
Introduction of New 18650-30Q6



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Energy Business Division

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Specification

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Type		Spec.	30Q Current Ver.	30Q New Ver.
Chemistry			NCA	NCA
Dimension (mm)	Diameter	18.33 ± 0.07	18.33 ± 0.07	←
	Height	64.85 ± 0.15	64.85 ± 0.15	←
Weight (g)		Max. 48.0	46.0	45.7
Initial IR (mΩ AC 1kHz)		≤ 18	11.6 ± 2	11.3 ± 2
Initial IR (mΩ DC (10A-1A))		≤ 30	18.8 ± 2	18.0 ± 2
Nominal Voltage (V)		3.60	3.63	3.65
Charge Method (100mA cut-off)		CC-CV (4.2±0.05V)	CC-CV (4.2±0.05V)	←
Charge Time	Standard (min), 0.5C	180min	137min	134min
	Rapid (min), 4A	80min	73min	67Min
Charge Current	Standard current (A)	1.5	1.5	←
	Max. current (A)	4.0	4.0	←
Discharge	End voltage (V)	2.5	2.5	←
	Max. cont. current (A) (without 80°C T-cut)	15	15	←
	Max. cont. current (A) (with 80°C T-cut)	30	30	←
Rated discharge Capacity	Standard (mAh) (0.2C)	2,950	3,084	3,077
	rated (mAh) (10A)	2,700	3,043	3,029
Schedule	Sample	-	-	Nov. 2019
	MP	-	-	Jan. 2020

▪ New 30Q

Cell	Capacity(Ah)	Energy(Wh)	Avg. volt(V)
1	3.079	11.2	3.64
2	3.077	11.2	3.65
3	3.074	11.2	3.65
Avg.	3.077	11.2	3.65

▪ Current 30Q

Cell	Capacity(Ah)	Energy(Wh)	Avg. volt(V)
1	3.081	11.2	3.63
2	3.084	11.2	3.63
3	3.087	11.2	3.63
Avg.	3.084	11.2	3.63

▪ New 30Q

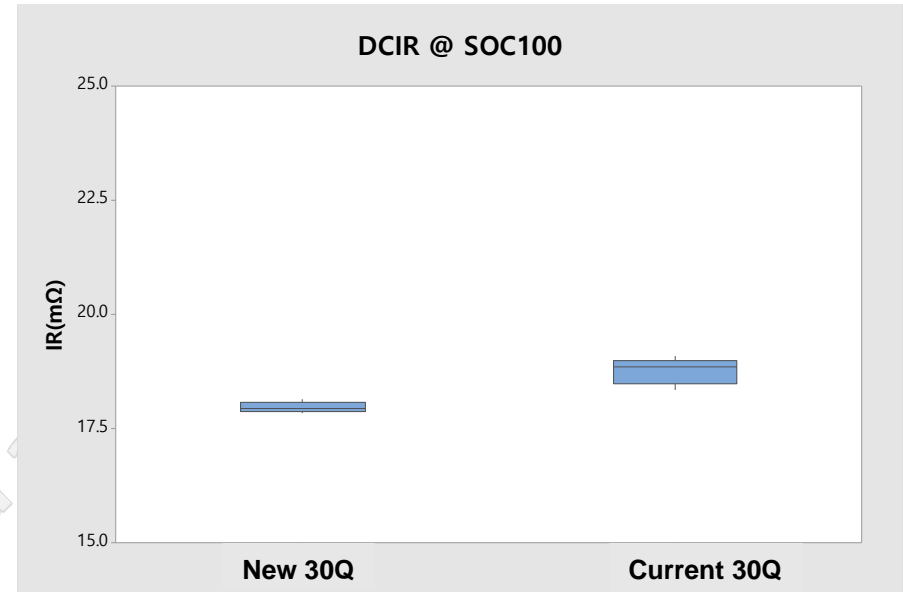
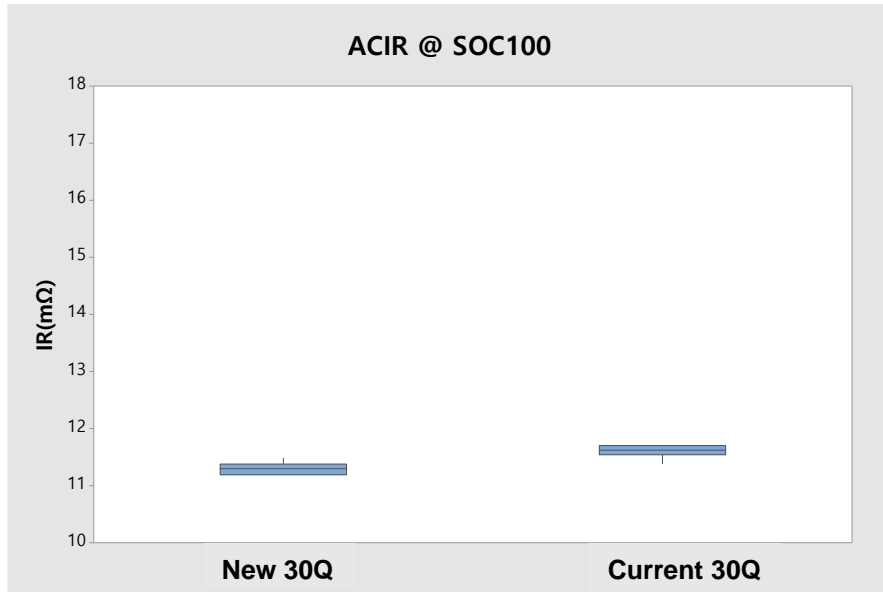
Cell	Capacity(Ah)	Energy(Wh)	Avg. volt(V)
1	3.029	10.3	3.41
2	3.035	10.4	3.41
3	3.024	10.3	3.42
Avg.	3.029	10.3	3.41

