



Sigma Power Systems

SG12220FP (12V 22.0Ah)

Use this chart to estimate the current for various times and end of discharge of voltages (EDV)

Constant Current Discharge Characteristics: Amp (25°C)

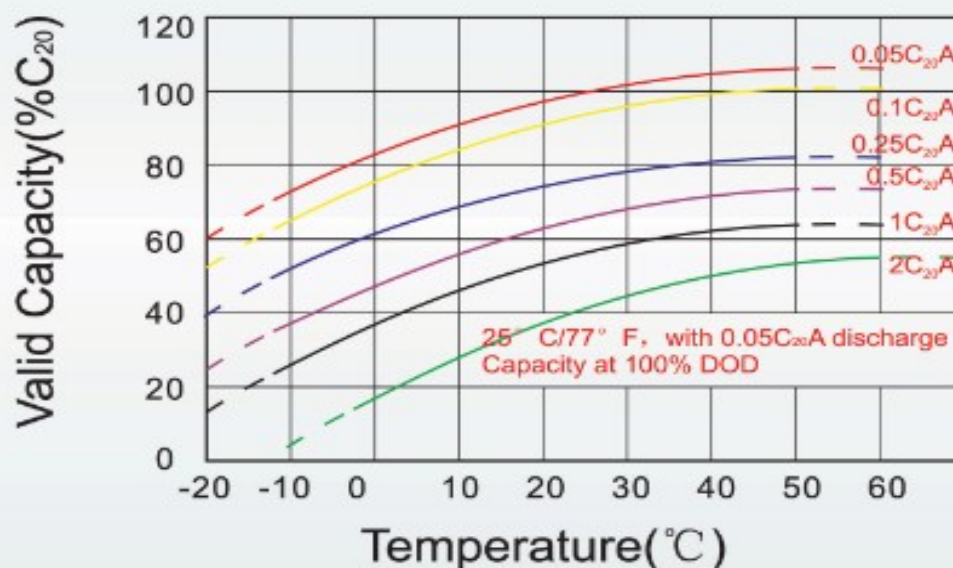
EDV	5 Min.	10 Min.	15 Min.	30 Min.	1 Hr.	2 Hr.	3 Hr.	5 Hr.	8 Hr.	10 Hr.	20 Hr.
9.60 V	81.31	53.32	41.79	23.46	13.94	8.029	5.456	3.726	2.409	2.099	1.222
10.0 V	78.39	51.99	40.45	23.16	13.56	7.867	5.355	3.665	2.400	2.079	1.181
10.2 V	73.78	49.41	39.33	22.81	13.43	7.783	5.307	3.626	2.379	2.049	1.162
10.5 V	66.32	46.20	37.10	22.18	13.17	7.682	5.260	3.583	2.359	2.039	1.130
10.8 V	59.42	43.09	25.00	21.45	12.93	7.619	5.199	3.546	2.350	2.006	1.069
11.1 V	51.99	39.50	32.29	20.63	12.58	7.312	5.097	3.511	2.332	1.977	1.053

Use this chart to estimate the power for various times and end of discharge voltages (EDV)

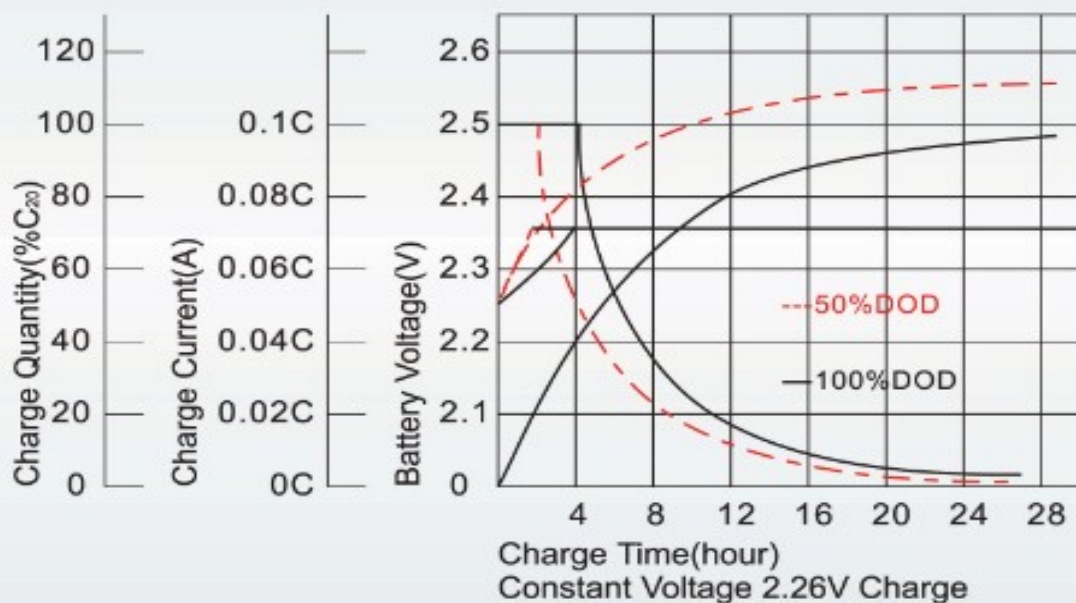
Constant Power Discharge Characteristics: Watt (25°C)

