

Li-Ion Energy Storage System for Telecom applications.

Technical data sheet for Solition Telecom.



Solition Telecom's battery modules are perfectly suited for a Telecom Base Transceiver Station (BTS).

The battery modules are designed with excellent cycle and calendar life performance to provide reliable power for energy storage systems in various grid conditions. The built-in battery management system and LFP cell chemistry offer a high level of safety under extreme conditions.

Applications



Telecom BTS
Stable Grid



Telecom BTS
Poor Grid



Telecom BTS
Off-Grid

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Technical data sheet

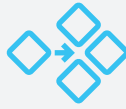
Features and benefits:



Longevity – cycle lifetime up to 3500 times

Stability – made with safest LiFePO₄ (LFP) cell chemistry – high stable, no thermal runaway

Safety – build-in automatic protection for over-charge, over-discharge and over-temperature conditions



Scalable – support parallel connection up to 15 modules

Intelligence – automatic cell balancing to improve the performance and life of the entire module

Cost-effective – simplified installation as 19" rack mountable modules



94 % round trip efficiency – less energy costs for recharging

50 % less volume – high energy density means a significant space saving

Battery Management System:

High-safety design

The integrated BMS utilizes multiple layers of protection to ensure safe operation and minimize potential safety risks.

Status display

The easily recognizable status lights on the front panel notify the operator through a blinking code. This helps to quickly identify and solve potential problems and decrease downtime.

Communication

The communication interface allows to exchange data and monitor remotely with other systems – all accessible with an additional monitor software.

Data logging

The build-in data logging function records critical battery parameters and event information for subsequent analysis and troubleshooting.

Fault diagnosis

Fault diagnosis is performed based on real-time monitoring of various parameters in the battery. It can detect any abnormalities in time and take necessary protective measures.

Dry contact

Battery events can be made available via the potential-free contact output to initiate further actions.

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Technical data sheet

Technical features:

- Environmentally friendly without any heavy metals inside
- Extreme cycle life, up to 3500 cycles at 80 % DoD to reduce CAPEX & OPEX in demanding telecom, switch gear or hybrid applications
- Advanced BMS with a multitude of safety and communication options available.
- Advanced BMS communication protocols (Modbus RS485, Dry-contact)
- Lithium iron phosphate chemistry has a high thermal runaway threshold being one of the safest lithium technologies in the market

Standards & certifications:

- Designed in accordance with IEC 62619 and IEC 62620
- Electro-magnetic compatibility according to 2014/30/EU
- In compliance with UN38.3
- IP20 rated



Design life
15 years



Nominal capacity
100-200 Ah C₁₀



3500 cycles at
80 % DoD 0.5C



Up to 15 modules
connected in parallel



Max. system size 48V,
3000 Ah

Technical characteristics and data

Specifications	Solition Telecom 48V100	Solition Telecom 48V150	Solition Telecom 48V200
Technology type	LiFePO ₄		
Nominal voltage [V]	48.0		
Nominal capacity [Ah]	100	150	200
Total energy [Wh]	4800	7200	9600
Dimension [WxDxH, mm]*	440 x 420 x 130 (3U)	440 x 525 x 130 (3U)	440 x 450 x 260 (6U)
Weight [kg]	41 ± 1 kg	55 ± 1 kg	76 ± 1 kg
Max. charging current [A]	100		
Recommended charging current [A]	50		
Max. discharging current [A]	100	150	150
Operation humidity	5~95 % RH (No condensing)		
Operating temperature range	0 °C to 55 °C charging -20 °C to +60 °C discharging		
Storage temperature range	0 °C to 40 °C (Recommended: 20 °C to 30 °C)		
Self-discharge rate	≤ 3% (0-30 °C / 90 days)		
Cycle life	≥ 3500 / 0.5C, 80 % DOD, 35 °C		
Design life	≥ 15 years		
Communication interface	RS485, dry contact		
Parallel support**	Yes, up to 15 per string		
IP protection level	IP20		
Installation type***	Standard 19" rack		
Terminal	M8, Torque 8 Nm		
Certification	UN38.3 / IEC 62619 / IEC 62620 / UL1973	UN38.3 / IEC 62619 / IEC 62620****	

* Excluding mounting ears

** For maximum recommended charge and discharge rates, see table "Parallel mode performance"

*** Can also be used in 23" rack by using adapter plates (not part of the product delivery)

**** Designed according listed certifications. For details, please contact your local Exide contact

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Parallel mode performance (Derating)

