



## Solar Power System

5.2KW 260W panel with battery backup

[www.solairworld.com](http://www.solairworld.com)

## Quotation for Solar Power System

### 5.2KW solar PV project-12V OPZV battery (Daily supply 17~20kwh electricity)

Component Name	Specifications	Unit	Quantity
Solar panel	Poly 260W/30V DC, 25 years warranty	pcs	20
Solar Inverter	Hybrid solar inverter 5KW/220V 50Hz, LCD display, 5 year warranty	Pcs	1
Solar Panel Mounting kit	Flat roof installation, aluminium, for 260W solar panel, 5 years warranty	Set	1
Solar cable	2PFG1169 1×4mm <sup>2</sup> , 2 years warranty	M	120
PV switch box	1 solair input, with battery circuit breaker to inverter, 2 years warranty	Set	1
Solar connector	MC4, 2 years warranty	Pair	10
OPZV Battery	12V/200AH	Pcs	25
Battery Mounting kit	Steel	Set	1
AC Cable	RVV 3*4sqmm	M	10
Cable	RVV 1*2.5sqmm	M	100

### Products Photos:

Solar Panel



Solar Inverter



Solar Panel Mounting



Solar cable



Solar Connector



Switch Box



Battery & Battery Mounting





**60 Cell**      **245-265W**  
Polycrystalline      Power Output  
Module                  Range

**16.5%**      **0~+5W**  
Maximum      Power Output  
Efficiency      Guarantee

AD series is the main brand of Aiduo PV's high quality solar modules.

Its high quality gives the customers more benefits.

AD series is famous for its high output power, convenient installation and high durability.

AD245-60P      AD250-60P  
AD255-60P      AD260-60P  
AD265-60P



Coated glass helps the absorption of more lights. Meanwhile it can make it easier to clean the dust on the modules in the rain and reduce the power loss caused by dust cover.



Excellent performance on anti-PID. Passed the PID free test of TUV .



The modules have excellent performance on anticorrosion and have passed the salt spray test of TUV.



Outstanding performance in low-light irradiance environments such as in early morning, evening and cloudy days.



The modules' protection level reaches IP67 such as dustproof and waterproof.

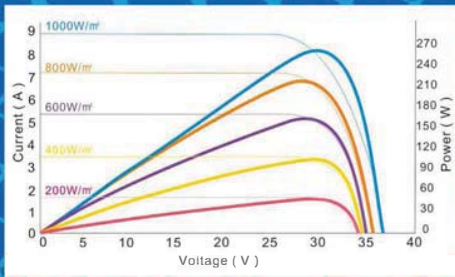
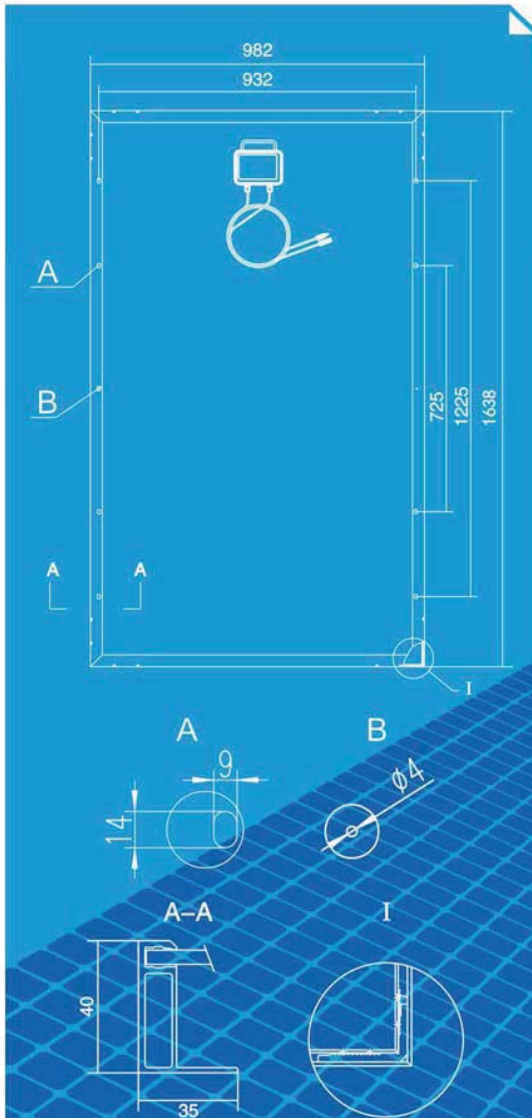


The frame can be customized to be white or black according to the customers' requirement.

