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**FULLRIVER BATTERIES**  
SINCE 1995

**FULLRIVER**

# A Brief History of Fullriver Battery Mfg. Co., Ltd. Product Development...

Fullriver Battery Manufacture Co., Ltd. was founded in 1995 and launched the HGL series. The HGL series batteries are mainly for general use purposes, i.e. low power UPS, Security & Alarm Systems, Emergency Lighting, Office machines, etc. The normal voltages for the HGL series are 6V and 12V; the capacity is ranged from 0.8Ah to 260Ah.

In 2001, the HGXL series was launched. This series is a 2V stationary maintenance-free battery, designed as high capacity, long life and high power batteries. These are mainly used for high capacity UPS systems, telecommunications and solar battery systems applications. The capacity of this series is ranged from 50 AH to 3000 AH.

In 2003, the HGHL series was launched. This series performs well in both high rate discharge and float service applications. This series was specially designed for UPS standby power supply. It is also available for other float service applications, such as emergency power supply, communication power supply, etc. the power of this series is ranged from 35W to 910W.

In 2004, the FAT series and the DC series were launched. The FAT series also has the characteristics of high rate discharge. They are widely used in UPS systems and telecommunications. The FAT series offer front terminal connections for fast and easy installation and maintenance. The monobloc's compact design is suitable for 19", 23" and ETSI racking. The capacity of FAT series is ranged from 55Ah to 175Ah.

The DC series is specially designed and used for deep cycle applications, which may require many more cycles. This series also has excellent recovery from deep discharge. The DC series is mainly used in golf trolley, golf caddy, forklift, electric wheelchairs, floor cleaning machines, marine, photovoltaic systems, and more.

In 2008, we started research, development, and manufacturing of the HC series. This series is especially used for engine starting, which requires superior cranking performance at lower temperatures and for high current discharge. These batteries can also be fitted with the protective steel case and TP brass terminals.

In 2010, the FSG series was launched. Which use revolutionary Super GEL long life plate technology and are designed specifically for solar energy and wind energy applications. The designed life is 20 years in float service at 20°C. the battery can be used in a wide operating temperature range from -40°C to +55°C.

In 2011, the DCG series was launched. Fullriver Deep-Cycle Gel (DCG) batteries are maintenance free and require no watering, while providing you the unmatched quality and power of Fullriver's advanced deep cycle technology. Fullriver offers a complete portfolio of Deep-Cycle Gel (DCG) products, featuring these benefits: Long-lasting runtime and battery life in the most demanding of applications; Proprietary Gel formulation prevents stratification; Superior engineering offers exceptional durability.

## Fullriver Batteries Qualifications, Approvals, and Certifications



- **Network Access License for Telecommunications Equipment**  
(Ministry of information Industry.PRC)
- **DOT 49CFR173.159 (d) (i) and (ii)** (Non-hazardous shipping)
- **IEC 61056-1; 2004** (General purpose lead-acid batteries, valve regulated types)
- **IEC 60896-2: 2004** (Stationary lead-acid batteries, valve regulated types)
- **JIS C8704-2: 2006** (Stationary lead-acid batteries, valve regulated types)
- **JIS C8702-1: 2003** (Small-sized valve regulated lead-acid batteries)

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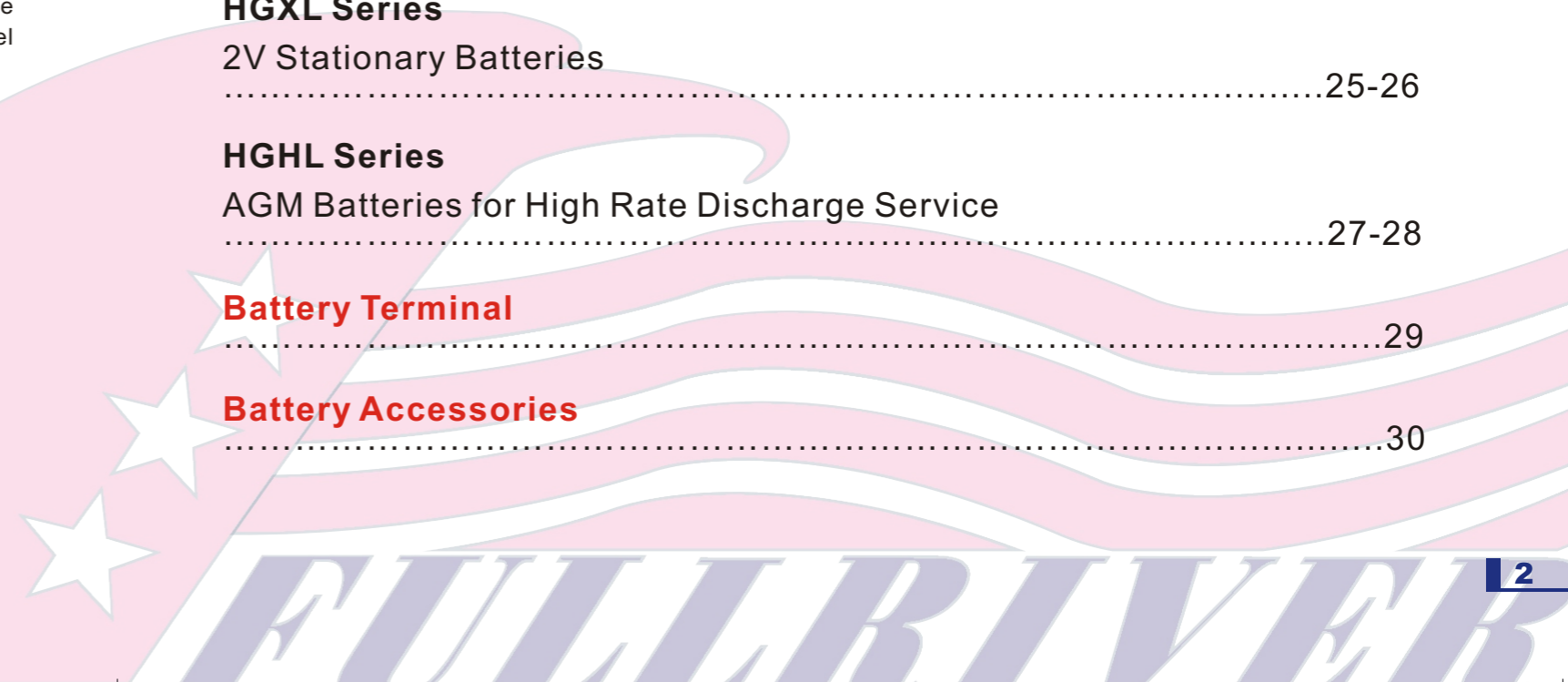
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# DCG Series Battery

Fullriver DCG (Deep-Cycle Gel) batteries are maintenance free and require no watering, while providing you the unmatched quality and power of Fullriver's advanced deep cycle technology.



## Specifications:

- The success of DCG batteries comes from the internationally superior Gel technology.
- Excellent energy storage capacity combined with high reliability.
- Designed in accordance with IEC 60254-1 700 Cycles at 75%DOD.
- 7 years design life at 20 °C ambient temperature (80% remaining capacity from C20).
- Grid plate construction consisting of a lead calcium alloy.
- Very low gassing due to the internal gas recombination.
- High cycle service life.
- Better temperature resistance performance.
- Excellent deep cycle performance.
- Superior low current discharge performance.
- Better charge acceptability.
- Better safety performance and reliability.
- High Performance price ratio and low yearly operating cost.
- Non-Spillable construction design.
- Safety valve installation makes it explosion proof.
- Low self discharge characteristic.
- ABS containers and covers (UL94HB, UL94V-0 optional).
- Gel-batteries are designed to be operated within a wide temperature range -40° C and +55° C.
- Maintenance-free (no topping up) motive power batteries in gel technology.
- Completely recyclable.

## Benefits

- Long-lasting runtime and battery life in the most demanding of applications.
- Proprietary Gel formulation prevents stratification.
- Superior engineering offers exceptional durability.
- Sealed containers ensure safe use in schools, hospitals, office buildings and other health & safety-sensitive (HSE) environments.

## Charging

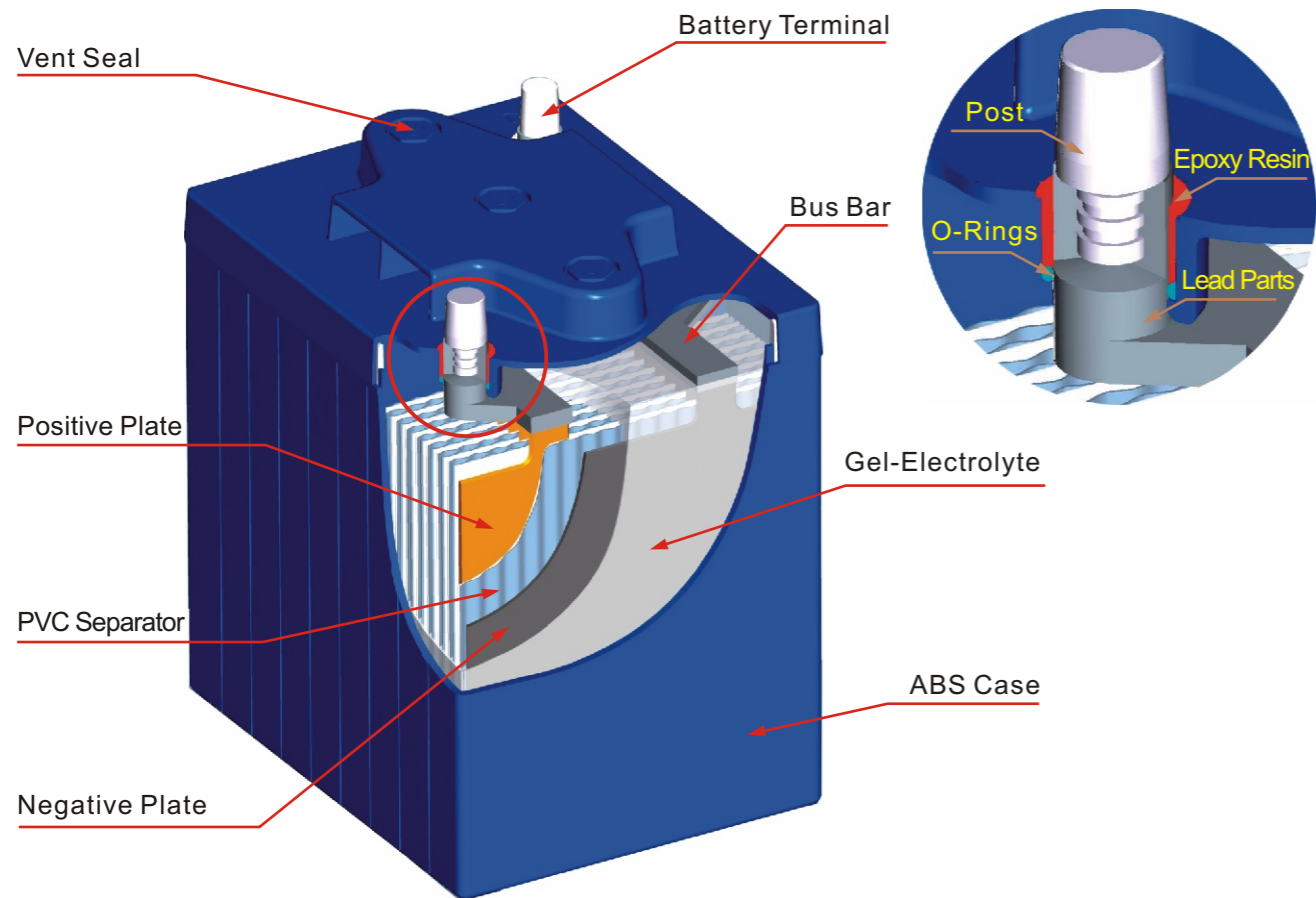
	Charge Voltage	Charging Current
Float Voltage	2.30Vpc	10 to 35 A per 100Ah
Voltage on boostcharge stage	2.35VPC-2.45VPC	
Max. switch mode voltage	2.45VPC	
Equalizing charge voltage (max. values)	2.45VPC	

