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MSJ 400 ▶ 2V 405 Ah

MSJ 400 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.



CSB-manufactured **VRLA** (Absorbent Glass Mat type) batteries are UL-recognized components under UL1989.

CSB is also certified by ISO 9001 and ISO 14001.

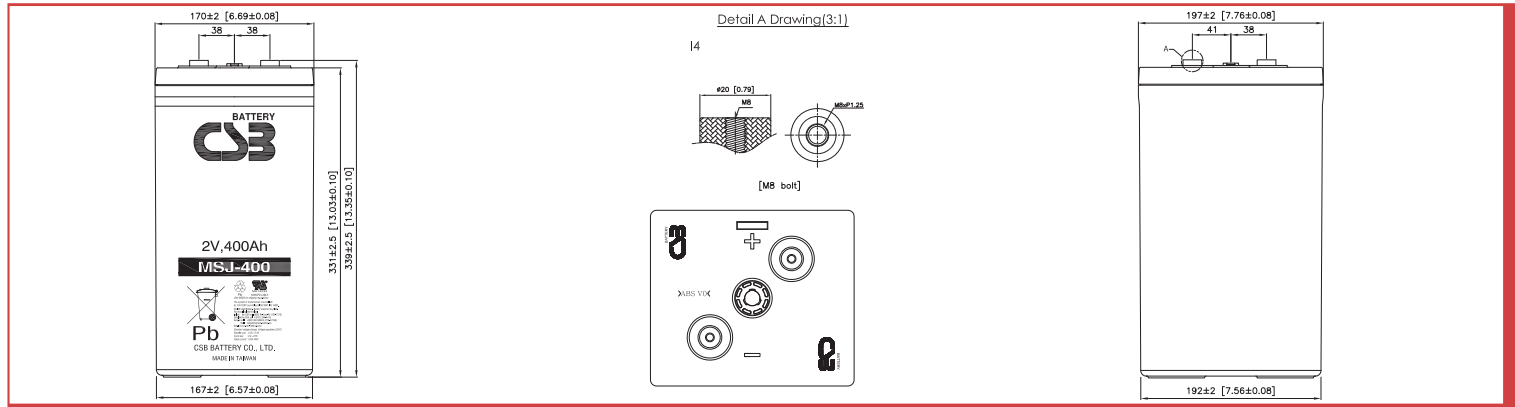
► Specification

Cells Per Unit	1
Voltage Per Unit	2
Capacity	405Ah @ 10hr-rate to 1.80V per cell @25 °C (77°F)
Weight	Approx. 28.6 kg(63.0 lbs)
Maximum Discharge Current	2400A(5sec)
Internal Resistance	Approx. 0.30m Ω
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	120A
Equalization / Cycle Use Charging Voltage	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 ABS(UL 94-V0) specifications. The oxygen index level is higher than 28

► Dimensions :

Unit: mm (inch)

Overall Height (H)	Container height (h)	Length (L)	Width (W)
339±2.5 (13.35±0.10)	331±2.5 (13.03±0.10)	197±2 (7.76±0.08)	170±2 (6.69±0.08)



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

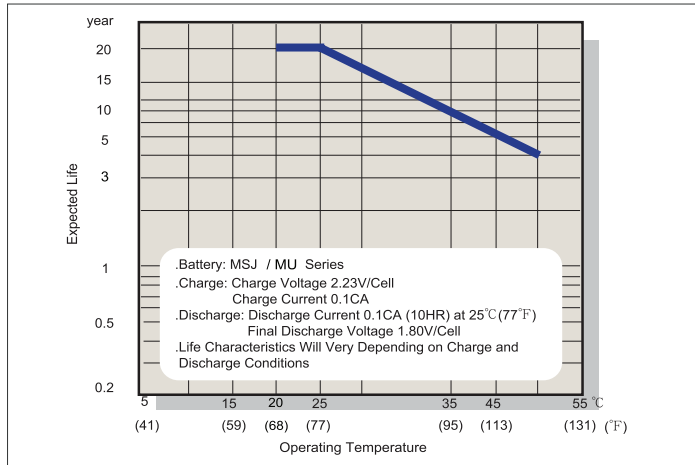
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	704	496	304	174.1	124.8	96.5	78.7	66.6	52.1	43.1
1.67V	631	472	296	172.0	123.5	95.4	77.9	66.0	51.6	42.7
1.70V	593	456	290	170.5	122.6	94.8	77.4	65.6	51.4	42.5
1.75V	533	415	276	166.7	120.4	93.1	76.1	64.6	50.7	42.0
1.80V	456	368	255	159.4	116.2	89.9	73.7	62.8	49.3	40.9
1.83V	403	337	239	152.5	111.6	86.7	71.3	60.9	47.9	39.8

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

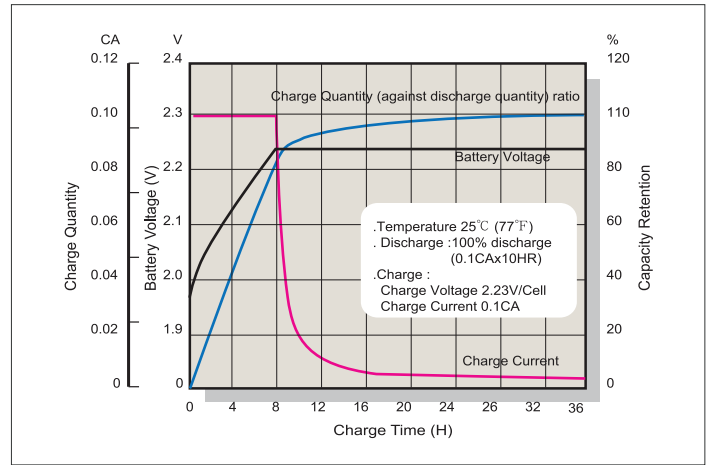
F.V/Time	15MIN	30MIN	60MIN	2HR	3HR	4HR	5HR	6HR	8HR	10HR
1.60V	1233	900	552	332.3	238.1	187.9	156.1	133.8	102.5	80.2
1.67V	1146	866	542	329.1	236.2	186.6	155.1	133.0	101.7	79.6
1.70V	1101	843	534	326.8	234.8	185.7	154.5	132.4	101.2	79.3
1.75V	1006	789	512	320.1	231.0	183.3	152.6	130.8	99.7	78.2
1.80V	902	712	478	307.5	223.7	178.5	148.7	127.6	96.7	75.9
1.83V	813	664	451	295.2	216.3	173.4	144.6	124.4	93.7	73.6

