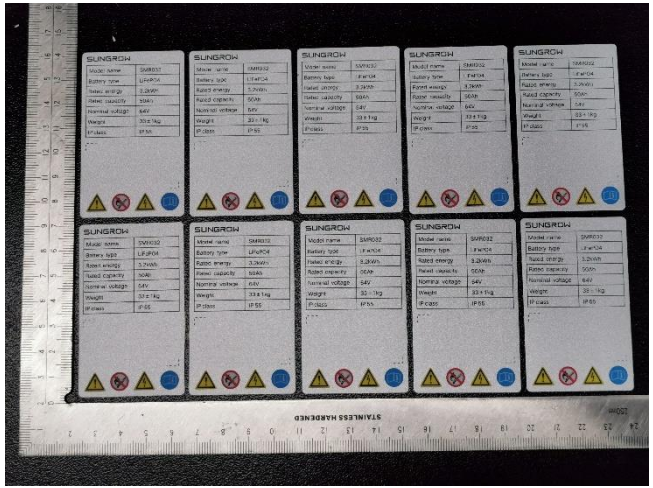


Test report no.: <i>Prüfbericht-Nr.:</i>	CN21H1ZN 004	Order No.: <i>Auftragsnr.:</i>	244536828 P01176031	Page 1 of 14 <i>Seite 1 von 14</i>
Client reference no.: <i>Kunden-Referenz-Nr.:</i>	2003666	Order date: <i>Auftragsdatum:</i>	2023-08-12	
Client: <i>Auftraggeber:</i>	Sungrow Power Supply Co., Ltd. No. 1699, Xiyou Road, New & High Technology Industrial Development Zone, Hefei, Anhui 230088, P.R. CHINA			
Test item: <i>Prüfgegenstand:</i>	Lithium battery label			
Identification / Type no.: <i>Bezeichnung / Typ-Nr.:</i>	/			
Order content: <i>Auftrags-Inhalt:</i>	Test report			
Test specification <i>Prüfgrundlage:</i>	Label UV Resistance requirements from the Best Practice Guide according to IEC 60068-2-5 Ed3 2018			
Date of sample receipt: <i>Wareneingangsdatum:</i>	2021-01-20			
Test sample no: <i>Prüfmuster-Nr.:</i>	Engineering sample			
Testing period: <i>Prüfzeitraum:</i>	2021-01-21 - 2021-02-20			
Place of testing: <i>Ort der Prüfung:</i>	SQI_DZ laboratory			
Testing laboratory: <i>Prüflaboratorium:</i>	TÜV Rheinland (Shanghai) Co., Ltd.			
Test result*: <i>Prüfergebnis*:</i>	Pass			
tested by: <i>geprüft von:</i>	<i>Stone Wang</i>	authorized by: <i>genehmigt von:</i>	<i>1-8</i>	
Date: 2023-08-23 <i>Datum:</i>		Issue date: 2023-08-23 <i>Ausstellungsdatum:</i>		
Position / Stellung:	Stone Wang/PE	Position / Stellung:	Bowen Dong/Authorizer	
Other: <i>Sonstiges:</i>	This report is based on CN21H1ZN 001-003. Update SBH series nameplate, the model SMR032 labels were tested as a representative since the material and inkjet are the same as other labels listed on this report and the report CN21H1ZN 001, and they are all from the same supplier.			
Condition of the test item at delivery: <i>Zustand des Prüfgegenstandes bei Anlieferung:</i>	Test item complete and undamaged Prüfmuster vollständig und unbeschädigt			
* Legend: P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested * Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet				
This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark. <i>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</i>				

Test report no.: CN21H1ZN 004
Prüfbericht-Nr.:

Page 2 of 14
Seite 2 von 14

Remarks
Anmerkungen

1	<p>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</p> <p><i>Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfbedingungen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.</i></p>
2	<p>As contractually agreed, this document has been signed digitally only. TÜV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TÜV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged.</p> <p><i>Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben.</i></p>
3	<p>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report. Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</p> <p><i>Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.</i></p>
4	<p>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</p> <p><i>Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.</i></p>
5	



