BATTERY DATASHEET

12V 150Ah LiFePO4 Battery

TITAN Lithium 12V 150Ah · Type 019 (L5) case · TITAN Custom 200A BMS

VOLTAGE	CAPACITY	ENERGY	REAL CAPACITY	WEIGHT	DIMENSIONS
12.8 V	150 Ah	1,920 Wh	160 Ah	≤16 kg	355×175×190 mm
Nominal	Rated @ 20Hr	Total stored	Achievable	Per unit	L × W × H (±0.5mm)

CHARGE PERFORMANCE

Charge voltage	14.4V – 14.6V
Float voltage	13.3V – 13.9V
Recommended current	50A – 100A
Max continuous charge	200A
Charge over-current (1°)	220A · 5s
Charge over-current (2°)	260A · 500ms

DISCHARGE PERFORMANCE

Continuous	200A
Peak (1°)	220A · 5s
Peak (2°)	260A · 500ms
Short-circuit trip	1,200A · 380µs
Short-circuit release	Remove load / connect charger
Internal resistance	<10mΩ

VOLTAGE PROTECTIONS

Cell over-voltage	3650mV · rel 3500mV (2000ms)
Cell under-voltage	2500mV · rel 3000mV (3000ms)
Pack over-voltage	14.4V · rel 14.0V (2s)
Pack under-voltage	10.0V · rel 12.0V (3s)
Auto-recovery	10 attempts · 1–10min
End-of-charge	14.0V CV · tail 1.0A · 10s

TEMPERATURE WINDOWS & PROTECTIONS

Operating — charge	-20°C to 60°C
Operating — discharge	-20°C to 65°C
Storage	≤7d 60°C · ≤3m 40°C · >4m 25°C
Charge cut-off	high 65°C · low 0°C
Discharge cut-off	high 65°C · low -20°C
MOSFET high	110°C trip · 80°C release

ACTIVE HEATER & BMS POWER

Heater activation	≤0°C
Heater deactivation	≥10°C
Heater draw	100W ±5% · 6.8A
Heater feed	Powered by the connected charger. If charge current isn't enough to fully run the heater, the BMS will draw up to 3.6A from the battery to make up the shortfall. The heater never draws from the battery when the charger is disconnected.
BMS draw	≤23mA idle · ≤46mA w/ comms
Hibernation	≤800µA (after 48h & <3.3V cell)

CELL BALANCING

Mode	Active + Passive
Start voltage	3400mV cell
Passive trigger	≥15mV cell diff
Passive current	68mA
Active trigger	≥30mV cell diff
Active current	1A – 5A (dynamic)

BUILD & COMMUNICATIONS

Case material	ABS Plastic (DIN-019 case)
Terminals	SAE Round Post + Integrated M8 (dual)
Cycle life	>3,000 @ 100% DOD
Self-discharge	<3% per month @ 25°C
Inverter comms	CAN · RS485 · Victron VE.CAN
Parallel comms	Ethernet (CAT5e)

TYPE APPROVALS

- UN38.3
- RoHS
- UN ECE R10 (E-Mark)
- CE
- UKCA
- EMC EN 61000-6

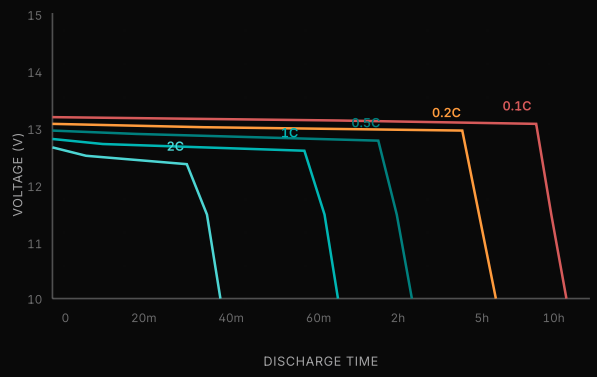
All values nominal. Refer to BMS protocol documentation for variant-specific tuning. Lifetime estimated under recommended charge regime; deeper cycles & higher temperatures will reduce useful life.

PERFORMANCE & CYCLE BEHAVIOUR

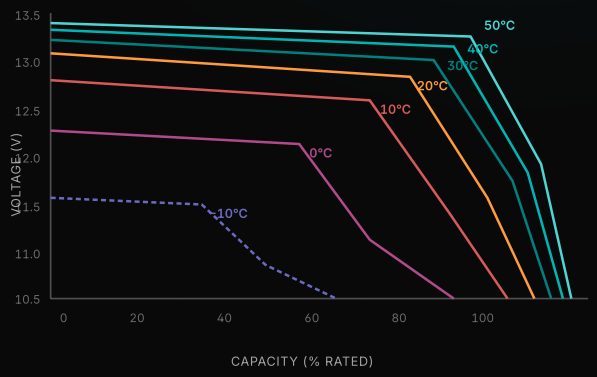
How TITAN Lithium 12V 150Ah Performs

Charge / discharge characteristics, temperature behaviour and projected cycle life. Curves illustrative for 1C reference cells; refer to commissioning notes for system-level tuning.

