



EnerRocket™
CONTINUOUSLY SAFEGUARDING

ES 5-12

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4

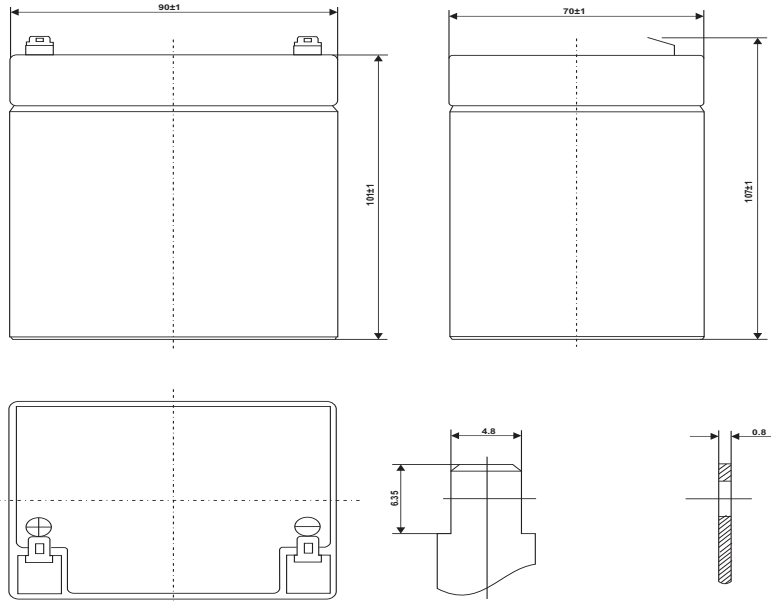
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Seal Lead Acid Battery
- Absorbent Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction (FR optional)
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output
- Wide Operating Temperature
- Maintenance-Free Operation

CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	10 Years	
Capacity 25°C (77°F)	20 Hour rate	5.0Ah
	10 Hour rate	5.0Ah
	5 Hour rate	4.8Ah
Internal Resistance (25°C, 100% Charge)	≤ 25mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current	75A (5sec)	
Maximum Charging current	2.00A	
Short Circuit Current	270A	
Charge Methods	14.4 to 14.7 V	
Constant Voltage Charge 77°F (25°C) - Cycle use	Temp. Compensation -30mV/°C	
Charge methods	13.4 to 13.8V	
Constant Voltage Charge 77°F (25°C) - Standby Use	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
90 mm	70 mm	101 mm	107 mm	1.72 ± 5%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	26.5	17.5	13.0	7.30	4.10	1.55	1.01	0.52	0.27
1.65	25.4	17.2	12.7	7.20	4.02	1.51	0.98	0.51	0.26
1.70	24.3	17.0	12.4	7.13	4.00	1.48	0.97	0.50	0.26
1.75	23.1	16.5	12.1	7.10	3.99	1.44	0.96	0.50	0.25
1.80	21.8	15.8	12.0	7.02	3.98	1.40	0.95	0.50	0.25

CONSTANT POWER DISCHARGE (Watts) AT 25°C

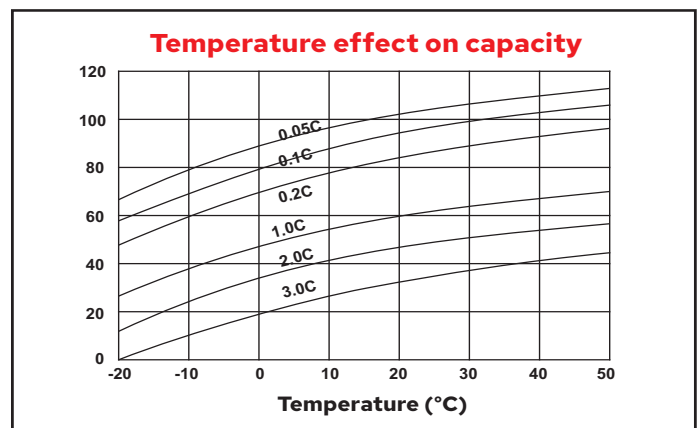
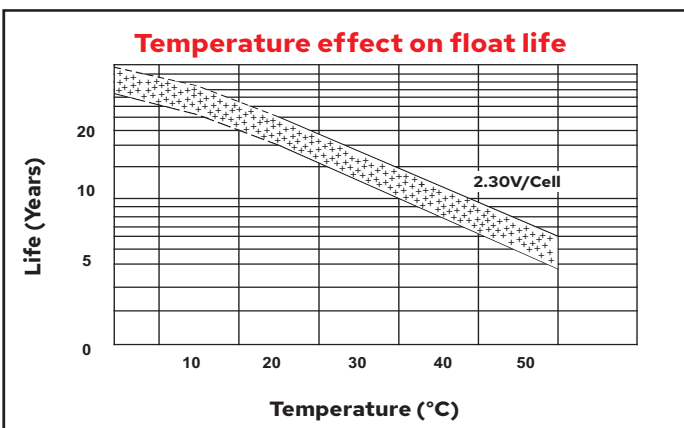
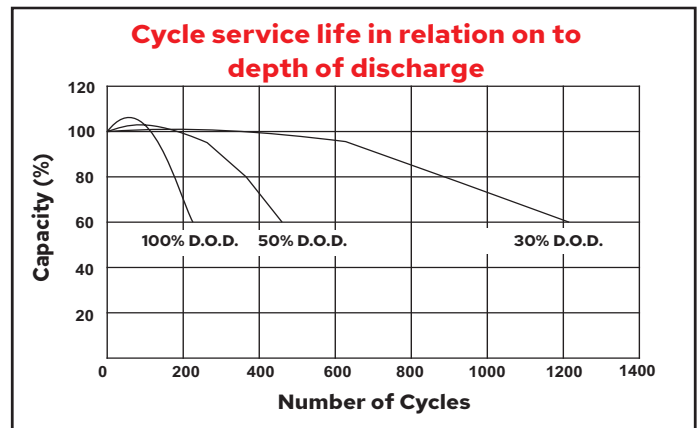
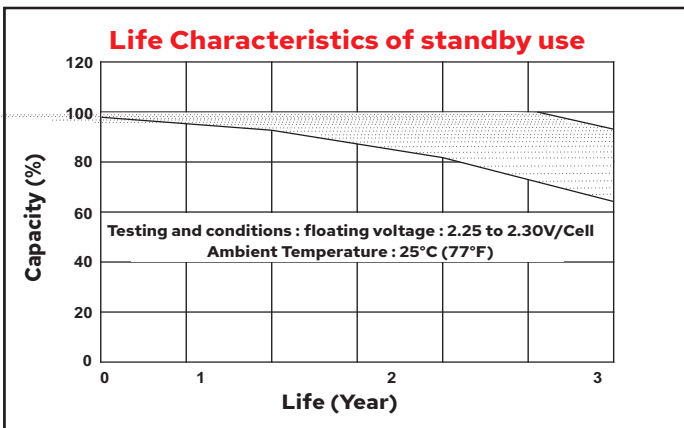
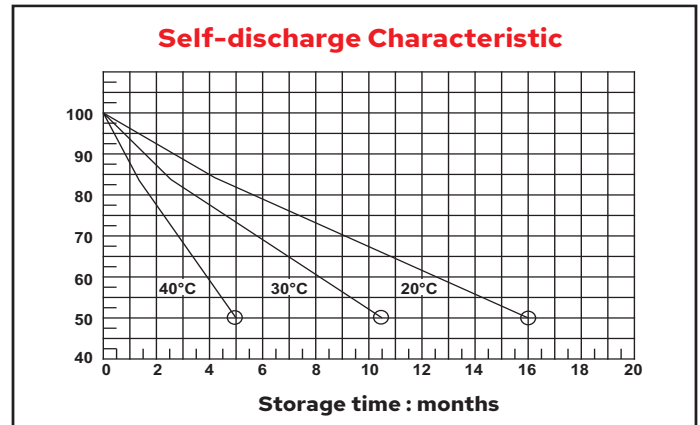
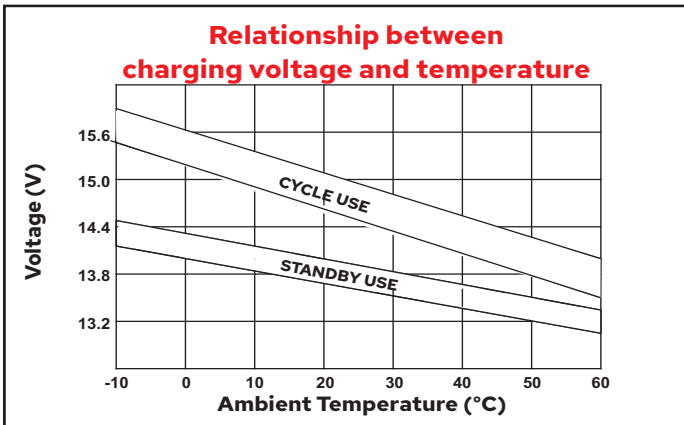
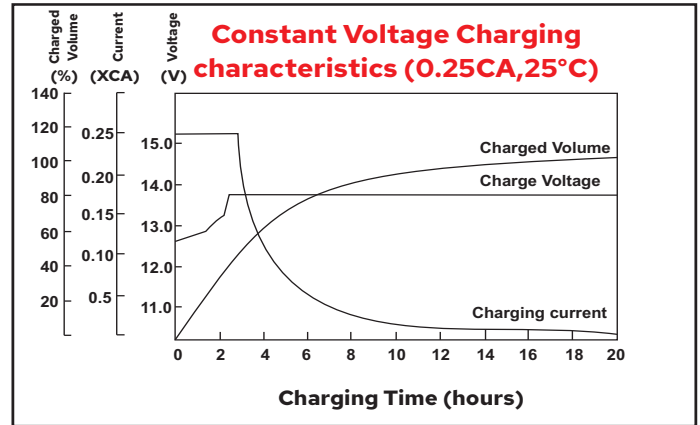
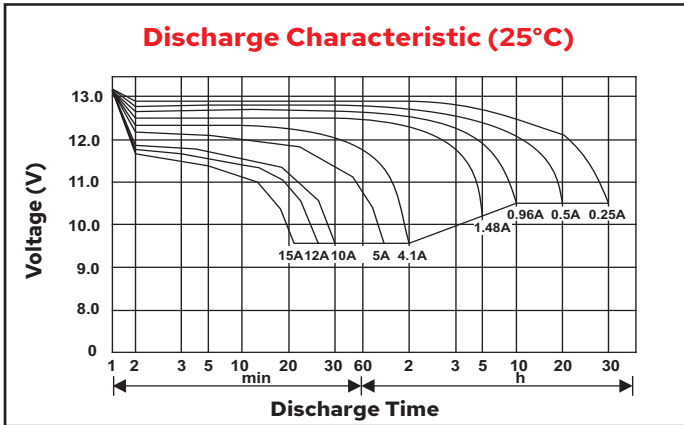
End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	49.5	35.2	25.7	14.60	8.05	3.05	2.01	-	-
1.65	47.1	34.0	25.2	14.40	8.03	2.99	1.98	-	-
1.70	44.8	33.5	25.0	14.30	8.00	2.93	1.95	-	-
1.75	42.3	32.5	24.3	14.30	7.99	2.86	1.91	-	-
1.80	39.8	31.6	23.5	14.20	7.97	2.80	1.88	-	-



ES 5-12

SMF VRLA RECHARGEABLE BATTERY

**LONG
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ES 7-12

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APPLICATIONS

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- Medical Equipment

COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4

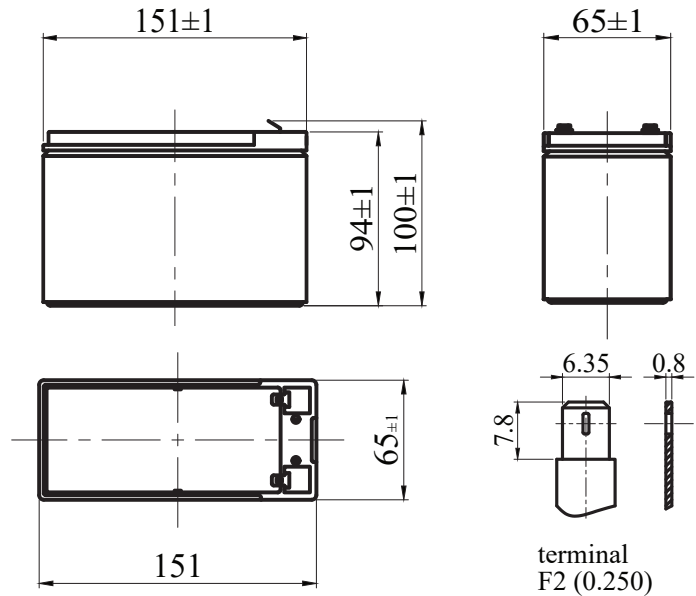
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Seal Lead Acid Battery
- Absorbent Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction (FR optional)
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output
- Wide Operating Temperature
- Maintenance-Free Operation

CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	10 Years	
Capacity 27°C (80.6°F)	20 Hour rate	7Ah
	10 Hour rate	6.7Ah
	5 Hour rate	5.6Ah
Internal Resistance (25°C, 100% Charge)	25mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current	105A (5sec)	
Maximum Charging current	2.88A	
Short Circuit Current	350A	
Charge Methods	14.4 to 14.7 V	
Constant Voltage Charge 77°F (25°C) - Cycle use	Temp. Compensation -30mV/°C	
Charge methods	13.4 to 13.8V	
Constant Voltage Charge 77°F (25°C) - Standby Use	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
151 mm	65 mm	94 mm	100 mm	2.2 ± 5%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	30.0	18.8	15.3	8.50	4.80	1.88	1.25	0.66	0.38
1.65	28.4	17.9	14.6	8.15	4.63	1.82	1.20	0.65	0.38
1.70	26.8	17.0	13.9	7.86	4.44	1.76	1.16	0.64	0.37
1.75	25.2	16.0	13.2	7.56	4.25	1.69	1.12	0.63	0.36
1.80	23.5	15.1	12.5	7.18	4.04	1.64	1.10	0.60	0.35

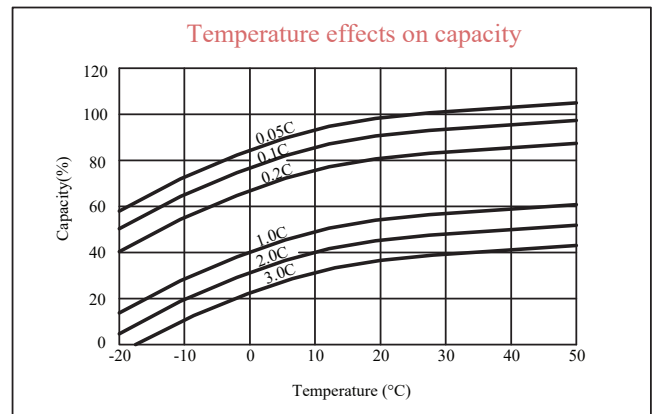
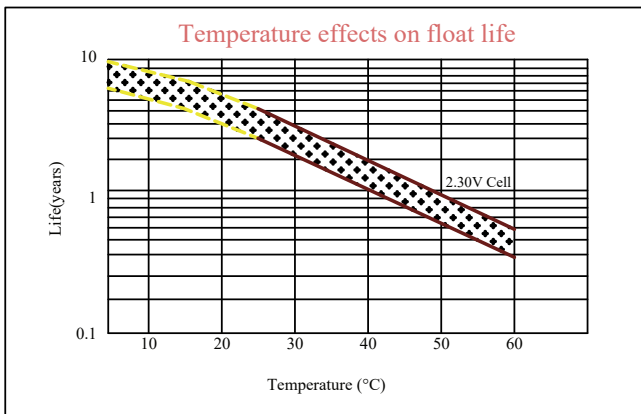
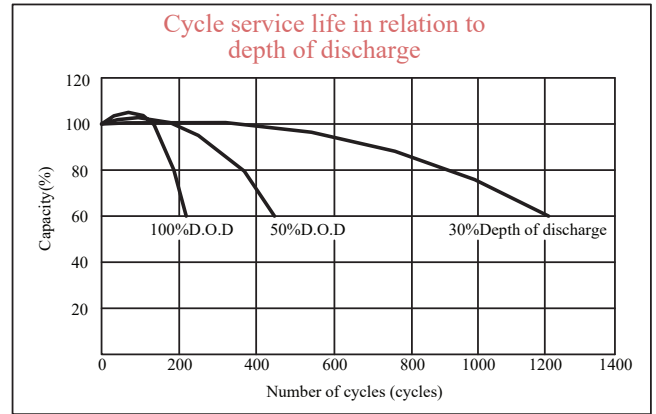
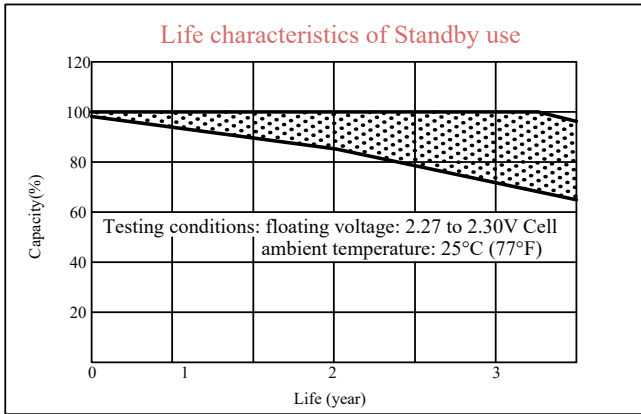
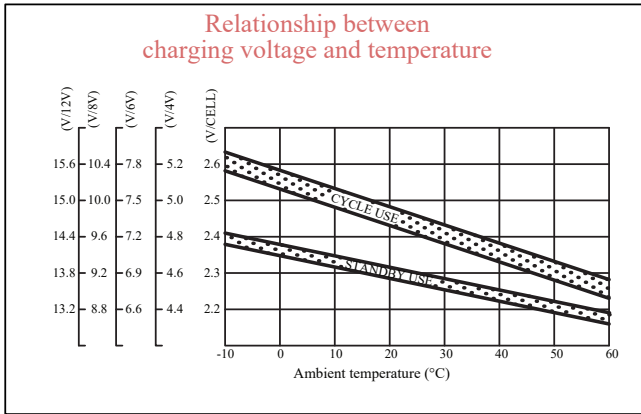
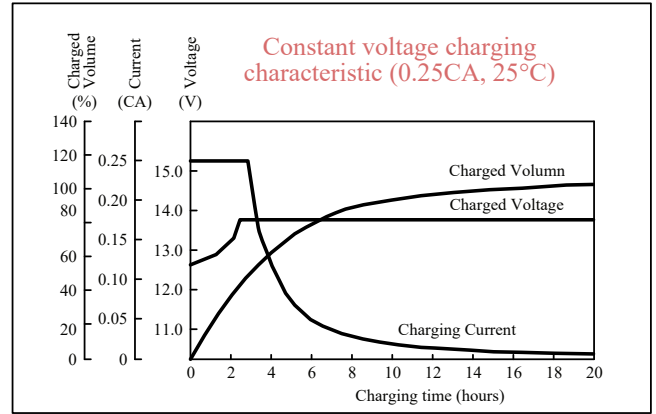
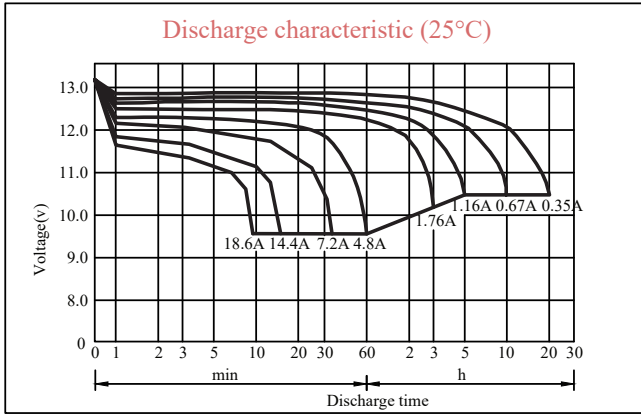
CONSTANT POWER DISCHARGE (Watts) AT 25°C

End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	53.3	35.8	28.1	15.50	9.30	3.68	2.38	1.34	0.70
1.65	50.7	34.0	27.0	14.90	8.90	3.59	2.34	1.32	0.69
1.70	48.1	32.2	25.9	14.30	8.53	3.49	2.30	1.30	0.68
1.75	45.6	30.4	24.8	13.70	8.28	3.38	2.25	1.28	0.66
1.80	43.1	28.6	23.8	13.20	7.90	3.27	2.19	1.26	0.64



ES 7-12

SMF VRLA RECHARGEABLE BATTERY





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ES 9-12

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- Medical Equipment

COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
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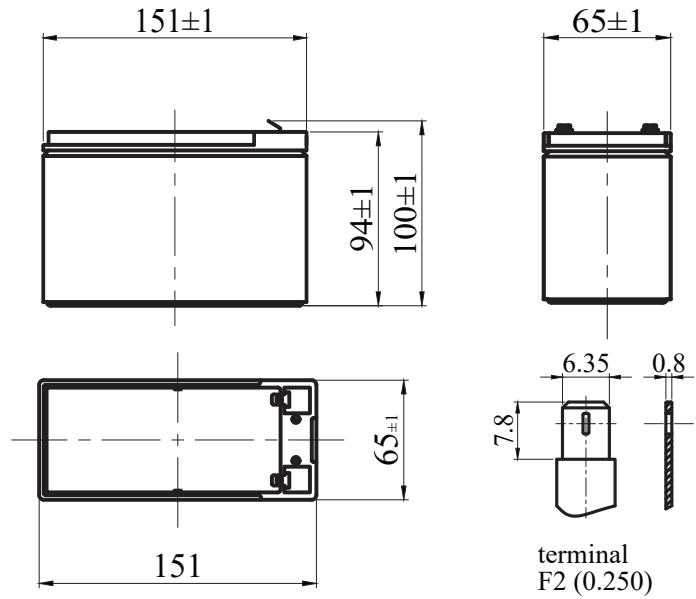
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Seal Lead Acid Battery
- Absorbent Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction (FR optional)
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output
- Wide Operating Temperature
- Maintenance-Free Operation

CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	10 Years	
Capacity 25°C (77°F)	20 Hour rate	9.0Ah
	10 Hour rate	8.2Ah
	5 Hour rate	7.7Ah
Internal Resistance (25°C, 100% Charge)	≤ 18 mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 50°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current	135A	
Maximum Charging current	3.6A	
Short Circuit Current	450A	
Charge Methods	14.4 to 14.7V	
Constant Voltage Charge 77°F (25°C) - Cycle use	Temp. Compensation -30mV/°C	
Charge methods	13.4 to 13.8V	
Constant Voltage Charge 77°F (25°C) - Standby Use	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
151 mm	65 mm	94 mm	100 mm	2.8 ± 5%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	33.0	24.2	17.0	9.90	5.80	2.33	1.60	0.87	0.47
1.65	32.1	23.6	16.5	9.79	5.75	2.29	1.56	0.86	0.46
1.70	30.9	22.9	16.1	9.36	5.71	2.25	1.55	0.84	0.46
1.75	30.3	22.1	14.6	8.91	5.66	2.20	1.54	0.82	0.45
1.80	29.6	21.0	13.9	8.45	5.51	2.14	1.53	0.82	0.44

CONSTANT POWER DISCHARGE (Watts) AT 25°C

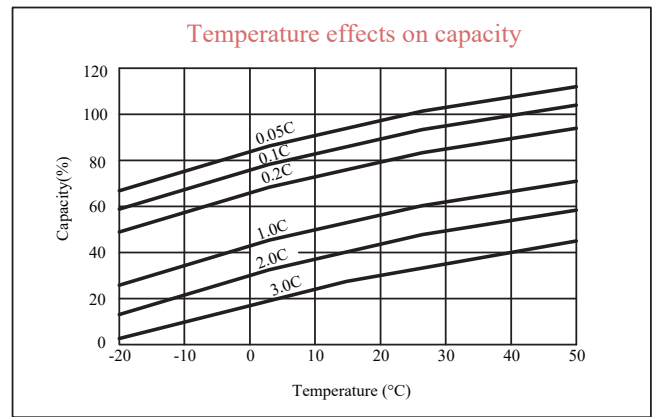
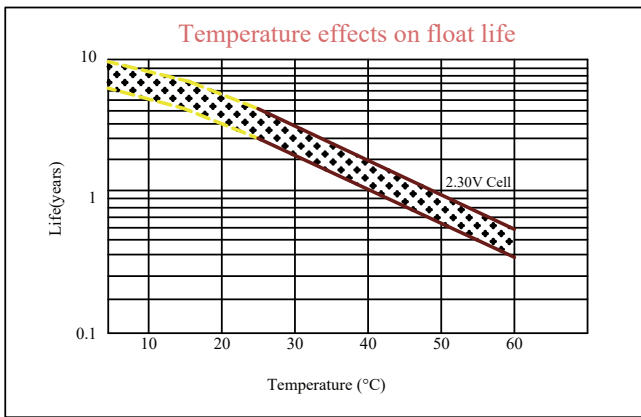
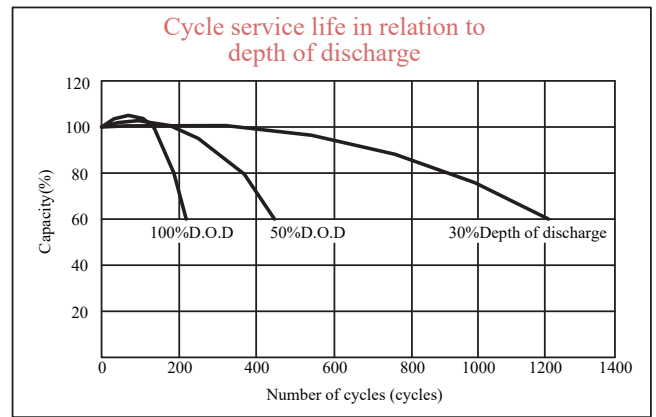
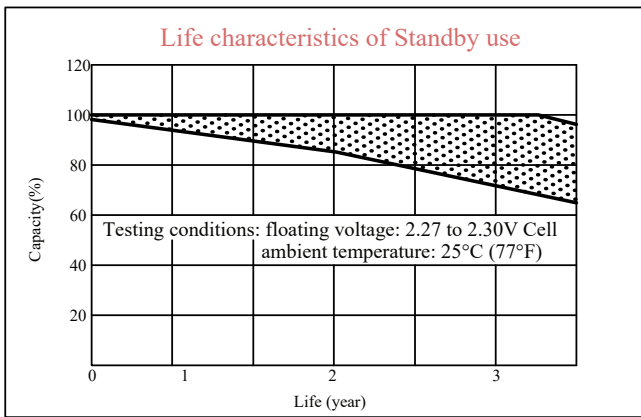
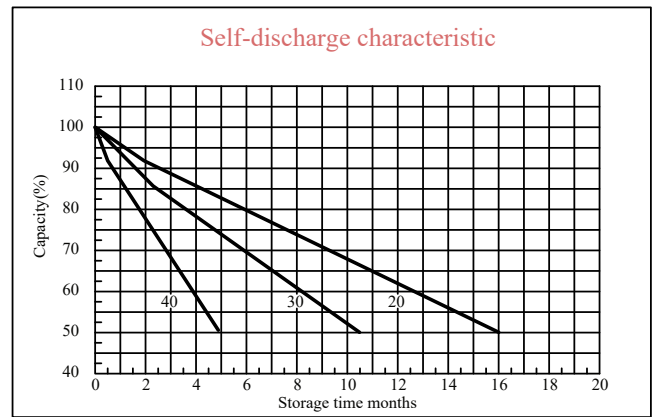
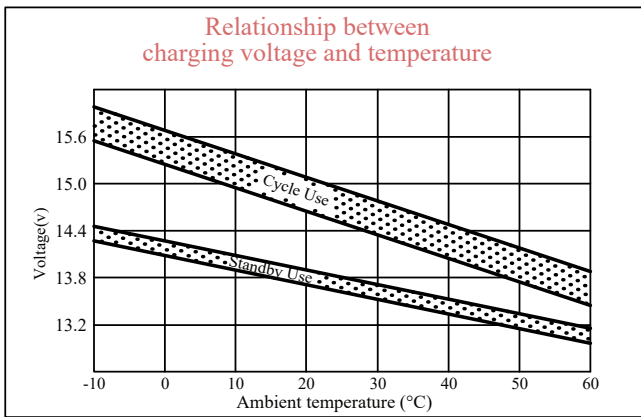
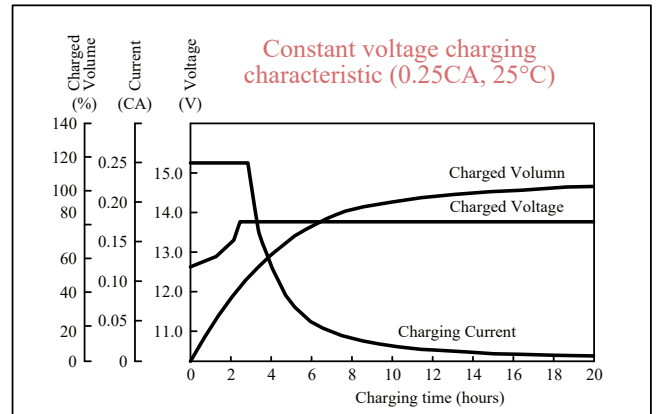
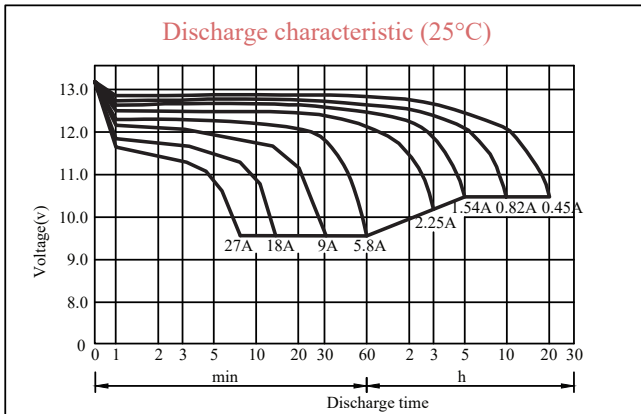
End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	71.7	44.8	33.6	19.6	11.5	4.34	3.10	1.70	0.90
1.65	68.3	44.3	33.1	19.1	11.2	4.29	3.04	1.60	0.90
1.70	64.8	42.9	31.1	18.5	11.0	4.20	2.98	1.60	0.90
1.75	61.4	41.1	30.2	17.6	10.7	4.08	2.92	1.60	0.90
1.80	58.0	39.2	28.4	16.6	10.4	3.92	2.85	1.60	0.80



ES 9-12

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
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ES 12-12

SMF VRLA RECHARGEABLE BATTERY

**LONG
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APPLICATIONS

- UPS Systems
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- Medical Equipment

COMPLIANCE STANDARDS

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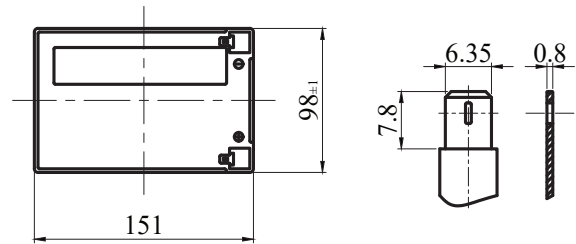
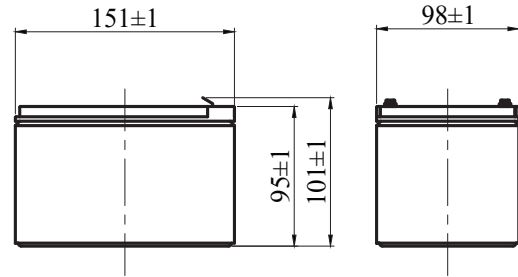
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Seal Lead Acid Battery
- Absorbent Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction (FR optional)
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output
- Wide Operating Temperature
- Maintenance-Free Operation

CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	10 Years	
Capacity 25°C (77°F)	20 Hour rate	12Ah
	10 Hour rate	11.4Ah
	5 Hour rate	10.25Ah
Internal Resistance (25°C, 100% Charge)	≤ 19 mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current	180A (5sec)	
Maximum Charging current	4.8A	
Short Circuit Current	600A	
Charge Methods	14.4 to 14.7V	
Constant Voltage Charge 77°F (25°C) - Cycle use	Temp. Compensation -30mV/°C	
Charge methods	13.4 to 13.8V	
Constant Voltage Charge 77°F (25°C) - Standby Use	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
151 mm	98 mm	95mm	101 mm	3.67 ± 5%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	46.4	31.7	24.8	13.8	8.14	3.18	2.12	1.18	0.61
1.65	45.0	30.8	24.3	13.5	8.04	3.15	2.10	1.17	0.61
1.70	43.5	29.9	23.7	13.3	7.94	3.12	2.07	1.16	0.61
1.75	42.1	29.0	23.2	13.0	7.85	3.09	2.05	1.14	0.60
1.80	40.6	28.2	22.6	12.7	7.75	3.06	2.02	1.12	0.59

