

LivΣN BATTERY



General Catalogue 2016

VRLA-AGM, VRLA-GEL and Stationary Batteries

Company Profile

Thanks to the extensive experience obtained from its work in all areas of the sector, Liven Battery is one of the few suppliers able to offer its customers the most current technology under one company: AGM, GEL, OPzV and lithium, among others.

The diverse technology of LIVEN Battery covers all the applications and needs in the battery field, to name a few: Uninterruptable Power Supply (SAI-UPS), system applications, production IT, renewable solar photovoltaic, wind energy, security surveillance, telecommunications equipment, security systems, defense applications, radio beacons, nautical, electric cars, carriages and golf carts and electro-medical systems.

Liven Battery Iberica offers the added value of providing the complete project solution from the initial consult, technological advice, battery supply, installation and removal of the product, design and the production of the storage closet or supports and accessories needed for installation.

Technologies

VRLA-AGM

A VRLA-AGM battery is an electric storage lead-acid battery

- Sealed with special compound epoxy and using pressure controlled vent valves.
- Starved electrolyte design-acid solution is absorbed in separators.
- Using a recombination reaction to prevent the escape of hydrogen and oxygen gases.
- Non spillable can be operated in any position. But, upside-down installation is not recommended.
- Maintenance free. But connections must be retorqued and the batteries should be cleaned periodically.

A VRLA-AGM battery uses recombinant technology. The oxygen produced from the positive plates of the battery is absorbed by the negative plates. This suppresses the generation of hydrogen at the negative plates. The recombination of oxygen and hydrogen leads to Water, retaining the electrolyte amount within the battery. Water filling is never required. Battery should never be opened as this would damage the battery with additional oxygen from the air. The warranty will be void if the battery is opened.

VRLA-GEL

What is gel? Gel is usually produced by homogeneous dispersion of pyrogenic silica in diluted sulfuric acid. Pyrogenic silica is a kind of powder of very well dispersed SiO₂, which absorb more than 10 times of its weight liquids, producing gel. Because of the thixotropic properties of gel (liquid by stirring and solid by resting), after a certain gelling time, the agglomerates are connecting themselves together to form a network which keeps the liquid inside and gives the gel structure. This form can be broken by stirring to single agglomerates giving again a liquid form.

Main difference from AGM batteries:

Using gel SOL as electrolyte

Using the extra microporous separator which can: reduce the depolarization of the negative electrode and avoid the PCL 3 effect (premature capacity loss due to negative plate sulphation); significantly decreases thermal runaway; during deep discharge or pole reversal, help to prevent short circuits by dendrite growth between the plates.

Plate thickness tolerance is not critical since the high compression of plate group assembly is not required.

More electrolytes for better contact with plates and active materials and container walls, good for releasing internal heat and cooling battery temperature.

Better vent valve design to lower gassing rate and water losing rate to extend battery lifetime.

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LV Serie / VRLA-AGM / 5 years STANDARD

LIVEN series LV (0.8Ah-30Ah) VRLA batteries are designed with AGM (Absorbent Glass Mat) technology and for general application purpose, such as UPS, alarm, security, medical equipment and electrical utilizes. With 5 years design life, the batteries comply the most popular international standards, such as IEC896-2, BS6290-4, Eurobat Guide.

GENERAL FEATURES

- Maintenance-free, no water adding required.
- Sealed Valve-Regulated
- Spill proof/leak proof
- Deep discharge protection
- Plate grids from lead-calcium alloy, free of antimony
- No corrosion
- Installs vertically or horizontally
- Low gassing (unless overcharged)
- Good cycling and stationary performance
- Good high rate discharges
- Long shelf life
- Rugged and vibration-resistant



MAIN APPLICATIONS

- All purpose
- Uninterruptable Power Supply (UPS)
- Electric Power System (EPS)
- Emergency backup power supply
- Emergency light
- Railway signal
- Aircraft signal
- Alarm and security system
- Electronic apparatus and equipment
- Communication power supply
- DC power supply
- Auto control system

