

# REC Solar

## AE-US Series PV modules

The REC AE-US Series modules, made in Sweden by REC, are a series of high quality solar modules designed to meet system demand for exceptional performance.

### Quality and Performance

Rigorous quality control is applied throughout the production process, from cells to modules. Sixty 156 mm square multicrystalline solar cells in each module are optimized for low light conditions and increased light absorption. The modules have an innovative design that reduces shading effects in order to achieve maximum performance. A power output tolerance of -0/+5W guarantees minimum mismatch losses.

### Installation

REC AE-US Series allows for quick and easy installation. The modules are equipped with PV Wire cables with MC4 locking connectors for problem-free inter-module connection. Cables meet 2008 NEC requirements for use with transformerless inverters.

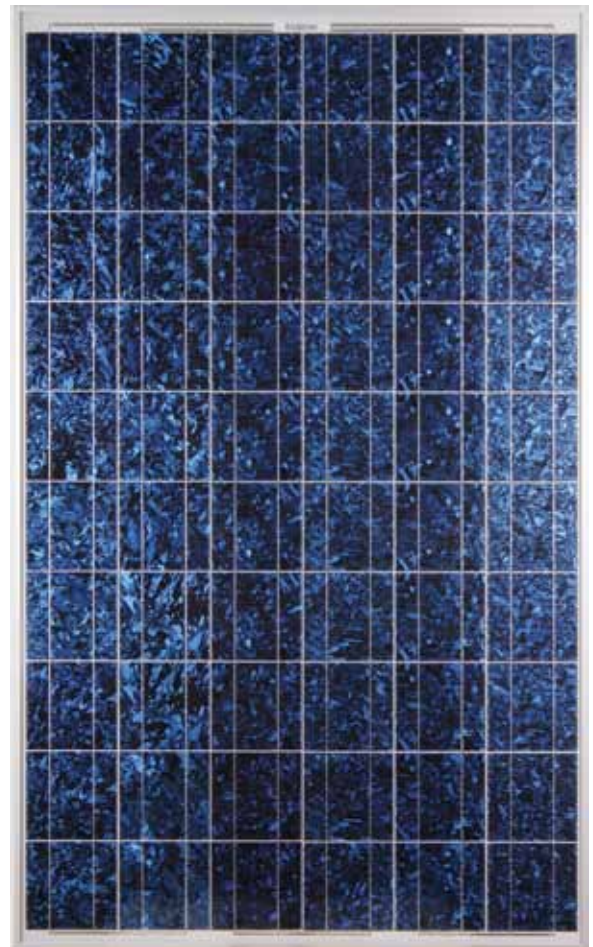
### Environmental Practices

The REC AE-US Series generates environmentally sound electricity. Cell and module production processes are designed to maximize recycling and reduce environmental impact. REC's wafers, cells and modules are produced within Scandinavia and the company's activities are therefore subject to very high standards of regulation regarding environmental standards.

### Warranty

The REC AE-US Series comes with a 63-month workmanship warranty and a guarantee of 90% of rated power output for 10 years, and 80% of rated power output for 25 years.

CSA Listed to UL 03 for the U.S. and Canada. Please check wattage availability when ordering.



Technical data		
Cells	qty/size	60/156 mm
Power output tolerance		-0/+5W
Temperature <sub>NOCT</sub>	°C	48.6
Power temp coefficient	%/°C	-0.497
Voc temp coefficient	%/°C	-0.370
Fire rating	class	C
Connector type		MC4
Cable length	inch (m)	61 (1.55)
Load rating	lbs/ft <sup>2</sup>	75
Quantity per pallet		30
Quantity per 53-ft trailer		540

The REC AE-US Series generates environmentally sound electricity. Cell and module production processes are designed to maximize recycling and reduce environmental impact. REC's wafers, cells and modules are produced within Scandinavia and the company's activities are therefore subject to very high standards of regulation regarding environmental standards.