▪ Current 30Q

Cell	Capacity(Ah)	Energy(Wh)	Avg. volt(V)
1	3.041	10.4	3.41
2	3.043	10.4	3.41
3	3.045	10.4	3.41
Avg.	3.043	10.4	3.41

AC/DC Impedance

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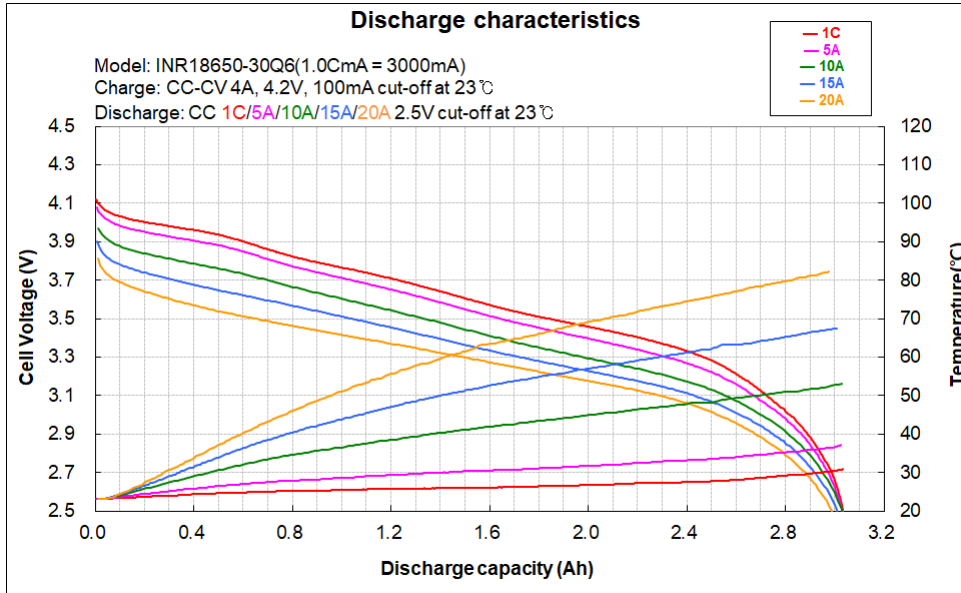
AC-IR	
30Q New Ver.	11.3 ± 2mΩ
30Q Current Ver.	11.6 ± 2mΩ