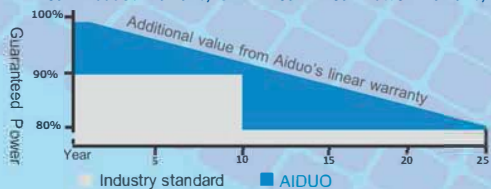
### RELIABLE QUALITY

- Module's power are classified according the tolerance of 0~+5W.
- The modules are soldered by automated machine and all the production are on the automatic assembly line. The quality is stable and reliable.
- EL test before packaging to exclude the product defects.





12 Year Product Warranty & 25 Year Linear Power Warranty



STC	AD245-60P	AD250-60P	AD255-60P	AD260-60P	AD265-60P
Maximum Power (Pm)	245	250	255	260	265
Maximum Power Voltage (Vm)	30.2	30.4	30.6	30.8	31.0
Maximum Power Current (Im)	8.12	8.23	8.34	8.45	8.56
Open Circuit Voltage (Voc)	36.8	36.9	36.9	37.0	37.0
Short Circuit Current (Isc)	8.74	8.88	9.02	9.16	9.31
Module Efficiency (%)	15.2	15.5	15.9	16.2	16.5
Operating Temperature (°C)	-40 ~ +85 °C				
Maximum System Voltage (V)	1000V				
Maximum Series Fuse Rating (A)	15A				
Power Tolerance (W)	0 ~ +5W				

STC: Irradiance 1000W/m<sup>2</sup>, module temperature 25°C, AM=1.5

NOCT	AD245-60P	AD250-60P	AD255-60P	AD260-60P	AD265-60P
Maximum Power (Pm)	179	182	186	189	193
Maximum Power Voltage (Vm)	27.5	27.7	27.8	28.0	28.2
Maximum Power Current (Im)	6.50	6.58	6.67	6.76	6.85
Open Circuit Voltage (Voc)	33.9	33.9	34.0	34.0	34.1
Short Circuit Current (Isc)	7.08	7.19	7.31	7.42	7.54

NOCT: Irradiance 800W/m<sup>2</sup>, ambient temperature 20°C, AM=1.5, wind speed 1m/s

#### Temperature Characteristics

NOCT	45 ± 2 °C
Temperature Coefficient of Pmax	-0.43% / °C
Temperature Coefficient of Voc	-0.31% / °C
Temperature Coefficient of Isc	0.046% / °C

#### Mechanical Characteristics

Solar Cell	Polycrystalline
Cell Size	156×156mm (6 Inches)
No. of Cells	60 (6×10)
Dimensions	1638×982×40mm
Weight	20kg
Frame	Anodized Aluminum Alloy
Junction Box	IP67 rated
Cables	4 m <sup>2</sup> , 900mm
Connectors	MC4/MC4 compatible

# NEW

From Solax

# SINGLE PHASE INVERTERS

From Solax

## X1 BOOST Dual MPPT

The X1 Boost series are high quality dual MPPT inverter offering efficiency and reliability at an unbeatable cost.

Solax have developed a range of single phase inverters, unrivaled in the industry for their quality, reliability and efficiency. The Solax single phase inverters boast a wide MPPT voltage range to allow for more energy harvesting and have a maximum input voltage of 600V, with a maximum efficiency of 97.8%.



