



ES12-12

SPECIFICATIONS

Nominal Voltage (V) 12V

Nominal Capacity

20 hour rate (0.6A to 10.50V)	12Ah
10 hour rate (1.14A to 10.50V)	11.4Ah
5 hour rate (2.04A to 10.20V)	10.2Ah
1C (12A to 9.60V)	6.8Ah
3C (36A to 9.60V)	4.8Ah

Weight Approx. 8.84Lbs. (4.02kg)

Internal Resistance (at 1KHz) Approx. 11 mΩ

Maximum Discharge Current for 5 seconds : 180A

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 months	90%
6 months	80%

Charging Methods at 25°C (77°F)

Cycle Use : Charging Voltage 14.4 to 15.0V
Coefficient -5.0mv / °C / cell
Maximum Charging Current : 3.6A

Standby Use : Float Charging Voltage 13.50 to 13.80V
Coefficient -3.0mv / °C / cell

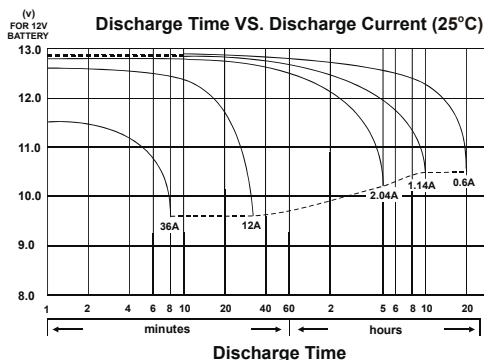
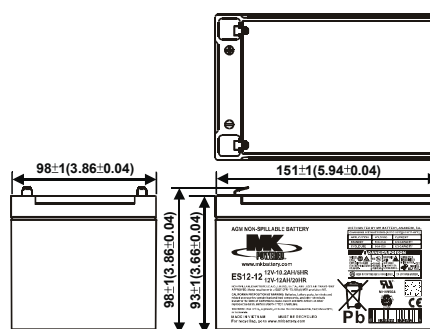
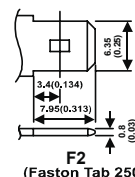
Case Material : ABS UL94 HB

Terminal : F2

Maintenance-Free Rechargeable Sealed Lead-Acid Battery



DIMENSIONS



MK Battery

1631 South Sinclair Street • Anaheim, California 92806

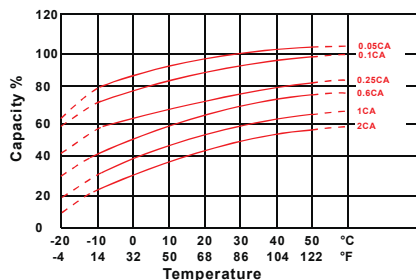
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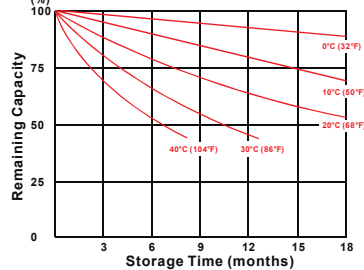


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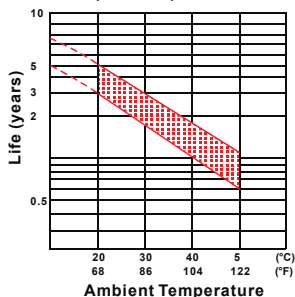
Effect of Temperature on Capacity 25°C (77°F)



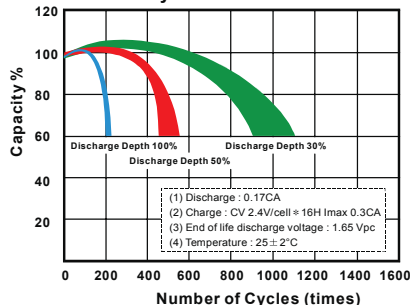
Capacity Retention Characteristic



Trickle (or float) Service Life



Cycle Service Life



- PERFORMANCE DATA

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

Time	End Voltage	1.85V	1.80V	1.75V	1.70V	1.67V	1.65V	1.60V
5	min	77.2	84.2	89.3	94.8	97.3	99.7	105
10	min	56.5	60.3	63.0	65.3	66.2	67.5	68.8
15	min	42.2	45.3	47.2	48.5	49.2	49.8	51.0
30	min	26.7	28.0	29.0	30.0	30.3	30.7	31.2
60	min	14.9	15.9	16.6	17.2	17.3	17.5	17.7
120	min	7.80	8.60	9.02	9.22	9.28	9.38	9.52
180	min	5.40	6.15	6.53	6.68	6.97	7.10	7.20
240	min	4.43	4.97	5.22	5.37	5.43	5.52	5.62
300	min	4.12	4.35	4.51	4.65	4.72	4.77	4.83
600	min	2.43	2.55	2.62	2.66	2.68	2.70	2.72
1200	min	1.29	1.31	1.35	1.37	1.39	1.40	1.43

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

Time	End Voltage	1.85V	1.80V	1.75V	1.70V	1.67V	1.65V	1.60V
5	min	37.8	41.8	44.6	47.5	48.8	50.1	52.7
10	min	28.1	30.3	31.5	32.7	33.2	33.8	34.6
15	min	21.3	22.6	23.7	24.6	25.0	25.4	26.1
30	min	12.6	13.5	14.1	14.6	14.8	15.0	15.3
60	min	8.55	8.74	8.86	8.97	9.02	9.08	9.16
120	min	4.71	4.84	4.95	5.04	5.08	5.13	5.18
180	min	3.14	3.33	3.40	3.46	3.49	3.52	3.56
240	min	2.15	2.26	2.35	2.42	2.45	2.49	2.74
300	min	1.98	2.06	2.12	2.18	2.20	2.23	2.27
600	min	1.19	1.22	1.24	1.26	1.27	1.28	1.29
1200	min	0.619	0.626	0.645	0.654	0.661	0.669	0.683

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%)

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