



**GEL TECHNOLOGY
SG (Solar-GEL) SERIES**

2SG820(2V820AH/120 HR)

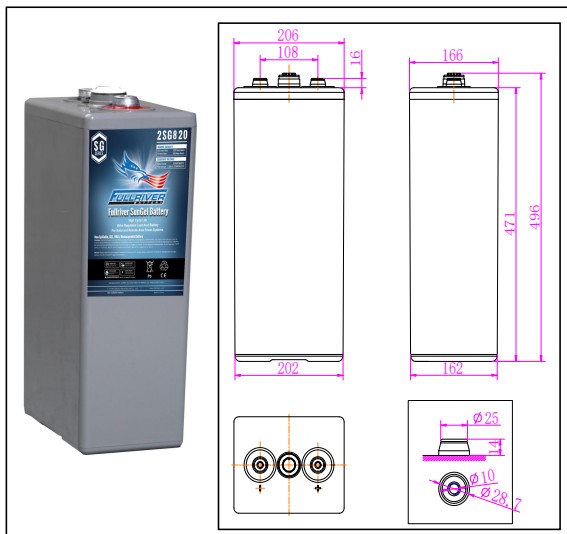


FSG series batteries using revolutionary Solar-GEL long life plate technology has been designed specifically for solar applications. Solar applications are often remotely located and installed in the most extreme environmental conditions. To deliver a reliable service with a long operating life requires a unique blend of physical, structural and chemical characteristics. For this reason FSG series batteries is possibly the world's best solar battery.

General Features

- (1) Superior low current discharge performance.
- (2) Excellent Recovery from deep discharge and good deep discharge cycle capability.
- (3) The battery has a low self-discharge,keep over 60% of the rated capacity after 2years stored under 25°C.
- (4) Compliance with IEC61427 (1999) , AS 4086.1 (1993).

Outer Dimensions



Dimensions and Weight

Total Height..... 496 ±2mm (19.5 inches)
 Height..... 471 ±2mm (18.5 inches)
 Length..... 166 ±2mm (6.5 inches)
 Width..... 206 ±2mm (8.1 inches)
 Weight.....Approx. 38.4 Kg (84.7 lbs)

Performance Characteristics

Nominal Voltage..... 2V
 Nominal of cell..... 1
 Design life..... 20 years
 Nominal Capacity 77°F(25°C)
 120 hour rate to 1.80V..... 836 AH
 100 hour rate to 1.80V..... 787 AH
 20 hour rate to 1.80V..... 560 AH
 10 hour rate to 1.80V..... 531 AH
 Safety vent..... Self resealing 150 mbar
 Self-Discharge
2.5% of capacity declined per month at 25°C (77°F)
 Operating Temperature Range
 Discharge -40°C to 55°C (-40°F-131°F)
 Charge -10°C to 50°C (14°F-122°F)
 Storage -20°C to 40°C (-4°F-104°F)
 Nominal Operating Temperature Range.....25±3°C
 Max.Discharge Current 77°F(25°C)..... 700 A(5S)
 Short Circuit Current..... 4300 A
 Internal Resistance0.40mΩ
 Container Material
ABS, Flame retardant to UL94-HB,UL94-V0 on request
 Terminal.....Threaded insert terminal M10

Charging Methods

Application	Charging method	Charging voltage at 25 °C	Temperature compensation coefficient of charging voltage	Max. charging current	Max. Charging time 25°C (h)	
					100% discharge	50% discharge
For standby power source	Constant voltage & Constant current charging (with current restriction)	2.25~2.275V	-3mV/°C	0.125C10	36	24
For Cycle service		2.40~2.45V	-4mV/°C	0.125C10	24	16

*Temperature compensation of charging voltage is not needed when using the batteries within 5°C to 35°C range.



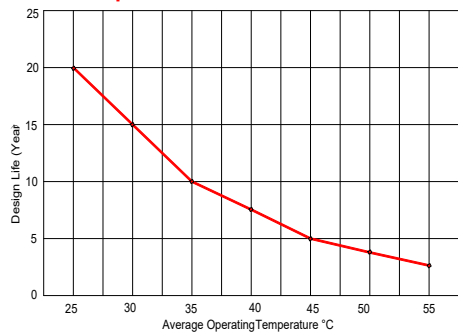
Constant Current Discharge Characteristics: A(25°C)

