



LIGHTEN  
WORLD  
INDUSTRY

世照股份有限公司

LIGHTEN WORLD INDUSTRY CO., LTD.

10696 台北市大安區忠孝東路四段303號7樓之1  
7F.-1, No.303, Sec.4, Jhongsiao E. Rd.,  
Da-An District, Taipei City 10696, Taiwan

+886-2-2771-8682 +886-2-2751-7141

[www.lightenworld.com.tw](http://www.lightenworld.com.tw)

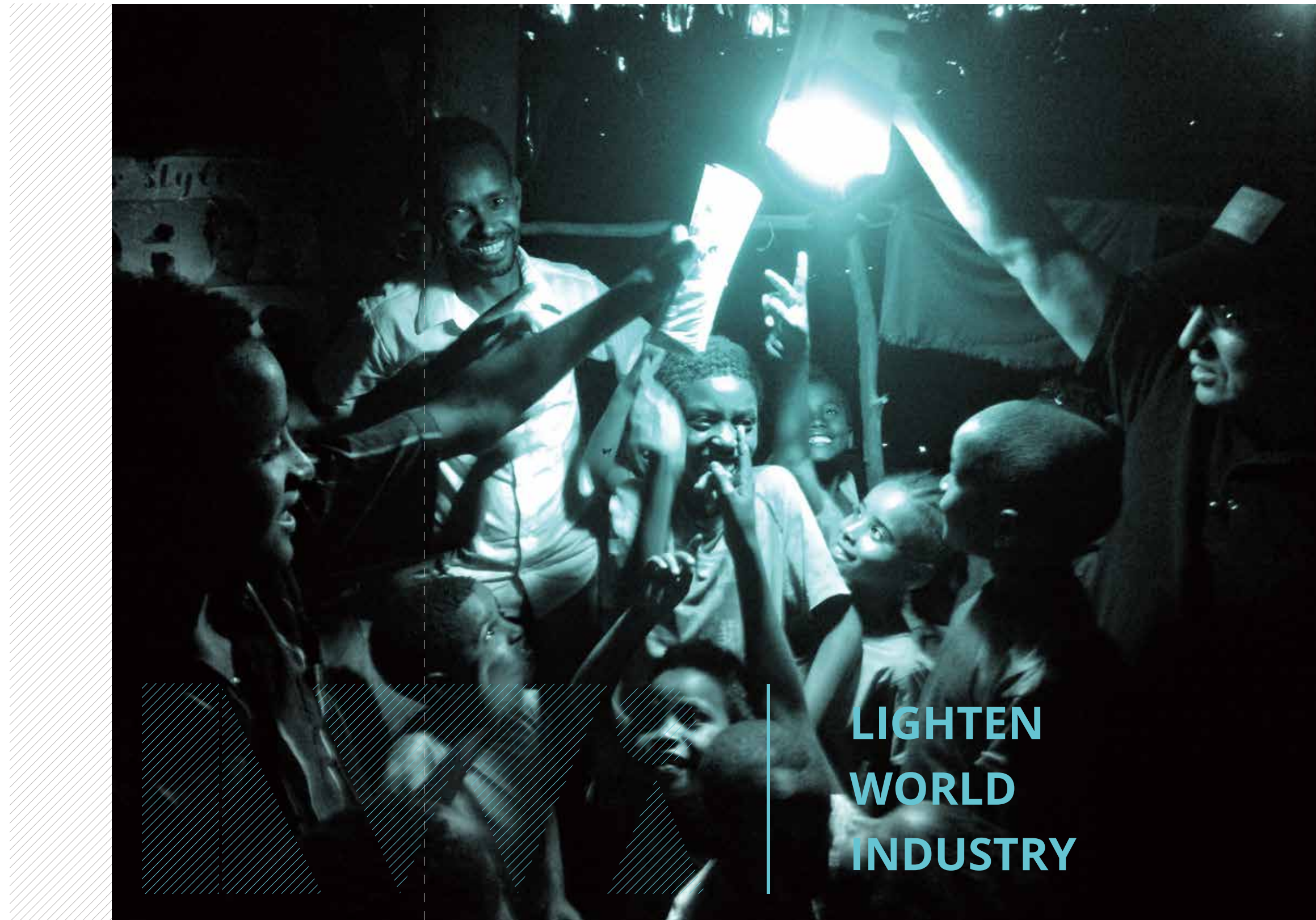


LIGHTEN  
WORLD  
INDUSTRY

**Your Energy  
Solution  
Anytime,  
Anywhere.**

## Contents

- 04 About us
  - Solar Battery
- 06 Battery NPS Series
- 08 Battery NPD Series
- 10 Battery NPL Series
- 12 Battery NPG Series
- 14 Battery Terminals
- 15 Battery Characteristics
  - Solar Power System
- 18 Hybrid PV Inverter
- 20 On-Grid PV Inverter
  - Solar Home System
- 22 Portable light
- 23 Lighting kit
- 24 TV kit
- 25 Home kit



**LIGHTEN  
WORLD  
INDUSTRY**





## About us

Established in 1985, LIGHTEN WORLD INDUSTRY has been dedicated into design, manufacture, and export energy related products including AGM battery, gel battery, deep cycle battery, tubular battery, solar battery for energy storage solution with PV inverter, converter, power supply and battery charger. Our commitment in quality and after service wins satisfaction and trust from valuable customers worldwide.

With strong R&D team, we have involved in renewable energy sector since 2009 by manufacturing customized and self-sustainable solar home system, and also designing intelligent solar power system for off-grid /on-grid / hybrid applications. Our solar solutions are now powering up household, office, and facility in Africa, Asia, Latin America and Oceania.

All of our solar solutions are carrying our AGM deep cycle or long life GEL deep cycle solar battery, which provide high performance in harsh environment. Our quality batteries fully satisfy various energy storage solutions from standby to cyclic applications including UPS, telecom, motive power, mobility scooter, solar home system and solar power system.

We provide your own energy solution for anytime, anywhere.





NPS Series  
Standard Industrial Battery

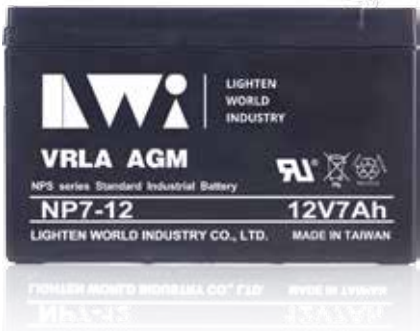


Voltage : 6V & 12V  
Capacity : 1.2AH ~ 250AH

Application :  
UPS / Security / electric appliances /  
Emergency light

Battery NPS Series

NPS battery is general purpose industrial battery with designed 10 years life in standby service, or more than 400 cycle life at 50% DOD in deep cycle service. NPS series batteries are highly efficient VRLA, AGM (Absorbent Glass Mat) separator maintenance free battery with lead-calcium alloy plate, which provides industrial standard performance, durability and lifespan.