## Applications

- Aerial Work Platform (AWP)/Access
- Material Handling
- Floor Machine
- Recreational Vehicle (RV)
- Industrial
- Electric Boats
- Golf/Utility/Neighborhood Electric Vehicle (NEV)
- Wheelchairs
- Remote Monitoring & Instrumentation
- Renewable Energy (Solar, Small Wind and Small Hydro)



## Design and Materials



**Plates (electrodes):** The positive plates of all monobloc batteries have pasted grids:

Alloy: Lead-Tin-Calcium (Pb-Sn-Ca).

All negative plates are pasted and have common grid design.

Alloy: Lead-Calcium (PbCa).

Calcium gives the grids mechanical stability and guarantees low gassing rates. Tin is good for both high corrosion resistance and high number of cycles.

**Container & Case sealing:** ABS (UL94-V0 on request).

**Electrolyte:** The battery electrolyte contains fumed silica, There is no liquid, no leakage.

**Separators:** European manufactured PVC-SiO<sub>2</sub> separator is used for world class performance.

**Terminal:** DIN Standard automotive post, brass with Pb-Sn.

**Relief valve:** Releases gas in case of excess pressure and protects the cell from the atmosphere.

## DCG Series General Specifications

Fullriver Type	Industry Ref.	Capacity AmpHours <sup>a</sup> (AH)			Capacity Minutes @ 2A <sup>b</sup> Amps	Cranking Performance		Length mm (inch)	Width mm (inch)	Height mm (inch)	Total Height mm (inch)	Weight (Approx.) Kg (lbs)	Terminal Type	Pallet QTY
		5-Hr rate	20-Hr rate	100-Hr rate		CCA <sup>c</sup> @ 0F	CA <sup>d</sup> @ 32F							
<b>6V DEEP CYCLE GEL BATTERY</b>														
DCG190-6	GC2	155	190	198	390	575	825	260 (10.24)	181 (7.13)	255 (10.04)	275 (10.8)	29.80 (65.70)	AP	28
DCG200-6	(DIN)	180	200	210	/	/	/	243 (9.57)	188 (7.40)	275 (10.83)	275 (10.83)	31.50 (69.45)	AP	30
DCG270-6	902	240	270	282	/	/	/	315 (12.40)	180 (7.09)	339.5 (13.37)	355 (13.98)	46.60 (102.74)	AP	22
<b>8V DEEP CYCLE GEL BATTERY</b>														
DCG140-8	GC8	114	140	160	/	/	/	260 (10.24)	182 (7.17)	268 (10.55)	272 (10.71)	29.40 (64.82)	M8	28
<b>12V DEEP CYCLE GEL BATTERY</b>														
DCG24-12	N/A	22	24	27.5	/	/	/	165 (6.50)	176 (6.93)	125 (4.92)	125 (4.92)	9.80 (21.61)	M6	120
DCG31-12	U1	26	31	36	/	/	/	197 (7.76)	131 (5.16)	167 (6.57)	171 (6.73)	10.70 (23.59)	M6	100
DCG40-12	U1L	33	40	46	/	/	/	198 (7.80)	166 (6.54)	171 (6.73)	171 (6.73)	13.10 (28.88)	M6	72~96
DCG50-12A	(DIN/L2)	42	50	57	/	/	/	241 (9.49)	175 (6.89)	190 (7.48)	190 (7.48)	17.70 (39.02)	AP	64
DCG50-12B	22NF	43	50	58	/	/	/	229 (9.02)	138 (5.43)	208 (8.19)	212 (8.35)	17.00 (37.48)	M6	63
DCG55-12	48	50	55	60	/	/	/	271 (10.67)	170 (6.69)	189 (7.44)	189 (7.44)	19.20 (42.33)	AP	48
DCG56-12	(DIN/L3)	51	56	61	/	/	/	278 (10.94)	175 (6.89)	190 (7.48)	190 (7.48)	21.00 (46.30)	AP	48
DCG70-12	24	63	70	77	147	330	460	256 (10.08)	166 (6.54)	206 (8.11)	210 (82.7)	22.40 (49.38)	M6	48
DCG77-12	24	66	77	85	/	/	/	260 (10.24)	169 (6.65)	211 (8.31)	215 (8.46)	25.10 (55.34)	M6	48
DCG78-12	(DIN/L5)	65	78	86	/	/	/	353 (13.90)	175 (6.89)	190 (7.48)	190 (7.48)	26.80 (59.08)	AP	36
DCG79-12	30H	70	79	87	/	/	/	328 (12.91)	169 (6.65)	212 (8.35)	232 (9.13)	27.20 (59.97)	AP	36
DCG88-12	27	72	88	99	/	/	/	307 (12.09)	169 (6.65)	211 (8.31)	215 (8.46)	28.10 (61.95)	M6	36
DCG102-12	31	85	102	108	200	445	620	329 (12.95)	171 (6.73)	227 (8.94)	247 (9.72)	31.50 (69.45)	AP	36
DCG110-12	6T	93.5	110	120	/	/	/	286 (11.26)	269 (10.59)	210 (8.27)	230 (9.06)	37.60 (82.89)	AP	27
DCG120-12A	5SHP	105	120	132	/	/	/	341 (13.43)	172 (6.77)	264 (10.39)	283 (11.14)	39.20 (86.42)	AP	24
DCG120-12B	GC12	105	120	132	/	/	/	327 (12.87)	182 (7.17)	269 (10.59)	289 (11.38)	39.50 (87.08)	AP	22
DCG170-12	921	148	170	187	/	/	/	381 (12.87)	178 (7.01)	351 (13.82)	371 (14.61)	56.50 (124.56)	DT	20
DCG185-12	4D	152	185	210	/	/	/	527 (20.75)	216 (8.50)	234 (9.21)	254 (10.00)	58.00 (127.87)	APW	21
DCG225-12	8D	188	225	265	/	/	/	527 (20.75)	279 (10.98)	234 (9.21)	254 (10.00)	72.40 (159.61)	APW	12
DCG240-12	8D	195	240	280	/	/	/	527 (20.75)	279 (10.98)	234 (9.21)	254 (10.00)	75.40 (166.23)	APW	12

A. The amount of amp-hours (AH) a battery can deliver when discharged at a constant rate at 80°F (27°C) for the 20 Hr and 100 Hr rates and 86°F (30°C) for the 5 Hr rate and maintain a voltage above 1.75 V/cell. Capacities are based on peak performance.

B. RC (Reserve Capacity) - the number of minutes a battery can be discharged at 25 amps at 27°C (80°F) and maintain a voltage above 1.75v/cell.

C. CCA (Cold Cranking Amps) - the discharge load in amperes which a new, fully charged battery can maintained for 30 seconds at 0°F (-17.8°C) at a voltage above 1.2v/cell.

D. CA (Cranking Amps) - the discharge load in amperes which a new, fully charged battery can maintained for 30 seconds at 32°F (0°C) at a voltage above 1.2v/cell.

E. Terminal type Please see our terminal configurations.

F. Dimensions are based on maximum size. Dimensions may vary depending on type of handle or terminal.



# FSG Series Battery

Fullriver FSG Series Valve-Regulated batteries using revolutionary Solar-Gel long life plate technology have been designed specifically for solar applications. Solar batteries are traditionally hard working batteries and are usually cycled on a daily basis as part of a primary power source of electricity where no grid power is available.