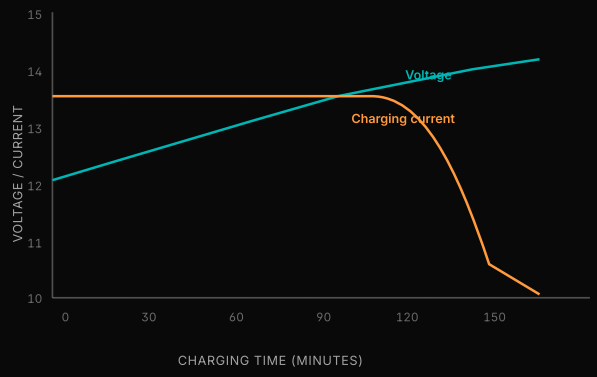
DISCHARGE CURVE — MULTIPLE C-RATES @ 25°C



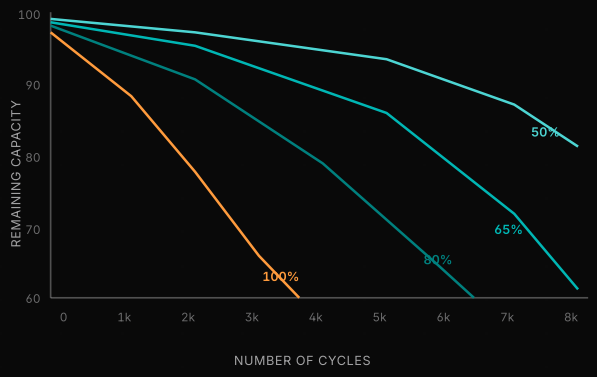
TEMPERATURE EFFECT ON CAPACITY @ 0.5C



CHARGING CHARACTERISTICS @ 0.5C, 25°C



CYCLE LIFE VS DEPTH OF DISCHARGE @ 1C, 25°C



Note · 1C refers to one times the rated capacity in amps. Example: 1C of a 150Ah pack is 150A; 0.5C is 75A. Curves are illustrative — actual performance depends on cell temperature, age and load profile.

SAFETY DATA SHEET · GHS / CLP

TITAN Lithium 12V 150Ah — SDS

Issued 2024-03-01 · revised 2026-04-22 · Technical Department · UN3480 Class 9 dangerous goods.

SECTION 1 — IDENTIFICATION

Product name	Lithium Iron Phosphate Rechargeable Battery
Common name	Lithium Iron Phosphate (LiFePO4)
Part number	LFP-150 · TITAN Lithium 12V 150Ah
Distributor	Groves Batteries Ltd T/A TITAN Lithium
Address	Lypiatt Street, Cheltenham, GL50 2UB, United Kingdom
Company reg.	05699836
Phone · email	+44 (0)1242 501802 · info@titanlithium.co.uk

SECTION 2 — HAZARDS IDENTIFICATION

Article. The product as supplied is a sealed battery and during normal, intended use the user will not be exposed to its chemical contents. Hazards listed below relate to rupture, fire, mechanical damage or thermal runaway events.

CAS 1333-86-4 — Signal: Danger

GHS: Self-heating substances and mixtures (1) · Carcinogenicity (2) · Specific target organ toxicity, repeated exposure (1) — lung

HAZARD: H251 Self-heating; may catch fire · H351 Suspected of causing cancer · H372 Causes damage to organs through prolonged or repeated exposure (lung)

CAS 7440-50-8 — Signal: Danger

GHS: Skin sensitisation (1, 1A, 1B) · STOT single exposure (1) — digestive system · STOT single exposure — respiratory tract irritation (3)

HAZARD: H317 May cause an allergic skin reaction · H370 Causes damage to organs (digestive system) · H335 May cause respiratory irritation

CAS 7429-90-5 — Signal: Danger

GHS: Substances which, in contact with water, emit flammable gases (2, 3) · STOT repeated exposure (1) — lung · Hazardous to the aquatic environment, long-term hazard (4)

HAZARD: H261 In contact with water releases flammable gases · H372 Causes damage to organs through prolonged or repeated exposure (lung) · H413 May cause long-lasting harmful effects to aquatic life

For physical and chemical hazards see Section 10. For human-health hazards see Section 11. For environmental hazards see Section 12.

