

# HEL-1000

High Energy Longlife Batteries



Storage of love and green energy

## High Energy Longlife Batteries



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)	1000 Ah - 100A for 10h to 1.80V/cell 1200 Ah - 10A for 120h to 1.85V/cell
Internal resistance	0.19 mΩ ( acc. to IEC 60896-21)
Short circuit current	11000 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	71 kg (156.5 lbs)
Length	211 mm (8.31 in)
Width	357 mm (14.06 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	1109	844	598	279	190	130	107	92	56.6	49.131	24.8	16.9	10.7
1.75V	1043	778	565	273	187	128	107	91.6	56.2	48.72	24.6	16.8	10.7
1.80V	973	728	536	267	182	125	105	90.6	55.2	47.611	24.3	16.6	10.5
1.83V	897	680	506	259	180	124	104	89.8	55.1	47.611	24.2	16.5	10.5
1.85V	828	641	473	245	170	120	101	86.5	53.3	46.294	23.3	15.9	10.2
1.90V	654	532	392	219	154	109	92	79.9	49.6	43.154	21.7	14.5	9.2

### 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	1998	1628	1190	575	392	283	235	196	118.8	103.15	52.07	35.48	22.47
1.75V	1913	1531	1122	564	384	276	233	194	117.5	101.88	51.44	35.13	22.37
1.80V	1802	1431	1033	547	374	270	228	191	115.3	99.48	50.77	34.68	21.94
1.83V	1686	1337	966	534	364	263	224	188	115.0	99.38	50.51	34.44	21.92
1.85V	1575	1235	885	516	355	255	216	181	110.9	96.31	48.47	33.08	21.22
1.90V	1276	1010	751	471	332	239	204	170	102.2	88.90	44.70	29.87	18.95

# HEL-1000

High Energy Longlife Batteries



Storage of love and green energy

## 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

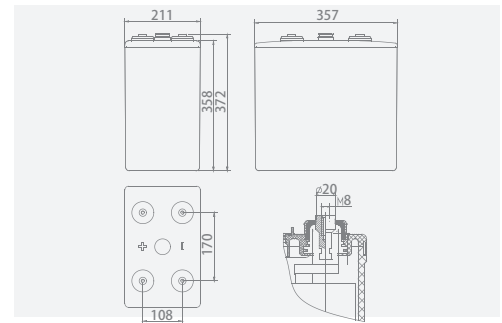
## Installation and operation:

- CC-CV charge current unlimited, otherwise 250A max. if T>25°C
- Cycle and equalize charge voltage 2.35V per cell at 25°C
- Compensation in function of temperature -5mV/°C/cell
- Recommended float charge voltage 2.25V per cell at 25°C
- Compensation in function of temperature -3mV/°C/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)

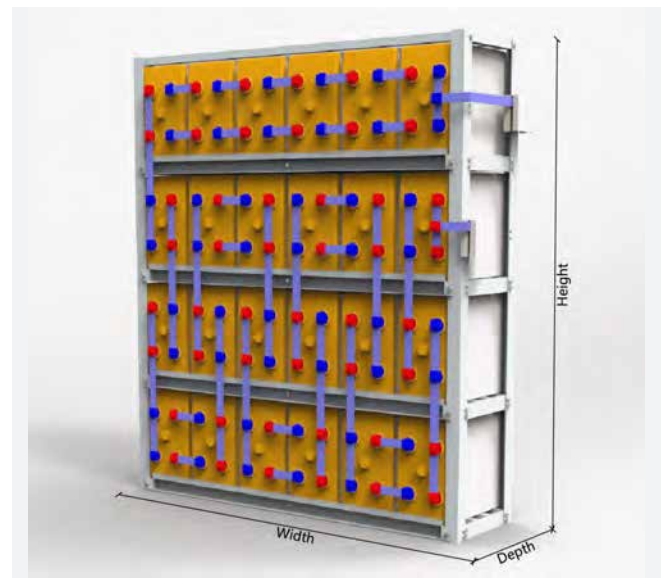


## Racking (optional)

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

- Cell model: HEL-1000
- Number of cells: 24
- System Voltage: 48

Cell Configuration	2 high 12 wide (optional)	4 high 6 wide (standard)
Rack width (mm)	3050	1535
Rack depth (mm)	415	415
Rack height (mm)	870	1690
System weight (kg)	855	1855



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.

SHUANGDENG GROUP CO.,LTD.

ADD: No 999, Tianmu Road, Jiangyan Economic Development Zone  
 Freephone helpline : +86 4008 899 886 Tel: +86 0523 88521888  
 Fax: +86 0523 88521244 E-mail: joyce.zhong@chinashoto.com