### Warranty

The REC AE-US Series comes with a 63-month workmanship warranty and a guarantee of 90% of rated power output for 10 years, and 80% of rated power output for 25 years.

CSA Listed to UL 03 for the U.S. and Canada. Please check wattage availability when ordering.

Module		REC205 AE-US	REC210 AE-US	REC215 AE-US	REC220 AE-US	REC225 AE-US	REC230 AE-US
Power STC (peak)	watts	205	210	215	220	225	230
Power PTC (CEC)	watts	178.2	182.7	187.2	191.7	196.2	200.7
Peak power voltage	volts	27.2	27.6	28.0	28.4	28.8	29.1
Peak power current	amps	7.6	7.6	7.7	7.8	7.8	7.9
Open circuit voltage	volts	36.0	36.1	36.3	36.4	36.6	36.8
Short circuit current	amps	8.3	8.3	8.3	8.4	8.4	8.4
Max. system voltage	volts	1000V (UL 600V)					
Series fuse rating	amps	15					
Length	inch (mm)	65.55 (1665)					
Width	inch (mm)	39.02 (991)					
Depth	inch (mm)	1.7 (43)					
Weight	lbs (kg)	48.5 (22)					
Item code w/clear anodized frame		011-02537	011-02538	011-02539	011-02540	011-02541	011-02542
Price		\$1,025	\$1,050	\$1,075	\$1,100	\$1,125	\$1,150
Item code w/black anodized frame		011-02531	011-02532	011-02533	011-02534	011-02535	011-02536
Price		\$1,035	\$1,060	\$1,085	\$1,110	\$1,135	\$1,160

# REC Solar

## NEW! PE-US Series PV modules

The REC PE-US Series modules, made by REC in Singapore, are a series of high quality solar modules designed to meet system demand for exceptional performance.

### Quality and Performance

Rigorous quality control is applied throughout the production process, from cells to modules. Sixty acid-etched, 3-busbar, 156 mm square multicrystalline solar cells laminated behind high-transparency glass with an anti-reflective surface treatment give these modules an efficiency of up to 14.2%. A power output tolerance of  $-0/+5W$  guarantees you the power you pay for and minimum mismatch losses.

The REC PE-US Series modules are made with silicon refined in the U.S. using renewable energy. Their energy payback is under one year and their cell and module production processes are designed to maximize recycling and reduce environmental impact.

### Installation

The comparatively low weight (39.6 lbs/18 kg) of the REC PE-US Series allows for quick and easy installation. The modules are equipped with an environmentally sealed junction box and PV Wire cables with MC4 locking connectors for problem-free inter-module connection. Cables meet 2008 NEC requirements for use with transformerless inverters.

### Warranty

The REC PE-US Series modules come with a 63-month workmanship warranty and a guarantee of 90% of rated power output for 10 years, and 80% of rated power output for 25 years.



Technical data		
Cells	qty/size	60/156 mm
Power output tolerance	W	-0/+5
Fire rating	class	C
Connector type		MC4
Cable length	inch (m)	+ 35 (0.9) + 47 (1.2)
Design load (UL 1703)	lbs/ft <sup>2</sup>	75
Quantity per pallet		40
Quantity per 53-ft trailer		760

Module		REC215 PE-US	REC220 PE-US	REC225 PE-US	REC230 PE-US	REC235 PE-US
Peak power	watts	215	220	225	230	235
Peak power voltage	volts	28.3	28.7	29.1	29.4	29.8
Peak power current	amps	7.6	7.7	7.7	7.8	7.9
Open circuit voltage	volts	36.3	36.6	36.8	37.1	37.4
Short circuit current	amps	8.1	8.2	8.2	8.3	8.3
Max. system voltage	volts	1000V (UL 600V)				
Series fuse rating	amps	15				
Length	inch (mm)	65.55 (1665)				
Width	inch (mm)	39.02 (991)				
Depth	inch (mm)	1.5 (38)				
Weight	lbs (kg)	39.6 (18)				
Item code	Clear anodized frame	011-02562	011-02563	011-02564	011-02565	011-02566
Price		\$1,075	\$1,100	\$1,125	\$1,150	\$1,175
Item code	Black anodized frame	011-02572	011-02573	011-02574	011-02575	011-02576
Price		\$1,085	\$1,110	\$1,135	\$1,160	\$1,185