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TEST REPORT Separate Specific Requirement 7 of the Best Practice Guide according to IEC 60068-2-5 Ed3 2018	
Report Reference No.....	: CN21H1ZN 004
Tested by (name + signature)	: See cover page
Witnessed by (name + signature) ...	: N/A
Supervised by (name + signature)..	: N/A
Approved by (name + signature)	: See cover page
Date of issue.....	: See cover page
Testing Laboratory	: TÜV Rheinland (Shanghai) Co., Ltd.
Address.....	: B1-13F, No. 177, Lane 777, West Guangzhong Road, Jing'an District, Shanghai 200072, P. R. China
Testing location/ procedure	: CBTL <input type="checkbox"/> TMP <input type="checkbox"/> WMT <input type="checkbox"/> SMT <input type="checkbox"/> RMT <input type="checkbox"/> CCATL <input type="checkbox"/>
Testing location/ address	: See cover page.
Applicant's name	: Sungrow Power Supply Co., Ltd.
Address.....	: No. 1699, Xiyou Road, New & High Technology Industrial Development Zone, Hefei, Anhui 230088, P.R. CHINA
Test specification:	
Standard	: Separate Specific Requirement 7 of the Best Practice Guide
Test procedure.....	: Test report
Non-standard test method.....	: N/A
Test Report Form No.....	: Label test_A
Test Report Form(s) Originator	: TÜV Rheinland (Shanghai) Co., Ltd.
Master TRF.....	: Dated 2020-09
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Test item description	: Lithium battery label
Trade Mark	: SUNGROW
Manufacturer.....	: Same as the applicant
Model/Type reference.....	: /
Ratings.....	: /

Testing procedure and testing location:
<input type="checkbox"/> CB Testing Laboratory: Testing location/ address :
<input type="checkbox"/> Associated CB Test Laboratory: Testing location/ address : Tested by (name + signature).... : See cover page Approved by (+ signature)..... : See cover page
<input type="checkbox"/> Testing procedure: TMP Tested by (name + signature).... : Approved by (+ signature)..... : Testing location/ address :
<input type="checkbox"/> Testing procedure: WMT Tested by (name + signature).... : Witnessed by (+ signature)..... : Approved by (+ signature)..... : Testing location/ address :
<input type="checkbox"/> Testing procedure: SMT Tested by (name + signature).... : Approved by (+ signature)..... : Supervised by (+ signature)..... : Testing location/ address :
<input type="checkbox"/> Testing procedure: RMT Tested by (name + signature).... : Approved by (+ signature)..... : Supervised by (+ signature)..... : Testing location/ address :

List of Attachments (including a total number of pages in each attachment):

None.

Summary of testing**Tests performed (name of test and test clause):** **Testing location:**

Label UV test

Location:

Shanghai Institute of Quality Inspection and
Technical Research Institute of Electronics &
Household Appliances Quality Inspection (SQI_DZ)

Add:

No. 900 Jiang Yue Road, Shanghai, 201114, China

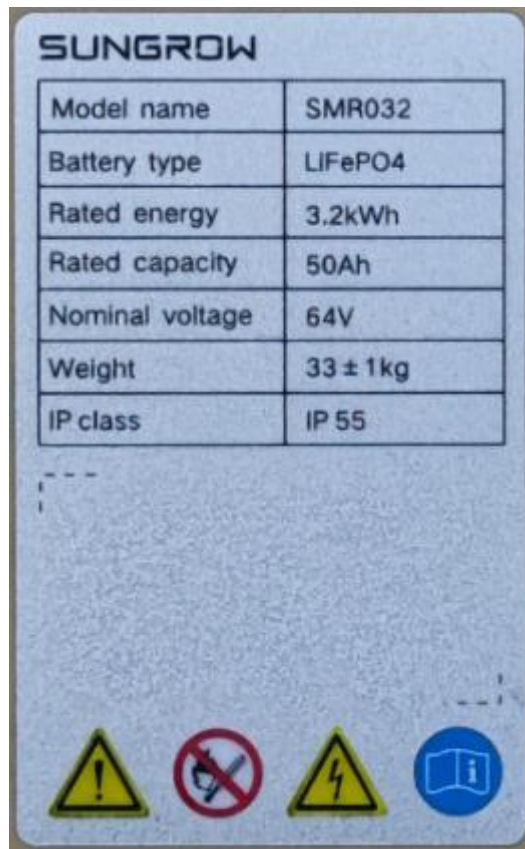
Summary of compliance with National Differences

List of countries addressed: None.

