



## Catalog & Selection Guide



### Standard Series



**mAh**  
High Capacity

All-round Performance

### High Drain Series



High Discharge Rate

### Long Cycle Life Series



1000 times

### Endurance and Longer Life Series



10 years



# GP • Battery Experts for over 50 years

We are a major global developer, manufacturer and distributor of primary and rechargeable batteries. Apart from retailing under the "GP" brand, we also supply electronic manufacturers and major battery companies with an extensive range of battery products. For now 14 consecutive years we have been #1 in the HK Market for our GP branded alkaline and rechargeable batteries, and battery chargers, selling more of these products than any other brand. GP Batteries International Limited is a wholly-owned subsidiary of Gold Peak Group in Hong Kong.



## R&D

Our world class R&D center features advanced testing equipment, professional trial-production workshops, chemical labs and material analysis rooms. All these support ongoing performance improvements and the development of new battery products.



## Automation

Our highly automated production lines deliver consistently high quality levels and productivity to meet capacity needs of demanding high volume customers.



## Quality

Our quality management system and manufacturing process is data-driven, following the Six Sigma philosophy for continuous improvement. Factors that affect product quality are automatically measured, analyzed and tightly controlled. Specialized state of the art inspection equipment such as Atomic Absorption Spectroscopy (AAS), UV-Visible Spectrometry (UV-VIS) and Energy Dispersive X-Ray Fluorescence (EDXRF) support us in our drive for quality.



# Battery Experts



## Product Compliance

GP Batteries meets and exceeds the highest international safety standards.

GP Batteries's IEC62133-certified **NiMH** and Lithium-ion batteries offer quick market penetration into **54** certification body scheme participating countries\*.

GP Batteries manufactures **4** out of **8** brands of certified primary 9V brands complying with UL217 specifically for Smoke Alarm applications.

GP Batteries is amongst the **first batch of Lithium-ion battery brands** to qualify for the voluntary CQC mark in China, as well as UR, BIS, and MC marks in the USA, India and Malaysia.

With **UN38.3** certification, all GP Lithium batteries are easily transported by air and sea to **5** continents\*.



\* Subject to national deviation, additional tests may be needed.



# Battery Experts

## Laboratory Services

### China and Singapore

GP Batteries' quality assurance centers, located strategically in China, Singapore and Hong Kong, provide full range R&D facilities for quality and safety assurance.

Our laboratories in China and Singapore are well-recognized by more than 90 international regions under the International Laboratory Accreditation Cooperation-Mutual Recognition Agreement (ILAC-MRA).

#### China (Dongguan) - Chemical & Calibration Laboratory

- CNAS (China National Accreditation Service for Conformity Assessment) Accreditation



- Testing scope
  - 2011/65/EU (RoHS Directive)
  - 2006/66/EC (Battery & Accumulator Directive)

#### Battery Performance Test in Singapore

- SAC-SINGLAS (Singapore Laboratory Accreditation Scheme) Accreditation

- Testing scope
  - IEC 60086-1
  - IEC 60086-2
  - IEC 60086-5



### Hong Kong Science Park

Our GP Hong Kong laboratory is the first in HK to be certified under UL WTDP (Witnessed Test Data Program) and one out of only five UL CTF (Customers Testing Facilities - Stage 2) certified laboratories in China and Hong Kong.

#### UL Data Acceptance Program

- WTDP (Witnessed Testing Data Program)
  - UL1642
  - UL2054
  - UL62133
  - UN38.3

