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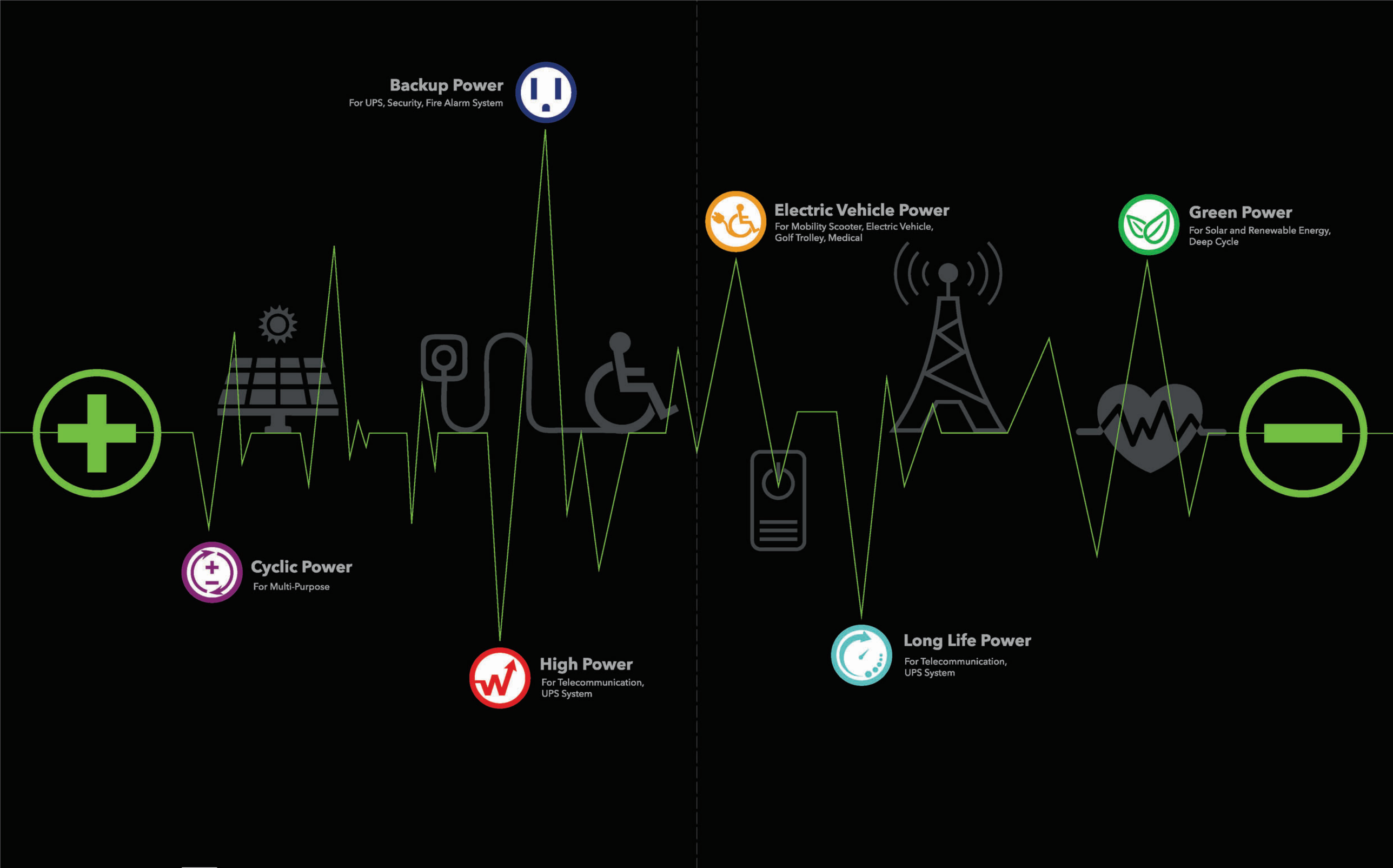
Power your life

LONG

LONG BATTERY
Product Catalog



INDEX

HTP SERIES 03
CWP SERIES 03
VRLA BATTERIES 05
SPECIFICATION 07
TECHNOLOGY 15
COMPANY INTRODUCTION 17

HTP&CWP SERIES

Backup Power — For UPS, Security, Fire Alarm System
Cyclic Power — For Multi-Purpose
High Power — For Telecommunication, UPS System
Electric Vehicle Power — For Mobility Scooter, Electric Vehicle, Golf Trolley, Medical
Long Life Power — For Telecommunication, UPS System
Green Power — For Solar and Renewable Energy, Deep Cycle

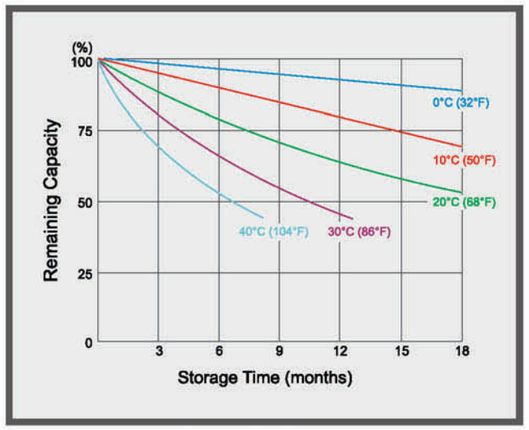
SPECIFICATION

MAIN APPLICATION	BATTERY TYPE	NOMINAL VOLTAGE (V)	NOMINAL CAPACITY (Ah) 5HR	NOMINAL CAPACITY (Ah) 20HR	DIMENSION L (in)	DIMENSION W (in)	DIMENSION H (in)	DIMENSION L (mm)	DIMENSION W (mm)	DIMENSION H (mm)	HT OVER TERMINAL (in)	HT OVER TERMINAL (mm)	WEIGHT (APPROX.) lbs	WEIGHT (APPROX.) kg	ASSEMBLY FIGURE TERMINAL POSITION	ASSEMBLY FIGURE TERMINAL TYPE
	HIGH TEMPERATURE SERIES															
●●●○●○	HTP12100A	12	85	100	19.96	4.17	9.25	507	106	235	9.25	235	67.8	30.8	23	F18
●●●○●○	HTP100-12N	12	85	100	13.31	6.69	8.35	338	170	212	8.54	217	71.5	32.5	9	F8
●●●○●○	HTP100-12RN	12	85	100	12.97	6.78	8.46	329.5	172.3	215	8.74	222	69.3	31.5	9	F18
●●●○●○	HTP120-12N	12	102	120	16.06	6.97	8.82	408	177	224	8.82	224	81.4	37	14	F18
●●●○●○	HTP150-12N	12	127.5	150	19.02	6.69	9.45	483	170	240	9.45	240	106	48.4	9	F18
●●●○●○	HTP200-12N	12	170	200	20.55	9.37	8.62	522	238	219	8.82	224	161	73.2	22	F18