Liven Model No.	Voltage (V)	Capacity Ah/ 20Hr	Dimension(mm)				Weight (kg) ±4%	Terminal Type
			L	W	H	Total H		
LV4-4	4	4	48	48	100	104	0,50	F1
LV1.3-6	6	1,3	97	24	51	55	2,29	F1
LV2.8-6	6	2,8	66	33	97	102	0,55	F1
LV3.2-6	6	3,2	125	33	60	64	0,63	F1
LV4-6	6	4	70	47	100	104	0,68	F1
LV4.5-6	6	4,5	70	47	100	104	0,74	F1
LV7-6	6	7	151	35	94	98	1,08	F1/F2
LV12-6	6	12	151	50	94	98	1,83	F1/F2
LV0,8-12	12	0,8	96	25	62	62	0,36	WIRE
LV1,3-12	12	1,3	97	45	52	57	0,57	F1
LV2,3-12	12	2,3	179	35	61	66	0,92	F1
LV2,9-12	12	2,9	79,5	56	99	103	1,10	F1
LV3,3-12	12	3,3	134	67	61	66	1,30	F1
LV4,5-12	12	4,5	90	70	101	105	1,46	F1/F2
LV5-12	12	5	90	70	101	105	1,60	F2
LV5.4-12	12	5,5	90	70	101	105	1,80	F2
LV7,2-12	12	7,2	151	65	94	100	2,15	F2
LV7,5-12	12	7,2	151	65	94	100	2,31	F2
LV9-12	12	9	151	65	94	100	2,55	F2
LV12-12	12	12	151	98	94	100	3,70	F2
LV17-12	12	17	181	76	166	166	5,00	INSERT
LV18-12	12	18	181	76	166	166	5,30	INSERT
LV20-12	12	20	181	76	166	166	5,60	INSERT
LV26-12	12	26	166	175	125	125	7,35	INSERT
LV26-12H	12	26	166	126	174	174	8,00	INSERT
LV28-12	12	28	166	175	125	125	7,92	INSERT
LV28-12H	12	28	166	126	174	174	8,30	INSERT
LV30-12	12	30	166	175	125	125	8,70	INSERT

LVL Serie / VRLA-AGM / 10 years STANDARD

LIVEN series LVL (7Ah-260Ah) long live VRLA batteries are designed with AGM (Absorbent Glass Mat) technology and for general application purpose, such as UPS, telecom, alarm, security, medical equipment and electrical utilizes. With 10 years design life, the batteries comply the most popular international standards, such as JIS, IEC896-2, BS6290-4, Eurobat Guide.



MAIN APPLICATIONS

- All purpose
- Uninterruptable Power Supply (UPS)
- Electric Power System (EPS)
- Emergency backup power supply
- Emergency light
- Railway signal
- Aircraft signal
- Alarm and security system
- Electronic apparatus and equipment
- Communication power supply
- DC power supply
- Auto control system

GENERAL FEATURES

- Maintenance-free, no water adding required
- Sealed Valve-Regulated
- Spill proof/leak proof
- Deep discharge protection
- Plate grids from lead-calcium alloy, free of antimony
- No corrosion
- Installs vertically or horizontally
- Low gassing (unless overcharged)
- Good cycling and stationary performance
- Good high rate discharges
- Long shelf life
- Rugged and vibration-resistant



Liven Model No.	Voltage (V)	Capacity Ah/ 10Hr	Dimension(mm)			Total H	Weight (kg) ±4%	Terminal Type
			L	W	H			
LVL7,2-12	12	7	151	65	94	100	2,45	F2
LVL12-12	12	12	151	98	94	101	3,80	F2
LVL18-12	12	18	181	77	167,5	167,5	5,70	INSERT
LVL26-12	12	26	166	175	125	125	8,40	INSERT
LVL33-12	12	33	196	131	161	164	10,80	INSERT
LVL36-12	12	36	196	131	161	164	11,50	INSERT
LVL40-12	12	40	196	164	170	170	12,80	INSERT
LVL45-12	12	45	196	164	170	170	14,20	INSERT
LVL50-12	12	50	230	137	210	215	16,00	INSERT
LVL55-12	12	55	230	137	210	215	17,20	INSERT
LVL65-12	12	65	350	167	179	179	21,10	INSERT
LVL70-12	12	70	260	167	213	216	20,60	INSERT
LVL75-12	12	75	260	167	213	216	22,30	INSERT
LVL90-12	12	90	305	168	207,5	212,5	28,00	INSERT
LVL100-12	12	100	328	172	222	222	30,00	INSERT
LVL120-12	12	120	407	173	222	231	35,00	INSERT
LVL134-12	12	134	345	172	273	278	41,50	INSERT
LVL145-12	12	145	345	172	273	278	44,00	INSERT
LVL150-12	12	150	483	171	240	240	44,50	INSERT
LVL180-12	12	180	522	239	218	223	53,00	INSERT
LVL200-12	12	200	522	239	218	223	60,00	INSERT
LVL230-12	12	230	521	269	220	225	67,00	INSERT
LVL260-12	12	260	521	269	220	225	74,00	INSERT
LVL100-6	6	100	194	170	205	210	16,50	INSERT
LVL150-6	6	150	260	180	247	250	23,50	INSERT
LVL180-6	6	180	306	168	222	227	26,50	INSERT
LVL200-6	6	200	322	177,5	226	247	29,00	INSERT
LVL200-6S	6	200	260	180	247	252	30,00	INSERT
LVL225-6	6	225	322	177,5	226	247	31,00	INSERT
LVL225-6S	6	225	243	187,5	275	275	32,00	INSERT

LVH Serie / VRLA-AGM / HIGH RATE

LIVEN HIGH RATE series LVH(5Ah-225Ah) VRLA batteries are designed with AGM (Absorbent Glass Mat). LVH (High Rate) series is especially designed for heavy load discharge applications with 5 to 10 years design life in float service. By using strong grids and specially designed active material the HR series offers stable performance during high current discharge.