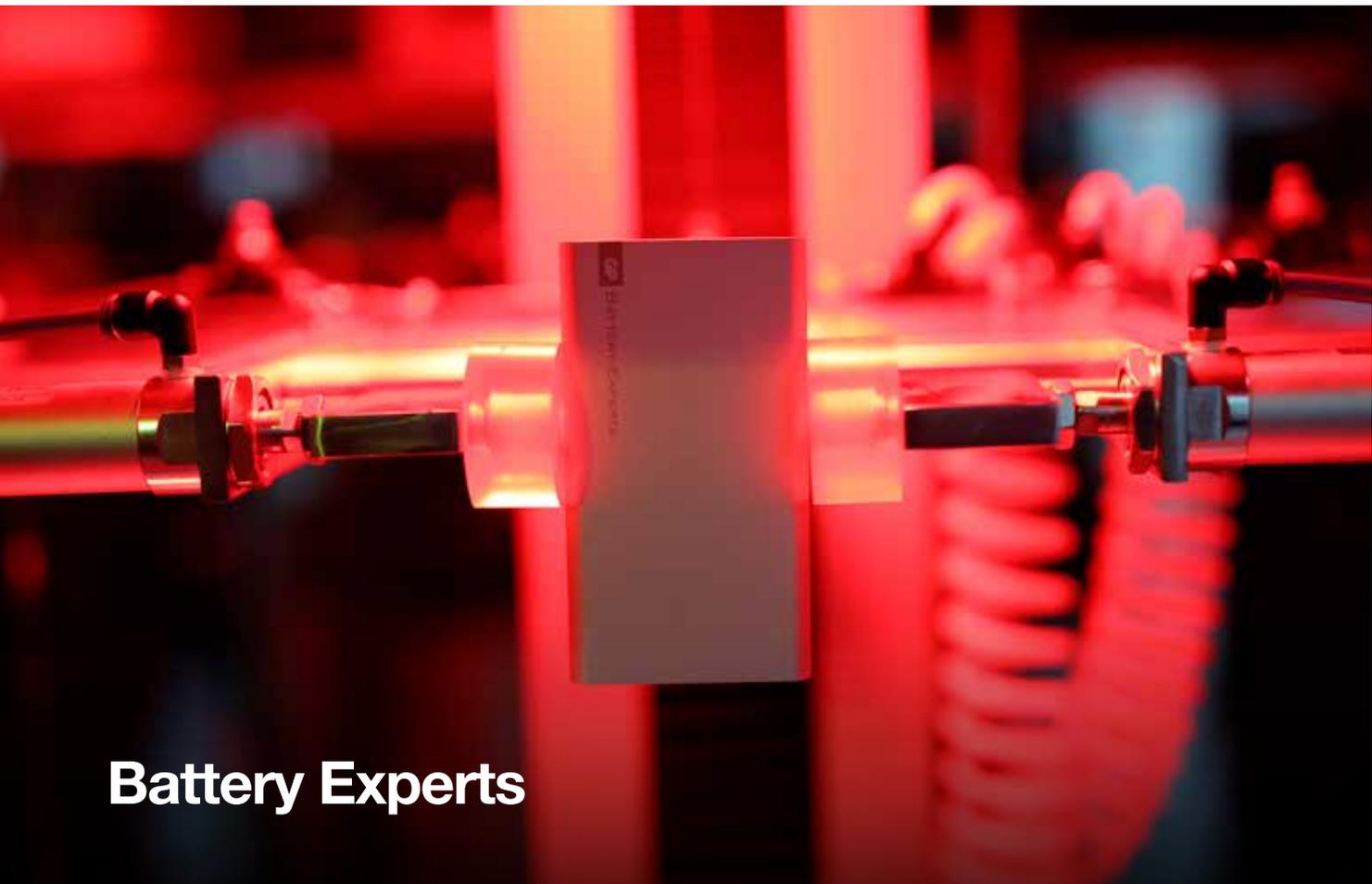


#### IEC Manufacturer's Testing Laboratory

- CTF (Customer's Testing Facilities (CTF) - Stage 2)
  - IEC62133

#### Reliability Test for Benchmarking

- Test conditions to be agreed with clients



# Battery Experts

## System Certification

GP has a strong Quality Management System in place and is ISO9001, ISO14001, OHSAS18001 certified. We have also been successfully audited for compliance to the Code of Conduct by the Responsible Business Alliance (RBA).

We also feature the following certifications:

### Global Security Verification (GSV)

Safety matters. Our GSV certified supply chain security excellence ensures shipments to clients are secured, protected against terrorist acts and against illegal trafficking.

### ISO26000 Social Responsibility

We value the relationship with society and our environment. Our social responsibility performance is ISO 26000 certified.

### ISO17025

Our China and Singapore laboratories are ISO17025 certified – a standard ensuring most reliable testing and calibration services.



## Awards

GP Batteries' continuous commitment to high standards is recognized by customers and the industry.

### Most Valuable Supplier and Green Partner:

This award was presented by Panasonic Corporation to recognize GP Batteries' contributions as a most valuable supplier, and we are also authorized by Sony as Green Partner.

### Asia Quality Best Practice Award:

Handed out by the International Six Sigma Council, the gold award celebrates GP Batteries being top in quality improvement.

### MAKE (Most Admired Knowledge Enterprise) Award:

The award recognizes organisations which out-perform their peers in creating shareholder's value by transforming tacit and explicit enterprise knowledge and intellectual capital into superior products/services/solutions.

### UL Environmental Claim Validation:

GP is the first battery manufacturer in Greater China to get the ECV (Environmental Claim Validation) Certificate from UL (Underwriters Laboratories).



# NiMH Batteries



Our rechargeable NiMH batteries excel in safety, portability and performance.



## Home safe - Non-flammable



Our thoroughly tested NiMH batteries are made from non-flammable materials and cells with a proven safety track record to ensure that they are non-flammable and home-safe.



## Full range of cylindrical batteries for easy adaption into electronic devices

The handy NiMH comes in a full range standard cylindrical battery sizes for a wide range of applications. They facilitate easy adaptation to different electronic devices.

# NiMH Series



GP's four NiMH series are precisely engineered to meet specific application requirements.

### Standard Series

This series has high capacity and balanced performance.

High Capacity

All-round Performance

### Long Cycle Life Series

This series can be recharged and discharged for up to 1,000 times.

1000 times

### High Drain Series

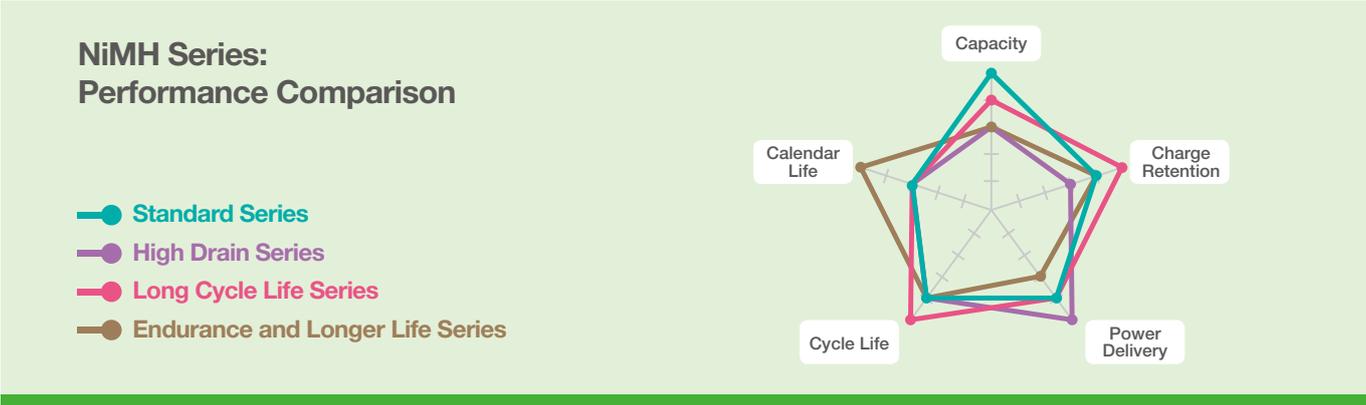
This series offers high discharge rate.

