x 7.9 x 8.7 in	
Ambient Temperature	10 to 43 °C**	
Wheels	On request***	
Weight	50 kg / 110 lbs (without package and pallet)	57.5 kg / 126.8 lbs (without package and pallet)
Warranty	5 years	

*Up to 38 °C ambient temperature.

**It is recommended to keep the fridge/freezer at maximum 32 °C ambient temperature or below.

***Extra costs may apply. Available in container quantity orders shipping EXW factory.

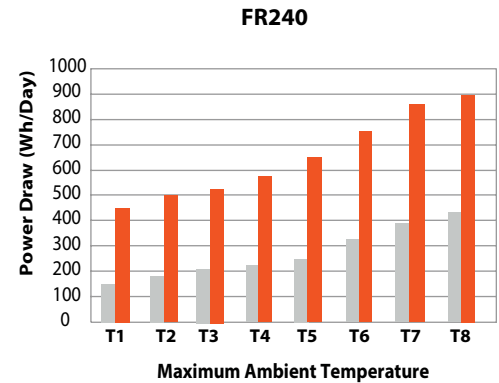
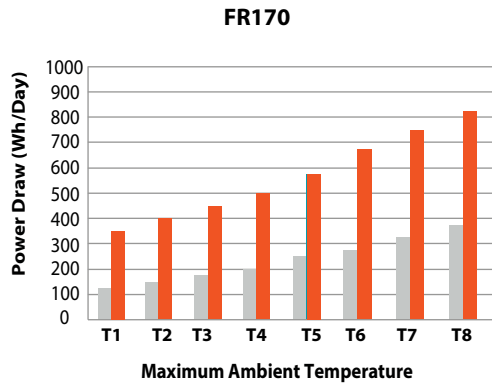


Design your FR Series system in 3 easy steps

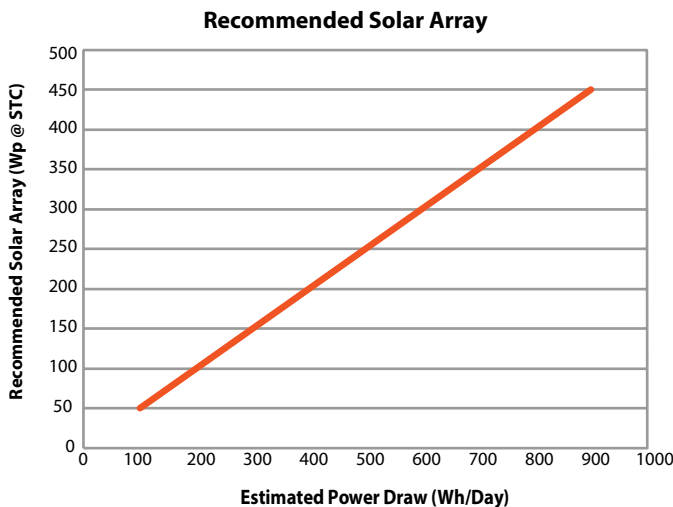
1 Use the location temperature range to determine the estimated power draw of your refrigerator/freezer system

- Used as freezer
- Used as refrigerator

T1	70-74 °F	21-23.5 °C
T2	75-79 °F	42-26 °C
T3	80-84 °F	26.5-29 °C
T4	85-89 °F	29.5-31.5 °C
T5	90-94 °F	32-34.5 °C
T6	95-99 °F	35-37.5 °C
T7	100-104 °F	38-40 °C



2 Using your estimated power draw value, find the recommended solar array from the chart or graph below



Power Draw	Recommended Solar Array
100 Wh/Day	50 Wp
150 Wh/Day	75 Wp
200 Wh/Day	100 Wp
250 Wh/Day	125 Wp
300 Wh/Day	150 Wp
350 Wh/Day	175 Wp
400 Wh/Day	200 Wp
450 Wh/Day	225 Wp
500 Wh/Day	250 Wp

Power Draw	Recommended Solar Array
550 Wh/Day	275 Wp
600 Wh/Day	300 Wp
650 Wh/Day	325 Wp
700 Wh/Day	350 Wp
750 Wh/Day	375 Wp
800 Wh/Day	400 Wp
850 Wh/Day	425 Wp
900 Wh/Day	450 Wp

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 also be factors when finalizing a solar system design.