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Publication No: LB--SOLAR-PB-EN-V4.4-202608

SOLAR POWER STORAGE BATTERIES SOLUTION

Stock Code:00842.HK



10,000 Green Power Stations

Qinghai Province Inner Mongolia China

LEOCH batteries are serving 10000 green power stations around the world, generating power by wind and solar, thus, reduced 80% fuel consumption and make the sky more clean and blue.

5200m Harsh Environment Test

Since 2005, LEOCH keeps supplying batteries for Qinghai-Tibet Railway, and the highest elevation is 5200m.



Exceptional High temperature Endurance

Africa Southeast Asia

LEOCH batteries provide solid power back-up for the telecommunication stations and durable power supply for solar street lights in Africa and Southeast Asia.

Reliable power of Household

Continuously supply stable and clean power to thousands families, never be dark.



Benefits of solar and wind station

LEOCH batteries offer energy storage solutions to intelligent photovoltaic power station, stabilize power supply system and guarantee the customer power generation benefits.

ENVIRONMENT FRIENDLY

Focusing on the environmental friendly development, **LEOCH** commits on the harmony between human being and the ecosphere of the Earth, and delivering rechargeable electricity storage products for green energy systems. We know that the Earth we are living on is borrowed from the next generation...

APPLICATION

- ✓ Telecommunications
- ✓ Solar system
- ✓ Wind power system
- ✓ Engine starting
- ✓ Wheelchair, Floor cleaning
- ✓ Machines, Golf trolley, Boats

SOLAR POWER LONG LIFE BATTERY



- Good deep discharge resilience performance
- Low risk of thermal runaway
- Special plate design, long cycle lifetime

-20~60℃
Operation
Temp.

≥ 600
Cycles
@80%DOD

High gas
recombination
efficiency

No
electrolyte
layering



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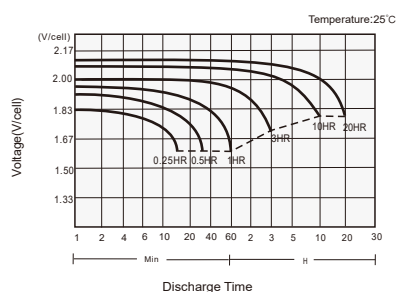
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LEOCH BATTERY

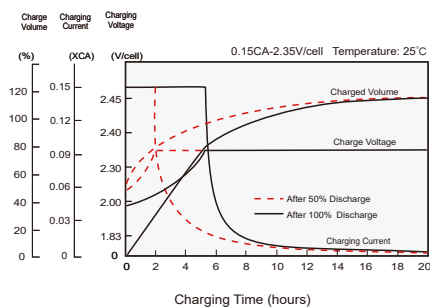
Specifications

Model	Normal Voltage (V)	Rated Capacity		Approx Dimension				Gross Weight Kg	Terminal Type
		20HR	10HR	Length mm	Width mm	Height mm	Total Height mm		
		1.80V/Cell	1.80V/Cell						
LPG12-17	12	17	/	181.5	76.5	167.5	167.5	5.8	T12-I(M5)
LPG12-24	12	24	/	166	175	125	125	8.5	T12-I(M5)
LPG12-31	12	30	/	195	130	164	178	10.2	T5
LPG12-38	12	38	/	197	165	170	170	12.8	T6(M6)
LPG12-45	12	45	/	257	132	200	200	15.5	T6(M6)
LPG12-50	12	50	/	229	138	205	211	16.1	T6(M6)
LPG12-60	12	60	/	255	170	174.5	177.5	18.5	T6(M6)
LPG12-65	12	65	/	325	167	174	174	20.5	T6(M6)
LPG12-70H	12	70	/	260	168	208	214	22.9	T6(M6)
LPG12-85	12	85	/	306	168	208	214	27.5	T6(M6)
LPG12-100	12	100	/	330	173	212	218	31.2	T11(M8)
LPG12-110	12	110	/	408	177	225	225	34.5	T11(M8)
LPG12-125	12	125	/	345	172	274	280	40	T11(M8)
LPG12-140	12	140	/	483	170	238.5	238.5	43.8	T11(M8)
LPG12-160	12	160	/	522	240	218	224	57.5	T11(M8)
LPG12-200	12	200	/	522	240	218	224	62.3	T11(M8)
LPG12-240	12	240	/	522	268	220	226	73.3	T11(M8)
LPG2-100	2	/	100	170	72	205	214	6	T6(M6)
LPG2-120	2	/	120	170	98	205	214	7.3	T7(M6)
LPG2-200	2	/	200	170	110	328	337	14.1	T11(M8)
LPG2-300	2	/	300	170	150	330	339	19.5	T11(M8)
LPG2-400	2	/	400	210	175	330	339	27	T11(M8)
LPG2-500	2	/	500	240	175	327.5	338	31.8	T11(M8)
LPG2-600	2	/	600	300	175	330	340	40	T11(M8)
LPG2-800	2	/	800	410	175	330	340	54	T11(M8)
LPG2-1000	2	/	1000	475	175	328	338	64.1	T11(M8)
LPG2-1500	2	/	1500	403	354	339	349	102	T11(M8)
LPG2-2000	2	/	2000	490	350	339	349	130	T11(M8)
LPG2-3000	2	/	3000	709	350	337	347	190	T11(M8)

