# Global LEAP Awards



**2016 Buyer's Guide for Outstanding Off-Grid Fans and Televisions** 























#### 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. The 2016 edition contains information about off-grid fans and televisions that were named Winners and Finalists in the 2015-16 Global LEAP Awards. It is designed to serve as a procurement tool for use by off-grid solar companies and other distributors, and to provide 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 in each category, with other high-quality products in that category identified as Finalists. The 2016 Buyer's Guide lists these products, and contains a total of 13 off-grid fans and 13 off-grid televisions.

The 2016 Global LEAP Awards Buyer's Guide is published by Global Lighting and Energy Access Partnership (Global LEAP), an initiative of the Clean Energy Ministerial (CEM) led by the US Department of Energy.

#### The Global LEAP Awards

An international competition that identifies and promotes the world's best, most energyefficient off-grid appliances

High-quality, energy-efficient appliances ensure that un- and under-electrified households and businesses can make the most out of off-grid energy. They are also essential to the growth of off-grid clean energy markets—they create demand for off-grid energy systems, and reduce costs and risks for consumers and businesses.

The Global LEAP Awards – a program within the framework of the Clean Energy Ministerial (CEM) and led by the U.S. Department of Energy – are intended to help accelerate the global off-grid clean energy market. They 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 have been tested in accredited laboratories for their energy performance, quality, and reliability, and have been evaluated 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.

Off-grid market actors – from manufacturers to distributors, from investors to policymakers – are strongly encouraged to use the Buyer's Guide as a resource in their exploration of the off-grid appliance market, and to contact the manufacturers of Global LEAP Awards Winners and Finalists about the products listed here.

Global LEAP Awards Winners and Finalists are eligible to participate in an affiliated Global LEAP procurement incentives program. This program is designed to drive large-scale procurement and distribution of best-in-class off-grid appliances in key off-grid markets. Further details about this program are available at www.globalleap.org/incentives.

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WINNER: Small TV

FINALIST: Small TV

FINALIST: Small TV

FINALIST: Small TV

WINNER: Medium TV

FINALIST: Medium TV

FINALIST: Medium TV

FINALIST: Medium TV

WINNER: Large TV

FINALIST: Large TV

FINALIST: Large TV

FINALIST: Large TV

FINALIST: Large TV

WINNER: Ceiling Fan

FINALIST: Ceiling Fan

FINALIST: Ceiling Fan

FINALIST: Ceiling Fan

FINALIST: Ceiling Fan

WINNER: Pedestal Fan

FINALIST: Pedestal Fan

WINNER: Medium Table Fan

FINALIST: Medium Table Fan

FINALIST: Medium Table Fan

FINALIST: Medium Table Fan

WINNER: Small Table Fan

FINALIST: Small Table Fan



# A Message from the U.S. Department of Energy

1 June 2016

Energy poverty creates pervasive public health, socioeconomic development, and environmental challenges, and it is far too common. More than a billion people throughout the developing world live entirely without access to electricity—and another billion have only unreliable access.

For people living "beyond the grid," access to modern energy services is essential to satisfying basic household and business needs. These services drive important social, economic, and environmental benefits. Addressing energy poverty through modern clean energy services is critical to meeting global sustainable development goals.

Markets for distributed clean energy technologies – such as solar lanterns and solar home systems – have grown phenomenally over the past few years, benefiting millions of un-electrified people globally. Yet, these markets are still in the early stages of their development and have largely provided only basic electrification services. Capturing the true socio-economic benefits of energy access will require greater levels of the energy services that transform the lives and livelihoods of underserved communities.

Through the work of efforts like the Global LEAP Awards – a program within the framework of Clean Energy Ministerial's Energy Access initiative led by the U.S. Department of Energy – a new class of energy-efficient and high-quality off-grid appliances is becoming more available. This program recognizes and promotes the best-in-class off-grid products, and in doing so encourages innovation, uptake, and scale.

The highly efficient off-grid appliances recognized by the Global LEAP Awards, such as televisions and fans, use dramatically less energy and as a result can reduce the total cost of off-grid energy by half. By making modern clean energy service affordable and accessible for more off-grid consumers, appropriately designed and priced off-grid appliances hold the potential to unlock clean energy services for millions and millions of people.

Thanks to the partnership with Energising Development and International Finance Corporation, Global LEAP now provides incentives to off-grid energy services companies and appliance manufacturers who distribute and market the Global LEAP Awards winning and finalist products. The incentives reduce risk for businesses to engage in the off-grid market and drive the best off-grid products into the market and into off-grid homes faster.

