



**UPG**

*Let us power you.™*

## SEALED LEAD-ACID BATTERIES



**AGM & GEL**

**AMEX: UPG**

## Battery Professionals

Universal Power Group, Inc. (AMEX: UPG) is one of the leading global suppliers and distributors of sealed lead-acid (SLA) batteries. We stock one of the largest inventories of SLA batteries in the nation and have the ability to deliver within 24 to 48 hours.

The size range of our SLA batteries will meet all of your power requirements, whether long service life, extended cycle life, and/or high rate of discharge. From specialized requirements to private label needs and fulfillment/distribution solutions, we have the proven expertise.

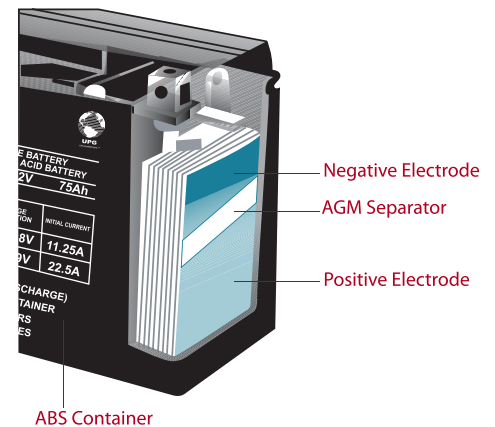
We are ISO 9001: 2000 certified and adhere to strict quality processes and standards. We are committed to continued innovation and excellence.

## Features & Benefits

Our UNIVERSAL line of AGM and Gel batteries are defined as Non Hazardous & Non-Spillable by DOT (Department of Transportation), IATA (International Airline Transport Association), and ICAO (International Civil Aviation Association).

### Our SLA batteries offer:

- Heavy duty, sealed and maintenance-free use.
- Outstanding performance, withstanding high current output and deep cycling.
- Excellent resistance to vibration, shock, chemicals and heat.
- High cranking amps.
- Low self-discharge.
- Exceptional leak resistance even in upside-down position.
- Reliable power for mission critical applications.
- Dot 60 classified for easy transportation.
- UL recognized.



## AGM & GEL Battery Design

AGM & GEL batteries are lead-acid and of the same battery chemistry (lead dioxide, lead sponge and sulfuric acid electrolyte) but the electrolyte is stabilized differently.



### AGM

The electrolyte is suspended in fiberglass mat separators which act as absorbent sponges.



### GEL

The electrolyte is suspended in a silica-based gel as a thick pasty material.