High Discharge Rate

### Endurance and Longer Life Series

The expected cycle life of this series is up to 10 years with superb performance under high temperature.

10 years



# Batteries Selection Guide



Application		NiMH Series			
		Standard	High Drain	Long Cycle Life	Endurance and Longer Life
					
Communication	Cordless Phone	★★			
	Walkie Talkie	★★			
Energy Storage System	Solar		★★		★★
	Standby		★★		★★
Lighting Device	Emergency Light				★★
	LED Light	★★		★	
	Flashlight / Lanterns	★★		★★	
Motor Driven Devices	Motor Toys	★★			
	Lawnmower	★	★★		
	E-Shutter				★★
	Electric Bottle Opener	★★			
Personal Care	Shaver	★★			
	Toothbrush	★★			
	Trimmer	★★			
	Facial Cleansing Device	★★			
	Dental Water Jet	★★			
Rideable	eBike		★★		
	Electric Wheelchair		★★		
	eScooter		★★		
	Golf Cart		★★		
Smart Home	Door Cam	★★			
	Baby Monitor	★★			
Telematics	eCall				★★
	Tracking	★★			★★
	Alarm	★★			
Toys	Electronic Gaming Device	★★		★	
	Game Controller	★★		★	
	Toys	★★			
Vacuum Cleaner	Stick Type Vacuum Cleaner		★★		
	Robotic Vacuum Cleaner	★★			
Misc	Nail Gun	★★			
	Home Entertainment Remote Controls	★★			
	Portable Radios / Speaker	★★		★	
	Portable Tape Recorders and Players	★★		★	
	Portable TVs	★★		★	
	Solar Application	★		★	★★
	Test Equipment	★★			
	Medical Equipment	★★			
	Digital Camera	★★			

Best Suitable ★★ Suitable ★



# Cordless Phone

Cell Size		Model	Dimension ( mm )		Nominal Voltage ( V )	Rated Capacity ( mAh )	Typical Capacity ( mAh )	Approx. Weight ( g )	LSD Type
			Diameter	Height					
AAAA	5/4AAAA	GP50AAAAALH **#	8.6	52.6	1.2	500	520	9.5	L80-1
AAA	AAA	GP50AAA AH **#	10.5	43.7	1.2	500	520	10.5	L80-1
	AAA	GP50AAAHC **#	10.5	44.5	1.2	500	520	12.0	L80-1
	AAA	GP60AAA H **	10.5	43.7	1.2	600	630	13.0	L80-1
	AAA	GP75AAA H **#	10.5	43.7	1.2	750	780	13.0	L80-1
	AAA	GP85AAAHC **#	10.5	44.5	1.2	850	860	14.5	L80-1
	AAA	GP95AAA H **#	10.5	43.7	1.2	900	930	15.2	L50-1
AA	AA	GP130AAHC **#	14.5	50.5	1.2	1300	1350	25.0	L80-1
	AA	GP150AAM **#	14.4	48.2	1.2	1500	1550	26.0	L80-1
	AA	GP180AAHC **#	14.5	50.5	1.2	1800	1850	28.0	L80-1

# With IEC62133

\*\* With UL2054 approval.

## GP Advantages

1. Low self discharge – excellent charge retention
2. Fully automated production line for excellent cell consistency that offers the best pack level performance
3. Safe – NiMH is an intrinsically safe chemistry and free from UN38.3 testing, not restricted in air transport
4. Value for money
5. Recyclable and environmental friendly





# Personal Care Ocean Series

Cell Size	Model	Dimension ( mm )		Nominal Voltage ( V )	Rated Capacity ( mAh )	Typical Capacity ( mAh )	Approx. Weight ( g )	LSD Type
		Diameter	Height					
AAA	GP42AAAHs ** 	10.5	44.2	1.2	440	460	10.5	L80-1
	GP60AAAH **	10.5	43.7	1.2	600	630	13.0	L80-1
	GP80AAAH ** 	10.5	43.7	1.2	800	830	13.0	L80-1
AA	GP60AAM ** 	14.4	48.2	1.2	600	820	15.5	L80-1
	GP130AAM **	14.4	48.2	1.2	1300	1350	25.0	L80-1

# With IEC62133

\*\* With UL2054 approval.

Models in **BLUE** are NiMH Ocean Series.

## GP Advantages

1. NiMH Ocean Series is perfect for sustained overcharge required by water-proof devices.
2. Safe – NiMH is an intrinsically safe chemistry and free from UN38.3 testing, not restricted in air transport
3. Value for money
4. Recyclable and environmental friendly





Rideable

Cell Size	Model	Dimension ( mm )		Nominal Voltage ( V )	Rated Capacity ( mAh )	Typical Capacity ( mAh )	Approx. Weight ( g )	LSD Type	Max. Discharge Current ( A )
		Diameter	Height						
D	D GP700DH **#	33.0	60.0	1.2	7000	7000	155.0	L50-1	35
	D GP900DH **	33.0	60.0	1.2	9000	9225	170.0	L50-1	45
	D GP1100DH	33.0	60.0	1.2	11000	11550	179.0	L50-1	55

# With IEC62133

\*\* With UL2054 approval.