## Features

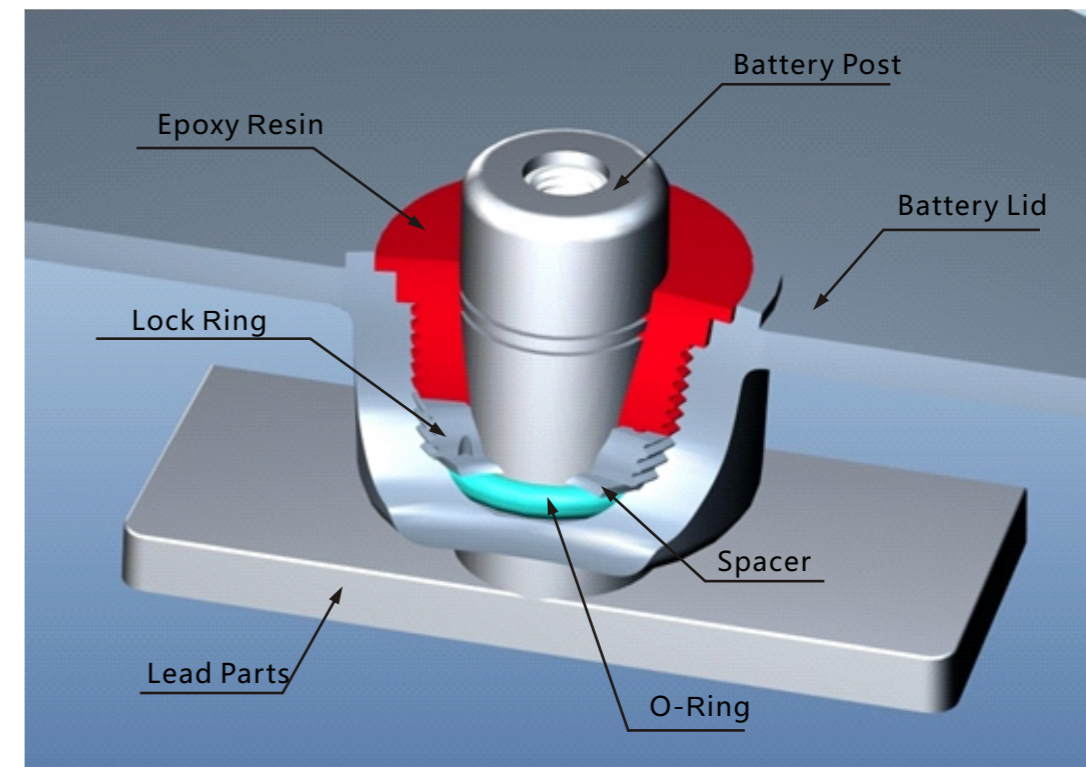
- Designed service life of 20 years.
- High cycle service life.
- Excellent deep cycle performance.
- Superior low current discharge performance.
- Stronger constant power discharge capability.
- Better safety performance and reliability.
- Modular and personified installation design.
- Non-Spillable construction design.
- Safety valve installation make it explosion proof.
- Low self discharge characteristic.
- Exceptional deep discharge recovery performance.
- Gel-batteries are designed to be operated within a wide temperature range -40° C and +55° C.
- Cells in compliance with IEC 61427, AS40861(1993).
- Completely recyclable.

## Specifications

- Positive Electrode: Flat Grid Pasted Plate
- Negative Electrode: Flat Grid Pasted Plate
- Alloy: Lead-Tin-Calcium (Pb-Sn-Ca)
- Float Voltage: 2.25 VPC +/- 1% at 25 °C
- Max. Charge Voltage: 2.40 VPC at 20 °C
- Electrolyte: Suspended Thixotropic Gel
- Safety Valve: 1-3 PSI Self-Resealing
- Separators: PVC-SiO2 Separator
- Battery Case: ABS
- Interconnects: Insulated Cables
- Terminals: Integral Copper Insert For M8 or M10 Bolt

## FSG Post Sealing Design

- The pole construction and the design of the lead-through depends on the battery type and capacity range.
- The special O-ring construction allows the positive terminals to grow keeping the cell sealed.
- FTG models are front terminal gel batteries, with the same unique design specifications as FSG.



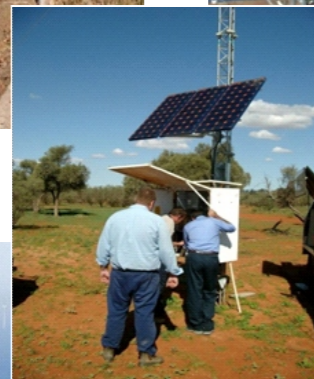




Thick and Strong PVC Separator

## Applications

- Telecommunications
- Rural infrastructure
- Village electrification
- Power generation
- Railways
- Solar power systems
- Wind power systems
- Micro hydro systems
- Hybrid power systems
- Mining

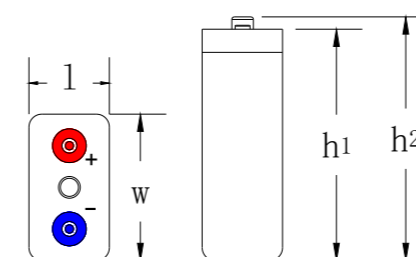


## FSG/FTG Series General Specifications

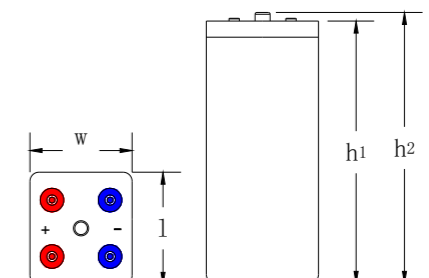
Type	DIN Size	Nominal Voltage V	C <sub>100</sub> 1.80V/C 25°C Ah	C <sub>72</sub> 1.80V/C 25°C Ah	C <sub>10</sub> 1.80V/C 25°C Ah	Length (l) max. mm	Width (w) max. mm	Height (h1) max. mm	Height (h2) max. mm	Weight approx. Kg	Terminal	Pole pairs
2V Fullriver Solar-Gel Battery												
FSG280-2	4OPZV200	2	280	265	200	103	206	355	390	15.9	M8	1
FSG350-2	5OPZV250	2	350	332	250	124	206	355	390	18.6	M8	1
FSG420-2	6OPZV300	2	420	399	300	145	206	355	390	21.3	M8	1
FSG570-2	5OPZV350	2	570	548	416	124	206	471	506	32.3	M8	1
FSG685-2	6OPZV420	2	685	657	499	145	206	471	506	37.4	M8	1
FSG800-2	7OPZV490	2	800	765	582	166	206	471	506	42.3	M8	1
FSG875-2	6OPZV600	2	875	840	616	145	206	646	681	46.1	M8	1
FSG1000-2	6OPZV600	2	1000	960	666	145	206	646	681	54.6	M8	1
FSG1160-2	8OPZV800	2	1160	1105	777	210	191	646	681	63.6	M8	2
FSG1330-2	8OPZV800	2	1330	1281	888	210	191	646	681	71.6	M8	2
FSG1660-2	10OPZV1000	2	1660	1600	1110	210	233	646	681	88	M8	2
FSG1990-2	12OPZV1200	2	1990	1910	1332	210	275	646	681	104.6	M8	2
FSG2290-2	12OPZV1500	2	2290	2140	1600	210	275	796	831	114.4	M8	2
12V Fullriver Front Access Terminal Gel Battery												
FTG105-12	N/A	12	-	135	103	394	125	286	286	42	M8	1
FTG160-12	N/A	12	-	210	160	544	125	317	317	63	M8	1

## Drawings with Terminal Position

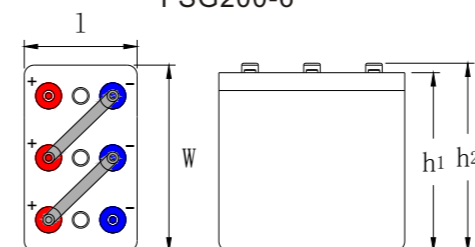
FSG250-2 to FSG1000-2



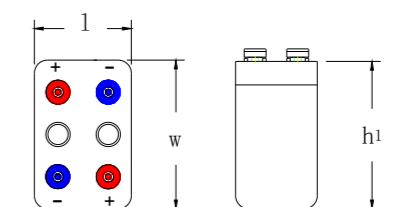
FSG1160-2 to FSG2290-2



FSG200-6



FSG100-4 & FSG320-4





# DC Series Battery

Fullriver Deep-Cycle AGM batteries are ideal for applications that require sealed batteries with heavy-duty cycling capabilities or for backup power.



## Specifications

- **Voltage:** 2V, 6V, 8V, 12V
- **Capacity:** 7Ah~1150Ah
- **Separator:** AGM (Absorbent Glass Mat)
- **Container and Covers Material:** ABS, UL94HB (UL94V-0 on request)
- **Design Life:** 450 cycles at 75%DOD (IEC60254-1:2005)
- **Operating Temperature Range:**  
Discharge: -15 °C ~ 50 °C (5°F ~ 122°F)  
Charge: 0 °C ~ 40 °C (32°F ~ 104°F)  
Storage: -15 °C ~ 40 °C (5°F ~ 104°F)
- **Nominal Operating Temperature Range:** 25 °C ±3°C (77°F ±5°F)
- **Cycle Service Charging Voltage:** 2.4V/cell ~ 2.5V/cell at 25°C (77°F)
- **Float Charging Voltage:** 2.25V/cell~ 2.3V/cell at 25°C (77°F)
- **Temperature Compensation Factor:**  
Float (Standby) Use: -3 mV/°C/cell  
Cycle Use: -4 mV/°C/cell
- **Recommended Charging Current:** 0.15C20~0.35C20
- **Maximum Discharge Current:**  
C20 ≤ 100AH, 15C (5S);  
100AH < C20 ≤ 260AH, 10C (5S);  
C20 > 260AH, 5C (5S).

## Key Features

- New High-Density Active Paste Material.
- Heavy Duty Thick Grids.
- Special Lead-Calcium Alloy Grids.
- Tank Formation Activation of Plates.
- 10 Day Curing Chamber Process.
- Unique Low Resistance Micro-Porous Glass Fiber Separators.
- Maintenance Free, Spill-Proof/Leak Proof.
- Self Regulating Pressure Relief Valves.
- Low Self Discharge Rate, Only 1% Per Month.
- Faster Recharging Times.
- Excellent Recovery from Deep Discharge.

## Benefits

- High Capacity and Long Life.
- True Deep Cycle Construction For Long Life.
- Superior Corrosion Resistance.
- Ensures Fully Formed, Voltage Matched Plates.
- Excellent Bonding of Active Material Paste to Grids Resulting in Longer Life.
- Enhanced Electrolyte Retention.
- DOT, IATA, ICAO and IMDG Approved as Safe for Air & Sea Transportation.
- Sure and Safe Operation of Batteries.
- Longer Shelf Life, Easy Storage.
- Rugged Construction, Shock and Vibration Resistant.
- Recognized Around The World.