EDV	5 Min.	10 Min.	15 Min.	30 Min.	1 Hr.	2 Hr.	3 Hr.	5 Hr.	8 Hr.	10 Hr.	20 Hr.
9.60 V	855.5	567.1	447.4	268.5	161.9	93.67	63.77	42.92	27.65	23.95	13.95
10.0 V	833.3	555.3	441.0	265.8	159.5	92.86	63.65	42.70	27.55	23.73	13.47
10.2 V	792.6	533.33	435.2	263.5	158.3	92.28	63.41	42.49	27.34	23.50	13.23
10.5 V	723.4	511.4	412.5	258.1	156.2	91.54	63.15	41.79	27.11	23.26	12.87
10.8 V	652.6	478.4	389.7	252.0	153.6	90.78	62.41	41.35	26.99	22.90	12.15
11.1 V	575.5	445.4	367.1	245.1	150.8	87.64	61.19	40.96	26.80	22.56	11.97

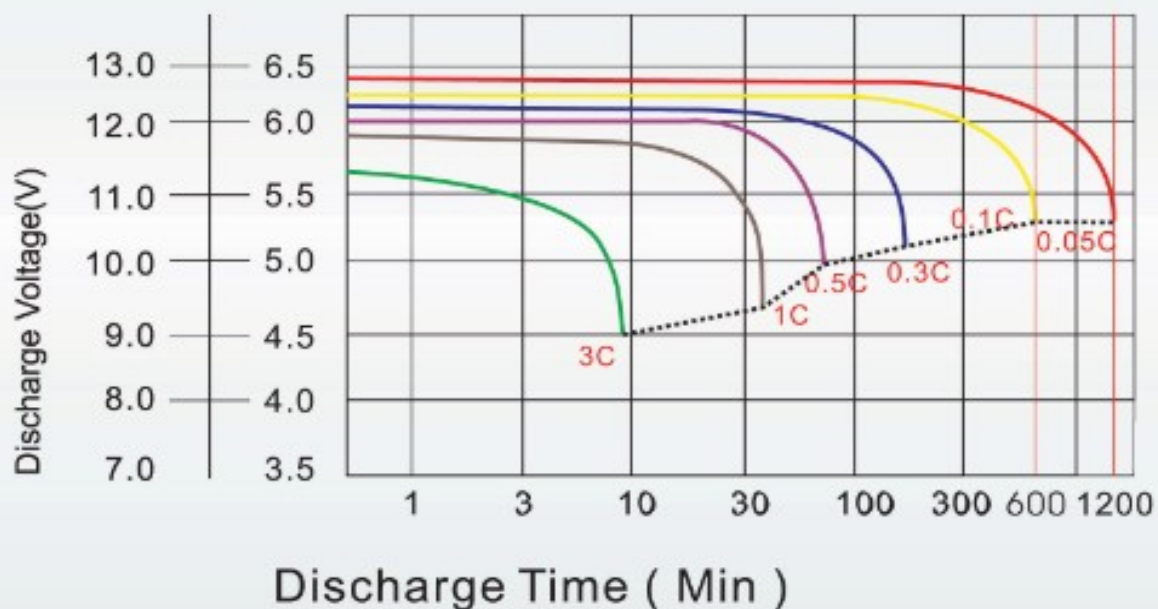
Temperature and Valid Capacity



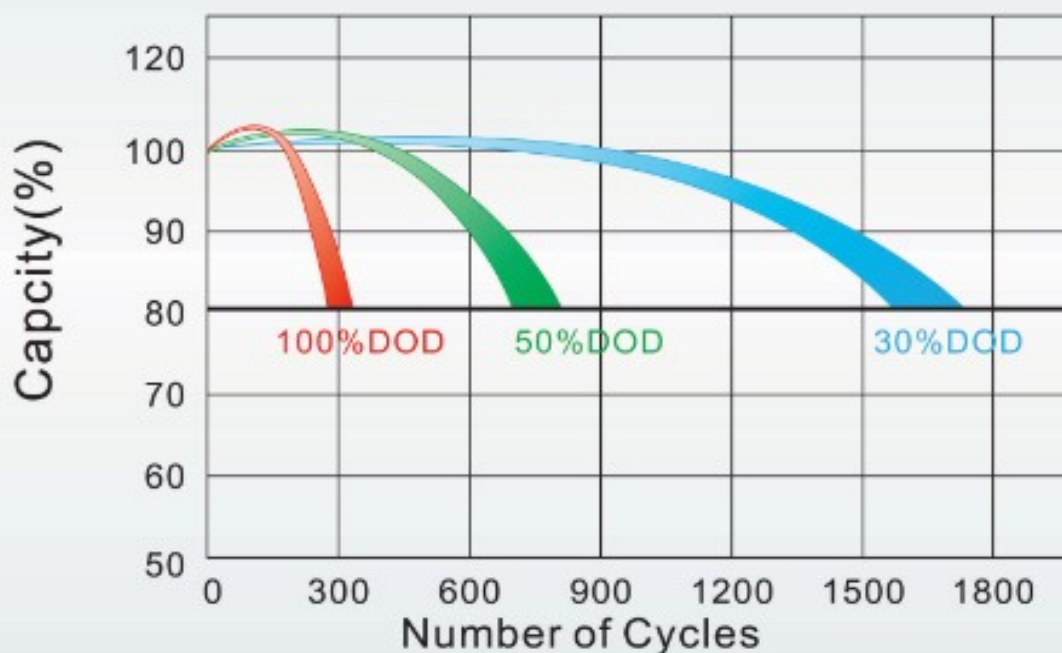
Charge Characteristics for Float Use @ 25°C/77°F



Discharge Characteristics at Various Rates @ 25°C/77°F



Cycle Life in Relation to Depth of Discharge





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Capacity at Different Temperatures

Battery Type		-20°C	-10°C	0°C	5°C	10°C	20°C	25°C	30°C	40°C	45°C
GEL Battery	6V & 12V	50%	70%	83%	85%	90%	98%	100%	102%	104%	105%
	2V	60%	75%	85%	88%	92%	99%	100%	103%	105%	106%
AGM Battery	6V & 12V	46%	66%	76%	83%	90%	98%	100%	103%	107%	109%
	2V	55%	70%	80%	85%	92%	99%	100%	104%	108%	110%

Discharge Current Vs. Discharge Voltage

