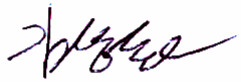
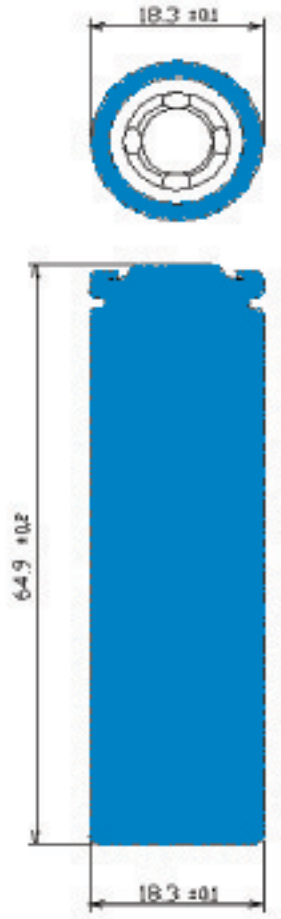
Prepared	Document No	Date
LGC/MEC/BTC Kim, Byung Sup	LRB-TI-ICY220-S3-070312	2007-03-12
Approved	**Description**	
LGC/MEC/BTC Ku, Cha Hun	Technical Information of ICR18650 S3 (2200mAh)	

TECHNICAL INFORMATION
of ICR18650 S3 (2200mAh)

