



# MU-1 SLD M-33

## SPECIFICATIONS

**Nominal Voltage (V)** 12V

### Nominal Capacity

20 hour rate ( 1.65A to 10.50V )	33Ah
10 hour rate ( 3.135A to 10.50V )	31.35Ah
5 hour rate ( 5.61A to 10.20V )	28.05Ah
1C ( 33A to 9.60V )	18.7Ah
3C ( 99A to 9.60V )	13.2Ah

**Weight** Approx. 22.2Lbs. (10.1kg)

**Internal Resistance (at 1KHz)** Approx. 6.5 mΩ

**Maximum Discharge Current for 5 seconds :** 495A

### 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 : 9.9A

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

**Case Material :** ABS UL94 HB

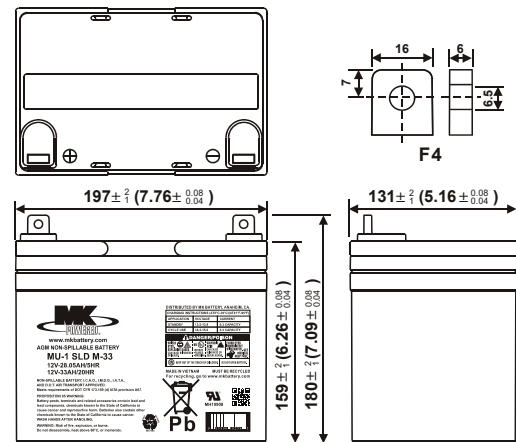
**Terminal :** F4

## Sealed Valve-Regulated Lead-Acid Battery

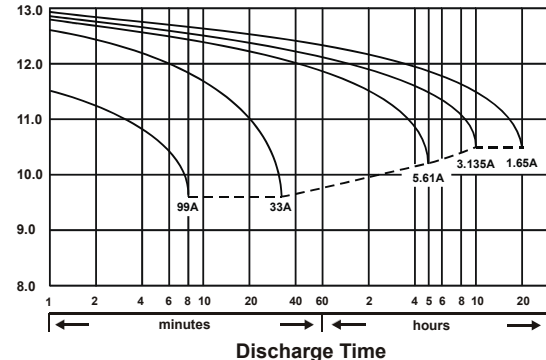


## DIMENSIONS

mm (inch)



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



## MK Battery

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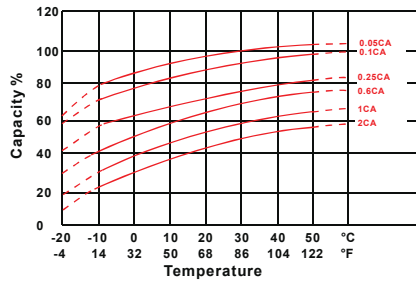
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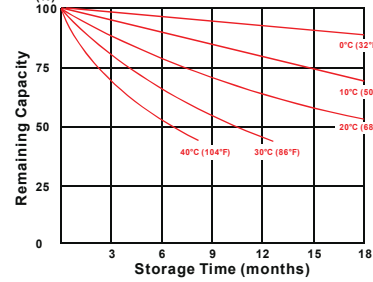


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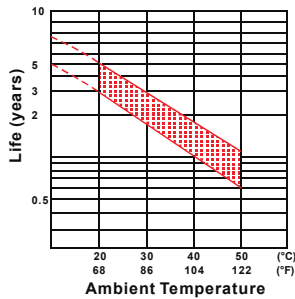
Effect of Temperature on Capacity 25°C (77°F)



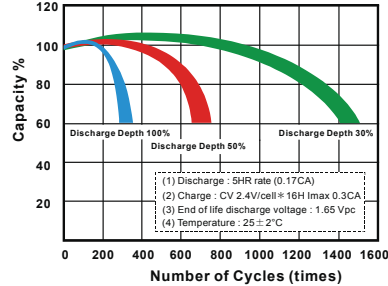
Capacity Retention Characteristic



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	163	192	211	223	227	232	236
10	min	111	130	143	151	154	156	159
15	min	85.8	99.3	108	114	115	117	119
30	min	48.2	55.5	60.3	63.0	63.8	64.8	66.0
60	min	30.3	33.2	35.0	36.8	37.5	38.2	39.0
120	min	19.0	20.5	21.5	22.3	22.7	23.0	23.5
180	min	13.6	14.7	15.5	16.1	16.4	16.7	17.0
240	min	11.0	11.7	12.3	12.8	13.0	13.2	13.4
300	min	9.57	10.3	10.9	11.3	11.4	11.5	11.7
600	min	5.52	5.97	6.35	6.57	6.63	6.70	6.80
1200	min	2.90	3.13	3.33	3.45	3.50	3.55	3.60

- 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	86.7	106	120	129	132	136	140
10	min	58.5	68.4	74.5	79.8	81.7	84.2	87.3
15	min	41.1	49.3	54.2	58.4	59.6	61.5	63.0
30	min	27.4	31.3	32.9	34.2	34.6	35.1	35.6
60	min	16.4	17.7	18.6	19.3	19.5	19.8	20.1
120	min	9.67	10.3	10.8	11.2	11.3	11.5	11.7
180	min	6.86	7.36	7.82	8.08	8.15	8.23	8.36
240	min	5.45	5.89	6.27	6.46	6.51	6.58	6.69
300	min	4.74	5.11	5.43	5.61	5.65	5.70	5.78
600	min	2.73	2.95	3.15	3.24	3.27	3.30	3.34
1200	min	1.48	1.59	1.66	1.71	1.72	1.74	1.76

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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