DC-IR	
30Q New Ver.	18.0 ± 2mΩ
30Q Current Ver.	18.8 ± 2mΩ

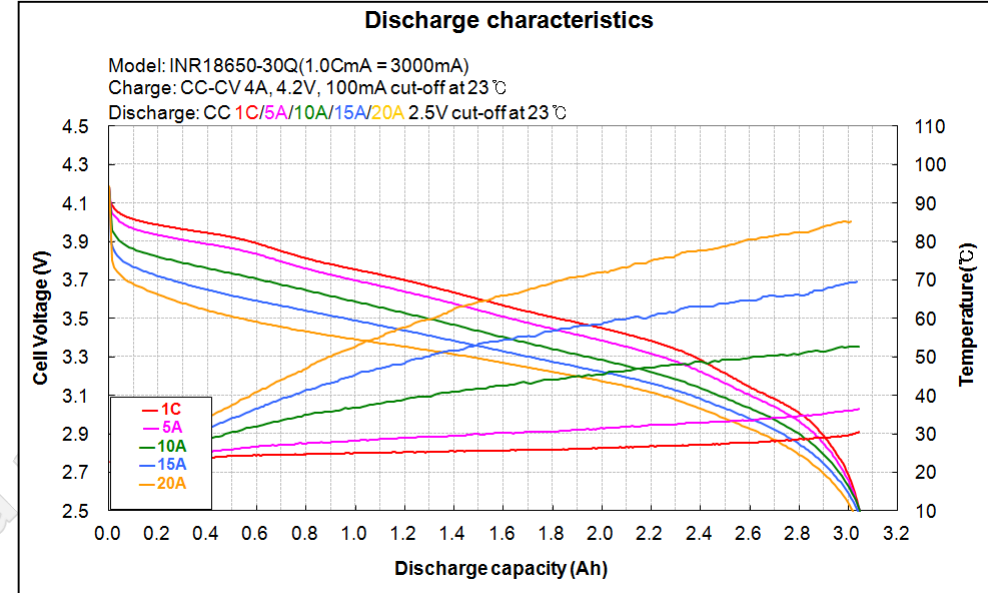
Capacity & Temperature vs. discharge capacity

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▪ New 30Q



▪ Current 30Q



Discharge current

	1C	5A	10A	15A	20A
Capacity (Ah)	3.034	3.032	3.030	3.011	2.988
Temp. (°C)	30.9	37.1	53.0	67.5	82.3
Time (min.)	60.6	36.3	18.1	12.0	8.9

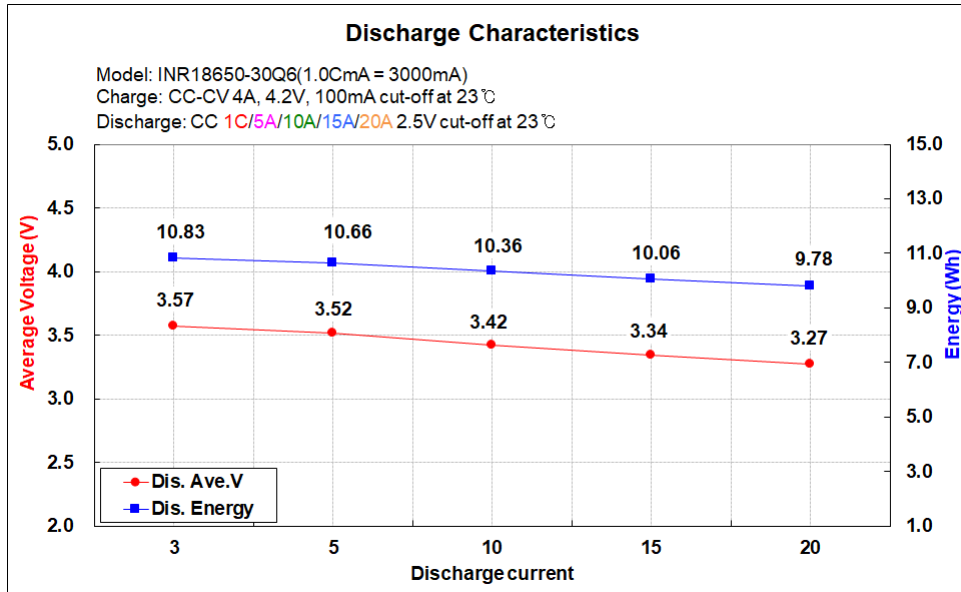
Discharge current

	1C	5A	10A	15A	20A
Capacity (Ah)	3.044	3.045	3.047	3.036	3.018
Temp. (°C)	30.5	36.5	52.8	69.7	85.2
Time (min.)	60.9	36.5	18.3	12.1	9.1