## AGM Batteries

UPG No.	Model No.	Terminal	Nom Volt	Capacity 20 hr. rate	Dimensions			Weight 1bs. +/-5%			
					Length in. mm	Width in. mm	Height in. mm				
40559	UB445	F2	4	4.50	1.86	47	2.06	52	3.82	97	1.10
40561	UB610	F1	6	1.00	2.01	51	1.65	42	2.20	56	0.53
D5731	UB613	F1	6	1.30	3.82	97	0.96	24	2.22	56	0.64
D5695	UB632	F1	6	3.20	2.57	65	1.28	33	4.00	102	1.06
D5732	UB634	F1	6	3.40	5.25	133	1.32	33	2.57	65	1.10
D5733	UB635	F1	6	4.50	2.76	70	1.85	47	4.17	106	1.83
40565	UB645WL	WL	6	4.50	2.75	69	1.86	47	3.94	100	2.02
D5697	UB650S Lantern	S2	6	5.00	2.63	67	2.63	67	4.50	114	2.02
D5897	UB650F Lantern	F1	6	5.00	2.63	67	2.63	67	4.00	102	2.02
D5734	UB670	F1	6	7.00	5.94	150	1.34	34	3.94	100	2.43
D5735	UB685	F1	6	8.50	3.82	97	2.19	56	4.60	117	3.10
D5736/D5778	UB6120	F1/F2	6	12.00	5.94	151	1.94	49	3.82	97	4.06
40575	UB6130 TOY	F1	6	13.00	4.25	108	2.82	72	5.44	138	5.04
D5737	UB6120 TOY	P2	6	12.00	4.25	108	2.78	71	5.47	139	4.19
45966	UB-GC2 (Golf Cart)	L5	6	200.00	10.25	260	7.06	179	10.19	259	64.00
45789	UB1208	WL	12	0.80	3.78	96	0.98	25	2.44	62	0.75
D5738	UB1213	F1	12	1.30	3.82	97	1.69	43	2.28	58	1.21
D2790	UB1220-T	ST	12	2.00	5.91	150	0.79	20	3.50	89	1.54
D5739	UB1222	F1	12	2.20	7.00	178	1.38	35	2.50	63	2.20
40580	UB1223A	PC	12	2.30	7.17	182	0.93	24	2.40	61	1.46
D5700	UB1229T	F1	12	2.90	3.06	78	2.19	56	4.00	102	2.12
D5740	UB1234	F1	12	3.40	5.25	133	2.63	67	2.44	62	3.20
D5741/D5777	UB1250	F1/F2	12	5.00	3.54	90	2.76	70	4.21	107	3.09
D5743/D5779	UB1280	F1/F2	12	8.00	5.94	151	2.56	65	3.94	100	4.96
40700/40708	UB1290/UB1290F2	F1	12	9.00	5.94	151	2.56	65	3.94	100	5.10
D5719	UB12100-S	F2	12	10.00	5.94	151	2.56	65	4.61	117	7.28
D5744/D5775	UB12120	F1/F2	12	12.00	5.94	151	3.88	99	4.00	102	8.38
D5745	UB12180	T4	12	18.00	7.13	181	3.01	76	6.57	167	11.90
40648	UB12180	F2	12	18.00	7.13	181	3.01	76	6.57	167	11.90
40696	UB12220	T4	12	22.00	7.13	181	3.01	76	6.57	167	13.01
D5747	UB12260	T3	12	26.00	6.50	165	6.86	174	4.94	125	18.08
40596	UB122260T	T3	12	26.00	6.50	165	4.94	125	6.86	174	21.00
D5722	UB12350 (Group U1)	L1	12	35.00	7.68	195	5.16	131	7.13	181	23.15
45976	UB 12350 (Group U1)	I2	12	35.00	7.68	195	5.16	131	6.14	156	23.15
45977	UB12500	L2	12	50.00	7.72	196	6.50	165	7.17	182	31.97
45825	UB12550 (Group 22NF)	Z1	12	55.00	9.02	229	5.43	138	9.13	232	38.58
40740	UB 12550 (+ ON LEFT)	Z1	12	55.00	9.02	229	5.43	138	9.13	232	38.58
45980	UB12550 (Group 22NF)	I4	12	55.00	9.02	229	5.43	138	8.27	210	38.58
45821	UB12750 (Group 24)	Z1	12	75.00	10.24	260	6.61	168	9.13	232	50.71
45822	UB12750 (Group 24)	I4	12	75.00	10.24	260	6.61	168	8.27	210	50.71
45826	UB12900 (Group 27)	Z1	12	90.00	12.05	306	6.61	168	9.13	232	59.52
45823	UB12900 (Group 27)	I4	12	90.00	12.05	306	6.61	168	8.27	210	59.52
45978	UB121000 (Group 27)	Z1	12	100.00	12.05	306	6.61	168	9.13	232	60.80
45824	UB121100 (Group 30H)	FL1	12	110.00	12.91	328	6.77	172	9.29	236	67.24
D5751	UB121100 (Group 30H)	L1	12	110.00	12.91	328	6.77	172	9.29	236	67.24
45981	UB121100 (Group 30H)	I6	12	110.00	12.91	328	6.77	172	8.58	218	67.24
40994	UB121350	I6	12	135.00	13.39	340	6.81	173	11.22	285	87.08
45965	UB-4D AGM	L4	12	200.00	20.75	527	8.11	206	9.65	245	123.46
45964	UB-8D AGM	L4	12	250.00	20.47	520	10.55	268	6.65	169	160.94