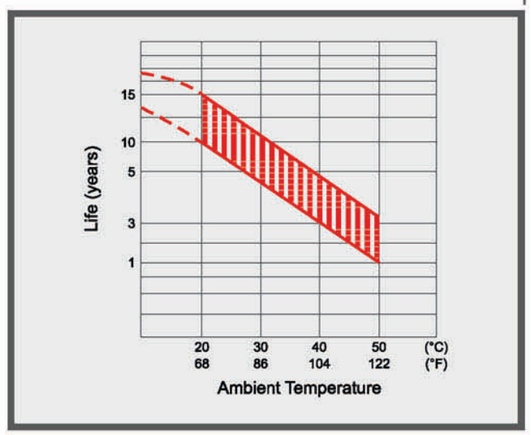
MAIN APPLICATION	BATTERY TYPE	NOMINAL VOLTAGE (V)	NOMINAL CAPACITY (Ah) 5HR	NOMINAL CAPACITY (Ah) 20HR	DIMENSION L (in)	DIMENSION W (in)	DIMENSION H (in)	DIMENSION L (mm)	DIMENSION W (mm)	DIMENSION H (mm)	HT OVER TERMINAL (in)	HT OVER TERMINAL (mm)	WEIGHT (APPROX.) lbs	WEIGHT (APPROX.) kg	ASSEMBLY FIGURE TERMINAL POSITION	ASSEMBLY FIGURE TERMINAL TYPE
	GREEN POWER SERIES															
○○○○○●	CWP75-12N	12	62.75	75	10.24	6.69	7.95	260	170	202	8.15	207	53.2	24.2	9	F8
○○○○○●	CWP100-12N	12	85	100	13.31	6.69	8.35	338	170	212	8.54	217	75.9	34.5	9	F8
○○○○○●	CWP150-12N	12	127.5	150	19.02	6.69	9.45	483	170	240	9.45	240	106	48.4	9	F18
○○○○○●	CWP200-12N	12	170	200	20.55	9.37	8.62	522	238	219	8.82	224	161	73.2	22	F18

CHARACTERISTIC

HTP & CWP SERIES

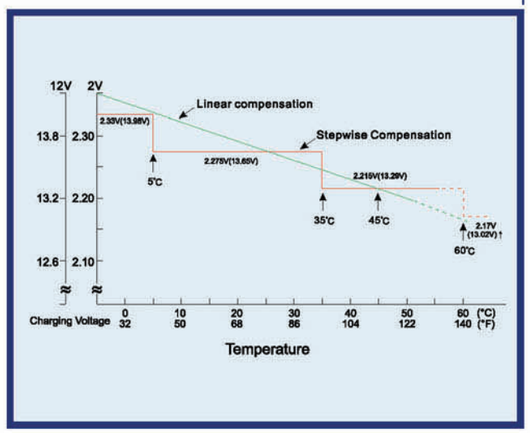


Capacity Retention Characteristic



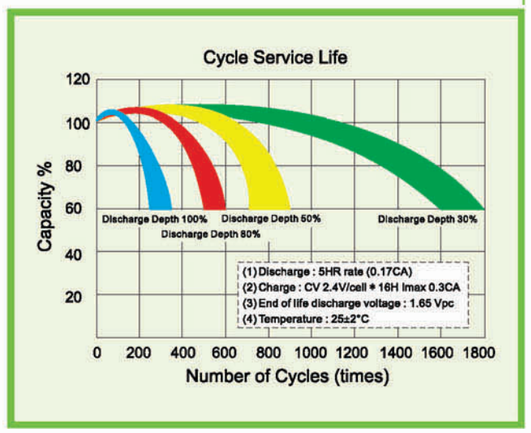
Trickle (or float) Service Life

HTP SERIES



Relationship Between Charging Voltage and Temperature

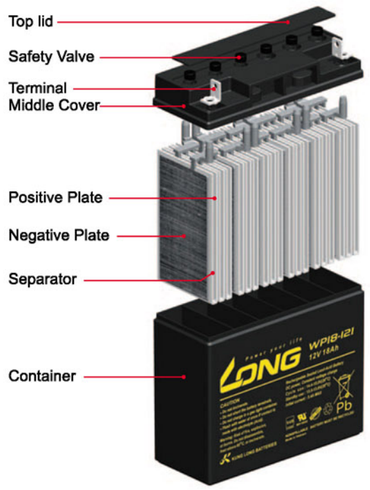
CWP SERIES



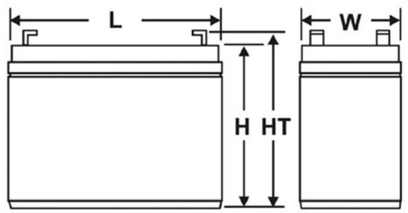
Relationship Between Charging Voltage and Temperature