# Evergreen Solar

## ES-A and ES-C Modules

Evergreen Solar modules are designed to deliver the best performance and dependability from Evergreen Solar's patented String Ribbon wafer technology. These modules have one of the tightest power tolerances in the industry.

### Performance

- Maximum power up to 5W above rated
- Anti-reflection cover glass delivers more energy
- A rigid, double-walled, deep frame with integrated water drainage holes
- Crimped frame corners – no screws to loosen
- Sealed junction box on ES-A modules never needs field maintenance

### Environmental Credentials

- Low lead – use of lead-free solder for all solar cell inter-connections
- Energy payback time up to 40% faster than leading crystalline technologies
- Low carbon dioxide emissions in the manufacturing process – up to 33% less than other leading crystalline technologies

PV modules produced by Evergreen Solar are distinctive in their appearance because they incorporate a proprietary crystalline silicon technology known as String Ribbon. In the String Ribbon technique, two high-temperature strings are pulled vertically through a shallow silicon melt, and the molten silicon spans and freezes between the strings. The process is continuous: long strings are unwound from spools; the melt is replenished; and the silicon ribbon is cut to length for further processing, without interrupting growth.

Evergreen ES-A modules utilize three parallel strings of 38 cells in series giving an 18-volt peak power voltage which allows fewer strings in grid-tie systems and also provides optimum voltage for battery charging with conventional as well as MPPT charge controllers. They have Multi-Contact MC4 locking connectors, PV Wire, and black anodized frames. Made in USA.

Evergreen ES-C modules are designed with the correct voltage for 12, 24 and 48 volt battery charging for off-grid applications. Their higher voltage allows superior charging performance in hot field conditions. They have a conduit-ready junction box for easy installation with cable or conduit. Made in China from US made cells.

Evergreen modules are ETL listed to UL 1703 for U.S. and Canada. Modules have a 10-year 90% power warranty, 25-year 80% power warranty.



Technical data		ES-A	ES-C
Power output tolerance		-0/+5W	-5/+5W
Temperature <sub>NOCT</sub>	°C	45.4	45.4
Power temp coefficient	%/°C	-0.43	-0.43
Open circuit voltage	%/°C	-0.31	-0.31
Fire rating	class	C	C
Connector type		MC4	J-Box
Cable length	inch (m)	42.1 (1.07)	N/A
Load rating	lbs/ft <sup>2</sup>	60	60
Quantity per pallet		28	Call
Quantity per 53-ft trailer		504	Call

Module		ES-A-200-FA3	ES-A-205-FA3	ES-A-210-FA3	ES-C-125	ES-C-120	ES-C-80
Power - STC (peak)	watts	200	205	210	125	120	80
Power - PTC	watts	180.7	185.4	190	111.1	106.7	71.5
Peak power voltage	volts	18.1	18.2	18.3	18.4	17.3	18.2
Peak power current	amps	11.05	11.27	11.48	6.81	6.95	4.39
Open circuit voltage	volts	22.6	22.7	22.8	22.6	21.3	22.5
Short circuit current	amps	11.8	11.93	12.11	7.37	7.62	4.78
Max. system voltage	volts	600	600	600	600	600	600
Series fuse rating	amps	20			15	15	8
Length	inch (mm)	65.0 (1651)			62.4 (1585)	62.4 (1585)	42.9 (1090)
Width	inch (mm)	37.5 (953)			25.7 (652)		
Depth	inch (mm)	1.8 (46)			1.6 (41)		
Weight	lbs (kg)	42.0 (19.1)			27 (12.3)	27 (12.3)	19 (8.6)
Item code		011-05356	011-05358	011-05360	011-05385	011-05383	011-05381
Price		\$1,000	\$1,025	\$1,050	\$750	\$720	\$520

# Mitsubishi Solar

## PV-Series Modules

As a general manufacturer of electrical machinery and appliances, Mitsubishi Electric Corporation offers a legacy of innovation and achievement that goes all the way back to its founding in 1921.

