

Specification Sheet

START

ST60 XX

LiFePO4 – 12,8 V – 576 Wh
high performance accumulator



symbolic image

version: 1.0

date: 20.11.2024

Table of content

1	Technical specifications.....	3
2	Electrical specifications.....	3
3	Features of the Battery Management System (BMS)	4
4	Protection	5
5	LITE BLOX App	6
6	Dimensions	7
7	Certification (ISO 9001:2015)	8

1 Technical specifications

<i>Specification</i>	<i>Value</i>	<i>Annotation</i>
<i>Dimensions</i> - see chapter dimensions		
Weight	7xxx kg	
<i>Cell</i>		
Cell chemistry	LiFePO4	
Cell type	26650	
Cell configuration	4s15p	
<i>Temperature</i>		
Temperature range for use	(- 20) – (+ 60) °C	(0) – (+ 50) °C for optimal cycle life
Temperature range for storage	(0) – (+ 40) °C	

2 Electrical specifications

<i>Specification</i>	<i>Value</i>	<i>Annotation</i>
<i>Battery Pack</i>		
Capacity (nominal)	45 Ah	± 5%
Voltage (nominal)	12,8 V	
Energy	576 Wh	± 5%
Cell pack impedance	2,1 mΩ	approx.
<i>Charging</i>		
Voltage charge (maximum)	15,2 V	
Voltage charge (recommended)	14,4 V	
Current charging (recommended)	< 10 A	LiFePO4 charging device
Current charging (continuous)	< 135 A	alternator
<i>Discharging</i>		
Voltage discharge (minimum)	10,0 V	
Current discharging (continuous)	< 250 A	
Current discharge (10s pulse)	< 900 A	

3 Features of the Battery Management System (BMS)

<i>Feature</i>	<i>Description</i>	<i>Details</i>
Balancing	charge transfer to prevent long term cell deviation (passive)	
Communication (via bluetooth)	Wireless connection to an external device (smartphone/tablet) to display battery condition and status	LITE BLOX App
Remote-Support	Firmware updates for continuous improvement & field telemetry data evaluation via our aftersales SUPPORT TICKET system	
Recording	On device recording of important field telemetry in real time via App	
Protection	Self-protection when running outside the intended operation limits	Protection
Thresholds	All thresholds can be adjusted manually via app [expert mode]	
I.K.O.S. Intelligent Kill-Operation-Switch	- smart misuse & overload protection - circuit breaker for extended sitting times without recuperation	
A.V.A.T. Active Vehicle Anti-Theft	will instantly shut down the full electrical load at any unauthorized starting event	
Deep discharge protection	Additional deep sleep mode for cell protection. Reducing the BMS consumption current to approx. 14,2 μ A below 8 V. Bluetooth/BMS is reactivated by adding external power supply.	
low self-discharge	< 1mA for extended sitting time	
Audiovisual feedback	via beeper and LED	
Physical Interface	<ul style="list-style-type: none"> • Switchable 12V power output • CAN communication (optional) 	

4 Protection

The LITE BLOX is autonomously protecting itself when leaving the intended working range (I.K.O.S. Mode). This self-protection is working on three levels.

<i>Protection mechanism</i>	<i>YELLOW</i> -warning-	<i>RED</i> -soft close-	<i>BLACK</i> -instant cut off-
Overvoltage (cell/pack)	3,85 V / 15,4 V	3,9 V / 15,6 V	4 V / 16 V
Undervoltage (cell/pack)	3,15 V / 12,6 V	3,1 V / 12,4 V	2,5 V / 10 V
Short circuit current	-	-	1200 A
Maximum charge current	-	-	200 A
Maximum temperature	80 °C	85 °C	90 °C

5 LITE BLOX App



Every LITE BLOX unit comes with an innovative interface for wireless operation via smartphone or tablet (bluetooth).

In addition to the remote shutdown (I.K.O.S.) plus the integrated vehicle anti-theft (A.V.A.T.), all relevant telemetry data can be monitored in real time and sent to us for evaluation.