CONSTANT POWER DISCHARGE (Watts) AT 25°C

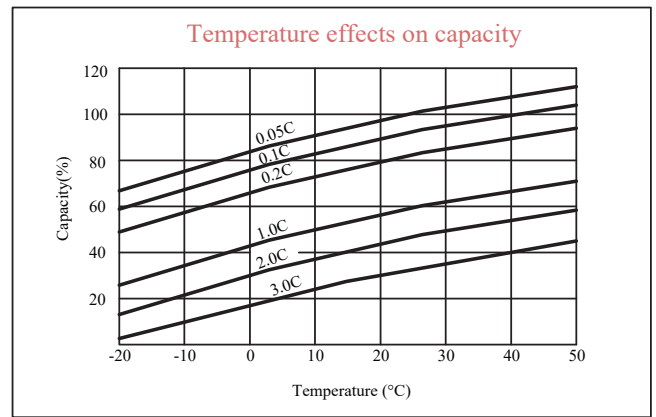
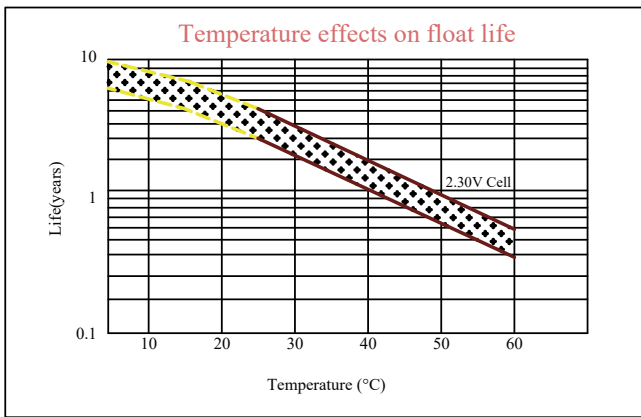
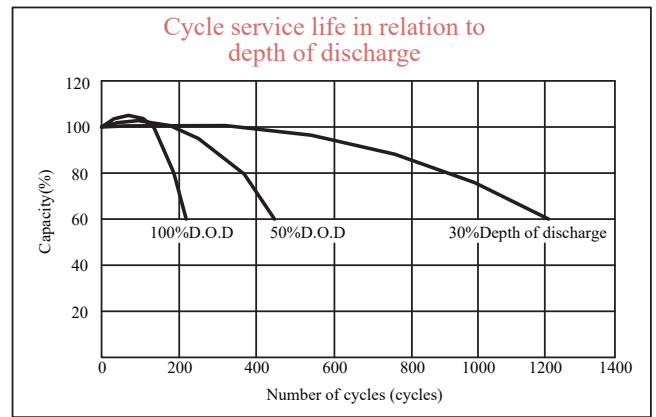
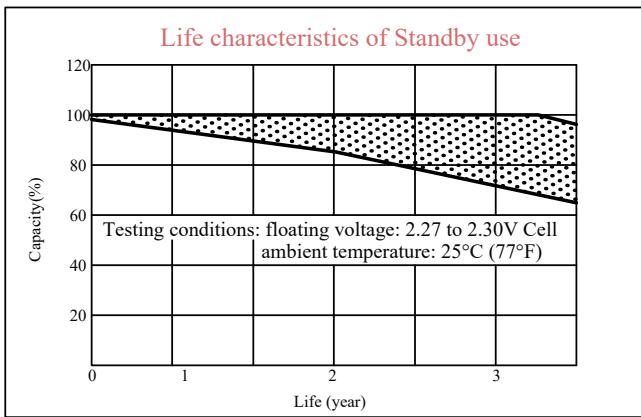
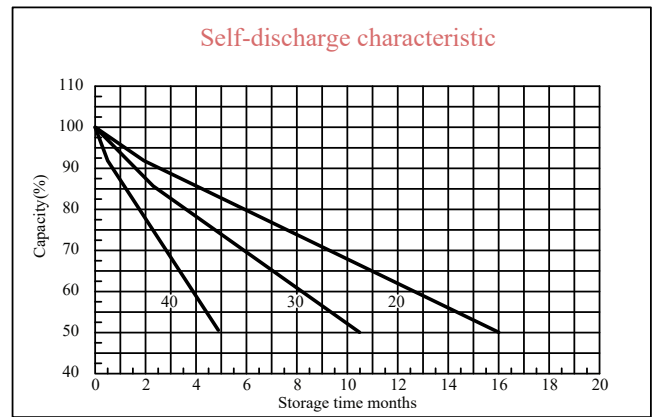
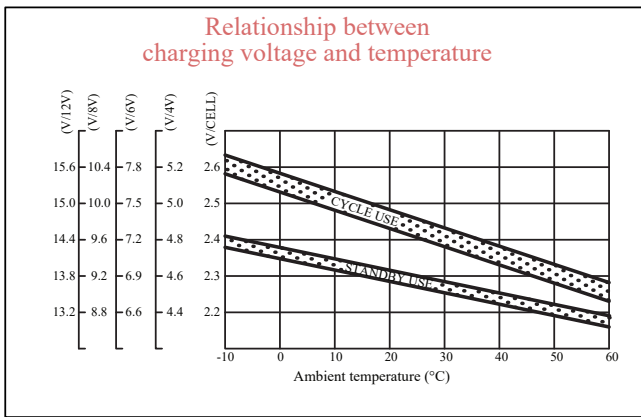
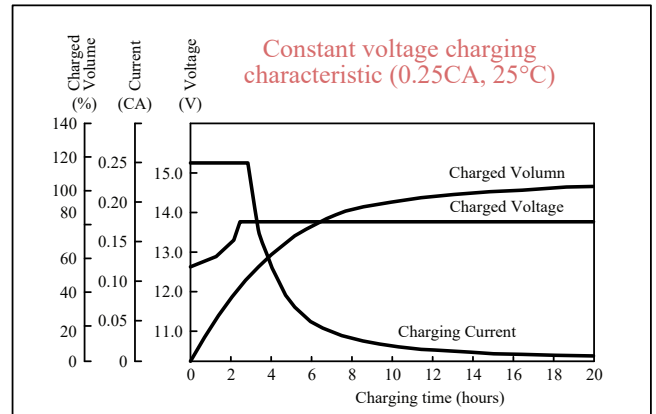
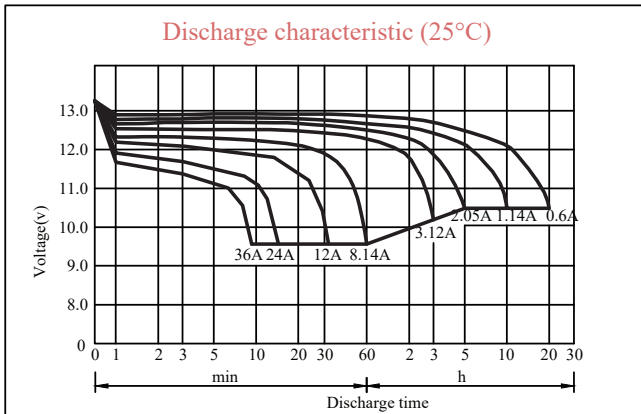
End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	86.2	58.7	46.7	27.0	16.1	6.50	4.20	2.36	1.22
1.65	84.1	57.7	46.0	26.6	16.0	6.44	4.17	2.33	1.21
1.70	81.9	56.6	45.3	26.2	15.8	6.37	4.14	2.31	1.20
1.75	79.8	55.6	44.6	25.8	15.7	6.31	4.11	2.29	1.18
1.80	77.6	54.6	43.9	25.4	15.5	6.24	4.08	2.26	1.17



ES 12-12

SMF VRLA RECHARGEABLE BATTERY

**LONG
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ES 18-12

SMF VRLA RECHARGEABLE BATTERY

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COMPLIANCE STANDARDS

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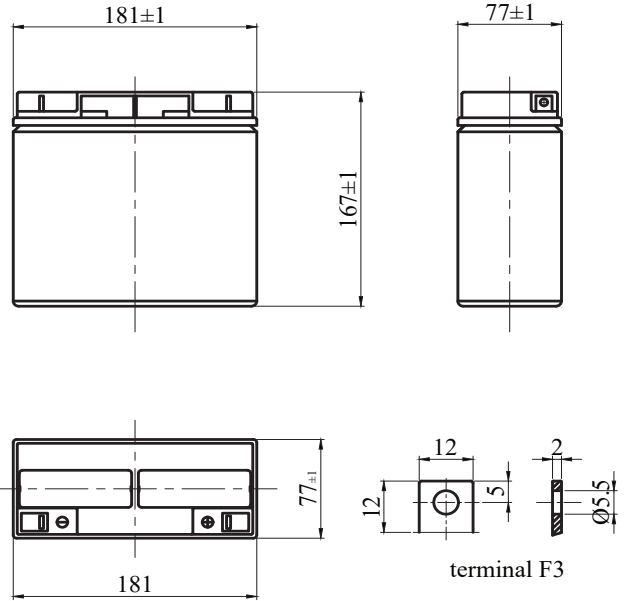
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- Seal Lead Acid Battery
- Absorbent Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction (FR optional)
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
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CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	10 Years	
Capacity 25°C (77°F)	20 Hour rate	17Ah
	10 Hour rate	16.8Ah
	5 Hour rate	15.05Ah
Internal Resistance (25°C, 100% Charge)	≤ 14 mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current	225A (5sec)	
Maximum Charging current	6.8A	
Short Circuit Current	850A	
Charge Methods	14.4 to 14.7V	
Constant Voltage Charge 77°F (25°C) - Cycle use	Temp. Compensation -30mV/°C	
Charge methods	13.4 to 13.8V	
Constant Voltage Charge 77°F (25°C) - Standby Use	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
181 mm	77 mm	167 mm	167 mm	5.5 ± 5%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	67.0	45.1	34.3	20.2	12.0	4.65	3.10	1.70	0.89
1.65	64.6	44.0	33.5	19.8	11.8	4.57	3.05	1.68	0.88
1.70	62.2	42.9	32.6	19.3	11.6	4.49	3.00	1.65	0.87
1.75	59.8	41.7	31.8	18.9	11.3	4.40	2.94	1.63	0.85
1.80	57.4	40.6	30.9	18.4	11.1	4.32	2.89	1.60	0.84

CONSTANT POWER DISCHARGE (Watts) AT 25°C

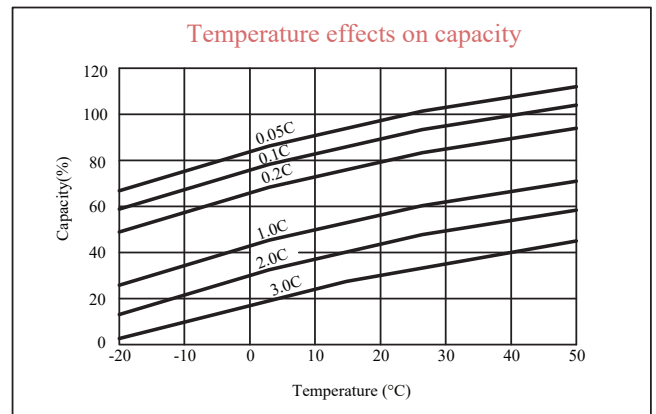
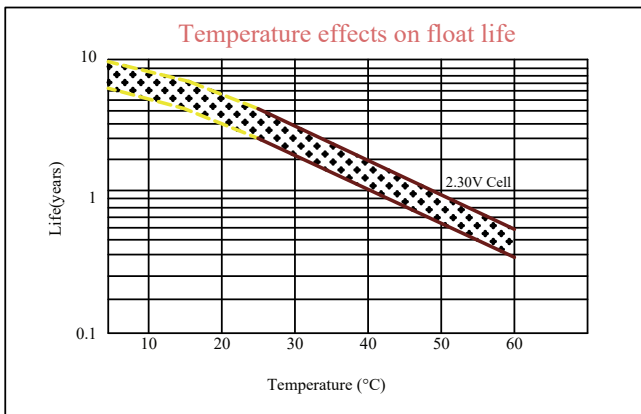
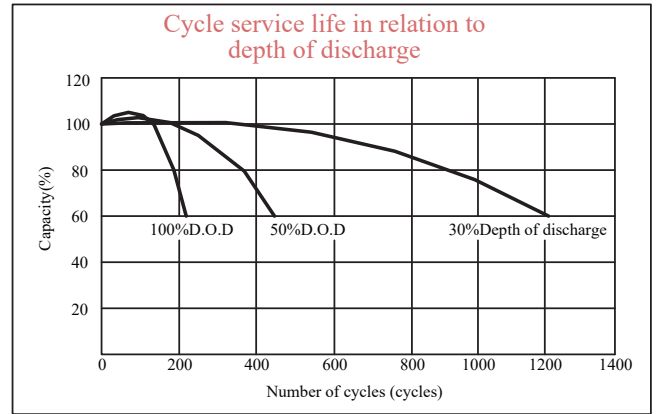
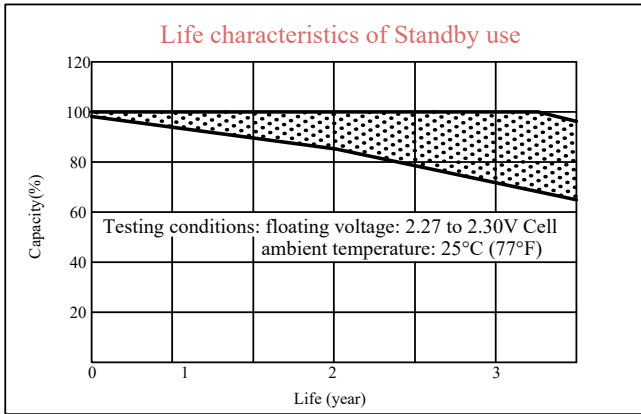
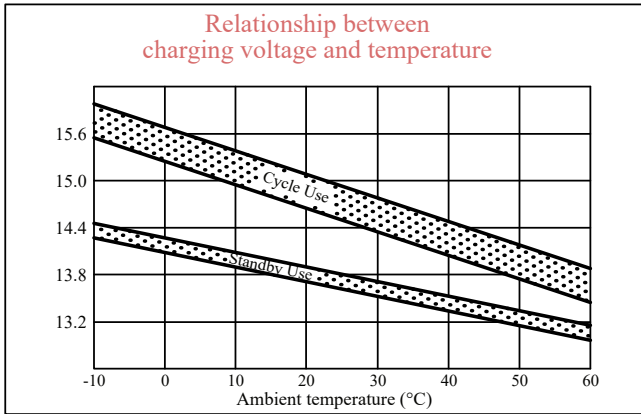
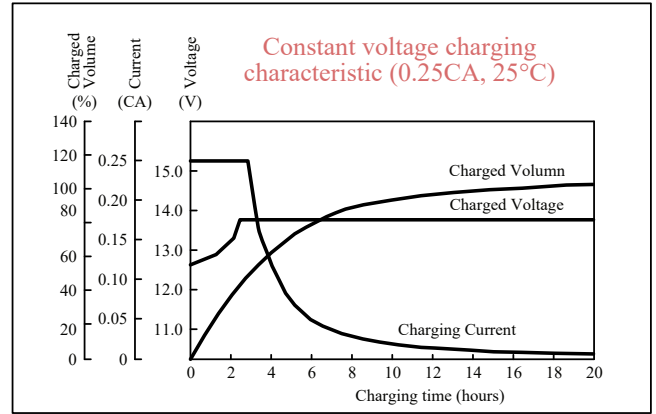
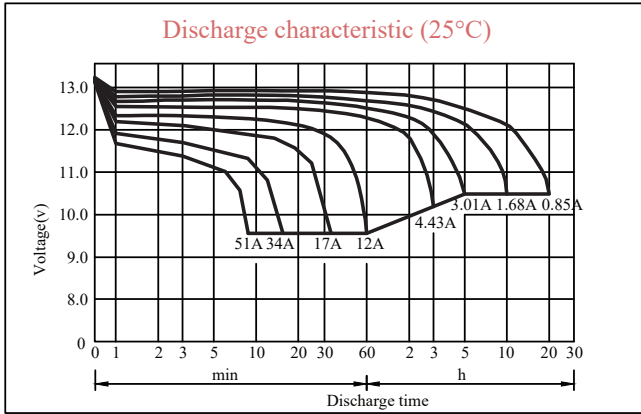
End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	117	79.0	61.0	36.0	22.0	9.10	6.16	3.52	1.82
1.65	113	77.4	59.8	35.5	21.8	9.01	6.10	3.49	1.80
1.70	110	75.8	58.5	35.0	21.5	8.92	6.04	3.45	1.78
1.75	106	74.1	57.3	34.5	21.3	8.83	5.98	3.42	1.77
1.80	102	72.5	56.0	34.0	21.0	8.74	5.92	3.38	1.75



ES 18-12

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**





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ES 26-12

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4

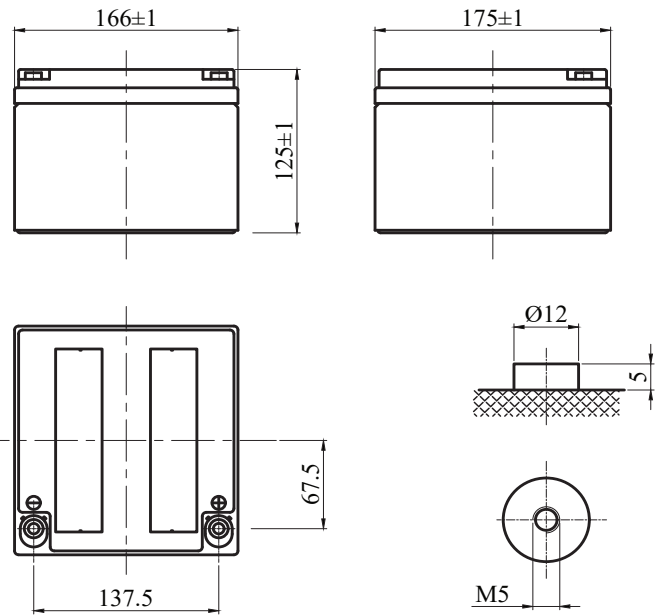
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Seal Lead Acid Battery
- Absorbent Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction (FR optional)
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output
- Wide Operating Temperature
- Maintenance-Free Operation

CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	10 Years	
Capacity 25°C (77°F)	20 Hour rate	24Ah
	10 Hour rate	23.7Ah
	5 Hour rate	20.5Ah
Internal Resistance (25°C, 100% Charge)	≤ 12 mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current	300A (5sec)	
Maximum Charging current	9.6A	
Short Circuit Current	1200A	
Charge Methods	14.4 to 14.7V	
Constant Voltage Charge 77°F (25°C) - Cycle use	Temp. Compensation -30mV/°C	
Charge methods	13.4 to 13.8V	
Constant Voltage Charge 77°F (25°C) - Standby Use	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
166 mm	175 mm	125mm	125 mm	8.1 ± 5%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	95.0	64.0	48.0	28.5	16.0	6.74	4.47	2.52	1.24
1.65	90.1	60.9	45.9	27.4	15.4	6.53	4.36	2.47	1.23
1.70	84.9	57.8	43.7	26.2	14.8	6.30	4.24	2.42	1.22
1.75	79.7	54.5	41.1	24.9	14.2	6.05	4.10	2.37	1.20
1.80	74.3	51.3	39.1	23.6	13.5	5.78	3.95	2.31	1.18

CONSTANT POWER DISCHARGE (Watts) AT 25°C

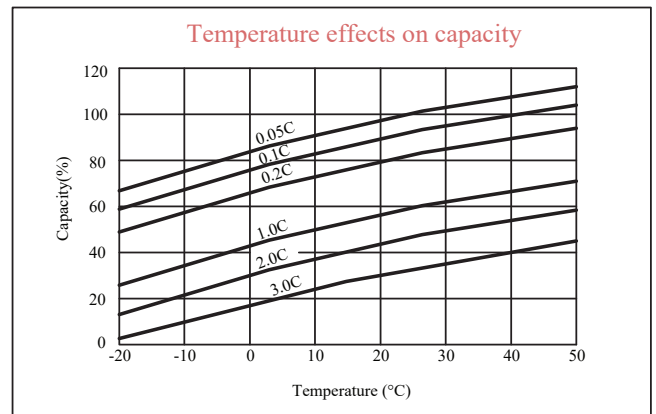
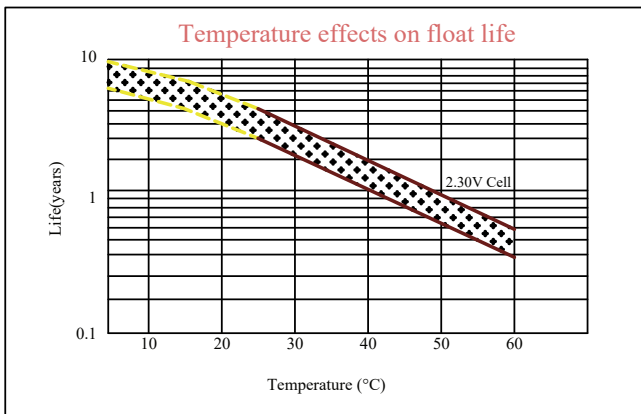
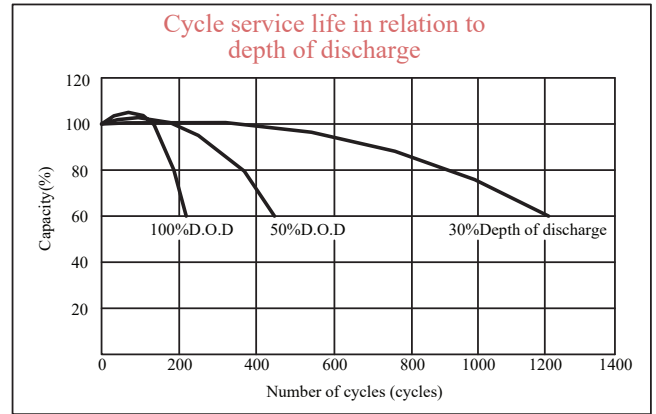
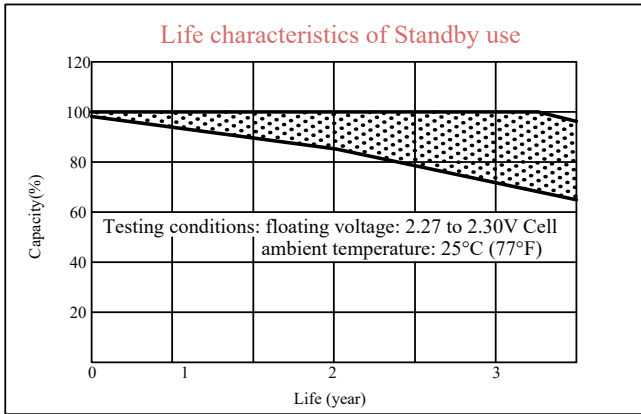
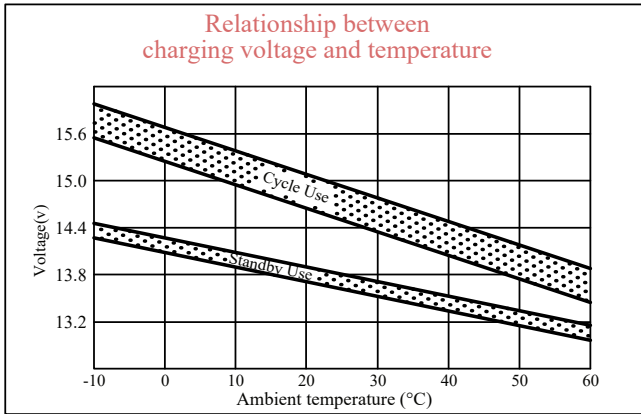
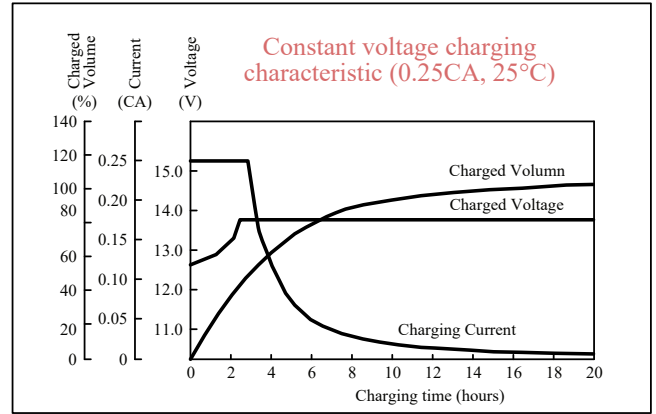
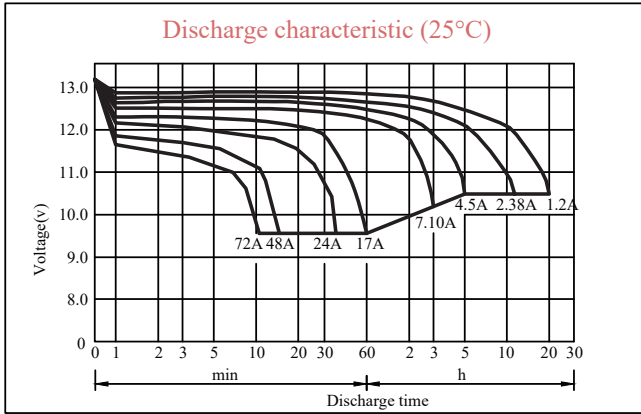
End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	185	121	90.0	55.0	31.7	13.4	8.54	5.38	2.78
1.65	173	114	85.1	52.3	30.3	13.1	8.39	5.35	2.77
1.70	161	107	80.2	49.4	28.9	12.5	8.22	5.30	2.73
1.75	151	99.7	75.2	46.6	27.5	12.0	8.03	5.18	2.68
1.80	139	92.7	70.3	43.7	26.0	11.4	7.83	5.12	2.62



ES 26-12

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**





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ES 33-12

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4

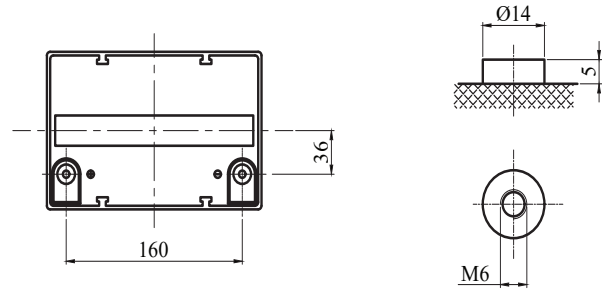
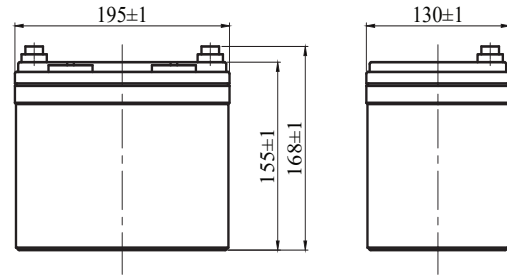
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Seal Lead Acid Battery
- Absorbent Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction (FR optional)
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output
- Wide Operating Temperature
- Maintenance-Free Operation

CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	10 Years	
Capacity 25°C (77°F)	10 Hour rate	33.0Ah
	5 Hour rate	27.9Ah
	1 Hour rate	22.3Ah
Internal Resistance (25°C, 100% Charge)	≤ 12mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current	330A (5sec)	
Maximum Charging current	9.9A	
Short Circuit Current	850A	
Charge Methods Constant Voltage Charge 77°F (25°C) - Cycle use	14.4 to 14.7V	
	Temp. Compensation -30mV/°C	
Charge methods Constant Voltage Charge 77°F (25°C) - Standby Use	13.4 to 13.8V	
	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
195 mm	130 mm	155mm	168 mm	9.7 ± 3%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	90.0	69.3	57.1	32.6	22.3	9.08	6.3	3.36	1.81
1.65	81.0	65.0	54.1	31.3	21.9	8.97	6.25	3.35	1.79
1.70	79.0	60.0	51.4	30.4	21.2	8.45	6.15	3.32	1.78
1.75	67.0	56.1	47.8	29.4	20.3	8.25	5.58	3.31	1.78
1.80	59.5	51.4	44.8	28.8	19.8	8.18	5.50	3.30	1.76

CONSTANT POWER DISCHARGE (Watts) AT 25°C

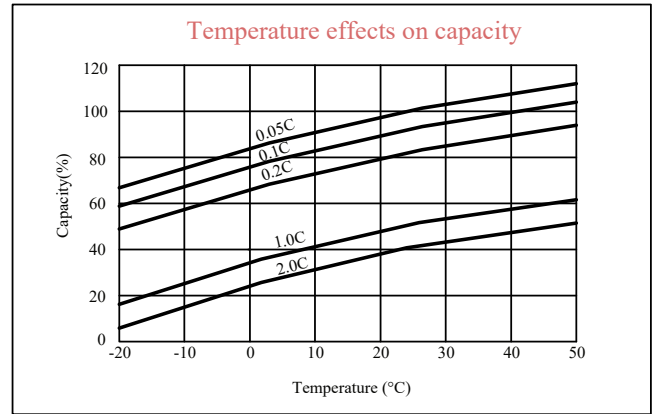
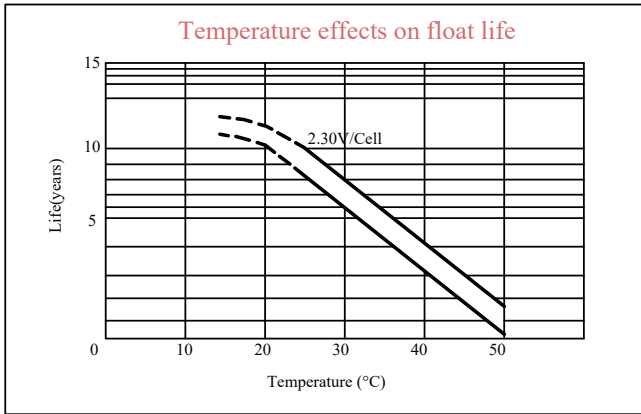
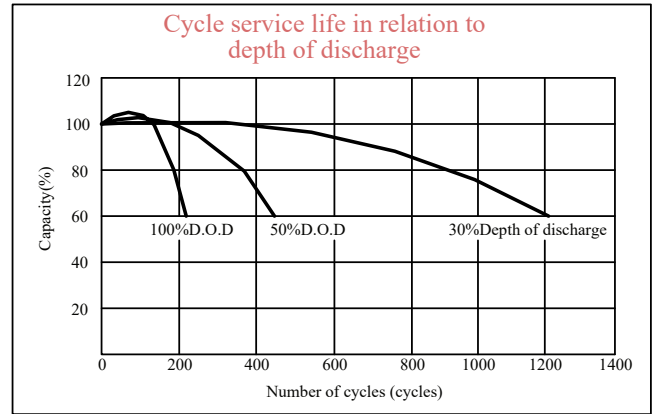
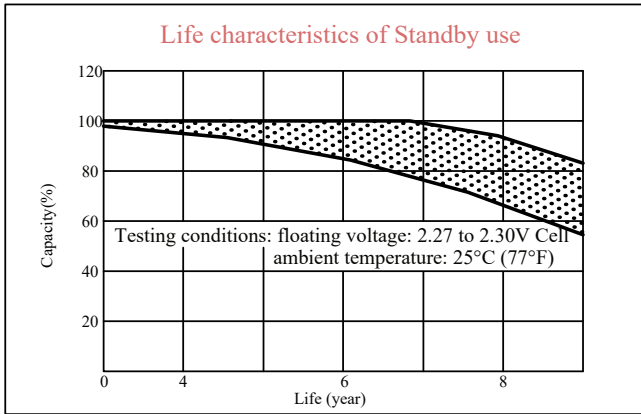
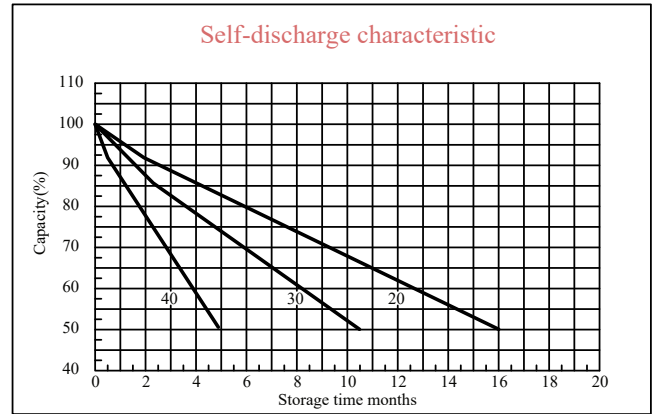
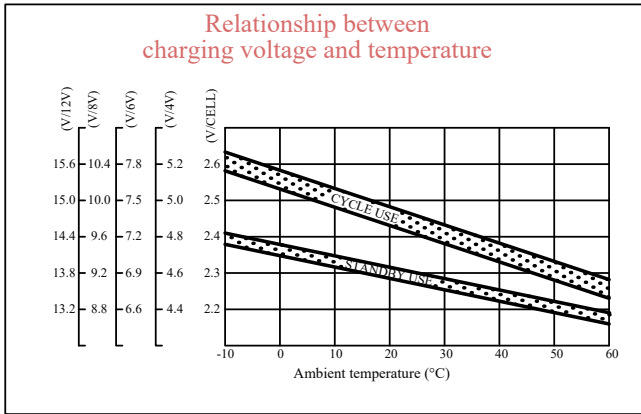
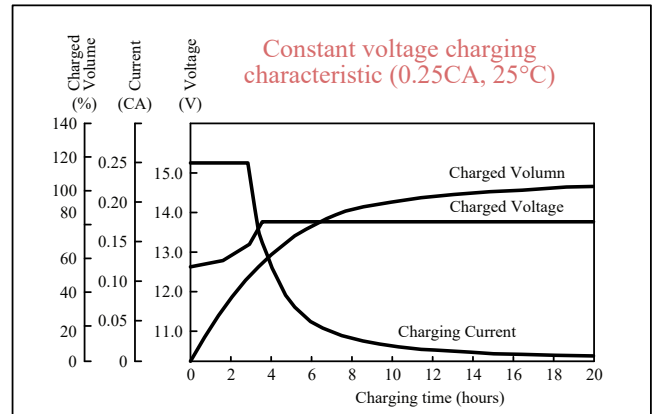
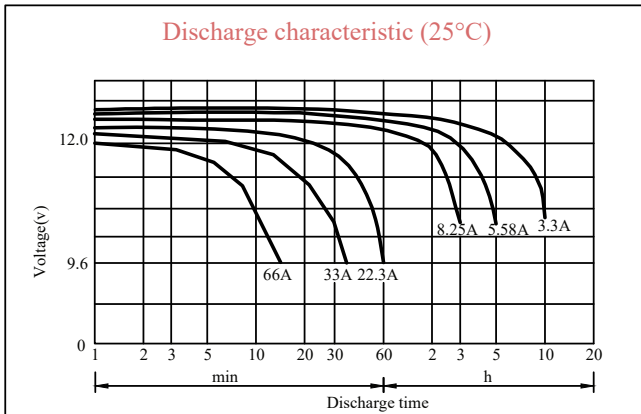
End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	144	122	100.0	65.3	40.9	17.4	12.2	6.0	3.2
1.65	140	116	98.6	61.7	40.5	17.3	11.9	5.9	3.2
1.70	135	110	95.7	60.0	39.9	16.8	11.5	5.8	3.2
1.75	126	104	92.0	58.0	39.1	16.0	11.3	5.8	3.1
1.80	119	97.7	89.0	56.0	38.3	15.2	11	5.7	3.1



