

# ES 18-12

# AGM-VRLA 12V - 18Ah

## 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

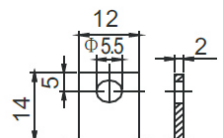
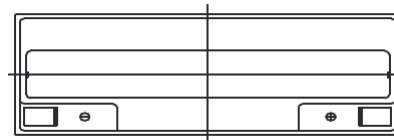
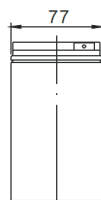
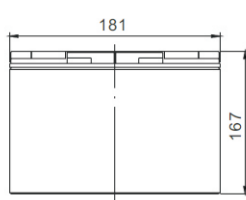
## SPECIFICATION

Nominal Voltage		12V
Capacity (20HR, 25°C)		18Ah
Dimension	Length	181mm (7.13inch)
	Width	77mm (3.03inch)
	Height	167mm (6.57inch)
	Total Height	167mm (6.57inch)
Approx Weight		5.4kg (11.9lbs)
Design Life		10 Years

## CHARACTERISTICS

Capacity 25°C (77°F)	20 hour rate	18Ah	
	10 hour rate	16.3Ah	
	5 hour rate	14.4Ah	
	1 hour rate	10.4Ah	
Internal resistance (Fully charge, 25°C)		17mΩ	
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)270A(5 Sec.)	
Charge Methods (Constant Voltage Charge 77°F(25°C)) - Cyclic Use		Cycle Use	14.4 to 14.9V
		Max. charging Current	5.4A
		Temp. compensation	-30mV/°C
Charge Methods (Constant Voltage Charge 77°F(25°C)) - Standby Use		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	67.0	45.3	36.0	28.5	24.0	20.0	17.8	15.5	14.0	13.3	12.3	12.0
1.65V	64.9	44.2	35.1	27.8	23.5	19.6	17.4	15.2	13.8	13.1	12.1	11.8
1.70V	62.6	43.1	34.2	27.2	22.9	19.1	17.0	14.9	13.5	12.9	11.9	11.6
1.75V	60.1	41.9	33.3	26.5	22.4	18.7	16.6	14.5	13.3	12.6	11.7	11.4
1.80V	57.4	40.8	32.4	25.8	21.8	18.2	16.2	14.2	13.0	12.4	11.5	11.2

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	10.0	8.41	7.20	6.40	5.82	5.30	4.90	4.58	3.75	3.19	2.77	2.35	2.15	1.97	1.78	0.91
1.65V	9.83	8.27	7.08	6.30	5.73	5.22	4.82	4.51	3.68	3.13	2.72	2.30	2.11	1.93	1.75	0.90
1.70V	9.67	8.13	6.96	6.19	5.64	5.14	4.74	4.43	3.60	3.07	2.66	2.26	2.07	1.90	1.72	0.89
1.75V	9.50	7.99	6.84	6.09	5.54	5.05	4.66	4.36	3.53	3.01	2.61	2.21	2.02	1.86	1.68	0.85
1.80V	9.33	7.85	6.72	5.98	5.45	4.97	4.58	4.28	3.45	2.93	2.55	2.16	1.98	1.82	1.65	0.84

## 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	131	83.6	67.3	53.6	45.6	38.3	34.5	30.7	29.4	26.6	24.4	23.4
1.65V	126.8	82.2	66.2	52.7	44.9	37.8	34.1	30.3	29.1	26.3	24.1	23.2
1.70V	122.5	80.8	65.0	51.8	44.2	37.2	33.6	29.9	28.7	26.0	23.9	23.0
1.75V	118.3	79.3	63.9	51.0	43.5	36.7	33.1	29.5	28.4	25.7	23.6	22.7
1.80V	114	77.9	62.7	50.1	42.9	36.1	32.6	29.2	28.0	25.4	23.4	22.5

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	19.7	16.7	14.4	13.1	11.6	10.6	9.75	9.10	7.31	6.16	5.37	4.58	4.21	3.88	3.52	1.82
1.65V	19.5	16.6	14.2	13.0	11.5	10.5	9.65	9.01	7.24	6.09	5.32	4.54	4.17	3.84	3.49	1.80
1.70V	19.3	16.4	14.1	12.8	11.4	10.3	9.55	8.92	7.17	6.01	5.27	4.49	4.13	3.80	3.45	1.78
1.75V	19.1	16.2	13.9	12.7	11.2	10.2	9.44	8.83	7.10	5.94	5.21	4.45	4.09	3.76	3.42	1.77
1.80V	18.9	16.0	13.8	12.5	11.1	10.1	9.34	8.74	7.03	5.92	5.16	4.40	4.05	3.73	3.38	1.75

## ES-CYCLE LIFE EXPECTANCY