Maintenance free

When battery is charging, hydrogen would be absorbed and reversed to electrolyte by plates. It doesn't need to refill water and balanced charge, which makes maintenance free.

Flexible installation

AGM separator keep electrolyte absorbed in glass mat and still. Battery can be used or positioned in any orientation.

Extremely safe

When excessive gas production by inappropriate charging occurs, safety valves will automatically emit the gas to prevent battery cracked.

Long standby life, Better cycle performance

Anti-corrosion lead-calcium alloy plate provides longer float charging life. AGM separator can trap electrolyte and prevent active materials on positive plate dropping at the same time. Moreover, it gives better deep discharge cycle performance.

Longer shelf life

Special lead-calcium alloy plates make lower self-discharge for longer shelf life.

High rate performance

Low inner resistance allows higher discharging and charging current for better performance in high rate application.

Model	Nominal Voltage (V)	Capacity (AH)	Internal Resistance (mOhm)	Dimensions (mm/in)								Terminal		Weight ±4%(Kg)	
				Length		Width		Height		Total Height					
				mm	in	mm	in	mm	in	mm	in	Type	Position	Kg	Lbs
NPS1.2-6	6	1.2	52	97	3.82	24	0.94	52	2.05	58	2.28	T1	C	0.28	0.62
NPS3-6	6	3.2	28	134	5.28	35	1.38	61	2.4	67	2.64	T1	C	0.6	1.32
NPS3-6A	6	3.2	28	67	2.64	34	1.34	118	4.65	124	4.88	T1	A/C	0.61	1.34
NPS4-6	6	4	30	70	2.76	47	1.85	101	3.98	107	4.21	T1	A	0.68	1.50
NPS7-6	6	7	16	151	5.94	34	1.34	94	3.7	100	3.94	T1/T2	C	1.12	2.47
NPS8-6	6	8	10	98	3.86	56	2.2	117	4.61	119	4.69	T1	B	1.2	2.65
NPS10-6	6	10	14	151	5.94	50	1.97	94	3.7	100	3.94	T1/T2	C	1.6	3.53
NPS12-6	6	12	10											1.75	3.86
NPS1.2-12	12	1.2	90	97	3.82	43	1.69	52	2.05	58	2.28	T1	E	0.25	1.15
NPS2.3-12	12	2.3	60	178	7.01	35	1.38	61	2.4	67	2.64	T1	C	0.88	1.94
NPS4-12	12	4	55	90	3.54	70	2.76	101	3.98	107	4.21	T1	C	1.35	2.98
NPS5-12	12	5	26	90	3.54	70	2.76	101	3.98	107	4.21	T1	C	1.6	3.53
NPS7-12	12	7	28	151	5.94	65	2.56	94	3.7	100	3.94	T1/T2	F	2.22	4.89
NPS9-12	12	9	19	151	5.94	65	2.56	94	3.7	100	3.94	T1/T2	F	2.6	5.73
NPS12-12	12	12	19	151	5.94	98	3.86	95	3.74	101	3.98	T2	F	3.5	7.72
NPS18-12	12	18	16	181	7.13	77	3.03	167	6.57	167/167	6.57/6.57	T3/T8	D	5.3	11.68
NPS26-12	12	26	12	165	6.5	176	6.93	127	5	127	5	T3	D	7.9	17.42
NPS38-12	12	38	9	197	7.8	165	6.5	170	6.7	170/170	6.7/6.7	T4/T9	D	12	26.46
NPS40-12	12	40	8.5											12.5	27.56
NPS65-12	12	70	6.5	260	10.2	168	6.6	211	8.3	233/214	9.2/8.4	T5/T9	C	21.5	47.40
NPS80-12	12	85	5											24.3	53.57
NPS100-12	12	100	4.5	330	13	171	6.7	214	8.4	224/220	8.8/8.7	T5/T9	C	30	66.14
NPS150-12	12	150	3.5	485	19.1	172	6.8	240	9.4	242/240	9.5/9.5	T5/T11	C	43	94.80
NPS200-12	12	200	3	522	20.6	238	9.4	218	8.6	238/221	9.4/8.7	T5/T11	E	60.5	133.38
NPS250-12	12	250	2.6	521	20.5	269	10.6	220	8.7	242/223	9.5/8.8	T5/T11	E	72.8	160.50

\* specification subject to change without notice





**Maintenance free**

When battery is charging, hydrogen would be absorbed and reversed to electrolyte by plates. It doesn't need to refill water and balanced charge, which makes maintenance free.

**Flexible installation**

AGM separator keep electrolyte absorbed in glass mat and still. Battery can be used or positioned in any orientation.

**Deep cycle application**

Efficient and fast recovery from deep discharging status after recharging, keep battery healthy for longer lifespan in deep cycle application.

**Extremely safe**

When excessive gas production by inappropriate charging occurs, safety valves will automatically emit the gas to prevent battery cracked.

**Long standby life, Better cycle performance**

Anti-corrosion lead-calcium alloy plate provides longer float charging life. AGM separator can trap electrolyte and prevent active materials on positive plate dropping at the same time. Moreover, it gives better deep discharge cycle performance.

**Longer shelf life**

Special lead-calcium alloy plates make lower self-discharge for longer shelf life.

**High rate performance**

Low inner resistance allows higher discharging and charging current for better performance in high rate application.



**NPD Series  
Deep cycle Battery**

**Battery NPD Series**

NPD battery is deep cycle battery with designed 10 years life in standby service, or more than 600 cycle life at 50% DOD in deep cycle service.

NPD series batteries are highly efficient VRLA, AGM (Absorbent Glass Mat) separator maintenance free battery with lead-calcium alloy plate, which provides great deep cycle performance, durability and lifespan.

