

# ES 7-12

# AGM-VRLA 12V - 7Ah

## INTRODUCTION

The most advanced technology of ROCKET, Valve Regulated Lead Acid batteries make them highly useful in a broad range of applications. The use of high-purity calcium alloy maximizes the longevity of ROCKET batteries to ensure excellent performance in any circumstances.

ES Series are specially designed to provide better cyclic life and are ideally suited for areas prone to frequent power failures.

The unique construction coupled with the use of special sealing epoxies and long sealing paths of ROCKET series ensures that no electrolyte leakage can occur from terminals or cases of any ROCKET Batteries. This feature ensures safe & efficient operation of ROCKET batteries in any position.

## TECHNICAL FEATURES

- Non-Spillable Sealed Construction
- Absorbent Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) container and cover
- Gas Recombination
- Maintenance-Free Operation
- Low Pressure Venting System
- Heavy - Duty Grids
- Low Self-Discharge - Long Shelf Life
- Wide Operating Temperature Range

## APPLICATIONS

- UPS
- Telecom Communication Equipments
- Fire Alarm & Security Systems
- Medical Instruments
- Emergency Lighting
- Computer Backup

## COMPLAINTS STANDARD

- JIS
- IEC 60896 PART 1 & 2
- BS6290-4,
- Eurobat Guide - HIGH Performance

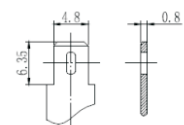
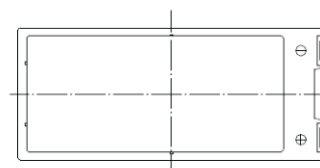
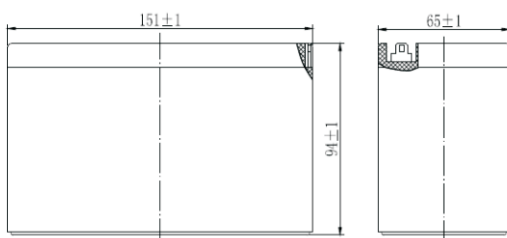
## SPECIFICATION

Nominal Voltage		12V
Capacity (20HR, 25°C)		7Ah
Dimension	Length	151mm (5.94inch)
	Width	65mm (2.56inch)
	Height	93.5mm (3.68inch)
	Total Height	94mm (3.70inch)
Approx Weight		2.53kg (5.58lbs)
Design Life		10 Years

## CHARACTERISTICS

Capacity 25°C (77°F)	20 hour rate	7Ah	
	10 hour rate	6.5Ah	
	5 hour rate	5.4Ah	
	1 hour rate	4.4Ah	
Internal resistance (Fully charge, 25°C)		24mΩ	
Self-discharge (20°C)	1 month	Remaining Capacity:97%	
	Operating temperature range	Discharge	-20°C~60°C
		Charge	-10°C~60°C
	Storage	-20°C~60°C	
Maximum discharge current		77°F(25°C) 105A(5 Sec.)	
Short circuit current		350A	
Charge Methods (Constant Voltage Charge 77°F(25°C)) - Cyclic Use	Cycle Use 14.4 to 14.9V		
	Max. charging Current 2.8A		
Charge Methods (Constant Voltage Charge 77°F(25°C)) - Standby Use	Temp. compensation - 30mV/°C		
	Standby Use 13.6-13.8V		
		Temp. compensation - 20mV/°C	

**THE BATTERY CONTAINER AND COVER ARE AVAILABLE BOTH IN ABS plastic and Flame Retardant (FR).**



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## CONSTANT CURRENT DISCHARGE (Amperes) at 25°C

End Point Volts/Cell	5min	10min	15min	20min	25min	30min	35min	40min	45min	50min	55min	1h
1.60V	24.3	16.0	12.1	10.1	8.60	6.80	5.90	5.25	5.00	4.62	4.35	4.05
1.65V	23.2	15.4	11.5	9.7	8.20	6.60	5.62	5.01	4.77	4.41	4.16	3.97
1.70V	22.1	14.8	11.2	9.24	7.80	6.40	5.34	4.76	4.54	4.21	3.97	3.85
1.75V	21.0	14.2	10.8	8.72	7.40	6.20	5.06	4.52	4.32	4.00	3.77	3.72
1.80V	19.8	13.3	10.2	8.21	7.00	6.00	4.78	4.28	4.09	3.80	3.58	3.56