We extend our thanks to appliance manufacturers who participated in the program as well as to the off-grid renewable energy companies, investors, and procurement officers who will partner with Global LEAP Awards Winners and Finalists. Together, product by product, household by household, we are building the global off-grid market and delivering life-changing clean energy to millions of un- and under-electrified people.

Sincerely,

**CHRISTIE ULMAN** 

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Director, Office of Climate and Clean Energy U.S. Department of Energy

# The Importance of Off-Grid Appliance Quality Assurance

Confidence in product quality is essential to the development of the off-grid market. As the off-grid market grows, the threat of low-quality, inefficient products eroding confidence in the market grows with it. Experiences with inferior products are quickly spread by word of mouth in off-grid communities, leading consumers to distrust the products. Decreased consumer confidence poses significant challenges to off-grid business models and undermines efforts to build self-sustaining, robust commercial markets.

More importantly, off-grid populations are typically among the world's poorest people. A small off-grid energy system and the appliances it powers represent big improvements in an off-grid household's quality of life, but require a large investment of very limited income. It's important that the products work as promised.

#### The Importance of Off-Grid Appliance Super-Efficiency

By enhancing and enabling off-grid consumer demand for energy services, off-grid appliance super-efficiency is also essential to the growth of clean energy access markets.

Super-efficient off-grid appliances offer greater service. A 40Wp solar module and a 70Ah battery can power a 25W incandescent bulb for 5 hours each day, but the same system can power a super-efficient 21" flat panel TV, two high-quality LED lights, and a super-efficient fan, mobile phone charger, and radio.

This expanded service greatly 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 radically 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. A recent analysis by experts at Lawrence Berkeley National Laboratory, Humboldt State University, and the University of California found that super-efficient appliances can reduce the total cost of providing off-grid electricity services by as much as 50%. This reduction in price greatly expands the market of consumers that can afford off-grid energy systems.

In other words, by providing greater service and greater cost-effectiveness, super-efficient appliances help off-grid clean energy companies serve more customers.

# Global LEAP Awards Winners & Finalists

The products featured in the Global LEAP Awards Outstanding Off-Grid Appliances Buyer's Guide are among the best off-grid fans and televisions in the world. Each Global LEAP Awards Winner and Finalist has had its quality, durability, and energy performance evaluated according to international test laboratory best practice—and each has been evaluated by a panel of off-grid market and technology experts.

#### **DISCLAIMER**

The Clean Energy Ministerial, Global LEAP, 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. Television luminance was measured, but this value was not incorporated into products' quantitative evaluation. Fans were tested at maximum speed, and their tested power consumption was compared against the rated power input on the product's nameplate.

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.

#### **Explanation of Product Specifications**

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 both televisions and fans.



# OFF-GRID TELEVISION PRODUCT SPECIFICATIONS

Product Model Number	Identifies the specific product model
Viewable Screen Size (cm²)	Surface area of screen
Aspect Ratio	Ratio of screen width to height (e.g., 16:9)
Safe Operating Voltage (V)	Voltage range within which the television can operate safely as stated by the manufacturer
Rated On Mode Power Consumption (W)	Power consumption as stated by the manufacturer
Tested On Mode Power Consumption (W)	Power consumption in as-shipped setting, based on laboratory testing
Tested Maximum On Mode Power Consumption (W)	Power consumption with volume and brightness settings at their maximums, based on laboratory testing
Tested Standby Mode Power Consumption (W)	Power consumption in standby mode, based on laboratory testing
Tested Luminance in As-Shipped Setting (Cd/m²)	Brightness of the television, based on laboratory testing (larger values are better)



# OFF-GRID FAN PRODUCT SPECIFICATIONS

Product Model Number	Identifies the specific product model
Fan Size (diameter, mm)	Distance between the tips of the fan blades
Regulated Speeds	Number of speeds
Safe Operating Voltage (V)	Voltage range within which the fan can operate safely as stated by the manufacturer
Rated Power Input (W)	Power consumption as stated on the product's nameplate
Tested Power Input (W, at Max Speed)	Power consumption when set at the maximum speed, based on laboratory testing
Tested Air Delivery (m³/min)	Amount of air delivered by the fan when set at maximum speed, based on laboratory testing



By providing greater service and cost-effectiveness, super-efficient, quality-assured appliances help off-grid clean energy reach more people.

