

Front Terminal Hybrid GEL Battery-USFG HS Series

# USFG12-200HS (12V200AH)

## 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

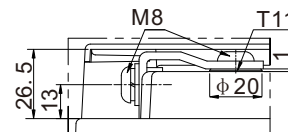
## Features

- ◆ Long life: 12 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

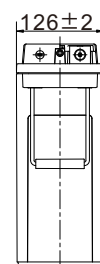
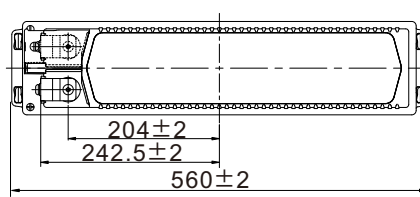
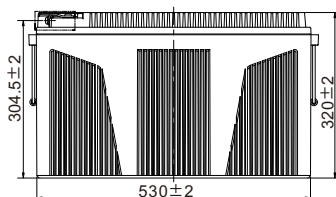
Terminal Model: M8

Unit: mm



### Layout

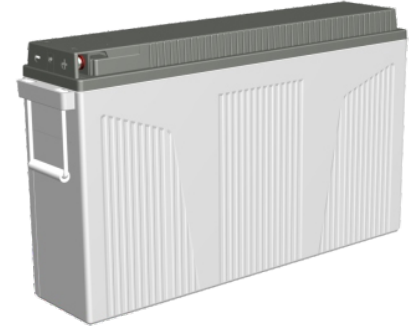
Unit: mm



## Front Terminal Hybrid GEL Battery-USFG HS Series

### Specification

Nominal Voltage	12V	
Rated Capacity (Ah)	200.0AH/10.0A	(20hr,1.80V/cell,25°C)
	166.5AH/17.3A	(5hr,1.75V/cell,25°C)
	111.1AH/62.7A	(1hr,1.67V/cell,25°C)
Dimension	Length	560±2mm
	Width	126±2mm
	Container Height	320±2mm
	Total Height	320±2mm
Approx Weight	Approx 60.5 kg	
Terminal	M8	
Container Material	ABS	
Max. Discharge Current	1600A (5s)	
Internal Resistance	Approx 4.0mΩ	
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 47.5 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-HS series batteries may be stored for up to 6 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	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h
1.85V/cell	238.5	198.0	151.7	114.6	91.5	59.6	45.1	36.0	30.2	26.6	21.3	17.8	15.8	9.35
1.80V/cell	277.4	227.1	171.5	127.9	101.2	64.9	48.8	38.8	32.5	28.5	22.5	19.0	16.8	10.0
1.75V/cell	293.4	238.8	179.3	132.9	104.7	66.9	50.1	39.8	33.3	29.1	23.2	19.3	17.1	10.1
1.70V/cell	310.1	251.1	187.2	138.2	108.8	69.0	51.6	40.8	34.0	29.8	23.6	19.6	17.4	10.3
1.67V/cell	319.9	258.3	191.9	141.3	111.1	70.2	52.3	41.4	34.4	30.2	23.9	19.8	17.6	10.4
1.60V/cell	342.6	274.9	202.8	148.5	116.5	73.1	54.3	42.7	35.5	31.1	24.4	20.2	18.0	10.6

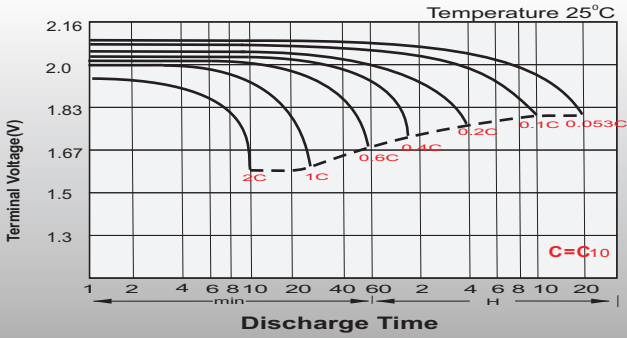
#### Constant Power Discharge (Watts/cell) at 25 °C (77°F)