VRLA BATTERIES

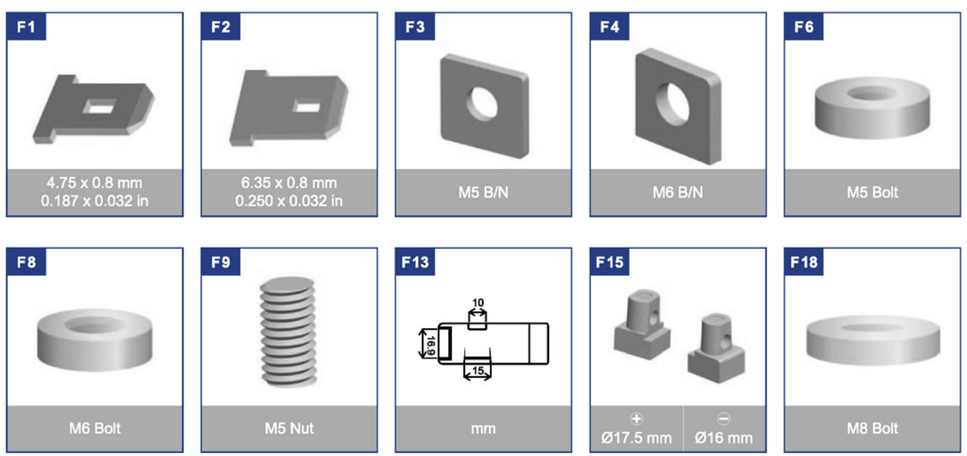
CONSTRUCTION



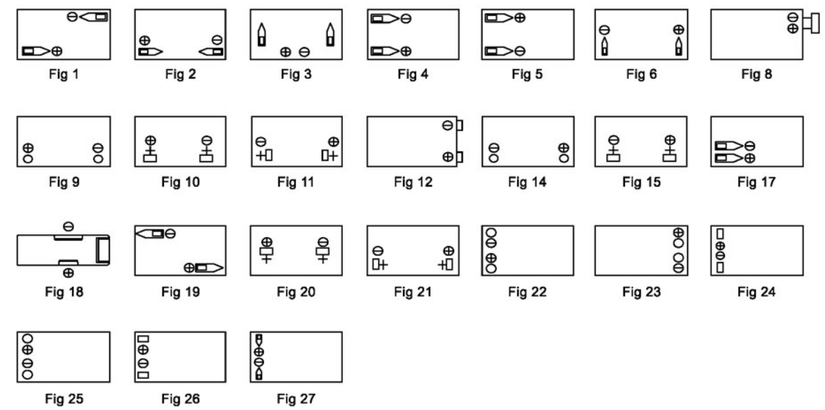
CASE DIMENSION



TERMINAL TYPE



TERMINAL POSITION



BATTERY NUMBERING SYSTEM

WP 2.9 — 12 TR

Battery Features
R: Negative Terminal Position
N: Type of Terminal, N: Nut
E: Electric Vehicle Power
W: Battery Capacity ST W/Cell at 15 Min. Rate
A, S, T: Same Capacity with Different Dimensions or Purpose
I: Inner Terminal Position
H: Handle Type

Battery Voltage

Battery Capacity At 20/10 Hr Rate

Battery Type:
WP: Multi-Purpose
WPS: Security Series
WPL: Long Life Series
U1: Sealed Battery with Conventional Dimension
KPH: High Power Type
22NF: Cyclic Type
MSK: 2V Stationary Series
TPK: 12V Front Terminal Series
LG: Gel Battery Series
CWP: Green Power Series
HTP: High Temperature Series

WP 12 36W

Battery Capacity ST W/Cell At 15 Min. Rate

Battery Voltage

SPECIFICATION

Backup Power
For UPS, Security, Fire Alarm System

Cyclic Power
For Multi-Purpose

High Power
For Telecommunication, UPS System

Electric Vehicle Power
For Mobility Scooter, Electric Vehicle, Golf Trolley, Medical

Long Life Power
For Telecommunication, UPS System

Green Power
For Solar and Renewable Energy, Deep Cycle

MAIN APPLICATION	BATTERY TYPE	NOMINAL VOLTAGE (V)	NOMINAL CAPACITY (Ah) 5HR	NOMINAL CAPACITY (Ah) 20HR / 10HR	DIMENSION L in	DIMENSION W in	DIMENSION H in	DIMENSION L mm	DIMENSION W mm	DIMENSION H mm	HT OVER TERMINAL in	HT OVER TERMINAL mm	WEIGHT (APPROX.) lbs	WEIGHT (APPROX.) kg	ASSEMBLY FIGURE TERMINAL POSITION	ASSEMBLY FIGURE TERMINAL TYPE
	MULTI-PURPOSE BATTERIES															
●●○○○○	WP4.5-4	4	3.825	4.5	1.91	2.07	3.70	48.5	52.5	94	3.94	100	1.39	0.63	3	F2
●●○○○○	WP9-4	4	7.65	9	3.98	1.73	3.74	101	44	95	4.02	102	2.60	1.18	3	F2
●●○○○○	WP1.2-6	6	1.02	1.2	3.82	0.98	2.05	97	25	52	2.24	57	0.65	0.30	2	F1
●○○○○○	WP3-6	6	2.55	3	5.28	1.34	2.32	134	34	59	2.56	65	1.47	0.67	2	F1
●○○○○○	WP4.5-6	6	3.825	4.5	2.76	1.85	4.02	70	47	102	4.17	106	1.80	0.82	1	F1
●○○○○○	WP5-6	6	4.25	5	2.76	1.85	4.02	70	47	102	4.17	106	1.83	0.83	1	F1
●●○○○○	WP7-6	6	5.95	7	5.94	1.34	3.70	151	34	94	3.94	100	2.64	1.20	2	F1
●●○○○○	WP7-6S	6	5.95	7	4.57	1.97	3.62	116	50	92	3.90	99	3.19	1.45	1	F1
●●○○○○	WP9-6A	6	7.65	9	3.88	2.20	4.65	98.5	56	118	4.65	118	3.74	1.70	19	F1
●●○○○●	WP10-6	6	8.5	10	5.94	1.97	3.70	151	50	94	3.94	100	3.74	1.70	2	F1
●●○○○○	WP12-6S	6	10.2	12	5.94	1.97	3.70	151	50	94	3.90	99	4.05	1.84	2	F1
●●○○○○	WP13-6	6	11.1	13	4.25	2.76	5.51	108	70	140	5.51	140	4.93	2.24	17	F1-, F2+
●●○○○●	WP20-6	6	17	20	6.18	3.27	4.92	157	83	125	4.92	125	8.56	3.89	20	F3
●●○○○○	WP0.7-12	12	0.6	0.7	3.78	0.98	2.44	96	25	62	2.44	62	0.80	0.36	8	Wire/A
●●○○○○	WP0.7-12S	12	0.6	0.7	3.78	0.98	2.44	96	25	62	2.44	62	0.80	0.36	8	Wire/J
●●○○○○	WP1.2-12 ★	12	1.02	1.2	3.82	1.69	2.09	97	43	53	2.32	59	1.24	0.56	4	F1
●●○○○○	WP1.2-12T	12	1.02	1.2	3.82	1.89	1.97	97	48	50	2.20	56	1.30	0.59	4	F1
●●○○○○	WP2.2-12 ★	12	1.87	2.2	7.01	1.34	2.36	178	34	60	2.60	66	2.29	1.04	2	F1
●●○○○○	WP2.3-12	12	1.96	2.3	7.01	1.34	2.36	178	34	60	2.60	66	2.29	1.04	2	F1
●●○○○○	WP2.6-12	12	2.21	2.6	7.01	1.36	2.36	178	34.5	60	2.60	66	2.20	1.00	2	F1
●●○○○○	WP2.9-12T	12	2.465	2.9	3.11	2.20	3.90	79	56	99	4.21	107	2.62	1.19	6	F1
●●○○○○	WP2.9-12TR	12	2.465	2.9	3.11	2.20	3.90	79	56	99	4.21	107	2.62	1.19	3	F1
●●○○○○	WP3-12	12	2.55	3	5.28	2.64	2.34	134	67	59.5	2.58	65.5	2.86	1.30	4	F1
●○●○○○	WP1213W	12	13W	3.3	5.28	2.64	2.34	134	67	59.5	2.58	65.5	2.86	1.30	4	F2
●○○○○○	WP4.5-12	12	3.83	4.5	3.54	2.76	4.00	90	70	101.5	4.21	107	3.56	1.62	3	F1
●●●○○●	WP5-12	12	4.25	5	3.54	2.76	4.00	90	70	101.5	4.21	107	4.18	1.90	3	F1
●○●○○○	WP5-12SHR	12	4.25	5	3.54	2.76	4.00	90	70	101.5	4.21	107	4.25	1.93	3	F2
●○●○○○	WP1224W	12	24W	6	5.94	2.01	3.70	151	51	94	3.98	101	4.40	2.00	5	F2
●○●○○○	WP7-12(28W)(T) ★	12	28W	7	5.94	2.56	3.70	151	65	94	4.02 (4.17)	102 (106)	4.93 (4.82)	2.24 (2.19)	5	F2 (F3)
●○○○○○	WP7.2-12A ★	12	6.12	7.2	5.94	2.56	3.70	151	65	94	4.02	102	5.17	2.35	5	F1
●●○○○●	WP7.2-12 ★	12	6.12	7.2	5.94	2.56	3.70	151	65	94	4.02	102	5.28	2.40	5	F1
●○●○○○	WP1236W(T)	12	36W	9	5.94	2.56	3.70	151	65	94	4.02 (4.17)	102 (106)	5.94	2.70	5	F2 (F3)
●○●○○○	WP12-12A ★	12	10.2	12	5.94	3.86	3.66	151	98	93	3.86	98	8.25	3.75	5	F1
●○●○○○	WP18-12 (N) SHR ★	12	15.3	18	7.13	2.99	6.57	181	76	167	6.57	167	12.32	5.60	11 (14)	F3 (F6)
●●○○○●	WP18-12I ★	12	15.3	18	7.13	2.99	6.57	181	76	167	6.57	167	13.86	6.30	11	F3
●●○○○●	WP18-12N ★	12	15.3	18	7.13	2.99	6.57	181	76	167	6.57	167	13.86	6.30	14	F6
●●●○○●	WP20-12I	12	17	20	7.13	2.99	6.57	181	76	167	6.57	167	13.09	5.95	11	F3
●●●○○●	WP20-12N	12	17	20	7.13	2.99	6.57	181	76	167	6.57	167	13.09	5.95	14	F6
●●●○○●	WP22-12N	12	18.7	22	7.13	2.99	6.57	181	76	167	6.57	167	15.18	6.90	14	F8
●●●○○○	WP22-12NSHR	12	18.7	22	7.13	3.03	6.69	181	77	170	6.69	170	15.40	7.00	14	F6
●●○○○○	WP24-12 (N) ★	12	20.4	24	6.54	6.89	4.92	166	175	125	4.92	125	17.60	8.00	21 (14)	F3 (F6)
●●●○○●	WP26-12 (N) ★	12	22.1	26	6.54	6.89	4.92	166	175	125	4.92	125	20.46	9.30	21 (14)	F3 (F6)
●●●○○●	WP30-12T	12	25.5	30	6.54	4.94	6.93	166	125.5	176	6.93	176	23.10	10.50	21	F3
●●●○○●	WP40-12 (N)	12	34	40	7.83	6.54	6.73	199	166	171	6.73	171	29.7 (29.5)	13.5 (13.4)	11 (14)	F4 (F8)

