

EVOLUTION ELECTRIC VEHICLES, INC. has a policy of improving products continuously. All the information in this catalogue is provided for reference only. In order to insure all the information is correct, there may be changes to make according to improvements of the products at the time of printing, we reserve the right to make corrections as well as product alterations and improvements at any time without notice. Trademarks are the property of EVOLUTION ELECTRIC VEHICLES, INC. or their respective owners.



**EVOLUTION ELECTRIC VEHICLES INC**  
Corporate Offices: 15865 Quality Wy, Chino, CA 91708  
Distribution Centers: Grand Prairie, TX; Orlando, FL  
909-590-4922 [info@evolutionelectricvehicle.com](mailto:info@evolutionelectricvehicle.com)  
[evolutionelectricvehicle.com](http://evolutionelectricvehicle.com)  
LITHIUM BATTERY BROCHURE V1.3 Jul 01, 2025

**V1.3**



**EVOLUTION ELECTRIC VEHICLES INC**

# LITHIUM BATTERY



# GOLF CART

## LIFEPO4 BATTERY

- ULTRA SAFE
- STEEL PACK
- MAINTENANCE-FREE
- 8-YEAR WARRANTY

# Contents

01

About Us

02

Company

03/04

Advantages of  
LFP Golf Cart  
Battery

05/06

LFP Golf Cart  
Battery-L Series

07/08

Battery  
Specifications

09

BMS  
Specifications

10

BMS  
Comparison

11

Durable Casing

12

Application  
Scenarios

13/14

Lead-acid vs.  
lithium-ion  
Battery

15

LFP Golf Cart  
Battery Warranty

16

Battery Charger





Evolution Electric Vehicles manufactures small-wheel, zero-emission electric vehicles and lithium-ion battery packs. The Company distributes electric golf cars & batteries for recreational use and off-road utility vehicles for golf, commercial and industrial use. Founded in 2006, Evolution headquartered in California and established a branch office in Florida. Evolution serves the customers in global markets since Evolution has over 200 dealers & distributors all over the world. Our network provides a complete end-to-end business solution, prompt and efficient service and support, great warranty experience to customers.

*In order to provide better services in the American market, we've set up 2 facilities in the United States to meet and satisfy the needs of our customers, to offer fast delivery and to provide solutions in time.*

15865

**Corporate Offices:** 15865 Quality Wy, Chino, CA 91708



**Distribution Centers:** Orlando, FL



**Distribution Centers:** Grand Prairie, TX



**Chinese Factory**



**Vietnam Factory**



## R&D and Test Centers

Safety  
Chemical  
Environment  
Electrical performance



## Manufacture

1,000+ employees  
5 factories  
Advanced equipments  
Cutting-edge technology





The lithium-ion battery packs, equipped with an integrated battery management system, feature advanced software for precise balancing, seamless management of regenerative currents, and prevention of unnecessary system disconnects. Key benefits of these lithium-ion batteries include reduced weight, faster charging times, extended lifespan, maintenance-free operation, and lower energy costs. Roam delivers advantages that stand out compared to other lithium battery providers.

# Advantages



Light weight

Half of the size and 1/4 of the weight take a load off the turf, protecting one of the customers' most valuable assets.

The lighter weight also means the golf cart can reach higher speeds with less effort and carry more.



Maintenance free

Free Maintenance. No waterfilling, no terminal tightening and cleaning of acid deposits on the top of our batteries.



Long life

Our LiFePO4 battery capacity is over 80% left after 1C charge & discharge under 100%DOD condition and 3500 cycles. Its design life is up to 15 years while the lead-acid battery can only cycle 500 times at 80%DOD.



Top notch BMS system allows batteries to discharge in deeper/higher current compared to our competitors.



Steel pack

Long-lasting steel casing. Rust resistant, Water-proof, Light weight, Impact resistant. Better heat dissipation. Longer life expectancy.



