LIGHTEN
WORLD
INDUSTRY

世照股份有限公司
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LIGHTEN
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Your Energy Solution Anytime, Anywhere.

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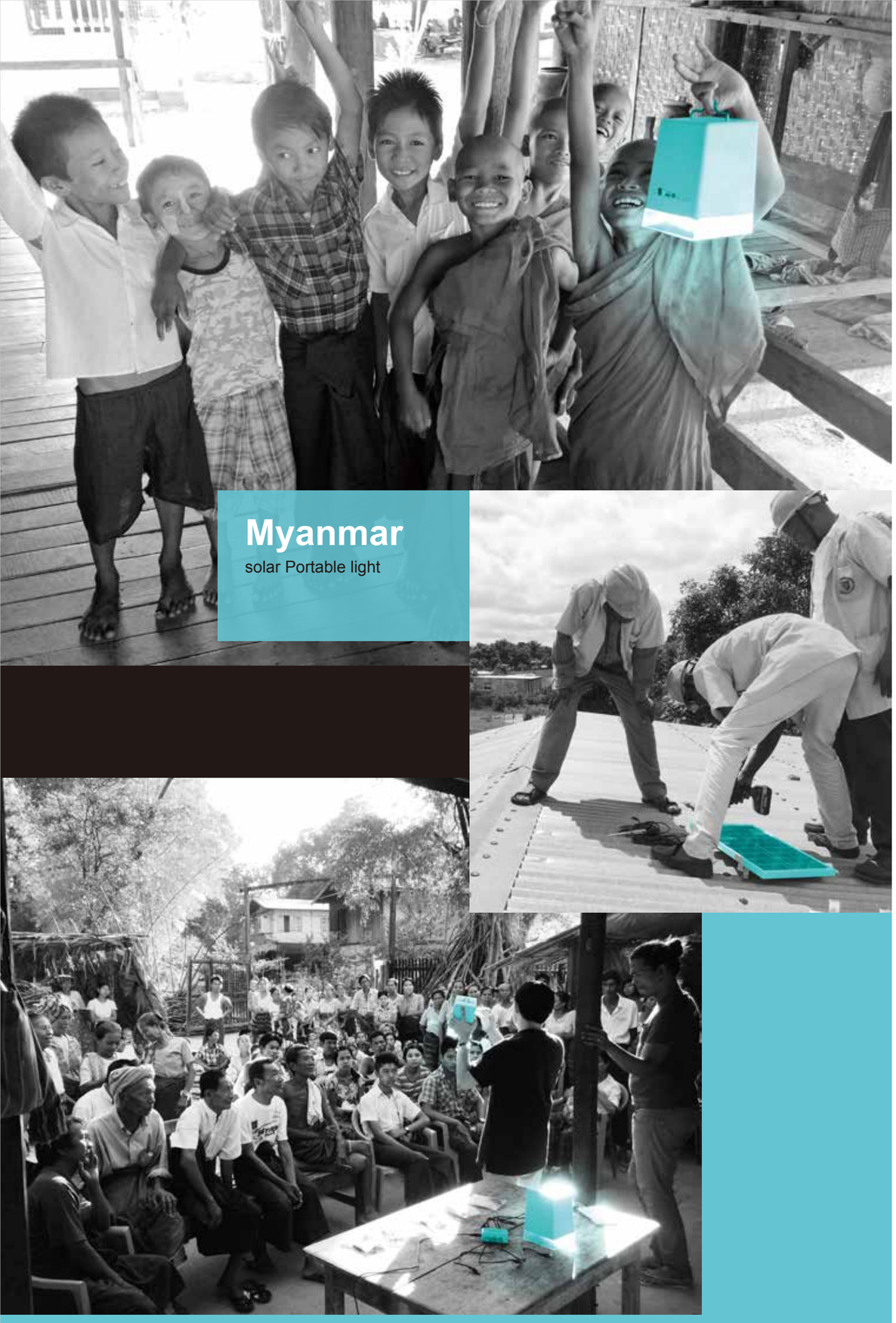
About us

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.