Since 1976, when Japan launched its first commercial satellite, Mitsubishi has participated in approximately 250 related projects around the world. One such project led to the development of a number of photovoltaic power generation systems that have proven to be extremely reliable, even in the harsh conditions of outer space.

### Lead-Free Manufacture

Mitsubishi has applied leading-edge technologies from its space-related applications to terrestrial systems to create high-performance photovoltaic power-generation systems for an astonishing range of applications. Mitsubishi Electric successfully produced the first cells in Japan that do not require solder coatings. This was a milestone in the development of environmentally friendly composite materials and manufacturing processes for the silver electrodes used on the surfaces of crystalline silicon photovoltaic cells. Their PV modules are now made using lead-free solder, completely eliminating lead from the manufacturing process.

The 185-watt and larger modules are designed for use in high-voltage grid-tie applications, but can be used in large industrial and off-grid applications for battery charging if the system includes an appropriate MPPT charge controller.

These modules use 156mm square poly-crystalline cells behind tempered glass with anodized aluminum frames, and Multi-Contact MC4 locking connector output cables. Positive and negative cables come from junction boxes at opposite ends of the module.

The 125-watt modules have Multi-Contact MC4 locking connector output cables and are optimized for 12-volt battery charging.

### Environmental Commitment

From their manufacturing process to their recyclable packaging, Mitsubishi has made a commitment to protect the environment. They use 100% lead-free solder in all of their modules and they are ISO 14001 certified for eco-friendly manufacturing processes, minimal cardboard packaging and recyclable steel pallets.

### Warranty

Made in Japan. UL Listed. 10-year 90% power warranty, 25-year 80% power warranty.



Technical data		PV-UE125	PV-UD	PV-UJ
Cells	qty	36	50	60
Power output tolerance		-3/+3	-3/+3	-3/+3
Temperature <sub>NOCT</sub>	°C	47.5	47.5	47.5
Power temp coefficient	%/°C	-0.452	-0.452	-0.452
Voc temp coefficient	%/°C	-0.343	-0.343	-0.343
Fire rating	class	C	C	C
Connector type		MC4	MC4	MC4
Cable length	inch	(+)31.5/(-)49.2	(+)31.5/(-)49.2	40
Load rating	lbs/ft <sup>2</sup>	75	112	112
Quantity per pallet		20	18	20
Quantity per 53-ft trailer		800	648	760

Module		PV-UE125MF5N	PV-UD185MF5	PV-UD190MF5	PV-UJ225GA6	PV-UJ230GA6
Peak power	watts	125	185	190	225	230
Peak power voltage	volts	17.3	24.4	24.7	30.0	30.2
Peak power current	amps	7.23	7.58	7.71	7.50	7.62
Open circuit voltage	volts	21.8	30.6	30.8	36.4	36.6
Short circuit current	amps	7.9	8.13	8.23	8.30	8.39
Max. system voltage	volts	600	600		600	
Series fuse rating	amps	15	15		15	
Frame color		black	black		black	
Length	inch (mm)	58.9 (1495)	65.3 (1658)		65.3 (1658)	
Width	inch (mm)	26.5 (674)	32.8 (834)		39.1 (994)	
Depth (120W incl j-box)	inch (mm)	1.8 (46)	1.8 (46)		1.8 (46)	
Weight	lbs (kg)	29.8 (13.5)	37 (17)		44 (20)	
Item code		011-08827	011-08867	011-08869	011-08874	011-08875
Price		\$690	\$953	\$978	\$1,144	\$1,170

# SolarWorld



## NEW! SW220/230 Sunmodules

SolarWorld California was founded in March 2005 and expanded in July 2006 with the acquisition of Shell Solar Industries' solar manufacturing facilities that had been operating in the USA since 1977. The factory, originally opened by ARCO Solar, later sold to Siemens Solar and then Shell, was purchased by SolarWorld in 2006.