## GP Advantages

1. Fast charge, deep discharge, long cycle life and maintenance-free
2. Higher volumetric and gravimetric energy density compared with Lead Acid – NiMH is light in weight and small in size
3. Safe – NiMH is an intrinsically safe chemistry and free from UN38.3 testing, not restricted in air transport
4. Recyclable and environmental friendly





# Vacuum Cleaner

Cell Size		Model	Dimension ( mm )		Nominal Voltage ( V )	Rated Capacity ( mAh )	Typical Capacity ( mAh )	Approx. Weight ( g )	LSD Type	Max. Discharge Current ( A )
			Diameter	Height						
AA	AA	GP130AAHV #	14.5	49.2	1.2	1300	1350	26.0	L50-1	13
SC	SC	GP130SCHSV **#	23.0	43.0	1.2	1300	1350	31.0	L50-1	13
	SC	GP150SCHSV #	23.0	43.0	1.2	1500	1580	36.5	L50-1	15
	SC	GP180SCHSV **#	23.0	43.0	1.2	1800	1850	43.0	L50-1	18
	SC	GP220SCHSV **#	23.0	43.0	1.2	2200	2300	48.0	L50-1	22
	SC	GP260SCHV	23.0	43.0	1.2	2600	2650	52.0	L50-1	26
	SC	GP300SCHSV **#	23.0	43.0	1.2	3000	3100	56.0	L50-1	30

# With IEC62133

\*\* With UL2054 approval.

## GP Advantages

1. Fully automated production line for excellent cell consistency that offers the best pack level performance
2. Safe – NiMH is an intrinsically safe chemistry and free from UN38.3 testing, not restricted in air transport
3. Value for money
4. Recyclable and environmental friendly





# E-Shutter

Cell Size		Model	Dimension ( mm )		Nominal Voltage ( V )	Rated Capacity ( mAh )	Typical Capacity ( mAh )	Approx. Weight ( g )	LSD Type	IEC Designation
			Diameter	Height						
AF	AF	GP210AFHT #	17.0	50.0	1.2	2100	2200	38.0	L80-1	T
SC	SC	GP220SCHT **#	23.0	43.0	1.2	2200	2310	53.0	L80-1	U
	SC	GP220SCHTD #	23.0	43.0	1.2	2200	2310	53.5	L80-1	U
18900	18900	GP400LALHT #	18.3	90.0	1.2	4000	4120	76.0	L80-1	U

# With IEC62133

\*\* With UL2054 approval.

## GP Advantages

1. Excellent performance at extreme temperatures
2. Caters for extended service life requirements (5-8 years)
3. Safe – NiMH is an intrinsically safe chemistry and free from UN38.3 testing, not restricted in air transport
4. Value for money
5. Recyclable and environmental friendly
6. Fully automated production line for excellent cell consistency that offers the best pack level performance





# Telematics

Cell Size	Model	Dimension ( mm )		Nominal Voltage ( V )	Rated Capacity ( mAh )	Typical Capacity ( mAh )	Approx. Weight ( g )	LSD Type	
		Diameter	Height						
AAA	2/3AAA	GP40AAAM **#	10.4	29.3	1.2	400	420	8.0	L50-1
	AAA	GP55AAAH **#	10.5	43.7	1.2	550	580	13.0	L50-1

Cell Size	Model	Dimension ( mm )		Nominal Voltage ( V )	Rated Capacity ( mAh )	Typical Capacity ( mAh )	Approx. Weight ( g )	LSD Type	
		Diameter	Height						
AAA	AAA	GP60AAAHT3**#	10.5	43.7	1.2	600	630	14.0	L70-1
	AAA	GP60AAAHT4	10.5	43.7	1.2	600	630	14.0	L70-1

# With IEC62133

\*\* With UL2054 approval.

## GP Advantages

1. Caters for extended service life requirements (5-8 years)
2. Excellent performance at extreme temperature including low temperature
3. Safe – NiMH is an intrinsically safe chemistry and free from UN38.3 testing, not restricted in air transport
4. Value for money
5. Recyclable and environmental friendly
6. Fully automated production line for excellent cell consistency that offers the best pack level performance





# Emergency Light

Cell Size	Model	Dimension ( mm )		Nominal Voltage ( V )	Rated Capacity ( mAh )	Typical Capacity ( mAh )	Approx. Weight ( g )	LSD Type	IEC Designation	
		Diameter	Height							
AAA	AAA	GP60AAAHT #	10.5	43.7	1.2	600	630	14.0	L80-1	T
AA	AA	GP110AALHT #	14.5	50.5	1.2	1100	1155	23.5	L80-1	U
	AA	GP125AAMT **#	14.4	48.2	1.2	1250	1280	24.0	L80-1	T
AF	4/5AF	GP160AFHT #	17.0	43.0	1.2	1600	1680	33.0	L80-1	T
	AF	GP210AFHT #	17.0	50.0	1.2	2100	2200	38.0	L80-1	T
18700	18700	GP400LAHT #	18.3	70.0	1.2	4000	4120	67.0	L80-1	T
18900	18900	GP400LALHT **#	18.3	90.0	1.2	4000	4120	76.0	L80-1	U
SC	SC	GP220SCHT **#	23.0	43.0	1.2	2200	2310	53.0	L80-1	U
	SC	GP220SCHTD #	23.0	43.0	1.2	2200	2310	53.5	L80-1	U
C	C	GP300CHT	25.0	50.0	1.2	3000	3100	75.0	L80-1	T
D	D	GP700DHT**	33.0	60.5	1.2	7000	7350	146.0	L80-1	U

# With IEC62133

\*\* With UL2054 approval.