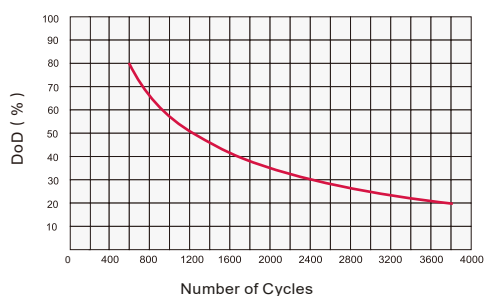
Discharge Characteristics



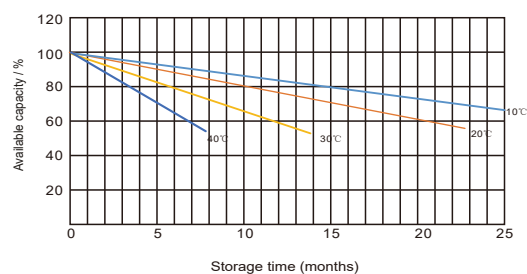
Charging Characteristics



Cycle Life in Relation to DoD -12V



Self Discharge Characteristics



APPLICATION

- ✓ Wind & solar & renewable energy
- ✓ Street lamp & CATV & oil and gas
- ✓ Poor grid reliability back-up applications
- ✓ Hybrid telecom remote base stations
- ✓ All extreme environment off-grid applications

SOLAR POWER DEEP CYCLE BATTERY

- GEL Technology
- For High Temperature Solution



- AGM separator, flat plate, top terminal series etc.
- Nano-meter fumed silica GEL
- ABS material (UL94 V-0, optional)
- Comply with IEC 60896, IEC 61427



-20~55°C
Operation
Temp.

≥ 400
Cycles
@80%DOD

12Y
Design
life

≤ 3%
Self
discharge

≥ 3
A+B cycles
@PSoC

Fast
recharge

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LEOCH BATTERY

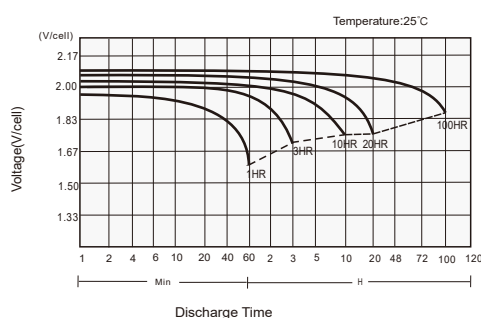
SOLAR POWER DEEP CYCLE BATTERY

LEOCH GEL battery is designed based on the high capacity and long life for high temperature area. Using the polymer gel electrolyte. The state of the art internal and external design ensures the battery high reliability and makes the installations quite simple and safe.

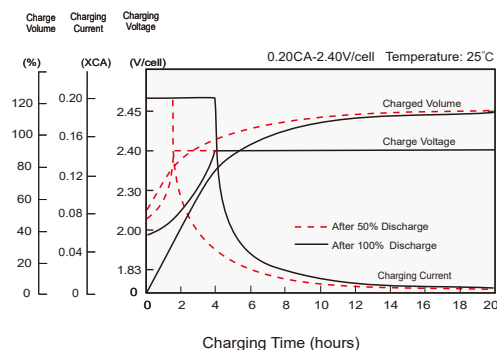
Specifications

Model	Normal Voltage (V)	Rated Capacity		Approx Dimension				Gross Weight Kg	Terminal Type
		20HR	10HR	Length mm	Width mm	Height mm	Total Height mm		
		1.75V/Cell	1.80V/Cell						
LPGS12-88	12	88	80	306	168	208	214	26.8	T6(M6)
LPGS12-110	12	110	100	330	173	212	220	31.5	T11(M8)
LPGS12-154	12	154	140	483	170	238.5	238.5	44.9	T11(M8)
LPGS12-190	12	190	173	532	207	214	220	58	T11(M8)
LPGS12-200	12	200	182	522	240	218	224	60.9	T11(M8)
LPGS12-210	12	210	191	522	240	218	224	62.5	T11(M8)
LPGS12-230	12	230	209	522	268	220	226	73.6	T11(M8)
LPGS12-250	12	250	228	522	268	220	226	75.5	T11(M8)