 The product fulfils the requirements of


Copy of marking plate:

"The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCB' s that own these marks"





Product Name	Rechargeable Li-ion Battery System IFpP41/150/102[(20S)3S]E/0+50/90		
Product Model	SBR096	Max. Current	30A
Nominal Voltage	192Vdc	Operating Voltage Range	150V~219Vdc
Power Rating	9.6kWh	Protective Class	Class I
Rated Capacity	50Ah	IP Rating of Enclosure	IP 55
Manufacturer	Sungrow Power Supply Co., Ltd.		

CAUTION:Do not disassemble the battery pack.Do not immerse the battery packin water.Do not short-circuit the battery.Do not leave the battery near by fire.The battery should be disposed by qualified recycling agent.




100V Rheinland
CERTIFIED


SBR096C12010050001

Type Approved
Battery
Pack Production
Surveillance





Product Name	Rechargeable Li-ion Battery System IFpP41/150/102[(20S)4S]E/0+50/90		
Product Model	SBR128	Max. Current	30A
Nominal Voltage	256Vdc	Operating Voltage Range	200V~292Vdc
Power Rating	12.8kWh	Protective Class	Class I
Rated Capacity	50Ah	IP Rating of Enclosure	IP 55
Manufacturer	Sungrow Power Supply Co., Ltd.		

CAUTION:Do not disassemble the battery pack.Do not immerse the battery packin water.Do not short-circuit the battery.Do not leave the battery near by fire.The battery should be disposed by qualified recycling agent.
