**Voltage :** 12V  
**Capacity :** 12AH ~ 250AH

**Application :** Mobility / E-scooter / E-bike / Renewable energy



Model	Nominal Voltage (V)	Capacity (AH)	Internal Resistance (mOhm)	Dimensions (mm/in)								Terminal		Weight ±4%(Kg)	
				Length		Width		Height		Total Height					
				mm	in	mm	in	mm	in	mm	in	Type	Position	Kg	Lbs
NPD12-12	12	12	19	151	5.9	98	3.9	95	3.7	101	4	T2	F	3.5	7.72
NPD18-12	12	18	16	181	7.1	77	3	167	6.6	167/167	6.6/6.6	T3/T8	D	5.3	11.68
NPD20-12	12	20	12											5.6	12.35
NPD24-12	12	24	14	166	6.5	175	6.9	125	4.9	125/125	4.9/4.9	T3/T8	D	7.8	17.20
NPD28-12	12	28	10											8.6	18.96
NPD36-12	12	36	10	195	7.7	130	5.1	155	6.1	180/166	7.1/6.5	T7/T9	C	9.5	20.94
NPD40-12	12	40	8.5	197	7.8	165	6.5	170	6.7	170/170	6.7/6.7	T4/T9	D	12.5	27.56
NPD55-12	12	55	6.5	229	9	138	5.4	208	8.2	230/211	9.1/8.3	T5/T9	C	16.5	36.38
NPD60-12	12	60	7	260	10.2	168	6.6	211	8.3	233/214	9.2/8.4	T5/T9	C	18.5	40.79
NPD70-12	12	70	6.5											21.5	47.40
NPD80-12	12	80	5.5											23.2	51.15
NPD65-12	12	65	6	350	13.3	167	6.6	179	7	186/179	7.3/7.0	T5/T9	C	20.8	45.86
NPD90-12	12	90	5.5	306	12	169	6.7	211	8.3	233/214	9.2/8.4	T5/T9	C	26.8	59.08
NPD100-12	12	100	4.5	330	13	171	6.7	214	8.4	224/220	8.8/8.7	T5/T9	C	30	66.14
NPD120-12	12	120	4	409	16.1	176	6.9	225	8.9	225/225	8.9/8.9	T5/T11	C	35	77.16
NPD150-12	12	150	3.5	485	19.1	172	6.8	240	9.4	242/240	9.5/9.4	T5/T11	C	43	94.80
NPD180-12	12	180	3.3	494	19.4	206	8.1	209	8.2	235/235	9.3/9.3	T20/T11	E	54	119.05
NPD200-12	12	200	3	522	20.6	238	9.4	218	8.6	238/221	9.4/8.7	T5/T11	E	60.5	133.38
NPD250-12	12	250	2.6	521	20.5	263	10.6	220	8.7	242/223	9.7/8.8	T5/T11	E	72.8	160.50

\* specification subject to change without notice



## NPL Series Long Life Gel Battery



## Battery NPL Series

NPL battery is long life Gel electrolyte battery with designed 12 years life in standby service, or more than 400 cycle life at 50% DOD in deep cycle service.

NPL series batteries are highly efficient and long life gel cell VRLA, AGM (Absorbent Glass Mat) separator maintenance free battery with lead-calcium alloy plate, which provides longer standby life performance, extra durability and lifespan.

**Voltage :** 12V  
**Capacity :** 50AH ~ 200AH

**Application :** UPS / Telecom / Base station



**Maintenance free**  
When battery is charging, hydrogen would be absorbed and reversed to electrolyte by plates. It doesn't need to refill water and balanced charge, which makes maintenance free.

**Flexible installation**  
AGM separator keep electrolyte absorbed in glass mat and still. Battery can be used or positioned in any orientation.

**Longer lifespan in extreme weather**  
Gel cell electrolyte prevent electrolyte being evaporated in high temperature or being frozen in low temperature, which keep battery in high performance in extreme weather.

**Extremely safe**  
When excessive gas production by inappropriate charging occurs, safety valves will automatically emit the gas to prevent battery cracked.

**Long standby life, Better cycle performance**  
Anti-corrosion lead-calcium alloy plate provides longer float charging life. AGM separator can trap electrolyte and prevent active materials on positive plate dropping at the same time. Moreover, it gives better deep discharge cycle performance.

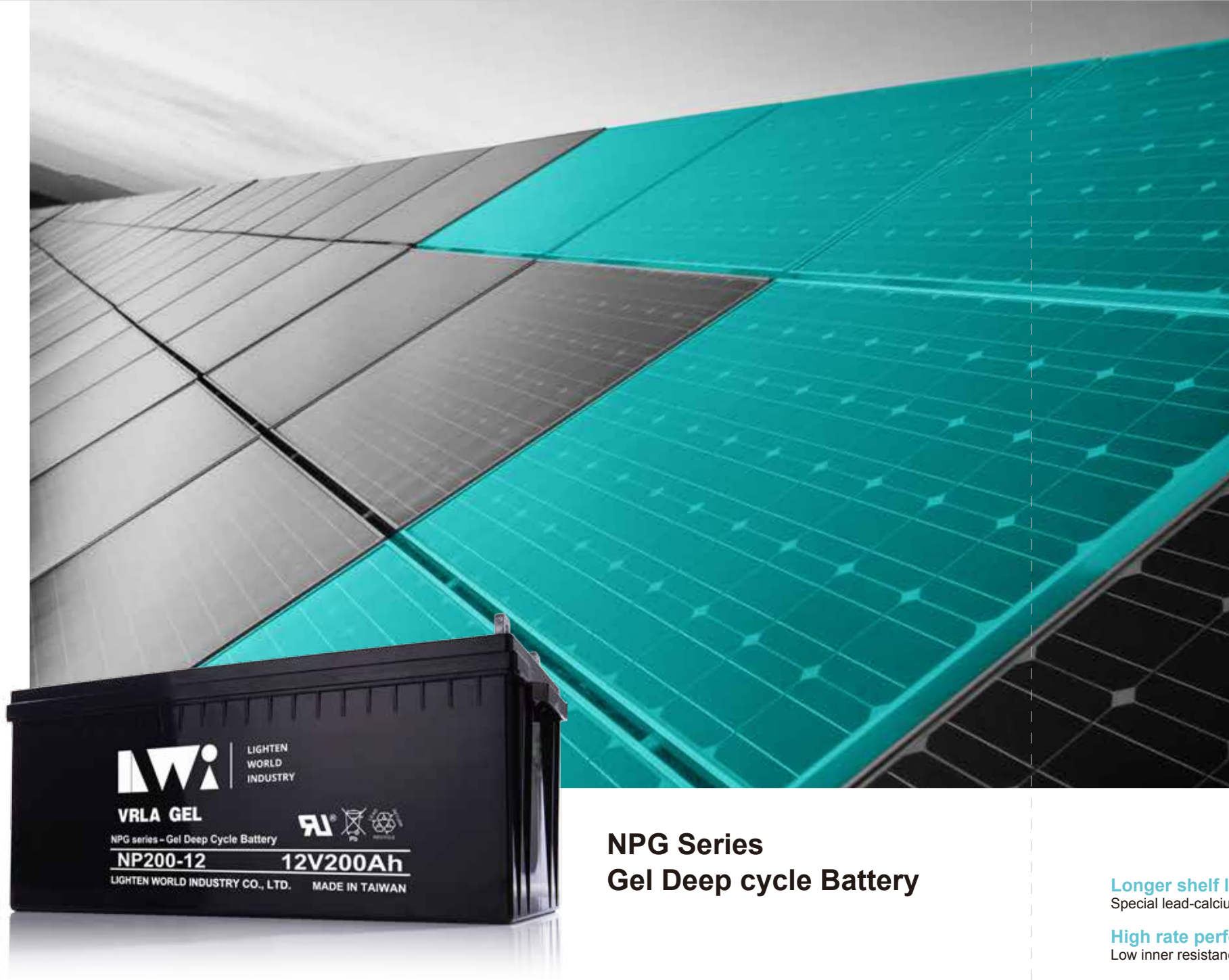
**Longer shelf life**  
Special lead-calcium alloy plates make lower self-discharge for longer shelf life.

