

Global LEAP Awards

2019 Buyer's Guide for Outstanding Off-Grid Refrigerators



The Global LEAP Awards Buyer's Guide

The Global LEAP Awards Buyer's Guide is a catalog of the world's best off-grid appliances. This edition contains information about off-grid refrigerators that were named Winners and Finalists in the 2019 Global LEAP Awards. The Buyer's Guide serves as a procurement tool for off-grid solar companies and distributors, and provides general market intelligence to other interested stakeholders. It includes rated product specifications, performance metrics based on laboratory testing, and sales contact information.

The Global LEAP Awards identify one Winner as the best overall product nominated for each size and form factor-based category, with other high-quality products in that category identified as Finalists. The 2019 Global LEAP Awards Off-Grid Refrigerator Buyer's Guide lists twenty-one refrigerators and refrigerator-freezer combination units intended for use with off-grid energy systems.

The Global LEAP Awards

The Global LEAP Awards – an initiative of the Efficiency for Access Coalition with support from UK aid and Power Africa – is an international competition that identifies and promotes the world's best, most energy-efficient off-grid appliances and equipment.

High-quality, energy-efficient appliances ensure that un- and under-electrified households and businesses can make the most out of off-grid energy. The Global LEAP Awards incentivize innovation and send the off-grid market clear and actionable signals about appliance quality, energy efficiency, and appropriateness of design and functionality.

All Global LEAP Awards Winners and Finalists undergo testing in accredited laboratories for their energy performance, quality, and reliability, and an evaluation by a panel of off-grid market experts. The products recognized by the Global LEAP Awards offer a strong balance of price, energy efficiency, performance, and reliability.

Global LEAP Awards Winners and Finalists are eligible for results-based financing that drives large-scale procurement and distribution of best-in-class off-grid appliances in key off-grid markets. Further details are available at www.globalleapawards.org/results-based-financing.

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The 2019 Global LEAP Awards Off-Grid Refrigerator Competition

Refrigerators hold a unique potential to unlock economic and social progress for the billions of un- and under-electrified people globally. Refrigeration provides a wide range of benefits, from improving human health and productivity, to reducing the domestic burden on women and children. However, refrigerators are one of the most challenging off-grid appliances to design and develop to be both energy efficient and cost-effective.

The 2017 Global LEAP Awards Off-Grid Refrigerator competition enabled the first rigorous technical assessment of off-grid refrigerator technology. The aim of the second round in 2019 was to provide updated information on product performance, energy efficiency, and quality for the rapidly evolving off-grid refrigeration market.

Addressing the Affordability Gap

While off-grid refrigeration has the potential to transform people's lives, very few customers can currently afford today's best-in-class technology. To help address this challenge, the 2019 Off-Grid Refrigerator Competition included the Global LEAP Awards' first-ever innovation prizes focused on affordability, sponsored by UK aid.

The **Consumer Affordability Prize**, for commercial innovations that make it easier for customers to purchase products, was awarded to Devidayal Solar Inc. Devidayal is investing in improvements to their logistics and after-sales services as well as providing new financing options for rural customers, which together will drive down the overall cost of their products.

The **Unit Cost Affordability Prize**, for technical innovations that reduce the cost to manufacture products, was awarded to Youmma for ongoing R&D focused on driving continued efficiency gains in the compressors and inverters used in their products, as well as exploring local assembly via partnerships with manufacturers in their target markets.

Each company will receive a £50,000 cash prize.



The Importance of Off-Grid Appliance Quality Assurance

Confidence in product quality is essential to the development of the off-grid and productive use appliance markets. As these markets grow, the threat of low-quality, inefficient products eroding consumer confidence grows with it as stories of experiences with inferior products can spread quickly in off-grid communities.

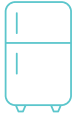
More importantly, off-grid populations are typically among the world's poorest people. A small off-grid energy system and the appliances and equipment it powers represent one of the biggest purchases these households and businesses will ever make.

The Global LEAP Awards helps ensure that these consumers have access to best-in-class products by providing clear and actionable data to the global off-grid market about appliance quality and performance.

The Importance of Off-Grid Appliance Super-Efficiency

Super-efficient off-grid appliances offer greater service. A 60Wp solar module and a 30Ah battery can power a 25W incandescent bulb for 6 hours each day, but the same system can power a super-efficient 50 litre refrigerator for 24 hours. This expanded service enhances consumer demand. Super-efficiency can also enable sales by reducing system cost. Most of the cost of off-grid energy is attributable to energy supply-related equipment like solar PV and batteries.