## GP Advantages

1. Complies with IEC6xxx and ICEL1010
2. Specific models enjoy up to 10 years' service life
3. Safe – NiMH is an intrinsically safe chemistry and free from UN38.3 testing, not restricted in air transport
4. Value for money
5. Recyclable and environmental friendly
6. Higher volumetric and gravimetric energy density compared with NiCd – NiMH is light in weight and small in size





# Energy Storage System

Cell Size	Model	Dimension ( mm )		Nominal Voltage ( V )	Rated Capacity ( mAh )	Typical Capacity ( mAh )	Approx. Weight ( g )	LSD Type	Max. Discharge Current ( A )	
		Diameter	Height							
D	D	GP700DH **#	33.0	60.0	1.2	7000	7000	155.0	L50-1	35
	D	GP900DH **	33.0	60.0	1.2	9000	9225	170.0	L50-1	45
	D	GP1100DH	33.0	60.0	1.2	11000	11550	179.0	L50-1	55

Cell Size	Model	Dimension ( mm )		Nominal Voltage ( V )	Rated Capacity ( mAh )	Typical Capacity ( mAh )	Approx. Weight ( g )	LSD Type	IEC Designation	
		Diameter	Height							
D	D	GP700DHT**	33.0	60.5	1.2	7000	7350	146.0	L80-1	U

# With IEC62133

\*\* With UL2054 approval.

## GP Advantages

1. Higher volumetric and gravimetric energy density compared with NiCd and Lead Acid – NiMH is light in weight and small in size
2. Long calendar life, maintenance-free and low cost of ownership
3. Safe – NiMH is an intrinsically safe chemistry and free from UN38.3 testing, not restricted in air transport
4. Recyclable and environmental friendly



# Specifications

## Industrial Series - Cylindrical Type



Models in **BLUE** are NiMH Ocean Series.

### Standard Series

Cell Size	Model	Dimension ( mm )		Nominal Voltage ( V )	Rated Capacity ( mAh )	Typical Capacity ( mAh )	Approx. Weight ( g )	LSD Type	
		Diameter	Height						
AAAA	5/4AAAA	GP50AAAAALH **	8.6	52.6	1.2	500	520	9.5	L80-1
AAA	1/3AAA	GP17AAAH #	10.4	14.1	1.2	170	180	4.2	L80-1
	2/3AAA	GP30AAAM #	10.4	29.3	1.2	300	300	7.5	L80-1
	2/3AAA	GP40AAAM **	10.4	29.3	1.2	400	420	8.0	L80-1
	AAA	<b>GP42AAAHs</b> **	10.5	44.2	1.2	440	460	10.5	L80-1
	AAA	GP50AAAH **	10.5	43.7	1.2	500	520	10.5	L80-1
	AAA	GP50AAAHc **	10.5	44.5	1.2	500	520	12.0	L80-1
	AAA	GP55AAAH **	10.5	43.7	1.2	550	580	13.0	L50-1
	AAA	GP60AAAH **	10.5	43.7	1.2	600	630	13.0	L80-1
	AAA	GP65AAAH **	10.5	43.7	1.2	650	680	13.0	L80-1
	AAA	GP65AAAHc **	10.5	44.5	1.2	650	680	13.0	L80-1
	AAA	GP70AAAH **	10.5	43.7	1.2	700	730	13.0	L80-1
	AAA	GP75AAAH **	10.5	43.7	1.2	750	780	13.0	L80-1
	AAA	<b>GP80AAAH</b> **	10.5	43.7	1.2	800	830	13.0	L80-1
	AAA	GP85AAAHc **	10.5	44.5	1.2	850	860	14.5	L80-1
	AAA	GP95AAAH **	10.5	43.7	1.2	900	930	15.2	L50-1
AAA	GP91AAALH **	10.5	50.0	1.2	910	930	15.1	L50-1	
AA	2/3AA	GP60AAH #	14.5	28.7	1.2	600	620	14.0	L80-1
	2/3AA	GP75AAH	14.5	28.7	1.2	750	770	15.0	L80-1
	AA	<b>GP60AAM</b> **	14.4	48.2	1.2	600	820	15.5	L80-1
	AA	GP70AAMD	14.4	48.2	1.2	700	730	17.0	L80-1
	AA	GP90AAMD #	14.4	48.2	1.2	900	930	20.0	L80-1
	AA	GP130AAM **	14.4	48.2	1.2	1300	1350	25.0	L80-1
	AA	GP130AAHc **	14.5	50.5	1.2	1300	1350	25.0	L80-1
	AA	GP150AAM **	14.4	48.2	1.2	1500	1550	26.0	L80-1
	AA	GP160AAH **	14.5	49.2	1.2	1600	1650	26.0	L80-1
	AA	GP160AAHc #	14.5	50.5	1.2	1600	1650	26.0	L80-1
	AA	GP180AAH **	14.5	49.2	1.2	1800	1850	28.0	L80-1
	AA	GP180AAHc **	14.5	50.5	1.2	1800	1850	28.0	L80-1
	AA	GP200AAH **	14.5	49.2	1.2	2000	2050	29.5	L80-1
	AA	GP210AAHc **	14.5	50.2	1.2	2000	2050	28.0	L80-1
	AA	GP220AAH **	14.5	49.2	1.2	2200	2250	29.5	L80-1
AA	GP230AAHc #	14.5	50.5	1.2	2200	2250	29.5	L80-1	

Ambient temperature range: Standard charge: 0 to 45°C, Fast Charge: 10 to 45°C, Discharge: -20 to 50°C, Storage: -20 to 35°C.  
 # With IEC62133      \*\* With UL2054 approval.

#### Definition of LSD type:

L80-1: Fully charged, at least 80% capacity will be retained after storage for 1 year at 20°C  
 L50-1: Fully charged, at least 50% capacity will be retained after storage for 1 year at 20°C  
 L30-1: Fully charged, at least 30% capacity will be retained after storage for 1 year at 20°C

#### Major Applications

Cordless phones, Baby monitors, Transceivers, Portable facimile machines, Portable scanners, Portable printers, Portable video / audio devices, Photographic devices, Personal care devices, Torches, Remote controllers etc.