F.V/Time	1h	2h	3h	5h	8h	10h	12h	24h	48h	72h	100h	120h
1.9	164	132	103	73.8	52.4	45.1	36.6	22.1	12.7	9.13	7.22	6.20
1.87	173	138	111	76.9	53.6	46.1	37.5	22.7	13.0	9.37	7.45	6.44
1.85	195	154	127	85.8	58.7	50.3	39.0	23.6	13.5	9.73	7.75	6.71
1.83	213	158	127	86.3	59.0	50.7	42.7	23.8	13.6	9.85	7.78	6.83
1.8	240	169	132	90.4	61.6	53.1	43.0	24.0	14.0	9.99	7.87	6.97
1.75	278	178	135	90.7	61.9	53.4	---	---	---	---	---	---
1.7	289	186	137	91.3	62.2	53.4	---	---	---	---	---	---
1.65	299	191	141	91.6	62.2	53.4	---	---	---	---	---	---

Constant Power Discharge Characteristics: W/cell(25°C)

F.V/Time	1h	2h	3h	5h	8h	10h	12h	24h	48h	72h	100h	120h
1.9	321	260	203	146.2	104.4	90.6	75.7	42.4	24.5	17.34	13.93	12.08
1.87	352	281	227	158.6	110.9	96.1	76.8	42.9	24.8	17.65	14.38	12.56
1.85	377	297	246	167.9	115.2	99.8	80.2	44.9	26.0	18.27	14.95	13.08
1.83	408	304	246	170.0	116.9	100.5	82.1	46.0	26.6	18.63	15.18	13.32
1.8	456	324	256	172.1	118.7	101.3	83.3	46.3	27.1	19.35	15.28	13.65
1.75	525	340	257	174.3	119.9	103.7	---	---	---	---	---	---
1.7	537	350	261	176.5	120.9	104.6	---	---	---	---	---	---
1.65	554	355	263	177.1	121.2	104.9	---	---	---	---	---	---

Design Life and Temperature



Design life is a measure of rated capacity based on corrosion rate of the positive plate at a specific strength of electrolyte and alloy dimension. This does not relate directly to the expected service life as applications and operating environment can have a bearing on actual service life.
Figure 1: Design Life Vs. Temperature

Capacity and Temperature

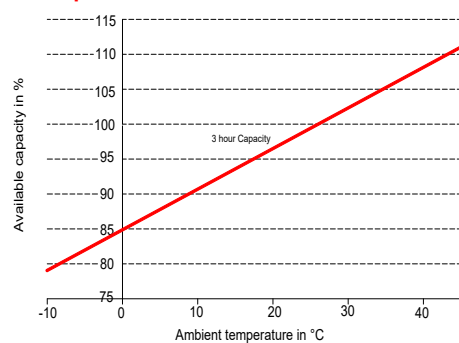


Figure 2: Capacity Vs Ambient temperature

Capacity Retention Characteristic

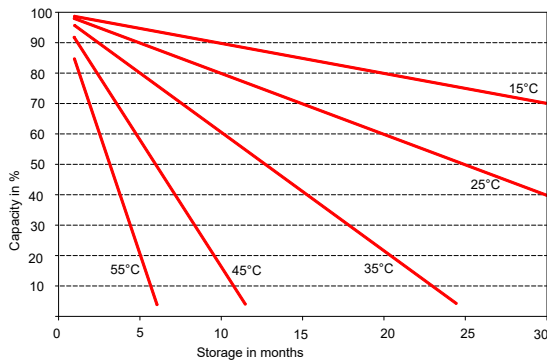


Figure 3. Self-discharge in relation to the storage temperature.

Cycle Service Life

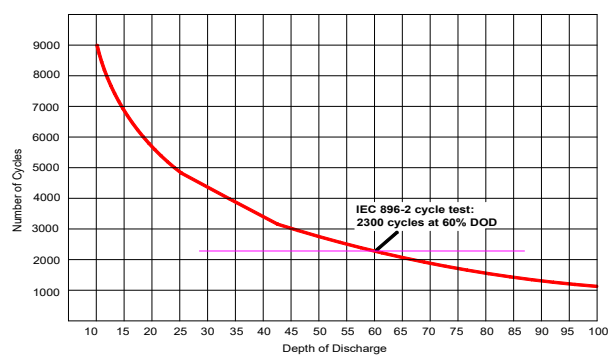


Figure 4. FSG Series, Number of Cycles vs. Depth of Discharge (DOD)

Contact Information

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Other Fullriver battery ranges:

- DC Series : AGM Battery For Deep Cycle service*
- HC Series : AGM Battery For High Cranking service*
- HGXL Series : 2V AGM Stationary batteries*
- HGHL Series : AGM Batteries for High Rate Service*
- FAT Series : Front Access Terminal Batteries for Telecom/IT Applications*
- DCG Series : Gel Battery For Deep Cycle service*
- HGL Series : AGM Battery For General Purpose service*