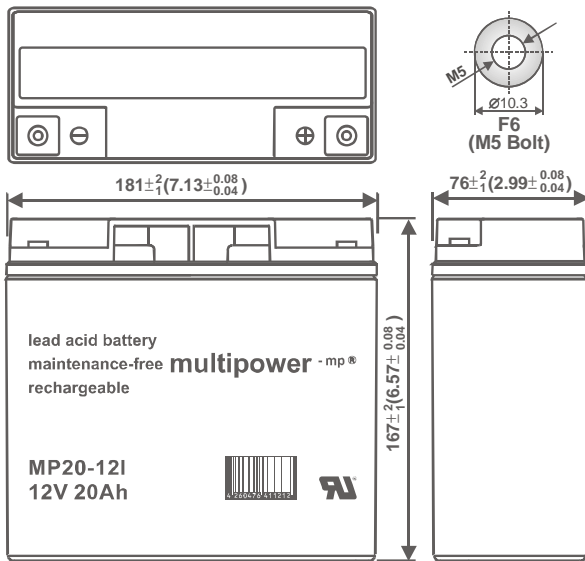


# multipower - mp®

## RECHARGEABLE SEALED LEAD ACID BATTERY

## SPECIFICATION



### MP20-12I

Nominal Voltage(V) 12V

#### Nominal Capacity

20 hour rate	(1A	to	10.50V)	20.00Ah
10 hour rate	(1.9A	to	10.50V)	19.00Ah
5 hour rate	(3.4A	to	10.20V)	17.00Ah
1 C	(20A	to	9.60V)	11.33Ah
3 C	(60A	to	9.60V)	8.00Ah

Weight Approx. 5.95kg (13.09Lbs.)

Internal Resistance (at 1KHz) Approx. 10 mΩ

#### Maximum Discharge Current for

5 seconds: 300A

#### Charging Methods at 25°C (77°F)

Cycle use:

Charging Voltage 14.7 to 14.8V

Coefficient -5.0mV/°C/cell

Maximum Charging Current: 6A

Standby use:

Float Charging Voltage 13.5 to 13.8V

Coefficient -3.0mV/°C/cell

#### Operating Temperature Range

Charge -15°C (5°F) to 40°C (104°F)

Discharge -15°C (5°F) to 50°C (122°F)

Storage -15°C (5°F) to 40°C (104°F)

#### Charge Retention (shelf life) at 20°C (68°F)

1 month 92%

3 month 90%

6 month 80%

#### Case Material

ABS UL94 HB

#### Terminal

F6

#### Description of torque value of hard ware for the terminals:

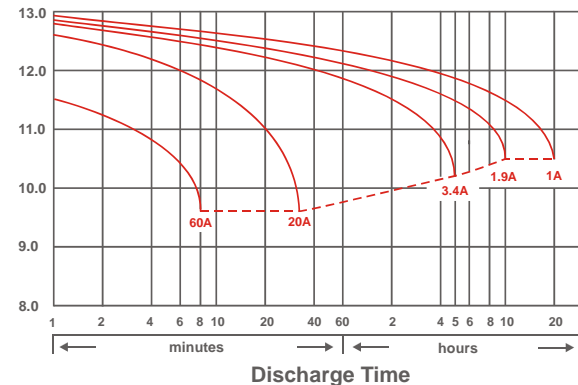
Recommended torque value

M5: 4 N·m (41 kgf·cm)

Maximum allowable torque value

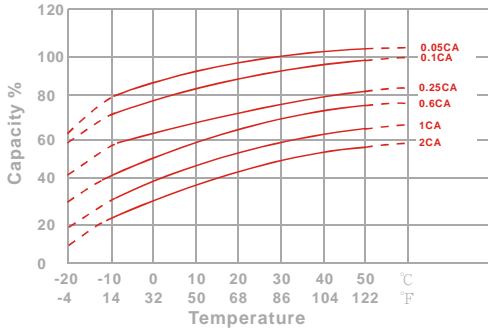
M5: 6 N·m (61 kgf·cm)

(V) FOR 12V BATTERY Discharge Time VS. Discharge Current (25°C)