# Specifications

## Industrial Series - Cylindrical Type

### Standard Series

Cell Size	Model	Dimension ( mm )		Nominal Voltage ( V )	Rated Capacity ( mAh )	Typical Capacity ( mAh )	Approx. Weight ( g )	LSD Type	
		Diameter	Height						
AF	4/5AF	GP211AFH **	17	43.0	1.2	2100	2160	33.0	L50-1
	AF	GP270AFH **	17	50.0	1.2	2600	2700	39.5	L50-1
	7/5AF	GP380AFH **#	17	67.0	1.2	3800	3820	53.5	L50-1
LA	18670	GP380LAHV **	18.3	67.0	1.2	3800	3990	60.0	L50-1
	18670	GP450LAH **	18.3	67.0	1.2	4300	4500	63.0	L50-1
Button		GP40BVH **	11.7	5.5	1.2	40	40	1.8	L30-1
		GP80BVH **	15.5	6.4	1.2	80	80	4.0	L30-1
		GP250BVH	25.2	6.4	1.2	250	250	12.0	L30-1
		GP320BVH	25.2	8.7	1.2	320	320	14.1	L30-1
9V	9V	GP17R8H **	15.7(T) X 26.5(W) X 48.5(H)		8.4	170	175	32.0	L80-1
	9V	GP17R9H **	15.7(T) X 26.5(W) X 48.5(H)		9.6	170	175	36.0	L80-1
	9V	GP20R7H	15.7(T) X 26.5(W) X 48.5(H)		7.2	200	210	36.5	L80-1
	9V	GP20R8H	15.7(T) X 26.5(W) X 48.5(H)		8.4	200	210	42.5	L80-1

Ambient temperature range: Standard charge: 0 to 45°C, Fast Charge: 10 to 45°C, Discharge: -20 to 50°C, Storage: -20 to 35°C.  
 # With IEC62133 \*\* With UL2054 approval.

### Long Cycle Life Series

Cell Size	Model	Dimension ( mm )		Nominal Voltage ( V )	Rated Capacity ( mAh )	Typical Capacity ( mAh )	Approx. Weight ( g )	LSD Type	Cycle Life
		Diameter	Height						
AAA	GP85AAAHC B **#	10.5	44.5	1.2	800	820	14.0	L80-2	1000
AA	GP210AAHC B **#	14.5	50.5	1.2	2000	2050	30.0	L80-2	1000

Ambient temperature range: Standard charge: 0 to 45°C, Fast Charge: 10 to 45°C, Discharge: -20 to 50°C, Storage: -20 to 35°C.  
 # With IEC62133 \*\* With UL2054 approval.

#### Major Applications

Cordless phones, Baby monitors, Transceivers, Portable facimile machines, Portable scanners, Portable printers, Portable video / audio devices, Photographic devices, Personal care devices, Torches, Remote controllers etc.

### High Drain Series

Cell Size	Model	Dimension ( mm )		Nominal Voltage ( V )	Rated Capacity ( mAh )	Typical Capacity ( mAh )	Approx. Weight ( g )	LSD Type	Max. Discharge Current ( A )	
		Diameter	Height							
AA	AA	GP130AAHV #	14.5	49.2	1.2	1300	1350	26.0	L50-1	13
	AA	GP150AAHV #	14.5	49.2	1.2	1500	1550	27.0	L50-1	15

Ambient temperature range: Standard charge: 0 to 45°C, Fast Charge: 10 to 45°C, Discharge: -20 to 50°C, Storage: -20 to 35°C.  
 # With IEC62133 \*\* With UL2054 approval.

#### Major Applications

Vacuum cleaners, Home appliances, Gardening tools, eBikes etc.

#### Definition of LSD type:

L80-1: Fully charged, at least 80% capacity will be retained after storage for 1 year at 20°C  
 L50-1: Fully charged, at least 50% capacity will be retained after storage for 1 year at 20°C  
 L30-1: Fully charged, at least 30% capacity will be retained after storage for 1 year at 20°C

# Specifications

## Industrial Series - Cylindrical Type

### High Drain Series

Cell Size	Model	Dimension ( mm )		Nominal Voltage ( V )	Rated Capacity ( mAh )	Typical Capacity ( mAh )	Approx. Weight ( g )	LSD Type	Max. Discharge Current ( A )	
		Diameter	Height							
SC	SC	GP130SCHSV **#	23.0	43.0	1.2	1300	1350	31.0	L50-1	13
	SC	GP150SCHSV #	23.0	43.0	1.2	1500	1580	36.5	L50-1	15
	SC	GP180SCHSV **#	23.0	43.0	1.2	1800	1850	43.0	L50-1	18
	SC	GP220SCHSV **#	23.0	43.0	1.2	2200	2300	48.0	L50-1	22
	SC	GP220SCH **#	23.0	43.0	1.2	2200	2310	55.0	L50-1	22
	SC	GP260SCHV	23.0	43.0	1.2	2600	2650	52.0	L50-1	26
	SC	GP300SCHSV **#	23.0	43.0	1.2	3000	3100	56.0	L50-1	30
	SC	GP300SCH	23.0	43.0	1.2	3000	3100	56.0	L50-1	33
	SC	GP330SCH	23.0	43.0	1.2	3300	3430	62.0	L50-1	33
C	C	GP350CH	25.8	50.0	1.2	3500	3850	78.5	L50-1	16.5
	C	GP1000CH	25.8	86.0	1.2	10000	10250	169.0	L50-1	50
D	D	GP700DH **#	33.0	60.0	1.2	7000	7000	155.0	L50-1	35
	D	GP900DH **	33.0	60.0	1.2	9000	9225	170.0	L50-1	45
	D	GP1100DH	33.0	60.0	1.2	11000	11550	179.0	L50-1	55

Ambient temperature range: Standard charge: 0 to 45°C, Fast Charge: 10 to 45°C, Discharge: -20 to 50°C, Storage: -20 to 35°C.