X1-3.0-T    X1-3.3-T  
X1-3.6-T    X1-4.2-T  
X1-4.6-T    X1-5.0-T

# X1 BOOST

## SINGLE-PHASE -PRODUCT DATA



X1-3.0-T    X1-3.3-T    X1-3.6-T    X1-4.2-T    X1-4.6-T    X1-5.0-T

INPUT (DC)						
Max.recommended DC power [W]	3250	3500	4000	4600	5200	5200
Max.DC voltage [V]	600					
Norminal DC operating voltage [V]	360					
Max. input current [A]	12/12	12/12	12/12	12/12	12/12	12/12
Max. short circuit current [A]	15/15	15/15	15/15	15/15	15/15	15/15
MPPT voltage range [V]	125-580	125-580	125-580	125-580	125-580	125-580
MPPT voltage range (full load) [V]	150-550	150-550	160-550	190-550	220-550	220-550
Start input voltage [V]	100	100	100	100	100	110
Start output voltage [V]	150	150	150	150	150	150
Shut down input voltage [V]	70	70	70	70	70	70
No. of MPP trackers	2	2	2	2	2	2
Strings per MPP tracker	1	1	1	1	1	1
OUTPUT (AC)						
Norminal AC power [VA]	3000	3300	3680	4200	4600	4999
Max. apparent AC power [VA]	3000	3300	3680	4200	4600	4999
Rated grid voltage(AC voltage range) [V]	220/230/240(180 to 280 )					
Rated grid Frequency(AC frequency range) [Hz]	50(45 to 55)/60(55 to 65)					
Max. output current [A]	14	15	16	19	21	21
Displacement power factor	0.8 overexcited to 0.8 underexcited					
Total harmonic distortion(THD)	<2%					
EFFICIENCY						
MPPT efficiency	99.90%	99.90%	99.90%	99.90%	99.90%	99.90%
Euro-efficiency	97.00%	97.00%	97.00%	97.00%	97.00%	97.00%
Max. efficiency	97.80%	97.80%	97.80%	97.80%	97.80%	97.80%
POWER CONSUMPTION						
Input standby power[W]	<2W					
STANDARD						
Safety	IEC 62109-1/-2/AS3100					
EMC	EN61000-1/EN61000-2/EN61000-3					
Certification	G83/2;G59;AS4777.2-2015;VDE4105; EN50438;CQC;VDE0126					
ENVIRONMENT LIMIT						
Protection class	IP65					
Operating temperature range [°C]	-20... +60 ( derating at +45 )					
Humidity [%]	0-95 (non-condensing)					
Altitude [m]	<2000					
Storage temperature [°C]	-20... +60					
Noise emission(typical) [dB]	<25					
Mounting	Wall hanging					
OTHERS						
Dimensions(WxHxD) [mm]	339x420x143					
Weight [kg]	14.6	14.6	14.6	16.7	16.7	16.7
Cooling concept	Natural					
Topology	Transformerless					
Communication	WIFI(optional), RF(optional), Meter(optional), RS485, USB, DRM					
LCD display	7 LCD					
Button	4(CapSense Button)					
Standard warranty	Standard 5 years					

# SFS-FR-02 Flat Roof Ballast Mounting System

SFS-FR-02 ballast mounting system adopts foldable triangular to save cost both on installation and transportation. It is a modular structure, which can be expanded from one module to any scale while maximizing the roof usage. Our professional engineers will propose the size and weight of ballast for the project you are involved in.



### Ballast Roof Bracket Specification

- Installation Site:** open ground and roof
- Panels:** Solar panel for any size
- Structural materials:** aluminum, stainless steel
- Survival wind speed:** up to 60m / s
- Design snow pressure:** up to 1.4KN / m2
- Inclination:** Customizable
- Component direction:** Horizontal or vertical
- Design Standards:** CE&AS / NZS 1170
- Life:** Design Life for 25 years, quality assurance for 10 years

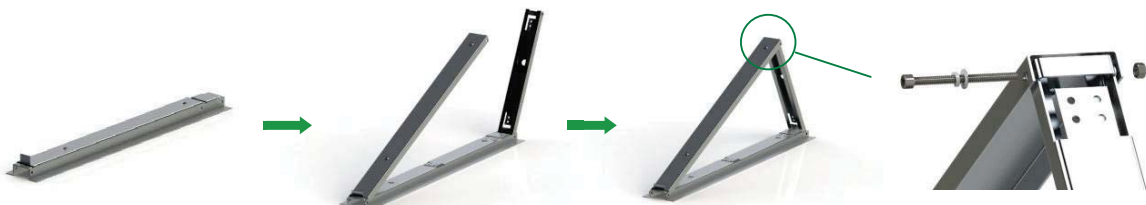
### Products Strengths of our technology

1. Functional triangular mounts
2. Economical with panel in landscape
3. Easy and fast installation with foldable design
4. Best tilt angle 5~15degree

### Overview of system components

(1X3 panel mounting system package: Based on Width of panel:1650X992X50mm )

SFS-BT MG-15	SFS Triangular mounts Group Extruded Al6005-T5 Anodize		SFS-MC G-50	SFS Mid-Clamp Group(50mm) Extruded Al6005-T5 Anodize	
SFS-EC G-50	SFS End Clamp Group(50mm) Extruded Al6005-T5 Anodize		SFS-AP- 1983	SFS Angle Plate L=1983mm Extruded Al6005-T5 Anodize	





# OPzV 12-160 (12V160Ah)



OPzV series is a Valve Regulated Lead Acid battery that adopts immobilized GEL and Tubular Plate technology to offer high reliability and performance. The Battery is designed and manufactured according to DIN standards and with die-casting positive grid and patent formula of active material. OPzV series exceeds DIN standard values with more than 20 years floating design life at 25°C and is even more suitable for cyclic use under extreme operating conditions.

