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<div>1Safety Instructions</div> <p>The battery contains flammable materials such as organic solvents. Mishandling the battery may cause fire, smoke, or an explosion and the battery’s functionality will be seriously damaged. Protection circuitry must be designed into the application device to protect the battery. Additionally, SANYO highly recommends adding these instructions to the owner’s manual. Please read and check the following prohibited actions.</p> <div>Danger</div> <div>(1) Immersion</div> <p>Do not immerse the battery in liquid such as water, beverages, or other fluids.</p> <p>Exposure to liquid may damage the battery or the battery pack (including protection circuit). As a result, the battery may generate heat, smoke, catch fire, or explode.</p> <div>(2) High Temperature</div> <p>Do not use or place the battery near an open flame, heater or high temperature (above 80°C).</p> <p>Subjecting the battery to high temperature may damage the polyolefin separator and can cause an internal short circuit. This may cause the battery to generate heat, smoke, catch fire, or explode.</p> <div>(3) Chargers and Charge Conditions</div> <p>Do not use unauthorized chargers.</p> <p>Only charge the battery within specified conditions (e.g., temperature range, voltage, and current). Use of an unauthorized charger could cause the battery to generate heat, smoke, catch fire, or explode.</p> <div>(4) Reverse Polarity</div> <p>Do not attach or insert battery with polarity reversed.</p> <p>A battery has polarity. If the battery does not easily fit into the charger or device, check the battery’s orientation. Do not force the battery into the battery compartment. If attached to the device with reversed polarity, the battery may generate heat, smoke, catch fire, or explode.</p> <div>(5) Direct Connection</div> <p>Do not connect the battery to an AC outlet or DC automotive plug.</p> <p>The battery requires a specific charger. If the battery is connected directly to a power outlet, the battery may generate heat, smoke, catch fire, or explode.</p> <div>(6) Use in Other Equipment</div> <p>Do not use the battery in equipment for which it was not intended.</p> <p>If the battery is used in unapproved applications or systems, the battery may become damaged and generate heat, smoke, catch fire, or explode.</p>			
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<p>(7) Incineration and Heat</p> <p><i>Keep the battery away from heat and fire.</i></p> <p>Heat will damage the battery and may cause it to generate heat, smoke, catch fire, or explode.</p> <p>(8) Short-Circuit</p> <p><i>Do not apply a short-circuit.</i></p> <p>Do not connect the positive (+) and negative (-) terminals with a conductive material. Do not carry or store the battery with any metal objects. If the battery is shorted, the shorting item may overheat and the battery may generate heat, smoke, catch fire, or explode.</p> <p>(9) Impact</p> <p><i>Avoid excessive impact to the battery.</i></p> <p>Excessive impact may damage the battery. This may cause the battery to leak, generate heat, smoke, catch fire, or explode.</p> <p>(10) Penetration</p> <p><i>Do not penetrate the battery with a nail or strike with a hammer.</i></p> <p>If subjected to a hard strike or penetrated by an object, the battery may be damaged or destroyed, thereby causing an internal short-circuit. This may cause the battery to generate heat, smoke, catch fire, or explode.</p> <p>(11) Soldering</p> <p><i>Do not directly solder to the battery.</i></p> <p>Soldering directly to the battery could melt the separator or damage the gas release vent or other safety mechanisms. This may cause the battery to generate heat, smoke, catch fire, or explode.</p> <p>(12) Disassembly</p> <p><i>Do not disassemble the battery cell and battery pack.</i></p> <p>Battery cell and/or battery pack may be deformed and damaged by disassembly.</p> <p>Disassembly or modification of the battery cell and/or battery pack may damage the protection functions. This may cause the battery cell and/or battery pack to generate heat, smoke, catch fire, or explode.</p> <p>(13) Charge near High Temperatures</p> <p><i>Do not charge the battery near high temperature.</i></p> <p>If the battery is charged while exposed to high temperature, the battery's protection circuit may activate and prevent charging, or fail and cause the battery to generate heat, smoke, catch fire, or explode.</p> <p>(14) Deformation</p> <p><i>Do not use the battery with conspicuous damage or deformation.</i></p> <p>It causes the generating heat, smoke, rupture or flame.</p>			