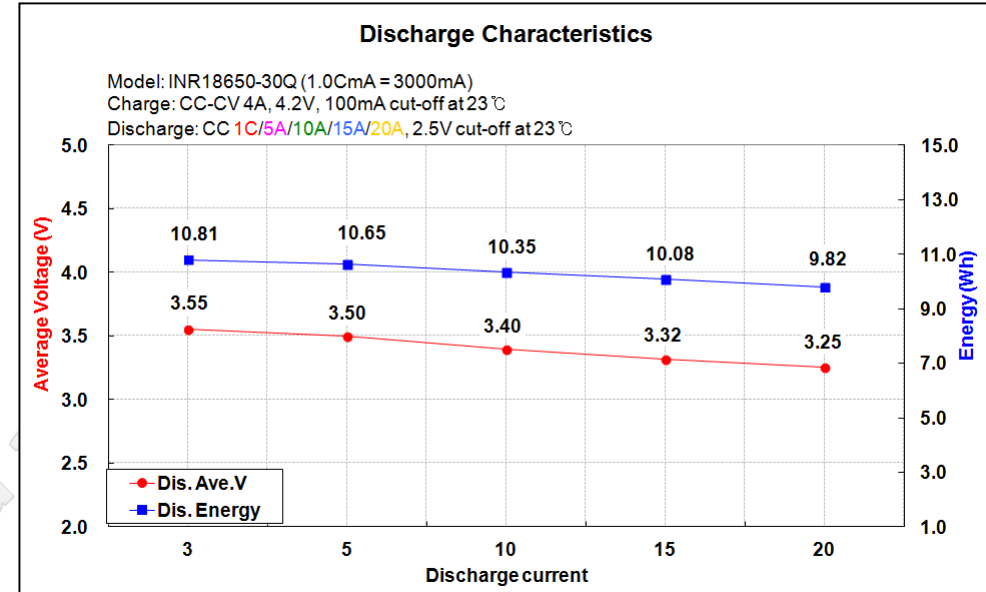
Energy & Avg. voltage at different current

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▪ New 30Q



▪ Current 30Q



Discharge current

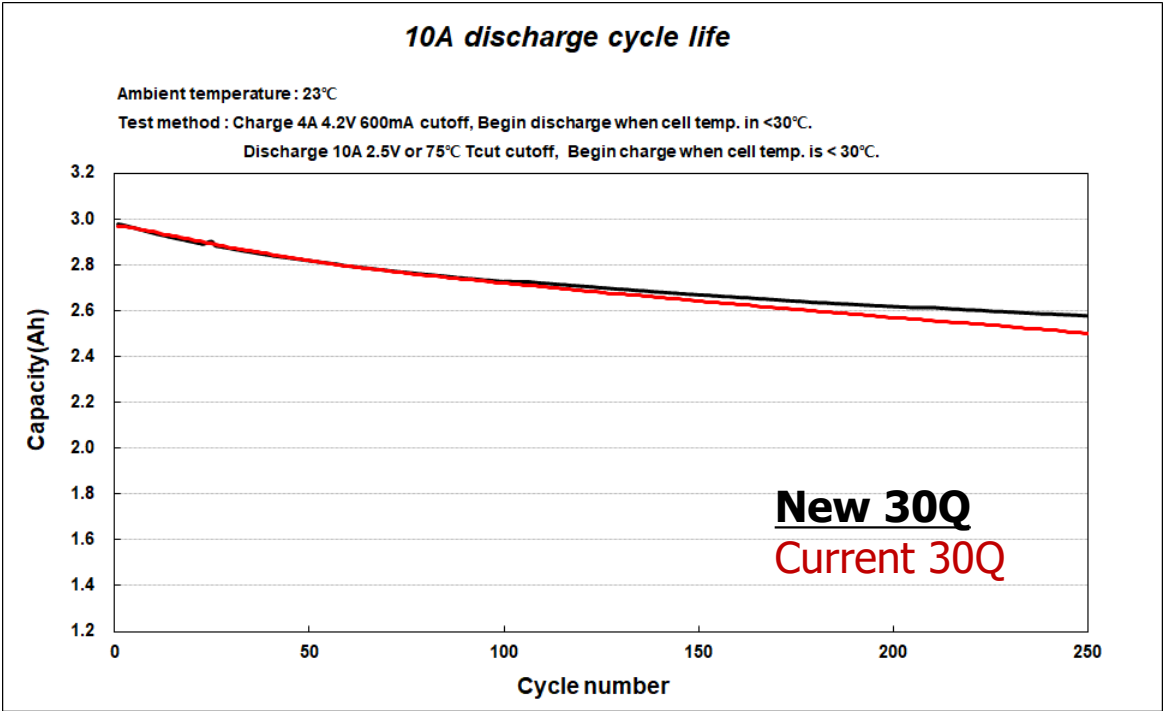
	1C	5A	10A	15A	20A
Energy (Wh)	10.83	10.66	10.36	10.06	9.78
Avg. Voltage (V)	3.57	3.52	3.42	3.34	3.27