Super-efficient off-grid appliances can reduce the need for energy supply investment, lowering prices and opening up vast new markets of consumers who could otherwise not afford off-grid energy services. In other words, by providing greater service and greater cost-effectiveness, super-efficient appliances help off-grid clean energy companies serve more customers.



EXPLANATION OF INFORMATION INCLUDED FOR EACH PRODUCT

To help readers understand the information included for each product in the Buyer's Guide, this page provides explanations of the product details, rated specifications, and laboratory test results for refrigerators.

Product Model Number	Identifies the specific product model
Total Volume (L)	Measured total volume of the interior of the product (combines refrigerator and freezer compartments for refrigerator-freezer combination units), based on laboratory testing
Freezing Compartment Volume (L)	Measured volume of the interior of the freezer compartment (<i>only applicable to refrigerator-freezer combination units</i>), based on laboratory testing
Inrush Current (A)	Measured peak starting current when the refrigerator compressor starts running, based on laboratory testing
Daily Energy Consumption at 32°C (kWh/day)	Energy consumption of the product in steady state operation at 32°C ambient temperature, based on laboratory testing
Pull Down Time (hours)	Time that the product took to cool down from 32°C to 8°C, based on laboratory testing
Autonomy (hours)	Time that the product's compartment stayed within a 8 degree temperature rise (from 4°C to 12°C or 8°C to 16°C), with no external power supply, at 32°C ambient temperature, based on laboratory testing
Water Bottle Freezing Performance (hours to reach -6°C)	Time that the product took to freeze a specific amount of 500ml water bottles at ambient temperature of 32°C (<i>only applicable to refrigerator-freezer combination units</i>), based on laboratory testing
Refrigerant(s)	Type of refrigerant(s) contained in the product, as declared by manufacturer
Phase Change Material Included (yes/no)	Indicates whether the product contains phase change materials, as declared by manufacturer
Product Weight (kg)	Weight of the product, as declared by manufacturer
Product Dimension d*w*h (cm)	External measurements (depth*width*height) of the product, as declared by manufacturer
Power Supply as Shipped	Indicates type of electric current that the product operates with, e.g. AC, DC, or both
Declared Operating Voltage Range	Safe operating voltage range, as declared by manufacturer
Declared Daily Energy Consumption (kWh/day)	Daily energy consumption of product, as declared by manufacturer, measured at indicated ambient temperature condition
Recommended PV Panel Capacity (Wp)	Recommended PV panel capacity to power the product, as declared by manufacture
Recommended Battery Capacity (Ah)	Recommended battery capacity to power the product, as declared by manufacture
Price Index within Category (\$ - \$\$\$\$)	The price index represents the product's FOB price relative to the category's average FOB price: \$\$\$\$: >40% more expensive than average \$\$\$: <40% more expensive than average \$\$: <40% less expensive than average \$: >40% less expensive than average

DISCLAIMER

The Global LEAP Awards, and associated partners and agents make no claims about the quality, energy performance, or off-grid appropriateness of any product not listed here. The inclusion in this Guide of a manufacturer's product should not be construed as an endorsement of that manufacturer or of its entire product line.

Global LEAP made every effort to provide transparent and accurate testing results for the product performance metrics included in the Buyer's Guide. The performance data included here is the result of testing randomly selected product samples at ISO/IEC-accredited test laboratories. Product performance may vary based on different product configuration, test environments or other factors. Products were tested in "as shipped" mode.

Data used in the Buyer's Guide should only serve as an indication of product performance. Bulk purchasers considering appliance products are strongly encouraged to request detailed test results from manufacturers and/or conduct independent testing. For guidance on how to interpret the data included here, or on identifying appropriate test laboratories and test methods, please contact Global LEAP.

Youmma NILO 50

Small Refrigerator

WINNER

SPECIFICATIONS

Product Model Number	NILO 50
Total Volume (L)	42
Inrush Current (A)	1.1
Daily Energy Consumption at 32°C (kWh/day)	0.143
Pull Down Time (hours)	0.84
Autonomy (hours)	1.02
Refrigerant(s)	R600a
Phase Change Material Included (yes/no)	No
Product Weight (kg)	16.5
Product Dimension d*w*h (cm)	47*44*49
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	9-16
Declared Daily Energy Consumption (kWh/day)	0.15*
Recommended PV Panel Capacity (Wp)	60
Recommended Battery Capacity (Ah)	14
Price Index within Category (\$ - \$\$\$\$)	\$\$