Less cost

Our LiFePO4 batteries have high discharge voltage platform (above 51V) and stable discharge curve. It requires less energy, less grid power and less charging time than lead-acid batteries, which leads to less energy costs.



WARRANTY

We offer a 8-year warranty to ensure the professional technical support and replacement for Evolution LiFePO4 golf cart batteries.



Safety

It contains multiple built-in protection functions: over charge protection, over discharge protection, over heated protection, short circuit protection., etc.



Quick charging

The quick-charging time is ONE hour for 80% charged and the standard charging time is 4-5 hours for fully charged.



ECO friendly

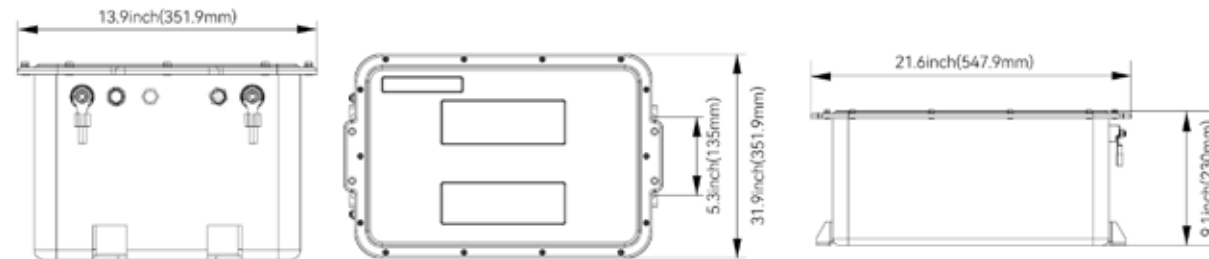
The lithium-ion battery is environmentally friendly. No emission of toxic and hazardous chemicals. No lead evaporation. No hydrogen during charging.



## L48105

### Technical specification

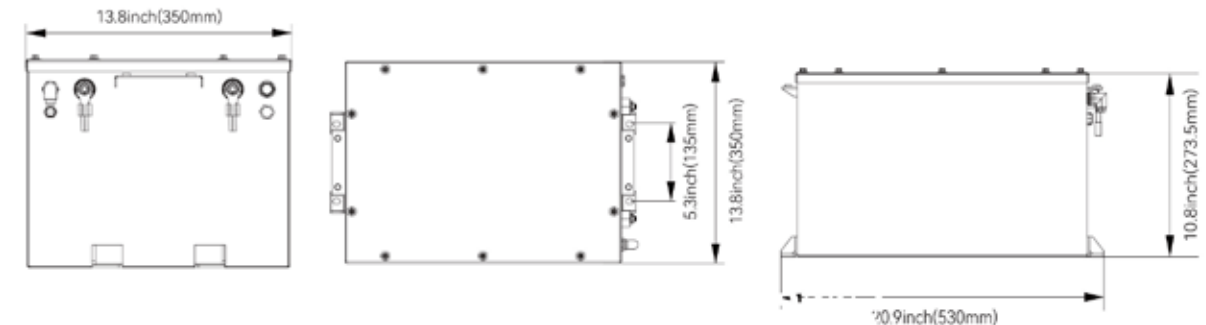
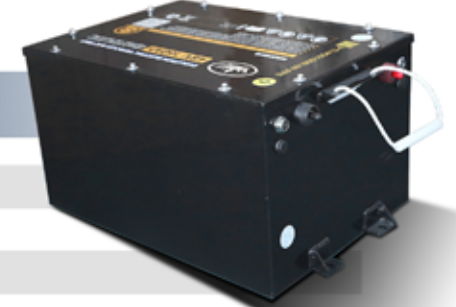
Nominal voltage	48V
Nominal capacity	105Ah
Stored energy	5.04kwh
Life cycles	>3500 times
Self discharge	max 3.2% per month
Mileage (2 seat at 13mph)	40-50miles/full charging
Continuous charge current	≤70A
Continuous discharge current	105A
Maximum discharge current	3C(30s)
Quick charging time	1-2h
Standard charging time	4-5h
Charge temperature range	32°F to 110°F (0°C to 65°C)
Discharge temperature range	-4°F to 140°F (-20°C to 65°C)
Storage temperature range	-4°F to 113°F (1month)(-20°C to 45°C)
General specification	32°F to 95°F (1year)(0°C to 35°C)
Cell combination	16 in series circuit
Cell assembly	3.2V105Ah
Casing material	Steel with rust-resistant coating
Weight	89.2lbs(40.45kg)
Dimension(L*W*H)	21.6*13.9*9.1in
IP rate	IP66