The HR series offers 30% more power output than the standard range. Suitable for UPS/EPS where high current loads are required. With 5 years design life for batteries <28Ah and 10 years design life >28Ah, the batteries comply to the most popular international standards, such as IEC896-2, BS6290-4, Eurobat Guide.

GENERAL FEATURES

- Long design life (25°C) 5 years <28Ah and 10 years >28Ah
- Low-self discharge rate: < 3% month
- Good high rate discharge performance
- High sealed reaction efficiency: >99%
- Wide operation temperature range: -20°-60°C
- Structure: compact design, shorter internal connectors between cells, thus low internal resistance
- Plate: Pasted flat type, with patent high rate formula of AM
- Terminal: two or more types terminals are convenient for selection
- Safety valve: flame arrester/filter is equipped with safety valve system
- Separator: using improved AGM separator, makes lower resistance higher assembling pressure to increase deep cycle life
- Battery case: made of high strength ABS(UL94-HB) and UL94-V0 is optional
- Terminal sealing: double sealing technics (mechanical + epoxy glue)

MAIN APPLICATIONS

- UPS (High rate),
- High power backup supply,
- Emergency power supply,
- Starting system,
- Power tools,
- Emergency lighting,
- Electric starting



Liven Model No.	Voltage (V)	Capacity Ah/ 20Hr	Capacity w@1.67V/cell 15'	Dimension(mm)			Total H	Weight (kg) ±4%	Terminal Type
				L	W	H			
LVH6-18W	6	5	18W	70	47	101	107,00	0,75	F2
LVH6-20W	6	5,3	20W	70	47	101	107,00	0,80	F2
LVH6-28W	6	7	28W	151	34	94	100,00	1,20	F2
LVH6-36W	6	9	36W	151	34	94	100,00	1,35	F2
LVH12-18W	12	5	18W	90	70	101	107,00	1,60	F2
LVH12-20W	12	5,3	20W	90	70	101	107,00	1,70	F2
LVH12-21W	12	5,8	21W	151	50	95	101,00	1,85	F2/F1
LVH12-28W	12	7	28W	151	65	93,5	100,00	2,20	F2
LVH12-36W	12	9	36W	151	65	93,5	100,00	2,63	F2
LVH12-48W	12	12	48W	151	98	95	101,00	4,20	F2
LVH12-80W	12	20	80W	181	77	167	167,00	6,20	INSERT
LVH12-88W	12	22	88W	181	77	167	167,00	6,50	INSERT
LVH12-96W	12	26	96W	166	175	125	125,00	8,10	INSERT
LVH12-104W	12	26	104W	166	175	125	125,00	8,60	INSERT
LVH12-125W	12	33	125W	195	130	159	180,00	10,20	INSERT
LVH12-150W	12	40	150W	198	166	171	171,00	13,00	INSERT
LVH12-200W	12	55	200W	229	138	210	235,00	18,00	INSERT
LVH12-240W	12	65	240W	350	167	180	183,00	21,00	INSERT
LVH12-280W	12	75	280W	260	169	210	235,00	24,80	INSERT
LVH12-350W	12	90	350W	306,5	168,5	210	235,00	29,00	INSERT
LVH12-380W	12	100	380W	328	172	222	227,00	31,50	INSERT
LVH12-450W	12	120	450W	407	177	225	225,00	36,50	INSERT
LVH12-570W	12	150	570W	483	170	240	240,00	46,00	INSERT
LVH12-570WS	12	150	588W	340	173	280	285,00	45,00	INSERT
LVH12-580W	12	155	580W	340	173	280	285,00	47,00	INSERT
LVH12-700W	12	200	707W	522	240	219	240,00	62,50	INSERT
LVH12-800W	12	225	795W	522	240	219	224,00	65,00	INSERT
LVH6-850W	6	225	850W	243	187,5	275	275,00	33,00	INSERT

LVF Serie / VRLA-AGM / FRONT

LIVEN LVF series (Front Terminal, 12V 55Ah-180Ah) battery is mainly used in the area of communication, which is unique in design, reasonable in structure and occupying the leading position in the same industry of the world. With 12 years design life, the batteries comply the most popular international standards, such as IEC896-2, BS6290-4, Eurobat Guide.