## Applications

- Renewable Energy Systems
- Golf/Utility Vehicles
- Floor Machines
- Aerial Work Platform
- Recreational Vehicles (RV)
- Medical Mobility
- Neighborhood Electric Vehicles
- Marine Vessels



# DC Series General Specifications

Fullriver Type	Industry Ref.	Capacity AmpHours (AH) <sup>A</sup>				Capacity <sup>B</sup> Minutes		Cranking Performance		Length mm (inch)	Width mm (inch)	Height mm (inch)	Total Height mm (inch)	Weight (Approx.) Kg (lbs)	Terminal <sup>E</sup> Type	Pallet QTY
		5-Hr rate	20-Hr rate	72-Hr rate	100-Hr rate	@25 Amps	@75 Amps	CCA <sup>C</sup> @0°F	CA <sup>D</sup> @32°F							
2V DEEP CYCLE BATTERY																
DC1150-2	903 /L16	945	1150	1220	1275	2235	758	/	/	295 (11.61)	179 (7.05)	404 (15.91)	411 (16.18)	57.60 (126.99)	M10	22
6V DEEP CYCLE BATTERY																
DC200-6A	27	165	200	212	220	400	100	/	/	306 (12.05)	169 (6.65)	220 (8.66)	226 (8.90)	30.00 (66.14)	M8	36
DC200-6B	(DIN)	165	200	212	220	400	100	/	/	244 (9.61)	190 (7.48)	275 (10.83)	275 (10.83)	31.00 (68.34)	AP	30
DC220-6	27	180	220	232	242	425	112	/	/	306 (12.05)	174 (6.85)	220 (8.66)	226 (8.90)	32.70 (72.09)	M8	36
DC224-6A	GC2	179	224	237	246	441	113	/	/	260 (10.24)	180 (7.09)	245 (9.65)	251 (9.88)	29.8 (65.70)	M8	42
DC224-6B	GC2	179	224	237	246	441	113	/	/	260 (10.24)	180 (7.09)	245 (9.65)	267 (10.51)	20.9 (65.92)	M8	42
DC245-6	(DIN)	198	245	260	270	457	120	/	/	244 (9.61)	190 (7.48)	275 (10.83)	275 (10.83)	32.30 (71.21)	AP	30
DC250-6	GC2	204	250	265	275	531	135	/	/	262 (10.31)	181 (7.13)	266 (10.47)	272 (10.71)	34.50 (76.06)	M8	28
DC335-6	902 /J305	274	335	350	370	751	184	/	/	295 (11.61)	178 (7.01)	346 (13.62)	366 (14.41)	47.80 (105.38)	DT	22
DC400-6	L16	340	415	435	460	885	229	/	/	295 (11.61)	179 (7.05)	404 (15.91)	424 (16.69)	56.00 (123.46)	DT	22
8V DEEP CYCLE BATTERY																
DC160-8A	GC8	131	160	170	178	315	112 @56 Amps	/	/	260 (10.24)	182 (7.17)	268 (10.55)	272 (10.71)	31.70 (69.89)	M8	28
DC160-8B	GC8	131	160	170	178	315	112 @56 Amps	/	/	260 (10.24)	182 (7.17)	288 (11.34)	288 (11.34)	31.80 (70.11)	M8	28
DC180-8A	GC8	147.5	180	191	198	335	125 @56 Amps	/	/	260 (10.24)	182 (7.17)	268 (10.55)	272 (10.71)	36.60 (80.69)	M8	28
DC180-8B	GC8	147.5	180	191	198	335	125 @56 Amps	/	/	260 (10.24)	182 (7.17)	288 (11.34)	288 (11.34)	36.70 (80.91)	M8	28
DC200-8	GC8H	164	200	212	220	390	140 @56 Amps	/	/	260 (10.24)	182 (7.17)	295 (11.61)	299 (11.77)	40.00 (88.18)	M8	28
12V DEEP CYCLE BATTERY																
DC7-12	N/A	/	7	/	/	/	/	/	/	151 (5.94)	65 (2.56)	95 (3.74)	101 (3.98)	2.73 (6.02)	F1	420
DC10-12	N/A	/	10	/	/	/	/	/	/	151 (5.94)	65 (2.56)	111 (4.37)	117 (4.61)	3.30 (7.28)	F1	336
DC12-12	N/A	/	12	/	/	/	/	/	/	151 (5.94)	99 (3.90)	95 (3.74)	101 (3.98)	4.20 (9.26)	F1	264
DC17-12	N/A	/	17	/	/	20	/	120	148	181 (7.13)	77 (3.03)	167 (6.57)	167 (6.57)	6.22 (13.71)	M5	192
DC20-12	N/A	16.5	20	/	/	23	/	135	165	181 (7.13)	77 (3.03)	167 (6.57)	167 (6.57)	6.44 (14.20)	M5	192
DC24-12	N/A	19.8	24	25.5	27	27	/	160	195	167 (6.57)	175 (6.89)	125 (4.92)	125 (4.92)	9.2 (20.28)	M5	120
DC26-12	N/A	21.3	26	27.6	30	30	/	165	200	165 (6.50)	176 (6.93)	125 (4.92)	125 (4.92)	9.8 (21.61)	M6	120
DC35-12A	U1	29	35	37	39	52	/	190	230	196 (7.72)	131 (5.16)	155 (6.10)	167 (6.57)	11.5 (25.35)	M6	108
DC35-12B	U1	29	35	37	39	52	/	190	230	196 (7.72)	131 (5.16)	167 (6.57)	180 (7.09)	11.5 (25.35)	F25	108

# Continued...

Fullriver Type	Industry Ref.	Capacity AmpHours (AH) <sup>A</sup>				Capacity <sup>B</sup> Minutes		Cranking Performance		Length mm (inch)	Width mm (inch)	Height mm (inch)	Total Height mm (inch)	Weight (Approx.) Kg (lbs)	Terminal <sup>E</sup> Type	Pallet QTY
		5-Hr rate	20-Hr rate	72-Hr rate	100-Hr rate	@25 Amps	@75 Amps	CCA <sup>C</sup> @0°F	CA <sup>D</sup> @32°F							
12V DEEP CYCLE BATTERY																
DC38-12	U1L	31	38	40	42	52	/	265	315	198 (7.80)	166 (6.54)	174 (6.85)	174 (6.85)	13.3 (29.32)	M6	96
DC40-12	U1L	32.8	40	42	44	53	/	275	320	198 (7.80)	166 (6.54)	174 (6.85)	174 (6.85)	13.4 (29.54)	M6	96
DC50-12A	DIN(L2)	41	50	53	56	85	17	440	575	241 (9.49)	175 (6.89)	190 (7.48)	190 (7.48)	18.5 (40.79)	AP	64
DC50-12B	U1L	42.5	50	53	56	70	/	350	400	198 (9.49)	166 (6.89)	170 (7.48)	170 (7.48)	14.5 (40.79)	M6	96
DC55-12	22NF	45	55	58	61	96	21	400	480	229 (9.02)	138 (5.43)	208 (8.19)	212 (8.35)	17.6 (38.80)	M6	63
DC60-12A	48	49.2	60	64	66	95	24	410	485	265 (10.43)	166 (6.54)	188 (7.40)	188 (7.40)	20.7 (45.64)	AP	45
DC60-12B	DIN(L3)	49.2	60	64	66	105	24	510	670	278 (10.94)	175 (6.89)	190 (7.48)	190 (7.48)	22 (48.50)	AP	48
DC65-12	93	53.3	65	69	72	100	28	430	510	351 (13.82)	167 (6.57)	176 (6.93)	176 (6.93)	23.6 (52.03)	M6	48
DC70-12	24	57.5	70	74	77	115	31	450	540	260 (10.24)	169 (6.65)	211 (8.31)	215 (8.46)	24.5 (54.01)	M6	48
DC79-12	27	64	79	84	87	125	31	600	710	307 (12.09)	169 (6.65)	211 (8.31)	215 (8.46)	26.5 (58.42)	AP	36
DC80-12	DIN(L5)	65.5	80	85	89	142	32	630	756	353 (13.90)	175 (6.89)	190 (7.48)	190 (7.48)	26.80 (59.08)	AP	36
DC85-12	24	70	85	90	94	148	34	510	600	260 (10.24)	169 (6.65)	211 (8.31)	215 (8.46)	25.10 (55.34)	M6	48
DC90-12	27	74	90	95.5	99	140	38	530	630	307 (12.09)	169 (6.65)	211 (8.31)	215 (8.46)	29.2 (64.37)	M6	36
DC105-12	27	86	105	111	116	170	40	550	660	307 (12.09)	169 (6.65)	211 (8.31)	215 (8.46)	30.20 (66.58)	M6	36
DC115-12A	31	91	115	122	128	175	43	600	710	328 (12.91)	172 (6.77)	214 (8.43)	220 (8.66)	32.7 (72.09)	M8	36
DC115-12B	31	91	115	122	128	175	43	605	720	331 (13.03)	175 (6.89)	214 (8.43)	218 (8.58)	32.9 (72.53)	M8	36
DC120-12A	N/A	98	120	127	132	223	52	750	900	407 (16.02)	174 (6.85)	210 (8.27)	240 (9.45)	38.2 (84.22)	M8	27
DC120-12B	31	98	120	127	132	230	54	760	910	331 (13.03)	175 (6.89)	214 (8.43)	218 (8.58)	36.5 (80.47)	M8	36
DC120-12C	(DIN)	98	120	127	132	232	56	750	900	341 (13.43)	172 (6.77)	267 (10.51)	283 (11.14)	38.7 (85.32)	AP	24
DC140-12	(DIN)	115	140	148	154	260	62	795	950	341 (13.43)	172 (6.77)	267 (10.51)	283 (11.14)	43.1 (95.02)	AP	24
DC145-12	N/A	122	145	154	160	279	86	820	975	341 (13.43)	173 (6.81)	281 (11.06)	287 (11.30)	44.3 (97.66)	M8	24
DC150-12	GC12	123	150	158	165	295	80	900	1050	327 (12.87)	182 (7.17)	269 (10.59)	273 (10.75)	42.6 (93.92)	M8	22
DC160-12	N/A	130	160	165	176	300	82	910	1070	484 (19.06)	171 (6.73)	241 (9.49)	241 (9.49)	45.5 (100.31)	M8	24
DC180-12	4D	147.5	180	191	198	350	85	/	/	530 (20.87)	209 (8.23)	214 (8.43)	218 (8.58)	57.8 (127.43)	M8	21
DC210-12	4D	172	210	223	231	400	105	/	/	530 (20.87)	209 (8.23)	214 (8.43)	218 (8.58)	60.5 (133.38)	M8	21
DC215-12	921 /J185	172	215	225	234	420	110	/	/	381 (15.00)	178 (7.01)	351 (13.82)	371 (14.61)	60 (132.28)	DT	20
DC220-12	4D	175	220	233	240	415	110	/	/	522 (20.55)	242 (9.53)	218 (8.58)	222 (8.74)	66.5 (146.61)	M8	18
DC240-12	8D	197	240	255	262	520	135	/	/	520 (20.47)	269 (10.59)	204 (8.03)	208 (8.19)	75.2 (165.79)	M8	12
DC260-12	8D	213	260	276	285	578	145	/	/	521 (20.51)	269 (10.59)	220 (8.66)	224 (8.82)	78.2 (172.40)	M8	12

A. The amount of amp-hours (AH) a battery can deliver when discharged at a constant rate at 80°F (27°C) for the 20 Hr 72Hr and 100 Hr rates and 86°F (30°C) for the 5 Hr rate and maintain a voltage above 1.75 V/cell. Capacities are based on peak performance.