## L48160

### Technical specification

Nominal voltage	48V
Nominal capacity	160Ah
Stored energy	7.68kwh
Life cycles	>3500 times
Self discharge	max 3.2% per month
Mileage (2 seat at 13mph)	40-50miles/full charging
Continuous charge current	≤80A
Continuous discharge current	100A
Maximum discharge current	3C(30s)
Quick charging time	1-2h
Standard charging time	4-5h
Charge temperature range	32°F to 110°F (0°C to 65°C)
Discharge temperature range	-4°F to 140°F (-20°C to 65°C)
Storage temperature range	-4°F to 113°F (1month)(-20°C to 45°C)
General specification	32°F to 95°F (1year)(0°C to 35°C)
Cell combination	16 in series circuit
Cell assembly	3.2V160Ah
Casing material	Steel with rust-resistant coating
Weight	132.7lbs(60.2kg)
Dimension(L*W*H)	20.9*13.8*10.8in
IP rate	IP66



#### Note:

1. Only authorized personnel is allowed to operate or make adjustments to the battery.
2. Must to use Evolution original chargers and accessories with our batteries.
3. Specifications in this catalogue are subject to change without notice. Please contact EVOLUTION ELECTRIC VEHICLES,INC. for detailed information.

UN38.3 CE 12

UN38.3 CE 12



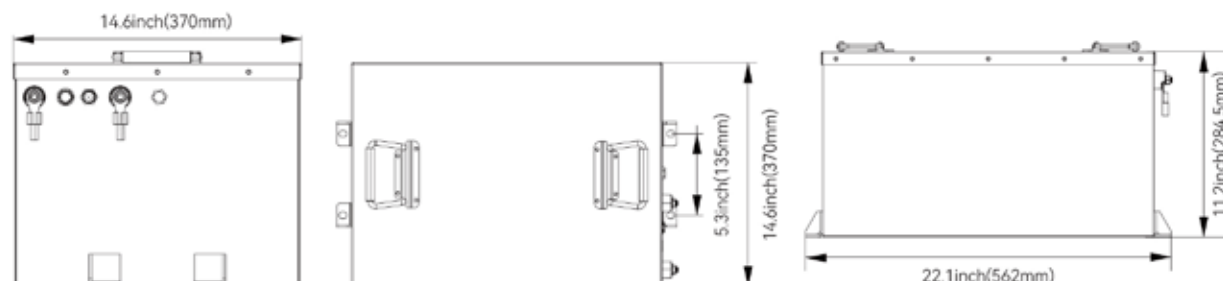


# L48205

## Technical specification



Nominal voltage	48V
Nominal capacity	205Ah
Stored energy	9.84kwh
Life cycles	>3500 times
Self discharge	max 3.2% per month
Mileage (2 seat at 13mph)	40-55miles/full charging
Continuous charge current	≤100A
Continuous discharge current	205A
Maximum discharge current	3C(30s)
Quick charging time	1-2h
Standard charging time	4-5h
Charge temperature range	32°F to 110°F (0°C to 65°C)
Discharge temperature range	-4°F to 140°F (-20°C to 65°C)
Storage temperature range	-4°F to 113°F (1month)(-20°C to 45°C)
General specification	32°F to 95°F (1year)(0°C to 35°C)
Cell combination	16 in series circuit
Cell assembly	3.2V205Ah
Casing material	Steel with rust-resistant coating
Weight	169lbs(76.65kg)
Dimension(L*W*H)	22.1*14.6*11.2in
IP rate	IP66