Headquartered in Camarillo, CA, SolarWorld California maintains ingot and cell production in their new plant in Hillsboro, OR, and module production facilities in the Camarillo facility. SolarWorld California modules are made in the USA ensuring high quality, performance and output. SolarWorld California is the largest manufacturer of solar modules in the U.S.

### Construction and Performance

These SolarWorld PV modules are designed for use in high-voltage grid-tie applications, using 60 six-inch semi-square single-crystal-line cells in series behind tempered glass. They feature clear- or black-anodized aluminum frames and a sealed junction box with bypass diodes and Multi-Contact MC4 locking connector and PV Wire output cables.

The Sunmodule is certified to meet or exceed the safety and design requirements of UL 1703 and IEC 61215. All U.S. Sunmodules are produced in the ISO 9001:2000 certified Camarillo, California facility. SolarWorld offers end-of-life module recycling for all Sunmodules.

Sunmodules have a +/-3% power tolerance.

SolarWorld bonds the tempered glass laminate deep into the aluminum frame with a continuous bead of silicone adhesive. This method guarantees exceptional rigidity for the entire module and prevents the frame from loosening or pulling away from the glass caused by sliding of heavy snow or handling. Tests carried out in accordance with IEC 61215, which applies loads of up to 113 lb/sf (5.4 kN/m<sup>2</sup>), demonstrate that the module can withstand the high loads that accompany heavy accumulations of snow and ice.

### Warranty

Sunmodules have a 10-year 90% power warranty and 25-year 80% power warranty. UL Listed for the U.S. and Canada.



Technical data		
Cells	qty/size	60/156 mm
Power tolerance		-3/+3%
Temperature <sub>NOCT</sub>	°C	46
Power temp coefficient	%/°C	-0.45
Open circuit voltage	%/°C	-0.33
Fire rating	class	C
Connector type		MC4
Cable length	inch (m)	37.4 (0.95)
Load rating (UL)	lbs/ft <sup>2</sup>	75
Quantity per pallet		30
Quantity per 53-ft trailer		540

Module		SW220-mono	SW230-mono
Peak power	watts	220	230
Peak power voltage	volts	29.4	30.0
Peak power current	amps	7.5	7.68
Open circuit voltage	volts	37.2	37.4
Short circuit current	amps	8.1	8.16
Max. system voltage	volts	600	
Series fuse rating		15A	
Length	inch (mm)	65.94 (1675)	
Width	inch (mm)	39.41 (1001)	
Depth	inch (mm)	1.34 (34)	
Weight	lbs (kg)	48.5 (22)	
<b>Item code - clear frame</b>		<b>011-02286</b>	<b>011-02288</b>
<b>Price</b>		<b>\$1,100</b>	<b>\$1,150</b>
<b>Item code - black frame</b>		<b>011-02290</b>	<b>011-02292</b>
<b>Price</b>		<b>\$1,120</b>	<b>\$1,170</b>

ADVERTISEMENT

# SCHOTT Solar



## NEW! SCHOTT POLY Solar Modules

SCHOTT Solar is a world leader in the photovoltaic industry with more than 50 years of experience in the development and production of quality components for solar applications. The company has been in business for 125 years. The polycrystalline cells within each module are sorted to narrow performance tolerances, thereby allowing series interconnections with minimal mismatch losses.

SCHOTT bulk packs modules to reduce job site waste and disposal costs. Available with black or clear anodized frames, SCHOTT modules have PV Wire type cables for use with transformerless inverters.