ES 33-12

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**





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ES 42-12

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4

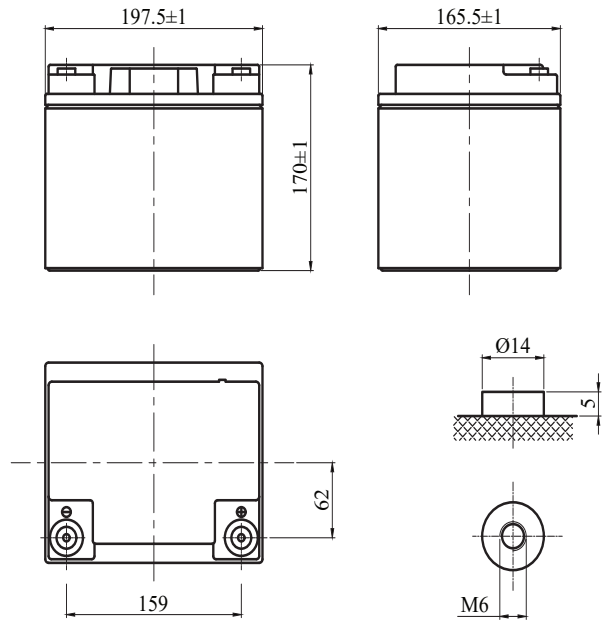
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Seal Lead Acid Battery
- Absorbent Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction (FR optional)
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output
- Wide Operating Temperature
- Maintenance-Free Operation

CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	10 Years	
Capacity 25°C (77°F)	20 Hour rate	42Ah
	10 Hour rate	40Ah
	5 Hour rate	37.55Ah
Internal Resistance (25°C, 100% Charge)	≤ 9.0 mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current	400A (5sec)	
Maximum Charging current	16A	
Short Circuit Current	950A	
Charge Methods Constant Voltage Charge 77°F (25°C) - Cycle use	14.4 to 14.7V	
	Temp. Compensation -30mV/°C	
Charge methods Constant Voltage Charge 77°F (25°C) - Standby Use	13.4 to 13.8V	
	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
197 mm	165 mm	170mm	170 mm	12.8 ± 5%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	130	90.5	72.7	41.9	25.9	11.3	7.95	4.20	2.25
1.65	122	86.2	69.1	40.6	25.4	11.1	7.81	4.15	2.22
1.70	114	81.8	66.5	39.2	24.8	10.9	7.67	4.10	2.18
1.75	106	77.6	63.0	37.7	24.2	10.6	7.51	4.05	2.14
1.80	97	73.9	59.2	36.2	23.5	10.4	7.35	4.00	2.10

CONSTANT POWER DISCHARGE (Watts) AT 25°C

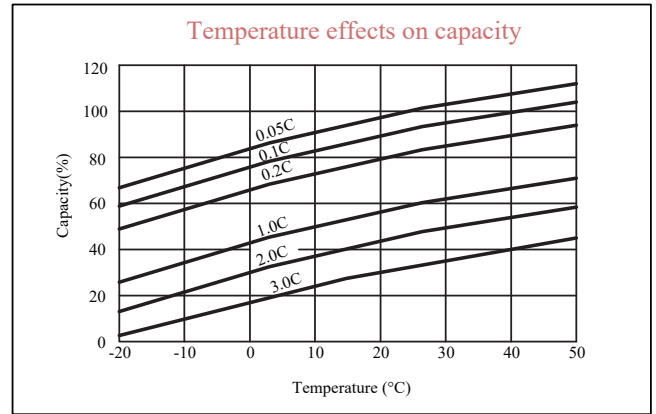
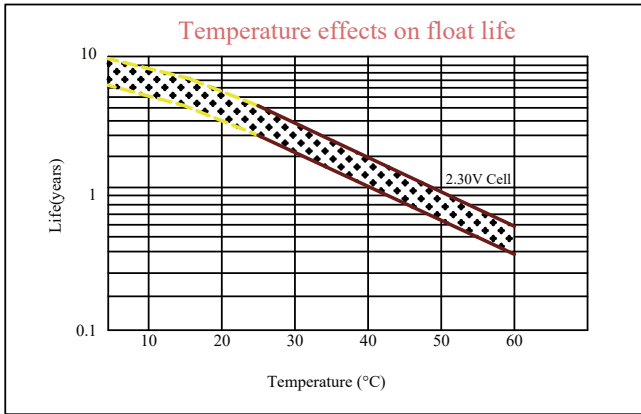
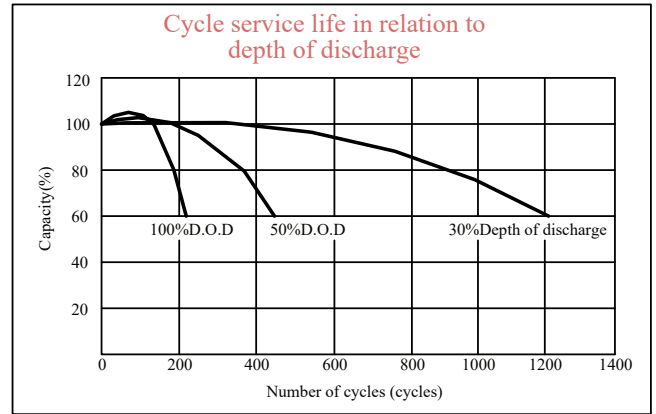
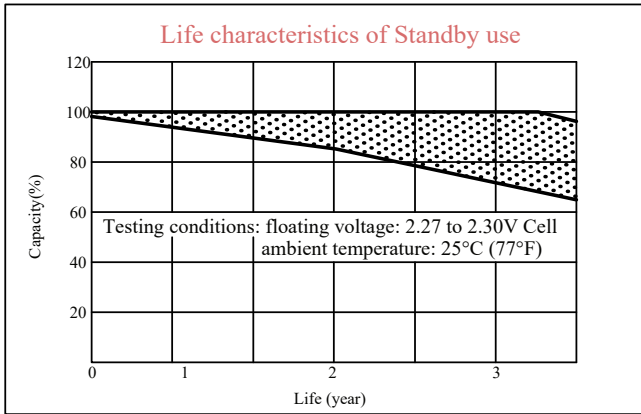
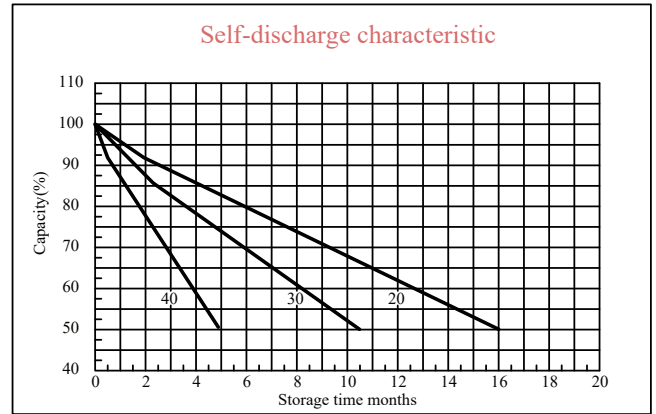
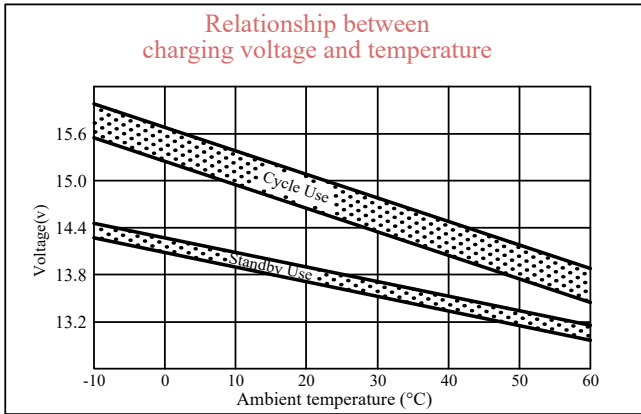
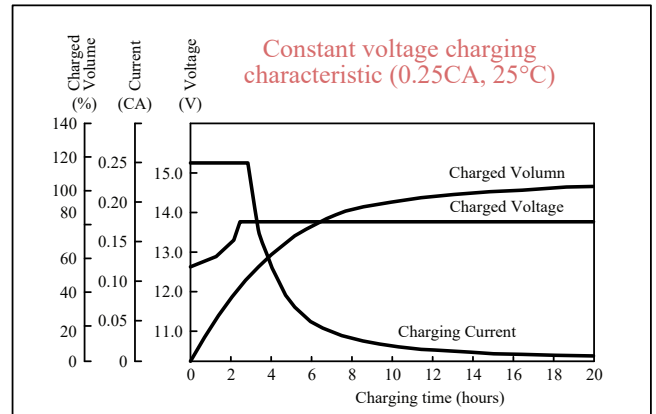
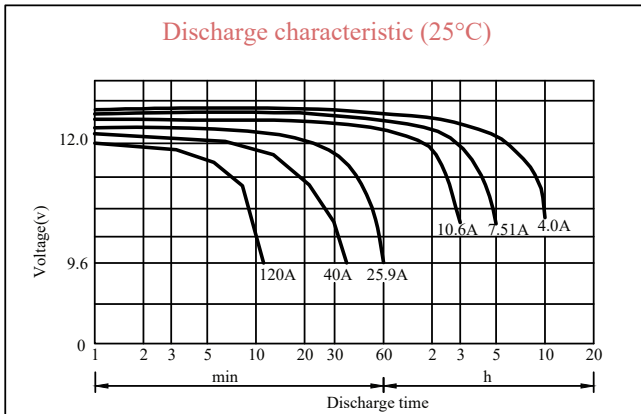
End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	236	163	127	83.2	50.9	21.5	14.0	8.76	3.9
1.65	220	157	124	81.8	50.2	21.2	13.8	8.59	3.9
1.70	204	150	121	79.3	49.3	20.8	13.6	8.42	3.8
1.75	186	143	117	76.8	48.5	20.5	13.4	8.21	3.8
1.80	177	135	113	74.3	47.7	20.1	13.3	8.04	3.7



ES 42-12

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**





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ES 55-12

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4

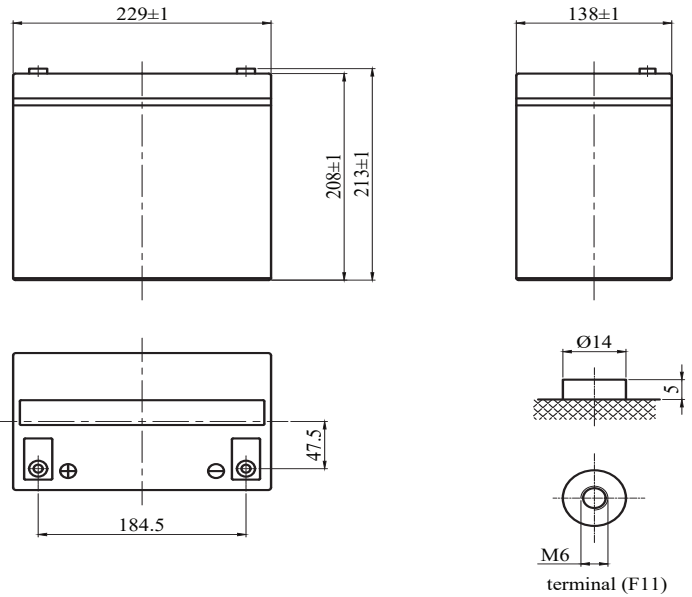
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Seal Lead Acid Battery
- Absorbent Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction (FR optional)
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output
- Wide Operating Temperature
- Maintenance-Free Operation

CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	10 Years	
Capacity 27°C (80.6°F)	10 Hour rate	55.0Ah
	5 Hour rate	46.2Ah
	1 Hour rate	35.1Ah
Internal Resistance (25°C, 100% Charge)	<7.2mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current	550A (5sec)	
Maximum Charging current	16.5A	
Short Circuit Current	1400A	
Charge Methods Constant Voltage Charge 77°F (25°C) - Cycle use	14.4 to 14.7V	
	Temp. Compensation -30mV/°C	
Charge methods Constant Voltage Charge 77°F (25°C) - Standby Use	13.4 to 13.8V	
	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
229 mm	138 mm	208 mm	213 mm	18.0 ± 5%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	24h
1.60	175	129	99.4	59.2	35.10	14.6	9.82	5.65	2.45
1.65	165	124	95.4	57.4	34.20	14.2	9.57	5.62	2.43
1.70	155	115	90.6	55.6	33.30	13.9	9.40	5.58	2.41
1.75	145	106	85.8	53.8	32.50	13.6	9.23	5.54	2.40
1.80	134	99.8	79.5	51.9	31.70	13.3	9.06	5.50	2.38

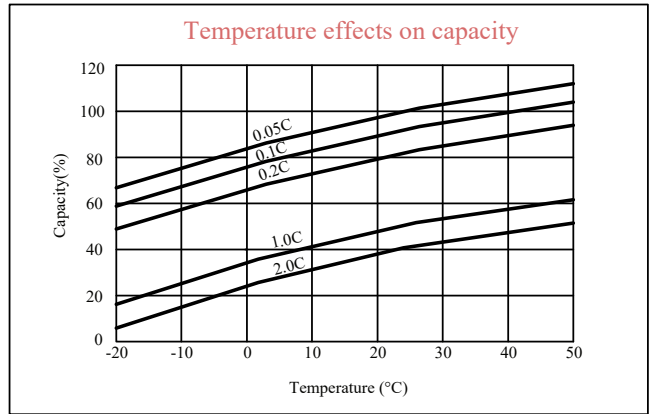
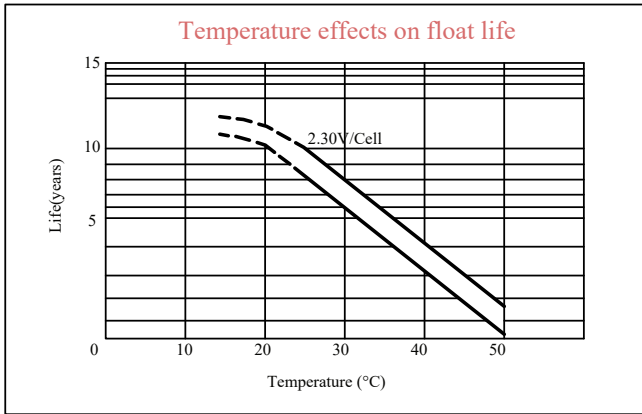
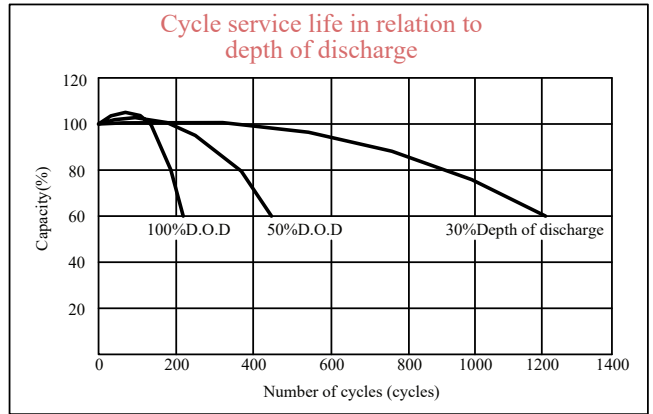
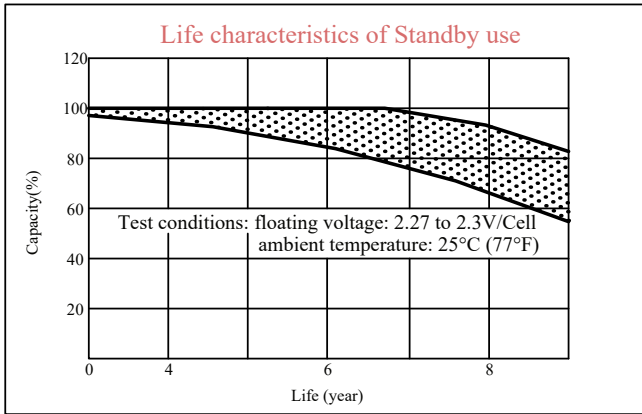
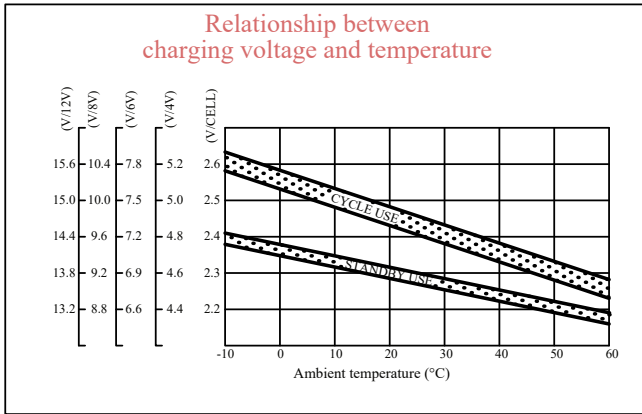
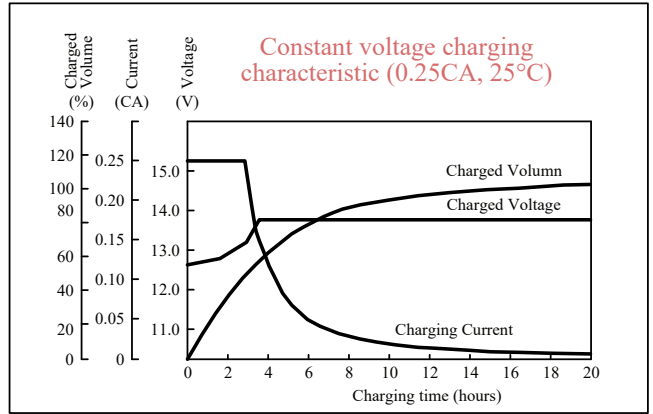
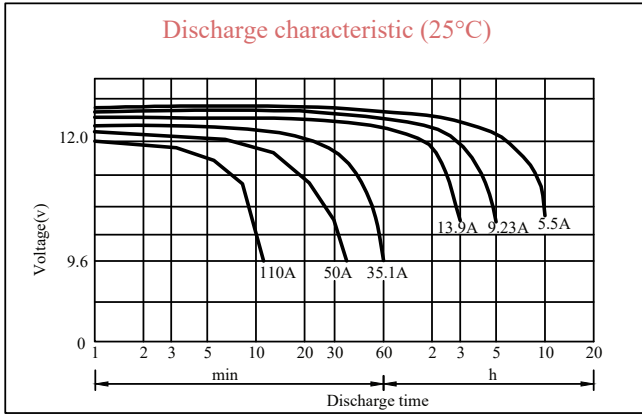
CONSTANT POWER DISCHARGE (Watts) AT 25°C

End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	24h
1.60	318	229	182	111	68.90	29.1	18.8	10.9	5.06
1.65	300	225	177	109	67.30	28.5	18.6	10.8	4.95
1.70	381	213	169	107	65.80	27.9	18.2	10.6	4.85
1.75	261	200	162	105	64.30	27.3	18.0	10.4	4.76
1.80	248	186	154	104	64.00	26.7	17.9	10.2	4.66



ES 55-12

SMF VRLA RECHARGEABLE BATTERY





EnerRocketTM
CONTINUOUSLY SAFEGUARDING

ES 65-12

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4

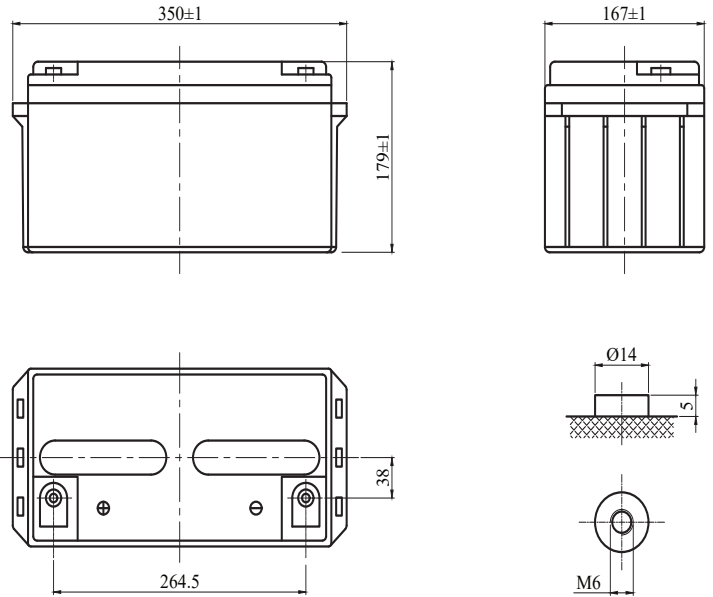
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Seal Lead Acid Battery
- Absorbent Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction (FR optional)
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output
- Wide Operating Temperature
- Maintenance-Free Operation

CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	10 Years	
Capacity 27°C (80.6°F)	20 Hour rate	68Ah
	10 Hour rate	65Ah
	5 Hour rate	55Ah
Internal Resistance (25°C, 100% Charge)	≤ 6.8 mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current	650A (5sec)	
Maximum Charging current	26A	
Short Circuit Current	1700A	
Charge Methods Constant Voltage Charge 77°F (25°C) - Cycle use	14.4 to 14.7V	
	Temp. Compensation -30mV/°C	
Charge methods Constant Voltage Charge 77°F (25°C) - Standby Use	13.4 to 13.8V	
	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
350 mm	167 mm	179mm	179 mm	20.4 ± 5%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	212	151	126	75.4	45.10	18.4	11.8	6.7	3.48
1.65	201	144	121	73.3	44.00	18	11.6	6.58	3.46
1.70	189	137	115	71.3	43.00	17.6	11.3	6.56	3.44
1.75	177	129	109	69.2	41.90	17.2	11.0	6.53	3.42
1.80	164	120	102	66.9	41.00	16.9	10.7	6.50	3.40

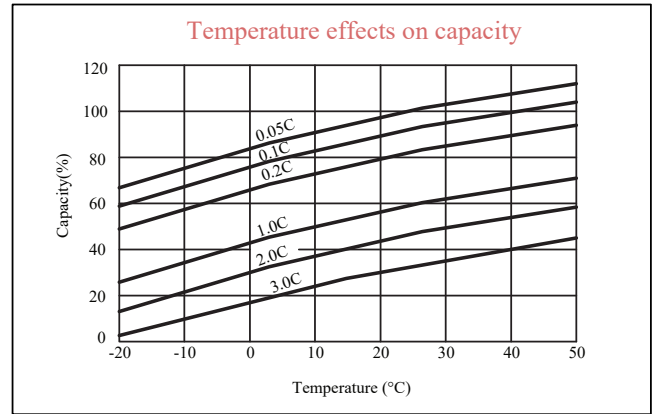
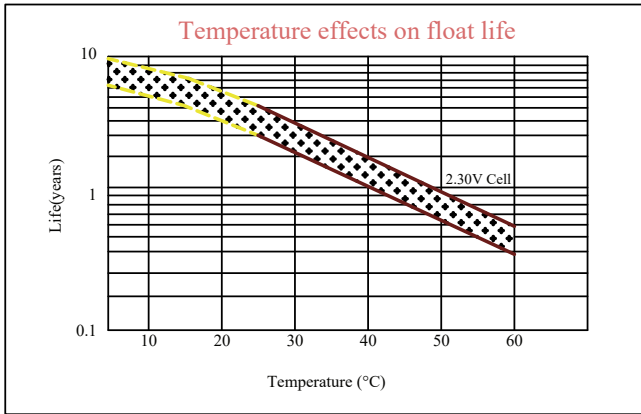
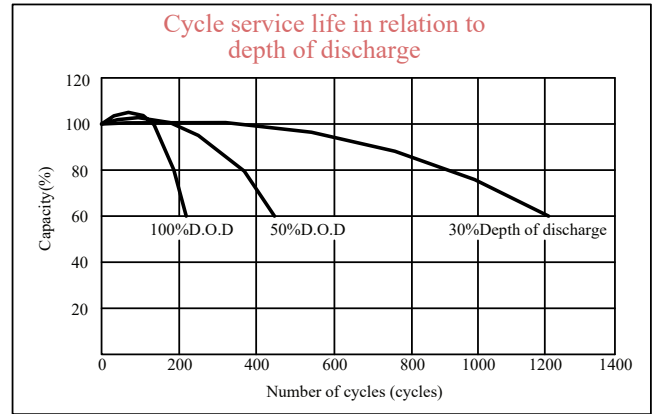
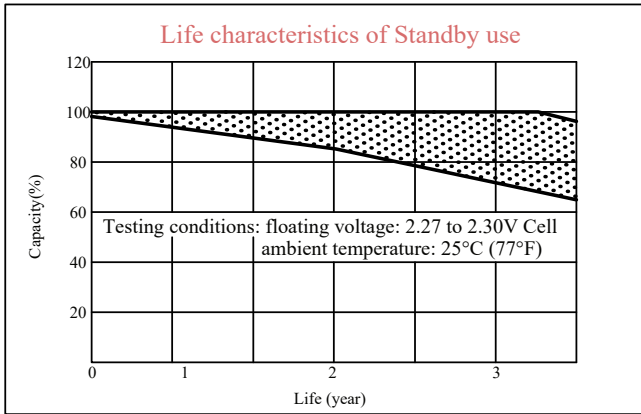
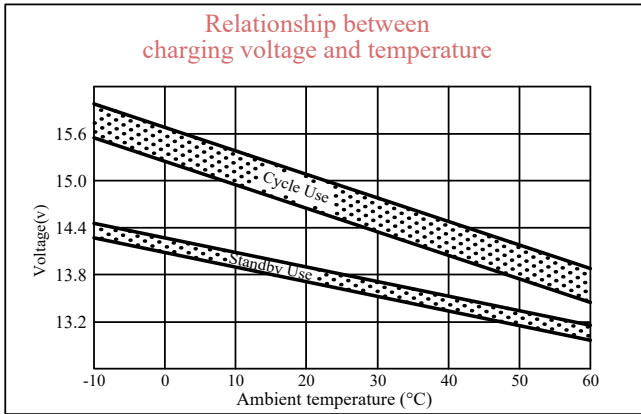
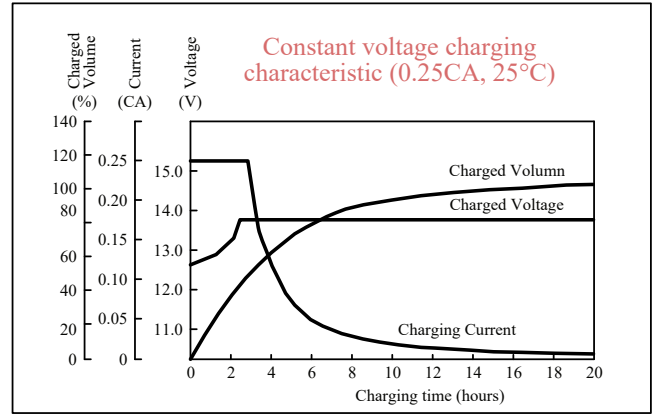
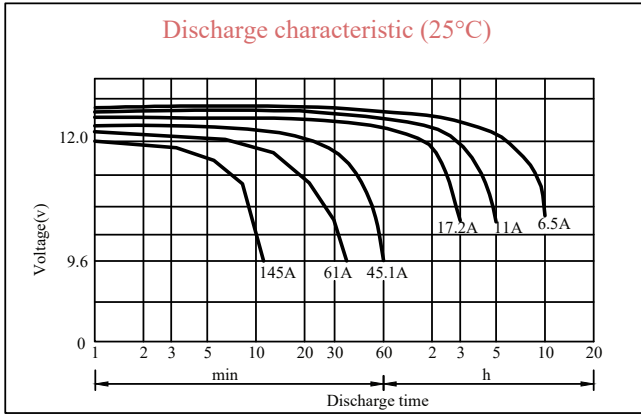
CONSTANT POWER DISCHARGE (Watts) AT 25°C

End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60	378	275	207	129	81.80	33.8	22.5	11.7	6.40
1.65	356	261	203	128	80.00	33.2	22.3	11.6	6.30
1.70	335	246	200	127	78.30	32.5	22.0	11.5	6.20
1.75	314	231	196	124	76.50	31.8	21.7	11.4	6.20
1.80	302	215	187	122	75.70	31.1	21.4	11.3	6.00



ES 65-12

SMF VRLA RECHARGEABLE BATTERY





EnerRocket[™]
CONTINUOUSLY SAFEGUARDING

ES 75-12

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4

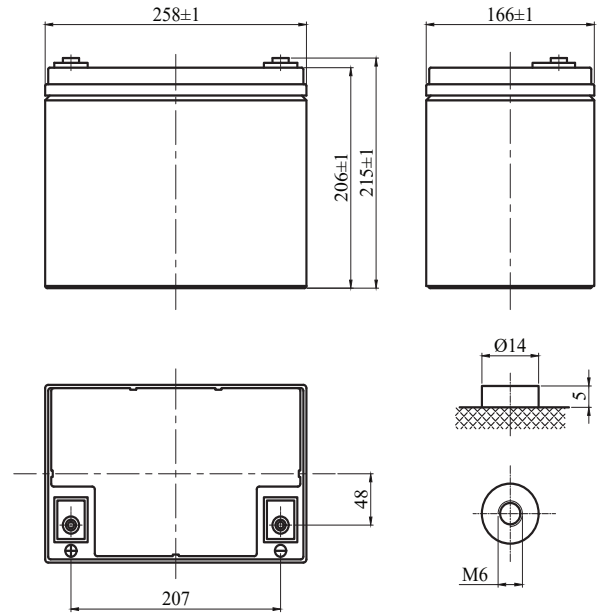
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Seal Lead Acid Battery
- Absorbent Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction (FR optional)
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output
- Wide Operating Temperature
- Maintenance-Free Operation

CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	10 Years	
Capacity 25°C (77°F)	20 Hour rate	80Ah
	10 Hour rate	75Ah
	5 Hour rate	67.5Ah
Internal Resistance (25°C, 100% Charge)	< 6.6 mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current	700A (5sec)	
Maximum Charging current	22.5A	
Short Circuit Current	1800A	
Charge Methods Constant Voltage Charge 77°F (25°C) - Cycle use	14.4 to 14.7V	
	Temp. Compensation -30mV/°C	
Charge methods Constant Voltage Charge 77°F (25°C) - Standby Use	13.4 to 13.8V	
	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
258 mm	166 mm	206 mm	215 mm	22.5 ± 5%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	24h
1.60	240	178	137	81.8	50.20	21.8	14.3	7.67	3.52
1.65	222	169	131	78.3	47.50	21.4	14.1	7.65	3.50
1.70	206	158	122	77.0	46.90	21.0	13.9	7.6	3.48
1.75	195	151	117	73.6	45.30	20.6	13.5	7.55	3.46
1.80	180	139	112	73.1	98.60	19.8	13.3	7.5	3.43

