Confidential 1/13 Specifications of Lithium Ion battery (Cylindrical Type) Title page 1. Publication Record No. Date Class **Items** Dft. K. Nishimura Chk. 2013/6/27 (0)(Draft) Chk. App. R. Gomimoto R. Domint Dft. Chk. K. Nishimura & Nishimure 2014/1/15 Issue (a) Chk. T. Muto App. A, Watanabe Dft. Chk. Chk. App. Dft. Chk. Chk. App. Dft. Chk. Chk. App. *Key to Class abbreviations: A for Added, D for Deleted, R for Revised Portable Rechargeable Battery Business Division, NCR18650-311 File No. SANYO Electric Co., Ltd.

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2. Safety Instructions

Prohibited Actions

The cell contains flammable objects such as organic solvents. If the battery is mishandled, it may cause fire, smoke or an explosion and the battery's functionality will be seriously damaged. Please read and check the following prohibited actions. Also, please equip a protection in the application so the application troubles don't affect the battery. Additionally, SANYO highly recommends embedding these instructions into the owner's manual.

! Danger

Immersion

"Do not immerse the battery with liquid such as water, sea water or soda."

The battery or the battery pack (including protection circuit) may catch on fire, smoke, explode, or cause heat generation by unexpected electrical load.

High Temperature

"Do not use or place the battery near fire, a heater or a high temperatures (more than $80\,\mathrm{C}$)."

The battery's polyolefin separator may get damaged from the heat and could cause an internal short circuit. This may cause the battery to catch on fire, smoke, explode, or cause heat generation.

Charger and Charge Condition

"Do not use unauthorized chargers."

If the battery is charged under unacceptable conditions (For example: usage in restricted temperature ranges, over voltage, or over current with unauthorized chargers) the battery may catch on fire, smoke, explode, or cause heat generation.

Reverse Polarity

"Do not force a reverse-charge or a reverse-connection."

The battery has correct polarity. If the battery doesn't fit, please check the battery's orientation and do not force into the battery mount. If the battery is forced to set with a different polarity, the battery may catch on fire, smoke, explode, or cause heat generation.

Direct Connection

"Do not connect the battery with AC plug (outlet) or car plugs."

The battery requires a specific charger. If the battery connects with the outlet directly, the battery may catch on fire, smoke, explode, or cause heat generation.

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• Inappropriate Use with Other Equipment

"Do not adapt the battery to unspecified applications. "

If the battery is used for unspecified applications or systems, the battery may get damaged or catch on fire, smoke, explode, or cause heat generation.

Incineration and Heat

"Please keep the battery away from heat and fire"

The battery materials will get damaged and may catch on fire, smoke, explode, or cause heat generation.

Short-Circuit

"Do not make a short-circuit."

Do not connect the + and - terminals with conductive material. Do not carry or store the battery with metal objects (such as wire, necklace or hairpins). If the battery is in a short-circuit, excessive large current will flow and may catch on fire, smoke, explode, or cause heat generation.

Impact

" Avoid unnecessary impact to the battery"

Unnecessary impact may cause the battery to leak, heat generation, smoke, fire or explode. Also, the protection circuit may break and that will lose the function of the battery's protection system.

Penetration

" Do not penetrate with a nail or strike with a hammer"

The battery cell may get destroyed or damaged. And the battery's protection circuit may get damaged and case an internal short-circuit. Additionally, the battery may catch on fire, smoke, explode, or cause heat generation.

Soldering

"Do not directly solder the battery"

The insulator could melt or the gas release vent might get damaged from the heat. Additionally, the battery may catch on fire, smoke, explode, or cause heat generation.

Disassemble and Reconstruction

"Do not disassemble the battery"

If the protection circuit gets damaged, the battery will not be protected. Then, the battery may catch on fire, smoke, explode, or cause heat generation.

Charge near High Temperatures

"Do not charge the battery near high temperatures"

If the battery is charged near high temperatures, the battery may not be able to charge due to the activation of the protection circuit. In these conditions, the protection circuit may break and the battery may catch on fire, smoke, explode, or cause heat generation.

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! Warning

Inaestion

"Keep away from infants"

The battery should be kept away from infants. In case of swallowing the battery, see a doctor immediately.

Storing

"Do not put the battery in the microwave or other cooking appliances"

The battery may on fire, smoke, explode, or cause heat generation due to heat or the electrical impact from the microwave.

Mixed Use

"Do not mix the battery with other batteries."

The battery should not be used with other batteries with different capacity, chemistry or manufacturer. Do not connect with other batteries or mix with other batteries. The battery may catch on fire, smoke, explode, or cause heat generation.

Rust, Changing Color and Deformities

"Do not use abnormal batteries."

Please stop using the battery if there are noticeable abnormalities such as abnormal smell, heat, deformities, or discoloration. The battery may have a defect and may catch fire, smoke, heat generation or explode if used continuously.

Charging Time

" Stop charging if the charging process cannot be finished."