MAIN APPLICATION	BATTERY TYPE	NOMINAL VOLTAGE (V)	NOMINAL CAPACITY (Ah) 5HR	NOMINAL CAPACITY (Ah) 20HR / 10HR	DIMENSION L in	DIMENSION W in	DIMENSION H in	DIMENSION L mm	DIMENSION W mm	DIMENSION H mm	HT OVER TERMINAL in	HT OVER TERMINAL mm	WEIGHT (APPROX.) lbs	WEIGHT (APPROX.) kg	ASSEMBLY FIGURE TERMINAL POSITION	ASSEMBLY FIGURE TERMINAL TYPE
	MULTI-PURPOSE BATTERIES															
●●●○○●	WP45-12 (N) ★	12	38.25	45	7.83	6.54	6.73	199	166	171	6.73	171	32.60	14.80	11 (14)	F4 (F8)
●●●○○●	WP50-12 (N)	12	42.5	50	7.83	6.54	6.73	199	166	171	6.73	171	33.22	15.10	11 (14)	F4 (F8)
●●○○○●	WP55-12 (N)	12	46.75	55	8.90	5.31	8.15	226	135	207	9.02 (8.43)	229 (214)	37.40	17.00	10 (9)	F15(F8)
●●○○○○	WP65-12 (N) ★	12	55.25	65	13.78	6.54	6.85	350	166	174	6.85	174	51.30	23.30	15 (14)	F4 (F8)
●●●○○●	22NF305CN	12	52.7	62	8.90	5.31	8.15	226	135	207	8.43	214	41.10	18.70	14	F8
●○○○●○	KPH65-12N	12	55.25	65	10.24	6.69	7.95	260	170	202	8.15	207	47.30	21.50	9	F8
●●○○●●	KPH75-12N	12	63.75	75	10.24	6.69	7.95	260	170	202	8.15	207	53.20	24.20	9	F8
●○○○●○	KPH80-12N	12	68	80	10.24	6.69	7.95	260	170	202	8.15	207	53.20	24.20	9	F8
●●○○●●	KPH100-12AN (AU)	12	85	100	12.09	6.61	8.19	307	168	208	8.43 (9.06)	214 (230)	64.90	29.50	9 (10)	F8(F15)
●○●○●●	KPH105-12AN	12	89.25	105	12.09	6.61	8.19	307	168	208	8.43	214	71.50	32.50	9	F18
●●●○●●	KPH110-12N	12	93.5	110	13.31	6.69	8.35	338	170	212	8.54	217	71.50	32.50	9	F8
●○●○●○	KPH115-12N	12	97.75	115	13.31	6.69	8.35	338	170	212	8.54	217	77.44	35.20	9	F18
●●●○●○	KPH130-12N	12	110.5	130	13.86	6.69	10.75	352	170	273	10.94	278	94.60	43.00	9	F8
●●●○●○	KPH135-12N	12	114.74	135	13.86	6.69	10.75	352	170	273	10.94	278	93.50	42.50	9	F18
●●●○●○	KPH150-12N	12	127.5	150	13.86	6.69	10.75	352	170	273	10.94	278	101.00	46.00	9	F8
●○●○●○	KPH155-12N	12	131.75	155	13.86	6.69	10.75	352	170	273	10.94	278	101.00	46.00	9	F18
	ELECTRIC VEHICLE POWER BATTERIES															
○○●●○○	WP5-12E	12	4.25	5	3.54	2.76	4.00	90	70	101.5	4.21	107	4.18	1.90	3	F2
○○○●○○	WP10-12SE	12	8.5	10	5.94	2.56	4.41	151	65	112	4.67	118.5	7.24	3.29	5	F2
○○○●○○	WP12-12E	12	10.2	12	5.94	3.86	3.66	151	98	93	3.86	98	8.84	4.02	5	F2
○○○●○○	WP14-12SE	12	11.9	14	5.94	3.86	3.74	151	98	95	3.94	100	9.68	4.40	5	F2
○○○●○○	WP14-12NE	12	11.9	14	5.94	3.86	3.74	151	98	95	3.74	95	9.68	4.40	25	F6
○○○●○○	WP15-12(N)SE	12	12.75	15	5.94	3.90	3.86	151	99	98	4.05 (3.86)	103 (98)	9.90	4.50	27 (25)	F2 (F6)
○○○●○○	WP20-12IE	12	17	20	7.13	2.99	6.57	181	76	167	6.57	167	13.09	5.95	11	F3
○○○●○○	WP22-12NE	12	18.7	22	7.13	2.99	6.57	181	76	167	6.57	167	15.18	6.90	14	F8
○○○●○○	WP24-12ANE	12	20.4	24	7.13	3.05	6.69	181	77.5	170	6.69	170	15.70	7.14	14	F6
○○○●○○	WP30-12TNE	12	25.5	30	6.54	4.96	6.93	166	125.5	176	6.93	176	20.50	9.30	14	F8
○○○●○○	WP40-12(N)E	12	34	40	7.83	6.54	6.73	199	166	171	6.73	171	29.7 (29.5)	13.5 (13.4)	11 (14)	F4 (F8)
○○○●○○	WP45-12NE	12	38.25	45	7.83	6.54	6.73	199	166	171	6.73	171	31.90	14.50	14	F8
○○○●○○	WP50-12NE	12	42.5	50	7.83	6.54	6.73	199	166	171	6.73	171	33.22	15.10	14	F8
●●○●○○	WP55-12NE	12	46.75	55	8.90	5.31	8.15	226	135	207	8.43	214	37.40	17.00	9	F8
○○○●○○	22NF305CNE	12	52.7	62	8.90	5.31	8.15	226	135	207	8.43	214	41.14	18.70	14	F8
○○○●○○	KPH75-12NE	12	63.75	75	10.24	6.69	7.95	260	170	202	8.15	207	53.70	24.40	9	F8
○○○●○○	U1-33H (N)	12	28.05	33	7.76	5.16	6.26	197	131	159	7.09 (6.69)	180 (170)	21.80	9.90	20 (9)	F4 (F6)
○○○●○○	U1-34H (N)	12	28.9	34	7.76	5.16	6.26	197	131	159	7.09 (6.69)	180 (170)	23.10	10.50	20 (9)	F4 (F6)
○○○●○○	U1-34HE	12	28.9	34	7.76	5.16	6.26	197	131	159	7.09	180	22.90	10.40	20	F4
○○○●○○	U1-36HE	12	30.6	36	7.76	5.16	6.26	197	131	159	7.09	180	23.50	10.70	20	F4
○○○●○○	U1-36NE	12	30.6	36	7.76	5.16	6.26	197	131	159	6.69	170	23.50	10.70	9	F8