* Ambient temperature at which the manufacturer tested product: 32°C



Amped Innovation WOWSolar EasyFreeze

Small Refrigerator

FINALIST



SPECIFICATIONS

Product Model Number	WOWSolar EasyFreeze
Total Volume (L)	16
Inrush Current (A)	3.6
Daily Energy Consumption at 32°C (kWh/day)	0.376
Pull Down Time (hours)	0.44
Autonomy (hours)	0.47
Refrigerant(s)	R134a
Phase Change Material Included (yes/no)	Yes
Product Weight (kg)	8.7
Product Dimension d*w*h (cm)	32*59*25
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	11-14
Declared Daily Energy Consumption (kWh/day)	0.2
Recommended PV Panel Capacity (Wp)	80
Recommended Battery Capacity (Ah)	6
Price Index within Category (\$ - \$\$\$\$)	\$



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SolarNow DC-35P

Small Refrigerator

FINALIST

SPECIFICATIONS

Product Model Number	DC-35P
Total Volume (L)	32
Inrush Current (A)	3.9
Daily Energy Consumption at 32°C (kWh/day)	0.199
Pull Down Time (hours)	0.54
Autonomy (hours)	0.78
Refrigerant(s)	R134a
Phase Change Material Included (yes/no)	No
Product Weight (kg)	18
Product Dimension d*w*h (cm)	55*34.5*49.5
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	12
Declared Daily Energy Consumption (kWh/day)	0.24
Recommended PV Panel Capacity (Wp)	100
Recommended Battery Capacity (Ah)	80
Price Index within Category (\$ - \$\$\$\$)	\$\$\$



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SunDanzer DCR50A

Small Refrigerator



SPECIFICATIONS

Product Model Number	DCR50A
Total Volume (L)	42
Inrush Current (A)	5.1
Daily Energy Consumption at 32°C (kWh/day)	0.173
Pull Down Time (hours)	0.63
Autonomy (hours)	1.72
Refrigerant(s)	R134a or R600a
Phase Change Material Included (yes/no)	No
Product Weight (kg)	31
Product Dimension d*w*h (cm)	63.5*68*79
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	10-31
Declared Daily Energy Consumption (kWh/day)	0.14*
Recommended PV Panel Capacity (Wp)	60
Recommended Battery Capacity (Ah)	20
Price Index within Category (\$ - \$\$\$\$)	\$\$

* Ambient temperature at which the manufacturer tested product: 32°C



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Youmma NILO 100

Medium Refrigerator

WINNER

SPECIFICATIONS

Product Model Number	NILO 100
Total Volume (L)	96
Inrush Current (A)	1.5
Daily Energy Consumption at 32°C (kWh/day)	0.182
Pull Down Time (hours)	1.04
Autonomy (hours)	1.38
Refrigerant(s)	R600a
Phase Change Material Included (yes/no)	No
Product Weight (kg)	23
Product Dimension d*w*h (cm)	52*47*84.5
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	9-16
Declared Daily Energy Consumption (kWh/day)	0.2*
Recommended PV Panel Capacity (Wp)	80
Recommended Battery Capacity (Ah)	22
Price Index within Category (\$ - \$\$\$\$)	\$\$

* Ambient temperature at which the manufacturer tested product: 32°C



Devidayal DDSF-100

Medium Refrigerator



SPECIFICATIONS

Product Model Number	DDSF-100
Total Volume (L)	86
Inrush Current (A)	8.6
Daily Energy Consumption at 32°C (kWh/day)	0.329
Pull Down Time (hours)	0.44
Autonomy (hours)	1.49
Refrigerant(s)	R134a
Phase Change Material Included (yes/no)	No
Product Weight (kg)	30
Product Dimension d*w*h (cm)	60.5*54*83.5
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	12-24
Declared Daily Energy Consumption (kWh/day)	0.6*
Recommended PV Panel Capacity (Wp)	200
Recommended Battery Capacity (Ah)	100
Price Index within Category (\$ - \$\$\$\$)	\$\$\$

* Ambient temperature at which the manufacturer tested product: 32°C



Winner of the Consumer
Affordability Prize

Company Devidayal Solar Solutions Pvt Ltd
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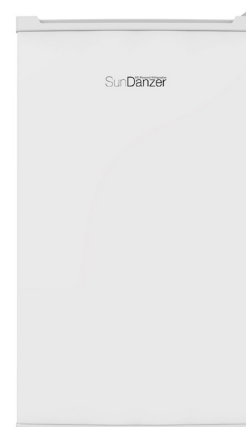
SunDanzer DCR105L