Ratings presented herein are subject to revision without notice. Please refer to www.csb-battery.com to confirm the latest version.

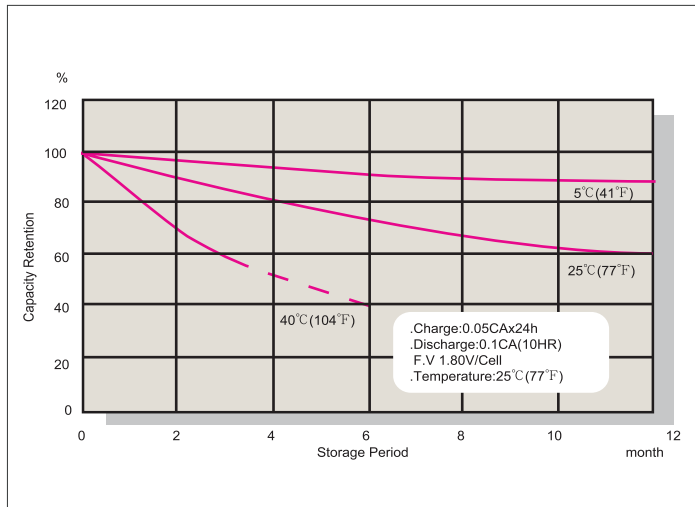
Expected Life V.S Operating Temperature



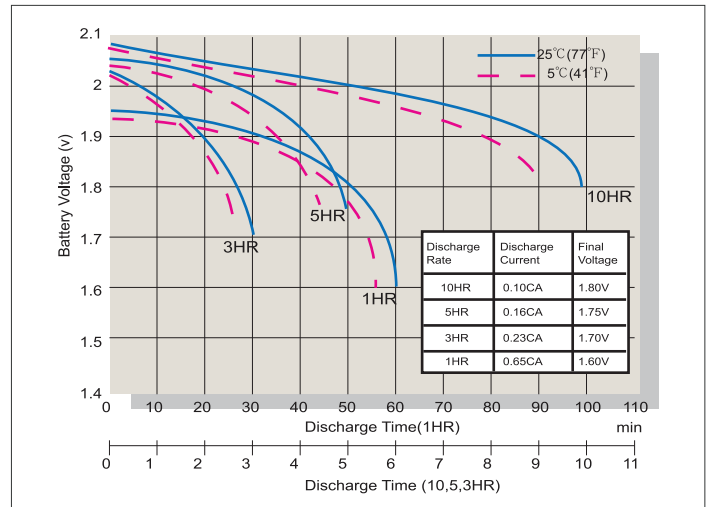
Typical Constant Voltage Charge Characteristics



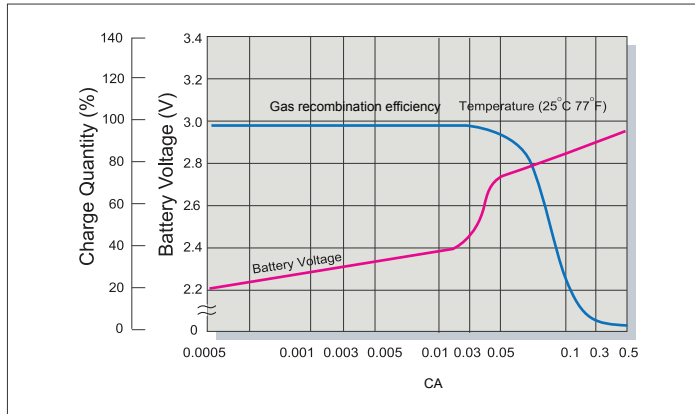
Capacity Retention Characteristics



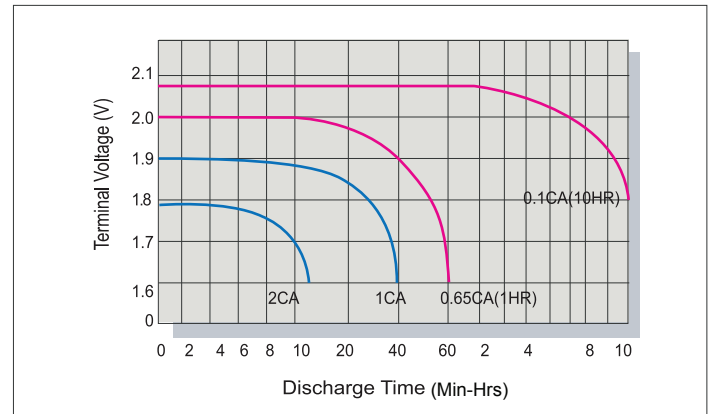
Discharge Characteristics



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
0.20C > A ≥ 0.15C	1.75
0.40C > A ≥ 0.20C	1.70
A > 0.40C	1.60

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