



# S145-12 (12V145Ah)

Helios (Deep Cycle GEL, 12 Volts) series is pure GEL battery with 12 years floating design life, it is ideal for standby or frequent cyclic discharge applications under extreme environments. By using strong grids, high purity lead and patented Gel electrolyte, the Helios series offers excellent recovery after deep discharge under frequent cyclic discharge use, and can deliver 400 cycles at 100% DOD. Suitable for solar, CATV, marine, RV and deep discharge UPS, communication, and telecommunication, etc.

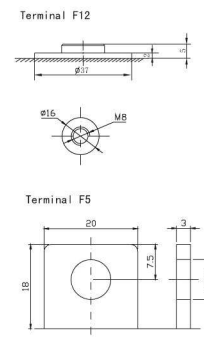
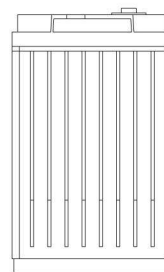
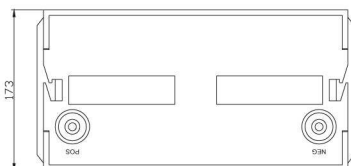
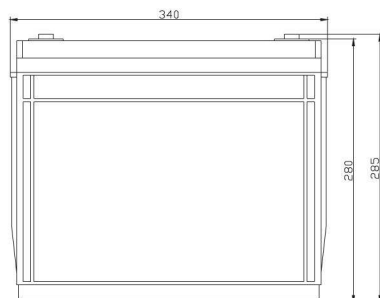
## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	145Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 44.0 Kg(Tolerance± 1.5%)
Max. Discharge Current	1450 A (5 sec)
Internal Resistance	Approx. 5.0 mΩ
Operating Temperature Range	Discharge: -40°C~60°C Charge: -20°C~50°C Storage: -40°C~60°C
Normal Operating Temperature Range	25°C±5°C
Float charging Voltage	13.6 to 13.8 VDC/unit Average at 25°C
Recommended Maximum Charging Current	29A
Equalization and Cycle Service	14.2 to 14.4VDC/unit Average at 25°C
Self Discharge	SIGA Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 3% per month at 25°C. Please charge batteries before using.
Terminal	Terminal F5/F12
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.



## Dimensions

Unit: mm Dimension: 340 (L) × 173 (W) × 280 (H)



### Constant Current Discharge Characteristics: A (25°C)(The capacity reaches the peak value after 5-20 cycles.)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	345.4	247.1	198.4	133.0	84.54	50.90	36.82	29.39	24.95	16.90	14.03	7.692
10.0V	335.4	235.2	194.3	131.8	84.15	50.51	36.68	29.26	24.81	16.77	13.90	7.553
10.2V	325.4	226.9	191.3	131.0	83.37	50.13	36.40	29.12	24.66	16.63	13.76	7.413
10.5V	295.7	211.8	184.3	128.9	82.59	49.75	36.26	28.85	24.37	16.49	13.63	7.250
10.8V	270.0	195.4	171.8	124.5	79.79	48.86	35.27	28.17	23.77	15.83	13.20	6.884
11.1V	233.2	176.7	155.9	117.7	75.80	46.69	33.72	26.81	22.75	15.16	12.80	6.479

### Constant Power Discharge Characteristics: W (25°C)(The capacity reaches the peak value after 5-20 cycles.)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	3572	2632	2182	1516	976.9	599.9	439.3	350.3	297.7	201.8	167.7	92.23
10.0V	3502	2551	2147	1498	974.5	596.7	438.3	349.9	297.0	200.8	166.6	90.63
10.2V	3462	2484	2123	1502	967.0	593.1	436.4	349.1	295.9	199.5	165.2	88.95
10.5V	3189	2341	2049	1482	958.3	588.8	434.7	345.9	292.4	197.9	163.5	87.00
10.8V	2938	2183	1916	1434	930.7	581.3	422.9	338.0	285.2	190.0	158.3	82.61
11.1V	2610	1997	1744	1360	890.9	559.7	404.6	321.7	273.0	181.9	153.7	77.75

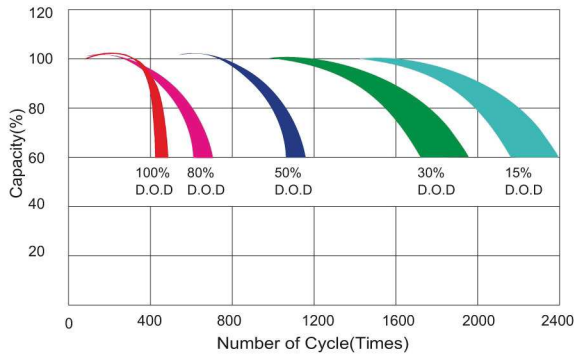
All mentioned values are average values (Tolerance ±2%).