Myanmar

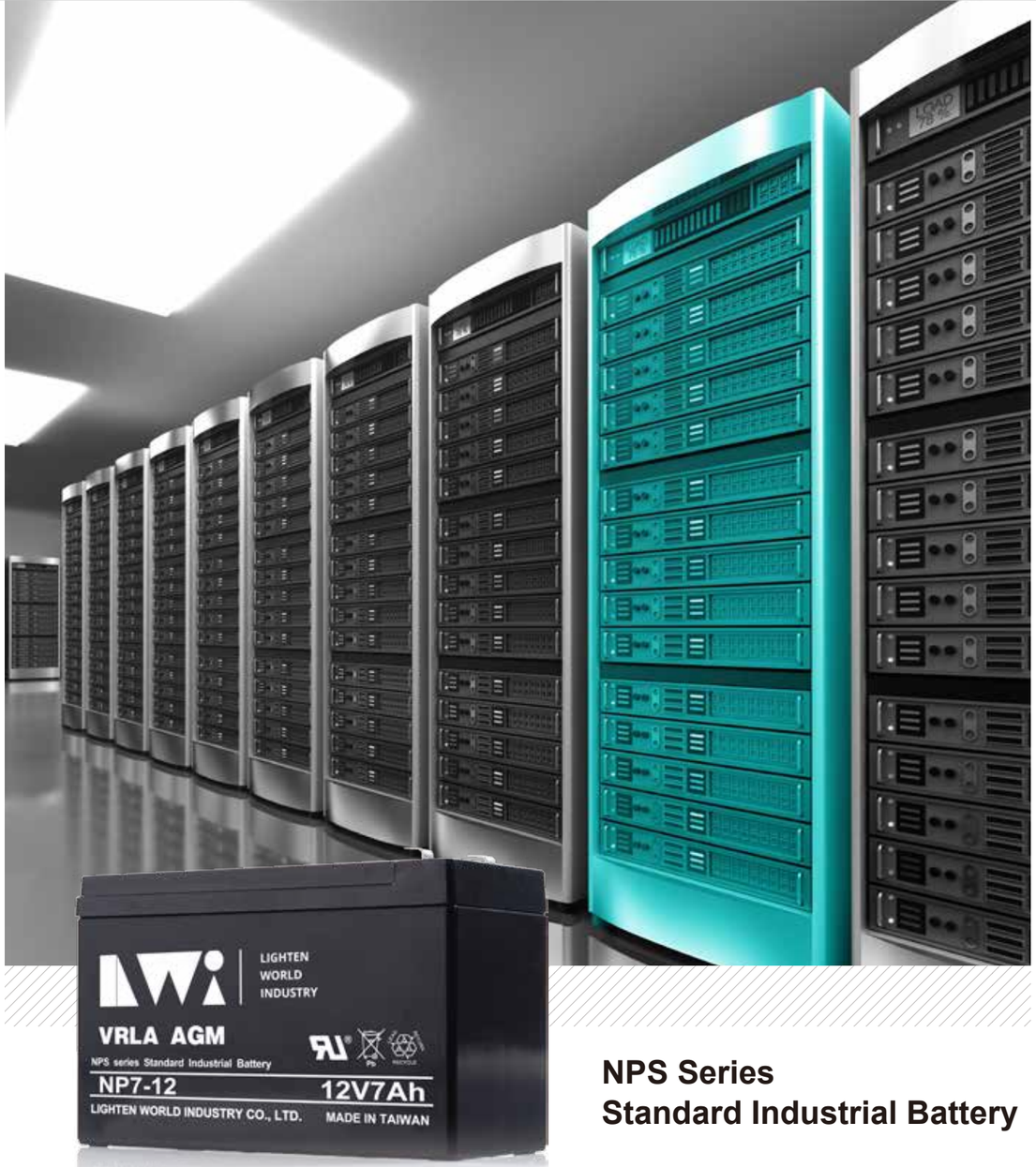
solar Portable light

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 anyplace easily by solar power.

Ethiopia



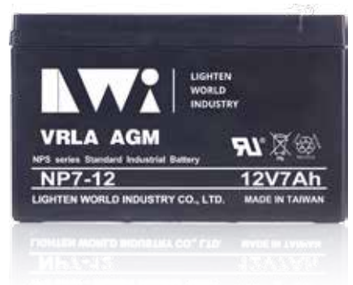
NPS Series
Standard Industrial Battery

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.

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

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

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

NPD Series
Deep cycle Battery

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.