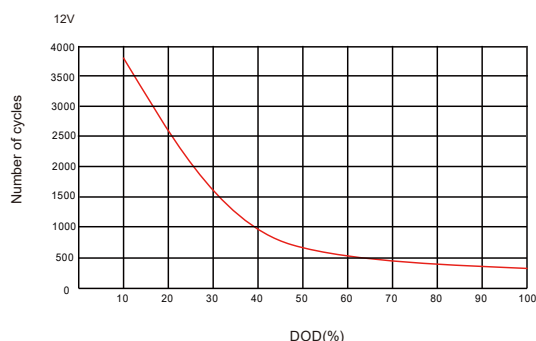
Discharge Characteristics



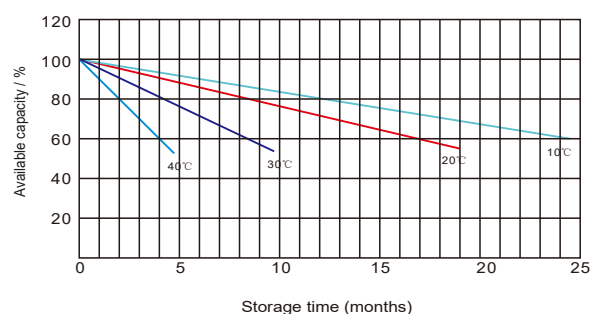
Charging Characteristics



Cycle Life in Relation to DoD



Self Discharge Characteristics



IATF16949

ISO14001

ISO9001

ISO45001

APPLICATION

- ✓ Wind & solar & renewable energy
- ✓ Mobile homes
- ✓ Street solar lighting
- ✓ Vessels
- ✓ Fork lifts & lifting platforms electrical vehicles
- ✓ Sweepers & scrubbing machines
- ✓ Electric stackers
- ✓ Boats & buoys & SOS pillars



SOLAR POWER ULTRA LONG LIFE BATTERY

- Tubular-GEL Technology
- Suitable for Renewable Energy, Cyclic Use



- PVC-SiO₂ separator, tubular plate, top terminal series etc.
- Pb-Ca-Sn-Al alloy, nano-meter fumed silica GEL
- ABS material (UL94 V-0, optional)
- Comply with IEC 60896, IEC 61427



-20~55°C
Operation
Temp.

≥ 2000
Cycles
@80%DOD

20Y
Design
life

≤ 3%
Self
discharge

≥ 5
A+B cycles
@PSoC

LEOCH OPzV series battery is designed and manufactured according to DIN standards and with die-casting positive grid and patent formula of active material, using the immobilized GEL and Tubular Plate technology to offer high reliability and performance, even more suitable for cyclic use under extreme operating conditions.

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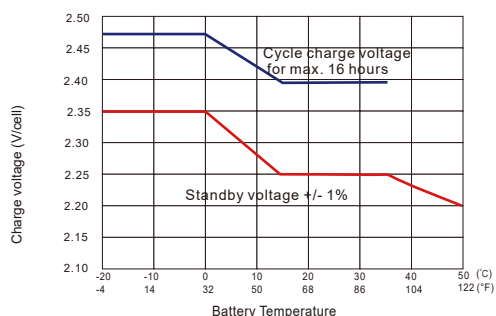