B. RC (Reserve Capacity) - the number of minutes a battery can be discharged at 25 or 75 amps at 27°C (80°F) and maintain a voltage above 1.75v/cell.

C. CCA (Cold Cranking Amps) - the discharge load in amperes which a new, fully charged battery can maintained for 30 seconds at 0°F (-17.8°C) at a voltage above 1.2v/cell.

D. CA (Cranking Amps) - the discharge load in amperes which a new, fully charged battery can maintained for 30 seconds at 32°F (0°C) at a voltage above 1.2v/cell.

E. Terminal type Please see our terminal configurations.

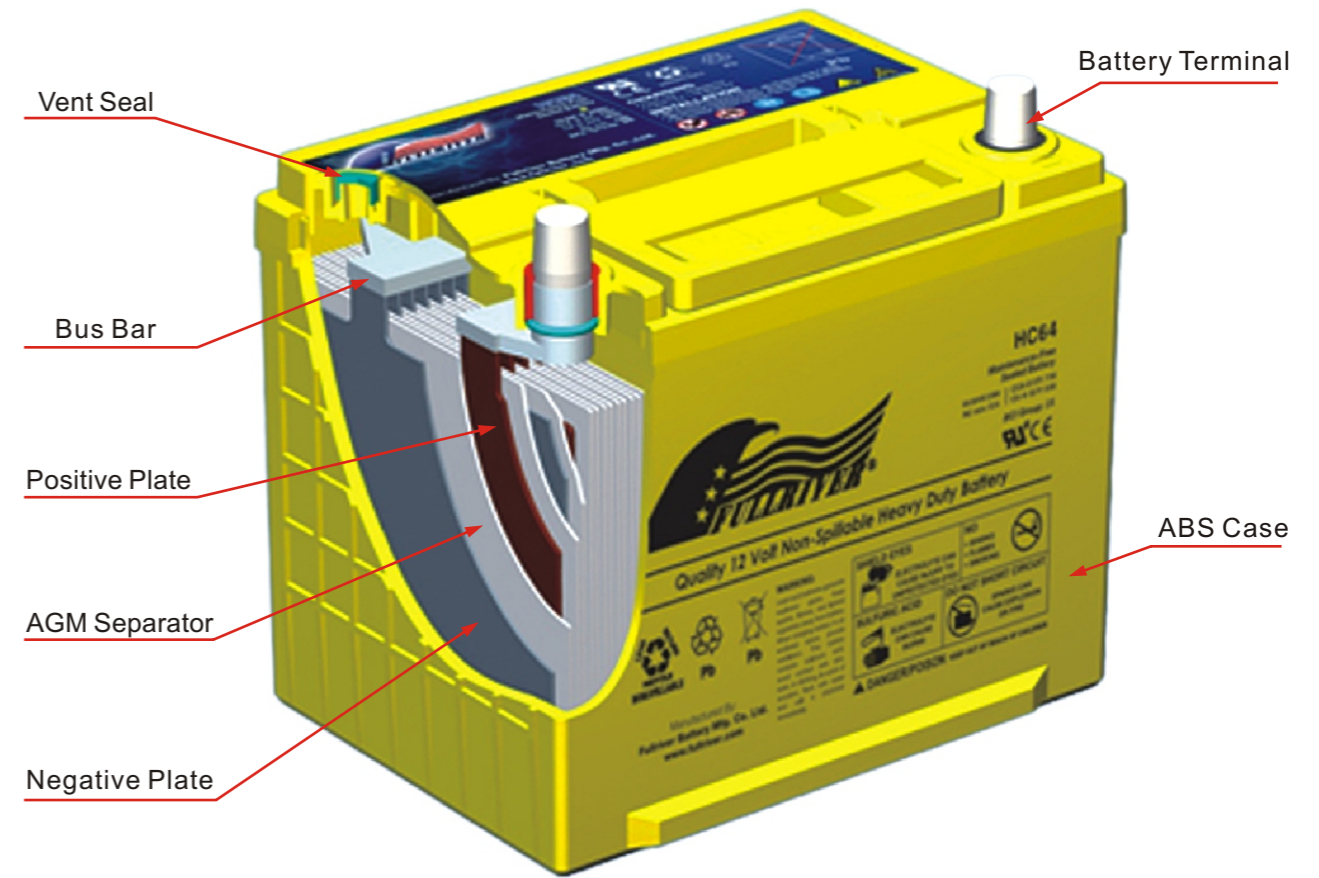


# HC Series Battery

Fullriver HC series battery ingeniously uses absorbed glass mat (AGM) technology to offer, in one box, the characteristics of two separate batteries. These batteries are capable of providing engine cranking pulses in excess of 2250A for 5 seconds, while offering high reserve capacity.



# Design and Materials



## Features

- Valve regulated lead acid battery.
- Dry cell technology with an absorbed glass mat.
- Ultra low resistance offers easy recharging and remarkable output power.
- 5S.Pulse discharge capabilities.
- Low self discharge, the self discharge rate below 4% per month.
- High rate discharge construction.
- Deep discharge recoverability.
- Can be ordered with metal case and fitted with TP brass automotive terminal.
- Operation temperature range: -22°F (-30°C) to 122°F (50°C).

## Benefits

- High capacity starting power, to start any size engines.
- Highest reserve capacity in the industry, to power a wide range of accessories.
- Superior conductivity brass terminals provide greater electrical transmission.
- Durable rugged design to withstand shock and vibration.
- Charge efficiency faster recharge than conventional wet batteries.
- Convenient maintenance free sealed construction, no water needed.
- Safety DOT,IATA,IMDG and ICAO CERTIFIED as non-spillable.

## Applications

- Auto/LTV
- Marine
- Extreme racing
- Heavy duty/Commercial
- Car audio accessories
- Engine starting
- Powersports
- Vehicle fleet
- Start-Stop



## HC Series General Specifications

Fullriver Type	Industry Ref.	Capacity C20 1.75 V/C 25°C Ah	5 sec. pulse hot cranking amps (PHCA)	Cranking Performance			Reserve capacity, Minutes 25A	Length mm (in)	Width mm (in)	Height mm (in)	Total Height mm (in)	Weight (Approx.) kg (pound)	Terminal Type	Pallet QTY
				CCA @ 0°F	CA @ 32°F	HCA @ 80°F								
12V High Cranking Battery														
HC8	N/A	8	310	100	155	200	8	138 (5.43)	86 (3.39)	101.6 (4.00)	101.6 (4.00)	3.00 (6.61)	M6	220
HC14A	N/A	14	535	200	265	300	20	170.2 (6.70)	99.1 (3.90)	155 (6.10)	155 (6.10)	6.00 (13.23)	M6	160
HC14B	N/A	14	545	185	240	300	15	177 (6.97)	86 (3.39)	130.7 (5.15)	130.7 (5.15)	5.00 (11.02)	M6	192
HC15	N/A	15	370	156	190	220	25	200 (7.87)	77 (3.03)	134 (5.28)	138 (5.43)	5.55 (12.24)	M6	192
HC18	N/A	18	625	265	350	440	26	170.2 (6.70)	99.1 (3.90)	175 (6.89)	175 (6.89)	7.00 (15.43)	M6	144
HC20	N/A	20	680	230	310	410	28	181 (7.13)	77 (3.03)	167 (6.57)	167 (6.57)	7.00 (15.43)	M6	144
HC28	N/A	28	925	410	530	625	48	165 (6.50)	176 (6.93)	125 (4.92)	125 (4.92)	10.70 (23.59)	M8	120
HC30	N/A	30	950	450	550	635	60	250 (9.84)	97 (3.82)	142 (5.59)	156 (6.14)	10.60 (23.37)	M6M	104
HC35	U1	35	975	438	525	605	50	196 (7.72)	131 (5.16)	167 (6.57)	167 (6.57)	12.1 (26.68)	M6	66
HC40	N/A	40	1100	500	600	700	70	250 (9.84)	97 (3.82)	192 (7.56)	206 (8.11)	14.90 (32.85)	M6 M	78
HC44	N/A	44	1200	560	725	860	80	198 (7.80)	166 (6.54)	170 (6.69)	170 (6.69)	15.10 (33.29)	M8	66
HC50	(DIN/L2)	50	1280	610	745	890	105	241 (9.49)	175 (6.89)	190 (7.48)	190 (7.48)	19.10 (42.11)	AP	64
HC55	22NF	55	1300	620	745	890	100	229 (9.02)	138 (5.43)	208 (8.19)	212 (8.35)	18.00 (39.68)	M6	63
HC60A	N/A	60	1340	700	840	1010	105	220 (8.66)	121 (4.76)	247 (9.72)	261 (10.28)	20.50 (45.19)	M6 M	48
HC60B	(DIN/L3)	60	1320	680	810	975	120	278 (10.94)	175 (6.89)	190 (7.48)	190 (7.48)	21.80 (48.06)	AP	48
HC64	25	64	1400	750	900	1080	120	240.3 (9.46)	173.7 (6.84)	202 (7.95)	220 (8.64)	22.30 (49.16)	AP	48
HC64X	25	64	1400	750	900	1080	120	240.3 (9.46)	168.7 (6.64)	202 (7.95)	220 (8.64)	22.30 (49.16)	AP	48
HC65X	34	65	1500	825	1000	1200	135	261 (10.28)	164.5 (6.48)	182.5 (7.19)	186.5 (7.34)	20.80 (45.86)	M8	48
HC65	34	65	1500	825	1000	1200	135	261 (10.28)	171.5 (6.75)	182.5 (7.19)	186.5 (7.34)	20.80 (45.86)	M8	48
HC65/T	34	65	1500	825	1000	1200	135	261 (10.28)	171.5 (6.75)	182.5 (7.19)	204 (8.03)	20.90 (46.08)	M8+TP28	48
HC65/S	34	65	1500	825	1000	1200	135	261 (10.28)	180 (7.09)	182.5 (7.19)	192 (7.56)	21.00 (46.30)	M8+FR45	48
HC65/ST	34	65	1500	825	1000	1200	135	261 (10.28)	180 (7.09)	182.5 (7.19)	207 (8.15)	21.10 (46.52)	M8+TP28+FR45	48
HC70	93	70	1650	900	1080	1250	160	351 (13.82)	167 (6.58)	179 (7.05)	179 (7.05)	24.8 (54.68)	M8	30
HC75	65	75	1750	930	1070	1350	142	300 (11.81)	182 (7.17)	169.5 (6.67)	187.5 (7.38)	25.40 (56.00)	AP	36
HC75X	65	75	1750	930	1070	1350	142	300 (11.81)	178 (7.01)	169.5 (6.67)	187.5 (7.38)	25.40 (56.00)	AP	36
HC80	(DIN/L5)	80	1800	890	1070	1300	168	353 (13.90)	175 (6.89)	190 (7.48)	190 (7.48)	27.70 (61.07)	AP	36