Prepared	Approved
Kim, Byung Sup	Ku, Cha Hun
	
Date : 2007.03.12	Date : 2007.03.12

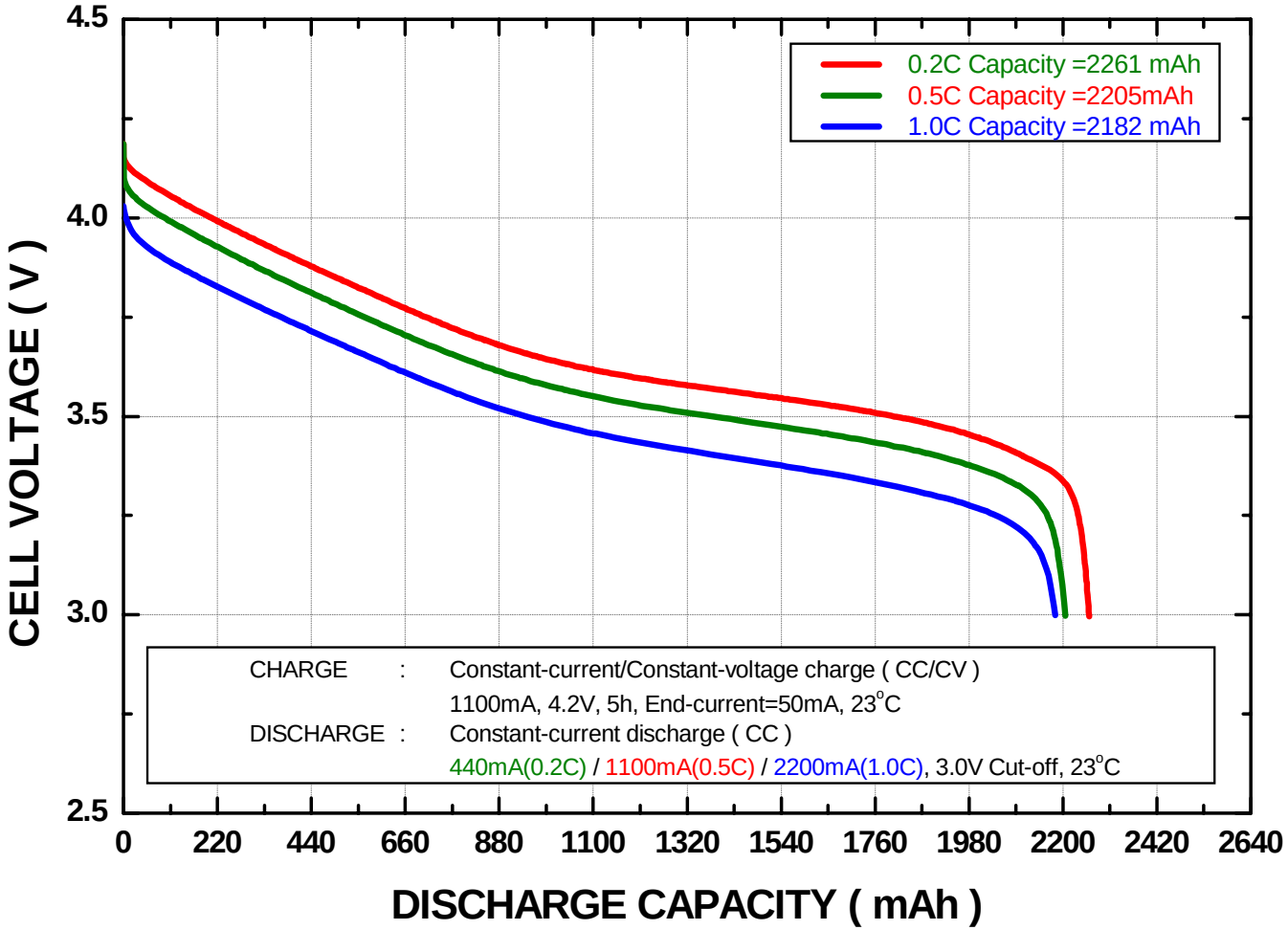
Li-Ion RECARGABLE

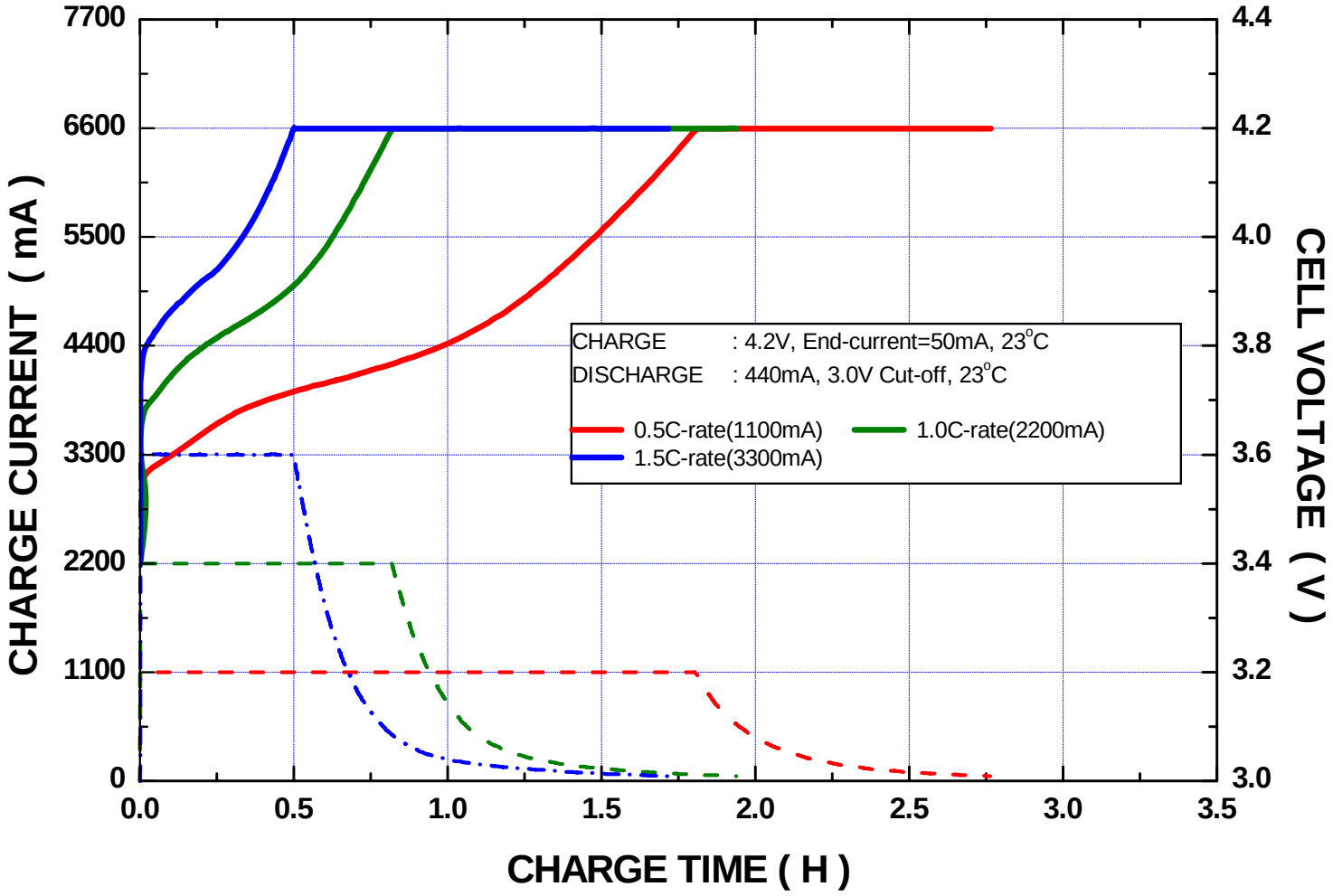


Model ICR18650 S3		
0.2C Capacity *	Nominal	2200 mAh
	Minimum	2150 mAh
0.5C Capacity	Average	2210 mAh
Dimensions	Diameter	Max. 18.4 mm
	Height	Max. 65.1 mm
Weight (Typical)		43.5grams
Nominal Voltage		3.6V
Internal Impedance		≤ 80 mOhm
Cycle Performance **		≥ 80% of initial capacity at 300 cycles

* ***Charge : 1100mA, 4.2V, 50mA End-current (CC-CV)***
Discharge : 440mAh, 3.0V cut-off
** ***0.5C-0.5C Cycling***

LG Chem


0.2C Capacity =2261 mAh
0.5C Capacity =2205mAh
1.0C Capacity =2182 mAh
CELL VOLTAGE (V)
4.5
4.0
3.5
3.0
2.5
0
220
440
660
880
1100
1320
1540
1760
1980
2200
2420
2640
DISCHARGE CAPACITY (mAh)
CHARGE : Constant-current/Constant-voltage charge (CC/CV)
1100mA, 4.2V, 5h, End-current=50mA, 23°C
DISCHARGE : Constant-current discharge (CC)
440mA(0.2C) / 1100mA(0.5C) / 2200mA(1.0C), 3.0V Cut-off, 23°C


CHARGE CURRENT (mA)
CELL VOLTAGE (V)
CHARGE TIME (H)
7700
6600
5500
4400
3300
2200
1100
0
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
CHARGE : 4.2V, End-current=50mA, 23°C
DISCHARGE : 440mA, 3.0V Cut-off, 23°C
0.5C-rate(1100mA)
1.0C-rate(2200mA)
1.5C-rate(3300mA)