- VdS Approved Model ★
- For batteries' capacity below 18Ah, all dimensions given are +/- 1mm (0.04 inches)
- For batteries' capacity above 18Ah, all dimensions given are +2/- 1mm (+0.08/-0.04 inches)
- Please refer to all the details of the specification sheet

SPECIFICATION

MAIN APPLICATION	BATTERY TYPE	NOMINAL VOLTAGE (V)	NOMINAL CAPACITY (Ah) 5HR	NOMINAL CAPACITY (Ah) 20HR / 10HR	DIMENSION L in	DIMENSION W in	DIMENSION H in	DIMENSION L mm	DIMENSION W mm	DIMENSION H mm	HT OVER TERMINAL in	HT OVER TERMINAL mm	WEIGHT (APPROX.) lbs	WEIGHT (APPROX.) kg	ASSEMBLY FIGURE TERMINAL POSITION	ASSEMBLY FIGURE TERMINAL TYPE
	BACKUP POWER BATTERIES															
●○○○○○	WPS4-6	6	3.4	4	2.76	1.85	4.02	70	47	102	4.17	106	1.64	0.75	1	F1
●○○○○○	WPS2.3-12	12	1.96	2.3	7.01	1.36	2.36	178	34.5	60	2.60	66	1.91	0.87	2	F1
●○○○○○	WPS4-12	12	3.4	4	3.54	2.76	4.00	90	70	101.5	4.21	107	3.30	1.50	3	F1
●○○○○○	WPS5-12	12	4.25	5	3.54	2.76	4.00	90	70	101.5	4.21	107	3.56	1.62	3	F1
●○○○○○	WPS7-12	12	5.65	7	5.94	2.56	3.70	151	65	94	4.02	102	4.40	2.00	5	F1
●○○○○○	WPS7.2-12	12	6.12	7.2	5.94	2.56	3.70	151	65	94	4.02	102	5.17	2.35	5	F1
●○○○○○	WPS8-12	12	6.8	8	5.94	2.56	3.70	151	65	94	4.02	102	5.06	2.30	5	F1
●○○○○○	WPS12-12(T)	12	10.2	12	5.94	3.86	3.66	151	98	93	3.86 (4.09)	98 (104)	8.10	3.68	5	F1 (F3)
●○○○○○	WPS17-12	12	13.73	17	7.13	2.99	6.57	181	76	167	6.57	167	10.58	4.81	11	F3
●●○○○○	WPS26-12(N)	12	22.1	26	6.54	6.89	4.92	166	175	125	4.92	125	17.60	8.00	21(14)	F3(F6)
●○●○○○	WPS40-12(N) ★	12	34	40	7.83	6.54	6.73	199	166	171	6.73	171	27.70	12.60	11 (14)	F4 (F8)
	LONG LIFE POWER BATTERIES															
●○●○●○	WPL5-12	12	4.25	5	3.54	2.76	4.00	90	70	101.5	4.21	107	4.18	1.90	3	F1
●○●○●○	WPL7.2-12	12	6.12	7.2	5.94	2.56	3.70	151	65	94	4.02	102	5.28	2.40	5	F1
●○●○●○	WPL1235W	12	35	8.5	5.94	2.56	3.70	151	65	94	4.02	102	5.94	2.70	5	F2
●○●○●○	WPL12-12	12	10.2	12	5.94	3.86	3.66	151	98	93	3.86	98	8.84	4.02	5	F1
●○●○●○	WPL18-12(N)SHR	12	15.3	18	7.13	2.99	6.57	181	76	167	6.57	167	12.47	5.67	11 (4)	F3 (F6)
●○○○●○	WPL26-12(N)B	12	22.1	26	6.54	6.89	4.92	166	175	125	4.92	125	17.60	8.00	21 (14)	F3 (F6)
●○●○●○	WPL26-12 (N)	12	22.1	26	6.54	6.89	4.92	166	175	125	4.92	125	20.46	9.30	21 (14)	F3 (F6)
●○●○●○	WPL26-12TN	12	22.1	26	6.54	4.94	6.89	166	125.5	175	6.89	175	21.60	9.80	14	F6
●○●○●○	WPL28-12TN	12	23.8	28	6.54	4.94	6.93	166	125.5	176	6.93	176	20.20	9.18	14	F6
●○●○●○	WPL28-12TM	12	23.8	28	6.54	4.94	6.93	166	125.5	176	6.93	176	20.20	9.18	14	F9
●○●○●○	WPL34-12N	12	28.9	34	7.76	5.16	6.26	197	131	159	6.69	170	23.10	10.50	9	F6
●○●○●○	WPL40-12 (N)	12	34	40	7.83	6.54	6.73	199	166	171	6.73	171	29.7 (29.5)	13.5 (13.4)	11 (14)	F4 (F8)
●○●○●○	WPL45-12 (N)	12	38.25	45	7.83	6.54	6.73	199	166	171	6.73	171	32.12	14.60	11 (14)	F4 (F8)
●○●○●○	WPL50-12 (N)	12	42.5	50	7.83	6.54	6.73	199	166	171	6.73	171	32.60	14.80	11 (14)	F4 (F8)
●○○○●○	WPL55-12 (N)	12	46.75	55	8.90	5.31	8.15	226	135	207	9.02 (8.43)	229 (214)	37.40	17.00	10 (9)	F15(F8)
●○○○●○	WPL60-12AN	12	51	60	13.78	6.57	7.05	350	167	179	7.05	179	45.10	20.50	14	F8
●○○○●○	WPL60-12ARN	12	51	60	13.78	6.57	7.05	350	167	179	7.05	179	45.10	20.50	9	F8
●○○○●○	WPL65-12AN	12	55.25	65	13.78	6.57	7.05	350	167	179	7.05	179	46.00	20.90	14	F8
●○○○●○	WPL65-12ARN	12	55.25	65	13.78	6.57	7.05	350	167	179	7.05	179	46.00	20.90	9	F8
●○●○●○	WPL90-12N	12	76.5	90	12.97	6.78	8.46	329.5	172.3	215	8.74	222	62.04	28.20	14	F18
●○●○●○	WPL100-12N	12	85	100	12.97	6.78	8.46	329.5	172.3	215	8.74	222	68.90	31.30	14	F18
●○●○●○	WPL100-12RN	12	85	100	12.97	6.78	8.46	329.5	172.3	215	8.74	222	68.90	31.30	9	F18
●○●○●○	WPL120-12N	12	102	120	16.06	6.97	8.82	408	177	224	8.82	224	78.10	35.50	14	F18