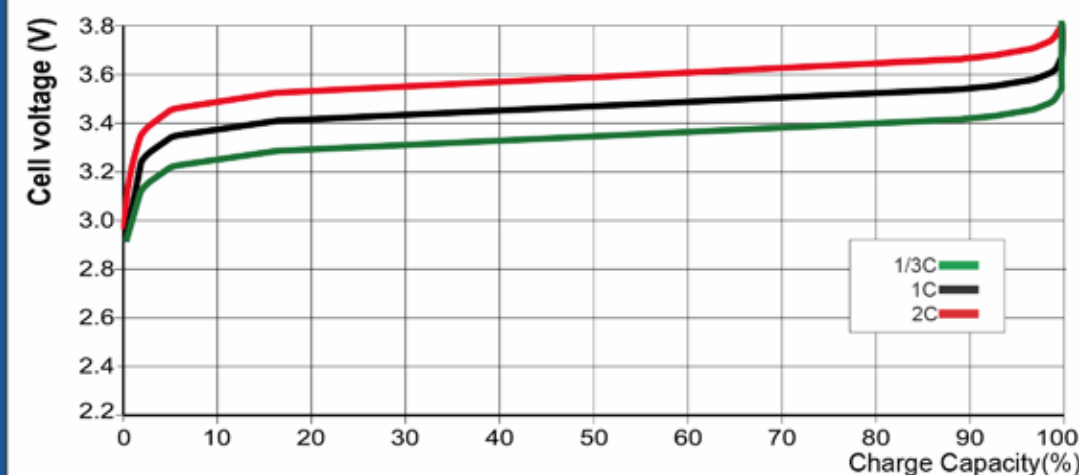


### Note:

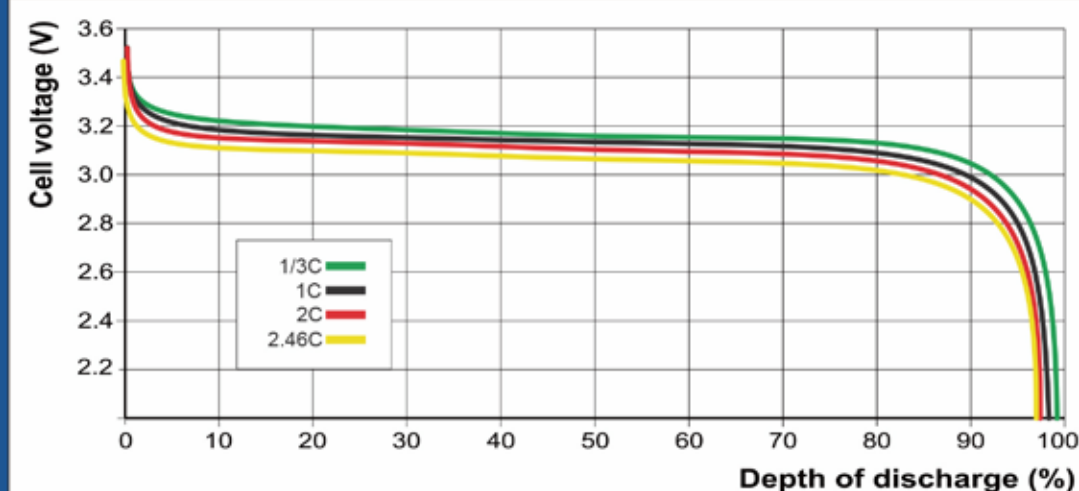
1. Only authorized personnel is allowed to operate or make adjustments to the battery.
2. Must to use Evolution original chargers and accessories with our batteries.
3. Specifications in this catalogue are subject to change without notice. Please contact EVOLUTION ELECTRIC VEHICLES,INC. for detailed information.