## HC Series General Specifications

Fullriver Type	Industry Ref.	Capacity C20 1.75 V/C 25°C Ah	5 sec. pulse hot cranking amps (PHCA)	Cranking Performance			Reserve capacity, Minutes 25A	Length mm (in)	Width mm (in)	Height mm (in)	Total Height mm (in)	Weight (Approx.) kg (pound)	Terminal Type	Pallet QTY
				CCA @ 0°F	CA @ 32°F	HCA @ 80°F								
12V High Cranking Battery														
HC100	27	100	1950	965	1170	1380	205	307 (12.09)	169 (6.65)	214 (8.31)	237 (9.33)	32.20 (70.99)	DT	36
HC105	30H	105	2150	1050	1300	1505	242	330 (12.99)	172 (6.77)	214 (8.43)	220 (8.66)	34 (74.96)	M8	36
HC110	31	110	2200	1100	1360	1560	230	330 (12.99)	173 (6.81)	214 (8.43)	237 (9.33)	34.6 (76.28)	M10M	33
HC120	6T	120	2250	1150	1450	1700	273	284 (11.18)	268 (10.55)	205.5 (8.09)	209.5 (8.25)	38.7 (85.32)	M8	27
14V High Cranking Battery														
HC14V25	34	25	820	375	450	550	32	260.4 (10.25)	164.2 (6.46)	178.9 (7.04)	182.9 (7.20)	12.4 (27.34)	M6	48
HC14V50	34	50	1250	570	675	820	75	260.4 (10.25)	164.2 (6.46)	178.9 (7.04)	182.9 (7.20)	19.1 (42.11)	M6	48
16V High Cranking Battery														
HC16V25	34	25	820	375	450	550	32	260.4 (10.25)	164.2 (6.46)	178.9 (7.04)	182.9 (7.20)	13.8 (30.42)	M6	48
HC16V50	34	50	1250	570	675	820	75	260.4 (10.25)	164.2 (6.46)	178.9 (7.04)	182.9 (7.20)	21.2 (46.74)	M6	48

Note: A) Note that successive discharges must be spaced apart to allow the terminals to cool down.

B) CCA (Cold Cranking Amps) – the discharge load in amperes which a new, fully charged battery can maintain for 30 seconds at 0°F (-17.8°C) at a voltage above 1.2V/cell.

C) CA (Cranking Amps) – the discharge load in amperes which a new, fully charged battery can maintain for 30 seconds at 32°F (0°C) at a voltage above 1.2V/cell. This is sometimes referred to as marine cranking amps@32°F or M.C.A.@32°F.

D) HCA (Hot Cranking Amps) - the discharge load in amperes which a new, fully charged battery can maintain for 30 seconds at 80°F (27°C) at a voltage above 1.2V/cell.

## Battery Supplier Cross Reference

Fullriver	Yuasa	EXIDE	Deka	Delco	Interstate
HC8	YTX9-BS	9-BS	ETX9	GTX9-BS	CYTX9-BS
HC14A	YTX20-BS	16-BS	ETX16	TBA	CYTX20BS
HC14B	YTX14BS	14BS	ETX14	GTX14BS	CYTX14BS
HC18	YTX20HLBS-PW	16L-BS	ETX16L	TBA	CYTX20LBS
HC20	YTX24HLBS	18L-BS	ETX18L	TBA	CYTX24HLBS
HC28	YIX30LBS	-	-	-	FAYIX30L



# HGL Series Battery

**HGL series valve regulated lead acid batteries are designed with AGM (Absorbent Glass Mat) technology and for general application purpose, such as UPS, telecom, and electrical utilities.**



## Features

- Sealed construction, no electrolyte leakage from the terminals or the case of any battery, efficient operation in any orientation.
- Maintenance free operation, no need to add water.
- Low self discharge, the self discharge rate is below 3% per month.
- Special lead calcium alloy, good corrosion resistance and high recovery capacity.
- FAA and IATA approved as non-hazardous.

## Specifications

- **Nominal Voltage:** 6 & 12volts
- **Design Life:** 22Ah and down: 4-6 years @25°C  
24Ah and up: 6-8 years @25°C
- **Operating Temperature:** -15°C to 50 °C
- **Plates:** Flat pasted
- **Separator:** AGM (Absorbent Glass Mat)
- **Case and Cover:** ABS(V0 on request)
- **Charge Voltage:** Float use: 2.25-2.30 VPC@25°C  
Cycle use:2.40-2.49VPC@25°C  
Max. Charge current: 0.25C20

## Applications

A list of some of the more common applications for standby or principal power is given below:

- Alarm Systems
- Cable Television
- Communications Equipment
- Computers
- Control Equipment
- Electronic Cash Registers
- Electronic Test Equipment
- Emergency Lighting Systems
- Fire & Security Systems
- Geophysical Equipment
- Marine Equipment
- Medical Equipment
- Microprocessor Based Office machines
- Portable Cine & Video Lights
- Power Tools
- Telecommunication Systems
- Television & Video Recorders
- Toys
- Uninterruptible Power Supplies
- Vending Machines



# HGL Series General Specifications

Fullriver Type	Volt	Nominal Capacity	Nominal Capacity	Nominal Capacity	Nominal Capacity	Length		Width		Height		Total Height		Weight (Approx.)		Terminal Type	Pallet QTY
		C20	C10	C5	C1	mm	in	mm	in	mm	in	mm	in	kg	pound		
		1.75 V/C	1.75 V/C	1.70V/C	1.60 V/C												
HGL1.36	6	1.3	1.10	1	0.72	97	3.82	24	0.94	52	2.05	58	2.28	0.31	0.68	F1	2420
HGL3.36	6	3.3	2.98	2.72	1.92	134	5.28	34	1.34	61	2.40	67	2.64	0.59	1.30	F1	1260
HGL4.6A	6	4	3.72	3.4	2.4	70	2.76	47	1.85	101	3.98	107	4.21	0.71	1.57	F1	1200
HGL4.6B	6	4	3.72	3.4	2.4	70	2.76	47	1.85	106	4.17	106	4.17	0.71	1.57	RB	1200
HGL4.6C	6	4	3.72	3.4	2.4	70	2.76	47	1.85	98	3.86	104	4.09	0.71	1.57	F1	1200
HGL5.6A	6	5	4.65	4.25	3	70	2.76	47	1.85	101	3.98	107	4.21	0.77	1.70	F1	1200
HGL5.6B	6	5	4.65	4.25	3	67	2.64	67	2.64	97	3.82	115	4.53	0.92	2.03	S01	900
HGL7.6	6	7	6.5	5.95	4.2	151	5.94	34	1.34	95	3.74	101	3.98	1.18	2.60	F1	770
HGL8.6	6	8	7.4	6.8	4.8	99	3.90	57	2.24	115	4.53	115	4.53	1.69	3.73	F1	660
HGL10.6	6	10	9.3	8.5	6	151	5.94	50	1.97	95	3.74	101	3.98	1.58	3.48	F1	680
HGL12.6	6	12	11.2	10.2	7.2	151	5.94	50	1.97	95	3.74	101	3.98	1.84	4.06	F1	680
HGL14.6CQ	6	14	13.0	11.9	8.4	108	4.25	71	2.80	140	5.51	140	5.51	2.38	5.25	CQ	320
HGL14.6TS	6	14	13.0	11.9	8.4	108	4.25	71	2.80	140	5.51	140	5.51	2.38	5.25	TS	320
HGL14.6TH	6	14	13.0	11.9	8.4	108	4.25	71	2.80	140	5.51	140	5.51	2.38	5.25	TH	320
HGL14.6PL	6	14	13.0	11.9	8.4	108	4.25	71	2.80	140	5.51	140	5.51	2.38	5.25	PL	320
HGL20.6	6	20	18.6	17.0	12.0	157	6.18	83	3.27	125	4.92	125	4.92	4.45	9.81	M5	280
HGL4.26	6	42	39.1	35.7	25.2	162	6.38	88	3.46	163	6.42	170	6.69	6.20	13.67	F2	144
HGL18.06	6	180	167	153	108	306	12.05	169	6.65	220	8.66	226	8.90	28.10	61.95	M8	36
HGL24.06	6	240	221	199	140	244	9.61	190	7.48	275	10.83	275	10.83	31.00	68.34	AP	30
HGL0.812	12	0.8	0.74	0.68	0.48	96	3.78	25	0.98	61	2.40	61	2.40	0.34	0.75	C01	2200
HGL1.312	12	1.3	1.10	1.02	0.72	97	3.82	43	1.69	52	2.05	58	2.28	0.59	1.30	F1	1800
HGL2.012	12	2	1.86	1.70	1.20	177	6.97	35	1.38	61	2.40	67	2.64	0.90	1.98	F1	1100
HGL2.312	12	2.3	2.14	1.96	1.38	177	6.97	35	1.38	61	2.40	67	2.64	0.92	2.03	F1	1100
HGL2.612	12	2.6	2.42	2.21	1.56	178	7.01	35	1.38	60	2.36	66	2.60	1.02	2.25	F1	990
HGL2.912	12	2.9	2.70	2.47	1.74	80	3.15	55.5	2.19	98	3.86	104	4.09	1.20	2.65	F1	900
HGL3.312	12	3.3	2.98	2.72	1.92	134	5.28	67	2.64	61	2.40	67	2.64	1.15	2.54	F1	720
HGL4.12	12	4	3.72	3.40	2.40	90	3.54	70	2.76	101	3.98	107	4.21	1.39	3.06	F1	600
HGL5.12	12	5	4.65	4.25	3.00	90	3.54	70	2.76	101	3.98	107	4.21	1.48	3.26	F1	600
HGL7.212	12	7.2	6.8	6.12	4.32	151	5.94	65	2.56	95	3.74	101	3.98	2.30	5.07	F1	480
HGL8.512	12	8.5	7.9	6.95	4.95	151	5.94	65	2.56	95	3.74	101	3.98	2.60	5.73	F1	450
HGL10.12	12	10	9.3	8.5	6	151	5.94	65	2.56	111	4.37	117	4.61	3.30	7.28	F1	336
HGL12.12	12	12	11.2	10.2	7.2	151	5.94	99	3.90	95	3.74	101	3.98	3.75	8.27	F1	264