Medium Refrigerator

FINALIST

SPECIFICATIONS

Product Model Number	DCR105L
Total Volume (L)	84
Inrush Current (A)	4.1
Daily Energy Consumption at 32°C (kWh/day)	0.787
Pull Down Time (hours)	0.76
Autonomy (hours)	1.10
Refrigerant(s)	R134a or R600a
Phase Change Material Included (yes/no)	No
Product Weight (kg)	29
Product Dimension d*w*h (cm)	53*48.5*84
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	10-31
Declared Daily Energy Consumption (kWh/day)	0.8
Recommended PV Panel Capacity (Wp)	120
Recommended Battery Capacity (Ah)	40
Price Index within Category (\$ - \$\$\$\$)	\$\$



Steca PF166-H

Large Refrigerator

WINNER



SPECIFICATIONS

Product Model Number	PF166-H
Total Volume (L)	173
Inrush Current (A)	5.1
Daily Energy Consumption at 32°C (kWh/day)	0.164
Pull Down Time (hours)	0.66
Autonomy (hours)	2.86
Refrigerant(s)	R290
Phase Change Material Included (yes/no)	No
Product Weight (kg)	47
Product Dimension d*w*h (cm)	76.5*88.5*92.5
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	10-31.5
Declared Daily Energy Consumption (kWh/day)	0.087*
Recommended PV Panel Capacity (Wp)	70
Recommended Battery Capacity (Ah)	80
Price Index within Category (\$ - \$\$\$\$)	\$\$

* Ambient temperature at which the manufacturer tested product: 25°C



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Palfridge LC221

Large Refrigerator

FINALIST

SPECIFICATIONS

Product Model Number	LC221
Total Volume (L)	192
Inrush Current (A)	4.2
Daily Energy Consumption at 32°C (kWh/day)	0.510
Pull Down Time (hours)	6.22
Autonomy (hours)	8.18
Refrigerant(s)	R600a
Phase Change Material Included (yes/no)	Yes
Product Weight (kg)	53
Product Dimension d*w*h (cm)	64*80.5*86.5
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	10-45
Declared Daily Energy Consumption (kWh/day)	0.536*
Recommended PV Panel Capacity (Wp)	180
Recommended Battery Capacity (Ah)	Not declared
Price Index within Category (\$ - \$\$\$\$)	\$\$\$

* Ambient temperature at which the manufacturer tested product: 43°C



**THE FRIDGE
FACTORY**

Company Palfridge Ltd (t/a The Fridge Factory)
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Email design@palfridge.com
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Phocos FR170 MP

Large Refrigerator



SPECIFICATIONS

Product Model Number	FR170 MP
Total Volume (L)	173
Inrush Current (A)	4
Daily Energy Consumption at 32°C (kWh/day)	0.283
Pull Down Time (hours)	0.68
Autonomy (hours)	2.05
Refrigerant(s)	R134a
Phase Change Material Included (yes/no)	No
Product Weight (kg)	50
Product Dimension d*w*h (cm)	68*91.4*75.5
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	10-45
Declared Daily Energy Consumption (kWh/day)	0.097*
Recommended PV Panel Capacity (Wp)	80-160
Recommended Battery Capacity (Ah)	Not declared
Price Index within Category (\$ - \$\$\$\$)	\$\$

* Ambient temperature at which the manufacturer tested product: 21°C



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Phocos FR240 MP

Large Refrigerator

FINALIST

SPECIFICATIONS

Product Model Number	FR240 MP
Total Volume (L)	237
Inrush Current (A)	5.8
Daily Energy Consumption at 32°C (kWh/day)	0.313
Pull Down Time (hours)	0.83
Autonomy (hours)	2.50
Refrigerant(s)	R134a
Phase Change Material Included (yes/no)	No
Product Weight (kg)	70
Product Dimension d*w*h (cm)	69*114.5*85
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	10-45
Declared Daily Energy Consumption (kWh/day)	0.104*
Recommended PV Panel Capacity (Wp)	100-200
Recommended Battery Capacity (Ah)	Not declared
Price Index within Category (\$ - \$\$\$\$)	\$\$