# Solar LED TV 15.6"

### **WINNER: Small TV**



#### **SPECIFICATIONS**

Product Model Number	Solar ELED TV 15.6"
Viewable Screen Size (cm²)	664
Aspect Ratio	16:9
Safe Operating Voltage (V)	10-30V DC
Rated On Mode Power Consumption (W)	10
Tested On Mode Power Consumption (W)	7.68
Tested Maximum On Mode Power Consumption (W)	9.33
Tested Standby Mode Power Consumption (W)	0.334
Tested Luminance in As-Shipped Setting (Cd/m²)	58.4





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# Global LEAP Awards

# **BBOXX 15" TV**



## FINALIST: Small TV



#### **SPECIFICATIONS**

Product Model Number	BBOXX TV
Viewable Screen Size (cm²)	664
Aspect Ratio	16:9
Safe Operating Voltage (V)	9-16V DC
Rated On Mode Power Consumption (W)	9
Tested On Mode Power Consumption (W)	9.16
Tested Maximum On Mode Power Consumption (W)	11.82
Tested Standby Mode Power Consumption (W)	0.09
Tested Luminance in As-Shipped Setting (Cd/m²)	123.8





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# 15.6" LED TV

## FINALIST: Small TV



#### **SPECIFICATIONS**

Product Model Number	IL002A
Viewable Screen Size (cm²)	664
Aspect Ratio	16:9
Safe Operating Voltage (V)	12V DC
Rated On Mode Power Consumption (W)	10
Tested On Mode Power Consumption (W)	8.47
Tested Maximum On Mode Power Consumption (W)	9.96
Tested Standby Mode Power Consumption (W)	0.317
Tested Luminance in As-Shipped Setting (Cd/m²)	96.7





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### FINALIST: Small TV



#### **SPECIFICATIONS**

Product Model Number	fosera TV110-digital 15.6" 12V
Viewable Screen Size (cm²)	664
Aspect Ratio	16:9
Safe Operating Voltage (V)	9-15V DC
Rated On Mode Power Consumption (W)	6.5
Tested On Mode Power Consumption (W)	5.7
Tested Maximum On Mode Power Consumption (W)	6.8
Tested Standby Mode Power Consumption (W)	0.131
Tested Luminance in As-Shipped Setting (Cd/m²)	67.6





Manufacturer Sales Contact

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# **18.5" LED TV**

## WINNER: Medium TV



#### **SPECIFICATIONS**

Product Model Number	LE185N91C
Viewable Screen Size (cm²)	943
Aspect Ratio	16:9
Safe Operating Voltage (V)	12V DC
Rated On Mode Power Consumption (W)	12
Tested On Mode Power Consumption (W)	9.38
Tested Maximum On Mode Power Consumption (W)	12.83
Tested Standby Mode Power Consumption (W)	0.343
Tested Luminance in As-Shipped Setting (Cd/m²)	38.4





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# Solar DC LED TV 19"





#### **SPECIFICATIONS**

Product Model Number	19M1A
Viewable Screen Size (cm²)	943
Aspect Ratio	16:9
Safe Operating Voltage (V)	8-18V DC
Rated On Mode Power Consumption (W)	18
Tested On Mode Power Consumption (W)	15.96
Tested Maximum On Mode Power Consumption (W)	17.39
Tested Standby Mode Power Consumption (W)	0.192
Tested Luminance in As-Shipped Setting (Cd/m²)	245





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# 2016 Buyer's Guide for Outstanding Off-Grid Fans and Television

# **DC Powered 19" LED TV Monitor**

### FINALIST: Medium TV





Product Model Number	TV19/SPM-19
Viewable Screen Size (cm²)	943
Aspect Ratio	16:9
Safe Operating Voltage (V)	10-14V DC
Rated On Mode Power Consumption (W)	10
Tested On Mode Power Consumption (W)	9.46
Tested Maximum On Mode Power Consumption (W)	12.42
Tested Standby Mode Power Consumption (W)	0.275
Tested Luminance in As-Shipped Setting (Cd/m²)	49.1





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# **LED TV 18.5"**



## FINALIST: Medium TV



#### **SPECIFICATIONS**

Product Model Number	SS18.5 LED
Viewable Screen Size (cm²)	943
Aspect Ratio	16:9
Safe Operating Voltage (V)	10-16V DC
Rated On Mode Power Consumption (W)	15
Tested On Mode Power Consumption (W)	15.79
Tested Maximum On Mode Power Consumption (W)	18.05
Tested Standby Mode Power Consumption (W)	0.195
Tested Luminance in As-Shipped Setting (Cd/m²)	182.7





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# Solar LED TV 23.6"