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<div data-bbox="547 300 1018 378"><b>Warning</b></div> <p data-bbox="132 409 328 443">(1) Ingestion</p> <p data-bbox="197 463 587 495"><i>Keep away from small children.</i></p> <p data-bbox="197 512 1449 577">Keep the battery away from small children. If the battery or any of its component parts is swallowed, seek medical attention immediately.</p> <p data-bbox="132 595 309 629">(2) Storage</p> <p data-bbox="197 649 1147 680"><i>Do not place the battery in or near a microwave or other cooking appliances.</i></p> <p data-bbox="197 698 1449 763">If subjected to heat or electromagnetic radiation, the battery may leak, generate heat, smoke, catch fire, or explode.</p> <p data-bbox="132 781 349 815">(3) Mixed Use</p> <p data-bbox="197 835 584 866"><i>Do not mix with other batteries.</i></p> <p data-bbox="197 884 1449 949">The battery should not be used with other batteries having a different capacity, chemistry, or manufacturer. Doing so could cause the battery to generate heat, smoke, catch fire, or explode.</p> <p data-bbox="132 967 617 1001">(4) Discoloration and Deformities</p> <p data-bbox="197 1021 580 1052"><i>Do not use abnormal batteries.</i></p> <p data-bbox="197 1070 1449 1171">Immediately stop using the battery if there are noticeable abnormalities, such as smell, heat, discoloration, or deformity. The battery may be defective and could generate heat, smoke, catch fire, or explode with continued use.</p> <p data-bbox="132 1189 408 1223">(5) Charging Time</p> <p data-bbox="197 1243 906 1274"><i>Stop charging if the charging process cannot be finished.</i></p> <p data-bbox="197 1292 1449 1357">If the battery can not finish the charging process within the specified time, halt the charging process. The battery may generate heat, smoke, catch fire, or explode.</p> <p data-bbox="132 1375 357 1408">(6) Leakage ①</p> <p data-bbox="197 1429 766 1460"><i>Do not use a leaking battery near open flame.</i></p> <p data-bbox="197 1478 1449 1543">If the battery or liquid leaking from the battery has an irritating odor, the battery should be kept away from any open flame. If exposed to an open flame, the battery could ignite and explode.</p> <p data-bbox="132 1561 357 1594">(7) Leakage ②</p> <p data-bbox="197 1615 577 1646"><i>Do not touch a leaking battery.</i></p> <p data-bbox="197 1664 1449 1729">If liquid leaking from the battery gets into your eyes, immediately flush your eyes with clean water and seek medical attention. If left untreated, it will cause significant eye damage.</p> <p data-bbox="132 1747 336 1780">(8) Transport</p> <p data-bbox="197 1800 681 1832"><i>Pack the battery securely for transport.</i></p> <p data-bbox="197 1850 1407 1881">To prevent short-circuit or damage during transport, securely pack the battery in a case or carton.</p>			
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<div data-bbox="547 300 1031 380"><b>Caution</b></div> <div data-bbox="124 412 1452 1935"><p>(1) Exposure to Direct Sunlight Do not use or leave the battery in a location exposed to excessive heat, such as in direct sunlight or in a car. Doing so could cause the battery to generate heat, smoke, catch fire, or explode. It may also cause the battery's performance and life to deteriorate.</p><p>(2) Static Electricity The battery pack has a protection circuit. Do not use the battery where static electricity in excess of 100V is generated as it may damage the protection circuit. If the protection circuit fails, the battery may generate heat, catch fire, smoke, or explode.</p><p>(3) Charging Temperature Range Only charge the battery at our specified temperature range. Charging outside of this temperature range may cause the battery to leak, generate heat, or result in serious damage. It may also cause the battery's performance and life to deteriorate.</p><p>(4) Manual Read the manual before use. Keep for future reference.</p><p>(5) Charging Method Read the charger's manual before use for proper charging method.</p><p>(6) First Time Usage Please contact the supplier if the battery gives off an unusual odor, generates heat, or shows signs of rust prior to its initial use.</p><p>(7) 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.</p><p>(8) Flammable Materials Do not charge or discharge near flammable materials. Doing so could result in fire.</p><p>(9) Leakage If electrolyte leaks from the battery and comes into contact with skin or clothing, immediately flush with water. Otherwise, it may cause skin irritation.</p><p>(10) Handling of Exposed Contacts or Conductors If the battery pack has a system interface consisting of stripped lead wires or exposed contact plates, handle with due care. Temporarily insulate exposed contacts and conductors with an insulator such as polypropylene tape or polyvinylchloride tape. Failure to do so could result in an electrical shock; a short circuit causing the battery to generate heat, smoke, catch fire, or explode; or the combustion of other materials.</p><p>(11) Recycling When disposing of the battery, recycle it according to local rules and regulations.</p></div>			
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## 2 Scope