●○●○●○	WPL120-12RN	12	102	120	16.06	6.97	8.82	408	177	224	8.82	224	78.10	35.50	9	F18
●○●○●○	WPL125-12RN	12	106.25	125	16.06	6.97	8.82	408	177	224	8.82	224	87.12	39.60	9	F18
●○●○●○	WPL130-12N	12	110.5	130	19.02	6.69	9.45	483	170	240	9.45	240	93.70	42.60	9	F18
●○●○●○	WPL150-12N	12	127.5	150	19.02	6.69	9.45	483	170	240	9.45	240	100.00	45.50	9	F18
●○●○●○	WPL12550WN	12	550W	150	19.02	6.69	9.45	483	170	240	9.45	240	110.00	49.80	9	F18
●○●○●○	WPL155-12N	12	131.75	155	19.02	6.69	9.45	483	170	240	9.45	240	106.00	48.20	9	F18
●○●○●○	WPL200-12BN	12	170	200	20.55	9.37	8.62	522	238	219	8.82	224	135.00	61.50	22	F18
●○●○●○	WPL200-12N	12	170	200	20.55	9.37	8.62	522	238	219	8.82	224	146.00	66.50	22	F18
●○●○●○	WPL230-12N	12	195.5	230	20.55	9.37	8.62	522	238	219	8.82	224	161.00	73.20	22	F18

MAIN APPLICATION	BATTERY TYPE	NOMINAL VOLTAGE (V)	NOMINAL CAPACITY (Ah) 5HR	NOMINAL CAPACITY (Ah) 20HR / 10HR	DIMENSION L in	DIMENSION W in	DIMENSION H in	DIMENSION L mm	DIMENSION W mm	DIMENSION H mm	HT OVER TERMINAL in	HT OVER TERMINAL mm	WEIGHT (APPROX.) lbs	WEIGHT (APPROX.) kg	ASSEMBLY FIGURE TERMINAL POSITION	ASSEMBLY FIGURE TERMINAL TYPE
	SPECIAL TYPE															
●○○○○○	WP2-12	12	1.7	2	5.91	0.79	3.54	150	20	90	3.54	90	1.60	0.73	12	F1
●○○○○○	WP1250	12	1.7	2	5.63	0.91	2.52	143	23	64	2.52	64	1.43	0.65	18	F13
●○○○○○	WP1222A	12	1.7	2	7.17	0.91	2.40	182	23	61	2.40	61	1.61	0.73	18	F13
●○○○○○	WP1223A	12	1.79	2.1	7.17	0.91	2.40	182	23	61	2.40	61	1.57	0.71	18	F13
	2V STATIONARY BATTERIES															
○○○○●○	MSK75	2	63.75	75	6.69	2.83	8.07	170	72	205	8.19	208	14.08	6.40	-	F18
○○○○●○	MSK100A	2	85	100	6.69	2.83	8.07	170	72	205	8.19	208	16.50	7.50	-	F18
○○○○●○	MSK200	2	170	200	6.69	4.17	13.11	170	106	333	13.48	342.5	30.80	14.00	-	F18
○○○○●○	MSK300	2	255	300	6.69	5.91	13.11	170	150	333	13.48	342.5	46.60	21.20	-	F18
○○○○●○	MSK400	2	340	400	7.76	6.69	13.11	197	170	333	13.48	342.5	56.10	25.50	-	F18
○○○○●○	MSK440	2	374	440	7.76	6.69	13.11	197	170	333	13.48	342.5	65.30	29.70	-	F18
○○○○●○	MSK500	2	425	500	6.77	9.49	12.83	172	241	326	13.41	340.5	73.70	33.50	-	F18
	12V FRONT TERMINAL BATTERIES															
○○○○●○	TPK12100A	12	85	100	19.96	4.17	9.25	507	106	235	9.25	235	67.80	30.80	23	F18
○○○○●○	TPK12125	12	106.25	125	21.65	4.33	11.34	550	110	288	11.34	288	85.80	39.00	23	F18
○○○○●○	TPK12150	12	127.5	150	21.65	4.33	11.34	550	110	288	11.34	288	108.00	49.00	23	F18
	GEL BATTERIES															
○●○○○○	LG7-12	12	5.95	7	5.94	2.56	3.7	151	65	94	4.02	102	5.39	2.45	5	F2
○●○○○○	LG12-12	12	10.2	12	5.94	3.86	3.66	151	98	93	3.86	98	8.80	4.00	5	F2
○●○○○○	LG17-12	12	14.45	17	7.13	2.99	6.57	181	76	167	6.57	167	13.86	6.30	21	F3
○●○○○○	LG24-12	12	20.4	24	6.54	6.89	4.92	166	175	125	4.92	125	20.46	9.30	21	F3
○●○○○○	LG32-12	12	27.2	32	7.76	5.16	6.26	197	131	159	7.09	180	22.90	10.40	20	F4
○●○○○○	LG36-12N	12	30.6	36	7.76	5.16	6.26	197	131	159	6.69	170	23.50	10.70	9	F8
○●○○○○	LG40-12 (N)	12	34	40	7.83	6.54	6.73	199	166	171	6.73	171	29.30	13.30	11 (14)	F4 (F8)
○●○○○○	LG45-12 (N)	12	38.25	45	7.83	6.54	6.73	199	166	171	6.73	171	33.00	15.00	11 (14)	F4 (F8)
○●○○○○	LG50-12 (N)	12	42.5	50	7.83	6.54	6.73	199	166	171	6.73	171	32.60	14.80	11 (14)	F4 (F8)
○●○○○○	LG55-12N	12	46.75	55	8.9	5.31	8.15	226	135	207	8.43	214	37.40	17.00	9	F8
○●○○○○	LG22NF305CN	12	52.7	62	8.9	5.31	8.15	226	135	207	8.43	214	40.70	18.50	14	F8
○●○○○○	LG65-12	12	55.25	65	13.78	6.54	6.85	350	166	174	6.85	174	52.58	23.90	15	F4
○●○○○○	LGK75-12N	12	63.75	75	10.24	6.69	7.95	260	170	202	8.15	207	54.60	24.80	9	F8
○●○○○○	LGK100-12N	12	85	100	13.31	6.69	8.35	338	170	212	8.54	217	74.80	34.00	9	F8
○●○○○○	LGL150-12N	12	127.5	150	19.02	6.69	9.45	483	170	240	9.45	240	101.00	45.80	9	F18