GENERAL FEATURES

- Specifically ideal for 19 inch or 23 inch power cabinets
- Front terminals make the installation, maintenance and supervision easy
- Shield designs protect terminals from short circuit and show good appearance
- Unique vent valve design: reduce water losing and prevent air/spark going inside
- Thick plates, special formula of paste and plate making process for a long service life
- ABS material: increase the strength of battery container (Flame-retardant ABS is optional)



MAIN APPLICATIONS

- For standard 19 inch or 23 inch power cabinets
- Network connection equipment of communication system
- Power system of special network or local area network
- UPS - standby power supply
- Power station systems
- Railway and marine systems

Model No.	Voltage (V)	Capacity Ah / C8	Dimension(mm)			Total H	Weight (kg) ±4%	Terminal Type
			L	W	H			
LVF55-12	12	55	277	106	222	222	18,00	INSERT
LVF70-12	12	70	564	114	187	187	25,00	INSERT
LVF100-12	12	100	508	110	238	238	35,60	INSERT
LVF100-12S	12	110	394	110	285	285	34,50	INSERT
LVF125-12	12	125	551	110	287	287	40,50	INSERT
LVF150-12	12	150	551	110	287	287	46,80	INSERT
LVF180-12	12	180	560	126	280	280	54,00	INSERT



LVT Serie / VRLA-AGM / 2V

LIVEN LVT series (2V 50Ah-3000Ah) of VRLA batteries are recognized as the most reliable and high quality battery system in the industry. LIVEN LVT series batteries designed with advanced AGM (Absorbent Glass Mat) technology, Long service life designed with 15 years, the batteries comply to the most popular international standards, such as IEC896-2, BS6290-4, Eurobat Guide.

GENERAL FEATURES

- Longer service life (up to 15 years life in float service at 25°C (77°F))
- LVT series battery range is in line with EURO BAT specifications for "High Integrity" (Over 10 years of service life in floating charge conditions)
- Water adding and specific gravity measurements are not required. There is also no need for an equalization charge, which reduces maintenance costs.
- LVT series battery is manufactured in accordance with JIS C8704 and qualified by the Battery Equipment Approval Committee of Japan for use in fire alarms, security systems and emergency lighting systems (Approval No.00C248)
- LVT series meets the NQAS requirements specified by NTT (Approval No. NQAS 0008) Proven service and supply records for telecommunications.
- LVT series battery has a long expected service life of up to 15 years.

MAIN APPLICATIONS

- Emergency lighting systems
- Electric power systems
- Power systems
- Power station
- Nuclear power station
- Solar and wind powered systems
- Marine equipment
- Power generation plants
- Alarm systems
- UPS
- Telecom
- Medical equipment
- Fire and security systems, etc...



Model No.	Voltage (V)	Capacity Ah / C10	Dimension(mm)			Total H	Weight (kg) ±4%	Terminal Type
			L	W	H			
2V Cells (AGM)								
LVT50-2	2	50	161	50	166	175	3,30	INSERT
LVT100-2	2	100	170	72	205	228	5,90	INSERT
LVT150-2	2	150	172	102	208	223	8,60	INSERT
LVT200-2	2	200	170	110	334	365	13,40	INSERT
LVT250-2	2	250	171	151	340	365	18,20	INSERT
LVT300-2	2	300	171	151	340	365	19,50	INSERT
LVT350-2	2	350	171	151	340	365	20,50	INSERT
LVT400-2	2	400	210	175	334	365	27,00	INSERT
LVT450-2	2	450	240	173	338	365	30,00	INSERT
LVT500-2	2	500	240	173	338	365	31,00	INSERT
LVT600-2	2	600	300	175	335	365	38,50	INSERT
LVT800-2	2	800	410	175	331	365	53,00	INSERT
LVT1000-2	2	1000	474	173	329	366	61,50	INSERT
LVT1500-2	2	1500	398	350	341	383	97,00	INSERT
LVT2000-2	2	2000	490	350	342	381	129,00	INSERT
LVT2500-2	2	2500	712	353	341	382	171,00	INSERT
LVT3000-2	2	3000	712	353	341	382	188,00	INSERT

LVG Serie / VRLA PURE GEL / GENERAL USE

LIVEN LVG series deep cycle gel (17Ah-240Ah) VRLA (Valve regulated lead acid) GEL batteries are designed with superfluous electrolyte evenly distributed in a special PVC-SiO2 separator and a patented grid design. This battery is perfect for cyclic use and high temperatures (Mobility, marine, photovoltaic and wind power systems and caravanning) and has a greater ability to withstand heat and deep discharge.

With 12 years design life, the batteries comply the most popular international standards, such as JIS, IEC896-2, BS6290-4, Eurobat Guide.

GENERAL FEATURES

- Long discharge time
- Suitable for standby power and energy storage power use
- Special plate design, long cycle lifetime
- Using special lead-calcium alloy to boost up the grid anti-corrosive performance and extend the battery using lifetime
- Special separator to boost up the battery internal performance
- High thermal capacity, reduce the risk of thermal runaway and dying up, can be used in poor environment
- High gas recombination efficiency
- Little water losing, no electrolyte stratification phenomenon
- Long storage time
- Good deep discharge resilience performance
- Using nano-fumed silica, with small particle size, and big specific surface area.