Number of modules in parallel	Recommended maximum charging current (A)	Recommended maximum discharging current (A)	Recommended maximum discharging power (W)	Maximum usable autonomy (Ah)
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48V100

2	150	180	8640	196
3	200	240	11520	294
4	250	300	14400	392
5	300	360	17280	490
6	350	420	20160	588
7	400	480	23040	686
8	450	540	25920	784
9	500	600	28880	882
10	550	660	31680	980
11	600	720	34560	1078
12	650	780	37440	1176
13	700	840	40320	1274
14	750	900	43200	1372
15	800	960	46080	1470

48V150

2	180	180	8640	294
3	240	255	12240	441
4	300	330	15840	588
5	360	405	19440	735
6	420	480	23040	882
7	480	555	26640	1029
8	540	630	30240	1176
9	600	705	33840	1323
10	660	780	37440	1470
11	720	855	41040	1617
12	780	930	44640	1764
13	840	1005	48240	1911
14	900	1080	51840	2058
15	960	1155	55440	2205

48V200

2	200	200	9600	396
3	275	290	13920	594
4	350	380	18240	792
5	425	470	22560	990
6	500	560	26880	1188
7	575	650	31200	1386
8	650	740	35520	1584
9	725	830	39840	1782
10	800	920	44160	1980
11	875	1010	48480	2178
12	950	1100	52800	2376
13	1025	1190	57120	2574
14	1100	1280	61440	2772
15	1175	1370	65760	2970

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Discharge data

Energy Wh					
End of discharge voltage (in V)	1h	2h	3h	5h	10h

48V100

49					1617
48.5			1179	1552	3344
48			2998	3280	3893
47.5		2028	3786	3883	4217
47		3355	4171	4215	4595
46.5	2170	3899	4528	4588	4655
46	3484	4275	4641	4660	4696
45.5	3985	4481	4696	4703	4730
45	4270	4550	4731	4738	4759
44.5	4395	4593	4768	4767	4783
44	4468	4626	4794	4793	4804
43.5	4518	4651	4817	4814	4821

48V150

49					2426
48.5			1768	2328	5016
48			4497	4921	5840
47.5		3042	5679	5824	6326
47		5032	6256	6322	6893
46.5	3255	5848	6792	6883	6982
46	5226	6412	6962	6990	7044
45.5	5978	6722	7045	7054	7094
45	6405	6825	7097	7107	7138
44.5	6592	6890	7152	7151	7175
44	6701	6940	7191	7189	7207
43.5	6777	6977	7225	7222	7232

48V200

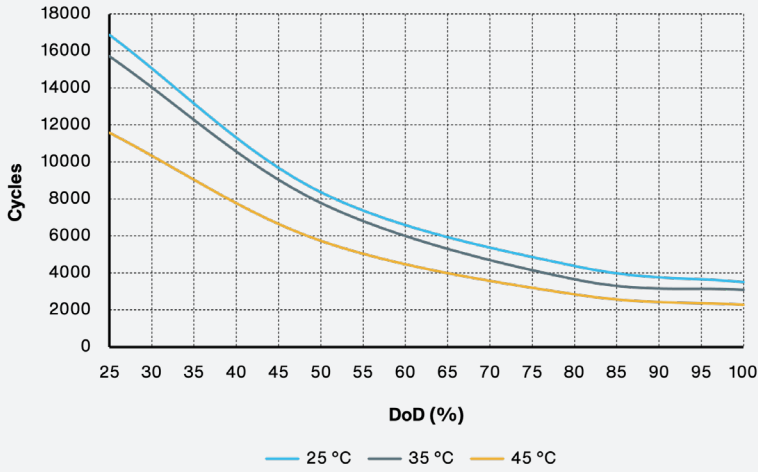
49					3234
48.5			2357	3104	6688
48			5996	6561	7786
47.5		4056	7572	7766	8435
47		6710	8341	8429	9190
46.5	4340	7797	9055	9177	9309
46	6968	8550	9282	9320	9391
45.5	7970	8962	9393	9406	9459
45	8540	9099	9463	9476	9517
44.5	8789	9186	9536	9534	9567
44	8935	9253	9588	9586	9609
43.5	9036	9303	9633	9629	9642