Discharge current

	1C	5A	10A	15A	20A
Energy (Wh)	10.81	10.65	10.35	10.08	9.82
Avg. Voltage (V)	3.55	3.50	3.40	3.32	3.25

Cycle life _ 10A cycle

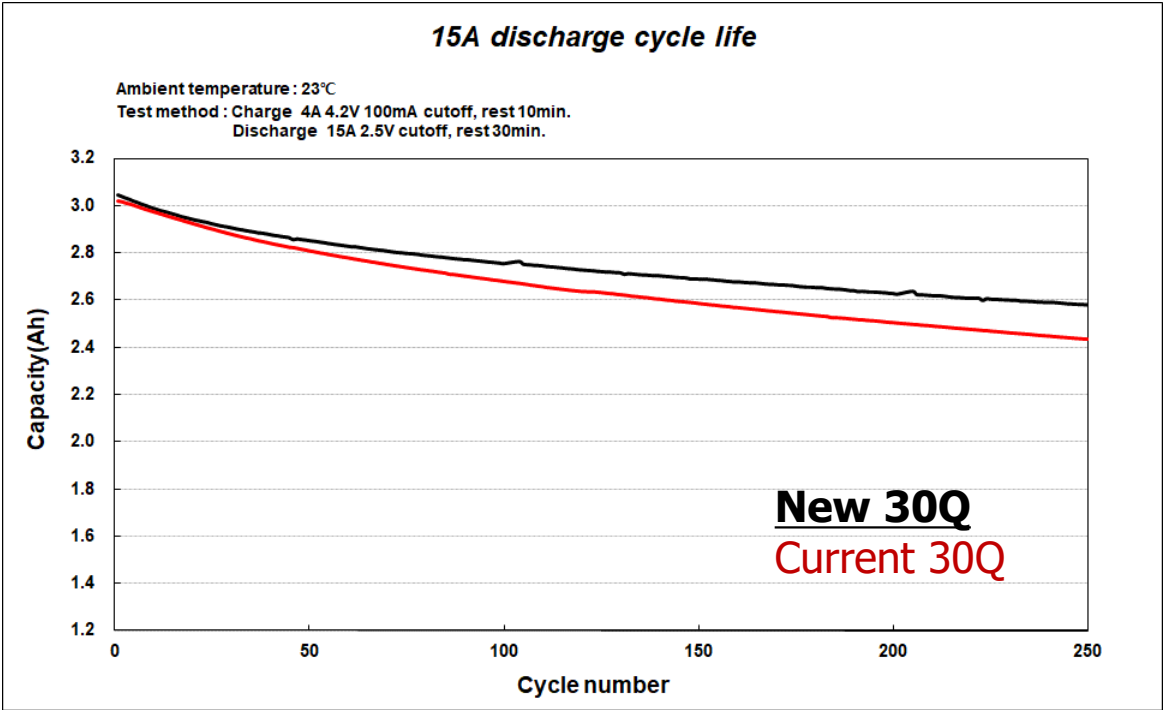
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	New 30Q		Current 30Q	
	Capacity (Ah)	vs. initial (%)	Capacity (Ah)	vs. initial (%)
250cycle	2.579	86.6	2.530	82.7

