

# MU 660

## 2V 660Ah

MU 660 is a Long service life battery up to 20 years expected life under normal float charge. As with all CSB batteries, all are rechargeable, highly efficient, leak proof and maintenance free.

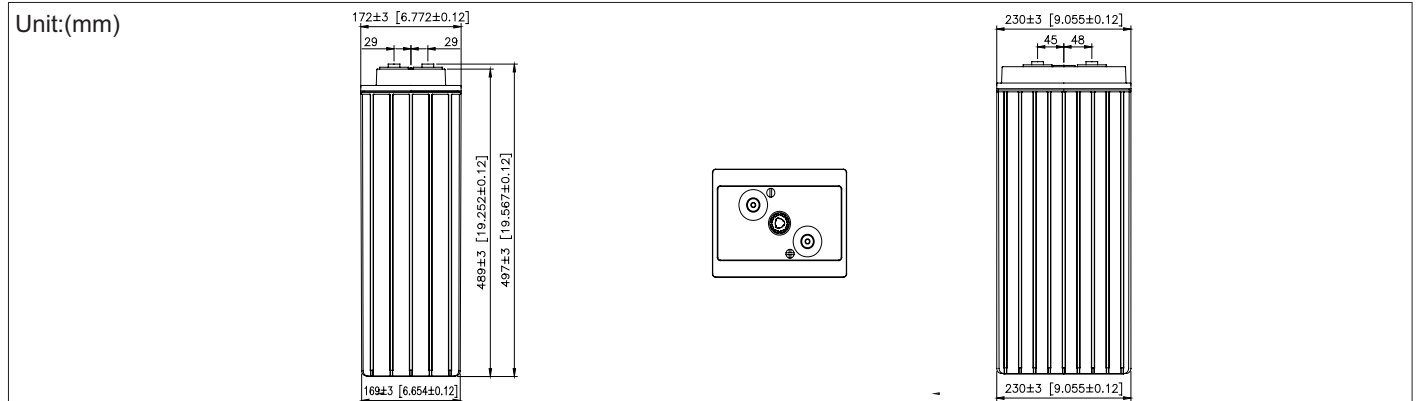
### Specification

Cells Per Unit	1
Voltage Per Unit	2
Capacity	660Ah @ 10hr-rate to 1.80V per cell @25 °C (77°F)
Weight	Approx. 42 kg(92.59 lbs)
Maximum Discharge Current	3960A(5sec)
Internal Resistance	Approx. 0.2~0.5mΩ
Operating Temperature Range	Discharge: -20°C~50°C (-4°F~122°F) Charge: 0°C~40°C (32°F~104°F) Storage: -20°C~40°C (-4°F~104°F)
Nominal Operating Temperature Range	25°C±3°C (77°F±5°F)
Float Charging Voltage	2.23±0.02/Cell at 25 °C (77°F) Temp. Coefficient-3.3mV/°C (-1.8mV/°F)
Recommended Maximum Charging Current Limit	198A
Equalization and Cycle Service	2.35V Temps coefficient -3.3mV/°C (-1.8mV/°F)
Terminal	Pb-Ca-Sn Alloy(Recessed Terminal)
Container Material	The container and cover are made of flame retardant plastics which meet UL 94-V0 specifications. The oxygen index level is higher than 28.



CSB-manufactured batteries are UL-recognized components under UL924 and UL1989. CSB is also certified by ISO 9001 and ISO 14001.

### Dimensions



### Constant Current Discharge Characteristics Unit:A (25°C, 77°F)

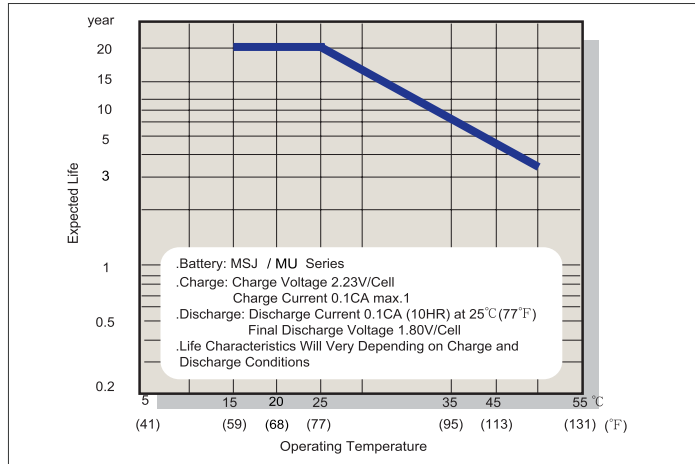
F.V/Time	60MIN	90MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	448	335	275	207	165	136	116	90.0	71.0
1.65V	434	326	267	200	160	132	113	87.0	70.0
1.70V	420	318	260	194	155	128	110	85.0	69.0
1.75V	391	300	247	185	149	123	106	83.0	67.0
1.80V	363	281	234	176	142	118	101	80.0	66.0
1.83V	323	256	216	165	132	110	95.0	76.0	62.0