100V Rheinland
CERTIFIED

SBR128C12010050001

Type Approved
Battery
Pack Production
Surveillance











<table border="1"> <tr> <td>Product Name</td> <td colspan="3">Rechargeable Li-Ion Battery System IFpP41/150/102[(20S)5S]E/0+50/90</td> </tr> <tr> <td>Product Model</td> <td>SBR160</td> <td>Max. Current</td> <td>30A</td> </tr> <tr> <td>Nominal Voltage</td> <td>320Vdc</td> <td>Operating Voltage Range</td> <td>250V~365Vdc</td> </tr> <tr> <td>Power Rating</td> <td>16kWh</td> <td>Protective Class</td> <td>Class I</td> </tr> <tr> <td>Rated Capacity</td> <td>50Ah</td> <td>IP Rating of Enclosure</td> <td>IP 55</td> </tr> <tr> <td>Manufacturer</td> <td colspan="3">Sungrow Power Supply Co., Ltd.</td> </tr> </table> <p>CAUTION:Do not disassemble the battery pack.Do not immerse the battery packin water.Do not short-circuit the battery.Do not leave the battery near by fire.The battery should be disposed by qualified recycling agent.</p>	Product Name	Rechargeable Li-Ion Battery System IFpP41/150/102[(20S)5S]E/0+50/90			Product Model	SBR160	Max. Current	30A	Nominal Voltage	320Vdc	Operating Voltage Range	250V~365Vdc	Power Rating	16kWh	Protective Class	Class I	Rated Capacity	50Ah	IP Rating of Enclosure	IP 55	Manufacturer	Sungrow Power Supply Co., Ltd.			 <div style="text-align: center;">  SBR160C12010050001 </div> <div style="display: flex; justify-content: space-around; align-items: center;">   <div style="font-size: 8px;"> Type Approved Battery For Production Surveillance </div>    </div>
Product Name	Rechargeable Li-Ion Battery System IFpP41/150/102[(20S)5S]E/0+50/90																								
Product Model	SBR160	Max. Current	30A																						
Nominal Voltage	320Vdc	Operating Voltage Range	250V~365Vdc																						
Power Rating	16kWh	Protective Class	Class I																						
Rated Capacity	50Ah	IP Rating of Enclosure	IP 55																						
Manufacturer	Sungrow Power Supply Co., Ltd.																								
<table border="1"> <tr> <td>Product Name</td> <td colspan="3">Rechargeable Li-Ion Battery System IFpP41/150/102[(20S)6S]E/0+50/90</td> </tr> <tr> <td>Product Model</td> <td>SBR192</td> <td>Max. Current</td> <td>30A</td> </tr> <tr> <td>Nominal Voltage</td> <td>384Vdc</td> <td>Operating Voltage Range</td> <td>300V~438Vdc</td> </tr> <tr> <td>Power Rating</td> <td>19.2kWh</td> <td>Protective Class</td> <td>Class I</td> </tr> <tr> <td>Rated Capacity</td> <td>50Ah</td> <td>IP Rating of Enclosure</td> <td>IP 55</td> </tr> <tr> <td>Manufacturer</td> <td colspan="3">Sungrow Power Supply Co., Ltd.</td> </tr> </table> <p>CAUTION:Do not disassemble the battery pack.Do not immerse the battery packin water.Do not short-circuit the battery.Do not leave the battery near by fire.The battery should be disposed by qualified recycling agent.</p>	Product Name	Rechargeable Li-Ion Battery System IFpP41/150/102[(20S)6S]E/0+50/90			Product Model	SBR192	Max. Current	30A	Nominal Voltage	384Vdc	Operating Voltage Range	300V~438Vdc	Power Rating	19.2kWh	Protective Class	Class I	Rated Capacity	50Ah	IP Rating of Enclosure	IP 55	Manufacturer	Sungrow Power Supply Co., Ltd.			 <div style="text-align: center;">  SBR192C12010050001 </div> <div style="display: flex; justify-content: space-around; align-items: center;">   <div style="font-size: 8px;"> Type Approved Battery For Production Surveillance </div>    </div>
Product Name	Rechargeable Li-Ion Battery System IFpP41/150/102[(20S)6S]E/0+50/90																								
Product Model	SBR192	Max. Current	30A																						
Nominal Voltage	384Vdc	Operating Voltage Range	300V~438Vdc																						
Power Rating	19.2kWh	Protective Class	Class I																						
Rated Capacity	50Ah	IP Rating of Enclosure	IP 55																						
Manufacturer	Sungrow Power Supply Co., Ltd.																								
<table border="1"> <tr> <td>Product Name</td> <td colspan="3">Rechargeable Li-Ion Battery System IFpP41/150/102[(20S)7S]E/0+50/90</td> </tr> <tr> <td>Product Model</td> <td>SBR224</td> <td>Max. Current</td> <td>30A</td> </tr> <tr> <td>Nominal Voltage</td> <td>448Vdc</td> <td>Operating Voltage Range</td> <td>350V~511Vdc</td> </tr> <tr> <td>Power Rating</td> <td>22.4kWh</td> <td>Protective Class</td> <td>Class I</td> </tr> <tr> <td>Rated Capacity</td> <td>50Ah</td> <td>IP Rating of Enclosure</td> <td>IP 55</td> </tr> <tr> <td>Manufacturer</td> <td colspan="3">Sungrow Power Supply Co., Ltd.</td> </tr> </table> <p>CAUTION:Do not disassemble the battery pack.Do not immerse the battery packin water.Do not short-circuit the battery.Do not leave the battery near by fire.The battery should be disposed by qualified recycling agent.</p>	Product Name	Rechargeable Li-Ion Battery System IFpP41/150/102[(20S)7S]E/0+50/90			Product Model	SBR224	Max. Current	30A	Nominal Voltage	448Vdc	Operating Voltage Range	350V~511Vdc	Power Rating	22.4kWh	Protective Class	Class I	Rated Capacity	50Ah	IP Rating of Enclosure	IP 55	Manufacturer	Sungrow Power Supply Co., Ltd.			 <div style="text-align: center;">  SBR224C12010050001 </div> <div style="display: flex; justify-content: space-around; align-items: center;">   <div style="font-size: 8px;"> Type Approved Battery For Production Surveillance </div>    </div>
Product Name	Rechargeable Li-Ion Battery System IFpP41/150/102[(20S)7S]E/0+50/90																								
Product Model	SBR224	Max. Current	30A																						
Nominal Voltage	448Vdc	Operating Voltage Range	350V~511Vdc																						
Power Rating	22.4kWh	Protective Class	Class I																						
Rated Capacity	50Ah	IP Rating of Enclosure	IP 55																						
Manufacturer	Sungrow Power Supply Co., Ltd.																								
<table border="1"> <tr> <td>Product Name</td> <td colspan="3">Rechargeable Li-Ion Battery System IFpP41/150/102[(20S)8S]E/0+50/90</td> </tr> <tr> <td>Product Model</td> <td>SBR256</td> <td>Max. Current</td> <td>30A</td> </tr> <tr> <td>Nominal Voltage</td> <td>512Vdc</td> <td>Operating Voltage Range</td> <td>400V~584Vdc</td> </tr> <tr> <td>Power Rating</td> <td>25.6kWh</td> <td>Protective Class</td> <td>Class I</td> </tr> <tr> <td>Rated Capacity</td> <td>50Ah</td> <td>IP Rating of Enclosure</td> <td>IP 55</td> </tr> <tr> <td>Manufacturer</td> <td colspan="3">Sungrow Power Supply Co., Ltd.</td> </tr> </table> <p>CAUTION:Do not disassemble the battery pack.Do not immerse the battery packin water.Do not short-circuit the battery.Do not leave the battery near by fire.The battery should be disposed by qualified recycling agent.</p>	Product Name	Rechargeable Li-Ion Battery System IFpP41/150/102[(20S)8S]E/0+50/90			Product Model	SBR256	Max. Current	30A	Nominal Voltage	512Vdc	Operating Voltage Range	400V~584Vdc	Power Rating	25.6kWh	Protective Class	Class I	Rated Capacity	50Ah	IP Rating of Enclosure	IP 55	Manufacturer	Sungrow Power Supply Co., Ltd.			 <div style="text-align: center;">  SBR256C12010050001 </div> <div style="display: flex; justify-content: space-around; align-items: center;">   <div style="font-size: 8px;"> Type Approved Battery For Production Surveillance </div>    </div>
Product Name	Rechargeable Li-Ion Battery System IFpP41/150/102[(20S)8S]E/0+50/90																								
Product Model	SBR256	Max. Current	30A																						
Nominal Voltage	512Vdc	Operating Voltage Range	400V~584Vdc																						
Power Rating	25.6kWh	Protective Class	Class I																						
Rated Capacity	50Ah	IP Rating of Enclosure	IP 55																						
Manufacturer	Sungrow Power Supply Co., Ltd.																								