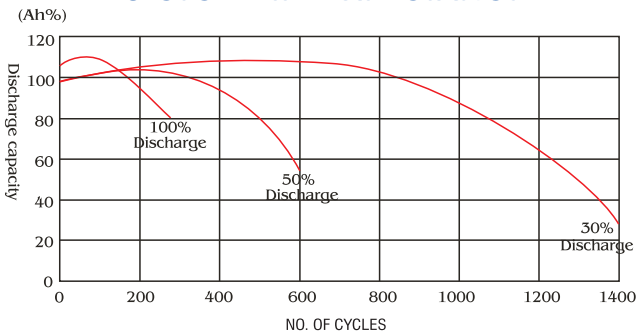
End Point Volts/Cell	1.25h	1.5h	1.75h	2h	2.25h	2.5h	2.75h	3h	4h	5h	6h	7h	8h	9h	10h	20h
1.60V	3.27	2.90	2.55	2.30	2.08	2.00	1.88	1.74	1.45	1.22	1.05	0.92	0.84	0.75	0.66	0.340
1.65V	3.12	2.78	2.44	2.21	2.00	1.93	1.82	1.70	1.40	1.19	1.02	0.90	0.82	0.73	0.65	0.335
1.70V	2.98	2.65	2.34	2.12	1.92	1.86	1.76	1.65	1.34	1.15	0.98	0.87	0.80	0.71	0.64	0.330
1.75V	2.83	2.53	2.23	2.03	1.84	1.79	1.69	1.62	1.29	1.11	0.94	0.84	0.78	0.69	0.63	0.325
1.80V	2.69	2.41	2.12	1.94	1.76	1.71	1.63	1.56	1.23	1.06	0.90	0.81	0.76	0.66	0.60	0.320

## CONSTANT POWER DISCHARGE (Watts per cell) at 25°C

End Point Volts/Cell	5min	10min	15min	20min	25min	30min	35min	40min	45min	50min	55min	1h
1.60V	43.5	30.5	23.1	18.5	16.4	13.8	12.3	11.2	10.6	9.89	9.15	8.74
1.65V	41.4	28.5	22.5	17.6	15.7	13.2	11.8	10.9	10.3	9.49	8.79	8.37
1.70V	38.5	27.5	21.6	16.8	15.0	12.6	11.3	10.6	9.9	9.10	8.43	8.02
1.75V	37.1	26.0	20.7	16.0	14.3	12.0	10.8	10.3	9.6	8.70	8.07	7.78
1.80V	36.3	24.5	19.5	15.2	13.6	11.6	10.3	10.0	9.3	8.31	7.71	7.43

End Point Volts/Cell	1.25h	1.5h	1.75h	2h	2.25h	2.5h	2.75h	3h	4h	5h	6h	7h	8h	9h	10h	20h
1.60V	7.19	6.34	5.64	4.98	4.53	4.18	3.76	3.50	2.77	2.26	1.94	1.76	1.61	1.45	1.34	0.70
1.65V	6.93	6.13	5.47	4.87	4.40	4.06	3.65	3.41	2.70	2.22	1.90	1.73	1.58	1.43	1.32	0.69
1.70V	6.67	5.92	5.29	4.74	4.27	3.94	3.54	3.32	2.63	2.19	1.86	1.69	1.55	1.41	1.30	0.68
1.75V	6.41	5.71	5.12	4.59	4.14	3.83	3.43	3.21	2.56	2.14	1.82	1.66	1.52	1.38	1.28	0.66
1.80V	6.15	5.50	4.95	4.44	4.02	3.71	3.33	3.11	2.49	2.07	1.78	1.62	1.49	1.35	1.26	0.64

## ES-CYCLE LIFE EXPECTANCY



## Discharge Characteristics