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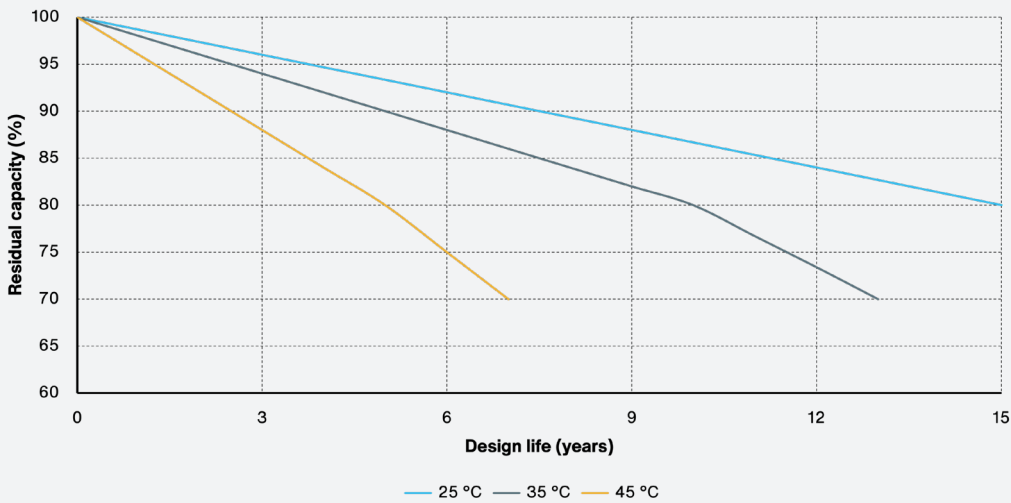
48V100



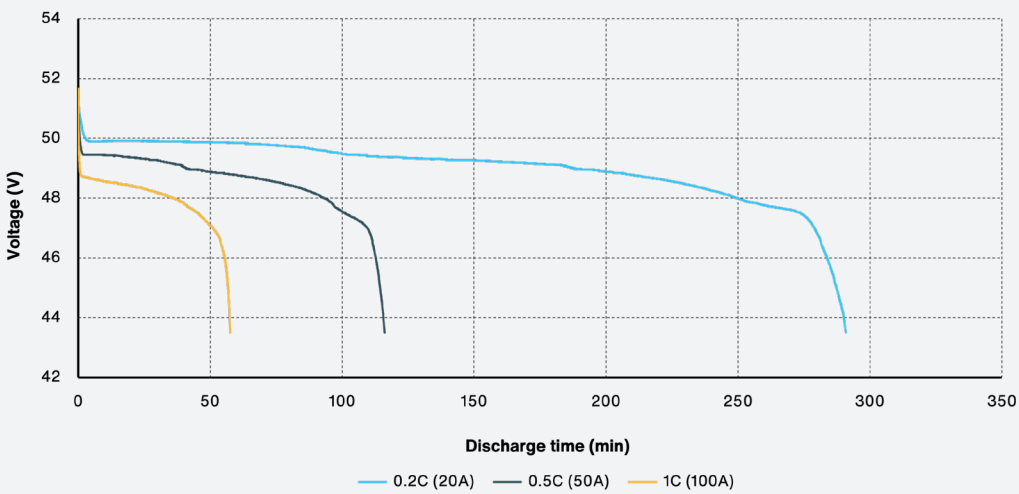
Cycle life at 0.5C (EOL 80 %)