SECTION 3 — COMPOSITION / INFORMATION ON INGREDIENTS

Mixture (article)

COMPONENT	CAS NO.	EC NO.	WEIGHT %
Lithium iron phosphate (LiFePO4)	15365-14-7	604-917-2	20–40%
Lithium hexafluorophosphate	21324-40-3	244-334-7	10–20%
Aluminium	7429-90-5	231-072-3	10–20%
Graphite	7782-42-5	231-955-3	10–20%
Copper	7440-50-8	231-159-6	7–13%
Poly(vinyl chloride)	9002-86-2	618-338-8	1–5%

SECTION 4 — FIRST AID MEASURES

General	No special measures required during normal handling.
Eye contact	Flush eyes with plenty of water for several minutes while holding eyelids open. Get medical attention if irritation persists.
Skin contact	Remove contaminated clothing and shoes. Wash immediately with water and soap, rinse thoroughly. Wash clothing and shoes before reuse. If irritation occurs, get medical attention.
Inhalation	Move victim to non-exposed area. Administer artificial respiration if breathing is difficult. Seek medical attention.
Swallowing	Do not induce vomiting. Get medical attention.

- Personal protective equipment for first-aid responders: no data available.
- Most important symptoms / effects, acute and delayed: no data available.
- Indication of immediate medical attention and special treatment needs: no data available.

SECTION 5 — FIRE-FIGHTING MEASURES

Suitable media	Use extinguishing agent suitable for local conditions and the surrounding environment — typically ABC dry chemical, foam, CO_2, powdered graphite, copper powder or sodium carbonate (soda) commonly used on combustible fires.
Unsuitable media	No data available.
Specific hazards	Battery may rupture and release hazardous decomposition products when exposed to fire. Lithium-ion batteries contain flammable electrolytes that may vent, ignite and spark when subjected to high temperature (>150°C / 302°F), or when damaged or abused (e.g. mechanical damage or electrical overcharging); may burn rapidly with a flare-burning effect and may ignite other batteries in close proximity.
Fire-fighter PPE	Wear self-contained breathing apparatus and a fully-protective impervious suit.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal precautions	Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation.
Emergency procedures	Remove ignition sources, evacuate area. Sweep up using a method that does not generate dust. Collect as much of the spilled material as possible and place in a suitable container for disposal. Keep spilled material out of sewers, ditches and bodies of water.
Environmental precautions	Do not allow material to be released into the environment without proper governmental permits.
Cleanup methods	All waste must comply with United Nations, national and local regulations for disposal. See Section 7 for safe handling, Section 8 for PPE, Section 13 for disposal information.

SECTION 7 — HANDLING AND STORAGE

SAFE HANDLING

- Avoid food and beverages in work areas; wash hands before eating or drinking.
- Ground containers when transferring liquids to prevent static accumulation and discharge.
- Batteries may explode or cause burns if disassembled, crushed or exposed to fire or high temperatures.
- Do not short-circuit or install with incorrect polarity.

STORAGE CONDITIONS

- Store in a cool, dry, well-ventilated place.
- Keep away from heat; avoid prolonged exposure to sunlight.
- Keep container tightly sealed.
- Maintain air gap between stacks or pallets.

SECTION 8 — EXPOSURE CONTROLS / PPE

Engineering	The usual precautionary measures for handling chemicals should be followed. Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work.
Respiratory	Wear a suitable protective mask. In case of leakage, wear chemical protective clothing including self-contained breathing apparatus.
Hand	Wear appropriate protective gloves to reduce skin contact.
Eye	Wear safety goggles or eye protection combined with respiratory protection.
Skin / body	Wear suitable protective clothing for the working environment to minimise skin contact. PPE selection should match the concentration and content of any hazardous substances in the workplace.

SECTION 9 — PHYSICAL & CHEMICAL PROPERTIES

Colour	Black	Physical state	Prismatic cell pack inside a sealed case
Odour	Not available	pH	Not applicable (solid article)
Melting / freezing point	Not available	Initial boiling point / range	Not available
Flash point	Not available	Flammability (solid, gas)	Not available
Explosion limits (vol% in air)	Not available	Vapour pressure (kPa @ 20°C)	Not available
Vapour density	Not available	Density (water = 1)	Not available
Solubility(ies)	Not available	Auto-ignition temperature	Not available
Decomposition temperature	Not available	Viscosity	Not available

SECTION 10 — STABILITY & REACTIVITY

Reactivity	No data available.
Chemical stability	Stable under recommended storage and handling conditions.
Hazardous reactions	No data available.
Conditions to avoid	Flames, sparks and other sources of ignition; incompatible materials.
Incompatible materials	Oxidising agents, acids, bases.
Decomposition products	Carbon monoxide, carbon dioxide, lithium-oxide fumes.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute toxicity data unavailable for the assembled article.