## Flame Retardant AGM Batteries

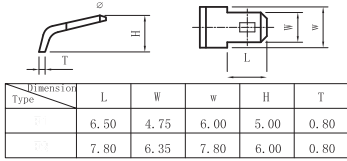
UPG No.	Model No.	Terminal	Nom Volt	Capacity 20 hr. rate	Dimensions			Weight 1bs. +/-5%			
					Length in. mm	Width in. mm	Height in. mm				
45565	UB1250FR	F2	12	5.00	3.54	90	2.76	70	4.21	107	3.09
45566	UB1270FR	F2	12	8.00	5.94	151	2.56	64	3.94	100	4.96
45567	UB12120FR	F2	12	12.00	5.94	151	3.88	98	4.00	102	8.38
45568	UB12180FR	T4	12	18.00	7.13	181	3.01	76	6.57	167	11.90
40995	UB12260FR	T3	12	26.00	6.54	166	6.89	175	4.92	125	18.08
D5800	UB12350FR	L1	12	35.00	7.68	195	5.16	131	7.13	181	23.15
D5881	UB12550FR	Z1	12	55.00	9.02	229	5.43	138	9.13	232	38.58
D5882	UB12750FR	Z1	12	75.00	10.24	260	6.61	168	9.13	232	50.71
D5883	UB12900FR	Z1	12	90.00	12.05	306	6.61	168	9.13	232	59.52
D5884	UB121100FR	Z1	12	110.00	12.91	328	6.77	172	9.29	236	67.24

## GEL Batteries

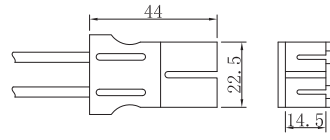
UPG No.	Model No.	Terminal	Nom Volt	Capacity 20 hr. rate	Dimensions			Weight 1bs. +/-5%			
					Length in. mm	Width in. mm	Height <sup>1</sup> in. mm				
40703	UB-GC2 (Golf Cart) Gel	L5	6	200.00	10.25	260	7.06	179	10.19	259	64.00
D5870	U1 Gel	L1	12	32.00	7.69	195	5.19	132	7.00	178	23.10
D5871	UB-22NF GEL	Z1	12	60.00	9.02	229	5.38	137	9.13	232	38.58
D5872	UB-24 GEL	Z1	12	75.00	10.25	260	6.63	168	9.25	235	50.10
D5873	UB-27 GEL	Z1	12	90.00	12.05	306	6.61	168	9.13	232	59.52
D5874	UB-30H GEL	FL2	12	100.00	12.91	328	6.77	172	9.29	236	67.24
40701	UB-4D GEL	L4	12	180.00	20.87	530	8.11	206	9.61	244	132.28
40702	UB-8D GEL	L4	12	250.00	20.47	520	10.55	268	9.65	245	171.96

## Terminal Configurations

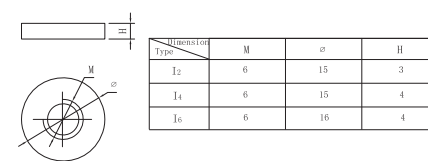
### F Series (Faston Tabs)



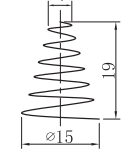
### P Series (P2)