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

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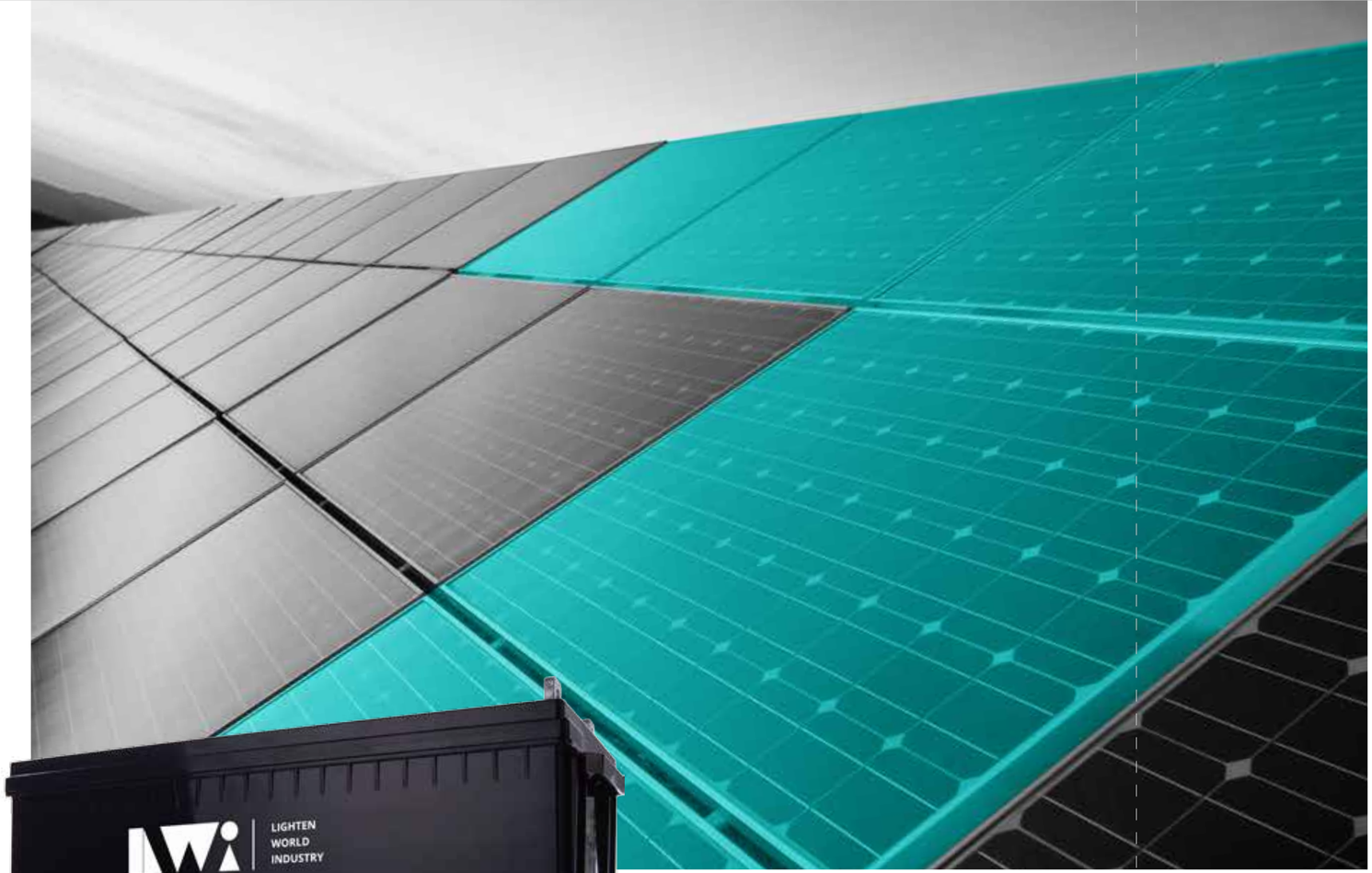


NPG Series
Gel Deep cycle Battery

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

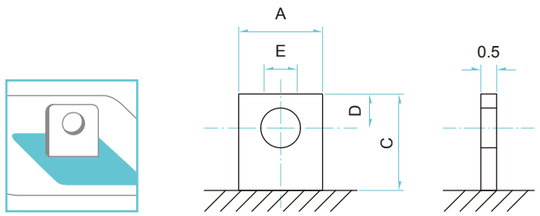
• specification subject to change without notice

Battery Terminals

Terminal Types (unit: mm)