F.V/Time	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h
1.85V/cell	458.3	381.3	293.3	222.3	177.8	116.6	88.4	70.8	59.4	52.5	42.1	35.2	31.5	18.9
1.80V/cell	527.4	433.2	328.8	246.1	195.5	126.2	95.3	76.0	63.8	56.1	44.4	38.1	33.4	20.1
1.75V/cell	552.1	451.3	340.7	253.8	200.7	129.3	97.4	77.7	65.1	57.1	45.7	38.1	34.0	20.2
1.70V/cell	576.9	469.6	352.5	262.0	207.2	132.8	99.8	79.3	66.3	58.3	46.4	38.6	34.4	20.4
1.67V/cell	596.6	482.3	359.5	266.3	210.5	134.5	101.0	80.2	67.0	58.9	46.8	38.9	34.6	20.5
1.60V/cell	622.0	503.2	374.9	277.2	218.7	139.1	104.1	82.5	68.8	60.4	47.8	39.6	35.3	20.9

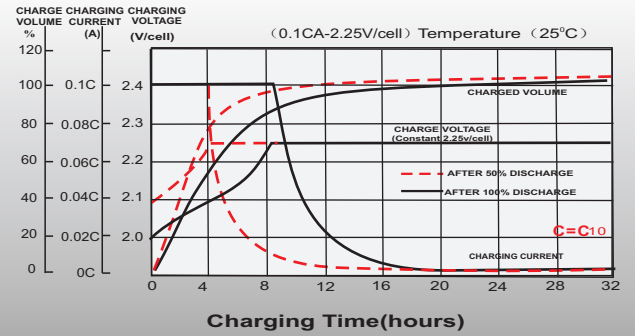
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Characteristic Curve

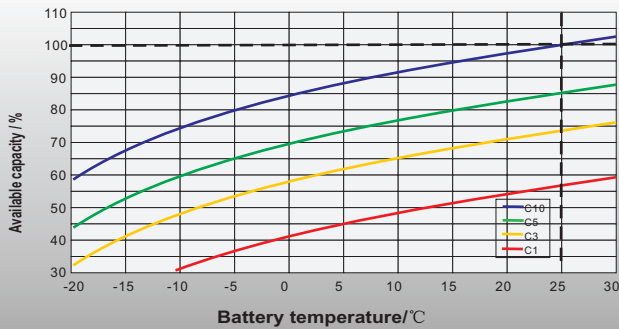
Discharge Characteristics



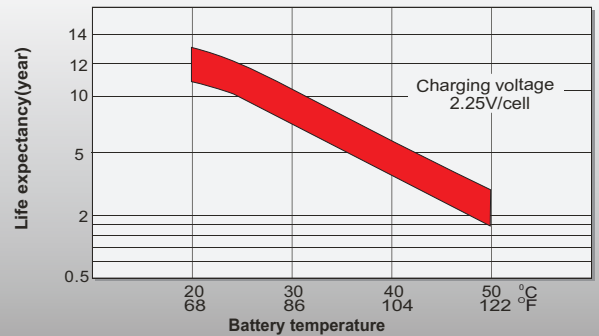
Float Charging Characteristics



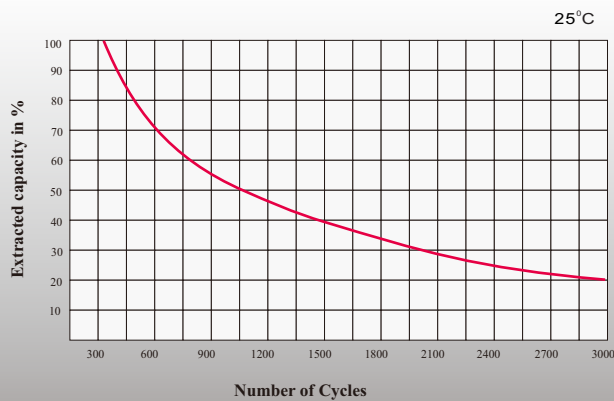
Temperature Effects in Relation to Battery Capacity



Effect of Temperature on Long Term Float Life



Cycle Life in Relation to Depth of Discharge



General Relation of Capacity VS. Storage Time