LEOCH BATTERY

SOLAR POWER ULTRA LONG LIFE BATTERY

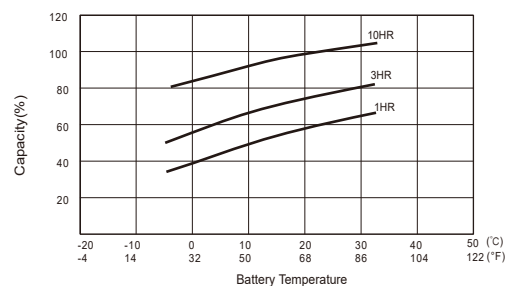
Specifications

Model	Normal Voltage (V)	Rated Capacity		Approx Dimension				Gross Weight Kg	Terminal Type
		100HR	10HR	Length mm	Width mm	Height mm	Total Height mm		
		1.80V/Cell	1.80V/Cell						
4OPzV200	2	200	260	103	206	355	390	18.8	T7-A(M8)
50PzV250	2	250	325	124	206	355	390	22.4	T7-A(M8)
60PzV300	2	300	390	145	206	355	390	26.4	T7-A(M8)
50PzV350	2	350	491	124	206	471	506	28.5	T7-A(M8)
60PzV420	2	420	590	145	206	471	506	33.5	T7-A(M8)
70PzV490	2	490	688	166	206	471	506	38.7	T7-A(M8)
60PzV600G	2	600	842	145	206	646	681	46.8	T7-A(M8)
80PzV800	2	800	1120	191	210	646	681	63.5	T7-A(M8)
100PzV1000	2	1000	1400	233	210	646	681	76.5	T7-A(M8)
120PzV1200	2	1200	1680	275	210	646	681	91.2	T7-A(M8)
120PzV1500	2	1500	2110	275	210	796	831	111.5	T7-A(M8)
160PzV2000	2	2000	2810	399	214	772	807	155.1	T7-A(M8)
200PzV2500	2	2500	3510	487	212	772	807	191	T7-A(M8)
240PzV3000	2	3000	4210	576	212	772	807	226.5	T7-A(M8)

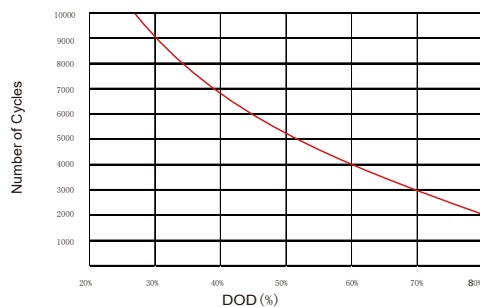
Charge Voltage vs Ambient Temperature Curve



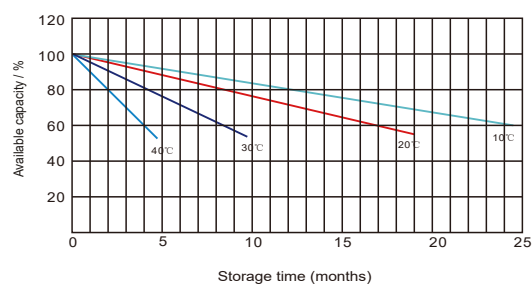
Temperature Effects in Relation to Capacity



Cycle life



Self Discharge Characteristics



APPLICATION

- ✓ Telecommunications
- ✓ Buoy lighting
- ✓ Standby power
- ✓ Railway signalling
- ✓ Emergency lighting systems
- ✓ Alternative power (solar, wind)
- ✓ Maritime standby power on ships and ashore

SOLAR POWER ULTRA LONG LIFE BATTERY

■ Tubular Technology

■ Suitable for Renewable Energy,Cyclic Use



- Lower self discharge
- Low risk of thermal runaway
- Superior deep cycle performance
- Wide operation temperature range

-15~55°C
Operation
Temp.

≥ 2150
Cycles
@80%DOD

20Y
Design
life

No
thermal
runaway



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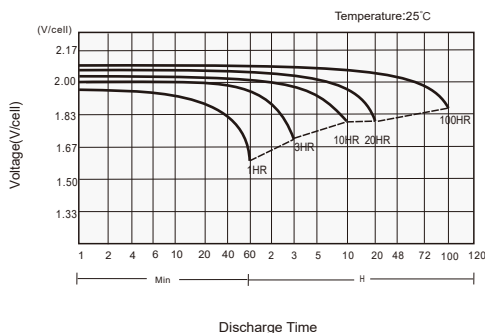