Design life



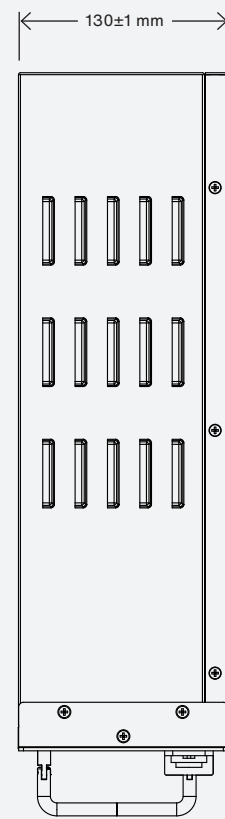
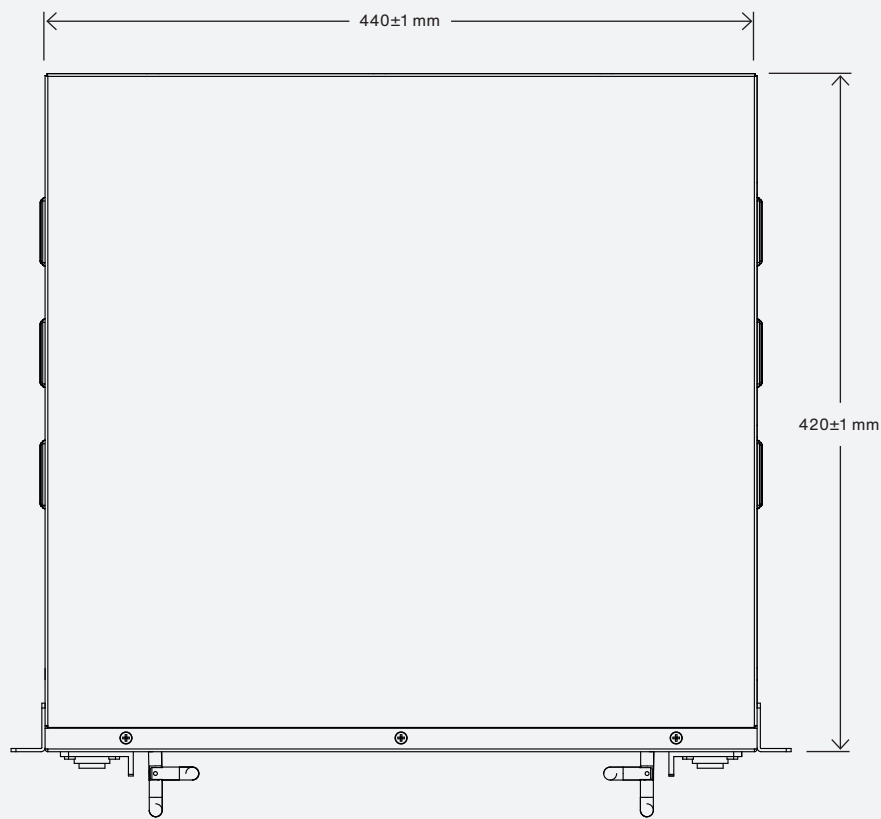
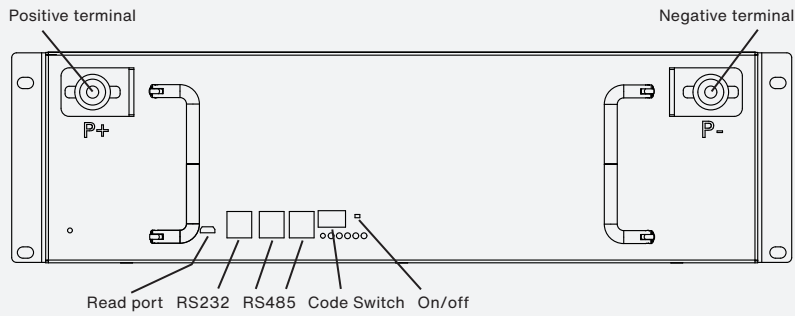
Discharge curve at 25 °C



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48V100

Technical drawings



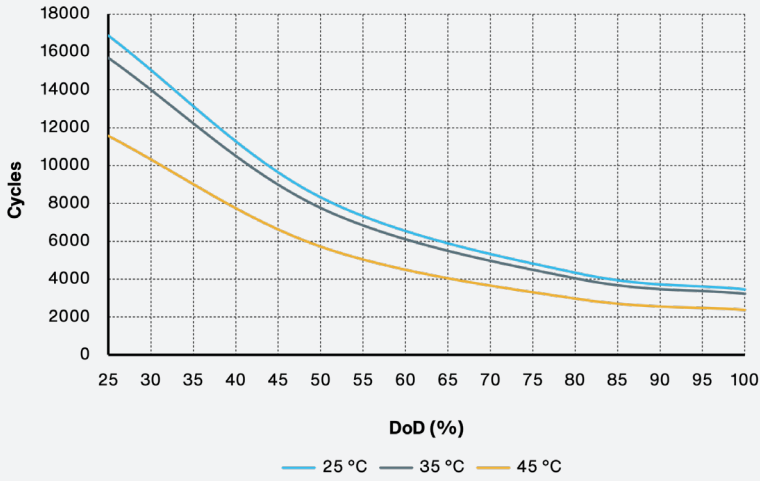
Not to scale!