SUNGROW Rechargeable Li-ion Battery System

IFpP42/151/108 IFpP42/151/108 IFpP42/151/108 IFpP42/151/108 IFpP42/151/108 IFpP42/151/108 IFpP42/151/108 IFpP42/151/108
 [(20S)2S]E/0+50/90 [(20S)3S]E/0+50/90 [(20S)4S]E/0+50/90 [(20S)5S]E/0+50/90 [(20S)6S]E/0+50/90 [(20S)7S]E/0+50/90 [(20S)8S]E/0+50/90

Product model	SBR064	SBR096	SBR128	SBR160	SBR192	SBR224	SBR256
Nominal energy	6.4kWh	9.6kWh	12.8kWh	16kWh	19.2kWh	22.4kWh	25.6kWh
Nominal voltage	128V d.c.	192V d.c.	256V d.c.	320V d.c.	384V d.c.	448V d.c.	512V d.c.
Operating voltage	108...146V d.c.	162...219V d.c.	216...292V d.c.	270...365V d.c.	324...438V d.c.	378...511V d.c.	432...584V d.c.
Degree of protection	IP 55			Protective class		Class I	
Operating temperature	Charge: 0°C...55°C/Discharge: -20°C...55°C			Max continuous current		Charge/Discharge: 30A d.c.	

CAUTION:
 The internal high voltage, please make sure the main circuit breaker is disconnected before opening. Do not disassemble the battery pack. Do not immerse the battery pack in water. Do not short-circuit the battery. Do not leave the battery near by fire. The battery should be disposed by qualified recycling agent.