**High rate performance**  
Low inner resistance allows higher discharging and charging current for better performance in high rate application.

Model	Nominal Voltage (V)	Capacity (AH)	Internal Resistance (mOhm)	Dimensions (mm/in)								Terminal		Weight ±4%(Kg)	
				Length		Width		Height		Total Height					
				mm	in	mm	in	mm	in	mm	in	Type	Position	Kg	Lbs
NPL50-12FT	12	50	7.5	277	10.91	106	4.17	221	8.7	221	8.7	T9	E	17	37.5
NPL56-12FT	12	55	6.5											17.5	38.6
NPL75-12FT	12	75	6	562	22.1	114	4.5	189	7.4	189	7.4	M8 bolt	E	25	55.1
NPL100-12FT	12	100	5	506	19.9	110	4.3	224	8.8	239	9.4	T9	E	31	68.3
NPL110-12FT	12	110	4.5	560	22	125	4.9	228	9	228	9	T9	E	33	72.8
NPL120-12FT	12	120	4.3	551	21.7	110	4.3	239	9.4	239	9.4	T11	E	36	79.4
NPL125-12FT	12	125	4.2	436	17.2	108	4.3	317	12.5	317	12.5	T14	E	38	83.8
NPL150-12FT	12	150	4	551	21.7	110	4.3	287	11.3	287	11.3	T11	E	48.5	106.9
NPL170-12FT	12	170	4											54	119
NPL180-12FT	12	180	3.8	546	21.5	125	4.9	317	12.5	323	12.7	T11	E	59	130.1
NPL200-12FT	12	200	3.2											59	130.1

\* specification subject to change without notice





## NPG Series Gel Deep cycle Battery

### Battery NPG Series

NPG battery is long life Gel electrolyte deep cycle battery with designed 12 years life in standby service, or more than 600 cycle life at 50% DOD in deep cycle service.

NPG series batteries are highly efficient and long life gel cell VRLA, AGM (Absorbent Glass Mat) separator maintenance free battery with lead-calcium alloy plate, which provides longer standby life and deep cycle performance, extra durability and lifespan.

**Voltage :** 12V

**Capacity :** 36AH ~ 250AH

**Application :** UPS / Security / electric appliances / Emergency light



#### Maintenance free

When battery is charging, hydrogen would be absorbed and reversed to electrolyte by plates. It doesn't need to refill water and balanced charge, which makes maintenance free.

#### Flexible installation

AGM separator keep electrolyte absorbed in glass mat and still. Battery can be used or positioned in any orientation.

#### Longer lifespan in extreme weather

Gel cell electrolyte prevent electrolyte being evaporated in high temperature or being frozen in low temperature, which keep battery in high performance in extreme weather.

#### Deep cycle application

Efficient and fast recovery from deep discharging status after recharging, keep battery healthy for longer lifespan in deep cycle application.

#### Extremely safe

When excessive gas production by inappropriate charging occurs, safety valves will automatically emit the gas to prevent battery cracked.

#### Long standby life, Better cycle performance

Anti-corrosion lead-calcium alloy plate provides longer float charging life. AGM separator can trap electrolyte and prevent active materials on positive plate dropping at the same time. Moreover, it gives better deep discharge cycle performance.

#### Longer shelf life

Special lead-calcium alloy plates make lower self-discharge for longer shelf life.

#### High rate performance

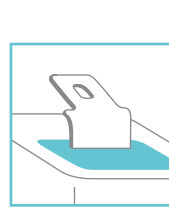
Low inner resistance allows higher discharging and charging current for better performance in high rate application.

Model	Nominal Voltage (V)	Capacity (AH)	Internal Resistance (mOhm)	Dimensions (mm/in)								Terminal		Weight ±4%(Kg)	
				Length		Width		Height		Total Height					
				mm	in	mm	in	mm	in	mm	in	Type	Position	Kg	Lbs
NPG36-12	12	36	11	195	7.7	130	5.1	155	8.9	155	8.9	T9	C	10.2	22.49
NPG40-12	12	40	9.5	197	7.8	165	6.5	170	6.7	170	6.7	T9	D	12.5	27.56
NPG55-12	12	55	7	229	9	138	5.4	208	8.2	208	8.2	T9	C	17	37.48
NPG65-12	12	65	6.6	350	3.8	167	6.6	179	7	179	7	T9	C	21	46.30
NPG60-12	12	60	7.7											22	48.50
NPG70-12	12	70	7	260	10.2	168	6.6	211	8.3	211	8.3	T9	C	24	52.91
NPG80-12	12	80	6.5	306	12.05	169	6.65	211	8.3	211	8.3	T9	C	27.5	60.63
NPG90-12	12	90	5.8	306	12.05	169	6.65	211	8.3	211	8.3	T9	C	28.5	62.83
NPG100-12	12	100	5	330	13	171	6.7	214	8.4	214	8.4	T9	C	32	70.55
NPG110-12	12	110	5.2	330	13	171	6.7	225	8.86	225	8.86	T9	C	33.5	73.85
NPG120-12	12	120	4.4	409	16.1	176	6.9	225	8.9	225	8.9	T11	C	36.5	80.47
NPG134-12	12	134	4.2	342	13.5	172	6.8	280	11	280	11	T11	C	42.5	93.70
NPG150-12	12	150	3.9	485	19.1	172	6.8	240	9.4	240	9.4	T11	C	44	97.00
NPG180-12	12	180	3.6	494	19.4	206	8.1	209	8.2	209	8.2	T11	C	55	121.25
NPG160-12	12	160	3.2	530	20.8	207	8.15	214	8.43	214	8.43	T11	C	53	116.84
NPG200-12	12	200	3.3	522	20.6	238	9.4	218	8.6	218	8.6	T11	C	66	145.51
NPG250-12	12	250	2.9	521	20.5	269	10.6	220	8.7	220	8.7	T11	E	75	165.35

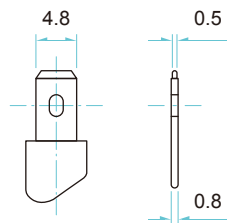
\* specification subject to change without notice

# Battery Terminals

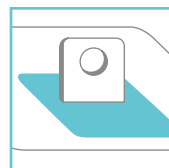
Terminal Types ( unit: mm )



