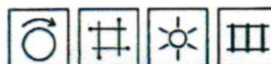


**Annexe B**

Supplier statement of product range test results

1) General product type information							
Product manufacturer	Hoppecke Batterien						
Manufacturing site of tested product	59929 Brilon – Hoppecke						
Lab – No	V9059						
Product name	sun   power VR L (series OPzV)						
Product model range	sun   power VR L 2-250 to sun   power VR L 2-3500						
Product comprising the above model range	sun   power VR L						
Product tested	sun   power VR L 2-620						
2) Product test performance information							
Product safe operation in service			IEC 60896-21 test clause result				
6.01	Gas emission (at float voltage and at 2.40 Vpc)		Ge (2.25 V/Z) = 0.0655 ml/(cell*h*Ah) Ge (2.40 V/Z) = 0.790 ml/(cell*h*Ah)				
6.02	High current tolerance		Pass				
6.03	Short circuit current and D.C. internal resistance		Ri = 0.460 mΩ*, Ik = 4440 A				
6.04	Internal ignition from external spark sources		Pass				
6.05	Protection against ground short propensity		Pass				
6.06	Content and durability of required markings		Pass				
6.07	Material identification		Case: Pass	Cover: Pass			
6.08	Valve operation		Before: Pass	After:			
6.09	Flammability rating of materials		Case: UL94 - 94HB	Cover: UL94 - 94HB			
6.10	Intercell connector performance		T < 61.3 °C				
Product performance in service							
6.11	Discharge capacity		C10 115.2 %	C8 117.0 %	C3 118.2 %	C1 121.7 %	C0.25 105.8 %
6.12	Charge retention during storage		Pass, Crf= 92.7 %				
6.13	Float service with daily discharges		647		Caf = 45.1 %		Cab = 50.3 %
6.14	Recharge behaviour		24 h:	101.2 %	168 h:	98.8 %	
Product durability in service							
6.15	Service life at an operating temperature of 40 °C		t(C3=80%): in progress > 708 d				
6.16	Impact of a stress temperature of 55 °C or 60 °C						
6.17	Abusive over-discharge		Pass, Caod = 106.8 %		Pass, Caoc = 118.4 %		
6.18	Thermal runaway sensitivity		Pass, at 2.45 V/Z was reached after 168 h T <sub>max</sub> = 21.8 °C, at 2.60 V/Z was reached after 168 h T <sub>max</sub> = 22.7 °C				
6.19	Low temperature sensitivity		Cals1 104.8 %	Cals2 104.3 %	Cals3 104.0 %		
6.20	Dimensional stability at elevated internal pressure		No fractures, excessive bulging or other freezing induced damages were found maximum change of dimension in mm: 4.70 maximum change of dimension in %: 2.88 no damages of cells were found				
6.21	Dimensional stability against abuse of units during installation		no leakage detectable after two times two drops				
61427 – 8.1	Discharge capacity		C120 - 120.5 %				
61427 – 8.4	Cycle endurance test in photovoltaic applications		in progress – 1500 cycles – 10 units				
Company name: HOPPECKE Batterien GmbH & Co KG Company officer: Wilhelm Giller – Manager Physical Laboratory Address/phone/fax/e-mail: Bontkirchener Str. 1 – 59929 Brilon-Hoppecke – Germany / 49296361- 484 / Wilhelm.Giller@hoppecke.com Signature/date/place: <i>i.v. Wilhelm Giller 04.01.2018, Brilon</i>							



HOPPECKE Batterien  
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Bontkirchener Str. 1  
59929 Brilon  
Deutschland

Annexe A

User statement of requirements

1) Application description information	
Application summary	
Load (in A or W) and autonomy time profile(s)	
Minimum and maximum system float voltage	
Maximum or boost charge system voltage available Y/N IF yes what value	
Minimum system discharge voltage or low voltage disconnect Y/N If yes what value	
Expected minimum and maximum operating temperatures and their duration per year	
Any other information or operational requirements such as duration and frequency of power outages, of diagnostic discharges and of energy cost saving actions	
2) Product specification information	
product safe operation in services	Compliance information mandatory
6.01 Gas emission (at float voltage and at 2.40 Vpc)	Data requested
6.02 High current tolerance	Pass
6.03 Short circuit current and D.C. internal resistance	Pass
6.04 Internal ignition from external spark sources	Pass
6.05 Protection against ground short propensity	Pass
6.06 Content and durability of required markings	Pass
6.07 Material identification	Pass
6.08 Valve operation	Pass
6.09 Flammability rating of materials	Data requested
6.10 Intercell connector performance	Data requested
Product performance in service	Compliance information mandatory or on as needed basis
6.11 Discharge capacity	C10 C8 C3 C1 C0.25
6.12 Charge retention during storage	Pass
6.13 Float service with daily discharges	Value to be requested as function of service environment
6.14 Recharge behaviour	Pass
Product durability in service	Compliance information mandatory or on as needed basis
6.15 Service life at an operating temperature of 40 °C	Value to be requested as function of service environment
6.16 Impact of a stress temperature of 55 °C or 60 °C	Value to be requested as function of service environment
6.17 Abusive over-discharge	Value to be requested if service environment warrants
6.18 Thermal runaway sensitivity	Pass and show data
6.19 Low temperature sensitivity	Value to be requested as function of service environment
6.20 Dimensional stability at elevated internal pressure	Show data
6.21 Dimensional stability against abuse of units during installation	Pass
61427 – 8.1 Discharge capacity	C120
61427 – 8.4 Cycle endurance test in photovoltaic applications	Value to be requested as function of service environment
Name of responsible operator: Address/phone/fax/e-mail: Signature/date/place Nonrecurring required identification code	