Sungrow Power Supply Co.,Ltd. Made in China

SUNGROW Rechargeable Li-ion Battery System

IFpP41/151/102 IFpP41/151/102 IFpP41/151/102 IFpP41/151/102 IFpP41/151/102 IFpP41/151/102 IFpP41/151/102 IFpP41/151/102
 [(20S)2S]E/0+50/90 [(20S)3S]E/0+50/90 [(20S)4S]E/0+50/90 [(20S)5S]E/0+50/90 [(20S)6S]E/0+50/90 [(20S)7S]E/0+50/90 [(20S)8S]E/0+50/90

Product model	SBR064	SBR096	SBR128	SBR160	SBR192	SBR224	SBR256
Nominal energy	6.4kWh	9.6kWh	12.8kWh	16kWh	19.2kWh	22.4kWh	25.6kWh
Nominal voltage	128V d.c.	192V d.c.	256V d.c.	320V d.c.	384V d.c.	448V d.c.	512V d.c.
Operating voltage	108...146V d.c.	162...219V d.c.	216...292V d.c.	270...365V d.c.	324...438V d.c.	378...511V d.c.	432...584V d.c.
Degree of protection	IP 55			Protective class		Class I	
Operating temperature	Charge: 0°C...55°C/Discharge: -20°C...55°C			Max continuous current		Charge/Discharge: 30A d.c.	

CAUTION:
 The internal high voltage, please make sure the main circuit breaker is disconnected before opening. Do not disassemble the battery pack. Do not immerse the battery pack in water. Do not short-circuit the battery. Do not leave the battery near by fire. The battery should be disposed by qualified recycling agent.








Sungrow Power Supply Co.,Ltd. Made in China

SUNGROW Rechargeable Li-ion Battery System

IFpP41/150/103 IFpP41/150/103 IFpP41/150/103 IFpP41/150/103 IFpP41/150/103 IFpP41/150/103 IFpP41/150/103 IFpP41/150/103
 [(20S)2S]E/0+50/90 [(20S)3S]E/0+50/90 [(20S)4S]E/0+50/90 [(20S)5S]E/0+50/90 [(20S)6S]E/0+50/90 [(20S)7S]E/0+50/90 [(20S)8S]E/0+50/90

Product model	SBR064	SBR096	SBR128	SBR160	SBR192	SBR224	SBR256
Nominal energy	6.4kWh	9.6kWh	12.8kWh	16kWh	19.2kWh	22.4kWh	25.6kWh
Nominal voltage	128V d.c.	192V d.c.	256V d.c.	320V d.c.	384V d.c.	448V d.c.	512V d.c.
Operating voltage	108...146V d.c.	162...219V d.c.	216...292V d.c.	270...365V d.c.	324...438V d.c.	378...511V d.c.	432...584V d.c.
Degree of protection	IP 55			Protective class		Class I	
Operating temperature	Charge: 0°C...55°C/Discharge: -20°C...55°C			Max continuous current		Charge/Discharge: 30A d.c.	

CAUTION:
 The internal high voltage, please make sure the main circuit breaker is disconnected before opening. Do not disassemble the battery pack. Do not immerse the battery pack in water. Do not short-circuit the battery. Do not leave the battery near by fire. The battery should be disposed by qualified recycling agent.








Sungrow Power Supply Co.,Ltd. Made in China

SUNGROW Rechargeable Li-ion Battery System

IFpP41/150/102 IFpP41/150/102 IFpP41/150/102 IFpP41/150/102 IFpP41/150/102 IFpP41/150/102 IFpP41/150/102 IFpP41/150/102
 [(20S)2S]E/0+50/90 [(20S)3S]E/0+50/90 [(20S)4S]E/0+50/90 [(20S)5S]E/0+50/90 [(20S)6S]E/0+50/90 [(20S)7S]E/0+50/90 [(20S)8S]E/0+50/90

Product model	SBR064	SBR096	SBR128	SBR160	SBR192	SBR224	SBR256
Nominal energy	6.4kWh	9.6kWh	12.8kWh	16kWh	19.2kWh	22.4kWh	25.6kWh
Nominal voltage	128V d.c.	192V d.c.	256V d.c.	320V d.c.	384V d.c.	448V d.c.	512V d.c.
Operating voltage	108...146V d.c.	162...219V d.c.	216...292V d.c.	270...365V d.c.	324...438V d.c.	378...511V d.c.	432...584V d.c.
Degree of protection	IP 55			Protective class		Class I	
Operating temperature	Charge: 0°C...55°C/Discharge: -20°C...55°C			Max continuous current		Charge/Discharge: 30A d.c.	

CAUTION:
 The internal high voltage, please make sure the main circuit breaker is disconnected before opening. Do not disassemble the battery pack. Do not immerse the battery pack in water. Do not short-circuit the battery. Do not leave the battery near by fire. The battery should be disposed by qualified recycling agent.