If the battery can not finish the charging process within the specified time, please stop the charging process. The battery may catch on fire, smoke, explode, or cause heat generation.

Leakage(1)

"Do not use a leaking battery near flames"

If the battery or liquid leaking from the battery has a pungent odor, the battery should keep away from flames. The battery may ignite and explode.

Leakage②

"Do not touch a leaking battery"

If the liquid leaking from the battery gets into eyes, it will cause significant damage. If the leaking liquid gets into your eyes, please flush eyes immediately with pure water. Please consult a physician immediately. If the liquid remains in the eyes it will cause significant damage.

Transport

" Pack the battery tightly during transport"

To prevent short-circuit or damages, please tightly pack the battery into a case or a carton box.

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! Caution

Use under Direct Sunlight

Do not use or leave the battery in excessive heat such as in a car in direct sunlight. The battery may catch on fire, smoke, explode, or cause heat generation. Also, it might cause a deterioration of battery's characteristics and battery life.

Static Electricity

Title

The battery pack has a protection circuit. Do not use the battery where it generates static electricity (more than 100V) that might damage the protection circuit. If the protection circuit is broken, the battery may catch on fire, smoke, explode, or cause heat generation.

Charging Temperature Range

Charging temperature range is regulated between 10°C and 45°C. Do not charge the battery out of the specified temperature range. Otherwise, it may cause heat generation, leakage or a serious damage. Also, it might cause deterioration of the battery's characteristics and battery life.

Manual

Please read the manual before usage. Please save the manual for future reference.

Charging Method

Please read the charger's manual for the charging method.

First Time Use

Please contact the supplier If the battery has unusual odor, heat generation or rusts during the first usage.

Use by Children

Parents must explain how to use the system and the battery. Please check back periodically to ensure children are using the system and the battery correctly.

Inflammable Materials

Please keep away from flammable materials during the charge and the discharge. It may catch on fire, smoke, explode, or cause heat generation.

Leakage

If electrolyte leak from the battery and adhere to the skin or clothes, immediately flush it with water. Otherwise, it may cause skin irritation.

Insulation

If lead wires or metal objects come out from the battery, please seal and insulate them completely. Otherwise, the battery may cause a short circuit and catch on fire, smoke, explode, or cause heat generation.

Recycle

Please recycle the battery according to local rules or regulations after use.

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3. Extent of the Application

This specification is applied to Lithium Ion Battery of NCR18650B-H05LA for Booster with Porta Power (HK) Limited.

For special applications in which quality and reliability are required, or if the failure or malfunction of the products may directly jeopardize life or cause threat of personal injury such as for weapon, aircraft and aerospace equipment, aircraft electronics equipment, medical equipment (a part of class 2 equipment, class 3 or more equipment), or cause large-scale system troubles, explosion-proof equipment, hybrid electric vehicle, and electric motor cycle (except electric power-assisted bicycle), this specification shall not be applied.

4. Battery Classification and Product Code and Model Name

4.1 Battery Classification
4.2 Product Code
4.3 Model No.
4.3 Cell Type
Lithium Ion Battery
BJ-A300123AA
NCR18650B-H05LA
NCR18650BE

This model is not controlled under Wassenaar Arrangement because of the relaxation for criterion. However, some of the countries have not amended the laws and/or regulations. Please make sure to confirm with the governmental authorities of the relevant countries for further detail.

5. Nominal Specifications

Items				Specifications	Notes	
5.1	Rated Capacity		3000mAh	0.606A discharge at 20°C		
			Minimum 3030mAh		0.606A discharge at 25°C	
5.2	Capacity		Typical	3180mAh	Reference only 0.606A discharge at 25°C	
5.3	.3 Nominal Voltage			3.6V	0.606A discharge at 25°C	
5.4	5.4 Discharging End Voltage			2.5V		
5.5	Charging Current (Std.)			0.909A		
5.6	6 Charging Voltage			4.20 ± 0.03V		
5.7	.7 Charging Time (Std.)			5.0 hours		
5.8	5.8 Continuous Discharging Current (Max.)**1			3.636A	0 ~ +40°C	
5.9	5.9 Internal Resistance			less than 40mΩ	AC Impedance 1 kHz	
5.10	5.10 Weight			less than 48.5g		
- 44	O	4	Charge	+10 ~ +45°C		
5.11	Operating Tempera	ture	Discharge	-20 ~ +60°C		
5.12	12 less than 1 month		-20 ~ +45°C	Percentage of		
		than 3 months	-20 ~ + 40°C	recoverable capacity		
		less	than 1 year	-20 ~ + 20°C	80% ^{*2}	

X1 The maximum discharge current for a single cell use. However after the battery pack assembly, there will be a limitation of maximum discharge current due to a protection circuit or a protection device.

X2 Percentage of recoverable capacity

= (Discharging time after storage / Initial discharging time) ×100

The discharging time is measured by the discharge current of 0.606A until 2.50V of end voltage after the battery is fully charged at 25°C.

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