### I Series (Internal Thread Terminal)



### S2



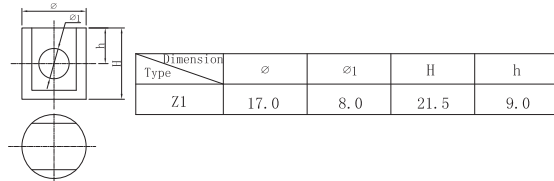
### ST

Side Terminal

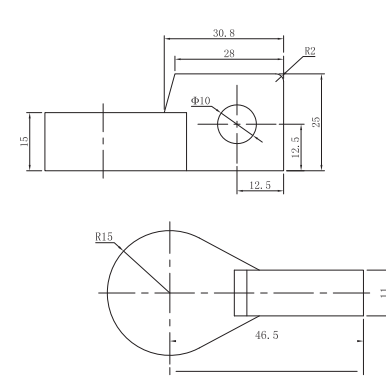
**PC**  
Pressure wire leads

**WL**  
Insulated wire leads

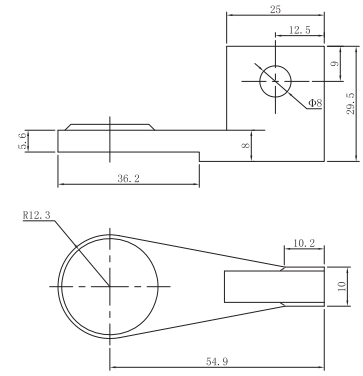
### Z Series (Z Post Terminal)



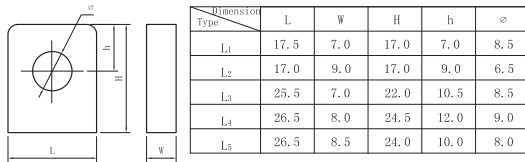
### Flag Terminal (FL1)



### Flag Terminal (FL2)



### L Series (L Type Terminal)



## Battery Care

To properly charge your deep cycle gel/AGM battery:

- + **Active users:** Charge daily.
- + **Occasional users:** Charge your battery before any outing and always after active use.
- + Only use with a specified charger. Only use appropriate charger to charge GEL vs AGM batteries as charging rates differ. Never use an automotive or wet type charger on a gel/AGM battery.
- + Never run your battery completely flat. Excess discharge of the battery can lower its performance level and shorten battery life.
- + Top charge your battery frequently.

## Battery Storage

- + Batteries should always be stored fully charged in a cool and dry place to maintain maximum service life.
- + Depending on storage temperature, batteries hold their charge for 3 to 9 months until recharge is necessary. Above 30°C (86°F), recharge at 9 months. Above 40°C (104°F), recharge at 3 months. Do not store above 40°C (104°F).
- + If a battery is stored for a year or longer without being charged, its service life may be shortened.
- + Never store batteries in a sealed environment or incorporate into a sealed structure/enclosure without adequate ventilation.

## Usage Precautions

SLA batteries if used under recommended conditions generate no sulfuric acid gasses. However, because they contain lead and sulfuric acid, which are both toxic, proper care and handling is important in order to avoid accidental fires, damage to property, bodily injuries or even death.

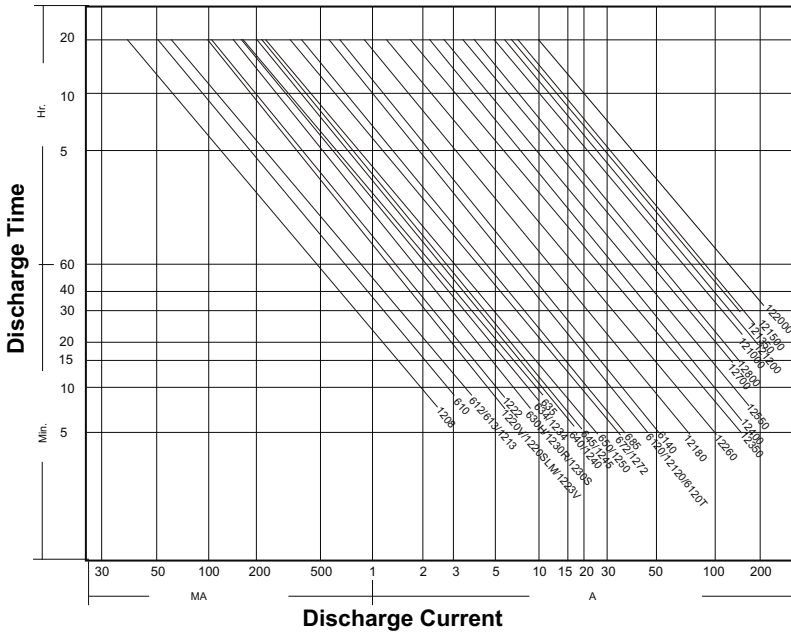
- Improper charging and poor maintenance may cause battery to emit hydrogen gas. Therefore, do not use battery near a spark, fuse, and/or equipment that emits sparks.
- Never mix the SLA batteries together with other types of batteries, such as dry cells and nickel-cadmium batteries.
- Keep the battery terminals from contact with wire, metal tools, such as screw drivers, spanners, torque wrenches unless they are properly insulated. Do not have on any watches, personal jewelry, hair pins or any other metallic objects when servicing the batteries.
- Short circuiting the terminals of the battery can cause burn injuries, damage to the storage battery, or trigger explosions.
- Do not direct solder to terminal. This may lead to electrolyte leakage.
- Use of SLA batteries in the upside down position is not recommended.
- Do not use organic solvent, cleaning agents, paint/thinner, petroleum products to clean battery surface. These products can lead to battery container/cover cracking.
- SLA batteries may not be compatible with certain equipment. Any uncertainty about the specifications of the battery should be brought to our attention.
- Observe circuit polarities. Do not make or break live circuits.
- As appropriate, use an insulating blanket to cover exposed portions of the battery system when performing extended maintenance that could result in personal or equipment contact with the energized conductors.