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Model name	SMR 050
Battery type	LiFePO4
Rated energy	5.0kWh
Nominal voltage	70.4V
Weight	46kg
IP class	IP 21



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Rechargeable Li-ion Battery System

	<input type="checkbox"/> IFpP42/151/116	<input type="checkbox"/> IFpP42/151/116	<input type="checkbox"/> IFpP42/151/116	<input type="checkbox"/> IFpP42/151/116	<input type="checkbox"/> IFpP42/151/116	<input type="checkbox"/> IFpP42/151/116	<input type="checkbox"/> IFpP42/151/116
	<input type="checkbox"/> [(22S)2S]E/0+50/90	<input type="checkbox"/> [(22S)3S]E/0+50/90	<input type="checkbox"/> [(22S)4S]E/0+50/90	<input type="checkbox"/> [(22S)5S]E/0+50/90	<input type="checkbox"/> [(22S)6S]E/0+50/90	<input type="checkbox"/> [(22S)7S]E/0+50/90	<input type="checkbox"/> [(22S)8S]E/0+50/90
Product model	SBH100	SBH150	SBH200	SBH250	SBH300	SBH350	SBH400
Nominal energy	10.0kWh	15.0kWh	20.0kWh	25.0kWh	30.0kWh	35.0kWh	40.0kWh
Nominal voltage	140.8V d.c.	211.2V d.c.	281.6V d.c.	352.0V d.c.	422.4V d.c.	492.8V d.c.	563.2V d.c.
Operating voltage	118.8...160.6V d.c.	178.2...240.9V d.c.	237.6...321.2V d.c.	297.0...401.5V d.c.	356.4...481.8V d.c.	415.8...562.1V d.c.	475.2...642.4V d.c.
Degree of protection	IP 55			Protective class			Class I
Ambient temperature	Charge : 0°C...50°C/Discharge : -20°C...50°C			Max continuous current			Charge/Discharge:50A

CAUTION:

The internal high voltage, please make sure the main circuit breaker is disconnected before opening. Do not disassemble the battery pack. Do not immerse the battery pack in water. Do not short-circuit the battery. Do not leave the battery near by fire. The battery should be disposed by qualified recycling agent.



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Test item particular:	
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object was not evaluated for the requirement....:	N/E
- test object does meet the requirement	Pass (P)
- test object does not meet the requirement	Fail (F)
Testing:	
Date of receipt of test items.....:	See cover page
Date(s) of performance of tests.....:	See cover page

General remarks:

"(see Attachment #)" refers to additional information appended to the report.
 "(see appended table)" refers to a table appended to the report.
 The tests results presented in this report relate only to the object tested.
 This report shall not be reproduced except in full without the written approval of the testing laboratory.
 List of test equipment must be kept on file and available for review.
 Additional test data and/or information provided in the attachments to this report.
 Throughout this report a comma / **point** is used as the decimal separator.
 Determination of the test results includes consideration of measurement uncertainty from the test equipment and methods.

General product information:

1. Equipment information:

Test equipment	Equipment model	Next calibration date
Xenon & Carbon-arc Weather Tester	CI4000	2021-10-18

2. Laboratory environment:
 Temperature: (25±5)°C;
 Relative humidity: (50±25) % RH;

3. Test condition:
 The temperature of 0.35 W/m² / nm and the blackboard was (63±3) °C. The temperature of the box is (45±3) °C. The relative humidity in the case shall be (50 + 5) %. 720 hours, spectral 340nm, no spraying for 102 minutes, spraying for 18 minutes.

