

USFG 12-90(12V90AH)

Applications

- ◆ Telecom application (indoor or outdoor BTS)
(19"/21"/23" rack or cabinet)
- ◆ Solar System
- ◆ Wind system
- ◆ Hybrid solution



Design

- ◆ Positive plate: flat plate and grid-plate in PbCaSn-alloy
- ◆ Negative plate: flat plate and grid-plate in PbCaSn-alloy with long life expander material
- ◆ Electrolyte: sulphuric acid, fixed as GEL by fumed silica
- ◆ Separator: high quality microporous separator
- ◆ Safety valve: valve with flame arrestor

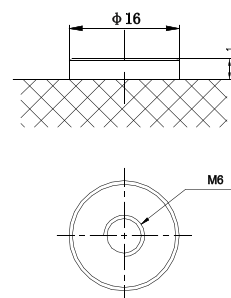
Features

- ◆ Long life: 16 years design life
- ◆ Good deep discharge resilience performance
- ◆ Special plate design, long cycle lifetime
- ◆ High thermal capacity, reduce the risk of thermal out of control and drying hard, can be used in bad environment
- ◆ Flame retardant container UL94-V0

Terminal

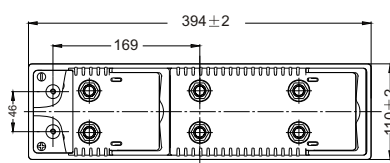
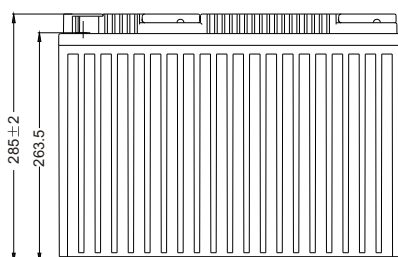
Terminal Model: T6

Unit: mm



Layout

Unit: mm



Front Terminal GEL Battery-USFG Series

Specification

Nominal Voltage	12V	
Rated Capacity (Ah)	90.0 AH/9.0 A	(10hr, 1.80V/cell, 25°C)
	69.0 AH/23.0 A	(3hr, 1.75V/cell, 25°C)
	52.2 AH/52.2 A	(1hr, 1.60V/cell, 25°C)
Dimension	Length	394 ± 2mm
	Width	110 ± 2mm
	Container Height	285 ± 2mm
	Total Height	285 ± 2mm
Approx Weight	Approx 35.0 kg	
Terminal	T6	
Container Material	ABS	
Max. Discharge Current	960A (5s)	
Internal Resistance	Approx 5.5mΩ	
Operating Temp. Range	Discharge: -20~55°C Charge: 0~40°C Storage: -20~50°C	
Capacity Affected by Temperature	40°C	103%
	25°C	100%
	0°C	86%
Cycle Use	Initial Charging Current less than 24.0 A.	
	Voltage: 14.4V at 25°C	Temp. coefficient -30mV/°C
Standby Use	Equalization voltage: 14.1V at 25°C Temp. coefficient -18mV/°C	
	Float voltage: 13.5V at 25°C	Temp. coefficient -18mV/°C
Self Discharge	USFG series batteries may be stored for up to 9 months at 25°C and then a freshening charge is required.	
	For higher temperatures the time interval will be shorter.	



ISO9001



ISO14001

Performance

Constant Current Discharge (Amperes) at 25 °C (77°F)

F.V/Time	20min	30min	45min	1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	20h
1.85V/cell	75.6	59.4	45.3	37.9	26.6	20.3	16.8	14.5	12.5	11.1	10.0	9.11	8.62	4.61
1.80V/cell	86.6	66.3	49.9	41.8	28.8	21.7	17.8	15.2	13.1	11.6	10.4	9.58	9.00	4.80
1.75V/cell	97.3	72.9	54.0	44.8	30.5	23.0	18.7	15.84	13.6	12.0	10.8	9.87	9.18	4.90
1.70V/cell	104.9	78.1	57.3	47.4	32.4	23.9	19.3	16.3	14.0	12.4	11.1	10.1	9.39	4.96
1.67V/cell	109.1	81.2	59.4	49.2	33.2	24.7	19.8	16.7	14.3	12.6	11.3	10.3	9.50	5.01
1.60V/cell	118.3	86.9	63.8	52.2	34.6	25.7	20.5	17.2	14.6	12.8	11.5	10.5	9.69	5.08