# **WINNER:** Large TV



#### **SPECIFICATIONS**

Product Model Number	Solar ELED TV23.6"
Viewable Screen Size (cm²)	1521
Aspect Ratio	16:9
Safe Operating Voltage (V)	10-30V DC
Rated On Mode Power Consumption (W)	15
Tested On Mode Power Consumption (W)	10.8
Tested Maximum On Mode Power Consumption (W)	15.21
Tested Standby Mode Power Consumption (W)	0.354
Tested Luminance in As-Shipped Setting (Cd/m²)	34.7





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# **24" LED TV**





#### **SPECIFICATIONS**

Product Model Number	LE236A1000
Viewable Screen Size (cm²)	1560
Aspect Ratio	16:9
Safe Operating Voltage (V)	10.5-15V DC
Rated On Mode Power Consumption (W)	15
Tested On Mode Power Consumption (W)	16.22
Tested Maximum On Mode Power Consumption (W)	17.96
Tested Standby Mode Power Consumption (W)	0.325
Tested Luminance in As-Shipped Setting (Cd/m²)	89.5





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# 2016 Buyer's Guide for Outstanding Off-Grid Fans and Television

# **Solar DC LED TV 22"**

# FINALIST: Large TV



#### **SPECIFICATIONS**

Product Model Number	ELED-22M1A
Viewable Screen Size (cm²)	1276
Aspect Ratio	16:9
Safe Operating Voltage (V)	8-18V DC
Rated On Mode Power Consumption (W)	21
Tested On Mode Power Consumption (W)	22.89
Tested Maximum On Mode Power Consumption (W)	27.92
Tested Standby Mode Power Consumption (W)	0.189
Tested Luminance in As-Shipped Setting (Cd/m²)	200.2





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# Solar LED TV 12V DC - 24"





#### **SPECIFICATIONS**

Product Model Number	MSDV2310MY-308C1
Viewable Screen Size (cm²)	1521
Aspect Ratio	16:9
Safe Operating Voltage (V)	10-15V DC
Rated On Mode Power Consumption (W)	29
Tested On Mode Power Consumption (W)	22.18
Tested Maximum On Mode Power Consumption (W)	26.38
Tested Standby Mode Power Consumption (W)	0.283
Tested Luminance in As-Shipped Setting (Cd/m²)	109





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# Solar LED TV 12V DC - 32"

# FINALIST: Large TV



#### **SPECIFICATIONS**

Product Model Number	MSDV 3235Y-308C1
Viewable Screen Size (cm²)	2732
Aspect Ratio	16:9
Safe Operating Voltage (V)	10-15V DC
Rated On Mode Power Consumption (W)	40
Tested On Mode Power Consumption (W)	24.95
Tested Maximum On Mode Power Consumption (W)	27.27
Tested Standby Mode Power Consumption (W)	0.31
Tested Luminance in As-Shipped Setting (Cd/m²)	141





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# Global LEAP Awards

# 48" DC Ceiling Fan

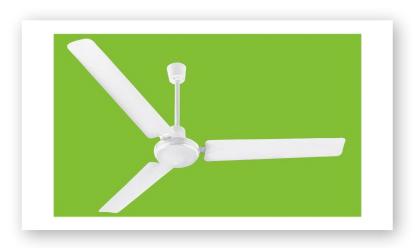


# WINNER: Ceiling Fan



#### **SPECIFICATIONS**

Product Model Number	ME-103-DC
Fan Size (diameter, mm)	1190
Regulated Speeds	5
Safe Operating Voltage (V)	12-14V DC
Rated Power Input (W)	35
Tested Power Input (W, at Max Speed)	24.19
Tested Air Delivery (m³/min)	147.3





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# 42" DC (RC) Ceiling Fan patent by Keppe Motor

# **FINALIST:** Ceiling Fan





#### **SPECIFICATIONS**

Product Model Number	KP-201
Fan Size (diameter, mm)	1060
Regulated Speeds	5
Safe Operating Voltage (V)	24-28V DC
Rated Power Input (W)	30
Tested Power Input (W, at Max Speed)	27.58
Tested Air Delivery (m³/min)	126.47







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# Global LEAP Award

# **SUPER X11**



# FINALIST: Ceiling Fan



#### **SPECIFICATIONS**

Product Model Number	SUPER X11
Fan Size (diameter, mm)	1200
Regulated Speeds	5
Safe Operating Voltage (V)	10.2-13.8V DC
Rated Power Input (W)	25
Tested Power Input (W, at Max Speed)	22.2
Tested Air Delivery (m³/min)	151.48