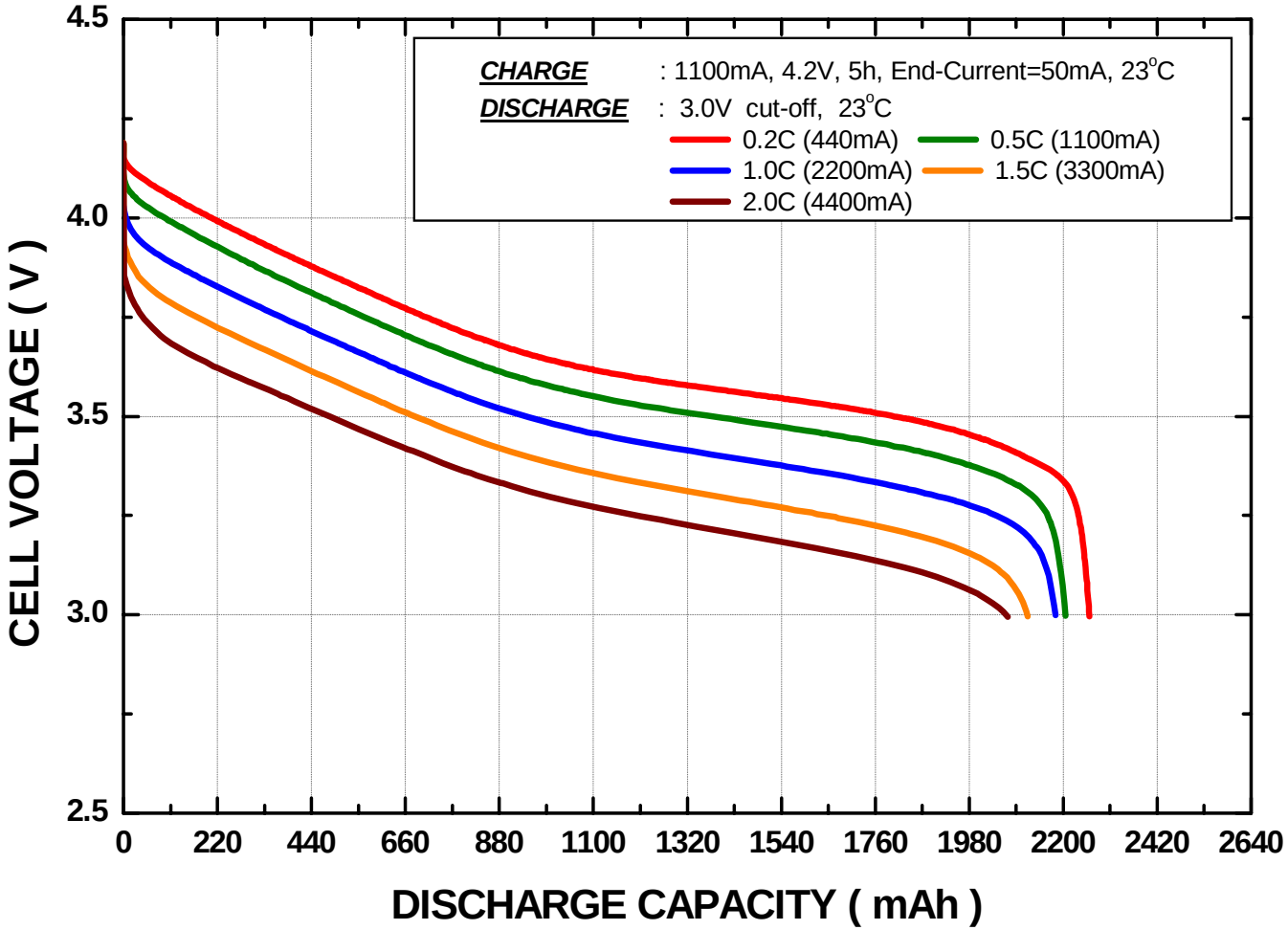
Discharge Characteristics

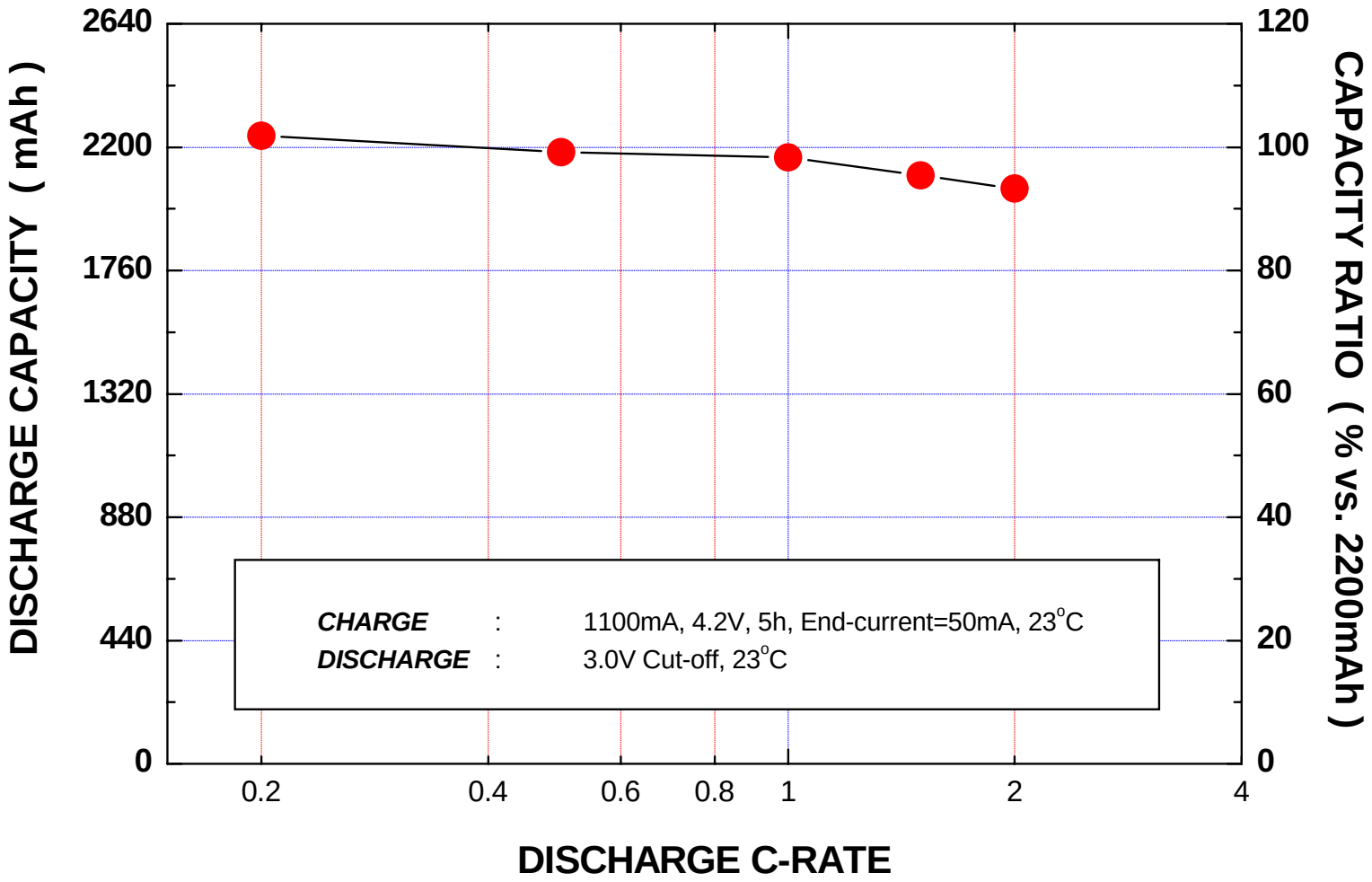
		0.2C	0.5C	1.0C	1.5C	2.0C
Capacity	mAh	2261	2205	2182	2117	2070
	%	100	97.5	96.5	93.6	91.6