This specification applies to the Lithium Ion Battery UR1865XX(Tentative) for Pedelec by (T.B.D)

This Specification shall not apply to special applications requiring a high degree of quality and reliability where the failure or malfunction of the products may directly jeopardize life or cause threat of personal injury. A non-exhaustive list of such applications includes: weapons, aircraft and aerospace equipment, aircraft electronics equipment, medical equipment (excluding Class 1 equipment), intrinsically safe equipment, electric vehicles, hybrid electric vehicles, and electric motorcycles (excluding electric bicycles).

## 3 Battery Classification and Product Code

3.1	Battery Classification	Lithium Ion Battery
3.2	Product Code	Tentative
3.3	Model Name	UR1865XX(Tentative)
3.4	Cell Type	UR1865XX

## 4 Nominal Specifications

Item		Specifications	Notes
4.1	Rated Capacity	2420mAh	0.494A discharge at 20°C
4.2	Capacity (Minimum) * <sup>1</sup>	2470mAh	0.494A discharge at 25°C
4.3	Capacity (Typical)	2550mAh	Reference only
4.4	Nominal Voltage	3.6V	0.494A discharge
4.5	Discharging End Voltage	2.50V	
4.6	Charging Current	Low temp.	0.62A or less
		Std. temp.	1.24A or less
4.7	Charging Voltage	4.20 ± 0.03V	
4.8	Charging Time (Std.)	3.0hours	
4.9	Continuous Discharge Current (Max.) * <sup>2,3,5</sup>	5.0A	0 ~ +40°C
4.10	Internal Resistance	less than 40mΩ	AC impedance 1 kHz
4.11	Weight	less than 46.4g(T.B.D.)	
4.12	Operating Temperature	Charge	0 ~ +45°C
		Discharge	-20 ~ +60°C
4.13	Storage Conditions	less than 1 month	Recoverable Capacity: 80% * <sup>4</sup>
		less than 3 months	
		less than 1 year	

\*1 Capacity is measured by the discharge at 0.494A until end voltage of 2.50V after fully charged at 25°C as described in the specification.

\*2 Discharge at high rate or high temperature environment will accelerate the degradation of the battery capacity. As a result, battery life will be shorten.