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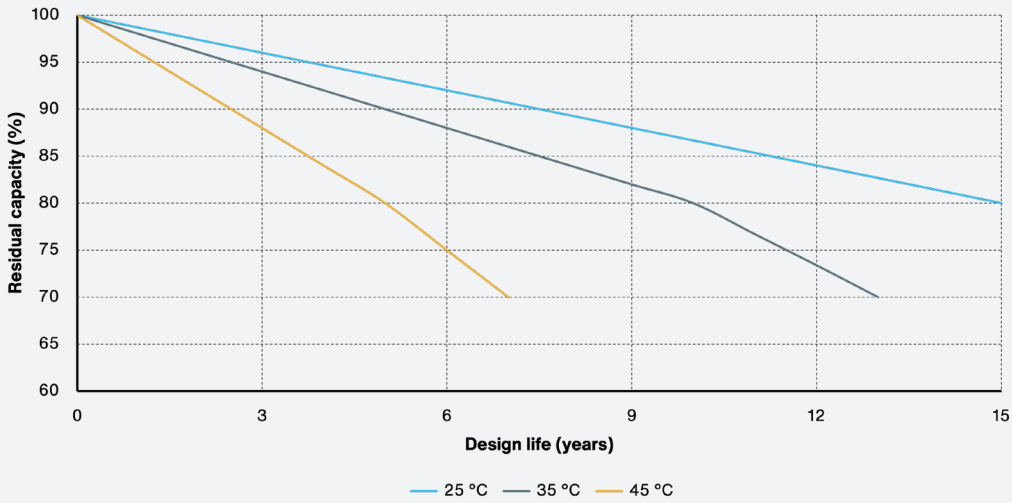
48V150



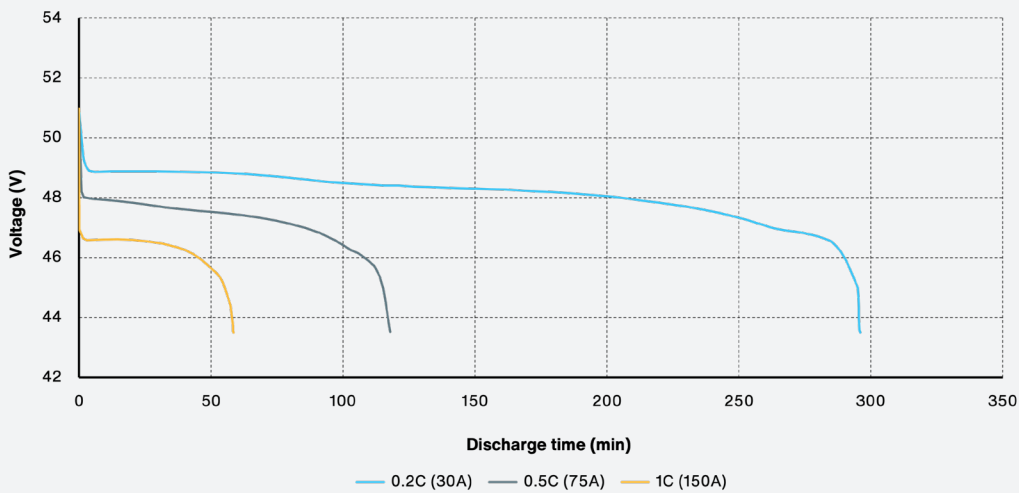
Cycle life at 0.5C (EOL 80 %)