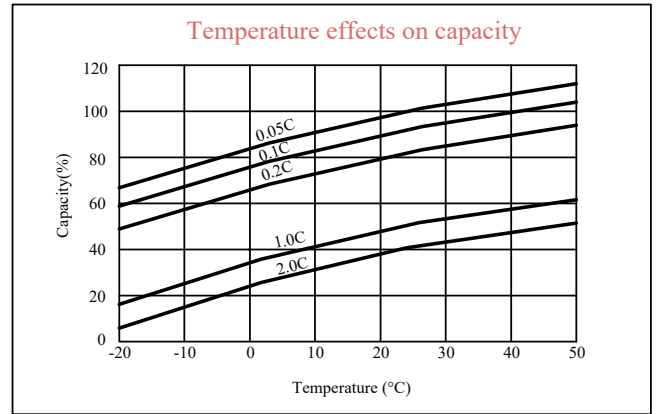
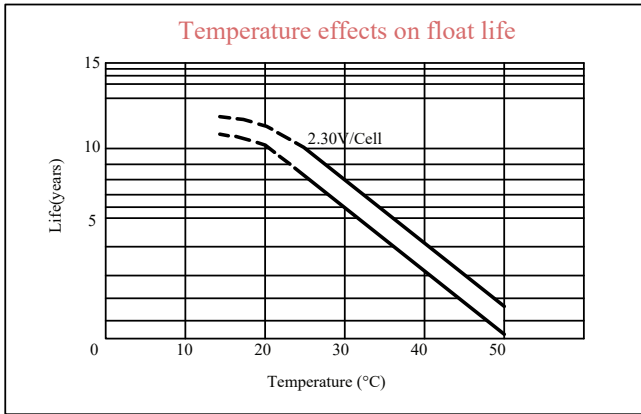
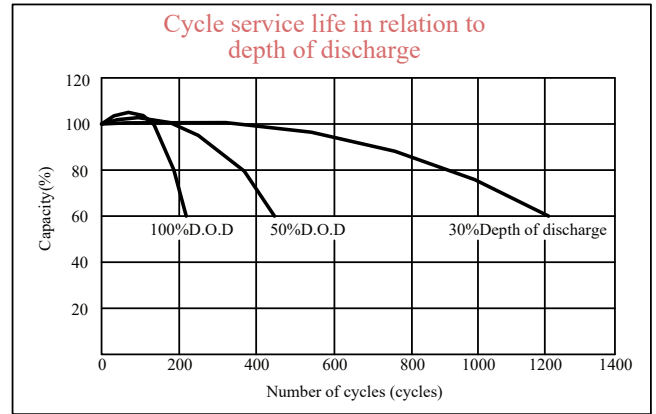
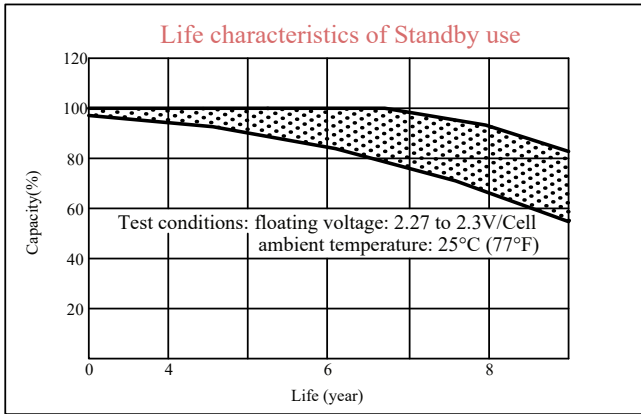
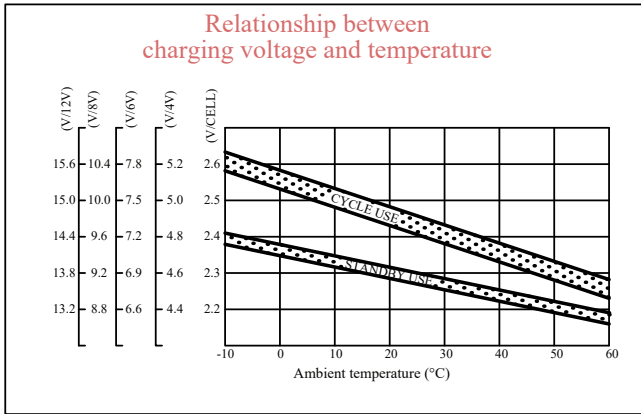
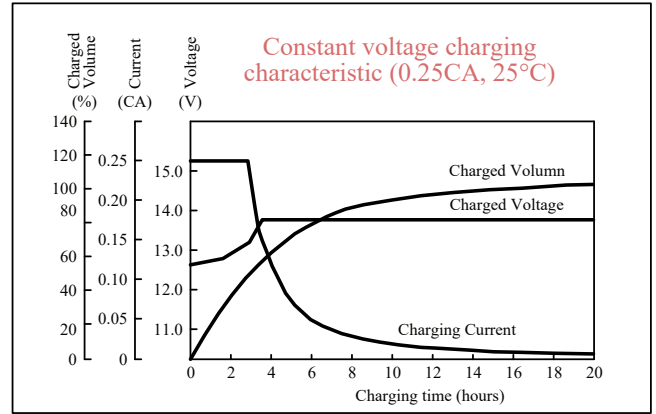
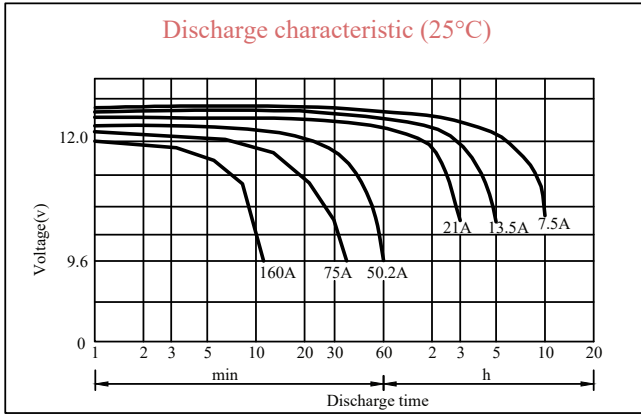
CONSTANT POWER DISCHARGE (Watts) AT 25°C

End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	24h
1.60	413	314	246	158.0	95.7	40.2	26.8	15.1	6.90
1.65	403	300	241	153	93.6	39.2	26.6	14.7	6.74
1.70	375	290	237	145	89.8	38.9	26.0	14.4	6.61
1.75	356	274	223	142	86.5	38.3	26.0	14.2	6.48
1.80	341	261	212	141	84.2	38.0	25.8	13.8	6.30



ES 75-12

SMF VRLA RECHARGEABLE BATTERY





EnerRocket™
CONTINUOUSLY SAFEGUARDING

ES 80-12

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4

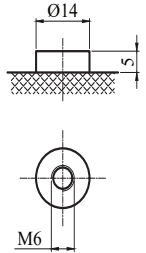
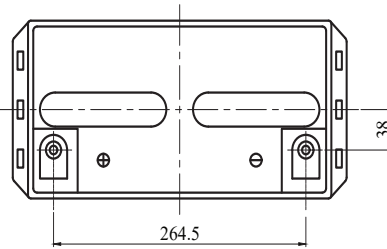
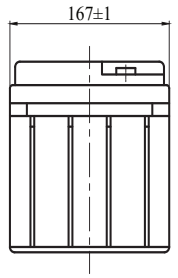
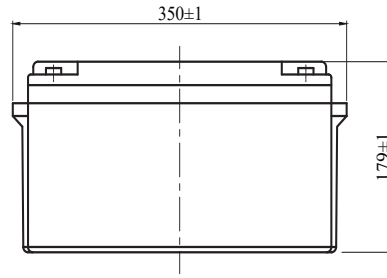
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Seal Lead Acid Battery
- Absorbent Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction (FR optional)
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output
- Wide Operating Temperature
- Maintenance-Free Operation

CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	10 Years	
Capacity 25°C (77°F)	10 Hour rate	80Ah
	5 Hour rate	72Ah
	1 Hour rate	53.7Ah
Internal Resistance (25°C, 100% Charge)	6.5mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current (25°C)	750A (5sec)	
Maximum Charging current	24A	
Short Circuit Current	1900A	
Charge Methods Constant Voltage Charge 77°F (25°C) - Cycle use	14.4 to 14.7V	
	Temp. Compensation -30mV/°C	
Charge methods Constant Voltage Charge 77°F (25°C) - Standby Use	13.4 to 13.8V	
	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
350 mm	167 mm	179mm	179 mm	22.5 ± 5%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	24h
1.60	247	188	149	87.3	53.70	22.7	15.0	8.20	3.72
1.65	233	178	137	83.0	51.60	22.5	14.7	8.15	3.70
1.70	218	168	132	80.3	49.80	22.4	14.7	8.1	3.65
1.75	204	159	126	77.6	47.10	21.8	14.4	8.05	3.63
1.80	190	149	118	75.0	46.30	20.7	14.1	8.00	3.61

CONSTANT POWER DISCHARGE (Watts) AT 25°C

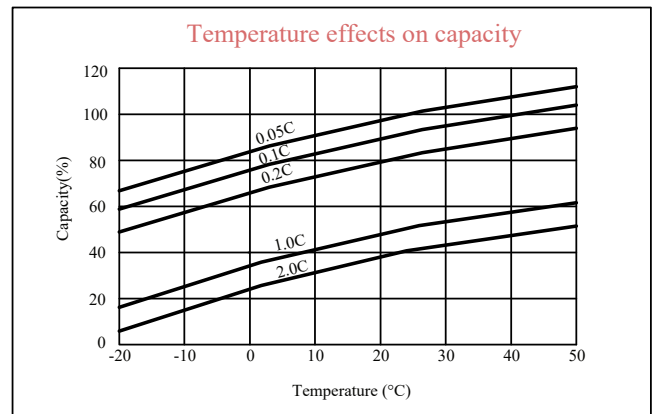
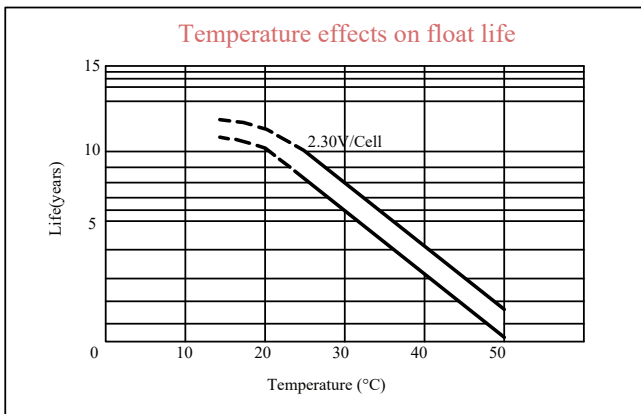
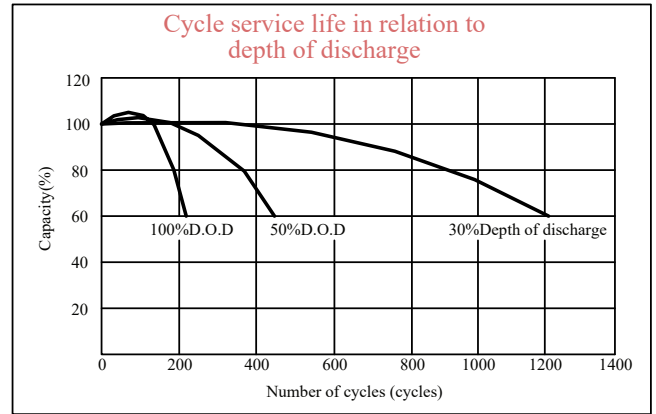
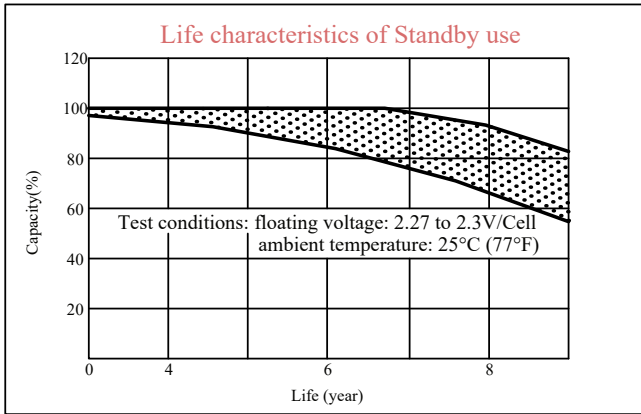
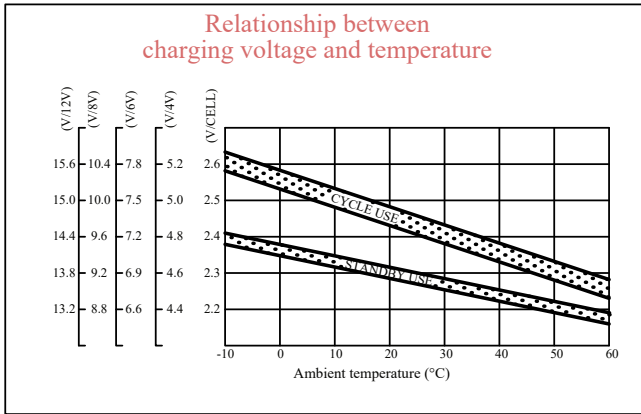
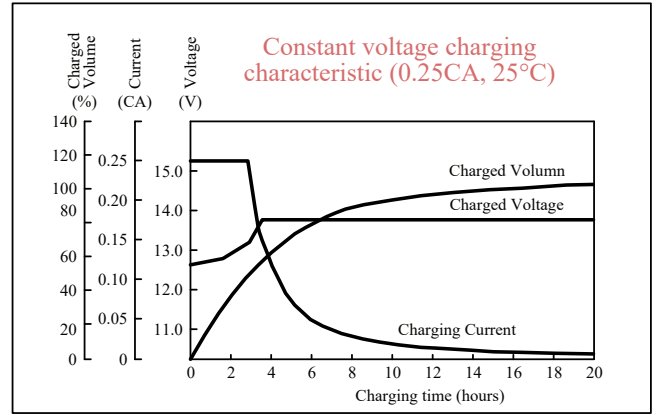
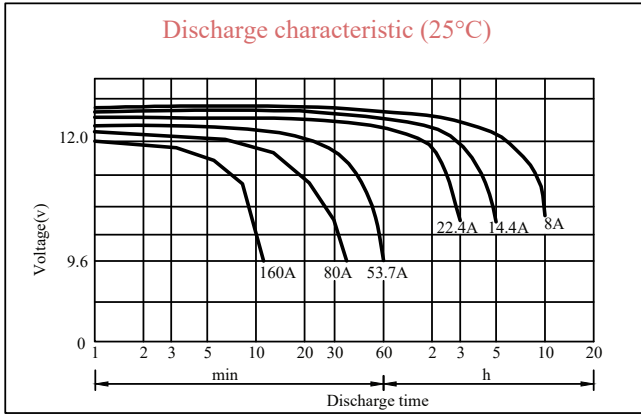
End Voltage Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	24h
1.60	433	323	258	165	98.60	42.5	27.9	16.1	7.30
1.65	420	310	250	157	97.80	41.1	27.4	15.7	7.20
1.70	390	299	246	151	93.80	40.4	27	15.4	7.10
1.75	368	287	232	149	92.30	39.9	26.8	15.1	7.00
1.80	349	275	218	146	88.50	39.0	26.4	14.8	6.90



ES 80-12

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**





EnerRocket™
CONTINUOUSLY SAFEGUARDING

ESC 100-12 FR

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4
- EUROBAT- HIGH Performance

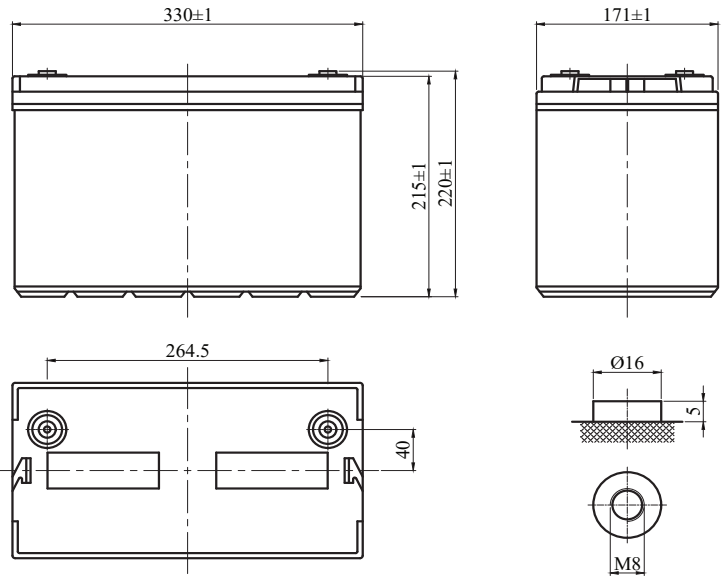
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Absorptive Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output

CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	12 Years	
Capacity (25°C)	10 Hour rate	100Ah
Internal Resistance (25°C, 100% Charge)	≤5.7 mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current (25°C)	500A (5sec)	
Maximum Charging current (25°C)	30A	
Short Circuit Current	2100A	
Charge Methods	14.4 to 14.7 V	
Constant Voltage Charge 77°F (25°C) - Cycle use	Temp. Compensation -30mV/°C	
Charge methods	13.4 to 13.8V	
Constant Voltage Charge 77°F (25°C) - Standby Use	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
330mm	171mm	215mm	220mm	28.0 ± 3%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	15min	20min	30min	1h	1.5h	2h	3h	4h
1.60	173	110	98.9	61.0	45.3	35.0	25.1	22.4
1.65	164	101	95.0	60.6	44.0	33.6	24.6	21.8
1.70	156	97	92.2	59.7	42.7	32.3	24.1	21.5
1.75	145	93	89.3	58.9	41.4	31.3	23.5	21.0
1.80	136	89	87.4	57.1	40.1	30.7	22.8	20.2

CONSTANT POWER DISCHARGE (Watts) AT 25°C

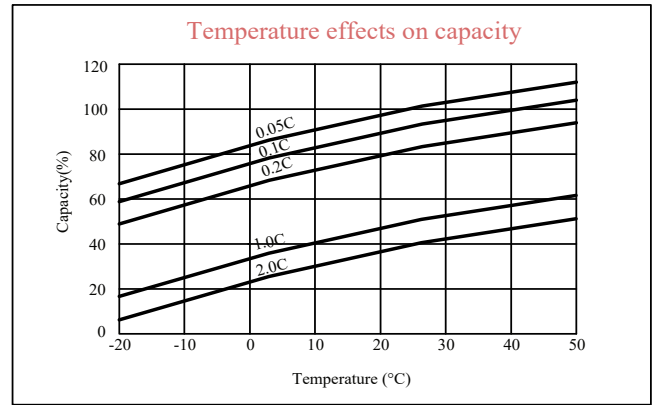
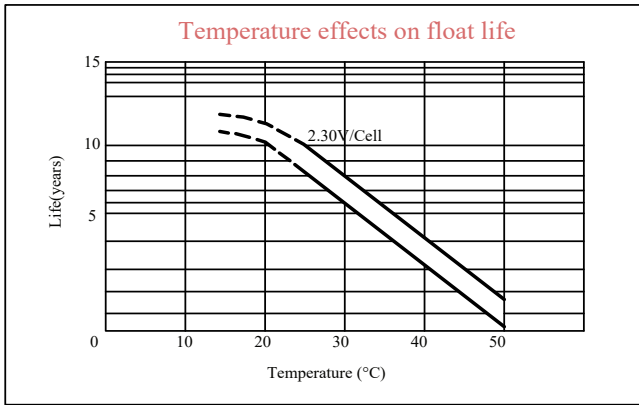
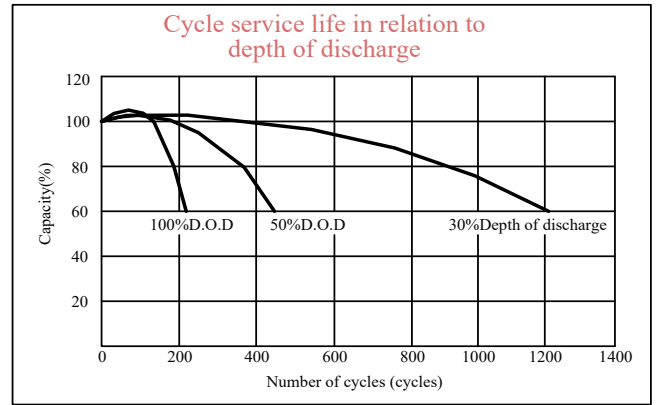
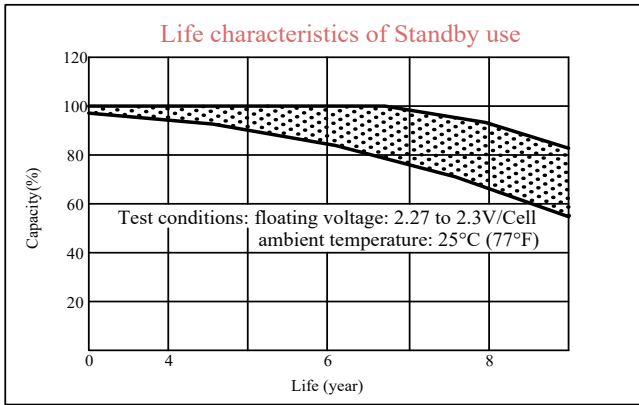
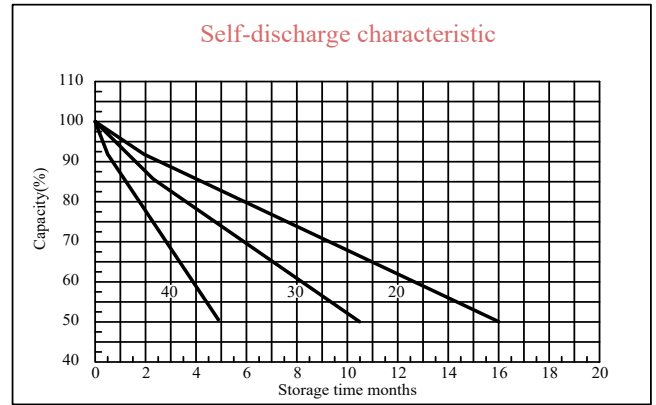
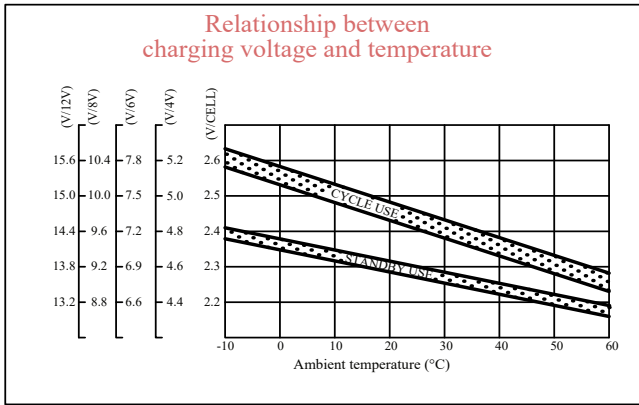
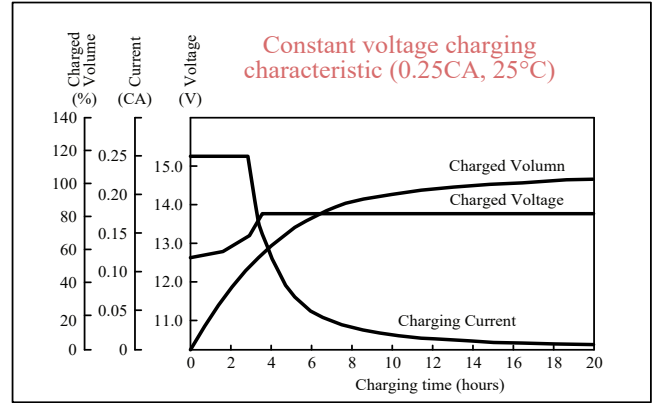
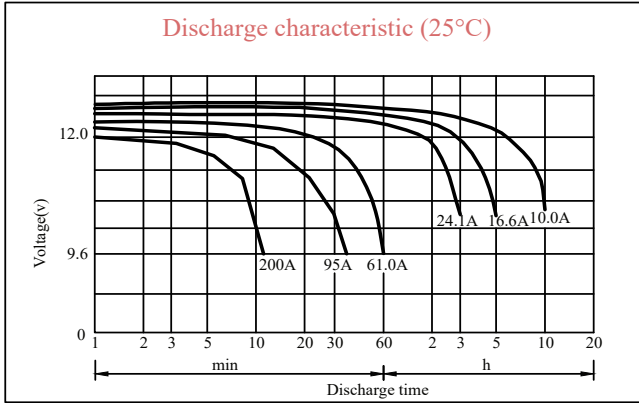
End Voltage Volts/Cell	15min	20min	30min	1h	1.5h	2h	3h	4h
1.60	304	202	198	119	84.3	68.2	48.4	41.9
1.65	299	195	187	117	82.7	67.0	47.8	40.8
1.70	290	190	182	116	80.2	65.8	47.3	40.0
1.75	279	183	176	112	78.2	64.6	46.7	38.1
1.80	270	178	170	109	76.3	63.9	45.9	37.4



ESC 100-12 FR

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**



Note:
GPSSGC reserves the right to make changes to the above values without any notice.
All data and discharge characteristics are average values based on actual discharge cycle tests performed and not minimum values.



EnerRocket™
CONTINUOUSLY SAFEGUARDING

ESC 120-12 FR

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4
- EUROBAT- HIGH Performance

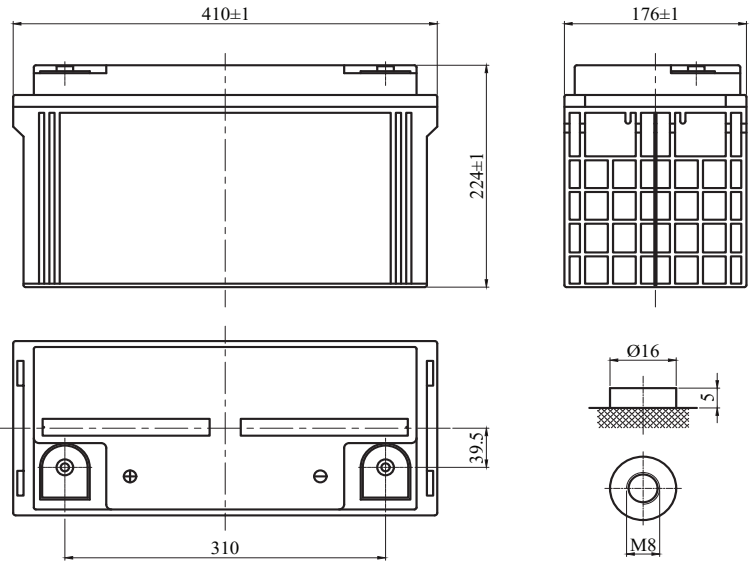
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Absorptive Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output

CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	12 Years	
Capacity (25°C)	10 Hour rate	120Ah
Internal Resistance (25°C, 100% Charge)	≤5.3 mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current (25°C)	950A (5sec)	
Maximum Charging current (25°C)	36A	
Short Circuit Current	2250A	
Charge Methods	14.4 to 14.7 V	
Constant Voltage Charge 77°F (25°C) - Cycle use	Temp. Compensation -30mV/°C	
Charge methods	13.4 to 13.8V	
Constant Voltage Charge 77°F (25°C) - Standby Use	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
410mm	176mm	224mm	224mm	33.5 ± 5%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	15min	20min	30min	1h	1.5h	2h	3h	4h
1.60	209	132.0	117	73.3	53.6	42.2	29.9	24.6
1.65	201	126.7	114	72.8	52.5	41.4	29.3	24.3
1.70	193	121.7	110	71.3	51.4	40.5	28.7	24.1
1.75	184	116.8	106	69.1	50.2	39.5	28.0	24.0
1.80	177	110.9	104	67.0	48.8	38.4	27.2	22.2

CONSTANT POWER DISCHARGE (Watts) AT 25°C

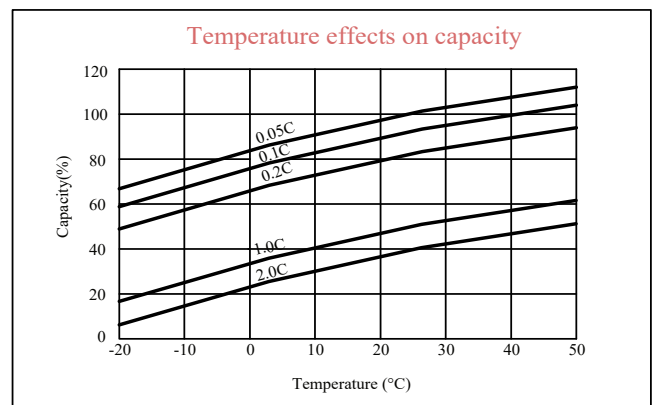
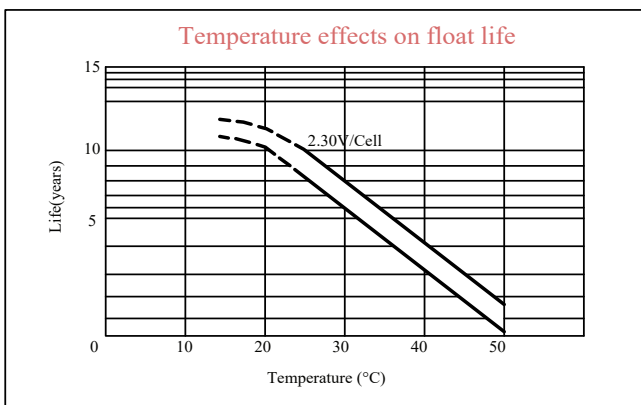
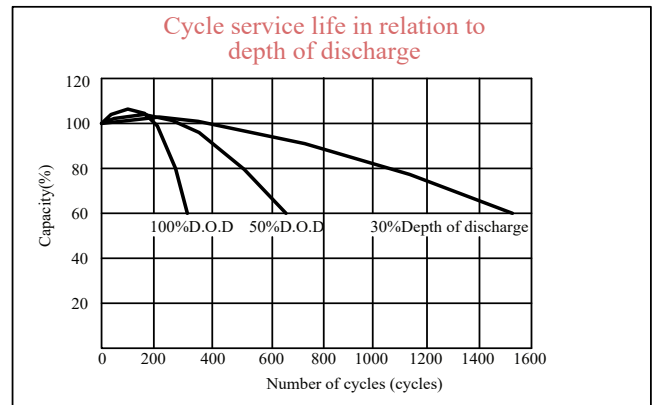
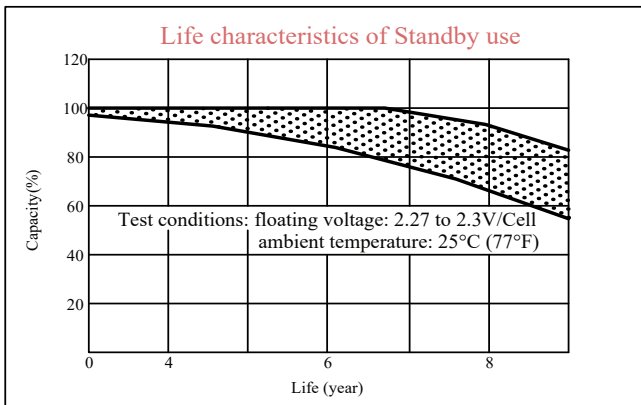
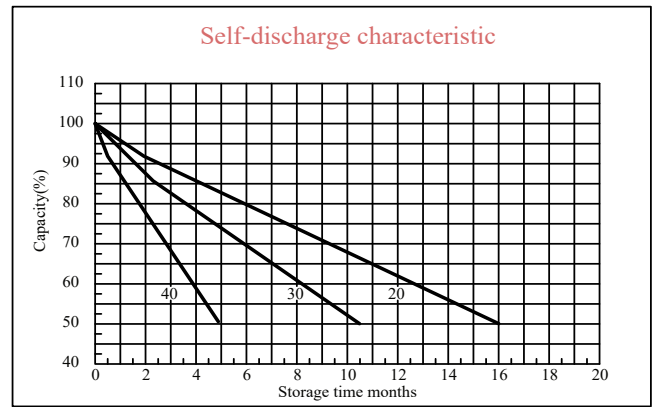
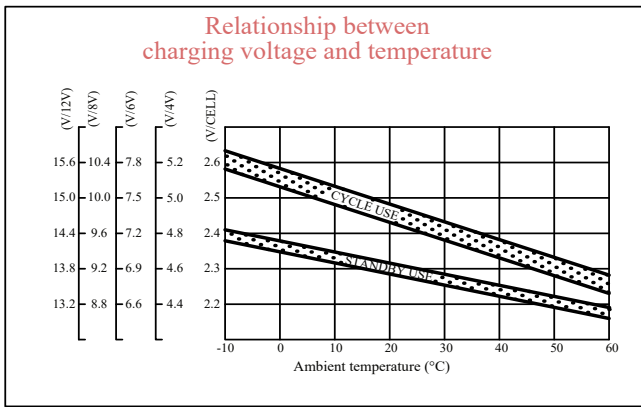
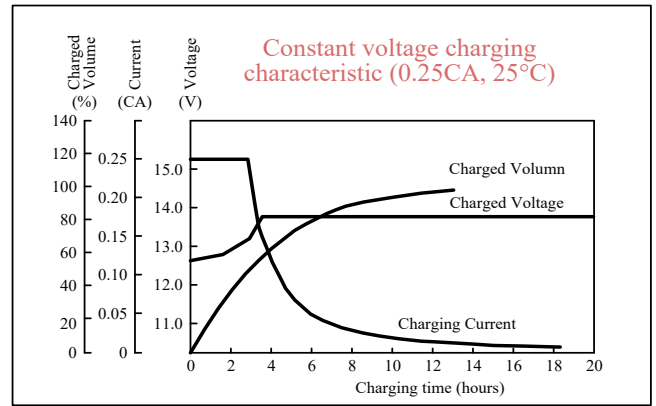
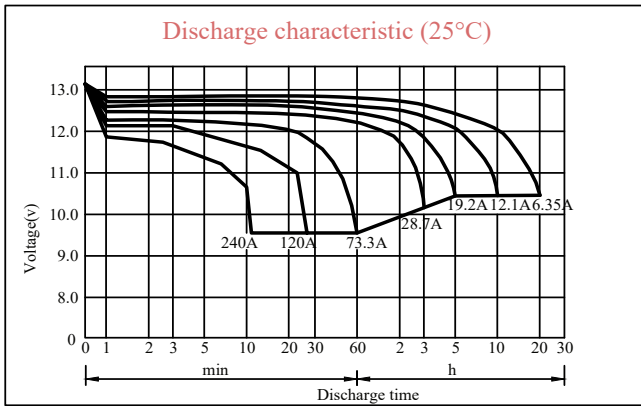
End Voltage Volts/Cell	15min	20min	30min	1h	1.5h	2h	3h	4h
1.60	367	243	225	147	101.2	82	58.0	46.9
1.65	354	228	218	145	99.2	80	57.3	45.5
1.70	343	219	211	143	96.2	79	56.6	44.6
1.75	331	213	204	139	93.8	77	56.0	43.7
1.80	319	203	198	134	91.5	75	55.0	43.0



ESC 120-12 FR

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**



Note:
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All data and discharge characteristics are average values based on actual discharge cycle tests performed and not minimum values.