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<p>*3 The maximum discharge current for a single cell use. However after the battery pack assembly , maximum discharge current will be limited by a protection circuit or device.</p> <p>*4 <i>Recoverable Capacity</i> = <math>\frac{\text{Discharge Time after Storage}}{\text{Initial Discharge Time}} * 100</math></p> <p>The discharge time is measured by fully charging the battery at 25°C and then discharging it at a current of 0.494A to 2.50V per cell in series.</p> <p>*5 Maximum cell surface temperature :The cell temperature must not exceed 70°C.</p>			
<b>5 Electrical Characteristics</b>			
Item	Conditions	Criteria	
5.1 Full Charge	The battery is charged at a 1.24A constant current until the voltage reaches 4.20V. The current is then reduced to keep a constant voltage of 4.20V. The total charging time is 3.0 hours at 25°C.		
5.2 Capacity	(1) Within 1 hour after fully charging at 25°C as per item 6.1, the battery is discharged at 0.494A continuously to 2.50V at 25°C.	More than 300 min.	
	(2) Within 1 hour after fully charging at 25°C as per item 6.1, the battery is discharged at 2.47A continuously to 2.50V at 25°C.	More than 54 min.	
5.3 Cycle Life	After the battery has been subjected to 300 repeated charge and discharge cycles (charged by CC-CV of 1.24A – 4.20V for 3 hours; discharged by CC of 2.47A to 2.50V at 25°C), the discharge time is measured as per Item 6.2, (2).	More than 38 min.	
5.4 Temperature Characteristics	(1) Within 1 hour after fully charging at 25°C as per item 6.1, the battery is stored at 0°C for 3 hours. The discharge time is then measured as per Item 6.2, (2) at 0°C.	More than 30 min.	
	(2) Within 1 hour after fully charging at 25°C as per item 6.1, the battery is stored at 60°C for 3 hours. The discharge time is then measured as per Item 6.2, (2) at 60°C.	More than 50 min.	
5.5 Storage at Fully Charged State	After fully charging at 25°C as per item 6.1, the battery is stored for 20 days at 60°C After storage, the battery is held at 25°C for 3 hours. Then, the discharge time is measured as per Item 6.2, (2).	More than 30 min.	
	Then, the same battery is fully charged again and discharged a second time and measured as per Item 6.2, (2) at 25°C.	More than 40 min.	
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Item		Conditions		Criteria	
5.6	Storage at Full Discharged State	After fully charging at 25°C, the battery is discharged as per Item 6.2, (2). Then, the battery is stored for 20 days at 60°C. After storage, the battery is held at 25°C for 3 hours and is then fully charged as per item 6.1. Then, the discharge time is measured as per Item 6.2, (2) at 25°C.		More than 50 min.	
6.7	Drop	After fully charging at 25°C, the cell is dropped 3 times in random directions from a height of 1 m onto a flat surface of concrete.		No rupture, no fire	
<p><b>STANDARD TEST CONDITIONS:</b></p> <p>All tests shall be conducted with new batteries delivered within the last 7 days. Tests shall be performed at a temperature of 25±2°C and a humidity of 65±20% (the standard temperature tolerance for Class 2 and the standard humidity tolerance for Class 20, respectively, as specified by JIS Z 8703, Standard Atmospheric Conditions for Testing). The precision of the voltmeter and ammeter used in the tests shall be higher than Class 0.5 as specified by JIS C 1102-2, Special Requirements for Ammeters and Voltmeters.</p> <p><b>6 Design and Dimensions</b></p> <p>The battery design is shown in the following documents or drawings.</p> <ul style="list-style-type: none"><li>• Drawing number [UR1865XX]</li></ul> <p><b>7 Appearance</b></p> <p>There shall be no such defects as followings, which may adversely affect commercial value of the cell:</p> <ul style="list-style-type: none"><li>• Scratch</li><li>• Rust</li><li>• Discoloration</li><li>• Dirt</li><li>• Deformation</li></ul> <p><b>8 State of Charge at Time of Shipment</b></p> <p>At time of shipment, the battery’s state of charge shall be 30% of its rated capacity or less.</p>					
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<p><b>9 Standard Charging Method</b></p> <p>The standard charge condition is a constant current – constant voltage method with a current of 1.24A and a maximum voltage of 4.20V. The charging process should be halted when either time, battery voltage, or current reach certain values.</p> <p>When the battery is in a state of over-discharge (the battery voltage is less than 2.0 V per cell), the battery should be charged by a pre-charge circuit to prevent heat generation in the charge FETs.</p> <p>The pre-charging current should be approximately 0.247A. Once, the battery voltage reaches more than 2.50V/cell, the charger can resume the standard charging method. The pre-charge function should have a cut-off timer in order to detect a short circuit. If the voltage does not recover to over 2.50V/cell within the specified time, charging must be terminated.</p> <p>The current interrupt device (CID) may activate if the battery is charged continuously after it has reached a fully-charged state or if the battery is charged at a high temperature. Please consult SANYO for instruction on the charge method.</p> <p><b>10 Precautions for Designing the Pedelec, the Charger and the Battery pack</b></p> <p>Please comply with the following instructions during every stage of application, charger, battery pack design and assembly processes otherwise the battery may experience a deterioration of functionality, quality, and safety. In the worst case, the battery may generate heat, smoke, catch fire, or explode.</p> <p><b>10.1 Precautions for Designing the Pedelec and the Charger</b></p> <p>(1) Charge</p> <ul style="list-style-type: none"> <li>• The battery is charged by a method of constant current-constant voltage.</li> <li>• Regarding UR1865XX(Tentative), the charging current should not exceed 2.47A/cell.</li> <li>• The charging voltage should not exceed 4.20V/cell.