MAIN APPLICATIONS

Golf trolleys, garden equipments, portable equipments, wheel chairs, solar and wind mill units, medical equipments, flash units also for mining (head flash), portable video/radio, military, railway crossing, traffic lights, street signs, boats or buoys, cottage camping, SOS pillars, toys and hobby applications, portable equipments for communication, testing distance measuring, pump system...

Standby applications.

Telecommunication backup, power plants, burglar alarms, medical equipments (stationary and portable i.e X-ray), computer backup (high power), communication systems, fire alarm systems, transmitter systems, cash register systems, emergency lights signal systems, telephone systems, clocks systems, uninterrupted power supplies, elevators emergency power supply (skyscrapers), solar applications, mobile stations, airport/runway emergency illumination, emergency power supply for hospitals, radar and satellite stations.



Model No.	Voltage (V)	Capacity Ah / C20	Dimension(mm)				Weight (kg) ±4%	Terminal Type
			L	W	H	Total H		
LVG17-12	12	17	181	77	167	167	5,80	INSERT
LVG26-12	12	26	175	166	125	125	8,90	INSERT
LVG32-12	12	30	195	130	167	164	10,70	INSERT
LVG40-12	12	38	197	165	170	170	13,50	INSERT
LVG50-12	12	50	229	138	205	211	16,60	INSERT
LVG60-12	12	60	325	167	174	174	21,50	INSERT
LVG65-12	12	65	325	167	174	174	24,00	INSERT
LVG70-12	12	70	259	168	208	210	23,00	INSERT
LVG85-12	12	85	305	168	207	213	28,00	INSERT
LVG100-12	12	96	330	173	212	220	31,00	INSERT
LVG110-12	12	110	410	177	225	225	36,00	INSERT
LVG130-12	12	130	344	171	274	288	47,00	INSERT
LVG135-12	12	135	485	170	240	240	44,20	INSERT
LVG200-12	12	200	522	240	218	224	62,90	INSERT
LVG240-12	12	240	522	268	220	226	78,40	INSERT
LVG200-6	6	200	322	178	228	234	31,50	INSERT



LEVG Serie / VRLA PURE GEL / MOBILITY

LIVEN LEVG series deep cycle gel (17Ah-70Ah) VRLA (Valve regulated lead acid) GEL batteries are designer with superfluous electrolyte evenly distributed in a special PVC-SiO2 separator and a patented grid design. This battery is perfect for cyclic use and high temperatures (Mobility, marine, photovoltaic and wind power systems, caravanning) and has a greater ability to withstand heat and deep discharge.

With 10 years design life, the batteries comply the most popular international standards, such as JIS, IEC896-2, BS6290-4, Eurobat Guide.

GENERAL FEATURES

- For longer cycle life: special paste formula, over dimensioned negative plate, optimized manufacturing process, additives for deep discharge.
- Special anti-vibration design (optional)
- Thick plates, special formula of paste and plate manufacturing process for a long service life
- ABS material: increase the strength of battery container (Flame-retardant ABS is optional)
- Long discharge time
- Suitable for standby power and energy storage power use
- Special plate design, long cycle life
- Using special lead-calcium alloy to boost up the grid anti corrosive performance and extend the battery using life
- Special separators boost up the battery internal performance
- High thermal capacity, reduce the risk of thermal runaway and drying up, can be used in poor environment
- High gas recombination efficiency
- Little water losing, no electrolyte stratification phenomenon
- Long storage time
- Good deep discharge resilience performance

MAIN APPLICATIONS

- Vehicle in place of walking
- Golf trolleys and golf cart
- Power system of special network or local area network
- UPS
- Standby power supply
- Power station systems
- Railway and marine systems



Model No.	Voltage (V)	Capacity Ah / C20	Dimension(mm)			Total H	Weight (kg) ±4%	Terminal Type
			L	W	H			
LEVG17-12	12	17	181	76	167	167	5,80	INSERT
LEVG24-12	12	24	166	175	125	125	8,70	INSERT
LEVG32-12	12	32	195	130	167	164	10,70	INSERT
LEVG40-12	12	40	197	165	170	170	13,50	INSERT
LEVG50-12	12	50	229	138	205	211	17,60	INSERT
LEVG60-12	12	60	259	168	190	190	19,70	INSERT
LEVG70-12	12	70	259	168	208	210	25,00	INSERT



OPzV Serie / TUBULAR GEL

LIVEN OPzV series tubular gel (200Ah-3000Ah) VRLA (Valve regulated lead acid) GEL batteries are designed with this main technological advantages:

Completely sealing throughout the batteries life. Service life up to 18-20 years in continuous float operation down to approx. 50% capacity. Gel electrolyte. Low gassing thanks to antimony-free alloy and internal oxygen recombination.