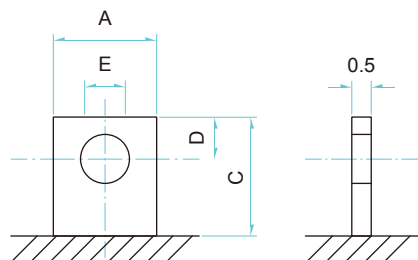
T1



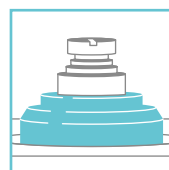
T2



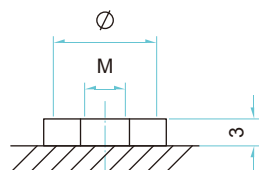
T3 T4 T5 T6 T7 T16 T17 T18 T19 T20



Type	A	B	C	D	E	Material
T3	12	2.0	14	5.0	5.5	Cu
T4	20	3.0	16	7.0	8.0	Cu
T5	22	3.5	22	8.5	8.0	Cu
T6	17	9.0	18	8.0	6.0	Pb
T7	17	6.0	16	7.0	8.0	Pb
T16	20	3.0	18	7.5	8.0	Cu
T17	18	7.0	20	7.5	7.0	Pb
T18	23	7.0	19	8.5	7.0	Pb
T19	25	7.0	24	10.5	9.0	Pb
T20	27	8.0	29	12.0	9.0	Pb

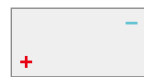


T8 T9 T10 T11 T12 T13 T14 T15

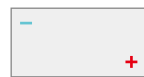


Type	M	Ø	Material
T8	5	12	Cu
T9	6	14	Cu
T10	8	20	Cu
T11	8	16	Cu
T12	9	14	Cu
T13	10	20	Cu
T14	9	18	Cu
T15	6	16	Cu

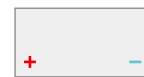
Terminal Position



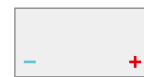
A



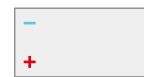
B



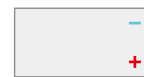
C



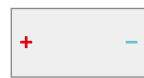
D



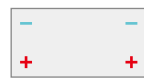
E



F



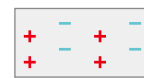
G



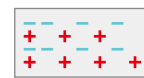
H



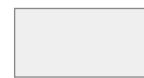
I



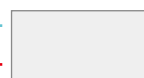
J



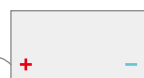
K



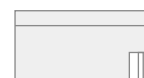
L



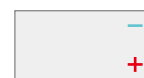
M



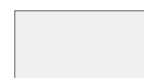
N



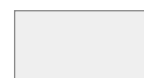
O



P



Q

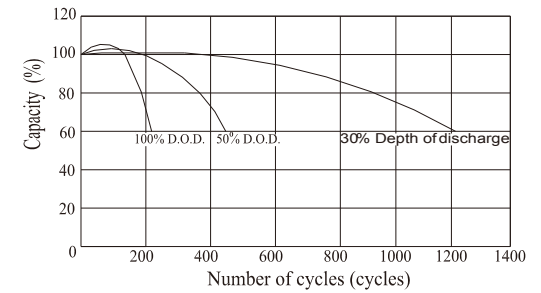


R

# Battery Characteristics

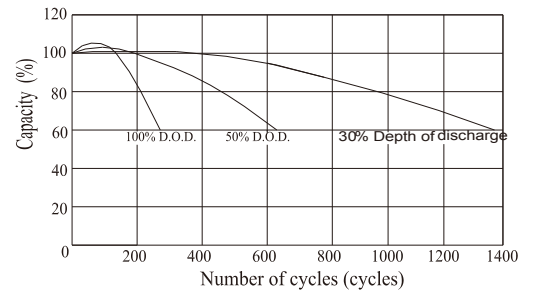
Cycle Life on D.O.D (25°C)

NPL Series / NPS Series

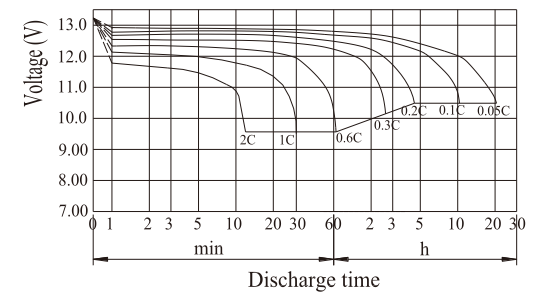


Cycle Life on D.O.D (25°C)

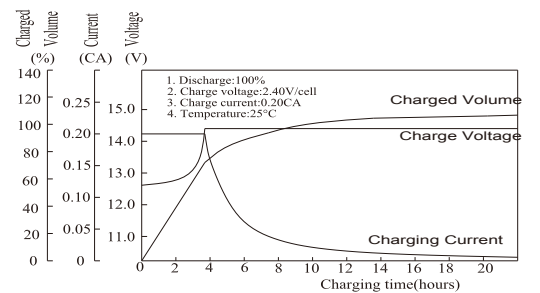
NPD Series / NPG Series



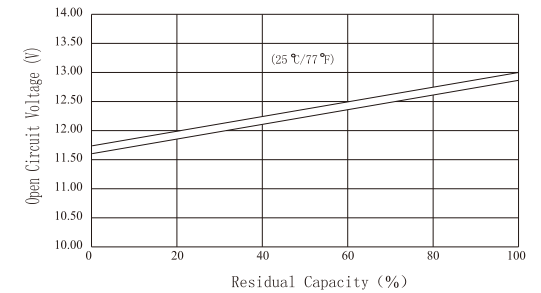
Discharge Characteristics (25°C)



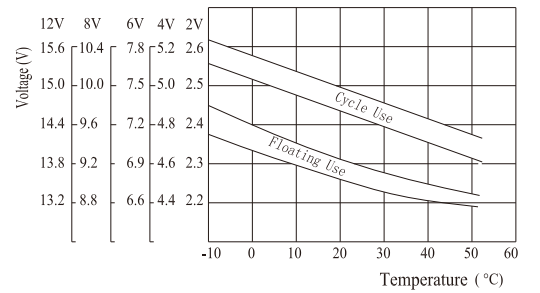
Charging Characteristics (25°C)



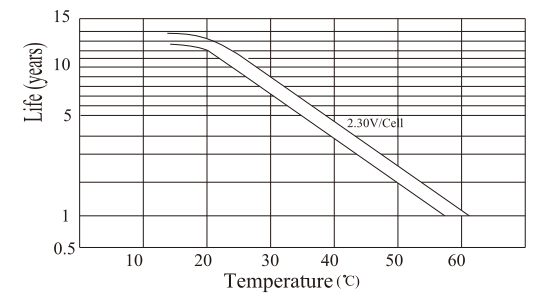
The Relationship for Open Circuit Voltage and Residual Capacity (25°C)



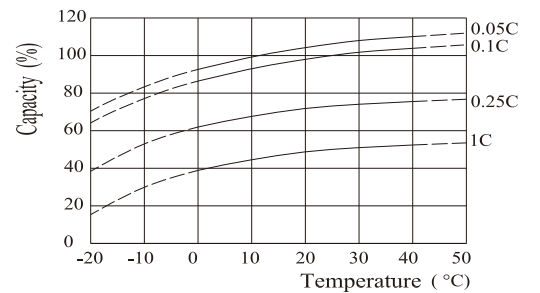
The Relationship for Charging Voltage and Temperature