</li> <li>• The charging voltage is required to be set to less than 4.23V/cell with considering the accuracy of charger. Even if the charger is failed, the total safety shall be secured.</li> <li>• The charger shall be equipped with a pre-charge system.</li> <li>• If battery voltage goes down to less than 2.50V/cell, the battery should be charged by pre-charge current of maximum 0.247A. Once, the battery reached more than 2.50V/cell by the pre-charging, the charger can resume the standard charging method. However, if the battery voltage never recovers more than 2.50V/cell, the charger must be stopped and turned off.</li> <li>• The charger shall be equipped a full charge detection.</li> <li>• The charger shall detect the full-charged state by a timer, current detection or open circuit voltage detection. When the charger detects the full-charge, the charger shall stop charging. Do not apply the continuous charging (trickle charging) method.</li> <li>• The charging temperature should be confined to the range 0°C to +45°C.</li> <li>• It is recommended that charging should be stopped to avoid continuous charging, when either of the following conditions are met; <ul style="list-style-type: none"> <li>- The charging current reaches approximately 49.4mA in CV mode.</li> <li>- The charging time reaches 3.0 h in case of charging at 1.24A.</li> </ul> </li> </ul>			
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<p>(2) Discharge</p> <ul style="list-style-type: none"> <li>The discharge current should not exceed 5.0A/cell.</li> <li>The discharge temperature should be between -20°C to +60°C.</li> <li>The discharge end voltage should be more than 2.5V/cell.</li> </ul> <p>If cells are to be connected in series, please refer to Item 13-1.</p> <p>(3) Over discharge</p> <ul style="list-style-type: none"> <li>Do not discharge the battery less than 2.0V/cell.</li> </ul> <p>(4) Design of Pedelecs and chargers</p> <ul style="list-style-type: none"> <li>The cells should be kept away from heat generating electronic parts in order to avoid deterioration of battery performance.</li> </ul> <p>(5) Strength of the battery pack enclosure</p> <ul style="list-style-type: none"> <li>The battery pack enclosure must be designed to have sufficient strength to resist damage from specified or typical expected mechanical stresses such as bending, twisting, and impact due to drop of application.</li> </ul> <p><b>10.2 Precautions for Battery Pack Design</b></p> <p>(1) Shape, mechanism and material of battery packs</p> <ul style="list-style-type: none"> <li>The battery pack should be designed so it cannot connect to unauthorized chargers.</li> <li>The battery pack should be designed so it cannot connect with unauthorized equipment and/or devices.</li> <li>The terminal shape should be designed to avoid short circuit issues. In addition, the battery pack should be equipped with an over current protection function in order to prevent from external short circuit issues.</li> <li>The terminal shape and structure should be designed so that it cannot connect in backwards.</li> <li>The battery pack should be designed to prevent static electricity, electrolyte, or water ingress issues.</li> <li>The battery pack should be designed so the protection circuit functions can be inspected during the assembly process.</li> <li>The battery pack should be designed so electrolyte cannot reach to the protection circuit board even if electrolyte leak out of the cells.</li> <li>The cells should be fixed by tape or glue in the case. If the battery pack is dropped, the cells should be protected against dents, deformations, and other mechanical stresses.</li> <li>Plastic cases should be closed with glue. If an ultra sonic welding method is applied to the case sealing, SANYO will not accept any responsibilities for any defects.</li> <li>The pack shall be designed so end users cannot remove or disassemble the cells.</li> <li>The battery pack or module shall be designed for the functions of anti-thermal propagation and flame containment in all usage. For (T.B.D)'s reference, the battery design items are shown as follows. <ul style="list-style-type: none"> <li>- Gas management structure not to remain heated-gases.</li> <li>- Prevention of large current flow from other cells.</li> <li>- Prevention of heat transfer to neighbor cells.</li> </ul> </li> </ul>			
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<p>(2) Protection circuit</p> <p>The following protection circuit should be equipped in the battery pack:</p> <ul style="list-style-type: none"> <li>• <b>Overcharge protection</b> We recommend the overcharge protection engages when cell voltage reaches more than 4.25V/cell then, the current shall be shut down.</li> <li>• <b>Over discharge protection</b> If cell voltage reaches approximately 2.2V/cell, we recommend that the over discharge protection circuit shuts down the discharge current and the circuit consumption current is set to less than 1μA.</li> <li>• <b>Over current protection</b> If discharge current exceeds approximately 5.0A/cell, the over current protection will shut down the current.</li> </ul> <p>(3) Electric circuit</p> <ul style="list-style-type: none"> <li>• To avoid over discharge mode during long storage times, the consumption current of the battery pack's protection circuit should be set as low as possible.</li> </ul> <p>(4) Cell connection</p> <ul style="list-style-type: none"> <li>• The cells should not be connected using a soldering process. In order to avoid any damages, cells should be connected to lead plates by a spot welding method.</li> </ul> <p>(5) Precautions on label</p> <ul style="list-style-type: none"> <li>• The rating label should indicate required information and precautions.</li> <li>• The precautions should be based on the information in section 2.</li> </ul> <p><b>11 Storing Condition</b></p> <p><b>11.1 Storage Temperature and Humidity (Within 3 months)</b></p> <ul style="list-style-type: none"> <li>• Cells should be stored in a stable environment characterized by low-humidity (less than 70%RH), free of corrosive gasses, and an ambient temperature between -20°C and +40°C</li> <li>• To prevent rust, avoid conditions that can create condensation such as rapid fluctuations in the ambient.</li> </ul> <p><b>11.2 Long Duration Storage</b></p> <ul style="list-style-type: none"> <li>• When long duration storage cells should be stored in a stable environment characterized by low-humidity (less than 70%RH), free of corrosive gasses, and an ambient temperature between -20°C and +20°C.</li> <li>• To prevent rust, avoid conditions that can create condensation such as rapid fluctuations in the ambient.</li> <li>• For long term storage, a discharged or partial charged state of charge per section 9 is recommended.</li> </ul>			