Minimum space required and room requirements are minimal e.g no washing facilities needed, ventilation requirements are minimal. Easy to move and handle and easy install using cable connectors with insulated terminal covers.

Ready for immediate use without further commissioning work. Can be supplied as a standard vertical installation or by special request, for a horizontal installation.

Very low self-discharge <50% of rated capacity in 2 years at 20°C ambient temperature. High cyclic ability over 400 cycles when discharged at 10 hours rate to an end voltage of 1.8Volt/cell at 20°C. Deep discharge protected, a load can be connected to the battery for up to 4 weeks.

No internal short circuits possible due to the gel structure. No acid stratification, so no equalizing charge necessary.

MAIN APPLICATIONS

- Telecommunications
- Radio and cellular telephone relay stations
- Emergency lighting systems
- Power stations
- Conventional power stations (alternative power, solar, wind)
- Large UPS and computer back-up
- Railway signaling
- Maritime standby power on ships and ashore
- Process and control engineering
- Standby power
- Buoy lighting



Type*	Positive Plates Number	Number of Poles	Nom. capacity (Ah at 20°C)						Length (mm)	Width (mm)	Height (mm)	Poles Dist. (mm)	Weight *** (approx kg)	Short Circuit Current (A)	Internal Resistance (mOhm)
			C10 1.80 V/cell	C240 1.85 Vpc	C120 1.85 Vpc	C48 1.80 Vpc	C24 1.80 Vpc	C12 1.80 Vpc							
4 OPzV 200	4	2	224	301	290	281	258	232	103	206	382	-	20	2300	0.88
5 OPzV 250	5	2	280	376	363	352	323	290	124	206	382	-	24	2860	0.71
6 OPzV 300	6	2	336	452	435	423	388	347	145	206	382	-	28	3380	0.60
5 OPzV 350	5	2	405	561	536	517	472	420	124	206	498	-	31	3380	0.60
6 OPzV 420	6	2	486	675	644	622	567	504	145	206	498	-	37	3980	0.51
7 OPzV 490	7	2	567	789	753	727	662	588	166	206	498	-	42	4520	0.45
6 OPzV 600	6	2	690	986	937	892	809	716	145	206	673	-	50	4360	0.47
8 OPzV 800	8	4	920	1311	1247	1187	1077	954	191	210	673	80	68	5980	0.34
10 OPzV 1000	10	4	1150	1641	1560	1485	1347	1193	233	210	673	110	82	7380	0.28
12 OPzV 1200	12	4	1380	1976	1877	1786	1618	1432	275	210	673	140	97	8640	0.24
12 OPzV 1500	12	4	1620	2214	2120	2050	1878	1678	275	210	824	140	120	9440	0.22
16 OPzV 2000	16	6	2160	2949	2824	2731	2503	2237	399	214	799	110	165	12680	0.16
20 OPzV 2500	20	8	2700	3678	3523	3412	3127	2796	487	212	799	110	200	16240	0.13
24 OPzV 3000	24	8	3240	4438	4248	4106	3760	3357	576	212	799	140	240	18460	0.11
6V 4 OPzV 200	4	2	206	263	253	250	233	212	272	205	371	-	48	2260	2.70
6V 5 OPzV 250	5	2	257	330	317	313	292	265	380	205	371	-	63	2740	2.22
6V 6 OPzV 300	6	2	309	397	381	377	350	318	380	205	371	-	70	3220	1.89
12V 1 OPzV 50	1	2	51	65	63	62	58	52	272	205	371	-	43	620	19.80
12V 2 OPzV 100	2	2	102	130	125	124	115	105	272	205	371	-	52	1240	9.90
12V 3 OPzV 150	3	2	153	196	188	186	173	158	380	205	371	-	72	1720	7.08

LVJ Serie / VRLA-GEL / 12 years CYCLIC USE

LIVEN LVJ series batteries (18Ah-260Ah) are manufactured with AGM separator and colloidal or foamed silica. The proven silica gel technology improves battery cycle life and performance at cold ambient temperatures. The number of deep discharge cycles is increased much compared with the normal AGM batteries.

MAIN APPLICATIONS

- Solar and wind systems
- Cable TV
- Telecommunications
- Wheelchair
- Marine Equipment
- Military Equipment
- Emergency lighting
- Power Plants
- Medical Devices
- Golf Cart.