Telemetry data:

Search: f300-lb20 Name ▾

ID	Device Name	Serial ADoc	Date	Time
293451	#f300-lb20xx	97	22.3.2023	15:15:24
292031	#f300-lb20xx	97	19.3.2023	10:53:49
290265	#f300-lb20xx	97	15.3.2023	15:36:29
288916	#f300-lb20xx	97	11.3.2023	17:21:44
288875	#f300-lb20xx	97	11.3.2023	16:21:42
288874	#f300-lb20xx	97	11.3.2023	16:21:07
288871	#f300-lb20xx	97	11.3.2023	16:18:40
288870	#f300-lb20xx	97	11.3.2023	16:18:17

Device			
Device Name			
Serial Akkudoc	97		
Revision No.	0		
FW Version	35		
FW Variation	0		
Password			
AVAT	true		
IKOS	false		
SOC	32%		
State	ok		
Reason			
Current			
	NOW	MIN	MAX
U cell1	3.29 V	1.5 V	3.81 V
U cell2	3.29 V	1.53 V	3.82 V
U cell4	3.29 V	1.5 V	3.82 V
U cell6	3.29 V	1.54 V	3.82 V
U total	13.24 V	6.11 V	15.38 V
T cells	10.21 °C	3.76 °C	42.1 °C
T pws	10.06 °C	3.65 °C	39.73 °C
I total	0.08 A	-143.99 A	717.55 A

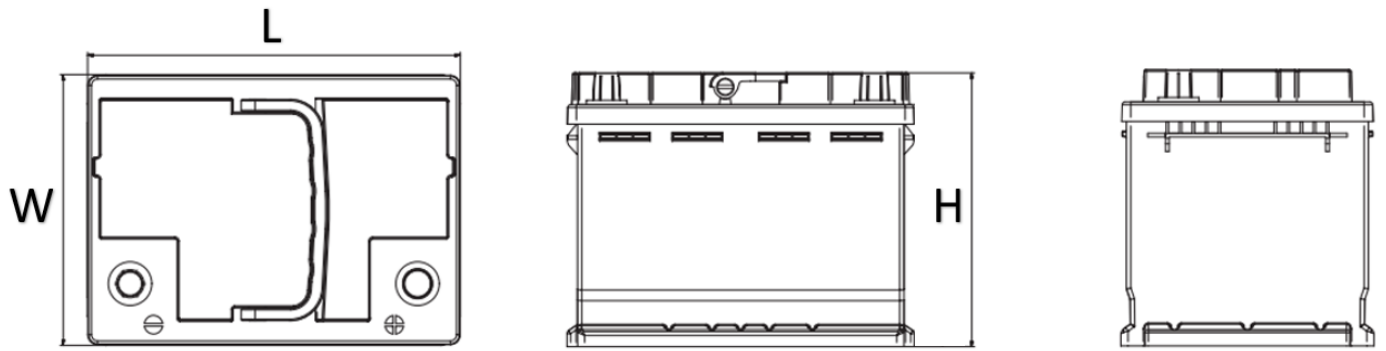
Lifecycle	
Lifecycle start (0h)	7.7.2020 01:06:34
Δt Cycle	23396.59 hours
time since boot	984.48 days
time awake	329.55 hours
deep discharge	4 days
Customer N° x	
Customer Info	Vehicle
Customer message	

History			
Time	Status	Reason	Value
15.3.2023, 07:59:32	ok		0
15.3.2023, 07:56:19	disabled	user off	1
15.3.2023, 07:54:56	ok		0
11.3.2023, 12:59:39	disabled	user off	1
11.3.2023, 12:57:44	ok		0
7.3.2023, 15:08:22	disabled	user off	1
13.7.2022	ok		0
Selftest			
bmsCellOv			✓
bmsCellUv			✓
bmsCbOpen			✓
bmsCbShort			✓
bmsOt			✓
bmsUt			✓
bmsFault1			✓
bmsFault2a			✓
bmsFault2b			✓
cellUv			✓

LITE BLOX App for download:



6 Dimensions



symbolic image

<i>dimensions</i>	<i>L in mm</i> ± 2	<i>W in mm</i> ± 2	<i>H in mm</i> ± 2
<i>LN 2</i>	242	175	190
<i>LN 3</i>	278	175	190
<i>LN 4</i>	315	175	190
<i>LN 5</i>	353	175	190
<i>LN 6</i>	394	175	190

7 Certification (ISO 9001:2015)



LITEWERKS GmbH

Robert-Bosch-Str. 10, D-78467 Konstanz

wurde durch DSR-CERTIFICATION auditiert und es wird bestätigt, dass das
Qualitäts-Management-System den Erfordernissen der

is audited by DSR Certification and applied that the Quality Management System meets the requirements of

ISO 9001:2015

für den nachfolgenden Umfang entspricht:
standard for the following activities:

Entwicklung, Herstellung und Vertrieb von Akkumulatoren
Development, Production and Distribution of Accumulators

Zertifikats-Nr.:/Certificate No: QMS-23.02.372