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<p><b>12 Handling Precautions for Lithium Ion Cells</b></p> <ul style="list-style-type: none"> <li>This section describes handling precautions for lithium ion cells which will be assembled as battery packs with (T.B.D). This battery pack consists of UR1865XX(Tentative).</li> </ul> <p><b>12.1 Series Connections Precautions</b></p> <ul style="list-style-type: none"> <li>When cells are connected in series, make sure that the lot number, shipping charge date, and capacity rank match. Please do not mix cells with different lot numbers, shipping charge dates, or capacity ranks. The voltage variability between cells should be within 25mV.</li> <li>The lot number, the shipping charge date and the capacity rank are indicated on the shipping carton label.</li> <li>If cells are connected in series, the discharge end voltage should be set more than 2.75V/cell.</li> </ul> <p><b>12.2 Inspection of the Battery Pack before Shipping</b></p> <p>All battery packs shall be inspected for:</p> <ul style="list-style-type: none"> <li>Voltage</li> <li>Internal impedance</li> <li>Function of protection circuit</li> <li>Thermistor resistance</li> <li>Thermal fuse</li> </ul> <p><b>12.3 Precautions on Pack Assembly</b></p> <ul style="list-style-type: none"> <li>Do not use potentially abnormal cells which have been dropped, shorted, or deformed during handling or assembly even if no damage is readily apparent. Do not use cells giving off the odor of electrolyte.</li> <li>Do not bring battery near or into contact with heat sources such as soldering irons.</li> <li>Do not allow any metal to come into direct contact with cells inside the battery pack compartment.</li> <li>Do not lift the core pack by holding the lead wires or the printed circuited board. Do not unnecessarily twist or bend the lead wires or the printed circuited board.</li> <li>Do not re-work the battery.</li> </ul> <p><b>13 Warranty Exemptions</b></p> <ul style="list-style-type: none"> <li>SANYO will not be liable for any damages that are caused by violations of the precautions in this specification.</li> <li>SANYO will not be liable for any problems caused by design defects of the battery packs, Applications, or chargers.</li> <li>SANYO will not accept return of any abnormal cells that were damaged due to any incorrect assembly process.</li> </ul>			
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<p><b>14 Remark of Safety Design</b></p> <ul style="list-style-type: none"> <li>SANYO has been addressing to enhance the quality and the reliability of battery cell, but we also require our customers to introduce the safety design into the battery pack for avoiding unsafety situation.</li> <li>The event such as abnormal heat generation, smoke, fire and explosion might happen due to the failure of battery cell and the use out of the specification. (T.B.D) should discuss to the product manufacturer about having the safety design such as redundant design, the prevention design against the spread of the fire, and so on, in order to prevent the accident of injury, death, fire, social harm as the result of battery cell failure.</li> <li>SANYO will not be liable for any damage due to slack safety design.</li> </ul> <p><b>15 Other Remarks</b></p> <ul style="list-style-type: none"> <li>If there are problems in this specification, SANYO will take them into consideration.</li> <li>SANYO can discuss specification or precautions that are not described in this specification.</li> <li>Do not use the provided cells for other applications.</li> </ul> <p><b>16 Battery Warranty Period</b></p> <p>In the event a defect is found in the battery, SANYO will replace the defective battery without cost only if all the following conditions are met:</p> <p>(i) The defect is found and reported to SANYO within 1 year from the date of shipment of the defective battery;</p> <p>(ii) The defect is caused by the reasons attributable to SANYO, such as a defect in design or manufacture; and</p> <p>(iii) It is clear by evidence data such as log or/and inspection data that the defect is not caused by the reasons attributable to any third party other than SANYO, such as any misuse of the battery or failure to comply with this specification.</p> <p>(IV) (T.B.D) and SANYO accomplished and confirmed the above and finally agreed that the reasons of the defect attributable to SANYO.</p> <p><b>17 Battery Safety Requirements</b></p> <p>In order to ensure the safety of the battery, please contact SANYO to discuss design of the application from a mechanical and electrical perspective. Also, if there are special usage conditions (for example: a large current load, a quick charge method, or a special usage pattern), please consult SANYO before finalizing the product specification.</p> <p><b>18 Document Terms (Tentative Specification)</b></p> <ul style="list-style-type: none"> <li>The expiration period for this document is 6 months from the cover date.</li> <li>If a new revision of the document is released, please return or destroy the previous revision.</li> <li>This document is still in a preliminary state. The contents are not yet fixed.</li> </ul>			
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## Appendix 1 < For Performance >

