

# HEL-500

High Energy Longlife Batteries



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• 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)	500 Ah - 50A for 10h to 1.80V/cell 600 Ah - 5A for 120h to 1.85V/cell
Internal resistance	0.26 mΩ ( acc. to IEC 60896-21)
Short circuit current	8030 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	35.5 kg (78.1 lbs)
Length	207 mm (8.15 in)
Width	183 mm (7.20 in)
Height of monobloc	357 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(140701529SHA-001)

### 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	800.0	465.0	303.0	137.0	95.7	65.3	54.6	46.2	29.1	24.79	12.50	8.60	5.46
1.75V	680.0	432.0	289.0	133.0	92.1	64.5	53.8	45.5	28.9	24.48	12.30	8.47	5.38
1.80V	557.0	405.0	270.0	129.0	90.0	63.2	52.5	44.4	28.4	24.07	12.10	8.28	5.30
1.83V	538.0	386.0	253.0	124.0	87.8	62.1	51.4	43.8	27.7	23.56	11.80	8.10	5.20
1.85V	490.0	361.0	244.0	122.0	86.9	61.4	51.1	43.5	27.4	23.15	11.70	8.06	5.11
1.90V	417.0	310.0	216.0	114.0	83.6	59.1	49.4	42.2	26.8	22.64	11.40	7.78	4.94

### 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	1123	891	606	284	186	130	106	97.0	61.1	52.04	26.24	18.06	11.46
1.75V	1081	861	582	272	180	126	105	95.6	60.4	51.19	25.72	17.71	11.25
1.80V	1030	830	569	263	175	122	103	94.1	59.3	50.30	25.28	17.30	11.07
1.83V	983	783	549	257	171	119	101	92.3	57.8	49.18	24.63	16.91	10.85
1.85V	938	738	517	249	169	118	99	90.5	57.0	48.17	24.34	16.77	10.63
1.90V	815	623	446	231	164	110	92	83.9	55.2	46.65	23.48	16.03	10.18

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shoto  
the source of love and green energy

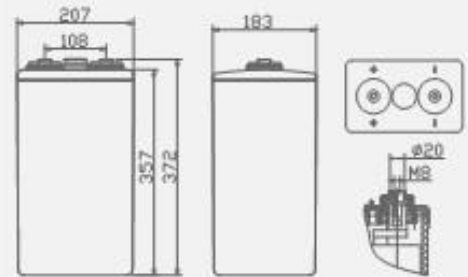
### The stored energy solutions:

- 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 125A max. if  $T > 25^{\circ}\text{C}$
- Cycle and equalize charge voltage 2.35V per cell at  $25^{\circ}\text{C}$
- Compensation in function of temperature  $-5\text{mV}/^{\circ}\text{C}/\text{cell}$
- Recommended float charge voltage 2.25V per cell at  $25^{\circ}\text{C}$
- Compensation in function of temperature  $-3\text{mV}/^{\circ}\text{C}/\text{cell}$
- Preferred operating temperature range  $15^{\circ}\text{C}$  o  $25^{\circ}\text{C}$  ( $68^{\circ}\text{F}$  to  $77^{\circ}\text{F}$ )
- Maximum operating temperature range  $40^{\circ}\text{C}$  to  $50^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$  to  $122^{\circ}\text{F}$ )
- A separate battery room is not necessary

### Dimensions(mm)

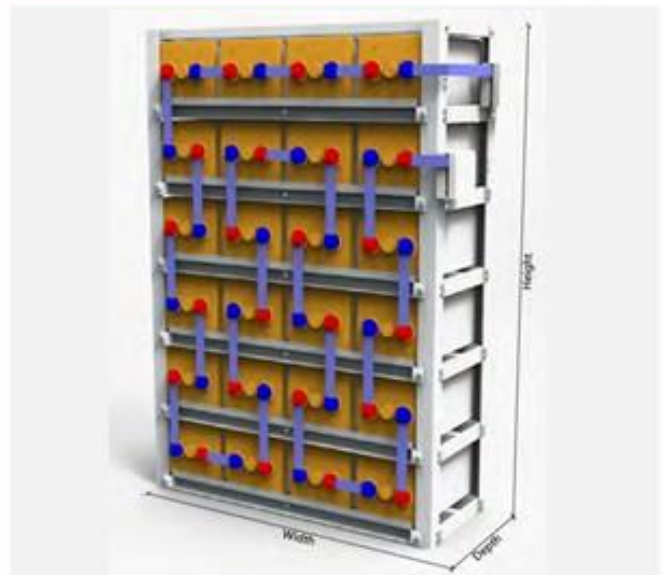


### Racking (optional)

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

- Cell model: HEL-500
- Number of cells: 24
- System Voltage: 48

Cell Configuration	4 high 6 wide (optional)	6 high 4 wide (standard)
Rack width (mm)	1515	1050
Rack depth (mm)	410	410
Rack height (mm)	975	1410
System weight (kg)	933	943



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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