ACUTE TOXICITY

CAS	LC50 / LD50
15365-14-7	No data available
21324-40-3	No data available
7429-90-5	No data available
7782-42-5	No data available
7440-50-8	No data available
9002-86-2	No data available

OTHER ENDPOINTS

- Skin corrosion / irritation: no data available
- Serious eye damage / irritation: no data available
- Respiratory or skin sensitisation: no data available
- Germ-cell mutagenicity: no data available
- Carcinogenicity: no data available
- Reproductive toxicity: no data available
- STOT — single & repeated exposure: no data available
- Aspiration hazard: no data available

SECTION 12 — ECOLOGICAL INFORMATION

Ecological toxicity	No data available
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Other adverse effects	No data available

SECTION 13 — DISPOSAL CONSIDERATIONS

Disposal method	Consult state, local or national regulations to ensure proper disposal. Do not incinerate. End-of-life packs should be returned to TITAN or to an approved battery-recycling facility.
Uncleaned packaging	Disposal must be made according to official regulations.

SECTION 14 — TRANSPORT INFORMATION

FIELD	IATA	IMDG	ADR	UN MODEL
UN number	UN3480	UN3480	UN3480	UN3480
Proper shipping name	Lithium ion batteries			
Hazard class	9	9	9	9
Packing group	N/A	N/A	N/A	N/A
Marine pollutant	No			
Label	Class 9 — Miscellaneous Dangerous Goods			

- TITAN LiFePO4 packs have passed UN38.3 testing alongside CE / RoHS / UKCA / EMC compliance.
- Watt-hour rating exceeds the threshold for excepted batteries — packs are classed as dangerous goods.
- Packed per IATA DGR Packing Instruction 965 Section IA — cargo aircraft only.
- Packed per IMDG Special Provisions 230 / 348 (37-14 amendment).
- Packed per UN Recommendations on the Transport of Dangerous Goods — Model Regulations (19th rev.).
- Cells and batteries must include a safety venting device or be designed to prevent violent rupture under normal transport conditions.
- Lithium-ion cells and batteries must be offered for transport at a state of charge ≤30% of rated capacity.
- Modes accepted: by air, by sea, by rail, by road.

SECTION 15 — REGULATORY INFORMATION

CAS	TSCA	IECSC	DSL / NDSL	EINECS / ELINCS
15365-14-7	Listed	Listed	DSL	Listed
21324-40-3	Listed	Listed	DSL	Listed
7429-90-5	Listed	Listed	DSL	Listed
7782-42-5	Listed	Listed	DSL	Listed
7440-50-8	Listed	Listed	DSL	Listed
9002-86-2	Listed	Listed	DSL	Listed

SECTION 16 — OTHER INFORMATION

Issue department · Technical Department

To the best of our knowledge, the information contained herein is accurate. Neither TITAN Lithium nor any of its subsidiaries assumes any liability for the accuracy or completeness of the information herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution.

GLOSSARY & ABBREVIATIONS

CAS	Chemical Abstracts Service	**EC**	European Commission
ACGIH	American Conference of Governmental Industrial Hygienists	**NIOSH**	US National Institute for Occupational Safety and Health
OSHA	US Occupational Safety and Health Administration	**TLV**	Threshold Limit Value
TWA	Time-Weighted Average	**STEL**	Short-Term Exposure Limit
PEL	Permissible Exposure Limit	**REL**	Recommended Exposure Limit
LC50	Lethal Concentration, 50% kill	**LD50**	Lethal Dose, 50% kill
IARC	International Agency for Research on Cancer	**EC50**	Median Effective Concentration
BCF	Bio-concentration Factor	**BOD**	Biochemical Oxygen Demand
NOEC	No Observed Effect Concentration	**NTP**	US National Toxicology Program
RTECS	Registry of Toxic Effects of Chemical Substances	**IATA**	International Air Transport Association
IMDG	International Maritime Dangerous Goods	**TDG**	Recommendations on the Transport of Dangerous Goods — Model Regulations
TSCA	Toxic Substances Control Act (USA)	**DSL**	Domestic Substances List of Canada
NDSL	Non-Domestic Substances List of Canada		

DOCUMENT CONTROL

Document	LFP-150 datasheet & SDS
Revision	Rev 05
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