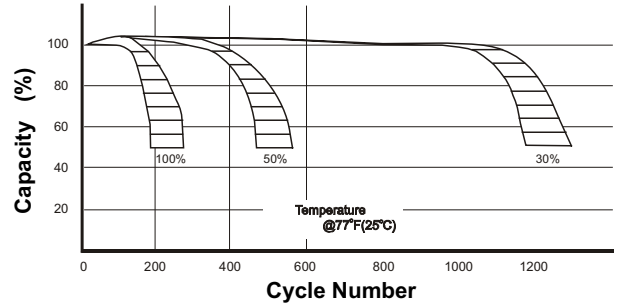
**UPG**  
Let us power you.™

# Performance Characteristics

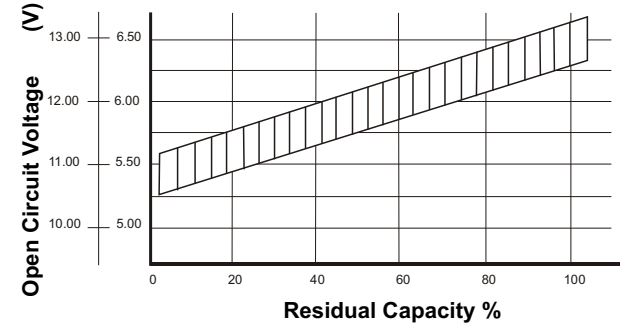
## DISCHARGE CURRENT vs TIME CURVE 25°C(77°F)



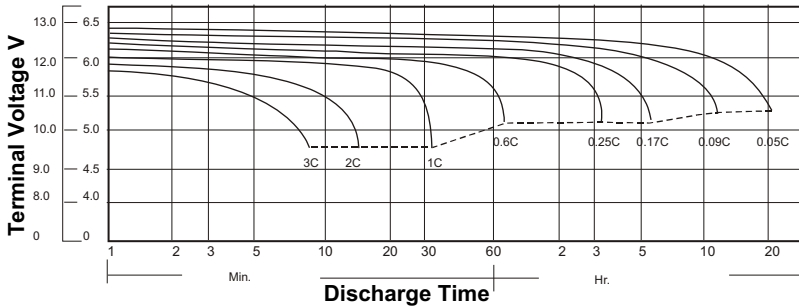
## CYCLE LIFE vs DEPTH OF DISCHARGE



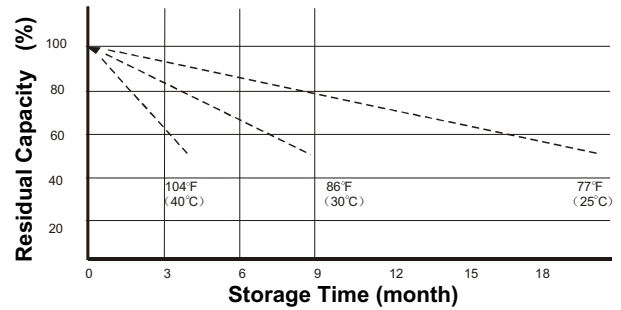
## OPEN CIRCUIT VOLTAGE vs RESIDUAL CAPACITY