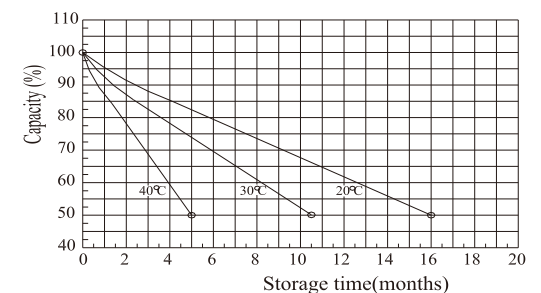
Floating Life on Temperature



Effect of Temperature on Capacity



Self-discharge Characteristics





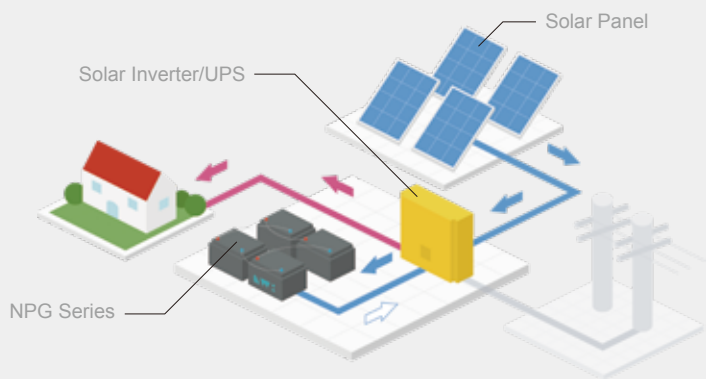


## Solar Power System & Soalr Home System





# Solar Power System



### Off Grid:

- Inverter output is separated from grid or genset
- Inverter supplies loads from PV and/or batteries

## Off Grid

Enjoy solar power in off-grid area.

This is independent stand-alone solar power system without connecting to AC grid. Our LWI high performance gel deep cycle solar battery can provide long service life for off-grid solar power solution. Off-Grid solar power system gives you completely self-sustainable solar energy anytime, anywhere.

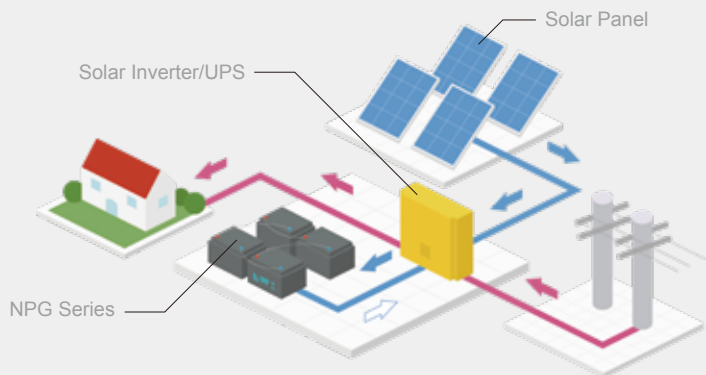
- Extra PV power is used to charge batteries
- Loads will be switched to AC input automatically while needed



## Specifications

Model		SHPV-3600	SHPV-5000	SHPV-6000
<b>Input (PV)</b>	Unit			
Max. PV Power	W <sub>p</sub>	3600	5000	6000
MPPT Range <sup>1</sup>	V	150 ~ 500	150 ~ 450	150 ~ 450
Max. DC Voltage	V	550	500	500
Max. Current	A	10	20	10 x 2
MPP Tracker Number		1	1	2
<b>Input (AC)</b>	Unit			
Nominal Voltage, Frequency	V/Hz	230, 50/60		
Maximum Current	A	15	25	25
<b>Battery</b>				
Nominal Voltage	V	48	48	48
Max. Charging I from PV	A	60	60	100
<b>Output (AC)</b>				
Nominal Power	W/VA	3000	5000	5000
Nominal Voltage, Frequency	V/Hz	230, 50/60		
Over-Load Cap.	%	200		
Waveform		Pure Sinusoidal		
Regulation (Linear Load)	%	± 5		
<b>General</b>				
Temperature Range <sup>2</sup>	°C	-20 ~ 55		
Environment		Indoor		
Cooling		Forced Air-Cooling		
Humidity	%	0~95, non-condensing		
Battery Type		VRLA or LiFePO <sub>4</sub>		
Parallel & 3-phase Operation		Yes	No	Yes
<b>Interface &amp; Mechanical</b>				
Display		16 x 2 Text Display		
Communication Interface		RS485, USB and Generator remote control		
ension (W / H / D)	mm	580/408/168	580/408/168	580/408/168
Weight	kg	22	23.8	24.2
<b>Certificate and Regulation<sup>3</sup></b>				
Safety		IEC 62109-1 & IEC 62109-2		
EMC		IEC/EN 61000-3-2	IEC/EN 61000-3-11	
		IEC/EN 61000-3-3	IEC/EN 61000-3-12	
		IEC/EN 61000-6-2, IEC/EN 61000-6-4		
Grid Monitoring		VDE 0126-1-1/A1, IEEE 519 CEA (2013), IEC 61727, IEC 62116		

• Note: 1. The input power may be reduced for V<sub>pv</sub> < 265V 2. AC power may need to be reduced for T > 40°C  
3. Specifications are subject to change without prior notice.



### On Grid net metering:

- Inverter output is physically connected to grid AC
- Inverter supplies loads from PV and/or batteries

## Solar UPS

Emergency power backup by solar energy.

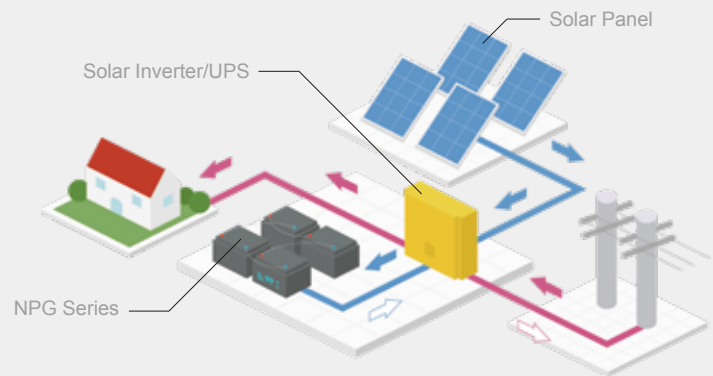
AC loads are supplied by solar power directly in daytime. AC loads are supported by grid only when solar power is weak. The standby battery pack are charged by solar panel in daytime or grid at night. Whenever AC grid is failure (blackout), your AC loads will be always secured by LWI long-life gel deep cycle batteries.

- Extra PV power is used to charge batteries
- Zero feeding to grid
- Loads are powered by inverter and/or grid AC

## Hybrid PV Inverter

Hybrid PV inverter is all-in-one PV inverter combines both off-grid and on-grid application by providing 3 different operation modes : Off-grid / On-grid net metering / On-grid self using for various scenario. This automatic and intelligent PV inverter is high efficient with MPPT solar charger, solar energy is stored and used through long life LWI gel deep cycle battery.