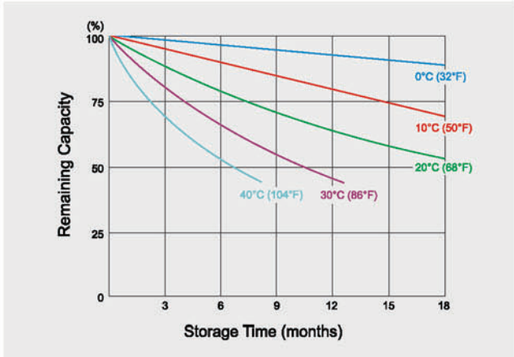
- VdS Approved Model ★
- For batteries' capacity below 18Ah, all dimensions given are +/- 1mm (0.04 inches)
- For batteries' capacity above 18Ah, all dimensions given are +2/- 1mm (+0.08/-0.04 inches)
- Please refer to all the details of the specification sheet

TECHNOLOGY

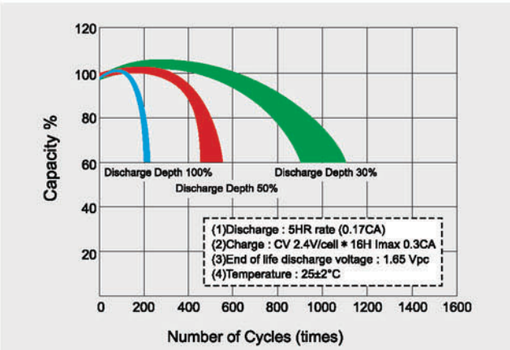
CHARACTERISTIC

Discharge current (A)	Final discharge Voltage (V/cell)
(A)≦0.2C	1.75
0.2C<(A)≦0.5C	1.70
0.5C<(A)≦3.0C	1.60
(A)>3.0C	1.40

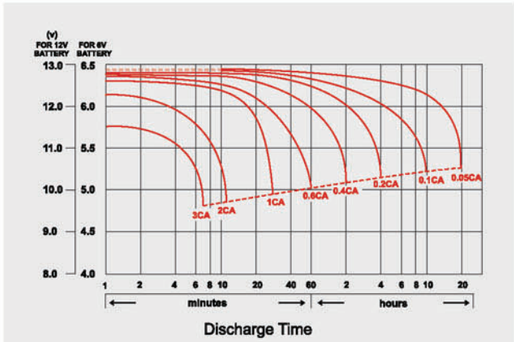
Discharge current and final discharge voltage



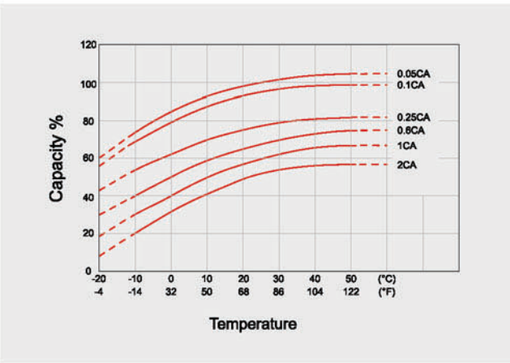
Capacity Retention Characteristic



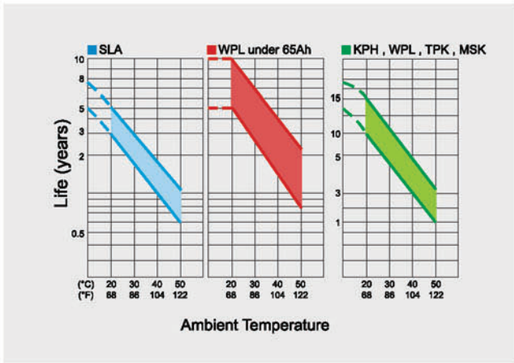
Cycle Service Life



Discharge Time VS. Discharge Current (25°C) (77°F)



Effect of Temperature on Capacity 25°C (77°F)



Trickle (or float) Service Life

CHARGING METHOD

APPLICATION		STANDBY USE	CYCLE USE
Charging method		Constant voltage	
Setting voltage (V/cell)		2.25~2.30	2.40~2.50
Temperature factor		-3.0mV/°C/cell	-5.0mV/°C/cell
Max. charge current (CA)		0.3	0.3
Charge Time	Discharge 100%	24h	16h
	Discharge 50%	20h	10h
Temperature (°C)		-15°C~40°C	

CHARGING METHOD

High performance and long service life of LONG battery depend upon correct charging. Improper charging modes or inadequate charging equipment result in decreased battery life and/or unsatisfactory performance.

Any of the conventional charging techniques may be used, but to obtain maximum service life and capacity, along with acceptable recharge time, constant current/constant voltage charging is recommended.