### Output Tolerance

SCHOTT Solar POLY modules are among the industry leaders in power output tolerances. Produced in a facility in Albuquerque, NM, these modules are available in 4 wattages, with minus 0 watts output tolerance. This provides for a stable, high-energy output.

### Warranty

2-year workmanship warranty and 10-year 90% power warranty and 25-year 80% power warranty.

CSA Listed to UL 1703 for U.S. and Canada. CEC approved.



Technical data		
Cells	qty/size	60/156 mm
Power tolerance	%	-0/+5%
Power temp coefficient	%/°C	-0.47
Open circuit voltage	%/°C	-0.334
Fire rating	class	C
Connector type		Tyco
Cable length	inch (m)	43.3 (1.1)
Load rating	lbs/ft <sup>2</sup>	75
Quantity per pallet		30
Quantity per 53-ft trailer		540

SCHOTT POLY module		210	217	220	225
Power STC (peak)	watts	210	217	220	225
Power PTC (CEC rating)	watts	184.4	191.2	193.9	198.4
Peak power voltage	volts	29.3	29.6	29.7	29.8
Peak power current	amps	7.16	7.33	7.41	7.55
Open circuit voltage	volts	36.1	36.4	36.5	36.7
Short circuit Current	amps	7.95	8.10	8.15	8.24
Max. system voltage	volts	600			
Series fuse rating	amps	15			
Length	inch (mm)	66.34 (1685)			
Width	inch (mm)	39.09 (993)			
Depth	inch (mm)	1.97 (50)			
Weight	lbs (kg)	50.6 (23)			
Item code - silver frame		011-04533	011-04534	011-04535	011-04536
Price		\$1,050	\$1,085	\$1,100	\$1,125
Item code - black frame		011-04537	011-04538	011-04539	011-04540
Price		\$1,070	\$1,105	\$1,125	\$1,145

# Kyocera

## KD Series Modules

Kyocera KD series modules have locking MC4 cables and black anodized frames for clean looking grid-tie installations. The 135-watt module has 36 cells and can be used for grid tie or off-grid applications.

New frame technology on the KD-LPU modules allows for end mounting with 2400 Pa (50 psf) or wind speeds of 130 mph (ASTM E1830) and traditional mounting with 5400 Pa (113 psf) to support increased snow load. Because of Kyocera's high cell efficiency, they use 54 cells in their large grid-tie modules where most competitors use 60. This makes their module efficiency higher, but does not allow them to be used with Enphase inverters.



KC65T



KD205GX-LPU



KC85T



KD135GX-LPU

## KC-T Series Modules

Kyocera KC-T Series off-grid modules are ideal for charging storage batteries to power remote homes, recreational vehicles, telecommunications systems, and other consumer and commercial applications. Kyocera KC-T series modules have an industrial-grade junction box that allows the use of nominal half-inch conduit fittings. They are available as 85-watt, 65-watt and 50-watt modules used for 12-, 24- and 48-volt battery charging. These modules are rated class 1, division 2 for hazardous locations.

All Kyocera modules feature extremely sturdy frames, tempered low-reflection glass covers, built-in bypass diodes and a 20-year power output warranty. UL Listed. Made in Japan or Mexico.

Technical data		KC- series	KD135GX-LPU	KD2xx-LPU	KD235-LB
Cells	qty	36	36	54	60
Power output tolerance		-5/+10	-5/+5	-0/+5	-0/+5
Temperature <sub>NOCT</sub>	°C	47	47.9	47.9	47.9
Power temp coefficient	%/°C	-0.480	-0.490	-0.490	-0.490
Voc temp coefficient	%/°C	-0.369	-0.359	-0.361	-0.361
Fire rating	class	C	C	C	C
Connector type		J-Box	MC4	MC4	MC4
Cable lengths	inch +/-	n/a	29.9(760) / 72.4(1840)		+40.6 / - 32.7
Load rating	lbs/ft <sup>2</sup>	75	113	113	113
Quantity per pallet		20	20	20	20
Quantity per 53-ft trailer		n/a	760	760	760