* Ambient temperature at which the manufacturer tested product: 21°C



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SolarNow DC-112F

Large Refrigerator

FINALIST



SPECIFICATIONS

Product Model Number	DC-112F
Total Volume (L)	113
Inrush Current (A)	5.2
Daily Energy Consumption at 32°C (kWh/day)	0.420
Pull Down Time (hours)	0.71
Autonomy (hours)	1.00
Refrigerant(s)	R134a
Phase Change Material Included (yes/no)	No
Product Weight (kg)	29.5
Product Dimension d*w*h (cm)	45.5*90*71
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	11-14
Declared Daily Energy Consumption (kWh/day)	0.36*
Recommended PV Panel Capacity (Wp)	150
Recommended Battery Capacity (Ah)	120
Price Index within Category (\$ - \$\$\$\$)	\$\$\$

* Ambient temperature at which the manufacturer tested product: 25°C



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C4P Inc. C4P7.4SRVR

Refrigerator-Freezer Combination Unit

WINNER

SPECIFICATIONS

Product Model Number	C4P7.4SRVR
Total Volume (L)	209
Freezing Compartment Volume (L)	47
Inrush Current (A)	6.7
Daily Energy Consumption at 32°C (kWh/day)	1.091
Pull Down Time (hours)	2.54
Autonomy (hours)	1.95
Water Bottle Freezing Performance (hours to reach -6°C)	7.25
Refrigerant(s)	R134a
Phase Change Material Included (yes/no)	Yes
Product Weight (kg)	43
Product Dimension d*w*h (cm)	47*39*82
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	10.9-17, 22.7-31.5
Declared Daily Energy Consumption (kWh/day)	0.57*
Recommended PV Panel Capacity (Wp)	230
Recommended Battery Capacity (Ah)	420
Price Index within Category (\$ - \$\$\$\$)	\$\$

* Ambient temperature at which the manufacturer tested product: 21°C



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Hangzhou HN67DC

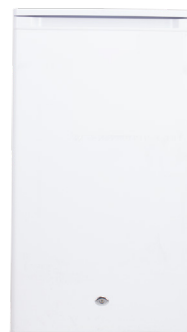
Refrigerator-Freezer Combination Unit



SPECIFICATIONS

Product Model Number	HN67DC
Total Volume (L)	80
Freezing Compartment Volume (L)	10
Inrush Current (A)	3.7
Daily Energy Consumption at 32°C (kWh/day)	0.526
Pull Down Time (hours)	1.06
Autonomy (hours)	1
Water Bottle Freezing Performance (hours to reach -6°C)	21.72
Refrigerant(s)	R134a
Phase Change Material Included (yes/no)	No
Product Weight (kg)	21
Product Dimension d*w*h (cm)	47*39*82
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	10.5-17
Declared Daily Energy Consumption (kWh/day)	0.36*
Recommended PV Panel Capacity (Wp)	100
Recommended Battery Capacity (Ah)	50
Price Index within Category (\$ - \$\$\$\$)	\$\$

* Ambient temperature at which the manufacturer tested product: 25°C



hinnova®

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Hinnova BCD-85

Refrigerator-Freezer Combination Unit

FINALIST

SPECIFICATIONS

Product Model Number	BCD-85
Total Volume (L)	83
Freezing Compartment Volume (L)	25
Inrush Current (A)	6.3
Daily Energy Consumption at 32°C (kWh/day)	1.174
Pull Down Time (hours)	2.23
Autonomy (hours)	1.38
Water Bottle Freezing Performance (hours to reach -6°C)	8.1
Refrigerant(s)	R134a
Phase Change Material Included (yes/no)	No
Product Weight (kg)	23
Product Dimension d*w*h (cm)	50.5*48*85.5
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	10.5-17
Declared Daily Energy Consumption (kWh/day)	0.45*
Recommended PV Panel Capacity (Wp)	150
Recommended Battery Capacity (Ah)	70
Price Index within Category (\$ - \$\$\$)	\$\$

* Ambient temperature at which the manufacturer tested product: 25°C



hinnova®

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Palfridge LC78

Refrigerator-Freezer Combination Unit



SPECIFICATIONS

Product Model Number	LC78
Total Volume (L)	214
Freezing Compartment Volume (L)	96
Inrush Current (A)	4.6
Daily Energy Consumption at 32°C (kWh/day)	0.578
Pull Down Time (hours)	2.29
Autonomy (hours)	2.12
Water Bottle Freezing Performance (hours to reach -6°C)	24.24
Refrigerant(s)	R600a
Phase Change Material Included (yes/no)	Yes
Product Weight (kg)	45.5
Product Dimension d*w*h (cm)	45*45*82
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	10-45
Declared Daily Energy Consumption (kWh/day)	0.62*
Recommended PV Panel Capacity (Wp)	180
Recommended Battery Capacity (Ah)	Not declared
Price Index within Category (\$ - \$\$\$\$)	\$\$\$