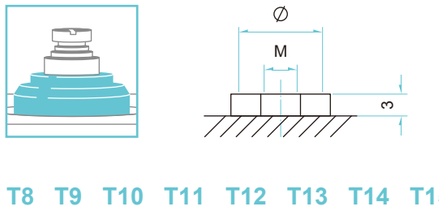
T1

T2



T3 T4 T5 T6 T7 T16 T17 T18 T19 T20

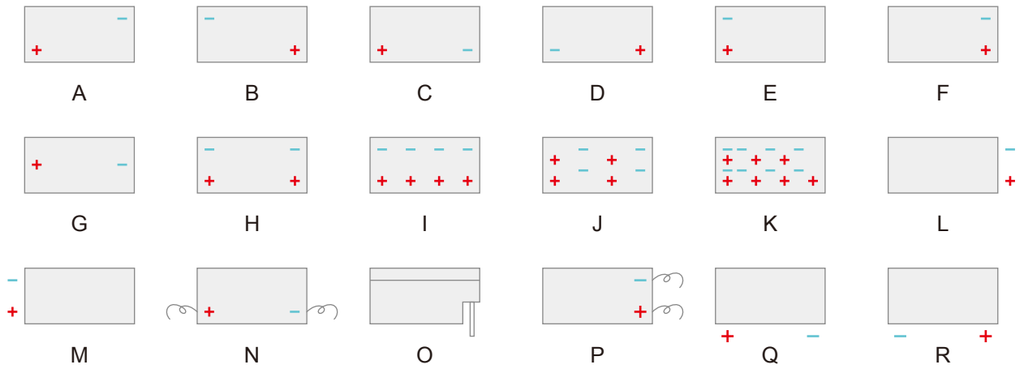
Type	A	B	C	D	E	Materal
T3	12	2.0	14	5.0	5.5	Cu
T4	20	3.0	16	7.0	8.0	Cu
T5	22	3.5	22	8.5	8.0	Cu
T6	17	9.0	18	8.0	6.0	Pb
T7	17	6.0	16	7.0	8.0	Pb
T16	20	3.0	18	7.5	8.0	Cu
T17	18	7.0	20	7.5	7.0	Pb
T18	23	7.0	19	8.5	7.0	Pb
T19	25	7.0	24	10.5	9.0	Pb
T20	27	8.0	29	12.0	9.0	Pb



T8 T9 T10 T11 T12 T13 T14 T15

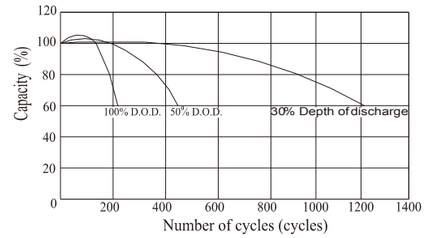
Type	M	∅	Materal
T8	5	12	Cu
T9	6	14	Cu
T10	8	20	Cu
T11	8	16	Cu
T12	9	14	Cu
T13	10	20	Cu
T14	9	18	Cu
T15	6	16	Cu

Terminal Position

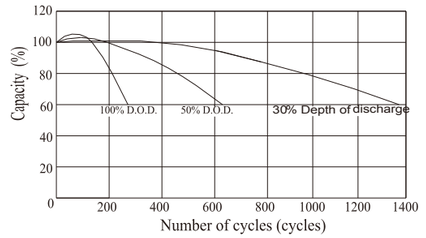


Battery Characteristics

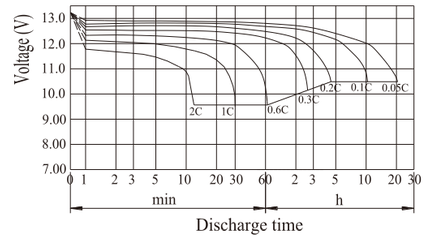
Cycle Life on D.O.D (25°C) NPL Series / NPS Series



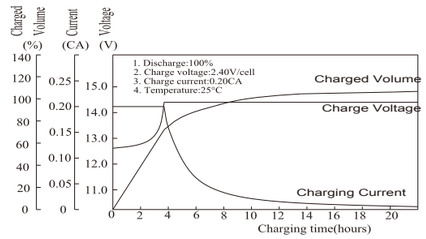
Cycle Life on D.O.D (25°C) NPD Series / NPG Series



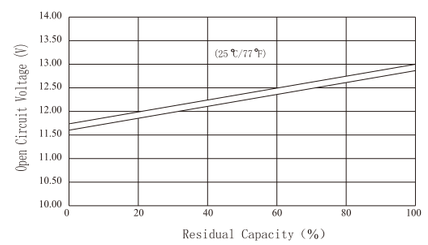
Discharge Characteristics (25°C)



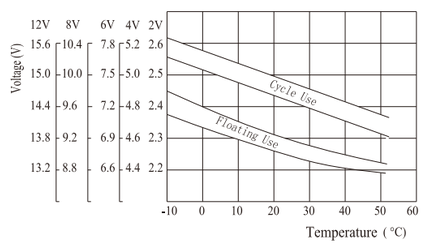
Charging Characteristics (25°C)



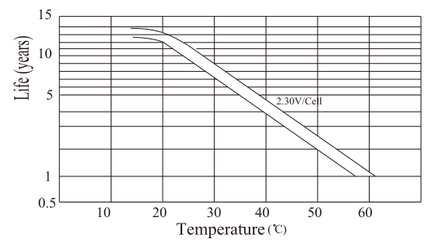
The Relationship for Open Circuit Voltage and Residual Capacity (25°C)



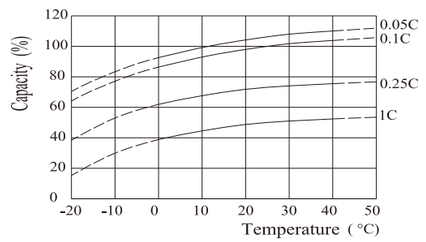
The Relationship for Charging Voltage and Temperature



Floating Life on Temperature



Effect of Temperature on Capacity



Self-discharge Characteristics