Design life



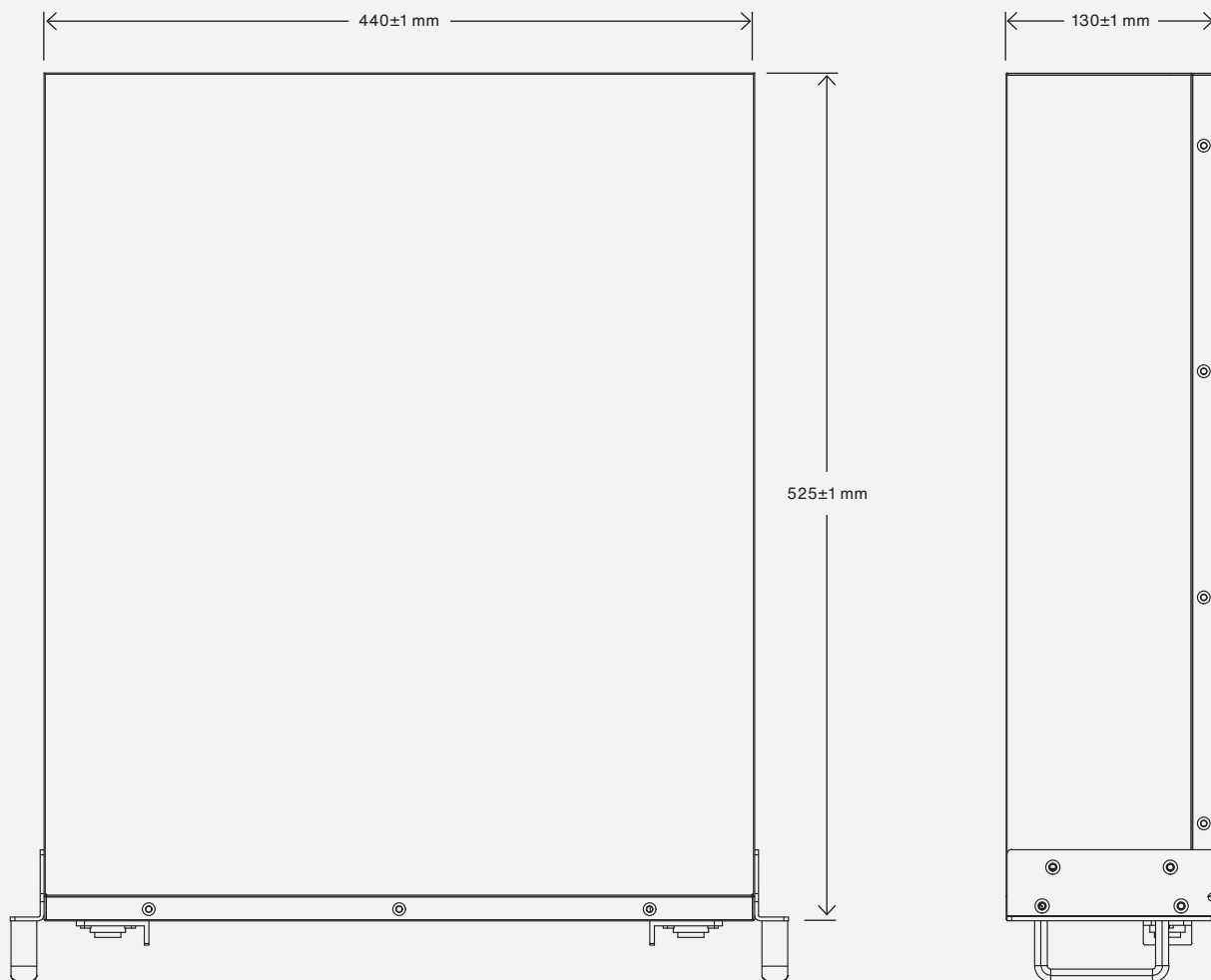
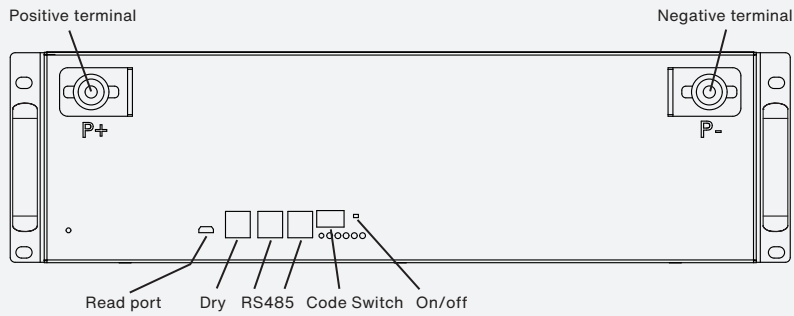
Discharge curve at 25 °C