* Ambient temperature at which the manufacturer tested product: 43°C



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SunDanzer BFR29

Solar Direct Drive Refrigerator

WINNER

SPECIFICATIONS

Product Model Number	BFR29
Total Volume (L)	36*
Inrush Current (A)	3.5
Daily Energy Consumption at 32°C (kWh/day)	0.167
Pull Down Time (hours)	6.43
Autonomy (hours)	133.09
Refrigerant(s)	R134a or R600a
Phase Change Material Included (yes/no)	Yes
Product Weight (kg)	32
Product Dimension d*w*h (cm)	59*67*77.5
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	12-22
Declared Daily Energy Consumption (kWh/day)	0.16**
Recommended PV Panel Capacity (Wp)	150
Price Index within Category (\$ - \$\$\$\$)	\$

* with ice packs

** Ambient temperature at which the manufacturer tested product: 32°C



FRIGOGLASS Solar 200

Solar Direct Drive Refrigerator

FINALIST



SPECIFICATIONS

Product Model Number	Solar 200
Total Volume (L)	209
Inrush Current (A)	Not tested
Daily Energy Consumption at 32°C (kWh/day)	0.722
Pull Down Time (hours)	4.32
Autonomy (hours)	17.16
Refrigerant(s)	R134a
Phase Change Material Included (yes/no)	No
Product Weight (kg)	16.5
Product Dimension d*w*h (cm)	47*44*49
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	11-22
Declared Daily Energy Consumption (kWh/day)	1.82*
Recommended PV Panel Capacity (Wp)	180
Recommended Battery Capacity (Ah)	100
Price Index within Category (\$ - \$\$\$\$)	\$\$

* Ambient temperature at which the manufacturer tested product: 25°C



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UNOCOOL 165 AC

Solar Direct Drive Refrigerator

FINALIST

SPECIFICATIONS

Product Model Number	UNOCOOL 165 AC
Total Volume (L)	144
Inrush Current (A)	3.3
Daily Energy Consumption at 32°C (kWh/day)	0.415
Pull Down Time (hours)	12.93
Autonomy (hours)	42.49
Refrigerant(s)	R600a
Phase Change Material Included (yes/no)	Yes
Product Weight (kg)	59.5
Product Dimension d*w*h (cm)	67.5*60.5*130.2
Power Supply as Shipped	AC
Declared Operating Voltage Range (V)	200-250
Declared Daily Energy Consumption (kWh/day)	0.5*
Recommended PV Panel Capacity (Wp)	150
Price Index within Category (\$ - \$\$\$\$)	\$

* Ambient temperature at which the manufacturer tested product: 40°C



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UNOCOOL 165 DC

Solar Direct Drive Refrigerator

FINALIST



SPECIFICATIONS

Product Model Number	UNOCOOL 165 DC
Total Volume (L)	147
Inrush Current (A)	6.1
Daily Energy Consumption at 32°C (kWh/day)	0.348
Pull Down Time (hours)	16.22
Autonomy (hours)	52.82
Refrigerant(s)	R600a
Phase Change Material Included (yes/no)	Yes
Product Weight (kg)	50
Product Dimension d*w*h (cm)	62*60*129
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	10-40
Declared Daily Energy Consumption (kWh/day)	0.5*
Recommended PV Panel Capacity (Wp)	150
Price Index within Category (\$ - \$\$\$\$)	\$

* Ambient temperature at which the manufacturer tested product: 40°C



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Palfridge LC86

Solar Direct Drive Refrigerator

FINALIST

SPECIFICATIONS

Product Model Number	LC86
Total Volume (L)	85
Inrush Current (A)	4.5
Daily Energy Consumption at 32°C (kWh/day)	0.199
Pull Down Time (hours)	3.81
Autonomy (hours)	12.64
Refrigerant(s)	R600a
Phase Change Material Included (yes/no)	Yes
Product Weight (kg)	48
Product Dimension d*w*h (cm)	64.0*80.5*86.5
Power Supply as Shipped	DC
Declared Operating Voltage Range (V)	10-45
Declared Daily Energy Consumption (kWh/day)	0.252*
Recommended PV Panel Capacity (Wp)	180
Price Index within Category (\$ - \$\$\$\$)	\$\$\$

* Ambient temperature at which the manufacturer tested product: 43°C



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