

HEL-200

High Energy Longlife Batteries



Storage of love and green energy

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- SHOTO HEL series battery is the new hi-tech product designed for Renewable Energy Sources based on international advanced technology.
- With corrosion-resistant alloy material, special grid design, proprietary activator, low density electrolyte technology. HEL battery devote itself to protect our Environment and Human with green clean energy and natural resources used effective.

Features:

- Long life design for deep cycle (2500 cycles at 60%DOD)
- The super designed float life 20 years (25°C)
- Excellent performance for capacity recovery
- Most cost effective
- Good valve safety performance
- Strong resistance to undercharge and overdischarge

Technical specifications :

Electrical data	
Nominal voltage	2 V
Number of cells	1
Rated capacity(25°C)	200 Ah - 20A for 10h to 1.80V/cell 240 Ah - 2A for 120h to 1.85V/cell
Internal resistance	0.36 mΩ (acc. to IEC 60896-21)
Short circuit current	5800 A (acc. to IEC60896-21)
Self discharge(25°C)	less than 1.5% per month
Design life at 25°C	20 years

Mechanical data	
Weight ready for use	17 kg (37.5 lbs)
Length	207 mm (8.15 in)
Width	95 mm (3.74 in)
Height of monobloc	358 mm (14.09 in)
Total height	372 mm (14.65 in)
Terminal	M8 female
Terminal hardware torque	10 - 15 Nm

The certification:

- ISO9001(03012Q10124R3M)
- ISO14001(03013E10129R1M)
- ISO18001(03011S10160R1M)
- UL(MH28466)
- CE

The standard:

- IEC 60896-21/22
- IEC 61427
- BS6290-Part4
- JISC8704-2
- GB/T19638.2-2005
- GB/T 22473-2008
- YD/T 799-2010

Constant Current Discharge Data Units: Amperes (25°C,77°F)

End Voltage	Time (minutes)		Time (hours)										
	15	30	1	3	5	8	10	12	20	24	48	72	120
1.70V	249.2	186.0	121.2	54.8	38.3	26.1	21.8	18.5	11.6	9.91	5.00	3.44	2.18
1.75V	236.4	172.8	115.6	53.2	36.8	25.8	21.5	18.2	11.6	9.79	4.92	3.39	2.15
1.80V	222.8	162.0	108.0	51.6	36.0	25.3	21.0	17.8	11.4	9.63	4.84	3.31	2.12
1.83V	208.8	154.4	101.2	49.6	35.1	24.8	20.6	17.5	11.1	9.42	4.72	3.24	2.08
1.85V	197.6	144.4	97.6	48.8	34.8	24.6	20.4	17.4	11.0	9.26	4.68	3.22	2.04
1.90V	166.8	124.0	86.4	45.6	33.4	23.6	19.8	16.9	10.7	9.06	4.56	3.11	1.98

Constant Power Discharge Data Units: Watts per cell (25°C,77°F)

End Voltage	Time (minutes)		Time (hours)										
	15	30	1	3	5	8	10	12	20	24	48	72	120
1.70V	449	356	242	114	78	52	42	39	24.4	20.82	10.50	7.22	4.59
1.75V	432	344	233	109	76	50	42	38	24.2	20.48	10.29	7.08	4.50
1.80V	412	332	228	105	74	49	41	38	23.7	20.12	10.11	6.92	4.43
1.83V	393	313	220	103	72	48	40	37	23.1	19.67	9.85	6.76	4.34
1.85V	375	295	207	100	70	47	40	36	22.8	19.27	9.74	6.71	4.25
1.90V	326	249	178	92	66	44	37	34	22.1	18.66	9.39	6.41	4.07

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The stored energy solutions:

- Grid design The creative multi-block and wave design
- Separator High density microporous glass mat
- Positive plate The multi-element alloy grids with a corrosion-resistant, pure lead, high tin
- Negative plate Lead-calcium multi-element alloy grids with low tin
- Electrolyte Special additives, low electrolyte density
- Valve With the function of automatic filtering acid mist and explosion-proof
- Container Super strong ABS

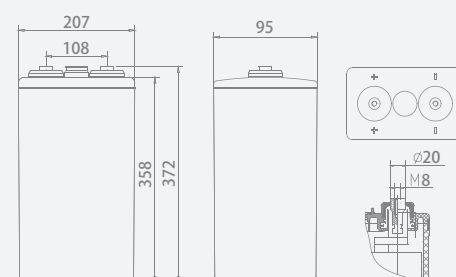
Installation and operation:

- CC-CV charge current unlimited, otherwise 50A max. if $T > 25^{\circ}\text{C}$
- Cycle and equalize charge voltage 2.35V per cell at 25°C
- Compensation in function of temperature $-5\text{mV}/^{\circ}\text{C}/\text{cell}$
- Recommended float charge voltage 2.25V per cell at 25°C
- Compensation in function of temperature $-3\text{mV}/^{\circ}\text{C}/\text{cell}$
- Preferred operating temperature range 15°C to 25°C (68°F to 77°F)
- Maximum operating temperature range -40°C to 50°C (-40°F to 122°F)
- A separate battery room is not necessary

Main applications:

- Solar and wind power system;
- Various electric equipment and station;
- Navigational signal system;
- Communication exchange and transmission system;
- Emergency lighting;
- The cycled system for instrument.

Dimensions(mm)

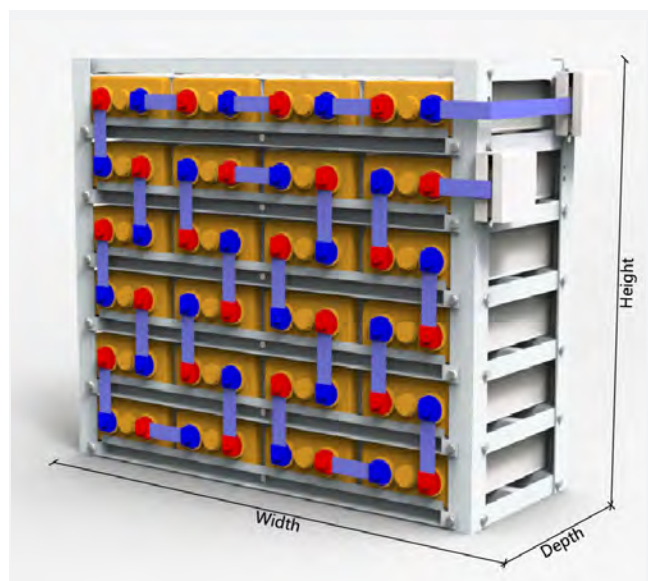


Racking (optional)

- The installation mode easy and strong;
- The strips used on sides, the terminals and parts of outputs protected

- Cell model: HEL-200
- Number of cells: 24
- System Voltage: 48

Cell Configuration	4 high 6 wide (optional)	6 high 4 wide (standard)
Rack width (mm)	1515	1056
Rack depth (mm)	430	430
Rack height (mm)	590	855
System weight (kg)	431	441



Note: This information is only the description for product performance, it didn't imply any guarantee for the battery. We keep rights for any changes for the parameters of the battery without notification, please keep in touch with SHOTO in order to obtain the latest information.

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