Cycle life _ 15A cycle

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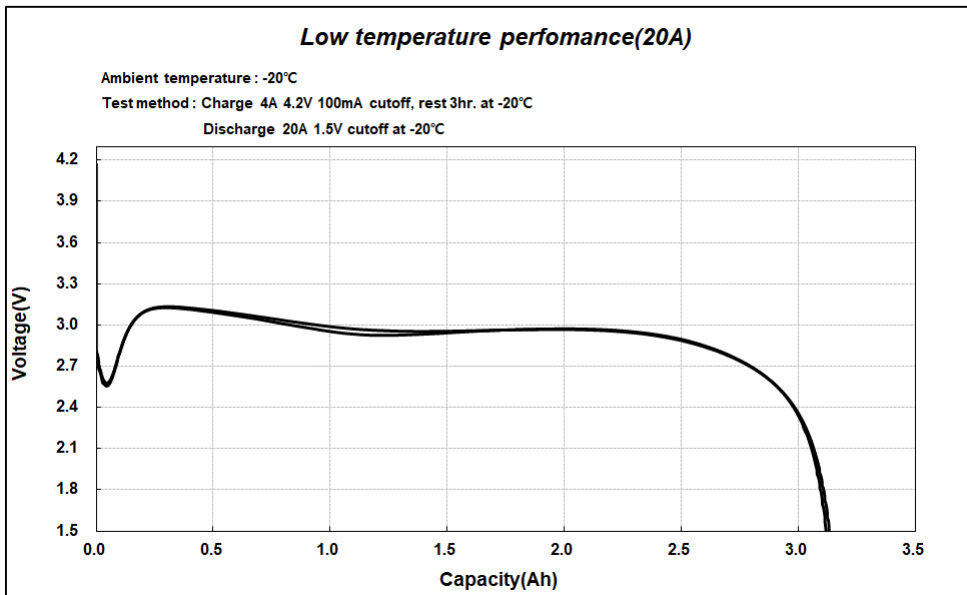


	New 30Q		Current 30Q	
	Capacity (Ah)	vs. initial (%)	Capacity (Ah)	vs. initial (%)
250cycle	2.580	84.7	2.435	80.7

Low temperature discharge (20A)

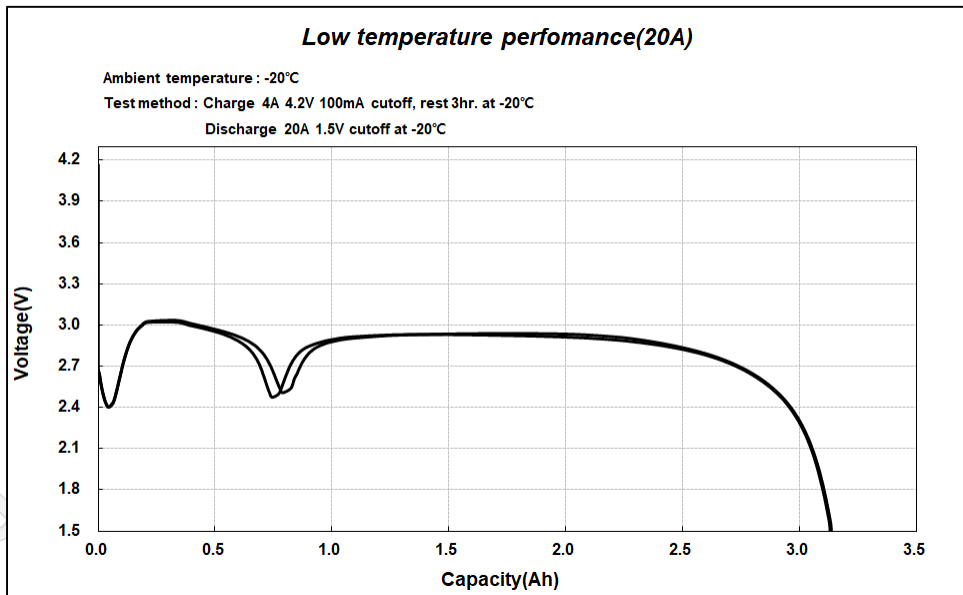
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▪ New 30Q



-20 °C		
	Capacity (Ah)	vs. R/T (%)
20A	3.132	△ 4.4
	3.119	△ 4.0
Avg.	3.125	△ 4.2