# HGL Series General Specifications

Fullriver Type	Volt	Nominal Capacity	Nominal Capacity	Nominal Capacity	Nominal Capacity	Length		Width		Height		Total Height		Weight (Approx.)		Terminal Type	Pallet QTY
		C20	C10	C5	C1	mm	in	mm	in	mm	in	mm	in	kg	pound		
		1.75 V/C	1.75 V/C	1.70V/C	1.60V/C												
HGL1812	12	18	16.7	15.3	10.8	181	7.13	77	3.03	167	6.57	167	6.57	5.50	12.13	M5	192
HGL2212	12	22	20.5	18.7	13.2	181	7.13	77	3.03	167	6.57	167	6.57	6.05	13.34	M5	192
HGL2412	12	24	22.3	20.4	14.4	165	6.50	176	6.93	125	4.92	125	4.92	7.70	16.98	M5	120
HGL2612	12	26	24.2	22.1	15.6	165	6.50	176	6.93	125	4.92	125	4.92	7.80	17.20	M6	120
HGL2812	12	28	26.0	23.8	16.8	166	6.54	126	4.96	174	6.85	174	6.85	8.60	18.96	M5	114
HGL3312	12	33	30.7	28.1	19.8	196	7.72	131	5.16	155	6.10	167	6.57	10.20	22.49	M6	100
HGL3512	12	35	32.6	29.8	21.0	196	7.72	131	5.16	155	6.10	167	6.57	10.30	22.71	M6	100
HGL3812	12	38	35.3	32.3	22.8	198	7.80	166	6.54	170	6.69	170	6.69	13.30	29.32	M6	72
HGL4012	12	40	37.2	34.0	24.0	198	7.80	166	6.54	174	6.85	174	6.85	13.40	29.54	M6	72
HGL4512	12	45	41.9	38.3	27.0	198	7.80	166	6.54	174	6.85	174	6.85	13.50	29.76	M6	72
HGL5012	12	50	47.5	43.0	31.2	229	9.02	138	5.43	208	8.19	212	8.35	17.10	37.70	M6	63
HGL5512	12	55	51.2	47.3	34.5	229	9.02	138	5.43	208	8.19	212	8.35	17.20	37.92	M6	63
HGL6012	12	60	55.8	51.0	36.0	229	9.02	138	5.43	208	8.19	212	8.35	17.30	38.14	M6	63
HGL6512	12	65	61.0	57.0	40.3	351	13.82	167	6.57	176	6.93	176	6.93	21.20	46.74	M6	48
HGL7012	12	70	66.3	61.0	43.0	260	10.24	169	6.65	211	8.31	215	8.46	21.90	48.28	M6	48
HGL7512	12	75	70	63.8	45.0	260	10.24	169	6.65	211	8.31	215	8.46	23.10	50.93	M6	48
HGL8012	12	80	74	68	48	351	13.82	167	6.57	179	7.05	183	7.20	26.00	57.32	M6	36
HGL9012	12	90	84	76.5	54	307	12.09	169	6.65	211	8.31	215	8.46	28.20	62.17	M6	36
HGL10012A	12	100	93	85	60	328	12.91	172	6.77	214	8.43	220	8.66	30.40	67.02	M8	36
HGL10012B	12	100	93	85	60	331	13.03	175	6.89	214	8.43	218	8.58	30.50	67.24	M8	36
HGL10012C	12	100	93	85	60	307	12.09	169	6.65	211	8.31	215	8.46	30.60	67.46	M6	36
HGL12012A	12	120	112	102	72	407	16.02	174	6.85	210	8.27	240	9.45	37.60	82.89	M8	27
HGL12012B	12	120	110	98	68	331	13.03	175	6.89	214	8.43	218	8.58	32.00	70.55	M8	36
HGL14012	12	140	130	119	84	341	13.43	173	6.81	281	11.06	287	11.30	42.50	93.70	M8	24
HGL16012	12	160	149	136	96	484	19.06	171	6.73	241	9.49	241	9.49	45.70	100.75	M8	24
HGL18012	12	180	167	153	108	530	20.87	209	8.23	214	8.43	218	8.58	55.30	121.92	M8	21
HGL20012	12	200	186	170	120	530	20.87	209	8.23	214	8.43	218	8.58	57.60	126.99	M8	21
HGL21012	12	210	195	178.5	126	522	20.55	242	9.53	218	8.58	222	8.74	61.00	134.48	M8	18
HGL23012	12	230	214	195.5	138	522	20.55	242	9.53	218	8.58	222	8.74	64.50	142.20	M8	18
HGL24012	12	240	223	204	144	520	20.47	269	10.59	204	8.03	208	8.19	70.20	154.76	M8	18
HGL26012	12	260	242	221	156	521	20.51	269	10.59	220	8.66	224	8.82	75.50	166.45	M8	12



# FAT Series Battery

**FAT Series batteries use the latest Valve Regulated Lead-Acid (VRLA) technology, yielding an expected life of 12 years under normal float charge. Front Access Terminal gives the battery more flexible installation and maintenance in 19" & 23" relay rack and cabinet enclosures.**



## Key Features

- Special lead calcium alloy, good corrosion resistance and high recovery capacity.
- Front terminal connections for fast and easy installation and maintenance.
- Carry handles for ease of installation.
- Suitable for 19", 23" and ETSI racking.
- One way self resealing safety vent for long life guarantee.
- Compliant with BS 6290 part 4.
- Designed to be compliant with Telcordia SR-4228.

## Specifications

- **Nominal Voltage:** 12 Volts
- **Design Life:** 12 Years @20 °C
- **Operating Temperature:** -15 °C To 50 °C
- **Plates:** Flat Pasted
- **Separator:** AGM (Absorbent Glass Mat)
- **Case and Material:** ABS (V0 On Request)
- **Electrolyte:** Sulphuric Acid (A/R)
- **Safety Vent:** Opening Pressure 10~35Kpa
- **Charge Voltage:** Float Use :13.5-13.8V@25°C  
Cycle Use:14.4-14.9V@25°C  
Max. Charge Current: 0.25C20

## Applications

- Telecom Applications
- UPS
- Broadband
- Electric Utility
- Railroad Signal
- Central Office
- Fire Alarms and Security Systems.
- Replacement of Open-Type Stationary Lead Acid Batteries



## FAT Series General Specifications

Type	Volt	W/cell to 1.67V/C		Nominal Capacity			Length mm (in)	Width mm (in)	Height mm (in)	Total Height mm (in)	Weight (Approx.) kg (pound)	Terminal Type	Pallet QTY
		10min	15min	C8 1.75 V/C 25°C Ah	C10 1.75 V/C 25°C Ah	C20 1.75 V/C 25°C Ah							
FAT55-12	12	150	118	51	53	55	278 (10.94)	106 (4.17)	223 (8.78)	223 (8.78)	174 (38.6)	M6	72
FAT80-12	12	203	158	74.5	77	80	562 (22.13)	114 (4.49)	188 (7.40)	188 (7.40)	27.2 (59.97)	M6	30
FAT95-12	12	232	180	86	90	95	395 (15.55)	105 (4.13)	255 (10.04)	266 (10.47)	29.2 (64.37)	M6	34
FAT100-12	12	243	189	90	95	100	508 (20)	111 (4.37)	227 (8.94)	227 (8.94)	329 (72.53)	M8	36
FAT110-12	12	257	199	99	104	110	394 (15.51)	110 (4.33)	286 (11.26)	286 (11.26)	33.6 (74.08)	M8	32
FAT125-12	12	292	226	113	120	125	550 (21.65)	110 (4.33)	240 (9.45)	240 (9.45)	38.7 (85.32)	M8	33
FAT160-12	12	325	263	146	154	160	550 (21.65)	110 (4.33)	287 (11.30)	287 (11.30)	480 (105.82)	M8	24
FAT175-12	12	355	288	163	168	175	560 (22.05)	125 (4.92)	317 (12.48)	317 (12.48)	56.9 (125.44)	M8	20

# HGXL Series battery

**HGXL series are valve-regulated, non-spillable types constructed with an absorbent glass mat (AGM) with pasted flat lead-calcium alloy plates. They are designed to provide long, reliable service life with minimal maintenance.**



## Applications

- Telecommunications Systems
- Electric Power Equipment Operations
- Fire Alarm security Systems
- Emergency Lighting
- UPS
- Solar Battery Systems
- Backup Power for Testing and Measuring Instruments
- Replacement for Open Type Stationary Lead Acid Batteries



## Features

- Special lead calcium alloy, better corrosion resistance, higher recovery capacity.
- Acid mist removing and anti-explosion facilities are installed, so it is safer and more reliable.
- Balanced charging is not needed.
- Special construction is adopted, no leakage will occur, allowed to be operated in any orientation.
- Maintenance-free operation, no need to add water.
- FAA and IATA approved as non-hazardous.