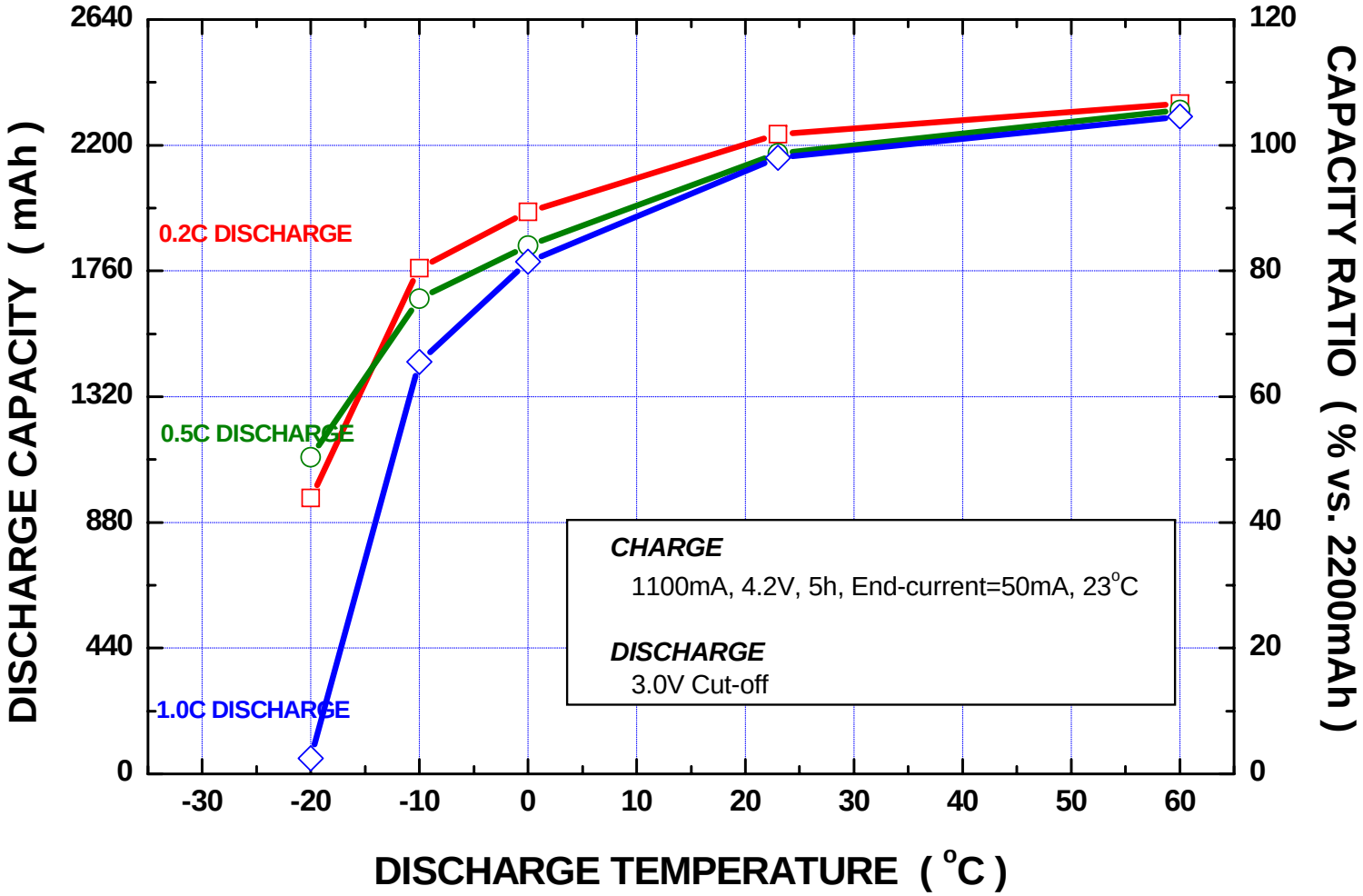
Discharge Temperature Characteristics

	Discharge Capacity					
	0.2C		0.5C		1.0C	
	mAh	%	mAh	%	mAh	%
-20ºC	988	43.7	1141	50.5	79.5	3.5
-10ºC	1792	79.3	1696	75.0	1466	64.8
0ºC	1988	87.9	1882	83.2	1817	80.4
23ºC	2261	100	2205	97.5	2182	96.5
60ºC	2368	105	2357	104	2326	103