**Application :** Off grid / On grid net metering / On grid self using



### On Grid self using:

- Inverter output is physically connected to grid AC
- Inverter supplies loads from PV and/or batteries

## Hybrid

Multifunctional solar power system with battery storage

Hybrid solar power system combines the advantages of On Grid, Off grid and Solar UPS system. AC loads are supplied by solar power directly, the surplus solar energy can be used to charge batteries or sell back to grid. The batteries are charged by solar panel in daytime and AC grid at night. Battery can be used to supply AC loads in day or night whenever grid electricity rate is expensive. AC loads are also secured by LWI high quality gel deep cycle batteries when grid is failure (blackout).

- Extra PV power is used to charge batteries and/or feeding grid
- Loads are powered by inverter and/or grid AC



# Solar Power System



## Specification (Preliminary)

Model		SOPV-6000
<b>Input (PV)</b>		
Maximum Power	W <sub>P</sub>	6200
MPPT Range <sup>1</sup>	V	150 ~ 450
Maximum Voltage	V	500
Maximum Current	A	10 x 2
MPPT Tracker Number		2
<b>OUTPUT (AC)</b>		
Rating Power	W	6000
Voltage/Frequency	V/Hz	230/50
Maximum Current	A	30
THDi	%	3
<b>Input (PV)</b>		
Temperature Range <sup>2</sup>	°C	-20 ~ 55
Environment		Indoor, IP20
Cooling		Temperature Controlled Forced Air-Cooling
Humidity	%	0~95, Non-condensing
Display		16 x 2 Text display
Communication		RS485, USB, optional CloudLOG™ Monitoring
Dimension (W / H / D)	mm	580/408/168
Weight	kg	20
<b>Certificate and Regulation</b>		
Safety		IEC 62109-1 & IEC 62109-2
EMC		IEC/EN 61000-3-11, IEC/EN 61000-3-12
		IEC/EN 61000-6-2, IEC/EN 61000-6-3
Grid Monitoring		VDE 0126-1-1/A1, IEEE 519 CEA (2013), IEC 61727, IEC 62116

\* Note: 1. The input power may be reduced for V<sub>PV</sub> <265V    2. AC power may need to be reduced for T>40°C  
3. Specifications are subject to change without prior notice.



## On-Grid PV Inverter

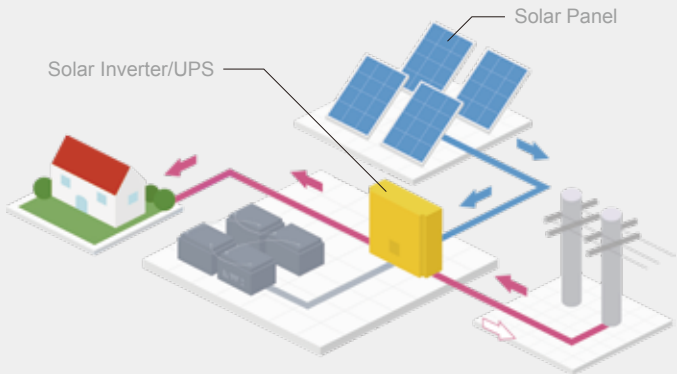
On grid PV inverter is PV inverter designed for on-grid application by providing 2 different operation modes : On-grid net metering / On-grid self using for various scenario. This automatic and intelligent PV inverter is high efficient with MPPT solar charger, solar energy is supplying loads directly or feeding grid without batteries

**Application :** On grid net metering / On grid self using

## On Grid – net metering

save more electricity bill by selling surplus solar energy back to grid

This On Grid – net metering system can save your electricity bills even more. AC loads are directly supplied by solar power instead of grid. When solar panels generate more electricity than demand of AC loads, those surplus solar energy will be sold back to grid.

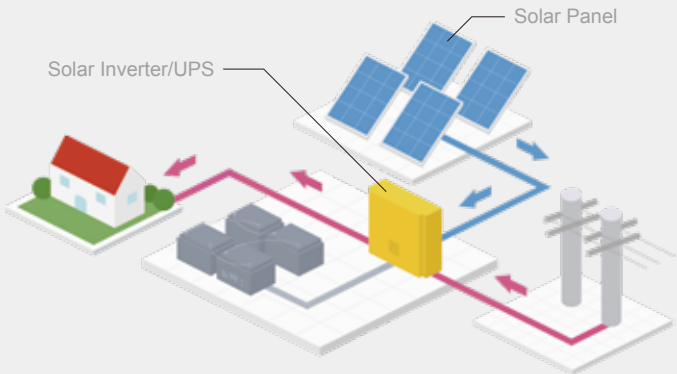


- On Grid net metering:
- Inverter output is physically connected to grid AC
  - Inverter supplies loads from PV
  - Extra PV power is feeding grid
  - Loads are powered by inverter and/or grid AC

## On Grid – Self Using

save electricity bill by using solar power instead of grid power

AC loads are directly supplied by solar power instead of grid. AC loads are supported by grid only when solar power is weak, such like cloudy day or raining day. However, if solar panels generate more electricity than demand of AC loads, those surplus solar power will not be sold back to grid.



- On Grid self using:
- Inverter output is physically connected to grid AC
  - Inverter supplies loads from PV
  - Extra PV power is not feeding grid
  - Zero feeding to grid
  - Loads are powered by inverter and/or grid AC



# Solar Home System



## Portable light

bring solar power on your hand

- Portable solar LED light with 3 stages adjustable brightness provides max 30 hours lighting anywhere.
- Built-in USB mobile phone charger keeps contacting people anytime.
- Enjoy LED lighting and smart phone charging anytime, anywhere.



### Specification

**LED light** : 3W max, 3 stage brightness.  
**USB output** : 2A  
**Battery** : LWI NPS 6V 4AH battery built-in  
**Solar panel** : 3.7W



## Portable light

The solar Portable light provide LED lighting and USB output for wide variety of applications including, off grid house, camping sites, agriculture and industrial facilities.

**Application** : LED lighting / mobile phone charging

### Energy storage

The LWI PORTABLE LIGHT features a rechargeable, replaceable, sealed, lead-acid battery rated at 24Wh.

### LED lights

The LWI PORTABLE LIGHT can provide up to 30 hours of continuous lighting through high efficiency, long lasting LED lights.

### USB charging

The LWI PORTABLE LIGHT can be used to charge small electronic devices via a built-in USB port. The kit includes a universal dongle that connects to most mobile phones.

### Brightness control

The LWI PORTABLE LIGHT can control the brightness of the LED light. By adjusting brightness, users can extend the length of time the lights can be used.

### Battery charge indication

The LWI PORTABLE LIGHT features battery charge indication lights that allow users to tell at a glance battery charge status.