# With IEC62133

\*\* With UL2054 approval.

### Major Applications

Vacuum cleaners, Home appliances, Gardening tools, eBikes etc.

### Endurance and Longer Life Series

Cell Size	Model	Dimension ( mm )		Nominal Voltage ( V )	Rated Capacity ( mAh )	Typical Capacity ( mAh )	Approx. Weight ( g )	LSD Type	IEC Designation	
		Diameter	Height							
AAA	AAA	GP60AAAHT #	10.5	43.7	1.2	600	630	14.0	L80-1	T
	AAA	GP60AAAHT3 **#	10.5	43.7	1.2	600	630	14.0	L70-1	NA
	AAA	GP60AAAHT4	10.5	43.7	1.2	600	630	14.0	L70-1	NA
AA	AA	GP110AALHT #	14.5	50.5	1.2	1100	1155	23.5	L80-1	U
	AA	GP125AAMT **#	14.4	48.2	1.2	1250	1280	24.0	L80-1	T
AF	4/5AF	GP160AFHT #	17.0	43.0	1.2	1600	1680	33.0	L80-1	T
	AF	GP210AFHT #	17.0	50.0	1.2	2100	2200	38.0	L80-1	T
18700	18700	GP400LAHT **#	18.3	70.0	1.2	4000	4120	67.0	L80-1	T
18900	18900	GP400LALHT **#	18.3	90.0	1.2	4000	4120	76.0	L80-1	U
SC	SC	GP220SCHT **#	23.0	43.0	1.2	2200	2310	53.0	L80-1	U
	SC	GP220SCHTD #	23.0	43.0	1.2	2200	2310	53.5	L80-1	U
D	D	GP700DHT**	33.0	60.5	1.2	7000	7350	146.0	L80-1	U

Ambient temperature range: Standard charge: 0 to 70°C, Discharge: -20 to 70°C, Storage: -20 to 35°C.

# With IEC62133

\*\* With UL2054 approval.

### Major Applications

Telematics, Emergency lightings, Energy storage devices/ UPS, Solar curtains, Solar device storages etc.

#### Definition of LSD type:

L80-1: Fully charged, at least 80% capacity will be retained after storage for 1 year at 20°C

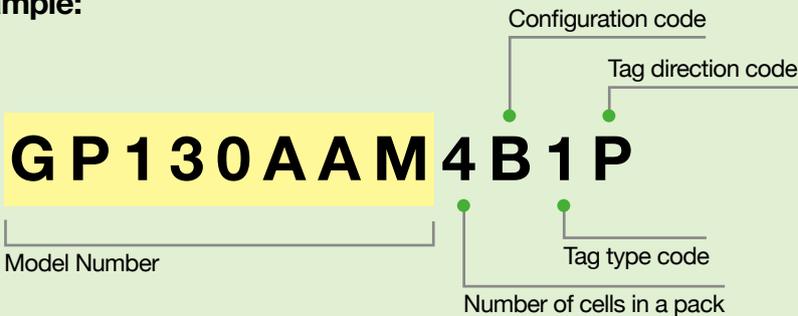
L50-1: Fully charged, at least 50% capacity will be retained after storage for 1 year at 20°C

L30-1: Fully charged, at least 30% capacity will be retained after storage for 1 year at 20°C

# Pack Configuration and Code

## Designation System for Battery Packs

Example:



For battery packs with connectors, the last two digits will be used to specify connector type.  
eg: GP130AAM4BMU



**CODE: A**

Cells stacked in a vertical column



**CODE: B**

Cells arranged in a row



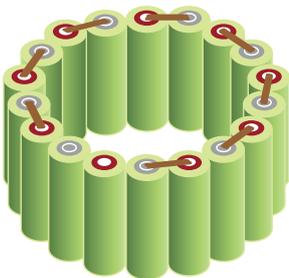
**CODE: F**

Cells arranged in a horizontal rectangle with cells above arranged in a row



**CODE: G**

Cells stacked in 2 vertical columns of unequal number of cells



**CODE: O**

Cells stacked in a circle



**CODE: S**

Cells stacked in multiple columns and layers



**CODE: T**

Cells arranged in a horizontal triangle



**CODE: U**

Cells arranged in horizontal zig-zag rows



**CODE: V**

Cells are arranged in a horizontal irregular triangle



**CODE: W**

Cells arranged in horizontal zig-zag rows (in one or more layers)



**CODE: Y**

Cells arranged in a horizontal rectangle

# Pack Configuration and Code

## Standard Configurations for Battery Packs

### Tag Type Specifications



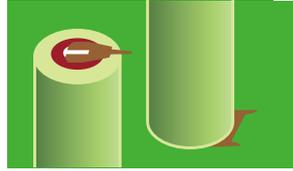
**CODE: 1**

Strip solder tag



**CODE: 2**

PCB solder tag



**CODE: 3**

Double PCB pin at positive terminal and single PCB pin at negative terminal



**CODE: 4**

Solder wire tag



**CODE: 5**

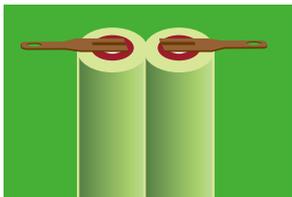
Short strip tag



**CODE: 6**

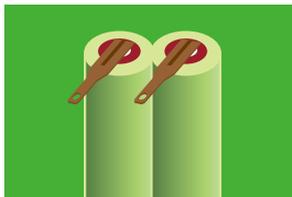
Lead wire

### Tag Direction Code



**CODE: P**

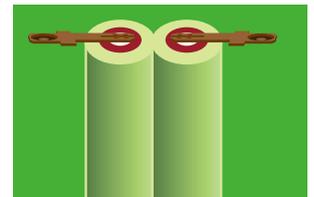
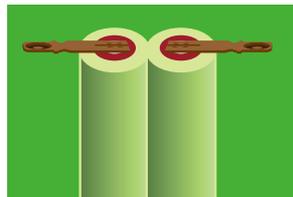
Pointing at 180°



**CODE: H**

Pointing at the same direction

### Tailor Tag



# Pack Configuration and Code

What Do We Provide?