UN38.3 CE

## Charging Curve



## Discharging Curve



UN38.3 CE

## BMS Specifications



Individual Cell  
Monitoring  
& Balancing System



Battery SOC  
Indicator (BDI)



Quick Charging  
mode (optional)



Adaptive  
input/output  
power controller



RS-485  
Communication



Smart  
Charging



SoC, SoH, Voltage,  
Discharge/Charge  
Current, Life Cycle  
Monitoring



Can be customized  
according to different  
applications



Higher restraint  
threshold (compared  
to competitive supplier)  
allow vehicle to handle  
steep/tough terrains  
without cutting off power  
(Protection  
mode)

Continuous  
Current

200A

100A

Peak  
Current

400A

150A

Peak Current  
Duration

30s

can not work with  
high current  
discharge

Time Between  
Peak Current

Not Limited

Limited

Over Charge,  
Over Discharge

Quick charge, Short  
period Over-current  
discharge

Limited

Energy  
Management

High Performance

Regular Performance





The advantages of lithium-ion battery include lighter weight, shorter charging time, longer life, free maintenance and lower electricity bills. Our battery has an integrated management system which includes an On/Off switch and a state-of-charge(SOC) gauge.

## Steel Casing Protection



Durable coated steel casing



Water-proof



Rust resistant



Impact resistant



Light weight



Better heat dissipation



Increased life expectancy



Outstanding safety protection

## Suitable for all top brand golf carts !

L series products are lithium-ion battery packs with integrated golf cart battery system. They are designed to replace the lead-acid batteries and are available for drop-in replacement in Club Car, EZ-GO, Yamaha, etc, vehicles easily.

Golf Carts

Utility Vehicles



A cell of a user-replaceable battery shall be in a rigid casing of sufficient strength to prevent flexing. A tool providing the mechanical advantage of a pliers, screwdriver, or hacksaw shall be the minimum capable of opening the user-replaceable cell casing, if opening of the casing will expose metallic lithium.

UN38.3 CE 12



## Lead-acid vs. lithium-ion battery

### EVOLUTION battery (48V 105Ah)



### Lead-acid battery (48V 170Ah)



#### Lifetime



#### Maintenance



	EVOLUTION battery (48V 105Ah)	Lead-acid battery (48V 170Ah)
Cycle life expectation	>3500 times	<500 times
Charging time	Quick charge-1hour/ Standard charge-5 hours	12 hours
Charging frequency	No memory, charge anytime	No memory, charge anytime
Safety	Multiple built-in protection	Multiple built-in protection
ECO friendly	No pollution	No pollution
Cost effective	More benefits, requires less manhours	More benefits, requires less manhours
Weight	89.2lbs (40.45kg)/golf cart	89.2lbs (40.45kg)/golf cart

## Eight-year cost comparison

The design life of the golf cart batteries is 15 years and we offer a eight-year warranty. Evolution EV batteries can save up to at least 70% expenditures for you in eight years. Below is the 8-year expenditure contrast table between Evolution lithium battery and lead-acid battery.



#### Purchases over eight years



Battery cost



Maintenance



Electricity waste



Installation



Shipping

	Battery cost	Maintenance	Electricity waste	Installation	Shipping
EVOLUTION battery (48V 105Ah)	N/A	N/A	N/A	N/A	N/A
Lead-acid battery (48V 170Ah)	N/A	N/A	N/A	N/A	N/A

	Battery cost	Maintenance	Electricity waste	Installation	Shipping
EVOLUTION battery (48V 105Ah)	1 bag of money	1 stack of money	1 stack of money	1 stack of money	1 stack of money
Lead-acid battery (48V 170Ah)	1 bag of money	1 stack of money	1 stack of money	1 stack of money	1 stack of money



**8 YEAR LIMITED WARRANTY**

Evolution Electric Vehicles("the Manufacturer") warrants each Evolution Lithium branded Lithium Iron Phosphate(LiFePO4) battery("the Battery") sold by Evolution Electric Vehicles or any of its authorized distributors or dealers, to be free of defects for 8 years("the Warranty Period") from the date of sale as determined by either the customer's sale receipt, the shipping invoice and/or the battery serial number, with proof of purchase. Within the 8 years of the Warranty Period, subject to the exclusions listed below, the Manufacturer will credit, replace and repair the Battery and/or the parts, if serviceable. If the components in question are determined to be defective in material or workmanship by manufacturer technicians or authorized technicians and the Manufacturer deems the components to be repairable, the Battery will be repaired and returned. If the Manufacturer deems the components to be not repairable, a new, similar Battery will be offered. The offer will be valid for 30 days after the date of notification.