A charge quantity of 105-120% of the previous discharged quantity is needed for fully charging the battery. The charging voltage of battery decreases with increasing temperature and increases with decreasing temperature. At a temperature below 5°C (41°F) or above 35°C (95°F), the temperature compensation for charging voltage is necessary. At ambient temperature the compensation will not be necessary.

Overcharging Should be avoided : As a result of too high a charge voltage. excessive current will flow after reaching full charge, causing decomposition of water in the electrolyte and, hence, premature aging.

Undercharging Should also be avoided : If too low a charge voltage is applied, the charger current output will essentially stop before the battery is fully charged. This allows some of the lead sulfate to remain on the plates which will eventually reduce capacity.

RECOMMENDED RECHARGING INTERVAL & METHOD	
STORAGE TEMPERATURE	RECHARGE INTERVAL & METHOD
Below 20℃ (68℉)	9 months, charge for 16~20 hrs at 2.4V/cell
20℃-30℃ (68℉-86℉)	6 months, charge for 16~20 hrs at 2.4V/cell
above 30℃ (86℉) (avoid this storage condition)	3 months, charge for 16~20 hrs at 2.4V/cell

HANDLING INSTRUCTION

- Do not short the terminals.
- Do not place the battery near or in fires.
- Do not use the battery in a container or bag without proper ventilation.
- Operate at a temperature between -15°C. To 50°C. But for cycle use, the 5°C to 35°C temperature range is recommended.
- To properly store the battery, remove battery from equipment or charge and store in a dry and cool place.
- Immediately recharge after discharging.
- If sulfuric acid from the battery is spilled on skin or clothing, wash immediately with water. If acid comes in contact with eyes, flush with large amounts of water and immediately see a doctor.
- To obtain maximum life, the ripple current at the RMS forward current of the charger should be regulated to 10% less than its output value.
- Avoid mixed use of batteries. Different capacities, histories, or manufacturers of batteries may cause damage to the batteries or other equipment's.

COMPANY INTRODUCTION

ABOUT KUNG LONG

Established 27 years ago, Kung Long Batteries Industrial Co., Ltd. is the only professional lead-acid battery manufacturer in Taiwan that owns a bonded factory and is also listed on the Taiwan Stock Exchange and company sales achieved NTD 7 billion in 2016. We have adopted the manufacturing and sales policy of international labor distribution as spreading manufacturing risks while expanding the market for potential sales. Since 1996, we established a factory in the Ben Luc District in Vietnam, which made us to become a first completely foreign-owned corporation to construct a battery production base in the locality. Thereafter, we passed ISO9001 and ISO14001 accreditation in 1999 and 2000, respectively. We passed OHSAS18001 accreditation, and also became a listed company in Taiwan in 2002. Construction of our 200,000m^2 Duc Hoa factory in Vietnam was finished in 2007. Then we passed TL9000 communications/telecommunications electronics industry quality system certification in 2008. In 2015 the Phase-6 production construction in Duc Hoa factory was finished.

In terms of product manufacturing, Kung Long possesses strict standards for each step of the manufacturing process, along with revolutionary innovations and implementations in the technology system, management methods and administrative procedures. Under precise manufacturing standards and insurance of product compliance of quality management systems, our entire collection of sealed battery products have passed UL safety standards. In addition, we have also passed German VdS certification to meet quality demands of the security system market in the European region. Renowned international corporations both domestic and overseas have voiced support and affirmation of our products' quality. We believe that customer satisfaction is not only from the product itself, but is also built from immediate service and establishment of a friendly working relationship with clients those are measures to provide extra value and enhance customer satisfaction. Thus, Kung Long earned the Gold Award for Customer Satisfaction, and also earned the honor of the Taiwan Excellence Award from the Ministry of Economic Affairs.

Our innovative developments stem from abundant experience and energy. With our competitive advantage of a broad, complete product line and flexible manufacturing technologies, Kung Long has developed more than 400 types of batteries for various usages. We continue developing batteries for renewable energy applications, such as electric vehicles, solar power and wind power. Because of our untiring efforts of product innovation and development and proactive attitude, since 1993 Kung Long has cooperated with the Industrial Technology Research Institute's Material & Chemical Research Laboratories on the development of deep-cycle sealed batteries, electric scooter batteries, and high-power surface modified batteries. We have also introduced new technologies from many sources and invested in a multitude of advanced facilities, demonstrating our mission and promise to provide state-of-the art services to customers while we are pursuing sustainable development.

Taiwanese Origins, Vietnamese Roots, and World Vision are Kung Long's main concern. Kung Long's goal is to provide clean energy for global consumers while upholding social and environmental responsibilities to promote continual growth, sustained development and untiring efforts within the company.

HISTORY

Our expertise comes from our ample experiences

2017
Obtained ISO17025 Certificate of Accreditation

2016
2016 Developed and accomplished High Temperature - HTP Series and Green Power - CWP Series

2015
Duc Hoa Plant in Phase-6 production construction finished
Le Long Vietnam Co., obtained ISO14001 and OHSAS18001
Start to supply Idling motorcycle batteries to Japan's biggest central factory

2014
Applied new automatic equipment into production
Idling motorcycle batteries obtained Japan's biggest central factory's approval

2013
Company sales achieved USD$190 million dollars

2012
Developed and accomplished Long Life Batteries, WPL Series
Duc Hoa Plant in Phase-5 production construction finished

2011
BI (Business Intelligence) system on line

2010
Developed and accomplished Stationary Batteries, MSK & TPK Series
Company sales achieved USD$145 million dollars
Duc Hoa Plant in Phase-4 production construction finished

2009
Duc Hoa Plant in Phase-3 production construction finished

2008
Obtained TL9000 Quality Management System Certificate in Vietnam

2007
Established the 2nd Plant (Duc Hoa) in Vietnam where occupies 200,000 square meters

2003
Obtained CE Certificate for EU product Safety standard
Le Long Vietnam Co., obtained VdS German Approval
Kung Long Enterprises USA, Inc founded

2002
Obtained OHSAS 18001 International Safety Management System Certificate

2001
Obtained the approval to become the listed company in Taiwan

2000
Obtained ISO9001 International quality management system Certificate

1999
Obtained ISO14001 International environmental Certificate

1998
Awarded " It is very well Made in Taiwan" by Ministry of Economic Affairs

1997
Awarded " Gold Award for Customer Satisfaction"

1996
Obtained VdS German product Safety approval
Became a bonded factory and passed National Defense appraisal in Taiwan
LE LONG Vietnam Plant established

1994
ISO9002 International Quality Certificate was obtained

1993
Developed Deep-Cycle SLA batteries with Materials Research Laboratories of the Industrial Technology Research Institute

1991
Obtained UL mark for US product safety standards

1990
Kung Long was approved to establish in Nan Kang Industrial Park