## One Stop Solution

**Testing Service**

UN / UL / IEC



**Charger**

Total Solution



**Battery Pack**

Hard Pack Level



**Battery Pack**

Soft Pack Level



**Cell**

Bare Cells

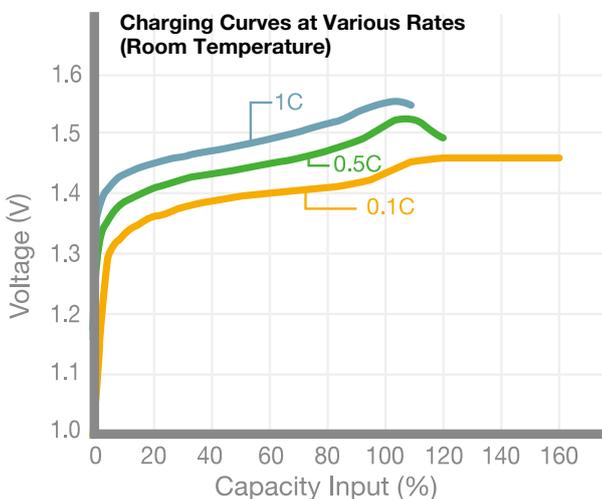


# Performance Characteristics



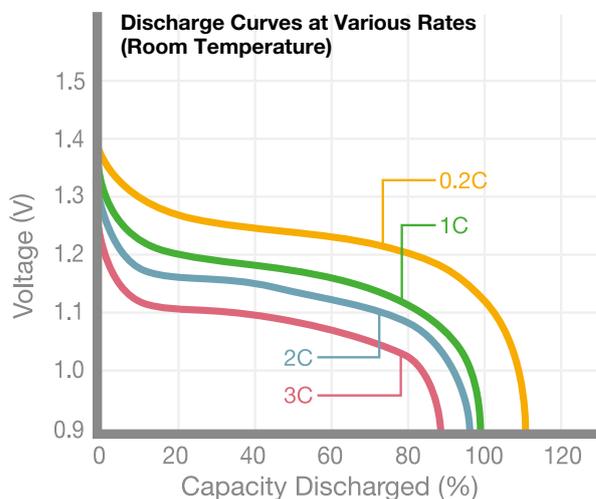
## Charge Characteristics:

Battery is restored for use through external recharging process. The charge voltage varies due to current, ambient temperature and time.



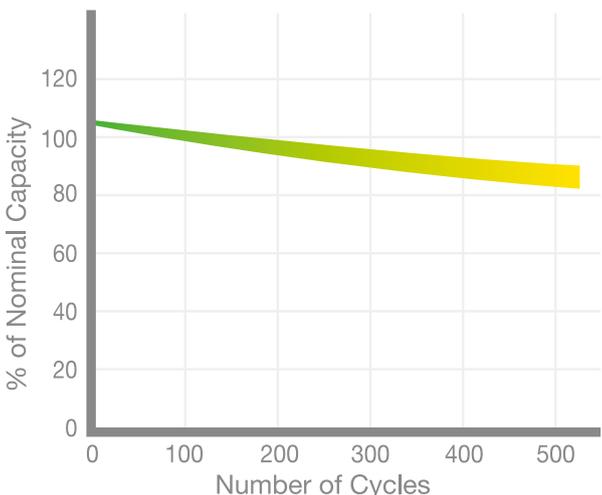
## Discharge Characteristics:

A NiMH battery has a nominal discharge voltage of 1.2V. The discharge voltage varies due to current, ambient temperature and time.



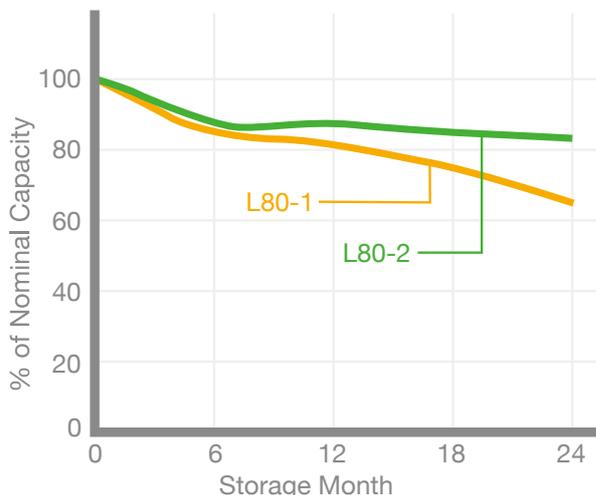
## Cycle Life Characteristics:

Cycle life refers to the number of charge-discharge cycles a battery can perform before its discharge capacity (0.2C) drops to 60% of the nominal capacity per IEC 61951-2 or other guaranteed value per GP specifications. A battery's cycle life changes due to ambient temperature and the depth of charge and discharge.



## Charge Retention:

L80-1: A fully charged battery can retain 80% of its minimum capacity if stored at 20°C for 12 months.  
 L80-2: A fully charged battery can retain 80% of its minimum capacity if stored at 20°C for 24 months.



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