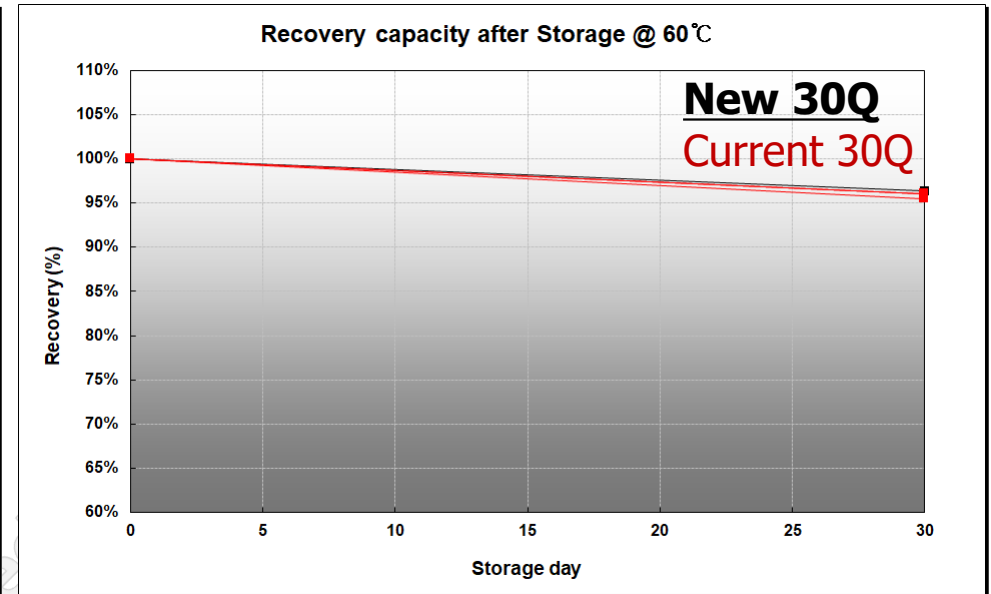
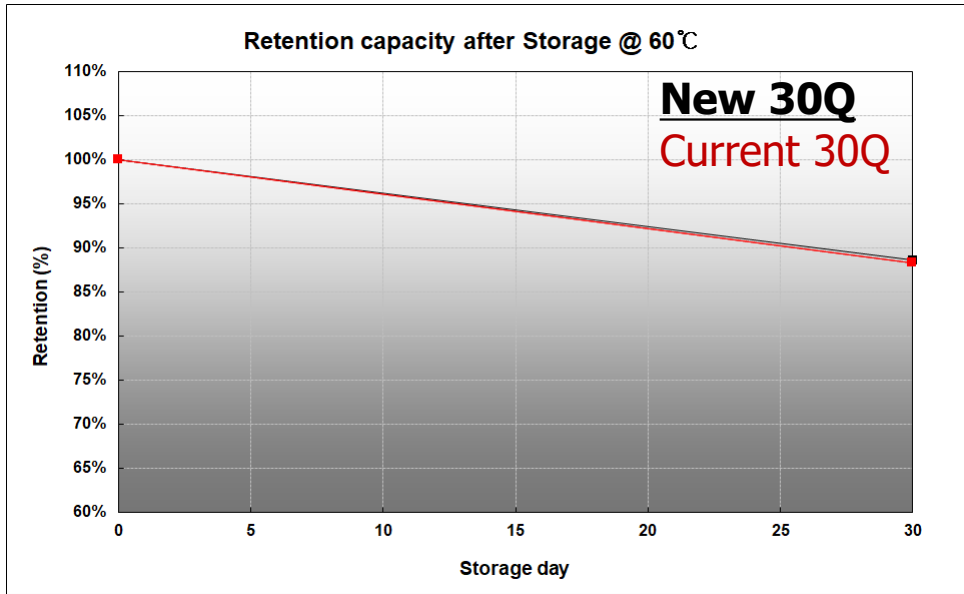
▪ Current 30Q



-20 °C		
	Capacity (Ah)	vs. R/T (%)
20A	3.136	△ 4.5
	3.131	△ 4.4
Avg.	3.133	△ 4.5