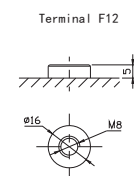
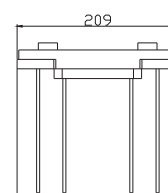
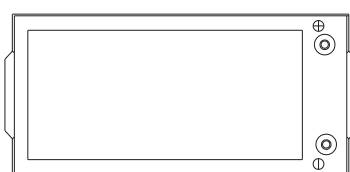
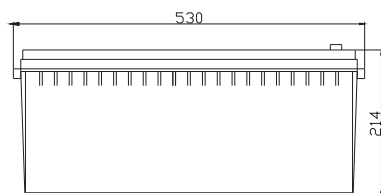
## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	160Ah@10hr-rate to 1.80V per cell @25°C
Weight	Approx. 57.0 Kg(Tolerance ±2%)
Max. Discharge Current	1600 A (5 sec)
Internal Resistance	Approx. 6.5 mΩ
Operating Temperature Range	Discharge: -40°C~70°C Charge: 0°C~50°C Storage: -20°C~60°C
Normal Operating Temperature Range	25°C ±5°C
Float charging Voltage	13.6 to 13.8 VDC/unit Average at 25°C
Recommended Maximum Charging Current	32A
Equalization and Cycle Service	14.2 to 14.4VDC/unit Average at 25°C
Self Discharge	RITAR Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 3% per month at 25°C. Please charge batteries before using.
Terminal	Terminal F12
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.



## Dimensions

Unit: mm Dimension: 530 (L) × 209 (W) × 214 (H)



### Constant Current Discharge Characteristics: A (25°C)

F.V/ Time	30min	1h	2h	3h	4h	5h	6h	8h	10h	20h
11.4	78.72	62.40	44.00	33.37	27.36	23.64	21.28	16.61	14.24	7.476
11.2	88.00	68.80	47.20	35.39	28.88	24.87	22.56	17.38	14.88	7.812
11.0	100.8	76.80	51.20	37.72	30.40	25.95	23.36	18.16	15.52	8.148
10.8	112.0	83.20	53.12	38.80	31.01	26.56	24.00	18.62	16.00	8.400
10.5	124.8	89.12	55.52	40.35	31.52	27.20	24.48	18.93	16.32	8.568
10.2	137.6	92.00	57.12	41.13	32.07	27.52	24.80	19.09	16.48	8.652
9.90	141.9	97.76	59.04	42.24	32.53	27.84	25.12	19.24	16.64	8.736
9.60	148.0	101.1	61.28	44.00	33.44	28.32	25.44	19.40	16.80	8.820

### Constant Power Discharge Characteristics: W (25°C)

F.V/ Time	30min	1h	2h	3h	4h	5h	6h	8h	10h	20h
11.4	904.0	718.8	510.4	387.8	321.3	279.4	252.5	199.3	174.1	91.42
11.2	994.7	780.5	541.3	406.3	338.6	292.8	266.9	207.7	181.6	95.33
11.0	1114	851.0	576.0	427.4	355.0	304.3	275.5	215.1	188.1	98.75
10.8	1218	907.9	595.3	437.0	361.8	311.0	282.2	219.8	192.8	101.2
10.5	1321	948.4	614.6	450.4	366.6	318.7	287.0	222.6	195.6	102.7
10.2	1416	958.0	630.0	458.1	372.4	321.6	289.9	224.4	197.4	103.6
9.90	1440	1000	647.4	468.1	377.2	324.5	292.8	226.3	198.3	104.1
9.60	1458	1031	662.8	483.5	386.9	327.4	294.7	227.2	199.3	104.6

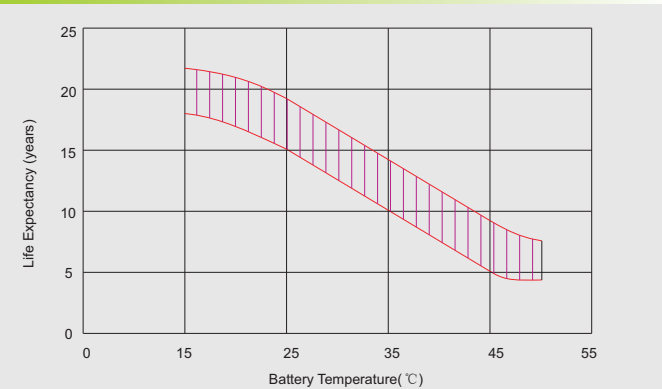
All mentioned values are average values (Tolerance ±2%).