## DISCHARGE CHARACTERISTICS



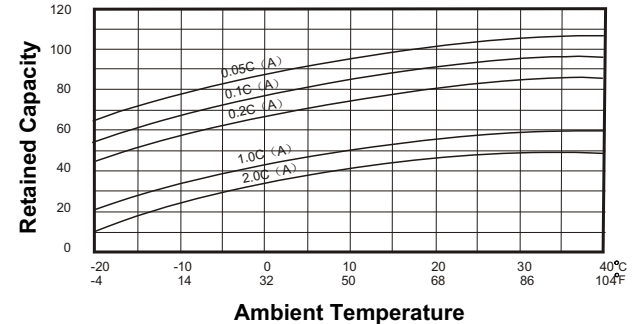
## SHELF-LIFE vs STORAGE TEMPERATURE



## DISCHARGE CURRENT vs FINAL DISCHARGE VOLTAGE

Discharge Current (A)	Final Discharge Voltage (V/cell)
$0.01C > C_A$	1.90
$0.2 > C_A \geq 0.01C$	1.75
$0.5 > C_A \geq 0.02C$	1.70
$2.0 > C_A \geq 0.05C$	1.60
$C_A \geq 2.0C$	1.30

## EFFECT OF TEMPERATURE ON CAPACITY



## Primary Power Applications

- + Consumer Electronics
- + Electric Vehicles
- + Engine Starters
- + Golf Cart
- + Hunting
- + Lawn & Garden Tools
- + Marine
- + Medical Mobility
- + Medical Equipment
- + Motorcycle
- + Photography
- + Powersports
- + Portable Tools
- + Solar
- + Toys & Hobby
- + Trucking
- + Other Portable Equipment

## Standby Power Applications

- + Access Control Devices
- + Automotive and Cable Electronics
- + Electronic Equipment Requiring Memory Protection
- + Emergency Lighting
- + Security
- + Telecommunications Equipment
- + UPS Systems

## Specialized Applications

If your needs are specialized, we are able to custom manufacture batteries and chargers to meet your particular specifications. Tell us what you need and let us handle the rest. Certain minimums apply.

## Environmental Care



Improper disposal of batteries can lead to contamination of soil and ground water. At UPG, we work with authorized recyclers to pick up your "spent"/used batteries and we ensure that these batteries are properly disposed of by EPA licensed smelters.

## Customer Care

Customer satisfaction is very important to us. Our Sales, Customer Service and Support Specialists are available to assist you with all of your rechargeable power needs. However large or small.

## Other UPG Product Solutions

### Adventure Power® AGM Power Sport Batteries



These batteries are designed for powersport applications and specially built to absorb high impact and extreme vibrations. They are ideal for ATVs, motorcycles, snowmobiles, and more! We carry a full line of factory activated, AGM wetpack, and conventional batteries.

### Adventure Power® Marine AGM Batteries



These batteries are designed for watersport applications and specially built to absorb high impact and extreme vibrations. They are ideal for all watercraft.

## Headquarters

**Universal Power Group**  
1720 Hayden Drive  
Carrollton, TX 75006

**P: 469.892.1122**  
**F: 469.892.1123**  
**T: 866.892.1122**  
**sales@upgi.com**

### Starter-Up® Automotive & Marine Jumpstarters



Our Starter-Up line of jumpstarters offer durable and compact engine starting and 12V DC solutions for automotive, marine and recreational vehicles.

### Chargers & Maintainers

Our automatic chargers and maintainers are available to match your cycling, float or standby power needs. If your charging requirements are unique, our engineers can help you develop specialized chargers. Let us help you stay powered and protect your battery life.

