



Battery 23" 2U / 180 Ah

B48-180-228-2
14s Series, Generation 6

770-00267 Rev 1.1



Polarium Battery is an advanced power backup system. Its rechargeable smart lithium-ion battery provides reliable power backup for hybrid, off-grid and grid-connected sites worldwide.

Safe

All our products are designed with your safety in mind - thoroughly verified and certified for safe operation.

Simple

Advanced technology made super easy to use. easy to install, maintenance free, charge control.

Strong

Works in all conditions and environments. Extra protection against dust and moisture for prolonged life.

Smart

Automatic balancing, automatic reconnect, remote monitoring options and much more.

Secure

Our unique, patented Anti-Theft Device disables function of batteries if removed from site. It's prepared for optional GPS tracker.

Sustainable

The lifetime is extraordinary long. It's small, light, maintenance free and can be remotely controlled.

Technical Specification

Enclosure Size	23" 2U
Lithium Chemistry	Nickel based
Rated Voltage	48 V
Rated Capacity (0.2 C, 25 °C to LVBD)	180 Ah
Rated Energy (0.2 C, 25 °C to LVBD)	9092 Wh
Calendar Life @ 80 % SOC	20 years
Peak Discharge Power	6 kW for 60 seconds
Discharge Cutoff Current	100 A
End-of-Discharge Voltage (LVBD)*	35 V
Charge Current Limitation (CLD)**	100 A
Charge Voltage for 100 % SOC	58.8 V
Charge Voltage for 80 % SOC	56 V
Operating Temperature Charging	0 to +55 °C (32 to 131 °F)
Operating Temperature Discharging	-20 to +60 °C (-4 to 140 °F)
Operating Relative Humidity	According to ETSI 300 019-1-3 class 3.2 (0-95 %)
Storage Temperature	-20 to +60 °C (-4 to 140 °F)
Weight	Approx 57 kg (126 lbs)
Dimensions	W 544 D 725 H 87 mm (W 21.4" D 28.5" H 3.4")
Circuit Breaker	100 A, BMS Controlled, dual pole
IP Class	IP65
Communication Protocols	RS485, RJ45 (2) ports, Modbus
Safety Standards	IEC62619, IEC62368, UN38.3
Management & Monitoring	Software for PC (Studio) included for full local monitoring and management. Remote connection via Modbus.

*Cut off when one cell reaches 2.5 V, 14 cells in series.

**If the charge current is 100 A or higher, the battery will automatically reduce the charge current to 6-12 A temporarily.

Data subject to change without notice

Constant Current / A @ 25 °C

Duration / Hours



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End of Discharge Voltage		1	2	3	4	5	6	7	8	9	10	12	14	16	20	24
47	N/A	65.9	45.1	34.4	27.8	23.3	20.1	17.6	15.7	14.2	11.9	10.2	9.0	7.2	6.0	
46	N/A	70.9	48.5	36.9	29.8	25.0	21.5	18.9	16.8	15.2	12.7	10.9	9.6	7.7	6.4	
45	N/A	75.4	51.5	39.1	31.6	26.5	22.8	20.0	17.8	16.1	13.4	11.5	10.1	8.1	6.8	
44	N/A	79.4	54.1	41.1	33.1	27.8	23.9	21.0	18.7	16.8	14.1	12.1	10.6	8.5	7.1	
43	N/A	82.6	56.2	42.6	34.4	28.8	24.8	21.7	19.4	17.5	14.6	12.5	11.0	8.8	7.3	
42	N/A	85.0	57.7	43.7	35.3	29.5	25.4	22.3	19.9	17.9	14.9	12.8	11.2	9.0	7.5	
41	N/A	86.5	58.6	44.4	35.8	30.0	25.8	22.6	20.1	18.2	15.2	13.0	11.4	9.1	7.6	
40	N/A	87.0	58.9	44.6	35.9	30.1	25.9	22.7	20.2	18.2	15.2	13.1	11.4	9.1	7.6	
39	N/A	87.0	58.9	44.6	35.9	30.1	25.9	22.7	20.2	18.2	15.2	13.1	11.4	9.1	7.6	
32.5	N/A	89.3	60.3	45.6	36.6	30.7	26.4	23.1	20.6	18.5	15.5	13.3	11.6	9.3	7.7	

Constant Power / W @ 25 °C

Duration / Hours

End of Discharge Voltage		1	2	3	4	5	6	7	8	9	10	12	14	16	20	24
47	N/A	3442	2367	1806	1460	1226	1057	929	829	748	627	539	473	381	319	
46	N/A	3679	2526	1926	1557	1307	1126	990	883	796	667	573	503	404	338	
45	N/A	3892	2668	2033	1643	1378	1188	1043	930	839	702	603	529	424	354	
44	N/A	4075	2790	2124	1716	1439	1240	1089	970	875	732	629	551	442	368	
43	N/A	4223	2887	2197	1774	1488	1281	1125	1003	904	756	649	569	455	380	
42	N/A	4331	2957	2248	1815	1522	1310	1151	1025	925	773	664	581	465	388	
41	N/A	4397	2998	2278	1838	1541	1327	1165	1038	936	782	672	588	471	392	
40	N/A	4419	3008	2284	1843	1545	1330	1168	1041	939	784	674	590	472	393	
39	N/A	4419	3008	2284	1843	1545	1330	1168	1041	939	784	674	590	472	393	
32.5	N/A	4537	3078	2334	1880	1576	1356	1191	1061	957	798	686	600	480	396	

Energy / Wh @ 25 °C

Duration / Hours

End of Discharge Voltage		1	2	3	4	5	10
47	N/A	6885	7100	7222	7302	7484	
46	N/A	7358	7578	7703	7784	7964	
45	N/A	7784	8005	8131	8213	8392	
44	N/A	8150	8370	8496	8578	8754	
43	N/A	8446	8661	8786	8868	9042	
42	N/A	8663	8871	8994	9075	9247	
41	N/A	8795	8993	9112	9192	9363	
40	N/A	8838	9024	9138	9215	9387	
39	N/A	8838	9024	9138	9215	9387	
32.5	N/A	9073	9234	9337	9402	9565	

State of Charge vs Discharge Voltage

Current / C-rate

State of Charge	0.2 C	0.5 C	1.0 C
100 %	58.2	58.2	N/A
90 %	56.1	56.0	N/A
80 %	54.6	54.5	N/A
70 %	53.2	53.1	N/A
60 %	51.8	51.7	N/A
50 %	50.8	50.7	N/A
40 %	50.2	50.0	N/A
30 %	49.6	49.4	N/A
20 %	48.9	48.8	N/A
10 %	47.6	47.6	N/A
0 %	42.9	42.8	N/A

Technical Drawings