EnerRocket™
CONTINUOUSLY SAFEGUARDING

ESC 150-12 FR

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4
- EUROBAT- HIGH Performance

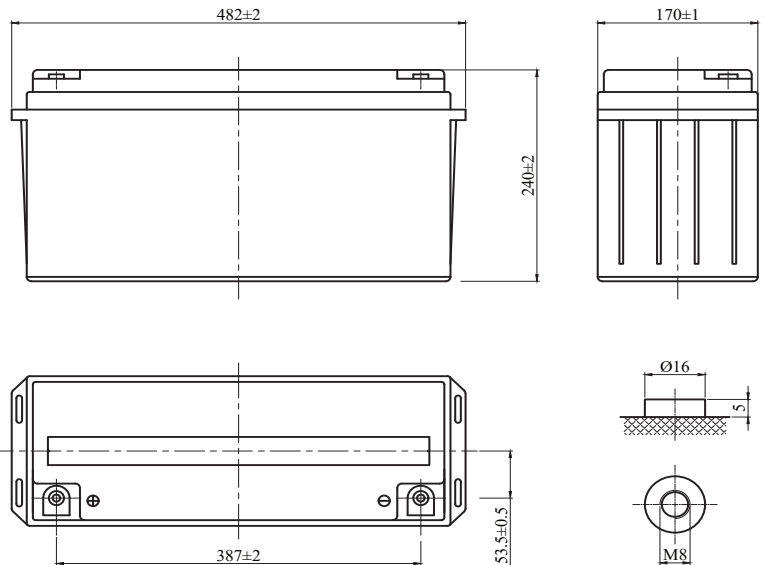
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Absorbent Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output

CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	12 Years	
Capacity (25°C)	10 Hour rate	153Ah
Internal Resistance (25°C, 100% Charge)	≤4.0 mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current (25°C)	1000A (5sec)	
Maximum Charging current (25°C)	45A	
Short Circuit Current	2800A	
Charge Methods	14.4 to 14.7 V	
Constant Voltage Charge 77°F (25°C) - Cycle use	Temp. Compensation -30mV/°C	
Charge methods	13.4 to 13.8V	
Constant Voltage Charge 77°F (25°C) - Standby Use	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
482mm	170mm	240mm	240mm	42.5 ± 5%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	15min	20min	30min	1h	1.5h	2h	3h	4h
1.60	300	186	173	98.6	72.0	57.8	44.7	33.00
1.65	281	177	163	95.2	69.8	55.4	43.4	32.01
1.70	264	167	155	92.1	67.7	53.2	41.6	31.05
1.75	247	158	149	89.3	65.7	51.6	40.5	30.12
1.80	226	153	143	84.5	63.7	50.1	39.8	29.21

CONSTANT POWER DISCHARGE (Watts) AT 25°C

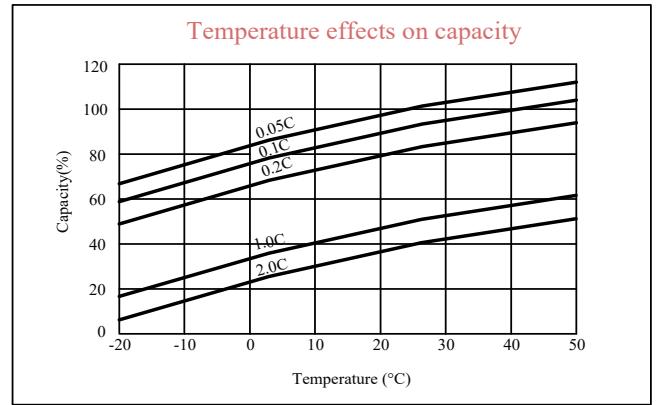
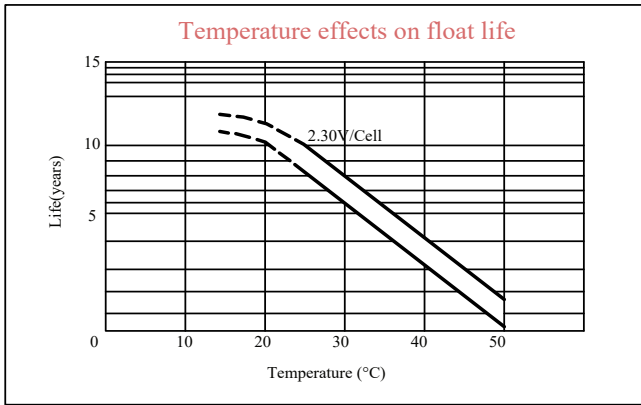
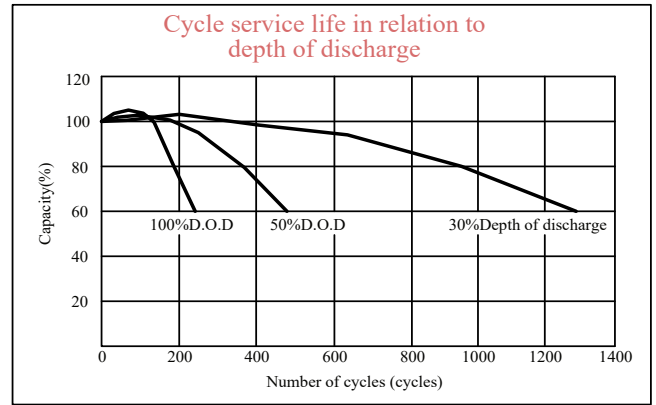
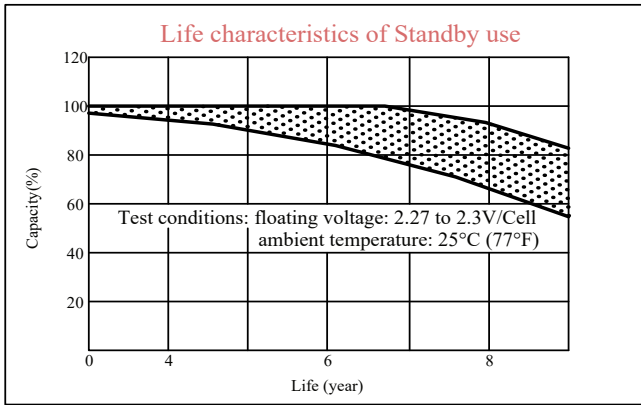
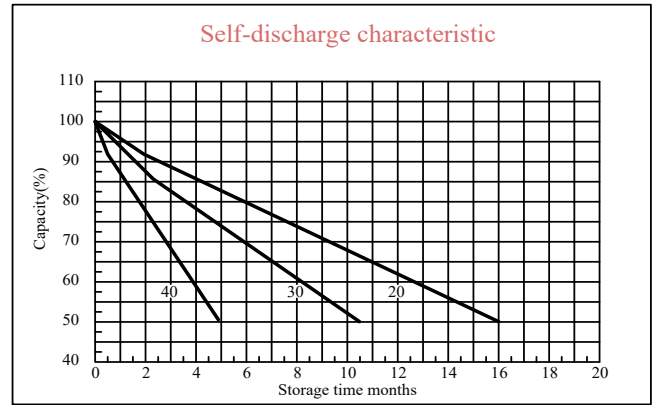
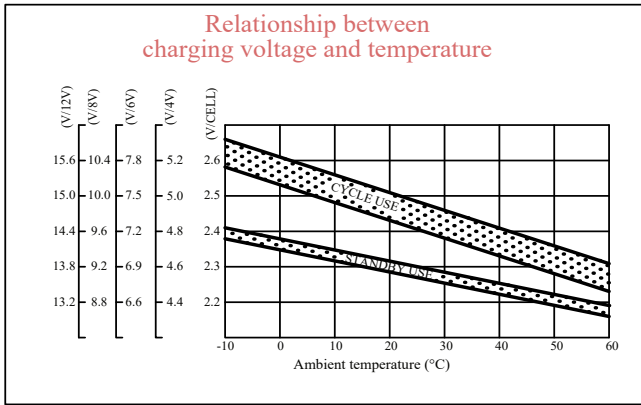
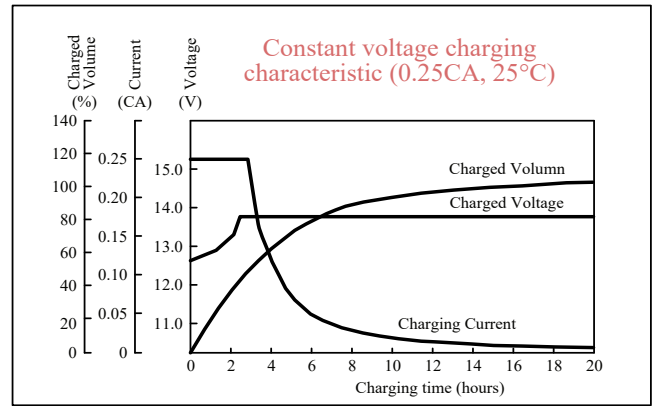
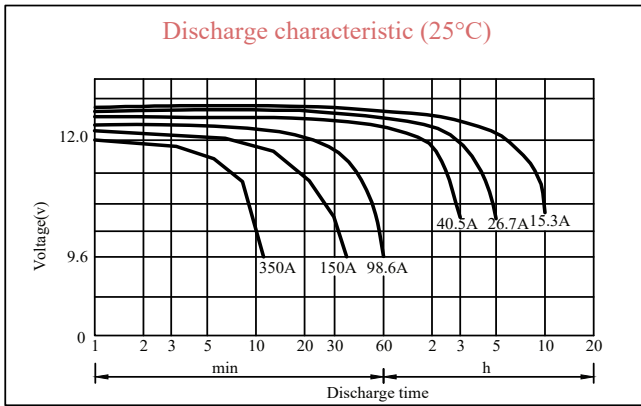
End Voltage Volts/Cell	15min	20min	30min	1h	1.5h	2h	3h	4h
1.60	524.9	434	314.5	185.3	136	118	85.4	61.4
1.65	499.1	419	300.0	179.9	133	114	83.3	59.5
1.70	473.0	404	286.7	175.3	130	110	80.2	57.8
1.75	449.3	388	277.0	170.5	126	94	78.2	56.3
1.80	416.4	374	269.0	163.7	122	88	77.1	54.9



ESC 150-12 FR

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**



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EnerRocket™
CONTINUOUSLY SAFEGUARDING

ESC 200-12 FR

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4
- EUROBAT- HIGH Performance

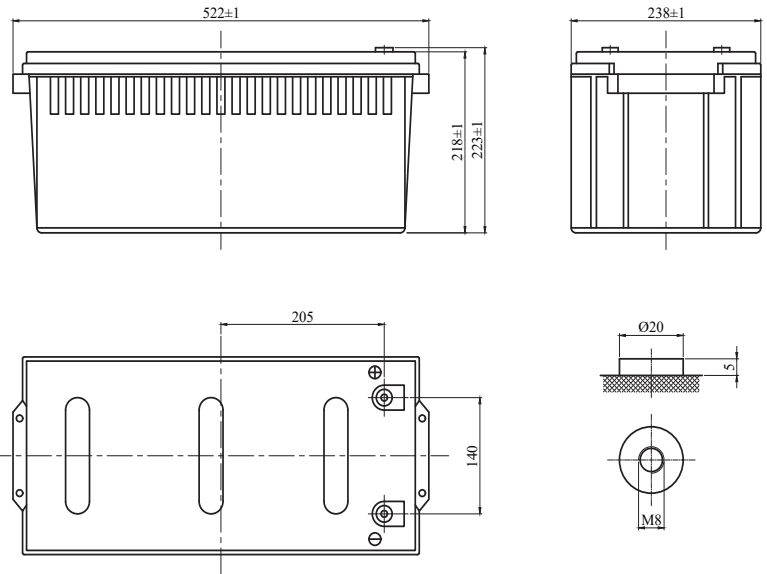
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Absorptive Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output

CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	12 Years	
Capacity (25°C)	10 Hour rate	200Ah
Internal Resistance (25°C, 100% Charge)	≤4.0 mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current (25°C)	1000A (5sec)	
Maximum Charging current (25°C)	60A	
Short Circuit Current	3300A	
Charge Methods	14.4 to 14.7 V	
Constant Voltage Charge 77°F (25°C) - Cycle use	Temp. Compensation -30mV/°C	
Charge methods	13.4 to 13.8V	
Constant Voltage Charge 77°F (25°C) - Standby Use	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
522mm	238mm	218mm	223mm	59.1 ± 5%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	15min	20min	30min	1h	1.5h	2h	3h	4h
1.60	327	280	196	129	91	71	50.3	44
1.65	308	269	188	126	88	68	49.1	43
1.70	288	259	181	123	85	65	48.2	41
1.75	269	250	175	120	83	64	47.1	40
1.80	250	240	168	117	80	62	45.7	39

CONSTANT POWER DISCHARGE (Watts) AT 25°C

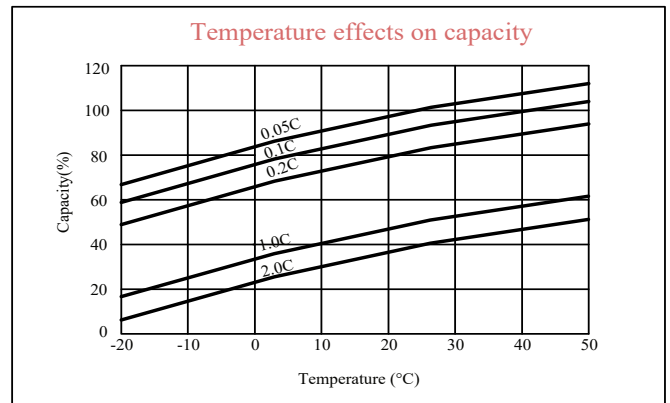
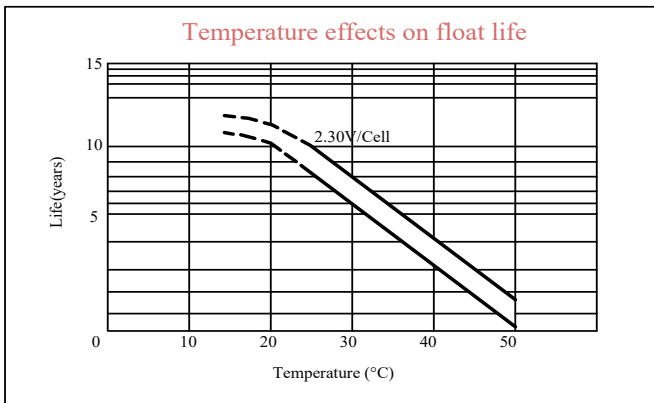
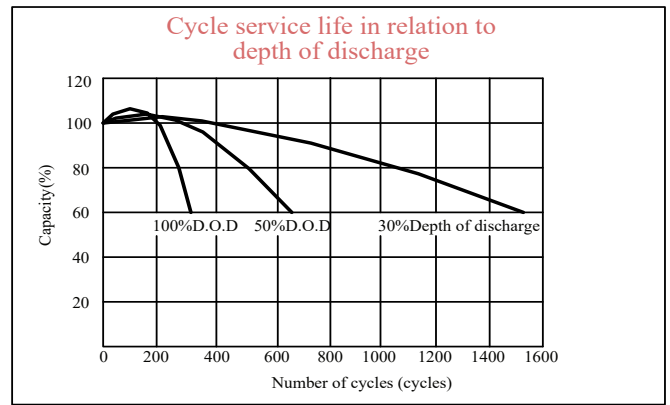
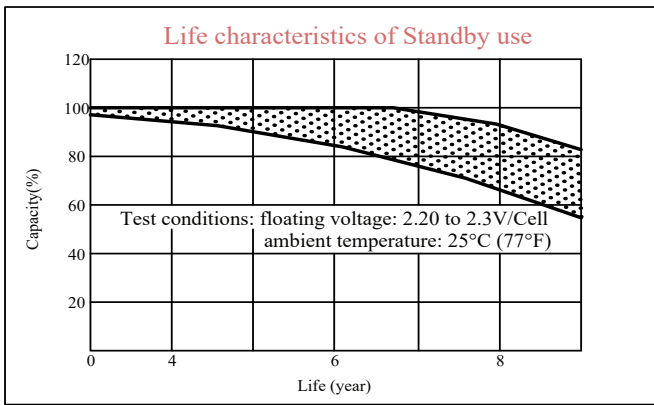
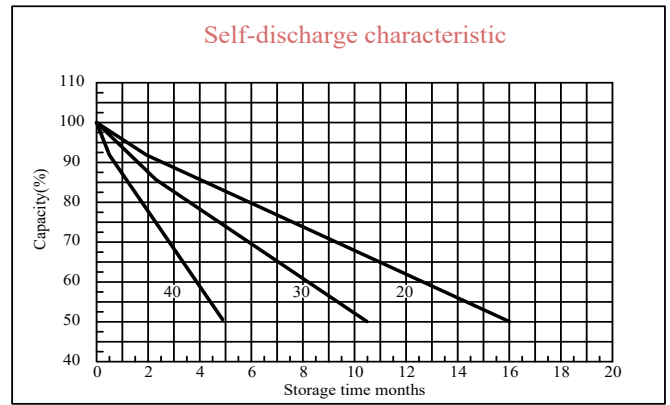
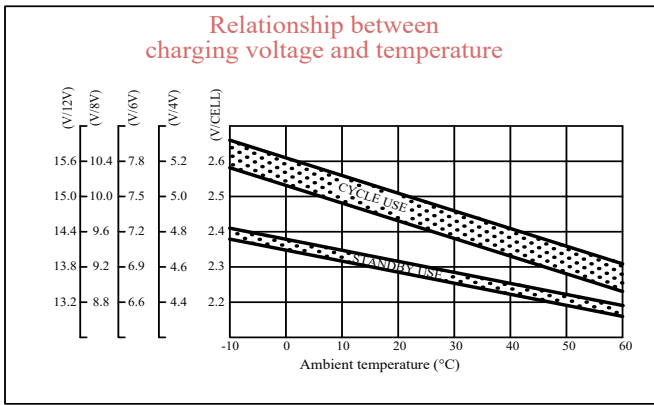
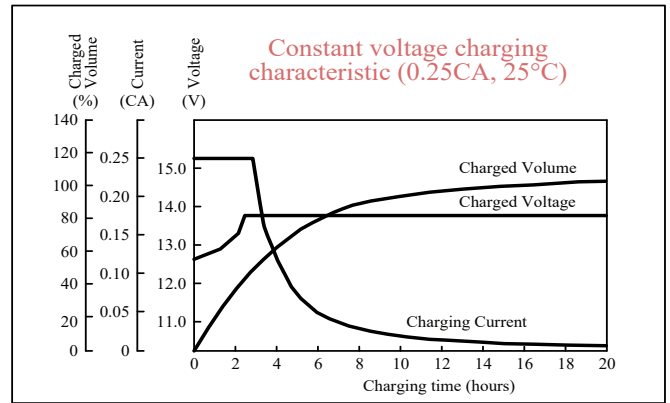
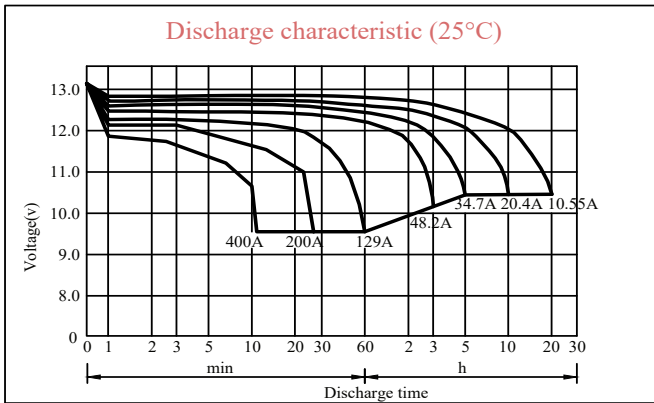
End Voltage Volts/Cell	15min	20min	30min	1h	1.5h	2h	3h	4h
1.60	566	480	374	248	181	137	97.4	82
1.65	547	464	360	243	177	134	96.1	79
1.70	530	449	347	238	173	131	94.8	77
1.75	512	434	332	233	169	128	93.4	75
1.80	482	409	319	228	164	124	92.4	73



ESC 200-12 FR

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**



Note:
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EnerRocket™
CONTINUOUSLY SAFEGUARDING

ESC 230-12 FR

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4
- EUROBAT- HIGH Performance

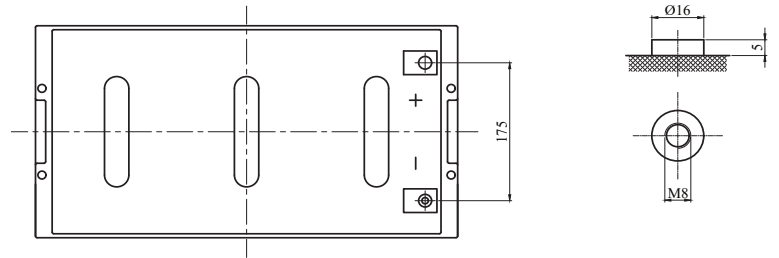
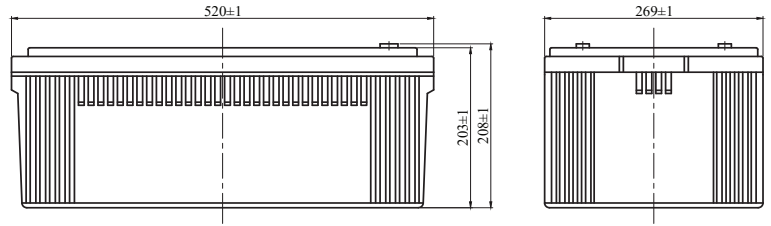
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Absorptive Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output

CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	12 Years	
Capacity (25°C)	10 Hour rate	230Ah
Internal Resistance (25°C, 100% Charge)	≤2.8 mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current (25°C)	1100A (5sec)	
Maximum Charging current (25°C)	69A	
Short Circuit Current	4300A	
Charge Methods	14.4 to 14.7 V	
Constant Voltage Charge 77°F (25°C) - Cycle use	Temp. Compensation -30mV/°C	
Charge methods	13.4 to 13.8V	
Constant Voltage Charge 77°F (25°C) - Standby Use	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
520mm	269mm	203mm	208mm	72.6 ± 5%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	15min	20min	30min	1h	1.5h	2h	3h	4h
1.60	371	307	242	153	111	89.6	68.5	54.0
1.65	367	304	241	151	110	88.8	68.2	53.8
1.70	365	302	240	150	109	88.3	67.8	53.5
1.75	359	298	236	149	108	87.3	66.8	53.0
1.80	348	290	233	148	107	87.0	66.5	52.6

CONSTANT POWER DISCHARGE (Watts) AT 25°C

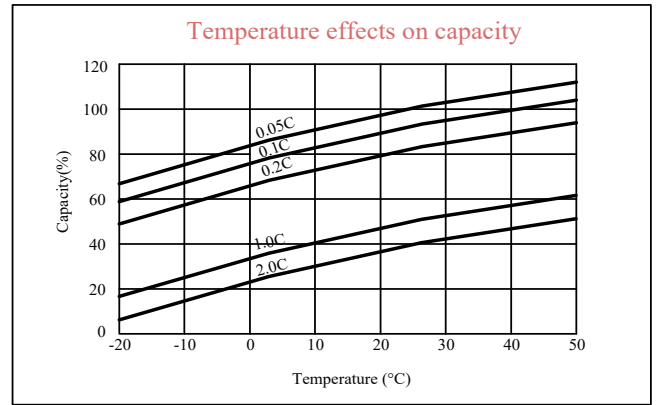
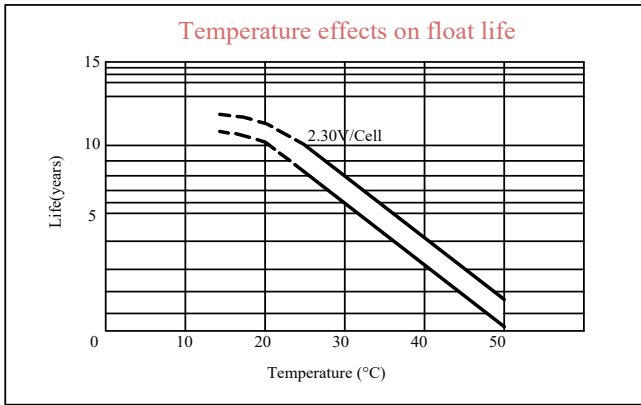
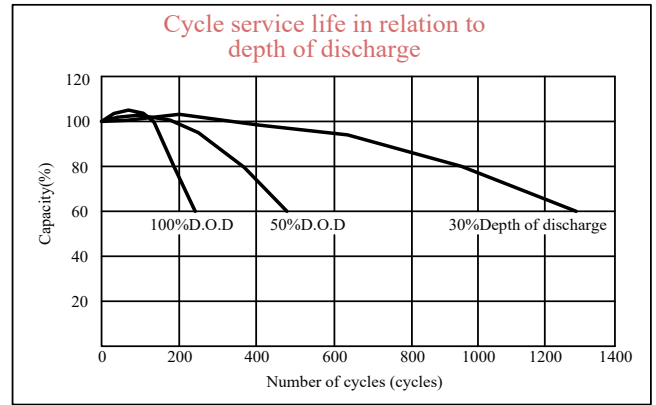
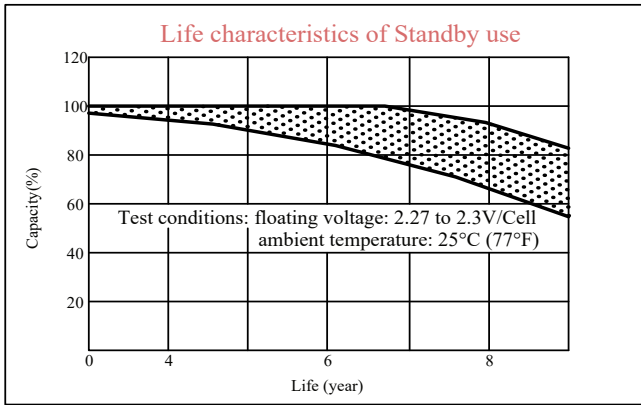
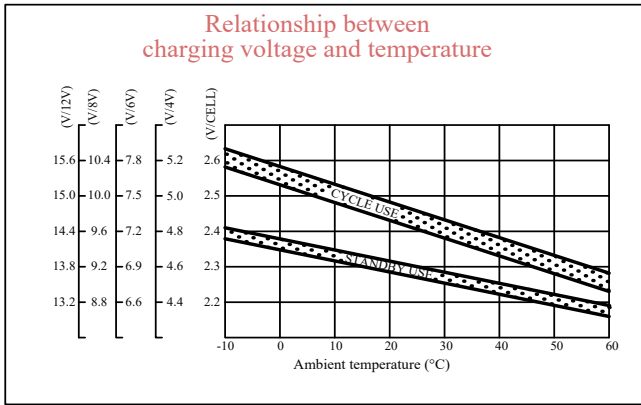
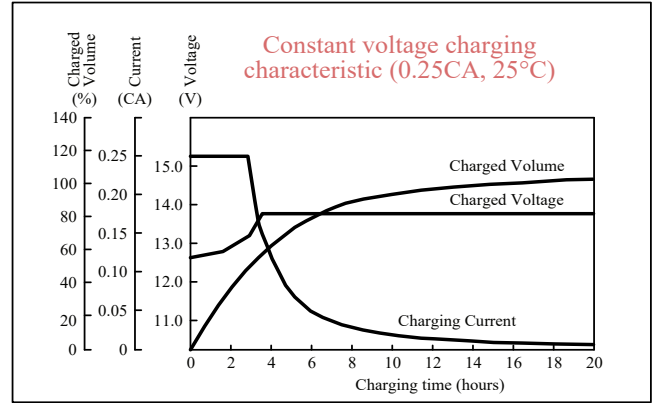
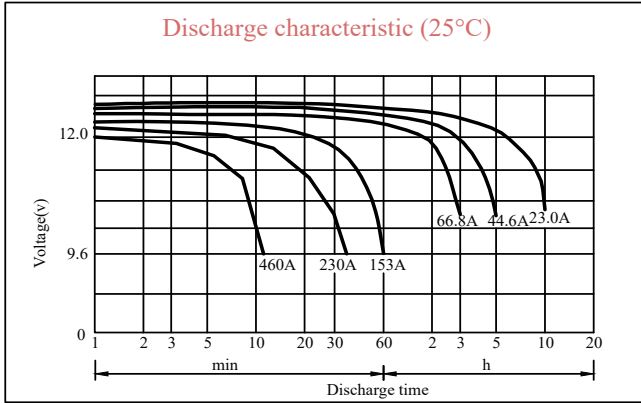
End Voltage Volts/Cell	15min	20min	30min	1h	1.5h	2h	3h	4h
1.60	677	573	469	296	213	172	131	103
1.65	673	570	466	294	212	171	130	103
1.70	666	564	462	291	210	169	129	102
1.75	658	558	459	288	208	168	128	101
1.80	649	552	455	284	205	166	126	100



ESC 230-12 FR

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**



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EnerRocket™
CONTINUOUSLY SAFEGUARDING

ESC 250-12 FR

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4
- EUROBAT- HIGH Performance

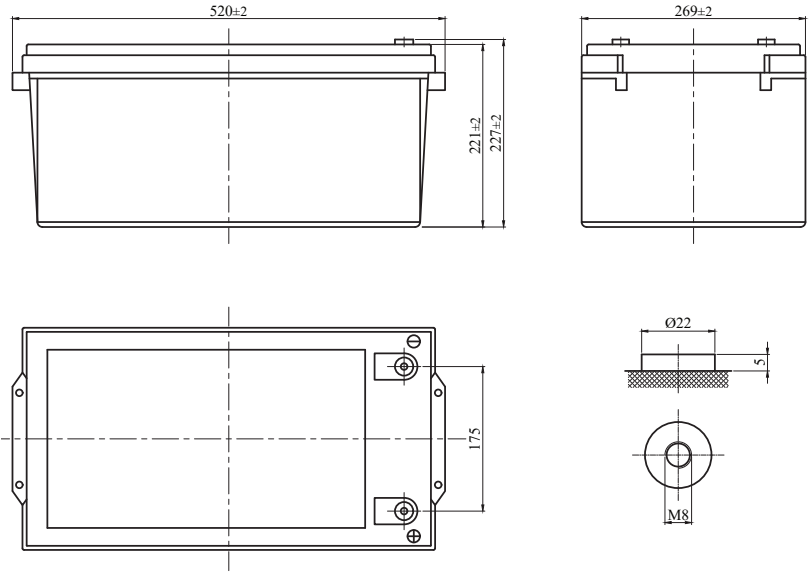
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Absorptive Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output