Throughout the test report following abbreviations may be used:

- input	i/p	- Test repeated, similar result(3 times)	TRSR
- output	o/p	- No indication of dielectric breakdown	NB
- short-circuited	s-c	- Cheesecloth remained intact	NC
- overloaded	o-l	- Tissue paper remained intact	NT
- open-circuit	o-c	- No hazards	NH
- normal conditions	N.C.	- The PCE can recover to operate automatically after removing the abnormal condition	RO
- single fault conditions	SFC	- functional insulation	FI
- between parts of opposite polarity	BOP	- basic insulation	BI
- internal protection operated	IPO	- supplementary insulation	SI
- Component damage (list damaged component)	CD	- double insulation	DI
- No component damaged	NCD	- reinforced insulation	RI

Indicate used abbreviations (if any)

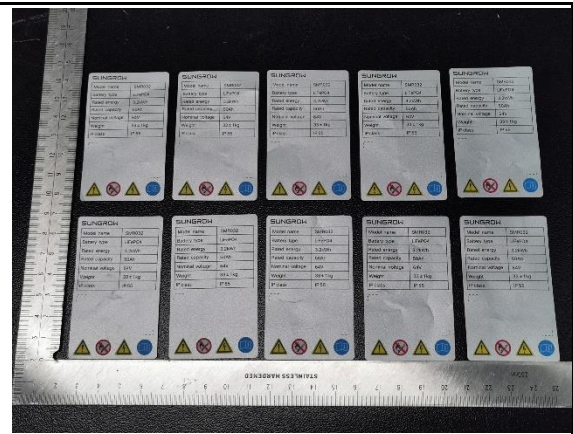
Separate Specific Requirement 7 of the Best Practice Guide according to IEC 60068-2-5 Ed3 2018			
Clause	Requirement – Test	Result - Remark	Verdict
7	Marking needs to be suitably UV resistant		P
7.1	Legibility of markings on equipment intended for outdoor use shall not be degraded by UV radiation. This requirement does not apply to markings that are physically engraved, embossed or etched with durable markings.		P
	Compliance is checked as follows (from IEC 60068-2-5 Ed3 2018)		P
7.1.1	Ten sample of the markings are to be exposed for 720h to open-flame sunshine carbon-arc, in accordance with ISO 4892-4.	10 test samples	P
7.1.2	The test samples are mounted on the inside of the cylinder in the ultraviolet light apparatus perpendicular to the light source and in such a way that the samples do not touch each other,		P
7.1.3	There shall be continous exposure to light and intermittent exposure to water spary. The cycle shall consist of 102 min without water spray and 18 min with water spray. The apparatus shall operate with and open-flame sunshine carbon-arc lamp, borosilicate glass Type 1, inner and outer optical filters, a spectral irradiance of 0.35W/M ² /nm at 340nm and a black panel temperature of (63±3)°C. The temperature of the chamber shall be (45±3)°C. The relative humidity in the chamber shall be (50±5)%.	See test condition	P

		Before the test			After the test			
		L ₁	a ₁	b ₁	L ₂	a ₂	b ₂	E
	1	82.65	-0.95	1.95	83.47	-2.43	2.61	1.82
	2	83.04	-0.98	1.66	83.67	-2.42	2.33	1.71
	3	82.03	-0.98	2.00	82.78	-2.40	2.39	1.65
	4	82.13	-0.93	1.92	82.84	-2.39	2.47	1.71
	5	81.64	-0.90	1.96	82.46	-2.48	2.38	1.83
	6	81.70	-0.92	1.97	82.55	-2.45	2.41	1.80
	7	81.76	-0.92	1.97	82.60	-2.40	2.53	1.79
	8	81.98	-0.93	1.77	82.77	-2.50	2.57	1.93
	9	81.95	-0.90	1.91	82.83	-2.37	2.53	1.82
	10	81.94	-0.94	1.69	82.87	-2.37	2.42	1.86

Photo:



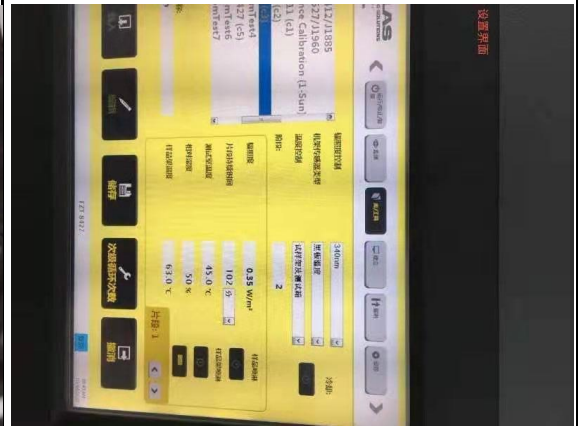
Before the test (1-10)



After the test (1-10)



Test photo



Setup page

- End of test report -