### Constant Power Discharge Characteristics Unit:W (25°C, 77°F)

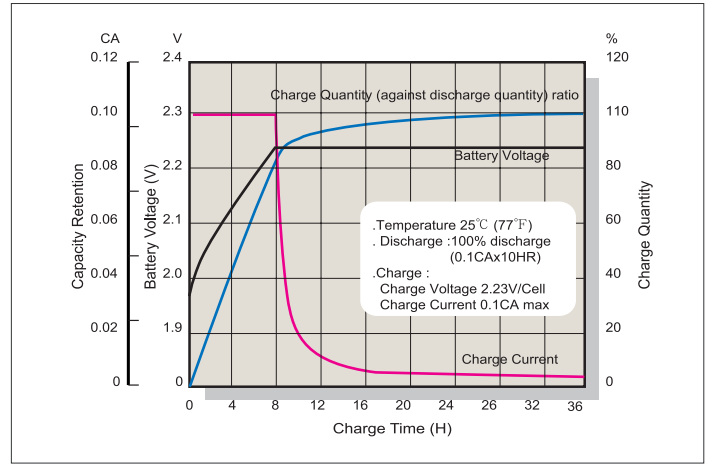
F.V/Time	60MIN	90MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	773	583	483	366	289	244	209	163	134
1.65V	757	574	476	359	287	239	207	162	133
1.70V	740	564	468	351	285	234	205	161	132
1.75V	697	536	449	339	275	228	198	156	129
1.80V	654	508	430	326	265	221	191	151	125
1.83V	628	491	419	319	259	217	187	148	123

- All mentioned values are average values.
- Cycle Information : 300~400 cycles@DOD80%, 600~700 cycles@DOD50%, 900~1200 cycles@DOD30%

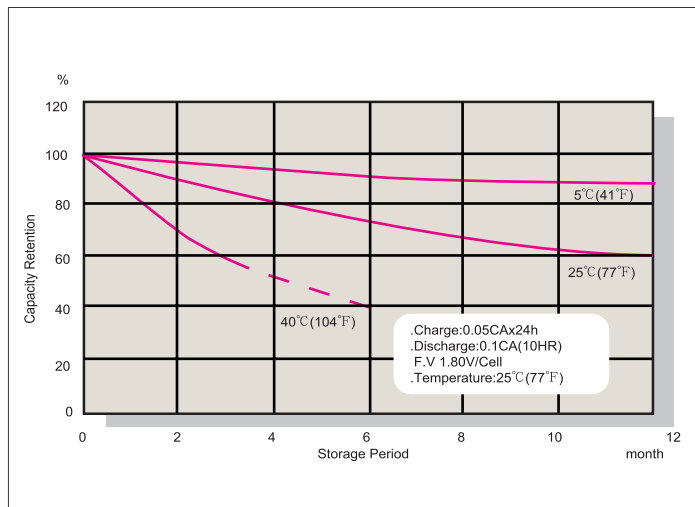
### Expected Life V.S Operating Temperature



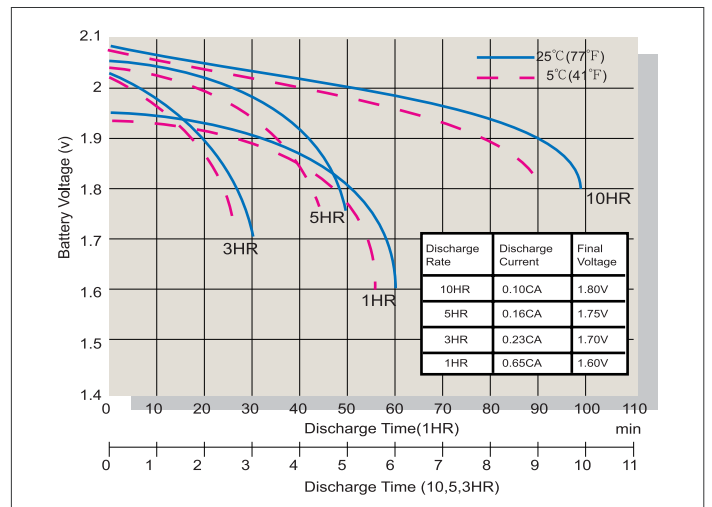
### Typical Constant Voltage Charge Characteristics