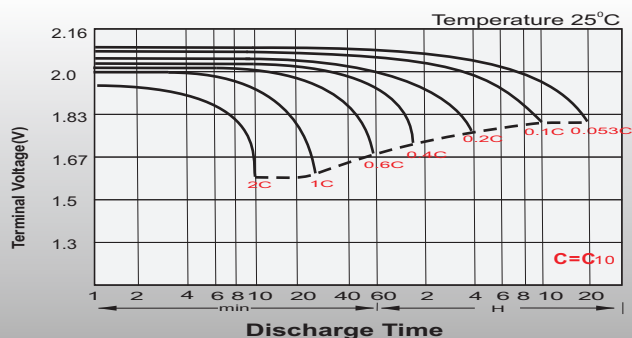
Constant Power Discharge (Watts/cell) at 25 °C (77°F)

F.V/Time	20min	30min	45min	1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	20h
1.85V/cell	144.7	114.4	87.8	73.8	52.0	39.8	33.1	28.6	24.7	22.0	19.8	18.2	17.2	9.20
1.80V/cell	163.6	126.6	95.9	81.0	56.0	42.5	34.9	30.0	25.9	22.9	20.7	19.0	17.9	9.57
1.75V/cell	181.8	137.7	102.8	86.3	59.2	44.7	36.4	31.0	26.7	23.7	21.3	19.6	18.2	9.75
1.70V/cell	193.8	146.5	108.8	91.0	62.5	46.5	37.6	31.9	27.6	24.4	21.9	20.1	18.7	9.86
1.67V/cell	199.4	150.2	111.6	93.7	63.8	47.7	38.4	32.5	28.0	24.7	22.2	20.3	18.8	9.95
1.60V/cell	213.7	159.7	119.2	98.9	66.0	49.4	39.7	33.4	28.5	25.1	22.6	20.7	19.2	10.1

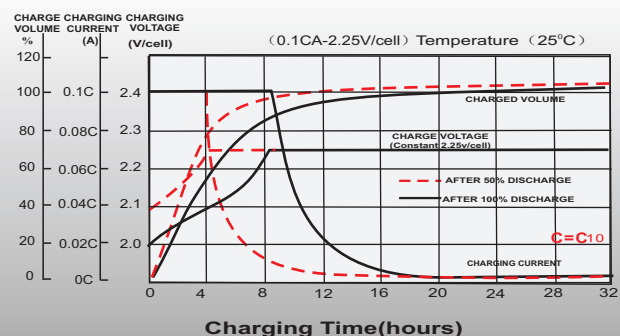
Front Terminal GEL Battery-USFG Series

Characteristic Curve

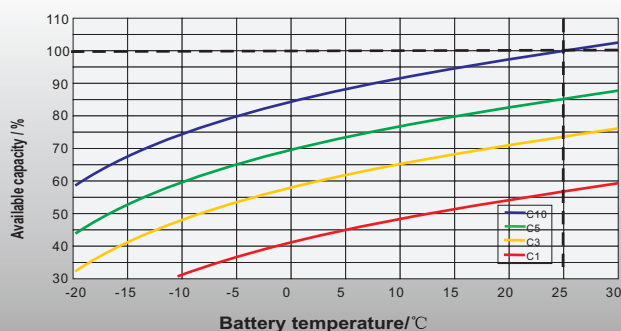
Discharge Characteristics



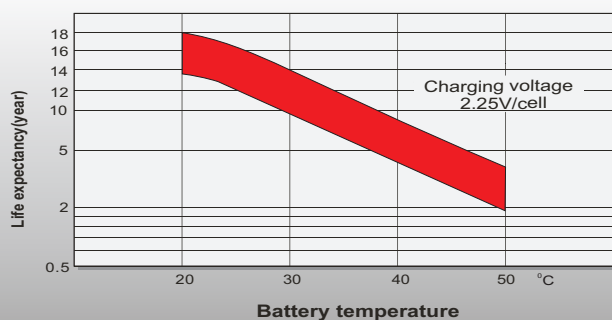
Float Charging Characteristics



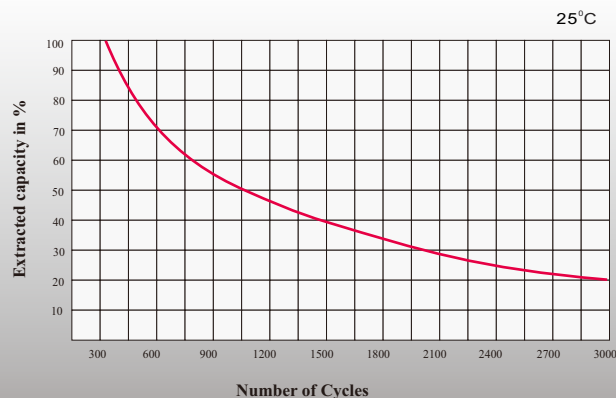
Temperature Effects in Relation to Battery Capacity



Effect of Temperature on Long Term Float Life



Cycle Life in Relation to Depth of Discharge



General Relation of Capacity VS. Storage Time