Kyocera module		KC50T	KC65T	KC85T	KD135GX-LPU	KD205GX-LPU	KD210GX-LPU	KD215GX-LPU	KD235GX-LB
Power STC (peak)	watts	50	65	87	135	205	210	215	235
Power PTC (CEC)	watts	n/a	n/a	n/a	119.4	180	184.6	189.1	1
Peak power voltage	volts	17.4	17.4	17.4	17.7	26.6	26.6	26.6	29.8
Peak power current	amps	3.11	3.75	5.02	7.63	7.71	7.90	8.09	7.89
Open circuit voltage	volts	21.7	21.7	21.7	22.1	33.2	33.2	33.2	36.9
Short circuit current	amps	3.31	3.99	5.34	8.37	8.36	8.58	8.78	8.55
Max. system voltage	volts	600	600	600	600	600			
Series fuse rating					15	15			
Nominal voltage	volts	12	12	12	12	n/a			
Length	inch (mm)	25.2 (639)	29.6 (751)	39.6 (1007)	59.1 (1501)	59.1 (1500)			65.4 (1662)
Width	inch (mm)	25.7 (652)	25.7 (652)	25.7 (652)	26.3 (668)	39.0 (990)			39.0 (990)
Depth (including j-box)	inch (mm)	2.125 (54)	2.125 (54)	2.125 (54)	1.8 (46)	1.8 (46)			1.8 (46)
Weight	lbs	11	13.2	18.3	28.6	39.7			35.3
Item code		011-07719	011-07722	011-07725	011-07752	011-07765	011-07766	011-07767	011-07769
Price		\$400	\$504	\$635	\$890	\$1,035	\$1,060	\$1,085	\$1,186



# SANYO



## HIT Power N Series Modules

SANYO HIT N Series solar cells are hybrids of mono crystalline silicon surrounded by ultra-thin amorphous silicon layers, and are available solely from SANYO.

### Efficiency

HIT N Series solar cells efficiency is as high as 19.3% and module efficiency is as high as 17.1%. With this high sunlight conversion efficiency, you can obtain maximum power within a fixed amount of space. Save money using fewer system attachments and racking materials, and reduce costs by spending less time installing per watt. HIT Power N Series models are ideal for grid-connected solar systems, areas with performance based incentives, and renewable energy credits.

### Performance

SANYO's power ratings for HIT Power modules guarantee customers receive 100% of the nameplate rated power (or more) at the time of purchase, enabling owners to generate more kWh per rated watt.

Unique eco-packing minimizes cardboard waste at the job site. The packing density of the modules reduces transportation, fuel, and storage costs per installed watt.

As temperatures rise, HIT Power N solar modules produce 10% or more electricity (kWh) than conventional crystalline silicon solar modules at the same temperature.

SANYO silicon wafers in HIT Power N solar modules are made in California and Oregon, and the modules are assembled in an ISO 9001 (quality), 14001 (environment), and 18001 (safety) certified factory.

### Warranty

The modules have a limited 20-year power output and 5-year product workmanship warranty. UL Listed for the U.S. and Canada



Technical data			Module		HIP-205NKHA6	HIP-210NKHA6	HIP-215NKHA6
Power output tolerance		-0/+10	Power - STC (peak)	watts	205	210	215
Temperature <sub>NOCT</sub>	°C	46	Power - PTC	watts	190.1	194.8	199.6
Power temp coefficient	%/°C	-0.336	Peak power voltage	volts	40.7	41.3	42.0
Open circuit voltage coefficient.	%/°C	-0.143	Peak power current	amps	5.05	5.09	5.13
Fire rating	class	C	Open circuit voltage	volts	50.3	50.9	51.6
Connector type		MC4	Short circuit current	amps	5.54	5.57	5.61
Cable length + / -	inch	40.55/34.6	Max. system voltage	volts	600	600	600
Load rating	lbs/ft <sup>2</sup>	60	Series fuse rating	amps	15		
Quantity per pallet		32	Length	inch (mm)	62.2 (1580)		
Quantity per 53-ft trailer		952	Width	inch (mm)	31.4 (798)		
			Depth	inch (mm)	1.8 (46)		
			Weight	lbs (kg)	35.3 (16)		
			Item code		011-00123	011-00124	011-00125
			Price		\$1,230	\$1,260	\$1,290