CHARACTERISTICS

Nominal Voltage	12 V	
Design Life	12 Years	
Capacity (25°C)	10 Hour rate	250Ah
Internal Resistance (25°C, 100% Charge)	≤3.0 mΩ	
Self Discharge (20°C)	1 Month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current (25°C)	1250A (5sec)	
Maximum Charging current (25°C)	75A	
Short Circuit Current	4300A	
Charge Methods	14.4 to 14.7 V	
Constant Voltage Charge 77°F (25°C) - Cycle use	Temp. Compensation -30mV/°C	
Charge methods	13.4 to 13.8V	
Constant Voltage Charge 77°F (25°C) - Standby Use	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
520mm	269mm	221mm	227mm	74.0 ± 0%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25°C

End Voltage Volts/Cell	15min	20min	30min	1h	1.5h	2h	3h	4h
1.60	463	307	274	160	111	89.6	72.3	54.0
1.65	430	304	258	153	110	88.8	69.5	53.8
1.70	415	302	252	150	109	88.3	68.3	53.5
1.75	386	298	240	146	108	87.3	66.3	53.0
1.80	357	290	229	142	107	87.0	64.2	52.6

CONSTANT POWER DISCHARGE (Watts) AT 25°C

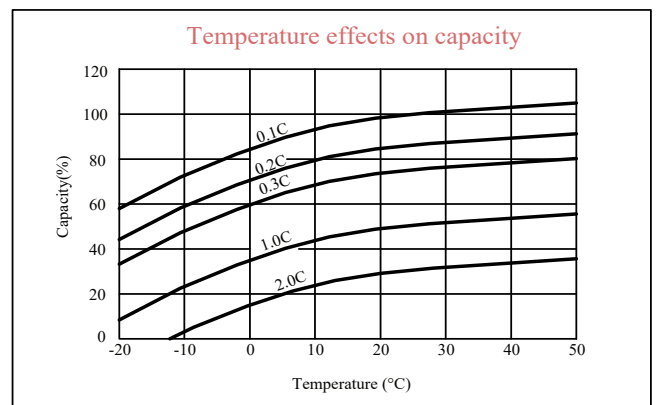
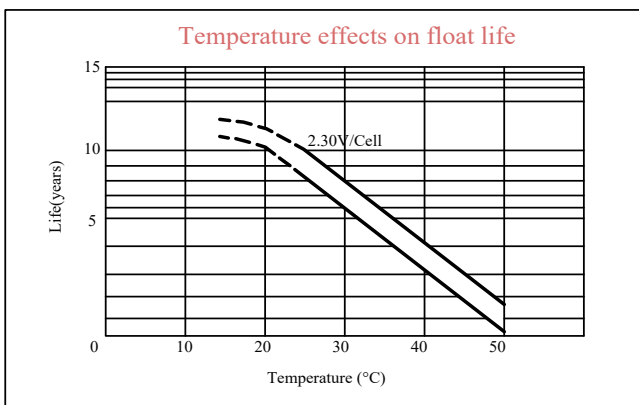
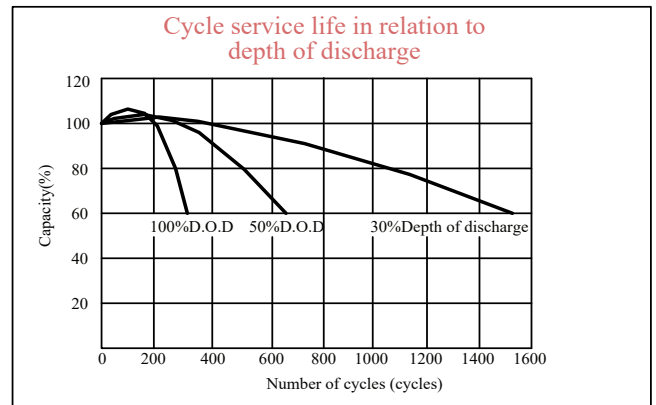
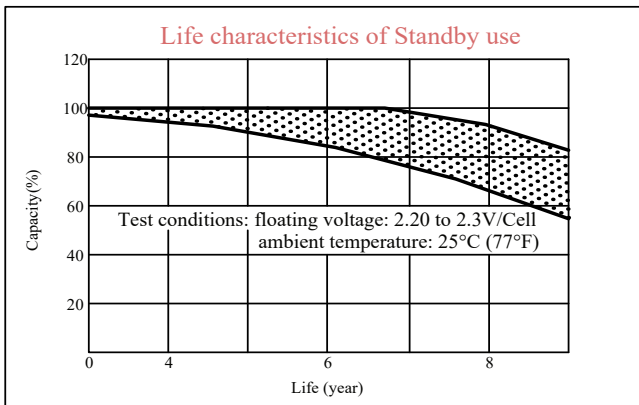
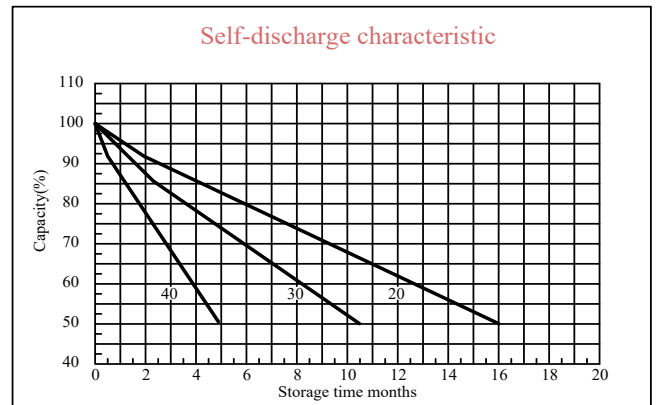
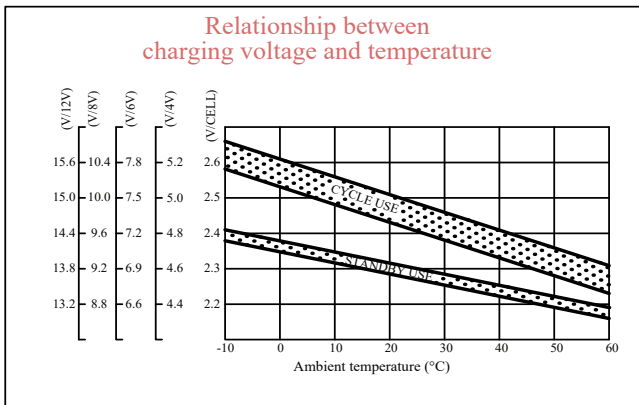
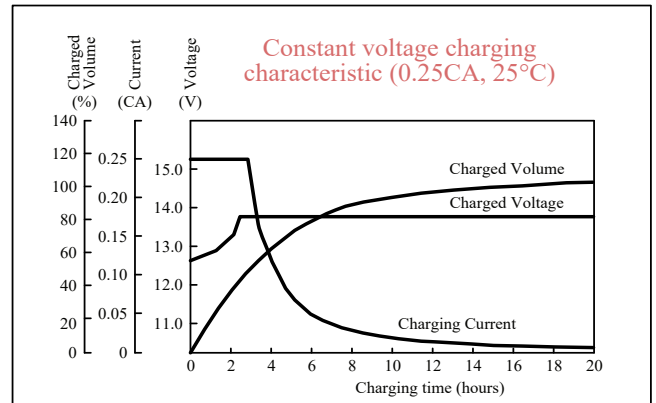
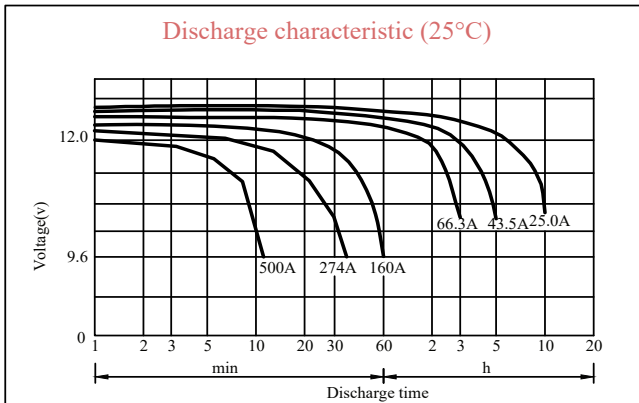
End Voltage Volts/Cell	15min	20min	30min	1h	1.5h	2h	3h	4h
1.60	810	573	497	300	213	182	135	103
1.65	770	570	475	291	212	175	133	103
1.70	747	564	465	285	210	172	131	122
1.75	705	558	449	278	208	165	127	101
1.80	660	552	434	268	205	160	123	100



ESC 250-12 FR

SMF VRLA RECHARGEABLE BATTERY

**LONG
LIFE
SERIES**



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EnerRocket™
CONTINUOUSLY SAFEGUARDING

ESH 12-320W FR

SMF VRLA RECHARGEABLE BATTERY

HIGH RATE
LONG LIFE SERIES

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

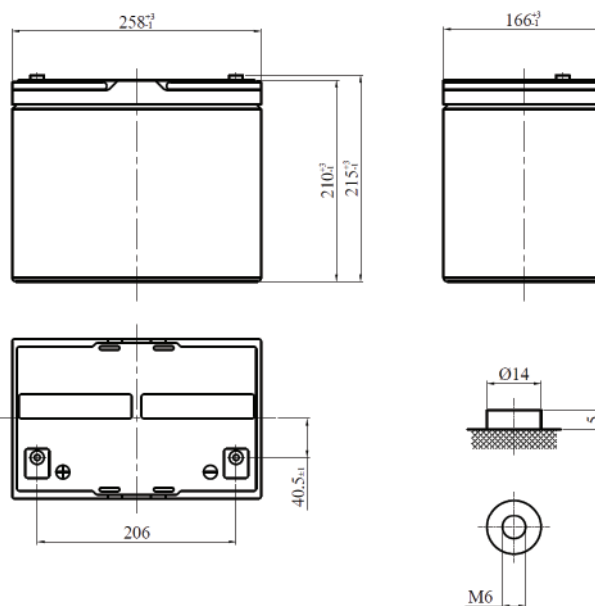
COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4
- EUROBAT- HIGH Performance

TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Absorptive Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
258mm	166mm	210mm	215mm	24.5 ± 5%

CHARACTERISTICS

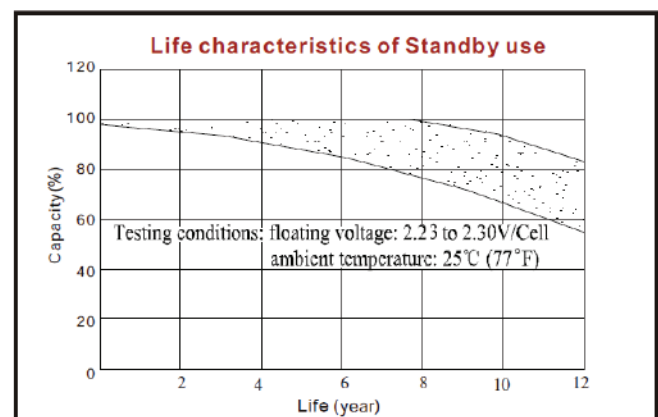
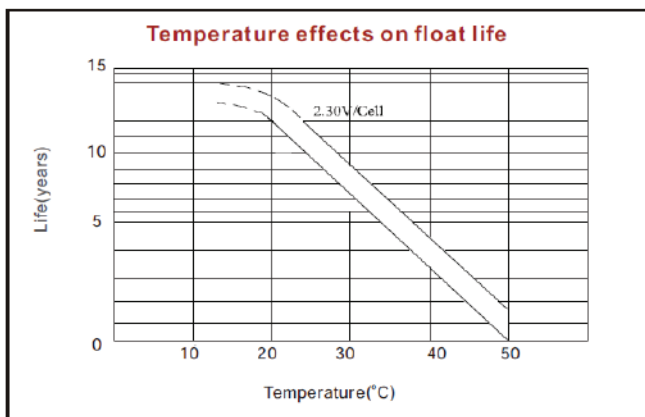
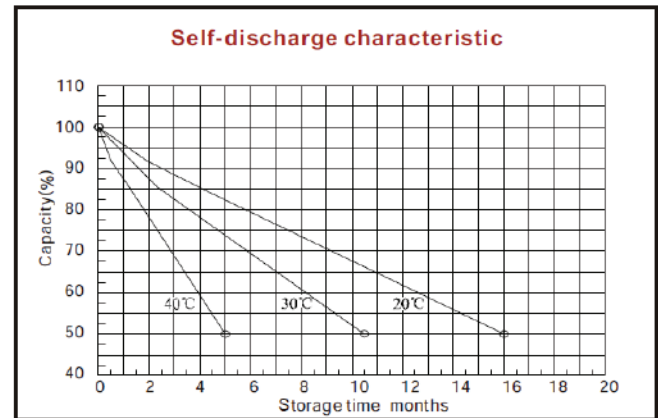
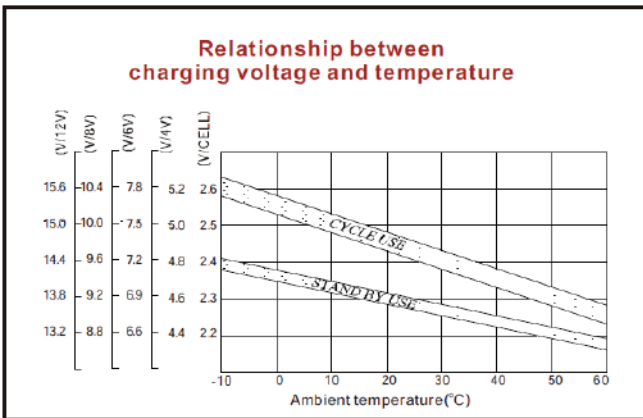
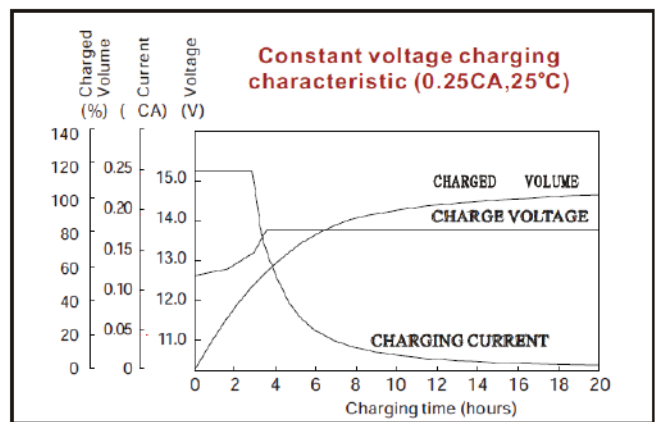
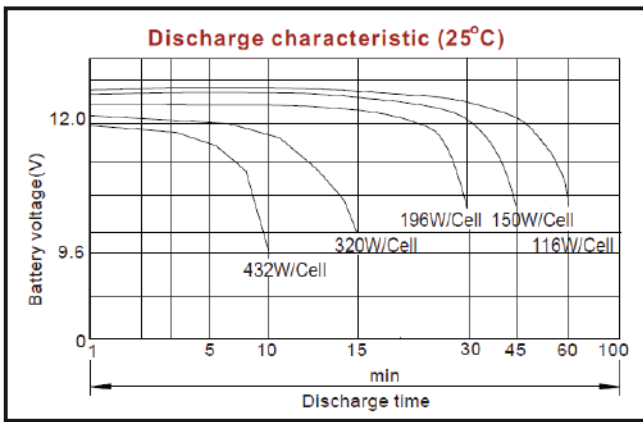
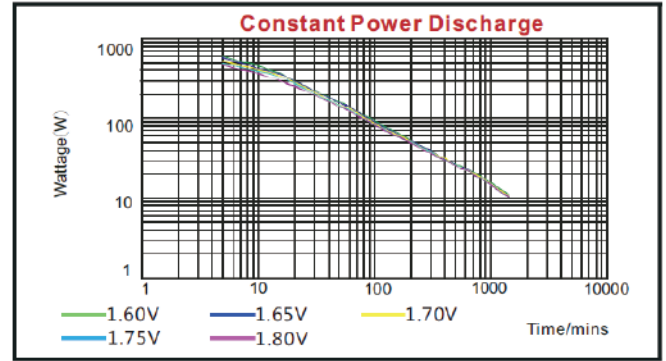
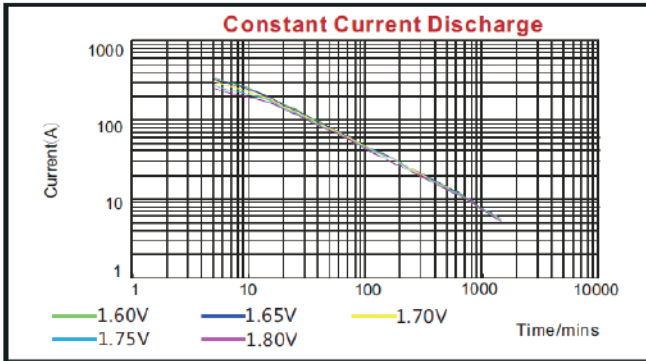
Nominal Voltage	12V	
Design Life	12 Years	
Capacity (25°C)	15min 1.67ECV	320w
Internal Resistance(25°C, 100% Charge)	≤5.0 mΩ	
Self Discharge (20°C)	1 month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current (25°C)	670A (5sec)	
Maximum Charging current (25°C)	24A	
Charge Methods Constant Voltage Charge 25°C Cyclic Use	14.4 to 14.7V	
	Temp.Compensation -30mV/°C	
Charge Methods Constant Voltage Charge 25°C Standby Use	13.4 to 13.8V	
	Temp. Compensation -20mV/°C	

CONSTANT CURRENT DISCHARGE (Amperes) AT 25 °C

End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	397	332	242	183	153	130	116	87.8	69.1
1.65V	386	319	231	174	148	127	113	85.2	67.3
1.67V	382	314	227	170	146	126	112	84.2	66.6
1.70V	372	305	216	164	140	122	109	82.2	64.2
1.75V	348	272	198	154	131	113	102	79.1	62.2
1.80V	318	249	183	144	124	108	98	73.6	57.9

CONSTANT POWER DISCHARGE (Watts) AT 25 °C

End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	810	640	432	327	281	241	213	158	124
1.65V	754	598	420	322	273	235	209	155	122
1.67V	732	581	415	320	270	232	207	154	121
1.70V	673	551	386	301	263	228	204	152	119
1.75V	643	500	364	288	249	216	196	150	116
1.80V	583	465	340	273	238	210	188	142	111



Note:
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All data and discharge characteristics are average values based on actual discharge cycle tests performed and not minimum values.



EnerRocket™
CONTINUOUSLY SAFEGUARDING

ESH 12-400W FR

SMF VRLA RECHARGEABLE BATTERY

HIGH RATE
LONG LIFE SERIES

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

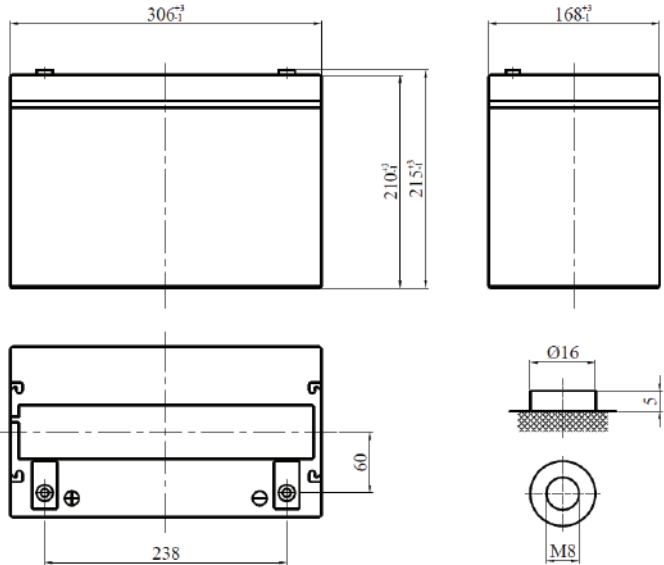
COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4
- EUROBAT- HIGH Performance

TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Absorptive Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
306mm	168mm	210mm	215mm	29.2 ± 5%

CHARACTERISTICS

Nominal Voltage	12V	
Design Life	12 Years	
Capacity (25°C)	15min 1.67ECV	400w
Internal Resistance(25°C, 100% Charge)	≤4.4 mΩ	
Self Discharge (20°C)	1 month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current (25°C)	810A (5sec)	
Maximum Charging current (25°C)	28A	
Charge Methods Constant Voltage Charge 25°C Cyclic Use	14.4 to 14.7V	
	Temp. Compensation -30mV/°C	
Charge Methods Constant Voltage Charge 25°C Standby Use	13.4 to 13.8V	
	Temp. Compensation -20mV/°C	

CONSTANT CURRENT DISCHARGE (Amperes) AT 25 °C

End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	446	376	286	215	182	161	145	100	71.2
1.65V	441	366	270	211	180	158	139	99	68.7
1.67V	439	362	264	210	179	156	137	99	67.7
1.70V	425	352	251	200	171	148	129	86	65.1
1.75V	408	339	245	194	167	144	125	84	63.2
1.80V	397	318	236	188	156	137	120	82	60.5

CONSTANT POWER DISCHARGE (Watts) AT 25 °C

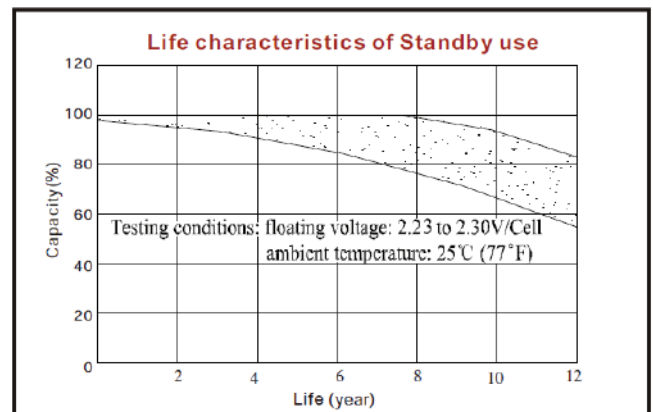
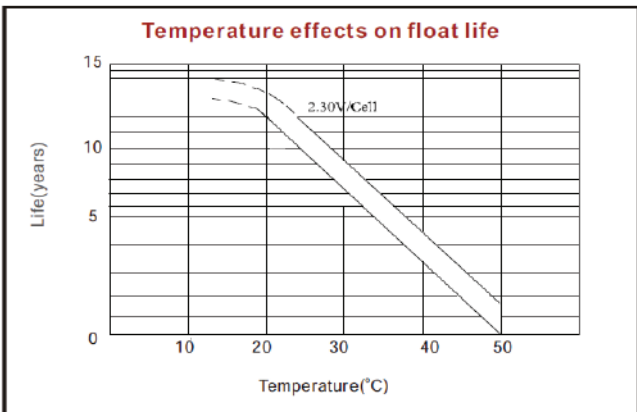
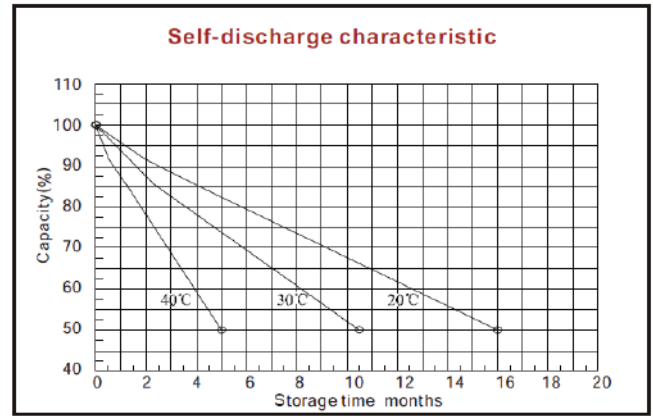
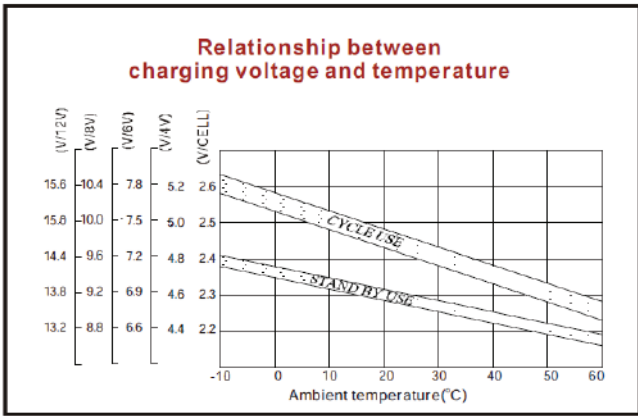
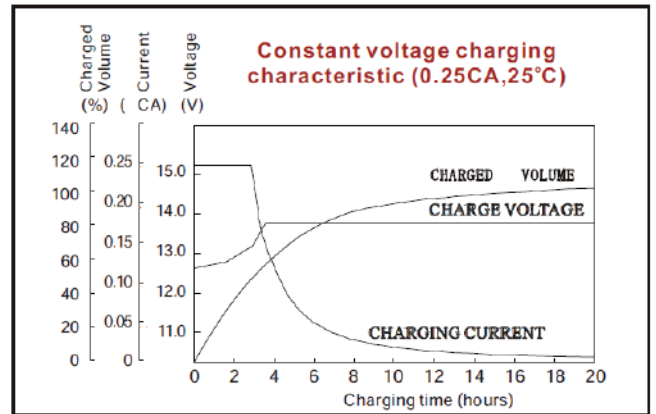
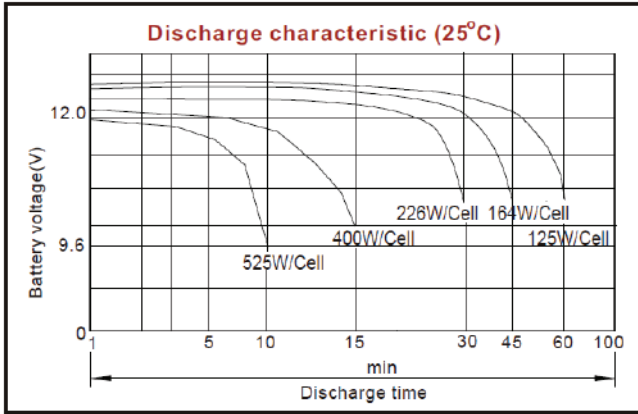
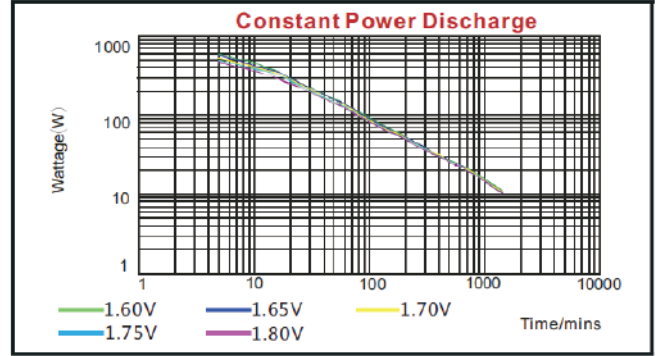
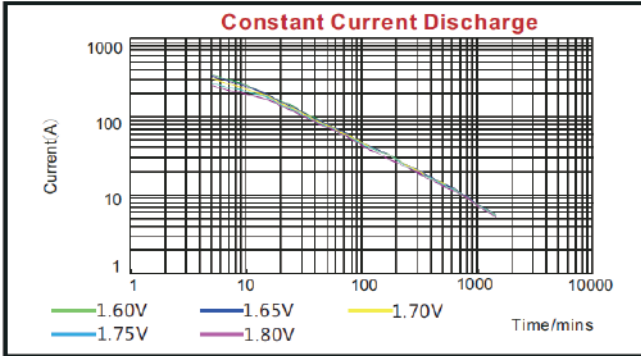
End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	874	719	525	412	349	300	259	187	141
1.65V	860	686	505	403	336	289	249	182	138
1.67V	854	672	497	400	331	284	245	181	137
1.70V	821	642	487	390	321	274	235	170	132
1.75V	764	607	457	358	311	264	226	164	125
1.80V	708	567	427	344	296	258	221	159	121



ESH 12-400W FR

SMF VRLA RECHARGEABLE BATTERY

HIGH RATE
LONG
LIFE
SERIES



Note: GPSGC reserves the right to make changes to the above values without any notice. All data and discharge characteristics are average values based on actual discharge cycle tests performed and not minimum values.