Regarding Operating Region for Performance, please follow the below condition.

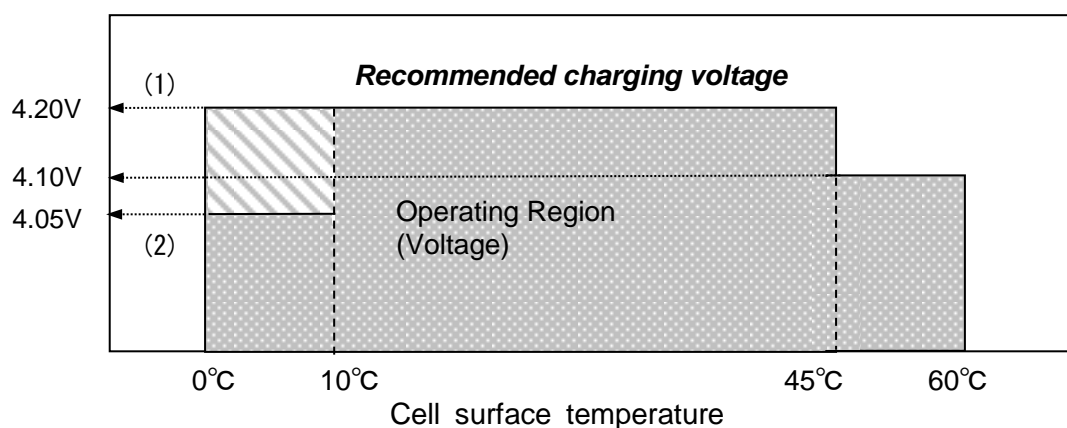
The charging voltage and current should be lower than following Recommended charging voltage and Recommended maximum charging current in Table.1 for suppression of deterioration.