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48V150

Technical drawings



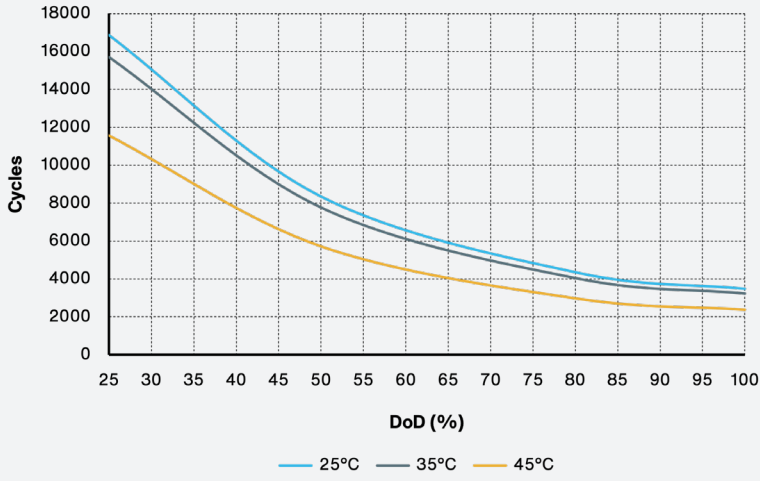
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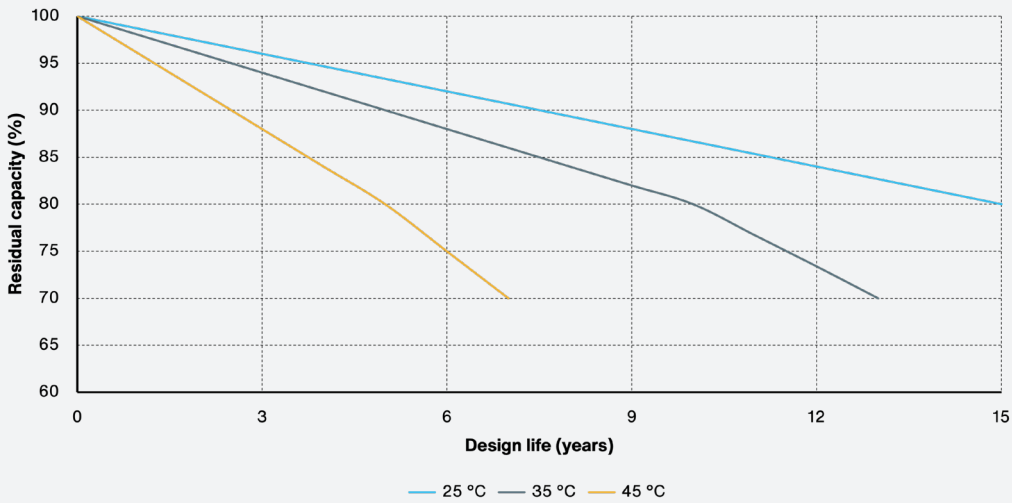
48V200



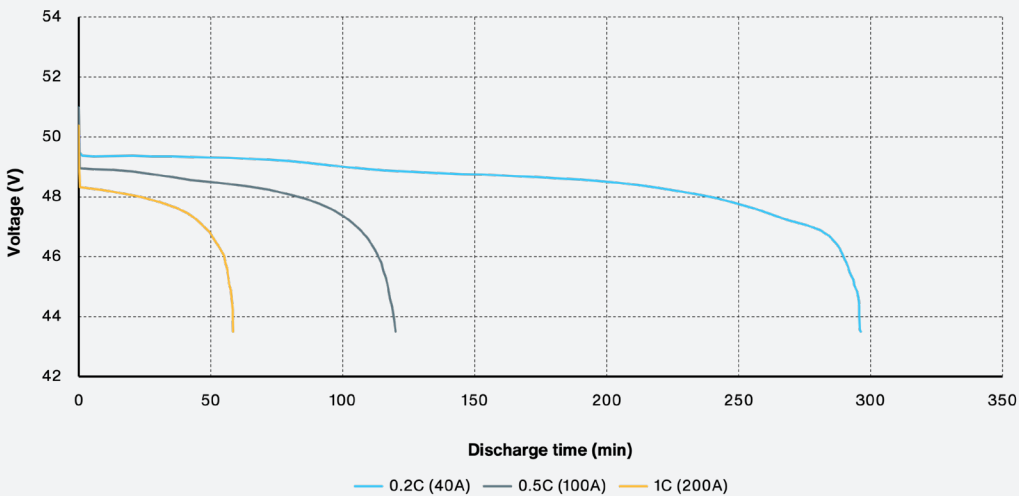
Cycle life at 0.5C (EOL 80 %)