EnerRocket™
CONTINUOUSLY SAFEGUARDING

ESH 12-420W FR

SMF VRLA RECHARGEABLE BATTERY

HIGH RATE
LONG LIFE SERIES

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

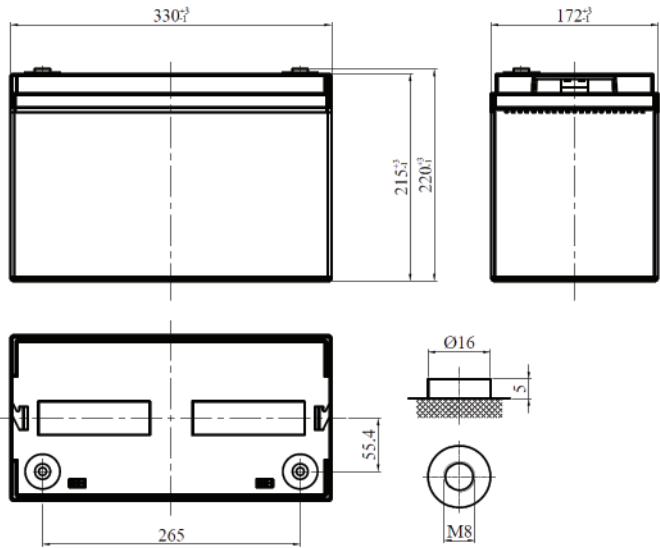
COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4
- EUROBAT- HIGH Performance

TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Absorptive Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
330mm	172mm	215mm	220mm	31.5 ± 5%

CHARACTERISTICS

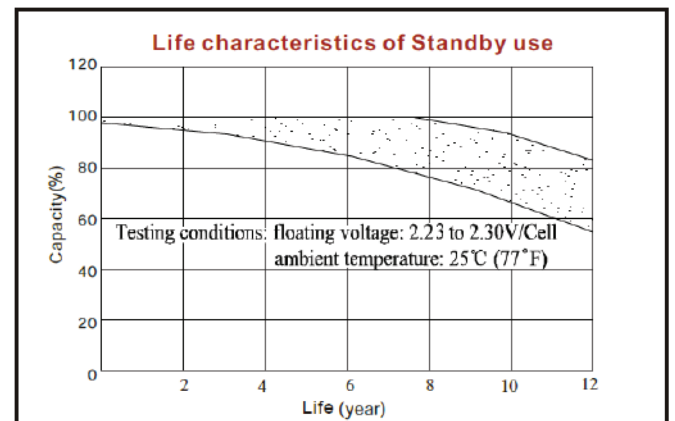
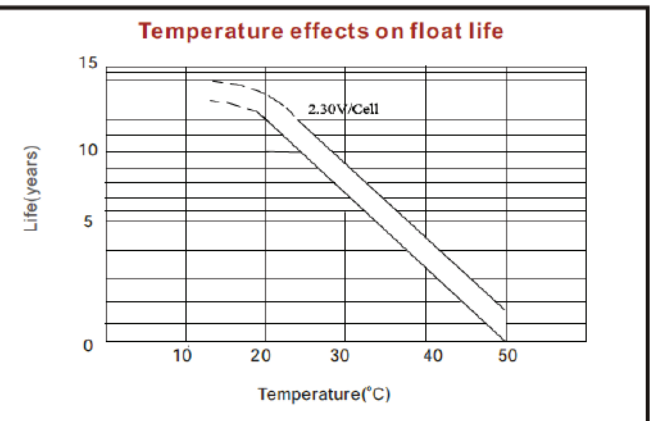
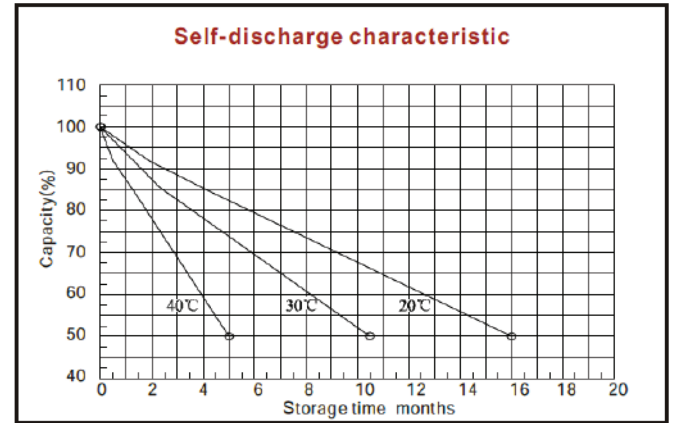
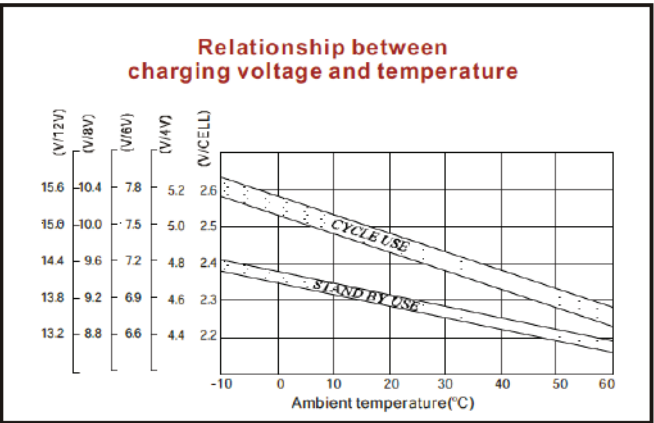
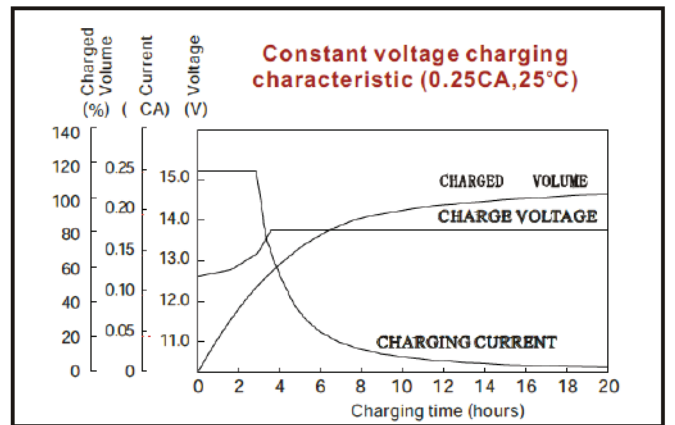
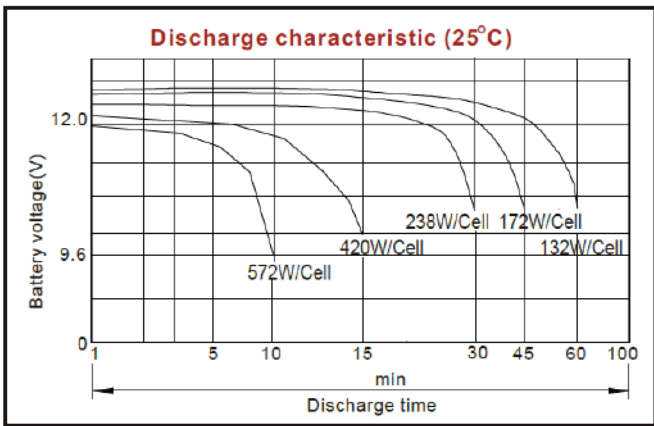
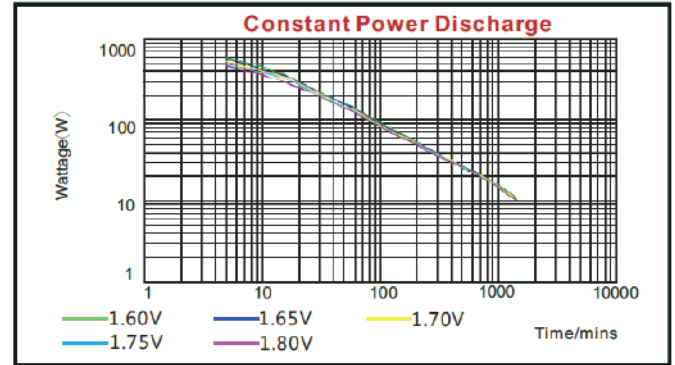
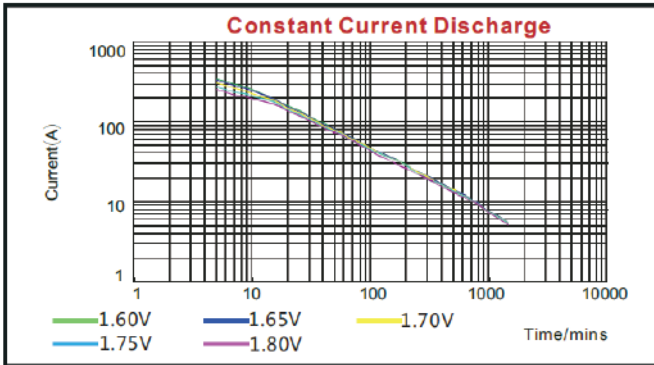
Nominal Voltage	12V	
Design Life	12 Years	
Capacity (25°C)	15min 1.67ECV	420w
Internal Resistance(25°C, 100% Charge)	≤4.2 mΩ	
Self Discharge (20°C)	1 month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current (25°C)	820A (5sec)	
Maximum Charging current (25°C)	33A	
Charge Methods Constant Voltage Charge 25°C Cyclic Use	14.4 to 14.7V	
	Temp.Compensation -30mV/°C	
Charge Methods Constant Voltage Charge 25°C Standby Use	13.4 to 13.8V	
	Temp. Compensation -20mV/°C	

CONSTANT CURRENT DISCHARGE (Amperes) AT 25 °C

End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	467	388	322	240	208	176	153	103	76.7
1.65V	453	376	314	229	193	164	144	101	74.4
1.67V	448	372	306	225	187	160	141	100	73.5
1.70V	434	358	294	210	175	151	132	93.5	71.4
1.75V	419	342	284	220	170	145	126	88.2	69.3
1.80V	405	328	263	191	164	141	121	86.1	67.2

CONSTANT POWER DISCHARGE (Watts) AT 25 °C

End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	886	746	572	437	365	315	267	191	144
1.65V	870	729	558	425	364	306	256	188	142
1.67V	864	723	553	420	360	302	252	187	141
1.70V	849	697	512	395	339	289	251	182	137
1.75V	832	664	482	372	323	273	238	172	132
1.80V	818	645	465	349	305	261	228	162	125



Note:
GPSC reserves the right to make changes to the above values without any notice.
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EnerRocket™
CONTINUOUSLY SAFEGUARDING

ESH 12-450W FR

SMF VRLA RECHARGEABLE BATTERY

HIGH RATE
LONG
LIFE
SERIES

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

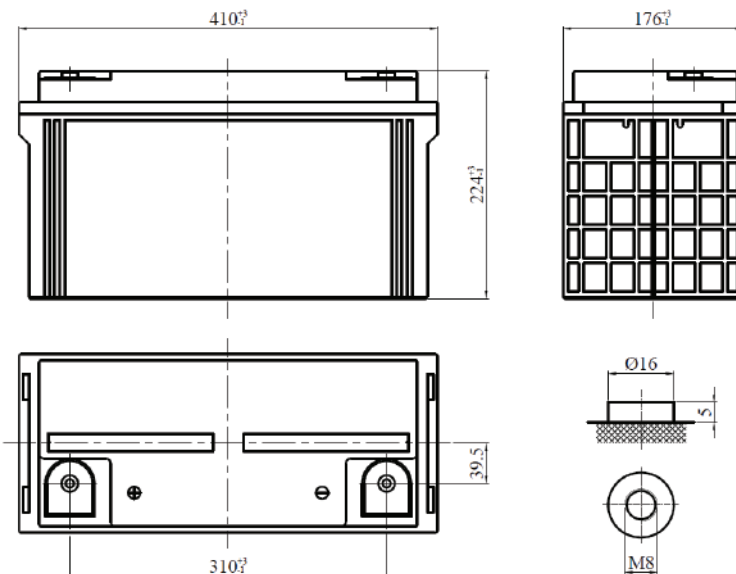
COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4
- EUROBAT- HIGH Performance

TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Absorptive Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
410mm	176mm	224mm	224mm	36.5 ± 5%

CHARACTERISTICS

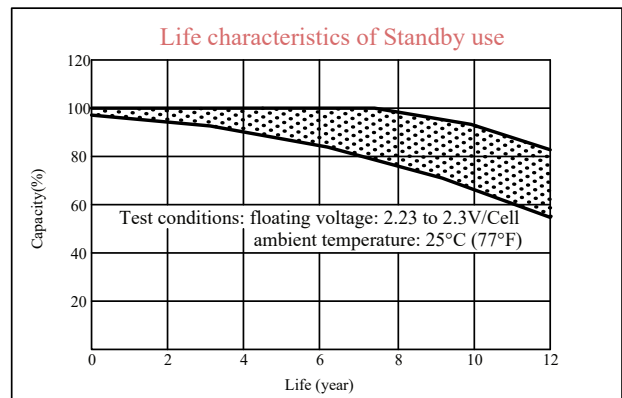
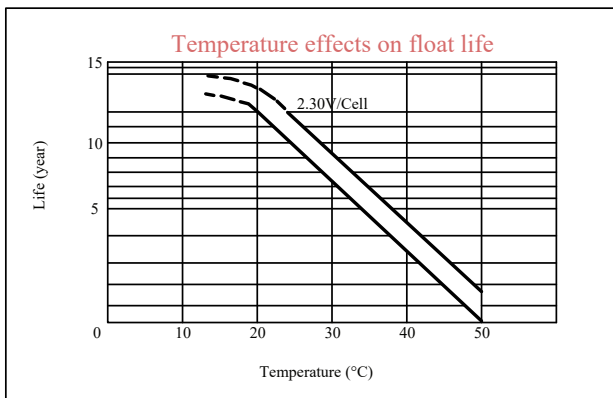
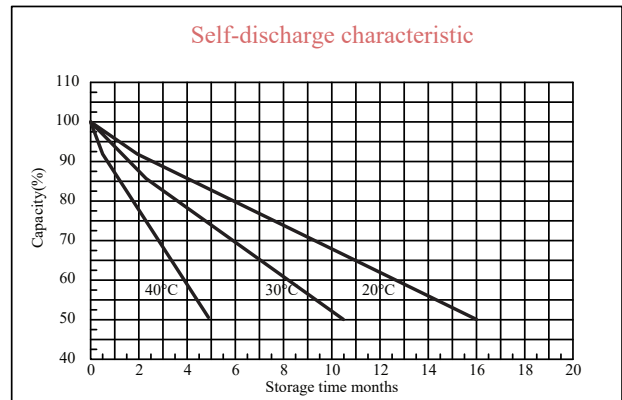
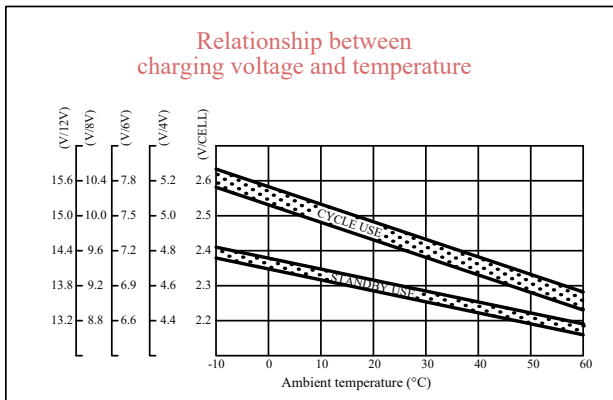
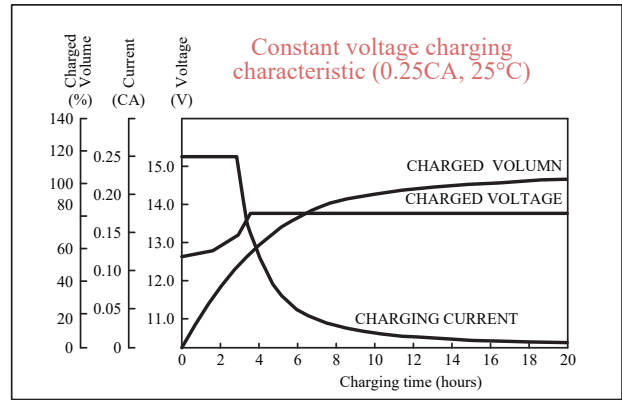
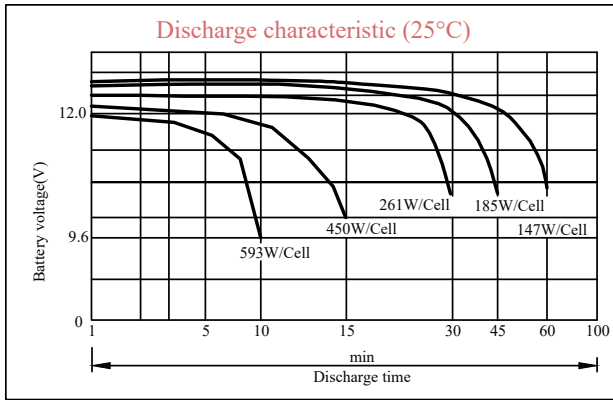
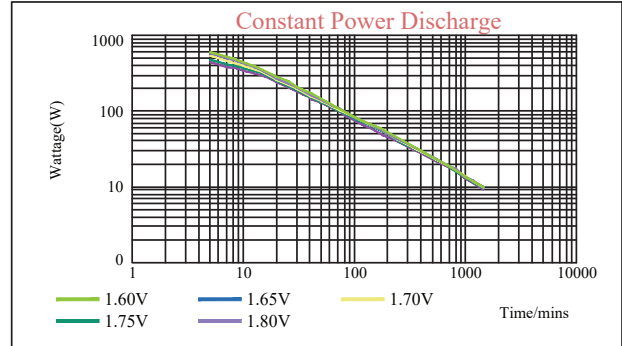
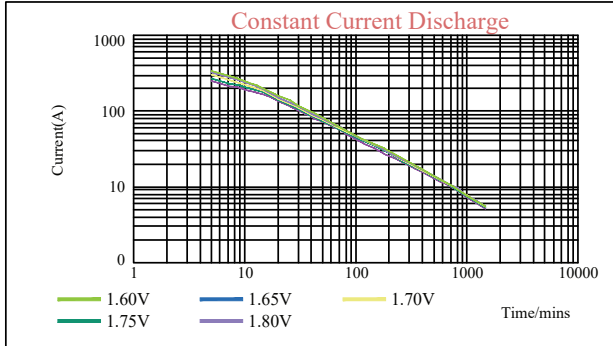
Nominal Voltage	12V	
Design Life	12 Years	
Capacity (25°C)	15min 1.67ECV	450w
Internal Resistance(25°C, 100% Charge)	≤4.0 mΩ	
Self Discharge (20°C)	1 month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current (25°C)	840A (5sec)	
Maximum Charging current (25°C)	37A	
Charge Methods Constant Voltage Charge 25°C Cyclic Use	14.4 to 14.7V	
	Temp.Compensation -30mV/°C	
Charge Methods Constant Voltage Charge 25°C Standby Use	13.4 to 13.8V	
	Temp. Compensation -20mV/°C	

CONSTANT CURRENT DISCHARGE (Amperes) AT 25 °C

End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	487	414	340	266	223	189	160	111	86.1
1.65V	471	405	318	255	211	179	151	105	81.6
1.67V	465	402	309	250	206	175	147	103	79.8
1.70V	446	384	294	244	198	168	143	99.8	77.7
1.75V	427	368	287	234	191	161	135	94.5	74.6
1.80V	406	362	282	223	183	157	131	92.4	72.5

CONSTANT POWER DISCHARGE (Watts) AT 25 °C

End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	904	764	593	475	403	341	294	203	161
1.65V	886	741	575	457	386	324	278	197	156
1.67V	879	732	568	450	379	317	271	194	154
1.70V	856	699	548	440	371	311	269	191	151
1.75V	832	667	538	424	358	301	261	185	147
1.80V	813	643	510	406	338	287	249	180	143



Note:
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EnerRocket™
CONTINUOUSLY SAFEGUARDING

ESH 12-500W FR

SMF VRLA RECHARGEABLE BATTERY

HIGH RATE
LONG LIFE SERIES

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4
- EUROBAT- HIGH Performance

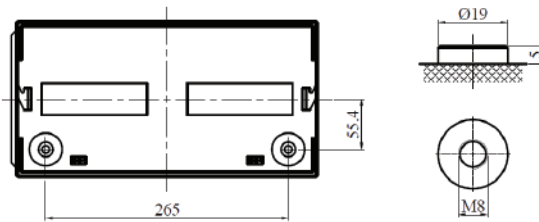
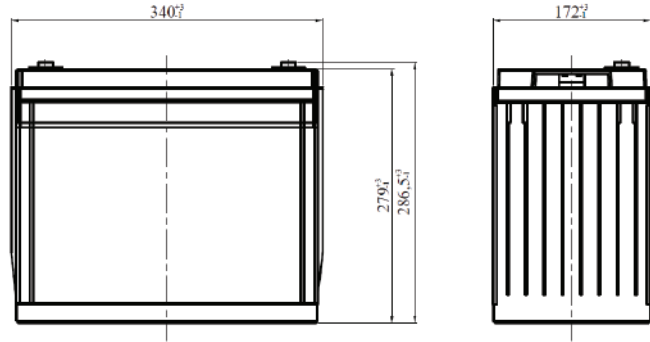
TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Absorptive Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output

CHARACTERISTICS

Nominal Voltage	12V	
Design Life	12 Years	
Capacity (25°C)	15min 1.67ECV	500w
Internal Resistance(25°C, 100% Charge)	≤3.8 mΩ	
Self Discharge (20°C)	1 month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C± 3°C	
Maximum Discharge current (25°C)	870A (5sec)	
Maximum Charging current (25°C)	42A	
Charge Methods Constant Voltage Charge 25°C Cyclic Use	14.4 to 14.7V	
	Temp. Compensation -30mV/°C	
Charge Methods Constant Voltage Charge 25°C Standby Use	13.4 to 13.8V	
	Temp. Compensation -20mV/°C	



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
340mm	172mm	279mm	286.5mm	40.0± 5%

CONSTANT CURRENT DISCHARGE (Amperes) AT 25 °C

End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	520	441	348	276	238	207	179	121	96
1.65V	504	432	327	263	229	198	173	117	92
1.67V	498	428	318	258	226	195	171	116	90
1.70V	486	412	309	251	214	184	161	110	88
1.75V	469	401	298	239	202	176	154	108	85
1.80V	456	387	290	229	195	171	149	105	81

CONSTANT POWER DISCHARGE (Watts) AT 25 °C

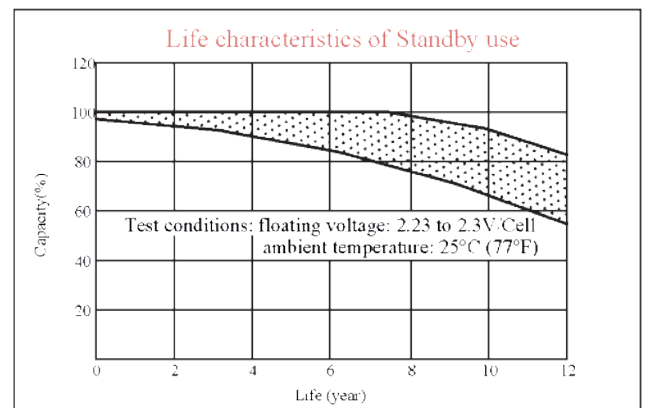
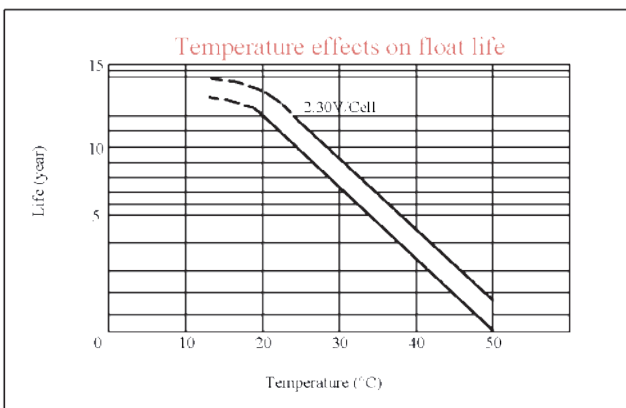
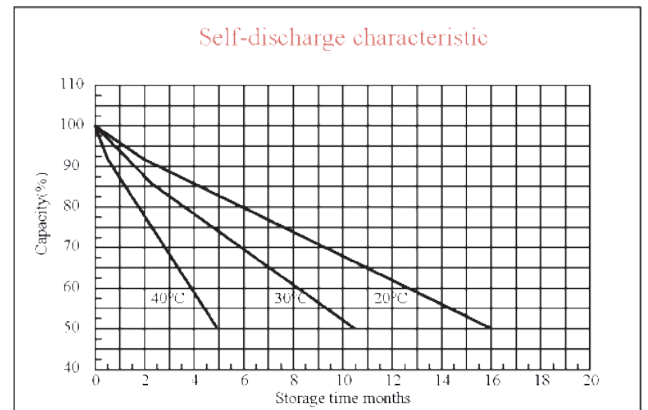
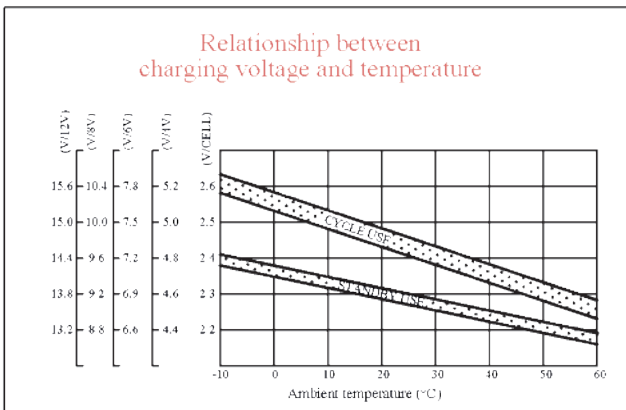
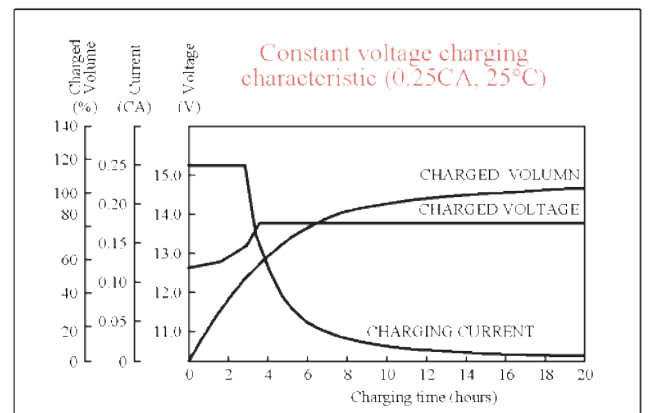
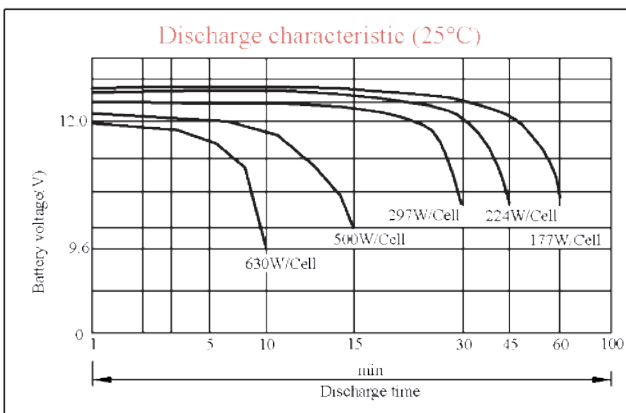
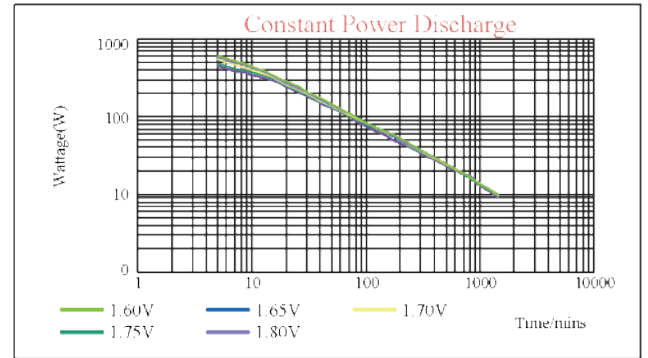
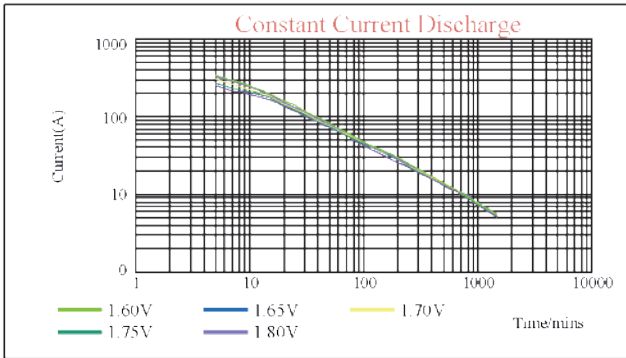
End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	1056	834	630	503	424	371	331	246	189
1.65V	1040	818	614	501	419	364	324	240	187
1.67V	1034	812	607	500	417	361	321	238	186
1.70V	1012	783	568	455	391	347	311	231	182
1.75V	973	759	528	438	381	334	297	224	177
1.80V	944	726	521	421	368	321	287	216	173



ESH 12-500W FR

SMF VRLA RECHARGEABLE BATTERY

HIGH RATE
LONG
LIFE
SERIES



Note:
GPSGC reserves the right to make changes to the above values without any notice.
All data and discharge characteristics are average values based on actual discharge cycle tests performed and not minimum values.



EnerRocket™
CONTINUOUSLY SAFEGUARDING

ESH 12-540W FR

SMF VRLA RECHARGEABLE BATTERY

HIGH RATE
LONG LIFE SERIES

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

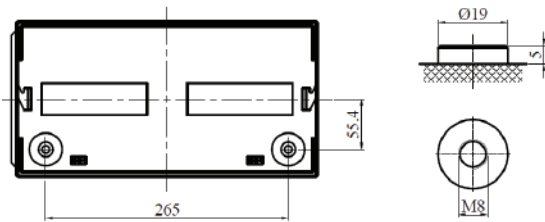
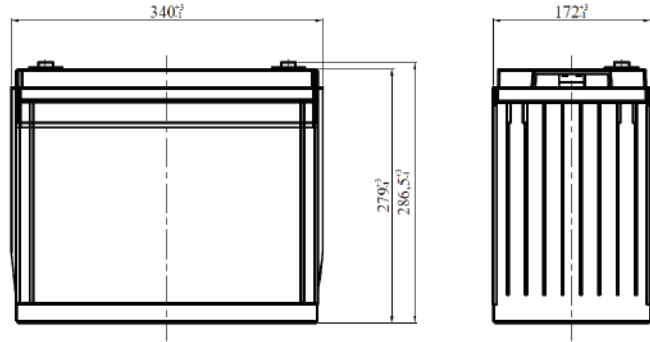
COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4
- EUROBAT- HIGH Performance

TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Absorptive Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
340mm	172mm	279mm	286.5mm	41.5 ± 5%

CHARACTERISTICS

Nominal Voltage	12V	
Design Life	12 Years	
Capacity (25°C)	15min 1.67ECV	540w
Internal Resistance(25°C, 100% Charge)	≤3.6 mΩ	
Self Discharge (20°C)	1 month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current (25°C)	910A (5sec)	
Maximum Charging current (25°C)	45A	
Charge Methods Constant Voltage Charge 25°C Cyclic Use	14.4 to 14.7V	
	Temp.Compensation -30mV/°C	
Charge Methods Constant Voltage Charge 25°C Standby Use	13.4 to 13.8V	
	Temp. Compensation -20mV/°C	

CONSTANT CURRENT DISCHARGE (Amperes) AT 25 °C

End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	568	469	358	292	253	217	196	134	103
1.65V	552	456	337	281	246	212	188	130	101
1.67V	546	450	328	276	244	210	185	128	100
1.70V	523	433	318	259	228	198	175	125	99
1.75V	509	416	302	245	215	190	169	122	96
1.80V	492	403	293	235	206	183	161	119	94

CONSTANT POWER DISCHARGE (Watts) AT 25 °C

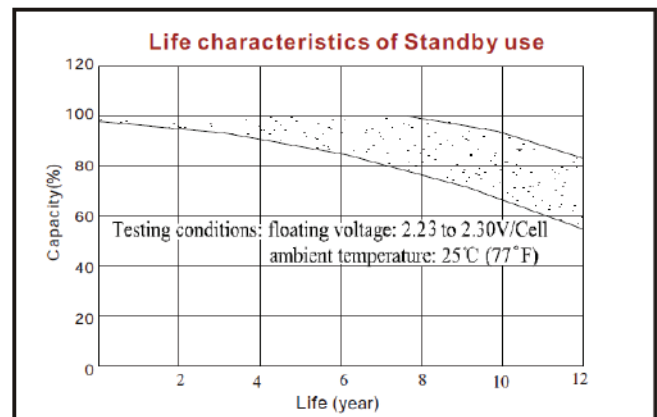
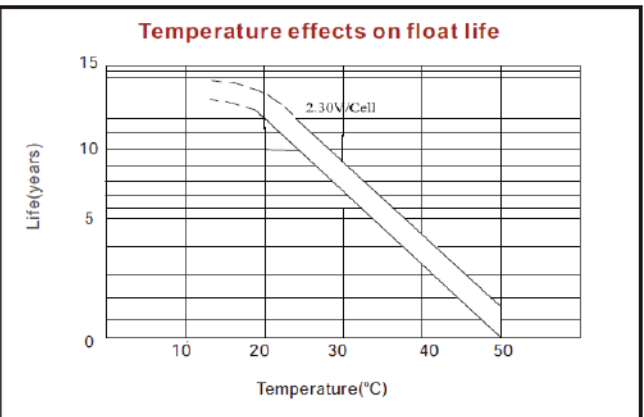
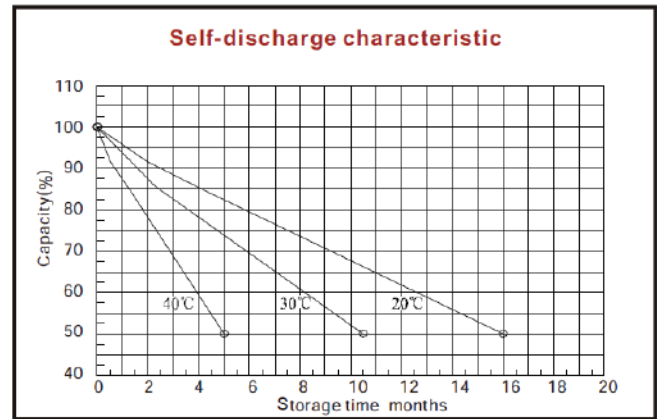
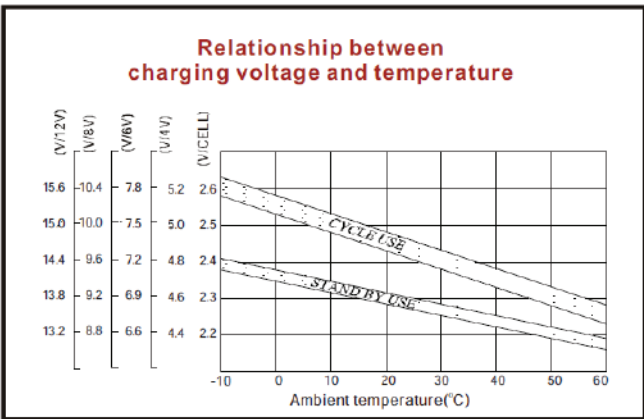
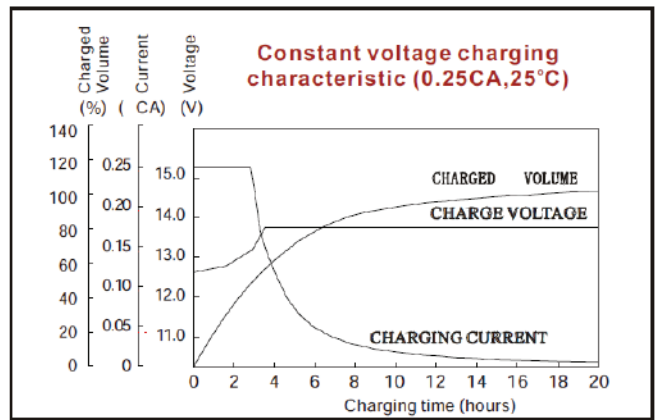
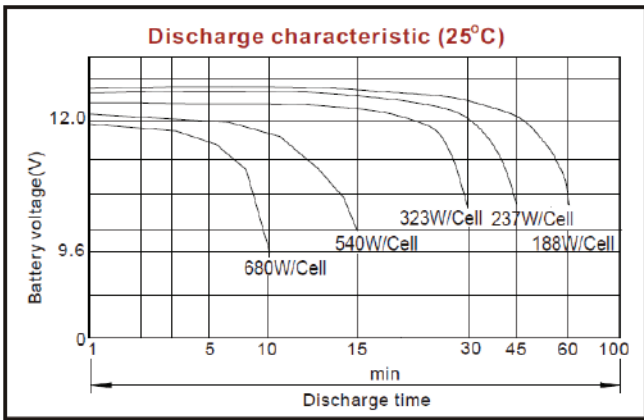
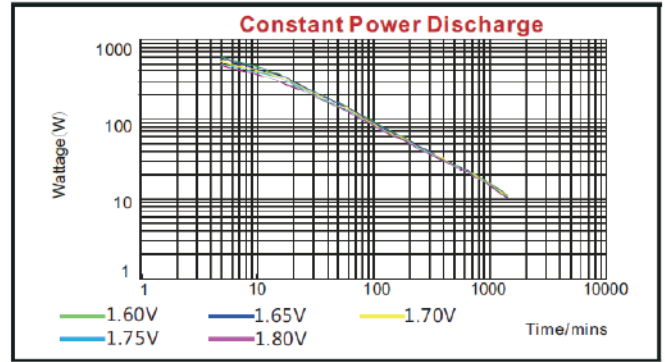
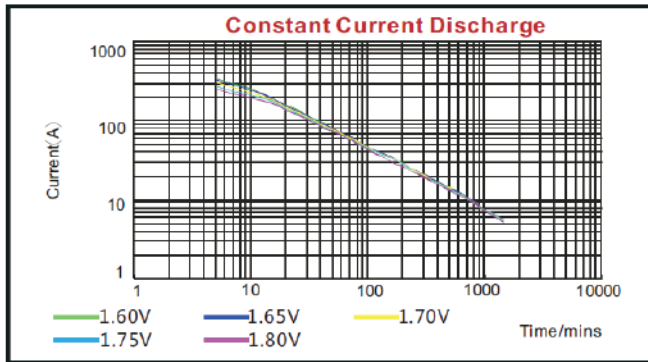
End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	1104	887	680	564	468	400	358	260	201
1.65V	1078	857	662	547	459	396	350	255	198
1.67V	1067	844	655	540	456	394	347	253	197
1.70V	1035	790	601	491	427	374	331	245	192
1.75V	1004	766	568	473	412	360	323	237	188
1.80V	976	744	534	455	397	347	311	229	184