## Specifications

- **Nominal Voltage:** 2volts
- **Design Life:** 15years
- **Operating Temperature:** -20°C to 50°C
- **Plates:** Flat pasted
- **Separator:** AGM(Absorbent Glass Mat)
- **Active Material:** 99.99% purity lead
- **Case and Cover:** ABS (V0 on request)
- **Charge Voltage:** 2.23V/cell (25 °C)
- **Temperature Compensation Factor:** -3mV/cell/°C
- **Electrolyte:** Sulfuric-acid analytical grade purity
- **Cables:** Connectors supplied as standard (cables on request)

## HGXL Series General Specifications

Battery Model	Volt	Capacity( Ah) 25°C				Length mm (inch)	Width mm (inch)	Height mm (inch)	Total Height mm (inch)	Weight (Approx.) kg (pound)	Internal resistance mΩ	short circuit current A	Terminal Type	Pallet QTY
		C100 1.80V/C	C72 1.80V/C	C10 1.80V/C	C3 1.70V/C									
HGXL50-2	2	59	57.5	50	37.5	161 (6.34)	49 (1.93)	166 (6.54)	166 (6.54)	3.20 (7.05)	1.1	1035	M8	320
HGXL100-2	2	118	115	100	77	172 (6.77)	72 (2.83)	206 (8.11)	229 (9.02)	6.60 (14.55)	0.56	2014	F7	180
HGXL150-2	2	177	172	150	118	172 (6.77)	102 (4.02)	206 (8.11)	228 (8.98)	9.20 (20.28)	0.5	2185	M8	126
HGXL200-2	2	236	230	200	168	172 (6.77)	110 (4.33)	330 (12.99)	365 (14.37)	16.00 (35.27)	0.51	2235	M8	60
HGXL300-2	2	355	344	300	253.5	172 (6.77)	150 (5.91)	330 (12.99)	365 (14.37)	22.60 (49.82)	0.36	3414	M8	60
HGXL400-2	2	472	460	400	335.8	211 (8.31)	175 (6.89)	330 (12.99)	367 (14.45)	32.50 (71.65)	0.32	4020	M8	40
HGXL500-2	2	590	574	500	420	241 (9.49)	172 (6.77)	330 (12.99)	365 (14.37)	37.20 (82.01)	0.3	4180	M8	24
HGXL600-2	2	709	690	600	505	301 (11.85)	175 (6.89)	330 (12.99)	365 (14.37)	45.00 (99.21)	0.28	4743	M8	24
HGXL800-2	2	945	920	800	674.8	411 (16.18)	175 (6.89)	330 (12.99)	365 (14.37)	61.50 (135.58)	0.22	6818	M8	16
HGXL1000-2	2	1180	1144	1000	844	474 (18.66)	175 (6.89)	328 (12.91)	366 (14.41)	73.50 (162.04)	0.2	8200	M8	6
HGXL1600-2	2	1895	1830	1600	1352	401 (15.79)	347 (13.66)	342 (13.46)	378 (14.88)	110.00 (242.51)	0.16	11200	M8	4
HGXL2000-2	2	2375	2310	2000	1689	490 (19.29)	349 (13.74)	342 (13.46)	382 (15.04)	146.00 (321.87)	0.13	14000	M8	2
HGXL3000-2	2	3560	3438	3000	2535	711 (27.99)	353 (13.90)	342 (13.46)	382 (15.04)	220.00 (485.02)	0.11	21000	F10	2



# HGHL Series Battery

**HGHL Series is specially designed for high rate discharge and has a design life of 10 years in float service. It can also be used for more than 200 cycles at 100% discharge in cycle service. These batteries are mainly used where high wattage is required for a short duration. With 50% more wattage available and a 30% reduction in size over conventional batteries, Fullriver battery HGHL series offers a superior value, especially in UPS applications.**



## Features

- Sealed Construction (Non-Spillable Battery)
- Electrolyte Suspension System
- Gas Recombination
- Maintenance Free Operation
- Operation in Any Orientation(except for the inverted position)
- Low Pressure Venting System
- Heavy Duty Grids
- Long Service Life
- Low Self Discharge Long Shelf Life
- Wide Operating Temperature Range

## Applications

### FLOAT SERVICE

- UPS power supply
- Workstation UPS
- Emergency lighting equipment
- Fire alarm and security systems
- Communications and electrical equipment
- Office computers, microcomputers
- Robots, control equipment
- Emergency power supply in power plants and substations

### CYCLIC SERVICE

- Portable measuring equipment
- Cameras and photographic equipment
- Various toys and hobby equipment.

# HGHL Series General Specifications

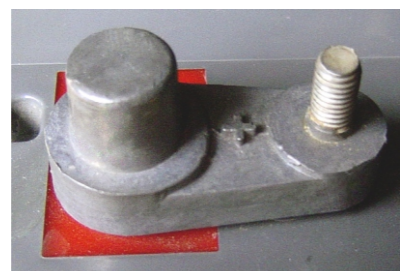
Fullriver Type	Volt	Nominal Capacity W/cell to 1.67V/C				Capacity C10 1.75 V/C 25°C Ah	Length mm (inch)	Width mm (inch)	Height mm (inch)	Total Height mm (inch)	Weight (Approx.) kg (pound)	Terminal Type	Pallet QTY
		30MIN	20MIN	15MIN	10MIN								
HGHL06720W	6	442	595	720	900	180	260 (10.24)	180 (7.09)	245 (9.65)	251 (9.88)	32.10 (70.77)	M8	42
HGHL1235W	12	21	28	35	45	8	151 (5.94)	65 (2.56)	95 (3.74)	101 (3.98)	2.63 (5.80)	F2	420
HGHL1255W	12	29	44	55	72	12	151 (5.94)	99 (3.90)	95 (3.74)	101 (3.98)	3.90 (8.60)	F2	264
HGHL1295W	12	54	72	95	117	20.5	181 (7.13)	77 (3.03)	167 (6.57)	167 (6.57)	6.95 (15.32)	M5	192
HGHL12106W	12	62	83	104	152	26	166 (6.54)	126 (4.96)	174 (6.85)	174 (6.85)	10.20 (22.49)	M5	114
HGHL12145W	12	83	111	144	185	32	196 (7.72)	131 (5.16)	155 (6.10)	167 (6.57)	11.50 (25.35)	M6	108
HGHL12170W	12	102	138	170	222	40	198 (7.80)	166 (6.54)	174 (6.85)	174 (6.85)	15.00 (33.07)	M6	72
HGHL12285W	12	172	232	285	375	70	260 (10.24)	169 (6.65)	211 (8.31)	215 (8.46)	28.20 (62.17)	M6	48
HGHL12330W	12	198	267	330	432	84	307 (12.09)	169 (6.65)	211 (8.31)	215 (8.46)	30.60 (67.46)	M6	36
HGHL12381W	12	229	308	381	497	93	328 (12.91)	172 (6.77)	214 (8.43)	220 (8.66)	34.20 (75.40)	M8	36
HGHL12430W	12	258	348	430	563	110	(331) (13.03)	175 (6.89)	214 (8.43)	218 (8.58)	35.00 (77.16)	M8	36
HGHL12520W	12	310	418	520	676	135	484 (19.06)	171 (6.73)	241 (9.49)	241 (9.49)	49.60 (109.35)	M8	24
HGHL12540W	12	318	428	540	692	140	341 (13.34)	173 (6.81)	281 (11.06)	287 (11.30)	47.50 (104.72)	M8	24
HGHL12615W	12	371	499	615	774	160	530 (20.87)	209 (8.23)	214 (8.43)	218 (8.58)	58.50 (128.97)	M8	21
HGHL12690W	12	420	566	690	849	175	530 (20.87)	209 (8.23)	214 (8.43)	218 (8.58)	65.50 (144.40)	M8	21
HGHL12710W	12	431	581	710	882	180	522 (20.55)	242 (9.53)	218 (8.58)	222 (8.74)	68.50 (151.02)	M8	18
HGHL12770W	12	474	639	770	957	200	522 (20.55)	242 (9.53)	218 (8.58)	222 (8.74)	76.50 (168.65)	M8	18
HGHL12800W	12	496	668	800	999	218	520 (20.47)	269 (10.59)	204 (8.03)	208 (8.19)	78.00 (171.96)	M8	12
HGHL12910W	12	564	759	910	1126	242	521 (20.51)	269 (10.59)	220 (8.66)	224 (8.82)	89.00 (196.21)	M8	12



## Terminal configurations



**M5, M6, M8 or M10**  
(Button Terminal)



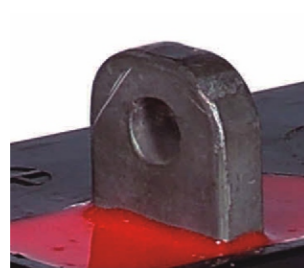
**APW**  
(Marine Dual Terminal)



**DT**  
(AP and Stud Terminal)



**M6M, M8M, M10M**  
(Male Stud Terminal)



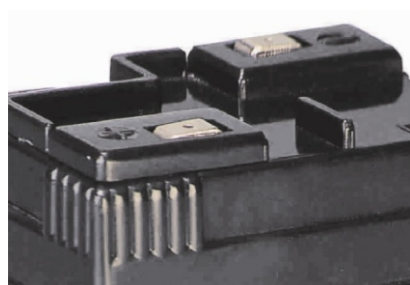
**L**  
("L" Terminal)



**AP**  
(Automotive Post)



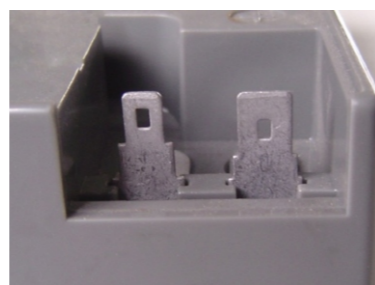
**F2 or F1**  
(Fasten Tab 250&187)



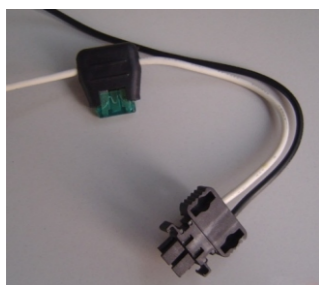
**RB**



**TS**



**PL**



**TH**



**CQ**



**C01**



**S01**

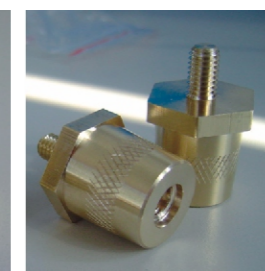
## Battery accessories



**TP01 (TP02)**  
M8(M6)-AP Terminal



**TP04 (TP05)**  
M8(M6)-A01 Terminal



**TP08 (TP07)**  
M8(M6)-A01 Terminal,  
With knurling



**TP26**  
M6-A01 Terminal



**TP28 (TP29)**  
M8 (M6) - A01 Terminal



**FR45 (FR46)**  
Side Receptacles for  
HC65 (HC75)



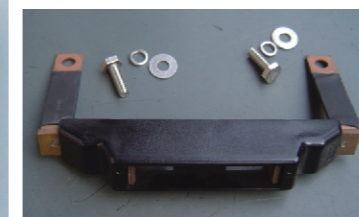
**AP400**  
Terminal Cover



**LP100**  
Terminal Cover



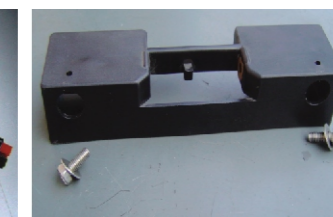
**VP100**  
Terminal Cover



**Adaptor**  
for DC26-12B



**JSTE Cables**  
for DC20-12&DC17-12



**Adaptor**  
for DC35-12B



**Adaptor**  
for DC24-12



**Metal Jacket**



**Battery Bag**  
for DC35, DC17,  
DC20, DC26



**Cross Belt**  
for DC35,  
DC17, DC20