Final Discharge Voltage V/cell	1.75V	1.70V	1.60V
Discharge Current (A)	$A \leq 0.2C$	$0.2C \leq A \leq 1.0C$	$\geq 1.0C$

Safety & Maintenance Tips

❗ Do not charge the battery in air tight atmosphere.

❗ Do not short the terminals.

❗ Avoid leaving them in hot environment.

❗ Charge the batteries at least once in 6 months when the batteries are at 77°F

❗ Max. charge current 0.3CA, constant voltage 2.4-2.45V/Cell charge 24h

❗ Effect of temperature on float charge voltage: -3mV/Cell.

❗ Life will be reduced by number and depth of discharge.

❗ Do not discharge below the minimum recommended voltage.

❗ Leaving a discharged battery without charge for a long period of time will affect the life of the batteries.

Charging Method

Constant Voltage	$-0.2C \times 2h + 2.4 - 2.45V/\text{cell} \times 24h$, Max. Current 0.3CA
Constant Current	$-0.2C \times 2h + 0.1CA \times 12h$
Fast	$-0.2C \times 2h + 0.3CA \times 4.0h$

General applications – Emergency lights, solar, UPS, Alarm systems, Security systems, wheelchairs, flash lights, toys etc.

Charge the batteries at least once every six months, if they are stored at 25°C

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