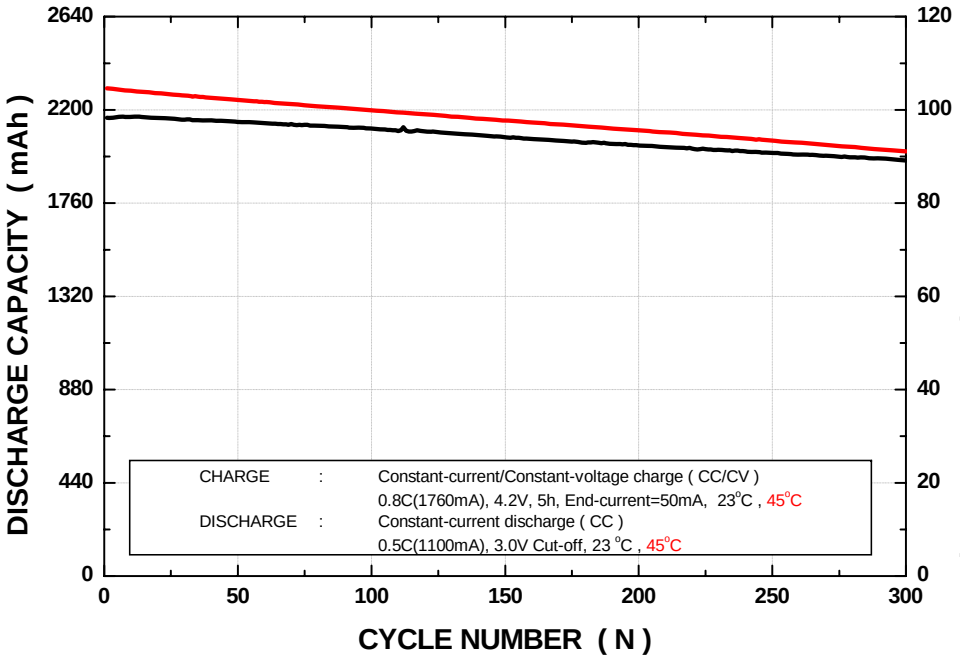
*** All ratio's are calculated vs. 0.2C discharge capacity at 23ºC.**


CHARGE : 1100mA, 4.2V, 5h, End-Current=50mA, 23°C
DISCHARGE : 3.0V cut-off, 23°C
0.2C (440mA)
0.5C (1100mA)
1.0C (2200mA)
1.5C (3300mA)
2.0C (4400mA)
CELL VOLTAGE (V)
4.5
4.0
3.5
3.0
2.5
0
220
440
660
880
1100
1320
1540
1760
1980
2200
2420
2640
DISCHARGE CAPACITY (mAh)


DISCHARGE CAPACITY (mAh)
2640
2200
1760
1320
880
440
0
CAPACITY RATIO (% vs. 2200mAh)
120
100
80
60
40
20
0
0.2
0.4
0.6
0.8
1
2
4
DISCHARGE C-RATE
CHARGE : 1100mA, 4.2V, 5h, End-current=50mA, 23°C
DISCHARGE : 3.0V Cut-off, 23°C


DISCHARGE CAPACITY (mAh)
CAPACITY RATIO (% vs. 2200mAh)
DISCHARGE TEMPERATURE (°C)
2640
2200
1760
1320
880
440
0
120
100
80
60
40
20
0
-30
-20
-10
0
10
20
30
40
50
60
0.2C DISCHARGE
0.5C DISCHARGE
1.0C DISCHARGE
CHARGE
1100mA, 4.2V, 5h, End-current=50mA, 23°C
DISCHARGE
3.0V Cut-off

vs. Capacity (mAh)



vs. Energy (Wh)