Model No.	Voltage (V)	Capacity Ah / C20	Dimension(mm)				Total H	Weight (kg) ±4%	Terminal Type
			L	W	H				
LVJ18-12	12	18	181	76	166	166	5,30	INSERT	
LVJ20-12	12	20	181	76	166	166	5,60	INSERT	
LVJ26-12	12	26	166	175	125	125	7,32	INSERT	
LVJ26-12H	12	26	166	126	174	174	8,00	INSERT	
LVJ28-12	12	28	166	175	125	125	7,90	INSERT	
LVJ30-12	12	30	166	175	125	125	8,70	INSERT	
LVJ33-12	12	33	196	131	161	164	10,80	INSERT	
LVJ40-12	12	40	196	165	170	170	12,80	INSERT	
LVJ45-12	12	45	196	165	170	170	14,20	INSERT	
LVJ50-12	12	50	196	165	170	170	15,20	INSERT	
LVJ55-12	12	55	228	138	208	213	17,20	INSERT	
LVJ65-12	12	65	350	167	179	179	21,00	INSERT	
LVJ75-12	12	75	261	173	221	224	23,10	INSERT	
LVJ90-12	12	90	305	168	207,5	212,5	28,50	INSERT	
LVJ100-12	12	100	330	173	217	220	30,00	INSERT	
LVJ120-12	12	120	407	173	224	231,5	35,00	INSERT	
LVJ134-12	12	134	345	172	273	278	41,50	INSERT	
LVJ145-12	12	145	345	172	273	278	44,00	INSERT	
LVJ150-12	12	150	485	172	240	240	44,50	INSERT	
LVJ180-12	12	180	522	239	218	223	53,00	INSERT	
LVJ200-12	12	200	522	239	218	223	60,00	INSERT	
LVJ230-12	12	230	521	269	220	225	67,00	INSERT	
LVJ260-12	12	260	521	269	220	225	74,00	INSERT	

LVTJ Serie / VRLA-GEL / 2V STATIONARY

LIVEN LVTJ series batteries (50Ah-3000Ah) are manufactured with AGM separator and colloidal or foamed silica. The proven silica gel technology improves battery cycle life and performance at cold ambient temperatures. The number of deep discharge cycles is increased much compared with the normal AGM batteries.

MAIN APPLICATIONS

- Solar and wind systems
- Cable TV
- Telecommunications
- Wheelchair
- Marine equipment
- Military equipment
- Emergency lighting
- Power plants
- Medical devices
- Golf cart



Model No.	Voltage (V)	Capacity Ah / C10	Dimension(mm)			Total H	Weight (kg) ±4%	Terminal Type
			L	W	H			
LVTJ50-2	2	50	161	50	166	175	3,30	INSERT
LVTJ100-2	2	100	170	72	205	228	5,90	INSERT
LVTJ150-2	2	150	172	102	208	223	8,60	INSERT
LVTJ200-2	2	200	170	110	334	365	13,40	INSERT
LVTJ250-2	2	250	171	151	340	365	18,20	INSERT
LVTJ300-2	2	300	171	151	340	365	19,50	INSERT
LVTJ350-2	2	350	171	151	340	365	20,50	INSERT
LVTJ400-2	2	400	210	175	334	365	27,00	INSERT
LVTJ450-2	2	450	240	173	338	365	30,00	INSERT
LVTJ500-2	2	500	240	173	338	365	31,00	INSERT
LVTJ600-2	2	600	300	175	335	365	38,50	INSERT
LVTJ800-2	2	800	410	175	331	365	53,00	INSERT
LVTJ1000-2	2	1000	474	173	329	366	61,50	INSERT
LVTJ1500-2	2	1500	398	350	341	383	97,00	INSERT
LVTJ2000-2	2	2000	490	350	342	381	129,00	INSERT
LVTJ2500-2	2	2500	712	353	341	382	171,00	INSERT
LVTJ3000-2	2	3000	712	353	341	382	188,00	INSERT

OPzS Serie

LIVEN OPzS series batteries (200Ah-3000Ah) provide the following advantages.

Plates:

Positive tubular plates can effectively prevent shedding of active material. The spines are casted by multi-alloy, of which the crystals are very fine and compact, in order to achieve excellent corrosion resistance and long service life. Negative flat plates are pasted plates with wavy construction, improving hugely utilization rate of active material and high current discharge property. Also the charging acceptance ability is very good.

Container:

SAN transparent container, better corrosion resistance, higher strength, nice appearance. People can directly see the internal construction and actual situation of batteries through SAN containers.

Separator: Imported PVC-SiO2 separator from Amersil, a famous European company. This kind of separator has large pore rate and lower electrical resistance.

Terminal sealing:

Lead pillar with copper insert has better current loading property and better corrosion resistance. Private sealing construction can effectively eliminate the stress caused by plate growth in later period of battery operation. This can prevent any leakage and make sure the reliability of pillar sealing so as to improve hugely battery service life.

Anti-acid plug:

Special funneled anti-acid plug can filter acid mist and is flame resistant. This is convenient for direct measuring the density and temperature of electrolyte. It is safe and easy to maintain.