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# 2016 Buyer's Guide for Outstanding Off-Grid Fans and Television

# **SUPER V11**

# **FINALIST:** Ceiling Fan



#### **SPECIFICATIONS**

Product Model Number	SUPER V11
Fan Size (diameter, mm)	1400
Regulated Speeds	5
Safe Operating Voltage (V)	10.2-13.8V DC
Rated Power Input (W)	28
Tested Power Input (W, at Max Speed)	33.2
Tested Air Delivery (m³/min)	203.8





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# Global LEAP Awards

# **SUPER X1**



# FINALIST: Ceiling Fan



#### **SPECIFICATIONS**

Product Model Number	SUPER X1
Fan Size (diameter, mm)	1200
Regulated Speeds	5
Safe Operating Voltage (V)	160-265V AC
Rated Power Input (W)	35
Tested Power Input (W, at Max Speed)	34.51
Tested Air Delivery (m³/min)	180.52





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# 2016 Buyer's Guide for Outstanding Off-Grid Fans and Television

# ECO Air 16" UP

## WINNER: Pedestal Fan





#### **SPECIFICATIONS**

Product Model Number	ECO Air 16 UP
Fan Size (diameter, mm)	370
Regulated Speeds	3
Safe Operating Voltage (V)	10-15V DC
Rated Power Input (W)	9
Tested Power Input (W, at Max Speed)	9.57
Tested Air Delivery (m³/min)	38





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# Global LEAP Awards

# 16" DC Stand Fan



## FINALIST: Pedestal Fan



#### **SPECIFICATIONS**

Product Model Number	ST40DC
Fan Size (diameter, mm)	370
Regulated Speeds	3
Safe Operating Voltage (V)	12-14V DC
Rated Power Input (W)	20
Tested Power Input (W, at Max Speed)	12.97
Tested Air Delivery (m³/min)	31.78





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# 2016 Buyer's Guide for Outstanding Off-Grid Fans and Televisior

# **ECO Air 16"**

## WINNER: Medium Table Fan



#### **SPECIFICATIONS**

Product Model Number	ECO Air 16
Fan Size (diameter, mm)	380
Regulated Speeds	3
Safe Operating Voltage (V)	10-15V DC
Rated Power Input (W)	9
Tested Power Input (W, at Max Speed)	9.57
Tested Air Delivery (m³/min)	41





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# **Table Fan**



# FINALIST: Medium Table Fan



#### **SPECIFICATIONS**

Product Model Number	KN-5922D
Fan Size (diameter, mm)	286
Regulated Speeds	3
Safe Operating Voltage (V)	12±0.05V DC
Rated Power Input (W)	9
Tested Power Input (W, at Max Speed)	8.78
Tested Air Delivery (m³/min)	24.33





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# 2016 Buyer's Guide for Outstanding Off-Grid Fans and Televisions

# 12" DC Table fan

## FINALIST: Medium Table Fan



#### **SPECIFICATIONS**

Product Model Number	SG-12-05CF
Fan Size (diameter, mm)	290
Regulated Speeds	4
Safe Operating Voltage (V)	12-14V DC
Rated Power Input (W)	17
Tested Power Input (W, at Max Speed)	12.55
Tested Air Delivery (m³/min)	22.44





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# **Table Fan**



# FINALIST: Medium Table Fan



#### **SPECIFICATIONS**

Product Model Number	FT30-DC02A
Fan Size (diameter, mm)	290
Regulated Speeds	3
Safe Operating Voltage (V)	10-16V DC
Rated Power Input (W)	11.5
Tested Power Input (W, at Max Speed)	11.81
Tested Air Delivery (m³/min)	27.79





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# 2016 Buyer's Guide for Outstanding Off-Grid Fans and Television

# ECO Air 9"

## WINNER: Small Table Fan





#### **SPECIFICATIONS**

Product Model Number	ECO Air 9
Fan Size (diameter, mm)	210
Regulated Speeds	2
Safe Operating Voltage (V)	10-14V DC
Rated Power Input (W)	6
Tested Power Input (W, at Max Speed)	6.2
Tested Air Delivery (m³/min)	11.76





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# Global LEAP Awards

# 8" DC Table fan



## FINALIST: Small Table Fan



#### **SPECIFICATIONS**

Product Model Number	SG-08-CF1
Fan Size (diameter, mm)	200
Regulated Speeds	regulated continuously
Safe Operating Voltage (V)	12-14V DC
Rated Power Input (W)	15
Tested Power Input (W, at Max Speed)	11.82
Tested Air Delivery (m³/min)	12.48





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