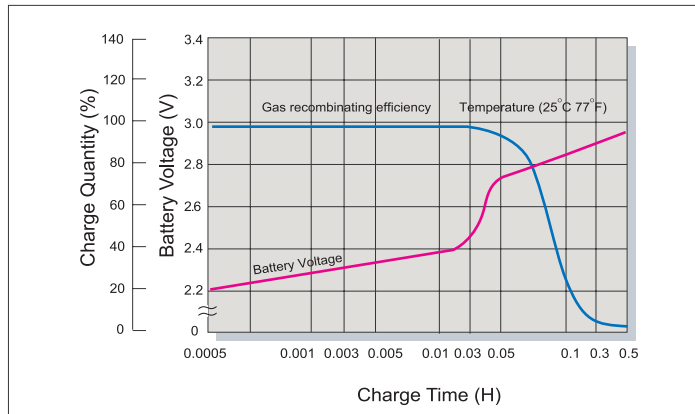
### Capacity Retention Characteristics



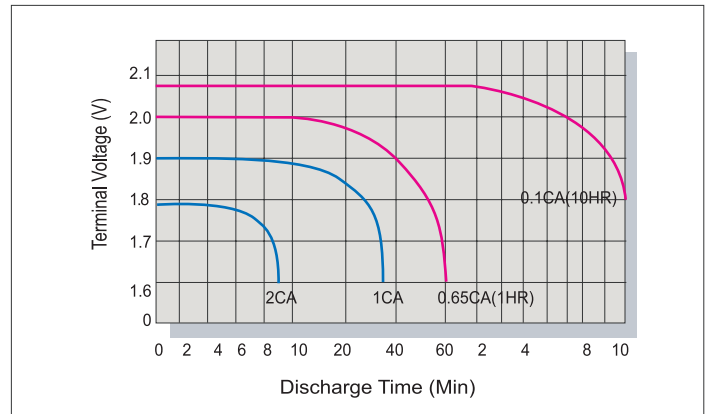
### Discharge Characteristics



### Oxygen Recombination Efficiency Chart



### Terminal Voltage (V) and Discharge Time 25°C (77°F)



### Charging Procedures

Application	Charge Voltage (V/Cell)			Max. Charge Current
	Temperature	Set Point	Allowable Range	
Standby	25°C (77°F)	2.23	2.21~2.25	0.3C

### Discharge Current VS. Discharge Voltage

Discharge Current (A)	Final Discharge Voltage (V/Cell)
0.05C > A	1.90
0.15C > A ≥ 0.05C	1.80
0.20 C > A ≥ 0.15C	1.75
0.40 C > A ≥ 0.20 C	1.70
A > 0.40 C	1.60

Sales Office URL: [WWW.CSB-BATTERY.COM](http://WWW.CSB-BATTERY.COM)

**CSB BATTERY CO., LTD.**  
 TAIWAN OFFICE  
 Tel: +886-2-2555-5600  
 Fax: +886-2-2555-3300  
 E-mail: service@csb-battery.com.tw

**CSB BATTERY LOGISTICS (SHANGHAI) CO., LTD.**  
 SHANGHAI OFFICE  
 Tel: +86-21-5046-1622, 5046-0833  
 Fax: +86-21-5064-3314

**CSB BATTERY TECHNOLOGIES, INC**  
 USA OFFICE  
 Tel: +1-817-244-7777/1-8003 CSBUSA(272872)  
 Fax: +1-817-244-4445  
 E-mail: csb@csb-battery.com

**CSB BATTERY LOGISTICS (SHANGHAI) CO., LTD.**  
 BEIJING OFFICE  
 Tel: +86-10-6597-8060, 6597-8070  
 Fax: +86-10-6597-8050  
 E-mail: chinasisl@csb-battery.com

**CSB BATTERY OF NETHERLANDS B.V**  
 NETHERLANDS OFFICE  
 Tel: +31(0) 180 418 140  
 Fax: +31(0) 180 418 327  
 E-mail: eurosales@csb-battery.com

**CSB BATTERY LOGISTICS (SHANGHAI) CO., LTD.**  
 SHENZHEN OFFICE  
 Tel: +86-755-2694-2788/2606/2706  
 Fax: +86-755-2694-2748  
 E-mail: she@csb-battery.com.tw