LEOCH BATTERY

SOLAR POWER ULTRA LONG LIFE BATTERY

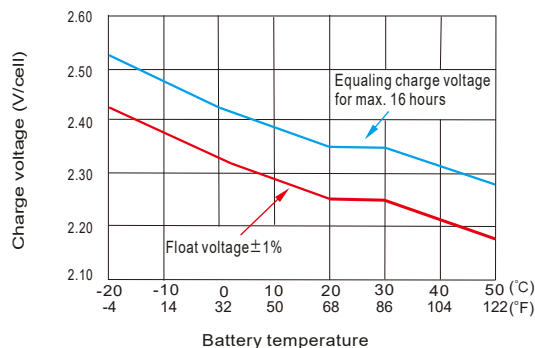
Specifications

Model	Normal Voltage (V)	Rated Capacity	Approx Dimension				Gross Weight (kg)	Terminal Type
		10HR 1.80V/Cell	Length mm	Width mm	Height mm	Total Height mm		
20PzS100	2	100	103	206	355	410	13.2	T7-B(M10)
30PzS150	2	150	103	206	355	410	15.3	T7-B(M10)
40PzS200	2	200	103	206	355	410	17.4	T7-B(M10)
50PzS250	2	250	124	206	355	410	20.4	T7-B(M10)
60PzS300	2	300	145	206	355	410	23.8	T7-B(M10)
50PzS350	2	350	124	206	471	526	28.3	T7-B(M10)
60PzS420	2	420	145	206	471	526	32.7	T7-B(M10)
70PzS490	2	490	166	206	471	526	38	T7-B(M10)
60PzS600	2	600	145	206	646	701	45.4	T7-B(M10)
80PzS800	2	800	191	210	646	701	62.9	T7-B(M10)
100PzS1000	2	1000	233	210	646	701	77.4	T7-B(M10)
120PzS1200	2	1200	275	210	646	701	91.7	T7-B(M10)
120PzS1500	2	1500	275	210	796	851	113.8	T7-B(M10)
240PzS3000	2	3000	576	212	772	827	224.8	T7-B(M10)

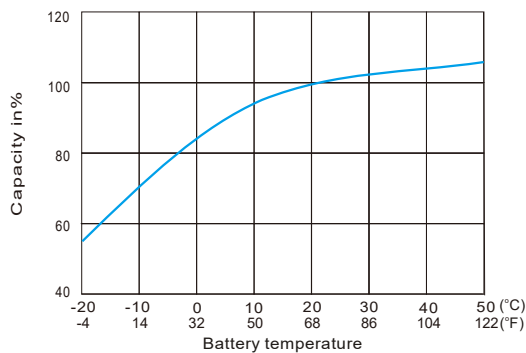
Discharge Characteristics



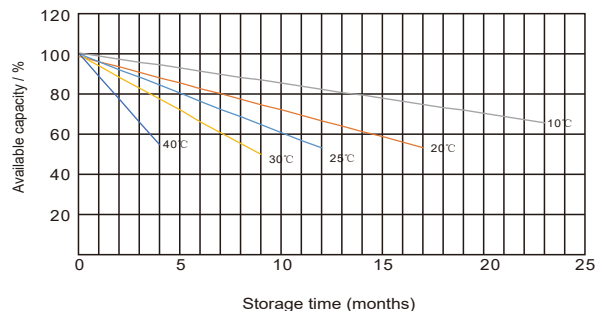
Charge Voltage vs Ambient Temperature Curve



Discharge Capacity vs Ambient Temperature Curve (I₁₀A)



Self Discharge Characteristics



IATF16949

ISO14001

ISO9001

ISO45001

APPLICATION

- ✓ Wind & solar & renewable energy
- ✓ Street & Highway Monitoring & Surveillance
- ✓ Poor grid reliability back-up applications
- ✓ Hybrid telecom remote base stations
- ✓ All extreme environment off-grid applications



LONG LIFE LITHIUM BATTERY MODULES

- BMS
- For Storage System



- LiFePO4 battery system
- No memory effect
- Intelligent BMS
- Comply with IEC62619, IEC62620



-20~60°C
Operation
Temp.

≥ 6000
Cycles

15Y
Design
life

≤3%/Month
Self
discharge

**Fast
recharge**

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LEOCH BATTERY

LONG LIFE LITHIUM BATTERY MODULES

LEOCH LiFePO₄ battery system is a kind of new high-tech products developed by Leoch Corporation, with many advantages such as integration, miniaturization, lighter and more intelligent centralized control, battery maintenance and management, unmanned operation, convenient cabinet installation, etc..