Storage at 60°C_Retention/Recovery

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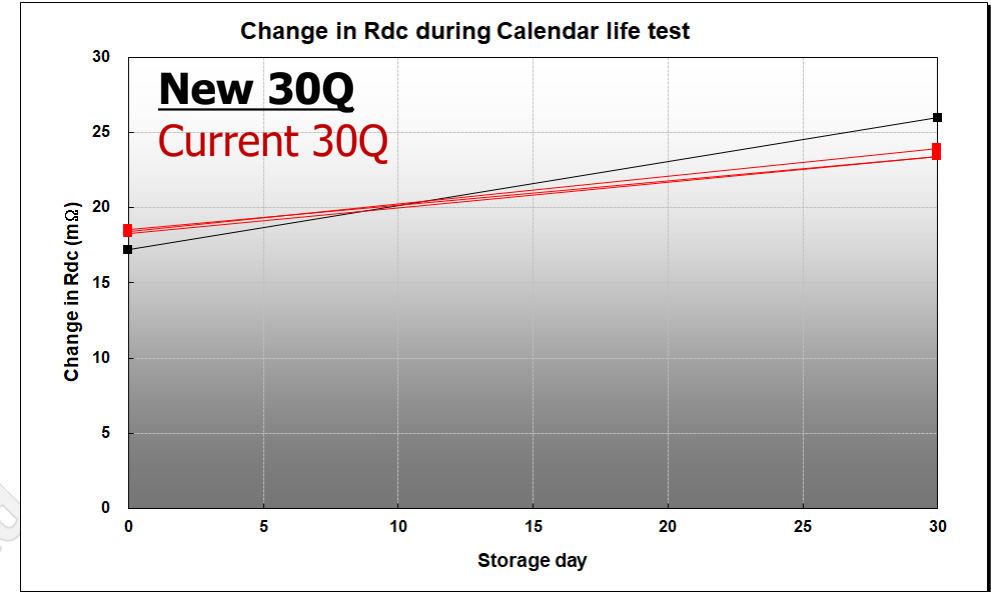
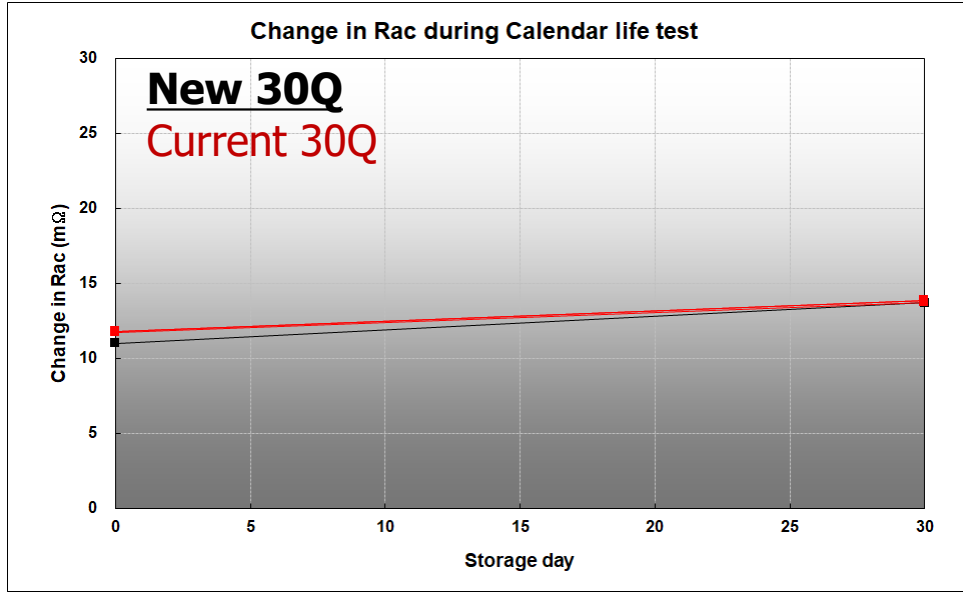


Storage at 60°C _ 30days

Model	initial			after storage			Ratio(%)		
	ACIR	DCIR	Capacity	ACIR	DCIR	Recovery	ACIR	DCIR	Recovery
New 30Q	11.0	17.2	3,030	13.7	26.0	2,920	△ 24.5	△ 50.9	▽ 3.6
Current 30Q	11.8	18.4	3,042	13.8	23.6	2,921	△ 17.7	△ 28.3	▽ 3.9

Storage at 60°C_ACIR/DCIR

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Storage at 60°C _ 30days

Model	initial			after storage			Ratio(%)		
	ACIR	DCIR	Capacity	ACIR	DCIR	Recovery	ACIR	DCIR	Recovery
New 30Q	11.0	17.2	3,030	13.7	26.0	2,920	△ 24.5	△ 50.9	▽ 3.6
Current 30Q	11.8	18.4	3,042	13.8	23.6	2,921	△ 17.7	△ 28.3	▽ 3.9

Safety test _ Summary

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	Test item		Spec.	Results		OK / NG
				Results	Max. temp.	
Electrical Abuse	Overcharge	12A 4.6V	L1	3L0	73	OK
	Short circuit	10mΩ at 23°C	L1	2L0, 1L1	131	OK
		80mΩ at 23°C (UL)	L1	3L1	100	OK
		80mΩ at 60°C (UL)	L1	3L1	133	OK
Mechanical Abuse	Impact	UL	L1	5L0	23.3	OK
	Crush	UL	L1	5L1	22.9	OK
Thermal Abuse	Hot oven	130°C (UL)	-	3L1	136	OK

Level 0

•No change

Level 1

•Leak

Level 2

•Smoke, < 200°C

Level 3

•Smoke, > 200°C

Level 4

•Fire

Level 5

•Explosion

- Thank you -

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