# S145-12

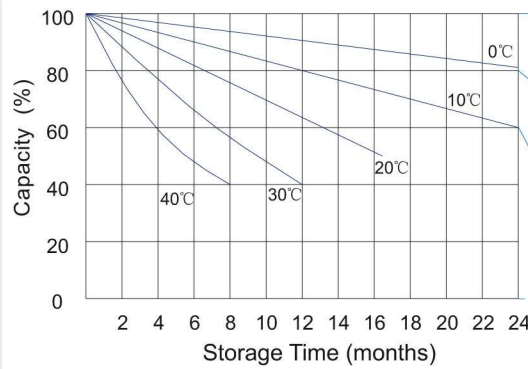
12V145Ah



## Life characteristics of cyclic use



## Storage characteristic



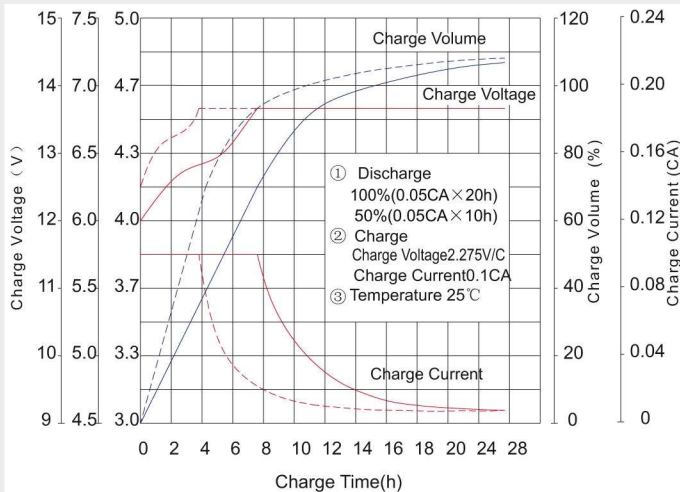
Supplementary charge required (Carry out supplementary charge before use if 100% capacity is required)

Supplementary charge required before use. This supplementary charge will help to recover the capacity and should be made as early as possible.

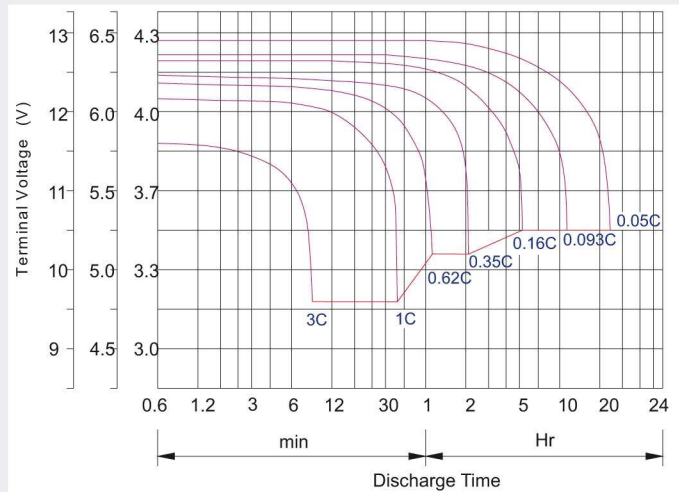
Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

Supplementary charge and storage guidelines

## Charge characteristic curve for cyclic use



## Discharge characteristic curve



## Capacity Factors With Different Temperature

Battery Type		-20°C	-10°C	0°C	5°C	10°C	20°C	25°C	30°C	40°C	45°C
GEL Battery	6V&12V	50%	70%	83%	85%	90%	98%	100%	102%	104%	105%
	2V	60%	75%	85%	88%	92%	99%	100%	103%	105%	106%
AGM Battery	6V&12V	46%	66%	76%	83%	90%	98%	100%	103%	107%	109%
	2V	55%	70%	80%	85%	92%	99%	100%	104%	108%	110%