ESH 12-540W FR

SMF VRLA RECHARGEABLE BATTERY

HIGH RATE
LONG
LIFE
SERIES



Note:
GPSGC reserves the right to make changes to the above values without any notice.
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EnerRocket™
CONTINUOUSLY SAFEGUARDING

ESH 12-560W FR

SMF VRLA RECHARGEABLE BATTERY

HIGH RATE
LONG
LIFE
SERIES

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

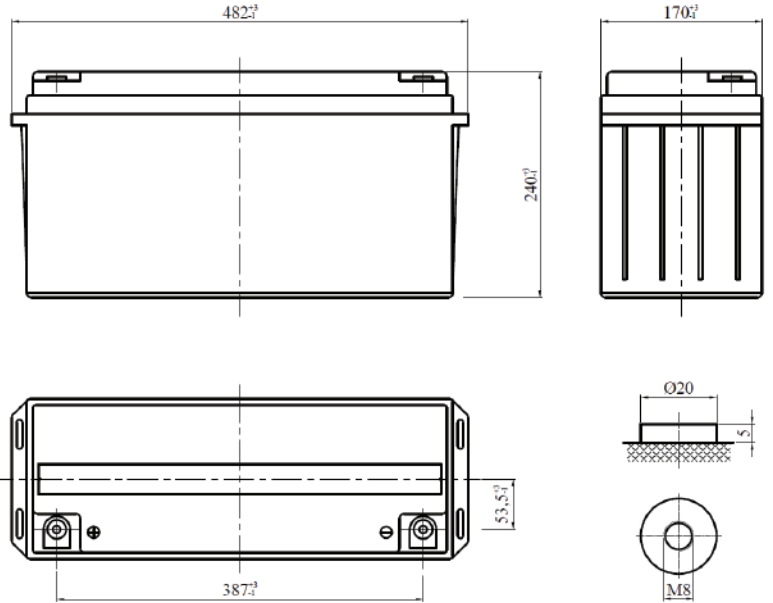
COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4
- EUROBAT- HIGH Performance

TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Absorbent Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
482mm	170mm	240mm	240mm	45.0 ± 5%

CHARACTERISTICS

Nominal Voltage	12V	
Design Life	12 Years	
Capacity (25°C)	15min 1.67ECV	560w
Internal Resistance(25°C, 100% Charge)	≤3.5 mΩ	
Self Discharge (20°C)	1 month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current (25°C)	970A (5sec)	
Maximum Charging current (25°C)	45A	
Charge Methods Constant Voltage Charge 25°C Cyclic Use	14.4 to 14.7V	
	Temp.Compensation -30mV/°C	
Charge Methods Constant Voltage Charge 25°C Standby Use	13.4 to 13.8V	
	Temp. Compensation -20mV/°C	

CONSTANT CURRENT DISCHARGE (Amperes) AT 25 °C

End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	597	501	411	332	284	245	208	139	107
1.65V	586	484	392	318	271	237	205	135	105
1.67V	582	477	387	312	266	234	204	133	104
1.70V	561	454	366	301	258	221	191	130	102
1.75V	543	444	354	291	252	218	186	127	101
1.80V	518	436	342	277	242	208	176	124	98

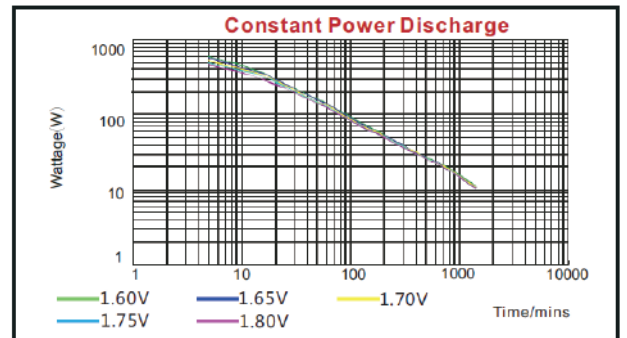
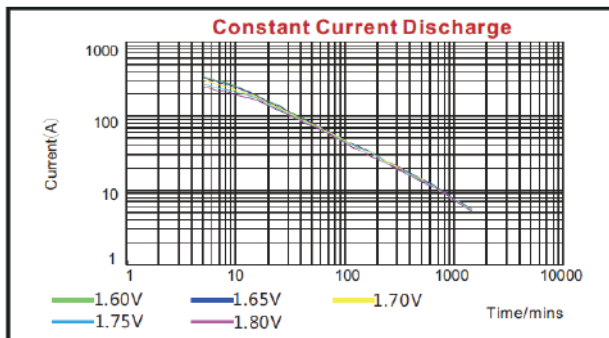
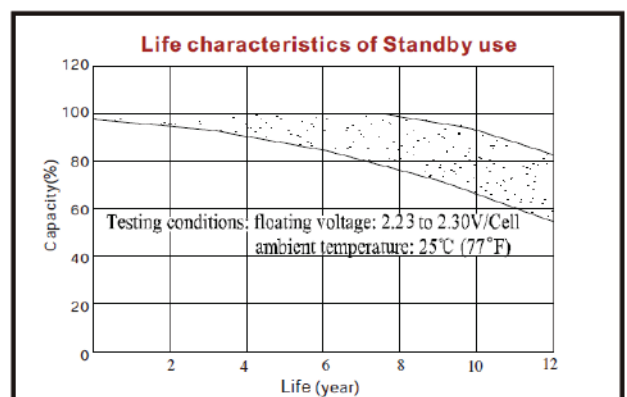
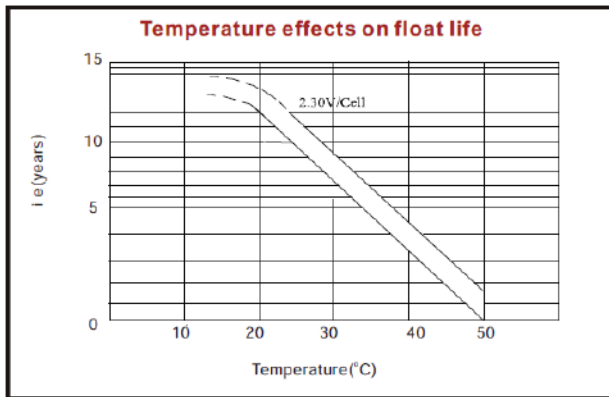
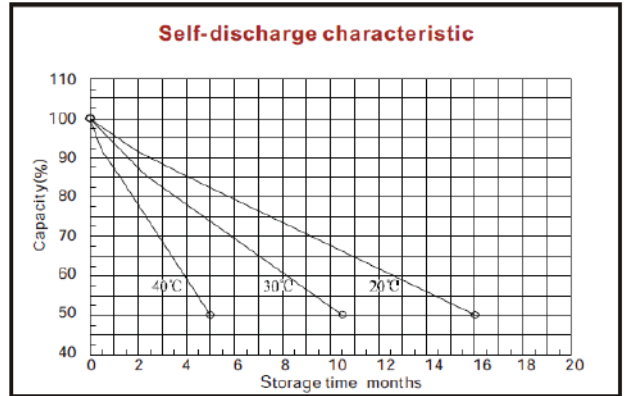
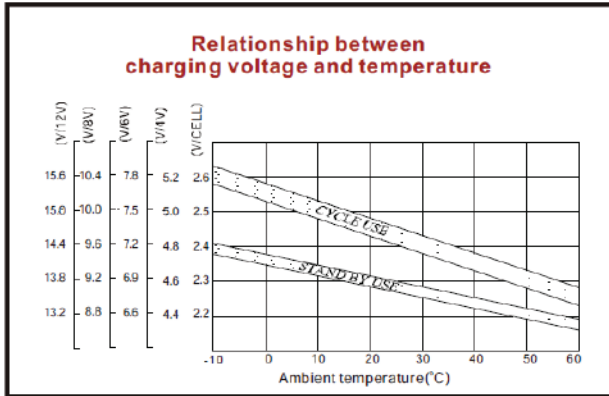
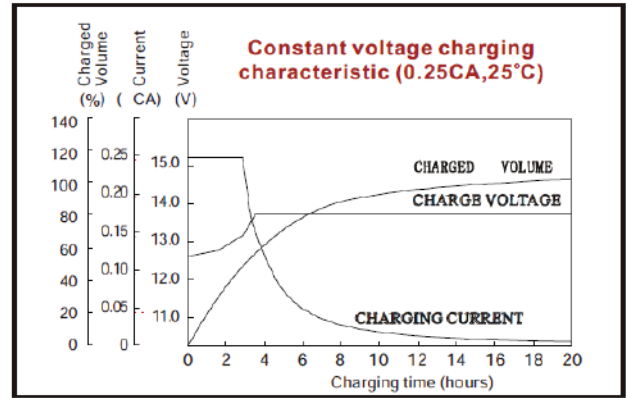
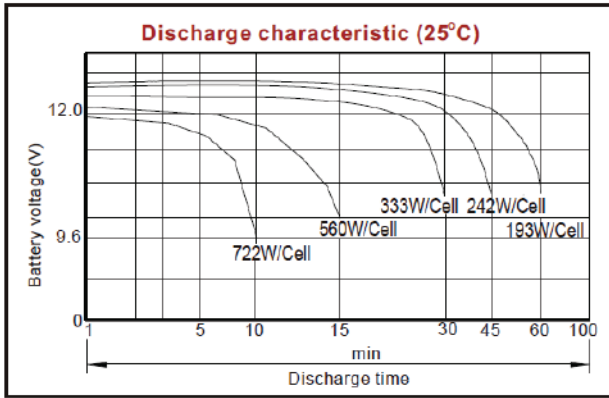
CONSTANT POWER DISCHARGE (Watts) AT 25 °C

End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	1147	915	722	600	502	431	370	267	210
1.65V	1130	892	684	571	483	416	362	258	204
1.67V	1123	883	668	560	476	410	359	255	202
1.70V	1103	864	654	550	463	401	347	250	200
1.75V	1076	844	615	527	450	386	333	242	193
1.80V	1047	806	601	502	432	372	320	234	190



ESH 12-560W FR

SMF VRLA RECHARGEABLE BATTERY



Note:
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All data and discharge characteristics are average values based on actual discharge cycle tests performed and not minimum values.

v205.2



EnerRocket™
CONTINUOUSLY SAFEGUARDING

ESH 12-710W FR

SMF VRLA RECHARGEABLE BATTERY

HIGH RATE
LONG
LIFE
SERIES

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

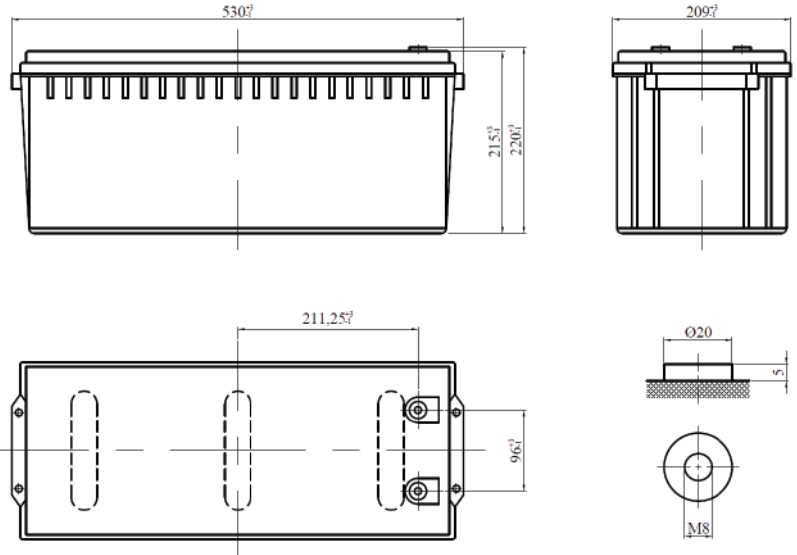
COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4
- EUROBAT- HIGH Performance

TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Absorptive Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
530mm	209mm	215mm	220mm	57.0 ± 5%

CHARACTERISTICS

Nominal Voltage	12V	
Design Life	12 Years	
Capacity (25°C)	15min 1.67ECV	710w
Internal Resistance(25°C, 100% Charge)	≤3.0 mΩ	
Self Discharge (20°C)	1 month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current (25°C)	1000A (5sec)	
Maximum Charging current (25°C)	60A	
Charge Methods Constant Voltage Charge 25°C Cyclic Use	14.4 to 14.7V	
	Temp.Compensation -30mV/°C	
Charge Methods Constant Voltage Charge 25°C Standby Use	13.4 to 13.8V	
	Temp. Compensation -20mV/°C	

CONSTANT CURRENT DISCHARGE (Amperes) AT 25 °C

End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	943	714	492	362	330	294	265	207	162
1.65V	939	711	489	360	329	293	263	205	160
1.67V	929	702	483	356	327	290	259	198	155
1.70V	913	687	464	350	320	281	254	192	150
1.75V	899	669	454	342	314	277	248	184	143
1.80V	884	655	434	334	304	268	240	176	138

CONSTANT POWER DISCHARGE (Watts) AT 25 °C

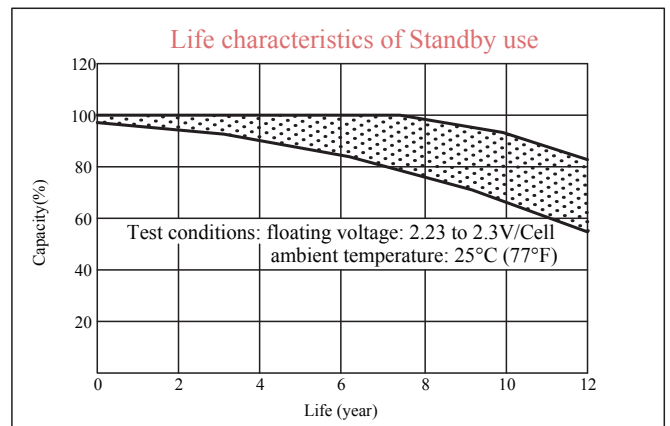
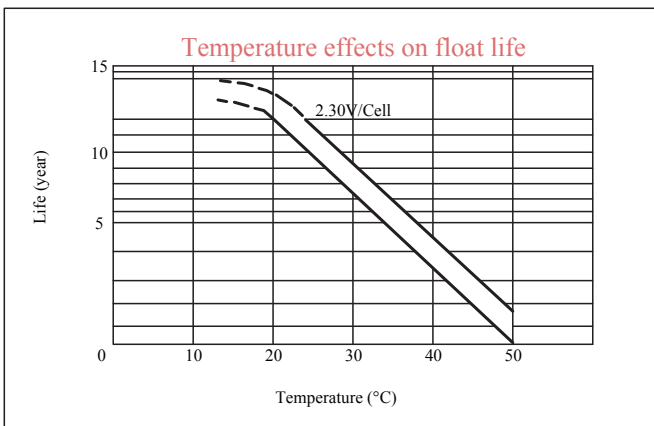
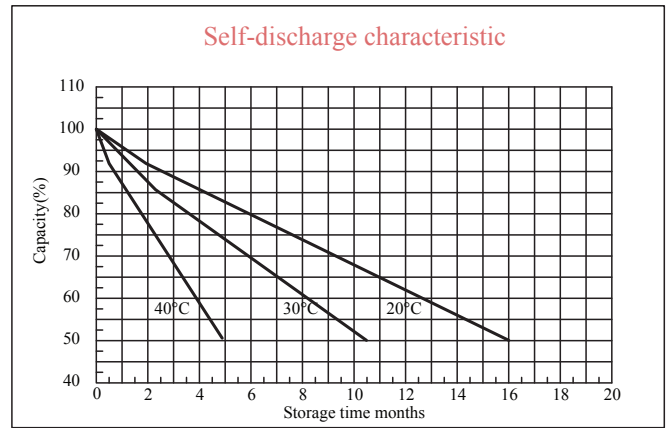
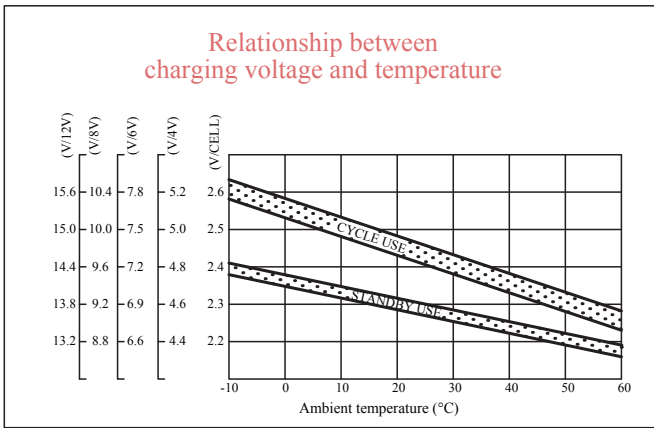
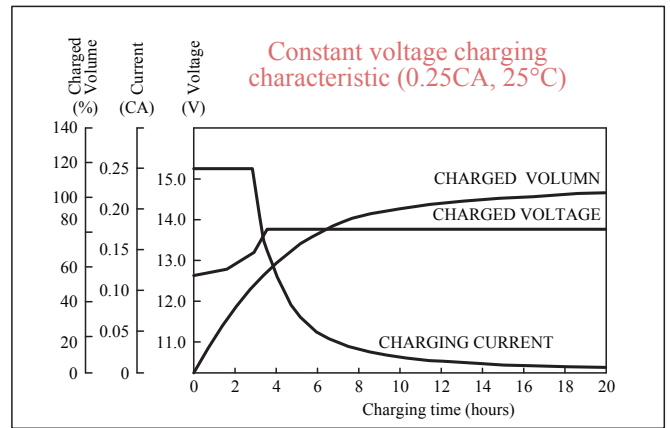
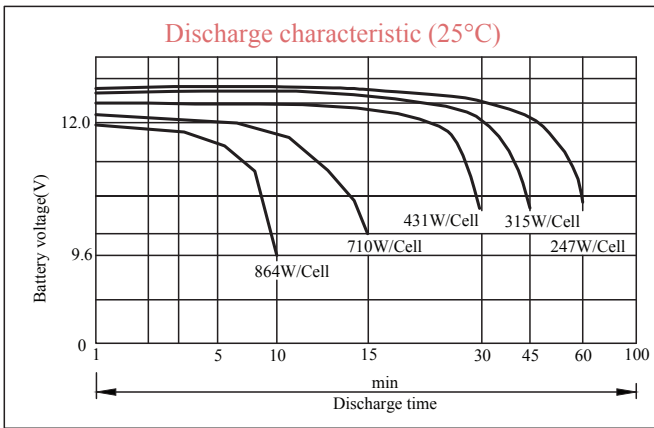
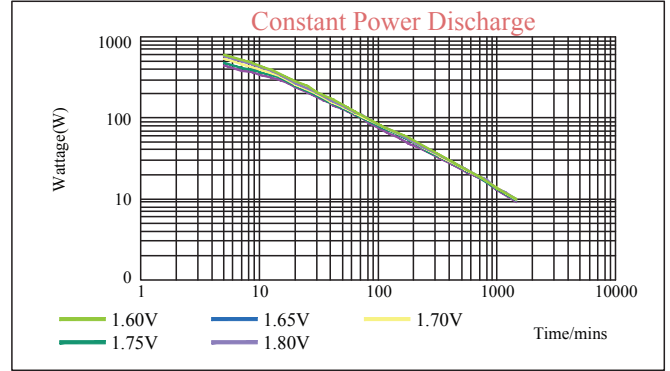
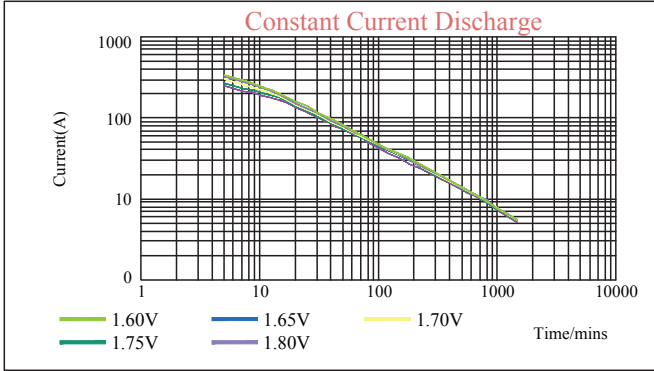
End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	1356	1134	864	730	620	545	485	355	277
1.65V	1341	1115	852	716	608	535	472	344	270
1.67V	1335	1107	847	710	604	531	466	340	267
1.70V	1304	994	817	700	584	513	447	329	257
1.75V	1264	976	804	678	559	491	431	315	247
1.80V	1227	956	789	643	544	479	412	302	236



ESH 12-710W FR

SMF VRLA RECHARGEABLE BATTERY

HIGH RATE
LONG
LIFE
SERIES



Note:
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v205.2



EnerRocket™
CONTINUOUSLY SAFEGUARDING

ESH 12-820W FR

SMF VRLA RECHARGEABLE BATTERY

HIGH RATE
LONG LIFE SERIES

APPLICATIONS

- UPS Systems
- Telecommunication Systems
- Fire Alarm Safety & Security Systems
- Medical Equipment

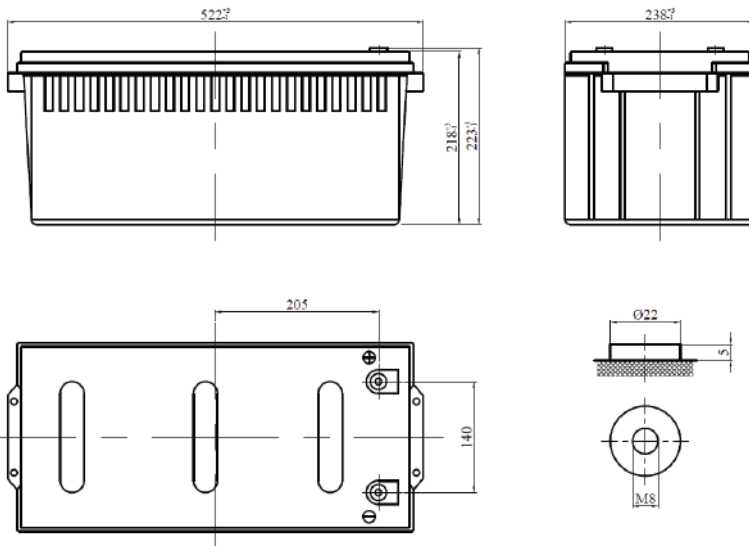
COMPLIANCE STANDARDS

- IEC 60896 PART 21 & 22
- BS6290-4
- EUROBAT- HIGH Performance

TECHNICAL FEATURES



- Non-Spillable Sealed Construction
- Absorptive Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) construction
- Gas Recombination
- Venting System for low internal pressure
- Low Self-Discharge
- Heavy-Duty, Highly Optimized Grids
- High Power Output



SPECIFICATIONS

Length	Width	Height	Total Height	Weight (kg)
522mm	238mm	218mm	223mm	67.5 ± 5%

CHARACTERISTICS

Nominal Voltage	12V	
Design Life	12 Years	
Capacity (25°C)	15min 1.67ECV	820w
Internal Resistance(25°C, 100% Charge)	≤2.2mΩ	
Self Discharge (20°C)	1 month	Remaining Capacity 97%
Operating Temperature	Discharge	-20°C - 60°C
	Charge	-10°C - 60°C
	Storage	-20°C - 60°C
Normal Operating Temperature	25°C ± 3°C	
Maximum Discharge current (25°C)	1100A (5sec)	
Maximum Charging current (25°C)	69A	
Charge Methods	14.4 to 14.7V	
Constant Voltage Charge 25°C Cyclic Use	Temp.Compensation -30mV/°C	
Charge Methods	13.4 to 13.8V	
Constant Voltage Charge 25°C Standby Use	Temp. Compensation -20mV/°C	

CONSTANT CURRENT DISCHARGE (Amperes) AT 25 °C

End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	971	748	558	447	389	341	303	222	171
1.65V	931	721	544	433	377	332	294	215	167
1.67V	915	711	538	428	372	328	291	212	165
1.70V	882	695	511	409	355	312	279	204	159
1.75V	876	675	486	390	337	296	267	194	151
1.80V	862	643	465	381	320	281	254	185	145

CONSTANT POWER DISCHARGE (Watts) AT 25 °C

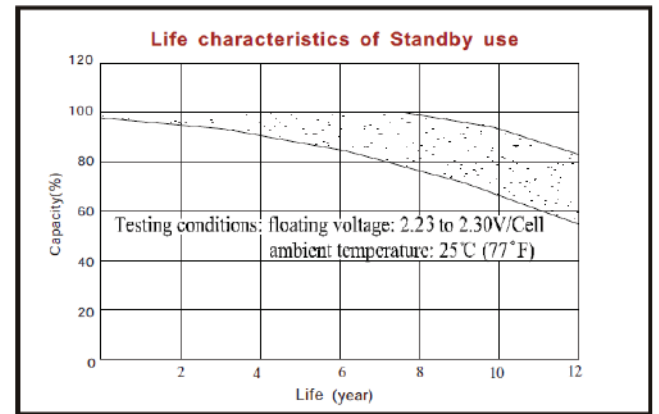
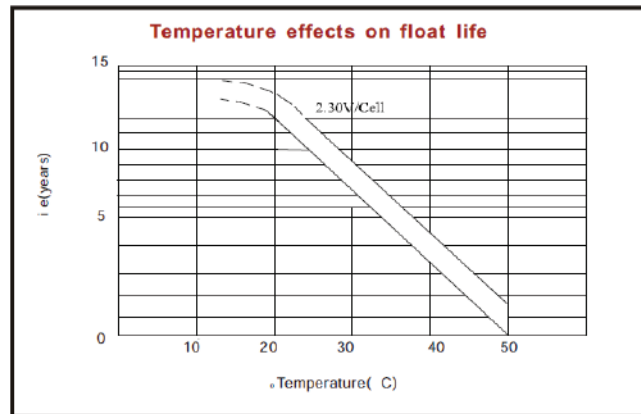
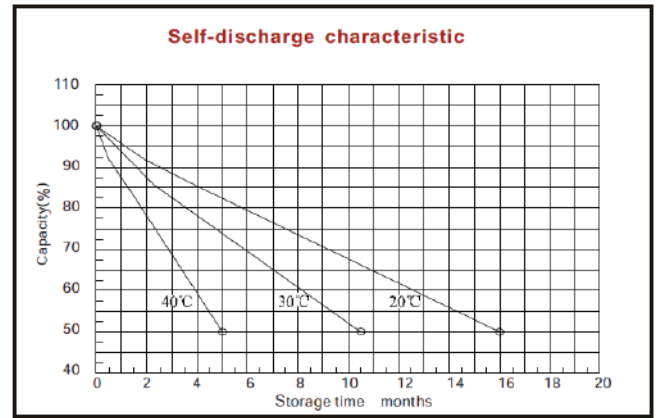
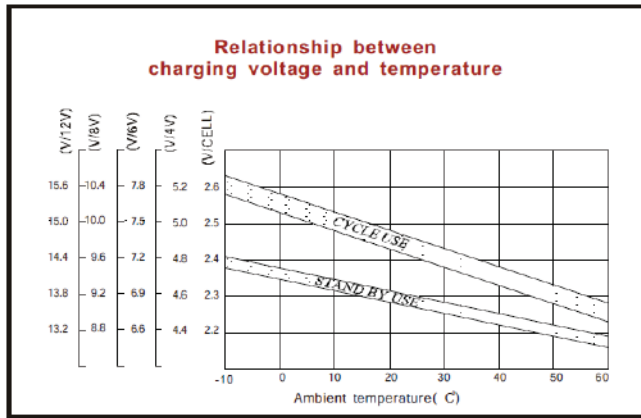
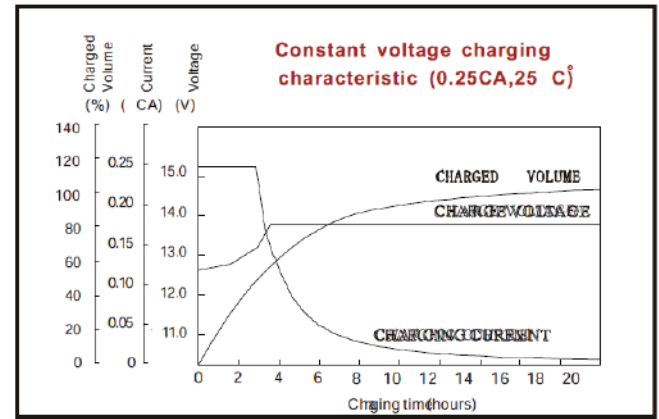
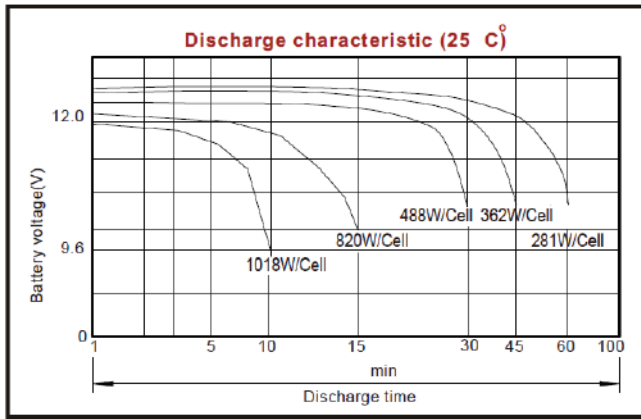
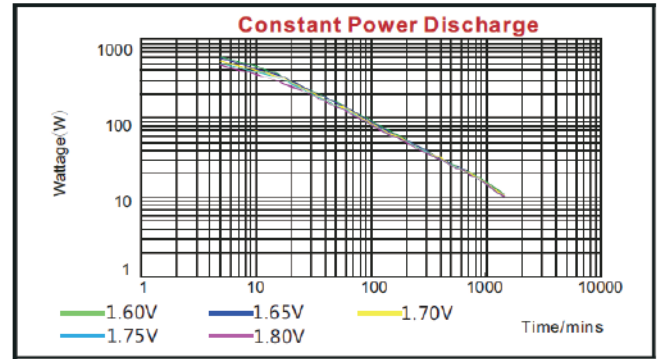
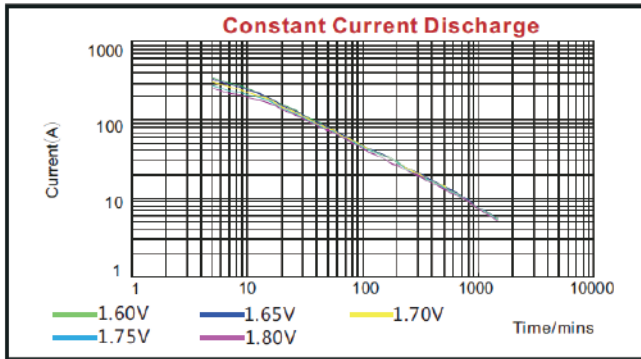
End Voltage Volt/Cell	3min	5min	10min	15min	20min	25min	30min	45min	60min
1.60V	1486	1276	1018	827	683	601	534	394	305
1.65V	1451	1265	997	822	671	584	523	386	299
1.67V	1437	1261	984	820	667	578	519	383	297
1.70V	1402	1200	966	780	645	554	504	373	289
1.75V	1376	1138	907	752	621	531	488	362	281
1.80V	1347	1114	857	680	578	508	463	352	273



ESH 12-820W FR

SMF VRLA RECHARGEABLE BATTERY

**HIGH RATE
LONG
LIFE
SERIES**



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