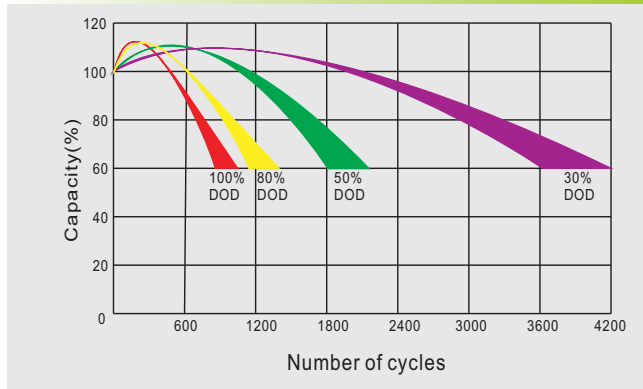
# OPzV 12-160

# 12V160Ah

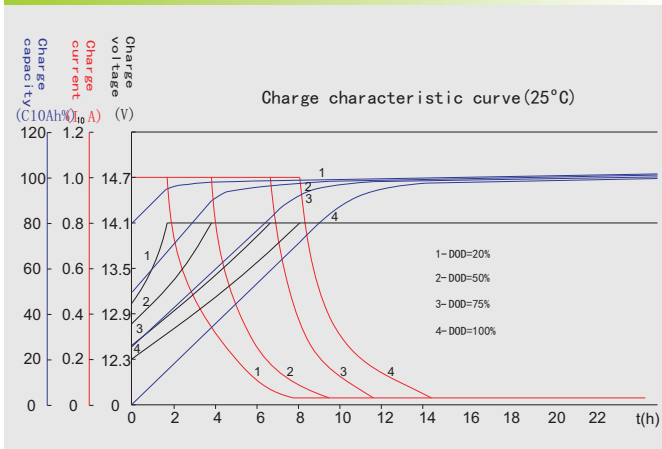
### Effect of temperature on long term float life



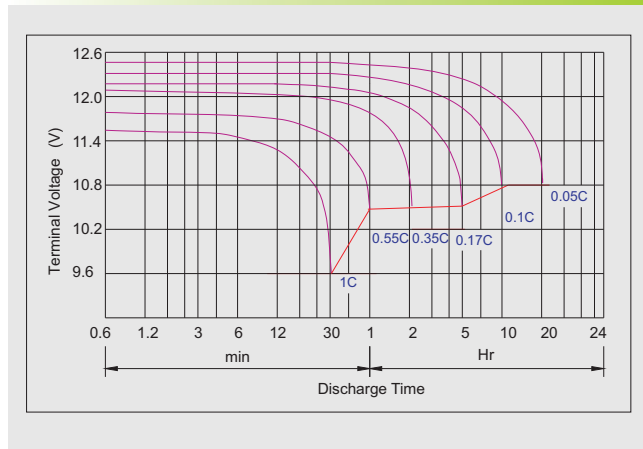
### Life characteristics of cyclic use



### Charge characteristic Curve for cyclic use



### Discharge characteristic Curve



### Long time discharge capacity for solar/wind application

Model	Capacity	C24 (Ah)	C48 (Ah)	C72 (Ah)	C100 (Ah)	C120 (Ah)	C240 (Ah)
		F.V=1.85VPC					
OPzV12-160		161.1	170.2	178.8	182.4	186.0	197.0

### Capacity factors vs temperature (OPzV series)

Temperature	-30°C	-20°C	-10°C	0°C	10°C	20°C	25°C	30°C	40°C	45°C	50°C
Capacity	60%	75%	83%	89%	92%	99%	100%	103%	105%	107%	109%

### Discharge Current VS. Final Voltage

Discharge current	Final voltage (V)
$I_{dis} \leq 0.1I_{10}$	1.90
$0.1I_{10} < I_{dis} \leq I_{10}$	1.85
$I_{10} < I_{dis} \leq 4I_{10}$	1.80
$4I_{10} < I_{dis} \leq 6I_{10}$	1.75
$6I_{10} < I_{dis} \leq 10I_{10}$	1.70
$I_{dis} > 15I_{10}$	1.60

Charge the batteries at least once every one year, if they are stored at 25°C.

Charging Method:

Constant Voltage	-0.2Cx2h+14.1~14.4V,24h,Max. Current 0.2CA
Constant Current	-0.2Cx2h+0.1CAx12h

### Maintenance & Cautions

#### Float Service:

- ※ Every month, recommend inspection every battery voltage.
- ※ Every three months, recommend equalization charge for one time.

Equalization charge method:

Discharge: 40~50% rate capacity discharge.

Charge: Max. current 0.2CA, constant voltage 14.1-14.4V charge 24h.

- ※ Effect of temperature on float charge voltage:  $-3mV/^{\circ}C/Cell.$

- ※ Service life will be directly affected by the number of discharge

cycles, depth of discharge, ambient temperature and charging method.