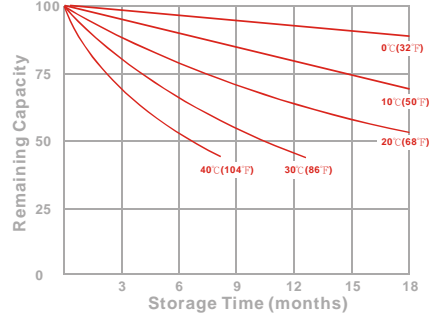


## CHARACTERISTIC & PERFORMANCE DATA

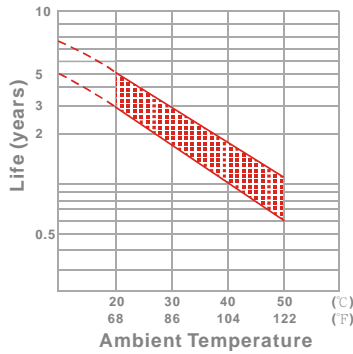
Effect of Temperature on Capacity 25°C(77°F)



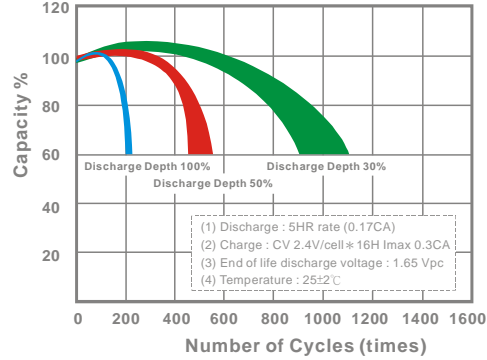
Capacity Retention Characteristic



Trickle (or float) Service Life



Cycle Service Life



### - PERFORMANCE DATA

Discharge Rates in Watts per Cell to Various End Voltages at 25°C(77°F)

End Voltage		1.85V	1.80V	1.75V	1.70V	1.67V	1.65V	1.60V
Time	min	110	128	139	146	148	150	152
5	min	78.7	88.8	96.2	101	102	103	105
10	min	68.2	75.5	80.4	83.5	84.3	85.2	85.9
15	min	35.5	37.9	40.6	42.2	42.7	43.1	43.6
30	min	22.2	23.2	24.0	24.7	24.8	25.2	25.5
60	min	12.2	12.7	13.0	13.5	13.6	13.7	13.8
120	min	9.53	9.88	10.1	10.3	10.4	10.5	10.6
180	min	7.63	7.93	8.12	8.27	8.32	8.38	8.46
240	min	6.65	6.88	7.00	7.10	7.13	7.18	7.24
300	min	3.87	3.98	4.07	4.13	4.15	4.19	4.22
600	min	2.05	2.12	2.17	2.20	2.22	2.23	2.25
1200	min							

### - Discharge Rates in Amperes per Battery to Various End Voltages at 25°C(77°F)

End Voltage		1.85V	1.80V	1.75V	1.70V	1.67V	1.65V	1.60V
Time	min	69.6	75.4	79.1	82.3	83.7	85.1	87.6
5	min	46.7	49.9	52.4	54.6	55.5	56.5	58.2
10	min	35.4	38.1	39.8	41.3	41.9	42.6	43.5
15	min	18.9	20.4	21.5	22.4	22.7	23.1	23.6
30	min	11.1	11.7	12.2	12.6	12.7	12.9	13.1
60	min	6.25	6.47	6.61	6.73	6.77	6.82	6.89
120	min	4.73	4.90	5.00	5.08	5.11	5.15	5.21
180	min	3.88	3.97	4.04	4.09	4.11	4.14	4.17
240	min	3.41	3.48	3.53	3.57	3.58	3.60	3.62
300	min	1.97	2.00	2.02	2.04	2.05	2.06	2.07
600	min	1.00	1.03	1.05	1.07	1.08	1.09	1.10
1200	min							

All data on the spec. sheet is an average value:

The tolerance range :  $X < 6\text{min}$ (+15%~-15%),  $6\text{min} \leq X < 10\text{min}$ (+12%~-12%),  $10\text{min} \leq X < 60\text{min}$ (+8%~-8%),  $X \geq 60\text{min}$ (+5%~-5%)