The Warranty period of any repaired Evolution Lithium battery product or its replacement is the remaining term of the Limited Warranty Period. This Limited Warranty does not cover the labor cost of installation, removal, repair, replacement, or re-installation of a lithium battery pack or its components.

**NON-TRANSFERABLE**

This Limited Warranty is to the original purchaser of the Battery and is not transferable to any other person or entity. Please contact the place of purchase regarding any warranty claim.

**WARRANTY DISCLAIMER**

This warranty is in place of all other express warranties. The Manufacturer will not be liable for consequential or incidental damages. We make no warranty other than this limited warranty and expressly exclude any implied warranty including any warranty for consequential damages. This limited warranty is not transferable.

**NON-EVOLUTION LITHIUM WARRANTIES**

This Limited Warranty does not cover batteries sold by the Manufacturer or an authorized distributor or dealer to an Original Equipment Manufacturer("OEM"). Please contact the OEM directly for warranty claims regarding such Battery.

**LEGAL RIGHTS**

Some countries and/or states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights, which may vary from country to country and/or state to state. This warranty shall be governed by and interpreted by the laws. This warranty is understood to be the exclusive agreement between the parties relating to the subject matter hereof. No employee or representative of the Manufacturer is authorized to make any warranty in addition to those made in this agreement.

**NON-EVOLUTION LITHIUM WARRANTIES**

If outside of the Warranty period or for damage not covered under the Warranty, customers may still contact the Manufacturer for battery repairs. Costs include shipping, parts, and \$65 per hour labor.

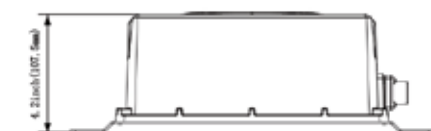
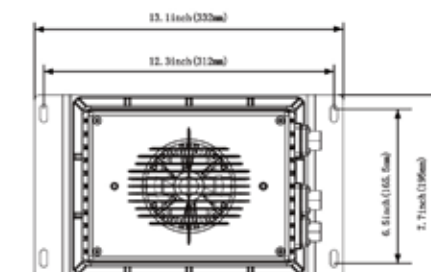
**SUBMITTING A WARRANTY CLAIM**

To submit a warranty claim, please contact the original place of purchase. The Battery may be required to be shipped back to the Manufacturer for further inspection.

- Intelligent
- High Efficiency
- High Reliability
- Globally Used

**Charger specification**

Battery pack rated voltage	48V
Maximum charger output	58.4V
AC input voltage range	100-240VAC;45-65Hz
AC input current value	≤12A
Power factor	≥0.98
Charger efficiency	≥93%
Noise	≤45dB
IP Class	IP67
Weight	10.5lb(4.75kg)
Operating temperature	-86°F to 149°F(-30°C to 65°C)
Storage temperature	-104°F to 203°F(-40°C; to 65°C)

**Safety & Certification**

- The application of active PFC, LLC and other new technologies;
- Reliable hardware protection and voltage, current self-check protection;
- Perfect charging strategy;
- Ensure the high safety of the charging process;
- Products fully comply with TUV, FCC, CEC, DOE, California 65 certification requirements.

**Reliability**

- The charger casing adopts integrated die-casting structure;
- The charger adopts the glue filling process;
- The active cooling fan is designed for long life span, the charger is with potting structure;
- With high reliability of product engineering design and years of industry verification, the charger can adapt to harsh operating environment.