### Portable emergency power

The LWI PORTABLE LIGHT can provide vital light and stored power in the event of a blackout or other emergency.

### Clean, free charging

The NP4-6 battery is designed to charge the battery using the included solar panel providing a renewable supply of clean free power.



## Lighting kit

light up anyplace by solar power

- Plug-and-Go system, hand-carrying and easy use without installation.
- High efficient and performance LED lights with adjustable brightness tuner.
- Built-in USB mobile phone charger keeps contacting people anytime.
- Enjoy LED lighting and smart phone charging at home easily.



### Specification

**LED light** : 4W x 2 with dimmer, adjustable brightness.  
**USB output** : 2A  
**Battery** : LWI NPS 12V 7AH battery built-in  
**Solar panel** : 10W



## Lighting kit

The solar Lighting kit provide LED lighting and USB output for wide variety of applications including off grid house, camping sites, agriculture and industrial facilities.

**Application** : LED lighting / mobile phone charging

### Energy storage

The LWI LIGHTING KIT features a rechargeable, replaceable, sealed, lead-acid battery rated at 84Wh.

### LED lights

The LWI LIGHTING KIT can connect 4W LED x2pcs of continuous lighting through high efficiency, long lasting LED lights.

### USB charging

The LWI LIGHTING KIT can be used to charge small electronic devices via a built-in USB port. The kit includes a universal dongle that connects to most mobile phones.

### Brightness control

The LWI LIGHTING KIT can control the brightness of the LED light. By adjusting brightness, users can extend the length of time the lights can be used.

### Battery charge indication

The LWI LIGHTING KIT features battery charge indication lights that allow users to tell at a glance battery charge status.

### Portable emergency power

The LWI LIGHTING KIT can provide vital light and stored power in the event of a blackout or other emergency.

### Clean, free charging

The NP7-12 battery is designed to charge the battery using the included solar panel providing a renewable supply of clean free power.

# Solar Home System



## TV kit

enjoy TV anywhere by solar power

- Plug-and-Go system, hand-carrying and easy use without installation.
- High efficient and performance LED lights with adjustable brightness tuner.
- Built-in USB mobile phone charger keeps contacting people anytime.
- AC and DC output for watching TV.
- High performance LWI deep cycle solar battery provides long service life.
- Enjoy watching TV, LED lighting, and smart phone charging anyplace easily by solar power.



### Specification

**LED light** : 4W x 2 with dimmer, adjustable brightness.  
**USB output** : 2A x 2  
**AC output** : Pro-universal socket x 2(Max. load 400W) / Lite-universal socket x 1(Max. load 150W)  
**DC output** : cigar socket x 1  
**Battery** : Pro- LWI NPD 12V 50AH battery / Lite- LWI NPD 12V 22AH battery built-in  
**Solar panel** : 50W~100W



## TV kit

The solar TV kit provide LED lighting, USB output, Cigar and AC socket for wide variety of applications including off grid house, camping sites, agriculture and industrial facilities.

**Application** : LED lighting / mobile phone charging / AC&DC electrical appliances

### Energy storage

The TV KIT features a rechargeable, replaceable, sealed, lead-acid battery rated at 600Wh.

### LED lights

The TV KIT can connect 4W LED x2pcs of continuous lighting through high efficiency, long lasting LED lights.

### USB charging

The TV KIT can be used to charge small electronic devices via a built-in USB port. The kit includes a universal dongle that connects to most mobile phones.

### AC output

The TV KIT can be used to connct electronic devices (under AC220V, 400W).

### Brightness control

The TV KIT can control the brightness of the LED light. By adjusting brightness, users can extend the length of time the lights can be used.

### Battery charge indication

The TV KIT features battery charge indcation lights that allow users to tell at a glance battery charge status.

### Portable emergency power

The TV KIT can provide vital light and stored power in the event of a blackout or other emergency.

### Clean, free charging

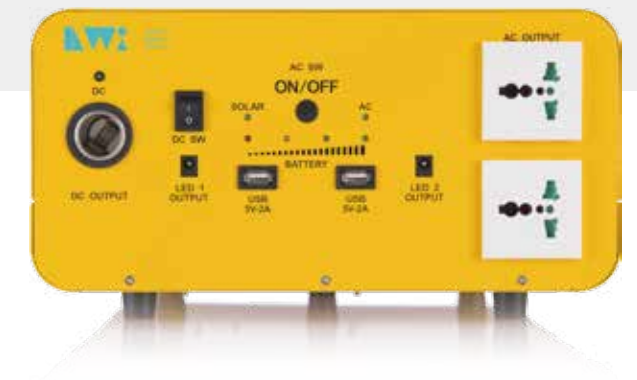
The NP50-12 battery is designed to charge the battery using the included solar panel provideing a renewable supply of clean free power.



## Home kit

build your modern life by solar power

- High efficient and performance LED lights with adjustable brightness tuner.
- Built-in USB mobile phone charger keeps contacting people anytime.
- AC and DC output for watching TV.
- AC output for refrigerator, computers, and other home appliances.
- High performance LWI gel deep cycle solar battery provides extra-long service life.
- Enjoy refrigerator, watching TV, LED lighting, and smart phone charging easily by solar power.



### Specification

**LED light** : 4W x 8 max  
**USB output** : 2A x 2  
**AC output** : universal socket x 2(Max. load 800W / 1200W)  
**DC output** : cigar socket x 1  
**Battery** : external LWI NPG 12V 100AH~200AH battery  
**Solar panel** : 100W~150W

## Home kit

The solar Home kit provide LED lighting, USB output, Cigar and AC socket for wide variety of applications including off grid house, camping sites, agriculture and industrial facilities.

**Application** : LED lighting / mobile phone charging / AC&DC electrical appliances

### Energy storage

The Home KIT features a rechargeable, replaceable, sealed, gel deep cycle battery can be expanded.

### LED lights

The Home KIT can connect 4W LED x4pcs of continuous lighting through high efficiency, long lasting LED lights.

### USB charging

The Home KIT can be used to charge small electronic devices via a built-in USB port. The kit includes a universal dongle that connects to most mobile phones.

### AC output

The Home KIT can be used to connct electronic devices (under AC220V, 1200W).

### Brightness control

The TV KIT can control the brightness of the LED light. By adjusting brightness, users can extend the length of time the lights can be used.

### Battery charge indication

The Home KIT features battery charge indcation lights that allow users to tell at a glance battery charge status.

### Portable emergency power

The Home KIT can provide vital light and stored power in the event of a blackout or other emergency.

### Clean, free charging

The NP100-12 battery is designed to charge the battery using the included solar panel provideing a renewable supply.







## Myanmar

solar Portable light



## Madagascar

solar Lighting kit & mobile phone charger & TV kit

High performance LWI deep cycle solar battery provides long service life.  
Enjoy watching TV, LED lighting, and smart phone charging anywhere easily by solar power.



## Ethiopia