Design life



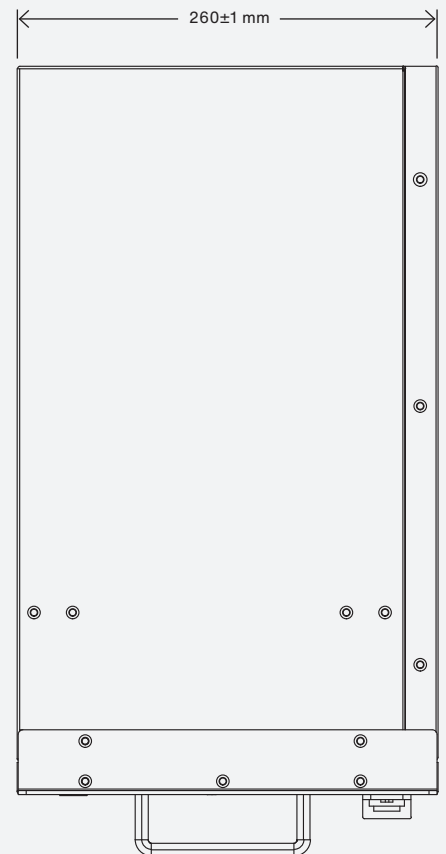
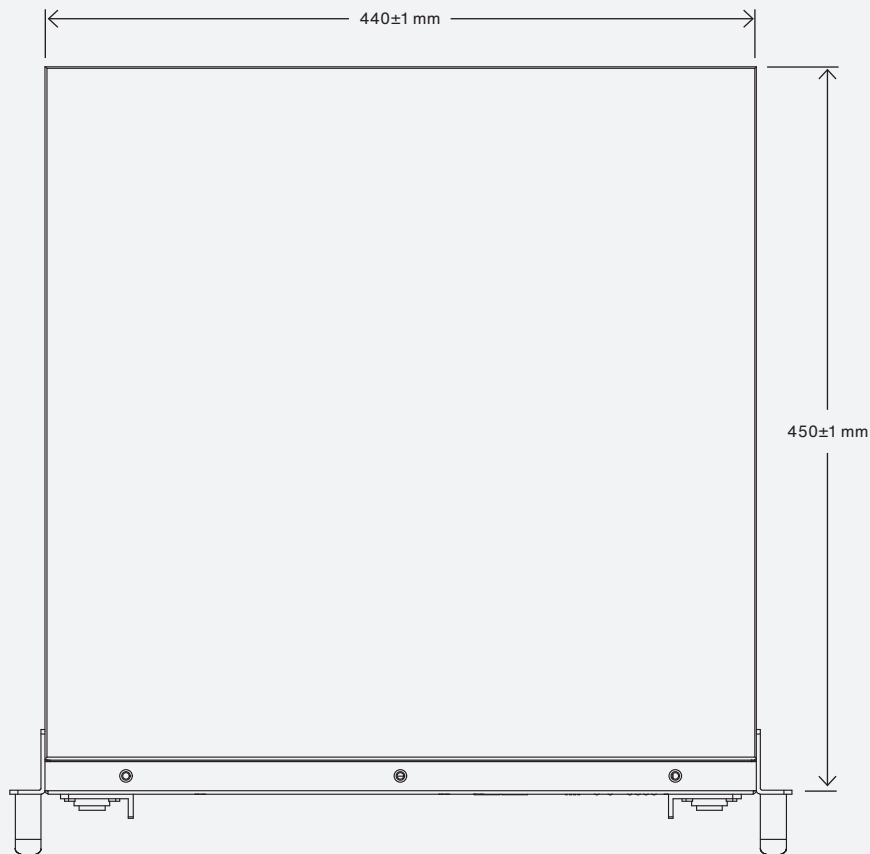
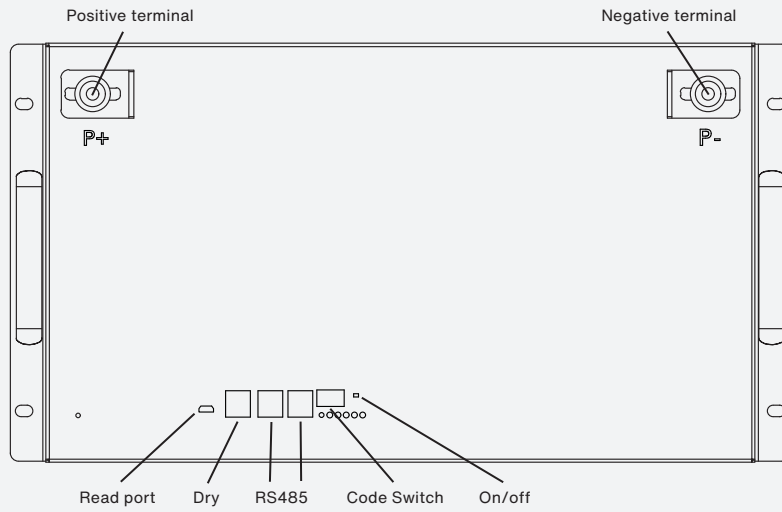
Discharge curve at 25 °C



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48V200

Technical drawings



Not to scale!