GENERAL FEATURES

- Lower self discharge
- Higher thermal capacity, no thermal runaway will occur
- Superior deep cycle performance
- Wide operation temperature range
- Long service life, designed life 15-20 years

MAIN APPLICATIONS

- Telecommunications
- Radio and cellular telephone relay stations
- Emergency lighting systems
- Power stations, conventional power stations, alternative power (solar, wind)
- Large UPS and computer back-up
- Railway signaling
- Maritime standby power on ships and ashore
- Standby power
- Buoy lighting



	Type*	Positive Plates Number	Number of Poles	Nom. capacity (Ah at 20°C)						Length (mm)	Width (mm)	Height ₁ (mm)	Height ₂ (mm)	Poles Dist. (mm)	Filled Weight (approx kg)	Dry Weight (approx kg)	Internal Resistance (mOhm)	Short Circuit Current (A)
				C10 1.80 Vpc	C240 1.85 Vpc	C120 1.85 Vpc	C48 1.80 Vpc	C24 1.80 Vpc	C12 1.80 Vpc									
Cells	2V 2 OPzS 100	2	2	126	197	187	172	153	132	103	206	355	369	-	14	8	1.620	1240
	2V 3 OPzS 150	3	2	180	274	263	244	217	188	103	206	355	369	-	16	11	1.083	1860
	2V 4 OPzS 200	4	2	215	310	300	285	258	224	103	206	355	369	-	18	13	0.847	2380
	2V 5 OPzS 250	5	2	270	391	378	359	323	281	124	206	355	369	-	21	15	0.671	3000
	2V 6 OPzS 300	6	2	324	470	454	431	387	338	145	206	355	369	-	26	19	0.575	3500
	2V 5 OPzS 350	5	2	396	574	553	527	474	413	124	206	471	485	-	28	21	0.608	3300
	2V 6 OPzS 420	6	2	474	686	661	630	567	494	145	206	471	485	-	34	24	0.518	3900
	2V 7 OPzS 490	7	2	541	780	750	717	646	564	166	206	471	485	-	39	28	0.453	4450
	2V 5 OPzS 500	5	2	609	948	904	845	748	639	145	206	646	660	-	42	29	0.537	3750
	2V 6 OPzS 600	6	2	672	1006	966	915	816	703	145	206	646	660	-	46	33	0.447	4500
	2V 7 OPzS 700	7	4	836	1286	1230	1154	1024	877	191	210	646	660	80	60	43	0.378	5350
	2V 8 OPzS 800	8	4	893	1330	1278	1212	1083	934	191	210	646	660	80	64	47	0.327	6200
	2V 9 OPzS 900	9	4	1028	1546	1484	1403	1250	1076	233	210	646	660	110	73	53	0.292	6950
	2V 10 OPzS 1000	10	4	1114	1656	1592	1511	1349	1165	233	210	646	660	110	78	57	0.261	7750
	2V 12 OPzS 1200	12	4	1329	1985	1908	1810	1614	1391	275	210	646	660	140	91	66	0.228	8850
	2V 11 OPzS 1375	11	4	1623	2369	2286	2172	1957	1698	275	210	797	811	140	111	76	0.238	8500
	2V 12 OPzS 1500	12	4	1630	2294	2226	2142	1944	1701	275	210	797	811	140	115	81	0.225	9000
	2V 14 OPzS 1750	13	6	1978	2868	2770	2639	2381	2069	397	212	772	786	110	143	96	0.195	10350
	2V 15 OPzS 1875	15	6	2114	3019	2921	2796	2531	2208	397	212	772	786	110	149	103	0.176	11500
	2V 16 OPzS 2000	16	6	2186	3065	2972	2861	2600	2279	397	212	772	786	110	155	109	0.160	12500
2V 18 OPzS 2250	18	8	2689	3917	3780	3589	3236	2811	487	212	772	786	110	184	125	0.140	14450	
2V 20 OPzS 2500	20	8	2926	4217	4076	3885	3510	3057	487	212	772	786	110	201	135	0.125	16200	
2V 24 OPzS 3000	24	8	3361	4769	4620	4429	4014	3508	576	212	772	786	140	230	158	0.108	18800	
Blocks	6V 3 OPzS 150	3	2	177	252	242	231	209	184	233	224	345	377	-	41	30	1.138	1780
	6V 4 OPzS 200	4	2	215	293	283	275	251	223	272	205	332	361	-	47	35	0.900	2240
	6V 5 OPzS 250	5	2	287	403	389	373	338	298	380	205	332	361	-	61	44	0.760	2660
	6V 6 OPzS 300	6	2	312	422	408	397	364	323	380	205	332	361	-	67	51	0.667	3040
	12V 1 OPzS 50	1	2	63	91	86	81	73	65	272	205	332	361	-	38	24	3.226	620
	12V 2 OPzS 100	2	2	103	137	132	128	118	106	272	205	332	361	-	49	38	1.613	1260
	12V 3 OPzS 150	3	2	150	199	191	186	172	155	380	205	332	361	-	70	53	1.138	1780

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