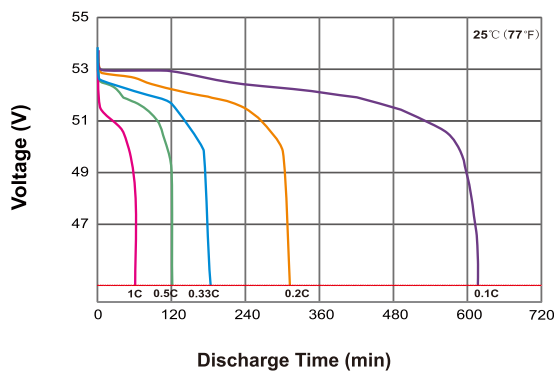
Specifications

Model	Nominal Voltage (V)	Rated Capacity (AH)	Energy KWh	Height 1U=44.45mm	Dimensions(mm/inches)			Weight Kg,±3%
					Width	Depth	Height	
					mm	mm	mm	
LR24-100	25.6	100	2.56	4U	442	350	177	26
LR24-200	25.6	200	5.12	4U	442	450	177	43
LR48-100	48	100	4.8	4U	442	431	177	40
LR48-150	48	150	7.2	4.5U	442	550	198	61
LR48-200	48	200	9.6	5.5U	442	550	244	82
LR51.2-50	51.2	50	2.56	3U	442	442	132	28
LR51.2-100	51.2	100	5.12	4U	442	431	177	43
LR51.2-150	51.2	150	7.68	4.5U	442	550	198	64
LR51.2-200	51.2	200	10.24	5.5U	442	550	244	82

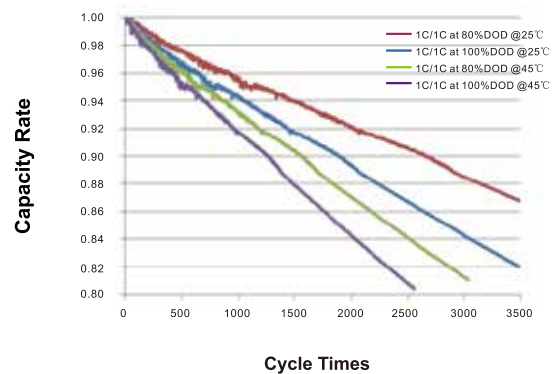
Noted:

1U = 44.45 mm; Length 442mm supports 19-inch cabinets

Discharge Time in relation to Discharge Rate



Cycle Curves at different DOD & Temp



APPLICATION

- ✓ Wind & solar & renewable energy
- ✓ Street lamp & CATV & oil and gas
- ✓ Poor grid reliability back-up applications
- ✓ Hybrid telecom remote base stations
- ✓ All extreme environment off-grid applications

LONG LIFE LITHIUM BATTERY MODULES

- BMS
- For Storage System



- LiFePO4 battery system
- No memory effect
- Long life, high cycle times
- Comply with CE Standard



-20~60°C
Operation
Temp.

≥ 5000
Cycles

15Y
Design
life

≤3%
Self
discharge

**Fast
recharge**

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LEOCH BATTERY

LONG LIFE LITHIUM BATTERY MODULES



LEOCH LFeLi-12V series LiFePO₄ batteries have been designed to suit the various power and energy requirements to streetlight, EV series.

Specifications

Model	Nominal Voltage (V)	Rated Capacity (AH)	Energy	Dimensions(mm/inches)			Weight Kg,±3%	Terminal model
			Wh	Length	Width	Height		
LFP1204	12.8	4	51.2	90	70	101	0.5	T1
LFP1207	12.8	7	89.6	151	65	93.5	0.95	T2
LFP1209	12.8	9	115.2	151	65	93.5	1.1	T2
LFP1212	12.8	12	153.6	151	98	98	1.4	T2
LFP1218	12.8	18	230.4	181.5	77	167.5	2.6	T3
LFP1220	12.8	20	256	181.5	77	167.5	2.63	T3
LFP1233	12.8	33	422.4	175	166	125	4	M6
LFP1250	12.8	50	640	257	132	200	6.5	M6
LFP1275	12.8	75	960	260	168	214	8.1	M6
LFP1280	12.8	80	1024	260	168	214	8.1	M6
LFP12100	12.8	100	1280	330	173	212	10.5	M8
LFP12150	12.8	150	1920	483	170	240	16.3	M8
LFP12200	12.8	200	2560	522	240	218	20.8	M8
LFP2404	25.6	4	102.4	151	98	95	1.2	T2
LFP2433	25.6	33	844.8	260	168	208	7.8	M6
LFP2450	25.6	50	1280	330	170	212	12	M8
LFP24100	25.6	100	2560	522	240	218	20.6	M8
LFP24150	25.6	150	3840	520	240	218	28.9	M8

Features



- Capacity from 4Ah to 200Ah
- Small and light
- Excellent safety
- Environment friendly
- High specific energy
- Low self-discharge rate
- More than 5000 cycles
- Good high temperature performance



Discharge Time in relation to Discharge Rate