## Discharge Current VS. Discharge Voltage

Final Discharge Voltage V /cell	1.75V	1.70V	1.60V
Discharge Current (A)	(A) ≤ 0.2C	0.2C < (A) < 1.0C	(A) ≥ 1.0C

**Charge the batteries at least once every six months, if they are stored at 25°C.**

Charging Method:

Constant Voltage	-0.2Cx2h+2.4-2.45V/cellx24h, Max. Current 0.2C
Constant Current	-0.2Cx2h+0.1Cx12h
Fast	-0.2Cx2h+0.2Cx6h

Bolt	M5	M6	M8
Terminal	F3 F4 F13 F18 T25 T26	F8 F11 F12-1 F15	F5 F9 F10 F12 F14 F16
Torque	6~7N·m	8~10N·m	10~12N·m

## Maintenance & Cautions

### Cycle service

- ※ Avoid battery over discharge, especially battery series connection use.
- ※ Charged with recommend voltage, ensure battery can be full recharged.
- In general, recharge capacity should be 1.1-1.15 times discharge capacity.
- ※ Effect of temperature on cycle charge voltage: -4mV/°C/Cell.
- ※ There are a number of factors that will affect the length of cyclic service.
- The most significant are depth of discharge, ambient temperature, discharge rate, and the manner in which the battery is recharged.
- Generally speaking, the most important factors is depth of discharge.

# Test Report - CERTIFICATE

## Akku, 06.02.2015,18:51:32

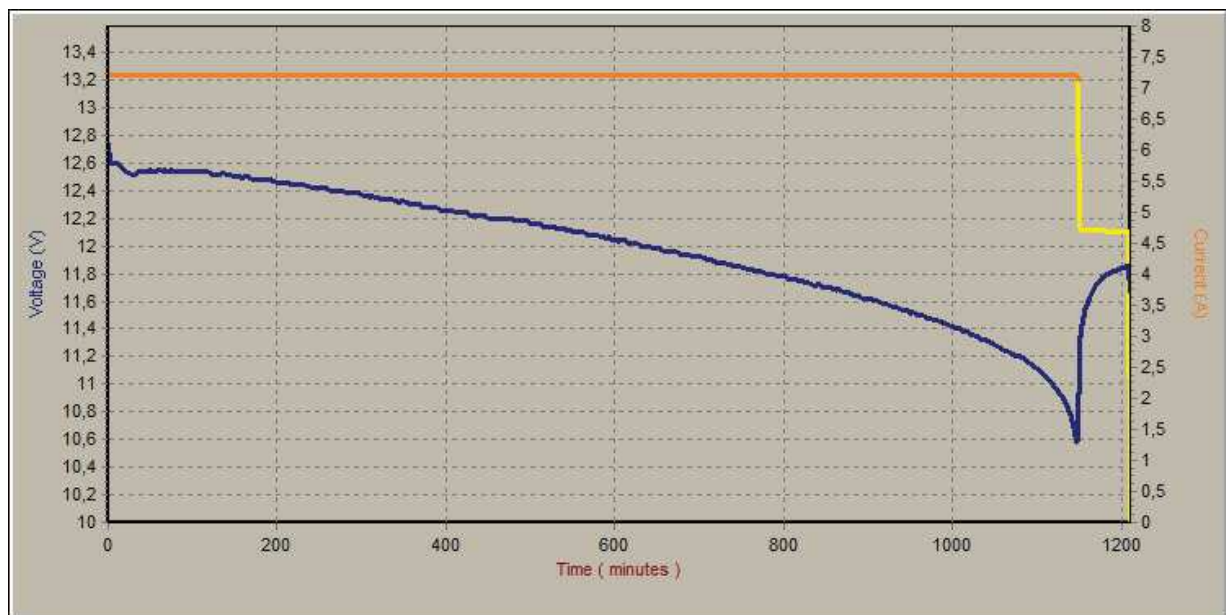


Name: SIGA Helios Gel 145AH on 20HR with 7,25A as datasheet

Place of measurement: 18 °Celsius

Instruments: Fortex Capacity Tester Professional

Date: 06.02.2015



### Measurement parameters

Charging time: 20 hours  
Discharge voltage: 10,50 V  
Discharge current: 07,25 A  
- - -  
Voltage correction: 1  
Voltage offset: 0  
Current correction: 1  
Current offset: 0

### Results

Discharge 1186 minutes @ 7,25A = 143,30 Ah

### Quality control

PASSED