## AEE Solar

### Battery Charging Modules

The AE series-HE photovoltaic modules provide cost-effective photovoltaic power for DC loads with moderate energy requirements. They charge batteries efficiently in virtually any climate. These modules are made with back-contact 18-20% efficient monocrystalline cells laminated behind tempered glass with aluminum frames, offering the smallest footprint available for this size module.

They have an industrial-grade conduit-ready junction box on the back that has knockouts for two standard half-inch conduit fittings. Typical commercial applications of these modules include remote telemetry, instrumentation systems, security sensors, signals, and land-based navigation aids. They have a 10-year power output warranty. Made in China.



Module		AE-120HE	AE-90HE	AE-80HE	AE-60HE	AE-50HE	AE-30HE
Peak power	watts	120	90	80	60	50	30
Number of cells		36	32	32	36	36	36
Peak power voltage	volts	18.90	17.60	17.60	18.90	17.4	18.90
Peak power current	amps	6.34	5.12	4.55	3.20	2.89	1.60
Open circuit voltage	volts	23.8	21.4	21.4	23.8	23.3	23.8
Short circuit current	amps	7.10	5.50	4.89	3.57	3.43	1.78
Length	inch (mm)	42.6 (1082)	40.83 (1037)	40.83 (1037)	31.10 (790)	24 (610)	21.89 (556)
Width	inch (mm)	31.3 (796)	20.75 (527)	20.75 (527)	21.10 (536)	21.10 (536)	16.38 (416)
Depth	inch (mm)	1.38 (35)	1.38 (35)	1.38 (35)	1.38 (35)	1.38 (35)	1.38 (35)
<b>Item code</b>		<b>011-08466</b>	<b>011-08463</b>	<b>011-08460</b>	<b>011-08455</b>	<b>011-08454</b>	<b>011-08443</b>
<b>Price</b>		<b>\$720</b>	<b>\$585</b>	<b>\$520</b>	<b>\$400</b>	<b>\$350</b>	<b>\$230</b>

### Small Off-Grid Modules

AEE small off-grid modules provide cost-effective photovoltaic power for DC loads with minimal energy requirements. They charge batteries efficiently in virtually any climate. These modules are made with multicrystalline cells laminated behind tempered glass. They have a small junction box on the back with screw terminals for wire connections. Typical commercial applications of these modules include remote telemetry, instrumentation systems, security sensors, signals, and land-based navigation aids. They have a 10-year power output warranty. Made in China.



Module		AEE-20	AEE-10	AEE-5
Peak power	watts	20	10	5
Peak power voltage	volts	17.3	17.3	17.3
Peak power current	amps	1.16	0.58	0.29
Open circuit voltage	volts	21.6	21.6	21.6
Short circuit current	amps	1.29	0.64	0.32
Length	inch (mm)	20.9 (530)	14.6 (370)	11.8 (300)
Width	inch (mm)	13.8 (350)	10.6 (270)	7.5 (190)
Depth	inch (mm)	1.0 (25)	0.7 (18)	0.7 (18)
Weight	lbs (kg)	5.4 (2.45)	2.54 (1.15)	1.54 (0.7)
<b>Item code</b>		<b>011-08603</b>	<b>011-08602</b>	<b>011-08601</b>
<b>Price</b>		<b>\$140</b>	<b>\$70</b>	<b>\$40</b>