Model: [UR1865XX(Tentative)]

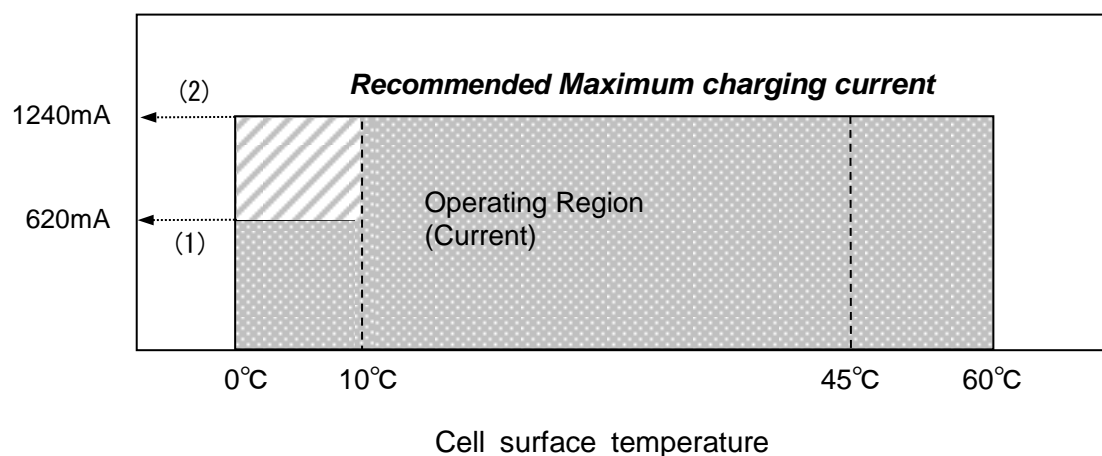
Table.1 Operating region (Cell surface temperature, voltage, current)

Temperature		Recommended charging voltae	Recommended maximum charging current
0°C~10°C	(1)	4.20 V	620 mA
	(2)	4.05 V	1240 mA
10°C~45°C		4.20 V	1240 mA
45°C~60°C		4.10 V	1240 mA

Charging voltage



Charging current



## Appendix 2 < For Safety >

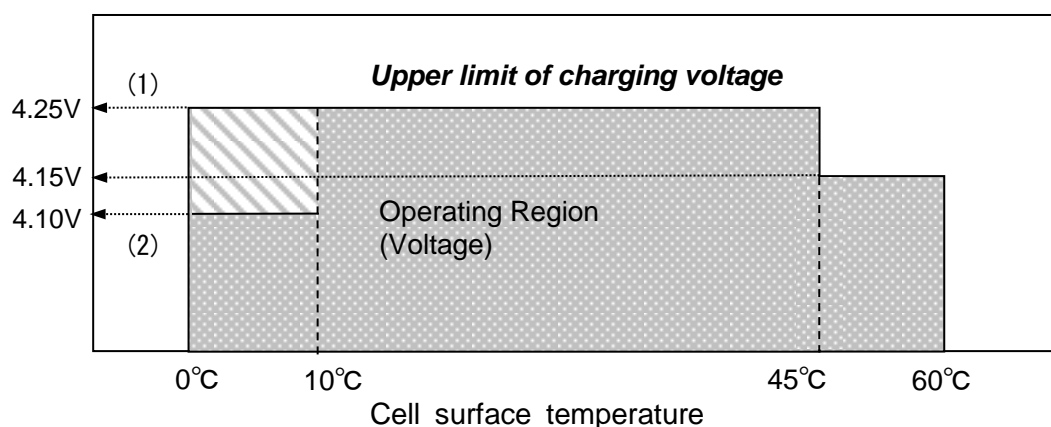
Regarding Operating Region for Performance, please follow the below condition.  
The charging voltage and current shall not exceed following Upper limit of charging voltage and Maximum charging current in Table.2 for safe use.

Model: [UR1865XX(Tentative)]

Table.2 Operating region (Cell surface temperature, voltage, current)

Temperature		Upper limit of charging voltage	Maximum charging current
0°C~10°C	(1)	4.25 V	1240 mA
	(2)	4.10 V	2470 mA
10°C~45°C		4.25 V	2470 mA
45°C~60°C		4.15 V	2470 mA

Charging voltage



Charging current

