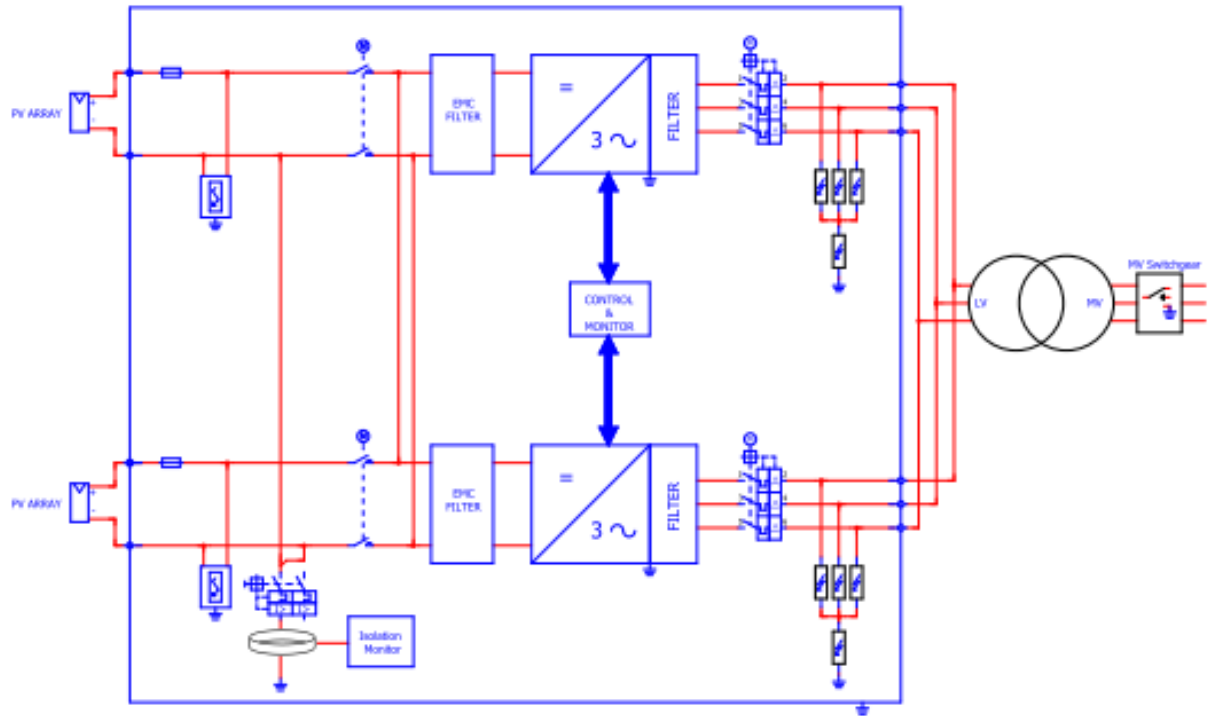

Product Certificate Number	20011-1-CER-E1
Applicant	Gamesa Electric, S.A.U AV. Fuentemar, 5 28823 Coslada (Madrid) - SPAIN
Model/	GAMESA E – 2,5 MVA-SB-I 1500V
Type of generating unit	Photovoltaic Inverter
Technical Data	See page 2
Network connection rule	IEC 61683: 1999 Photovoltaic systems. Power conditioners. Procedure for measuring efficiency
<p>Having assessed the test report number: 20011-1-TR-E2 performed by Certification Entity for Renewable Energies, S.L. (EA Accredited Laboratory N° 1239/LE2396) based on the requirements of the EN ISO/IEC 17025:2005.</p> <p>The above-mentioned generating unit complies with the requirements of the: IEC 61683: 1999 Photovoltaic systems. Power conditioners. Procedure for measuring efficiency.</p> <p>This certification is according the CERE internal process PET-CERE-09 Rev 11 based on the requirements of the EN ISO/IEC 17065:2012. For this certification process the conformity assessment activities was based on:</p> <ul style="list-style-type: none"> • Testing of production samples selected by CERE. • Audit of quality system according ISO 9001 with certificate number: 01 100 115165 issued by a certification body accredited according EN ISO/IEC 17021. • Inspection of the manufacturing process. <p>This certificate cancels and supersedes the certificate 20011-1-CER issued on September 05, 2017</p>	
<p>Madrid at April 03, 2019. This certificate is valid until September 5, 2020</p> <p style="text-align: right;">Miguel Martínez Lavín Certification Manager</p>	

GAMESA E - 2.5MVA-SB-I

DC INPUT	
Recommended PV-Power	3250 kWp
Max. DC Current (50°C)	2823 A
Max. DC Current (40°C)	2880 A
Max. DC Current (25°C)	2936 A
Max. DC short-circuit Current	3600 A
DC Voltage range	900 - 1500 V
DC Voltage Range MPPT	900 - 1300 V
AC OUTPUT	
Number of phases	3
Nominal AC Power (50°C)	2500 kVA
Max. AC Power (40°C)	2550 kVA
Max. AC Power (25°C)	2600 kVA
Nominal AC Voltage	Up to 34.5 kVrms with external transformer
Voltage allowance range	-10% / +10%
Frequency Range	47,5...53/57...63 Hz
Power Factor	Any
THD of AC current	<3% @ Sn
Maximum AC current	2300 Arms

Electrical Diagram of GAMESA E – 2,5 MVA-SB-I 1500V:



The sample selected to test was representative of the production.
The sample was selected in:

Gamesa Electric, S.A.U
AV. Fuentemar, 5
28823 Coslada (Madrid) - SPAIN

Sample Report Number:

20003-1-TM

The inspection of manufacturing process was performed in:
On 20th of June of 2017

CEIS
Carretera de Villaviciosa de Odón a Móstoles
(M-856), Km 1.5, 28935 Móstoles, Madrid.

Inspection Report Number:

20003-IF

ANNEX TO CERTIFICATE

0,9 Vdcm _{max} = 1170 V ± 50 V Measure = 1171,11 V								
% P _n	P _{aDC} (kW)	P _{aAC} (kW)	η _p (%)	P _{fDC} (kW)	P _{fAC} (kW)	η _c (%)	Ripple I (%I _n)	THD I (%I _n)
5	71,91	69,04	96,12	58,79	55,88	95,09	11,42	1,23
10	133,93	130,62	97,56	123,55	120,04	97,17	11,16	1,24
20	259,87	255,89	98,47	258,75	253,01	97,78	4,72	1,38
25	323,92	319,46	98,63	313,69	307,73	98,10	4,58	1,38
30	385,48	380,69	98,76	379,90	372,39	98,02	4,56	1,35
50	639,02	632,02	98,90	637,88	627,54	98,38	5,30	1,29
75	961,09	950,08	98,85	954,74	939,22	98,37	6,08	1,19
100	1286,18	1271,50	98,86	1276,48	1257,48	98,51	7,36	1,45
Euroefficiency		98,66%						
No-load losses		--						
Standby loss		-187,84 W						

V _{dcnom} = 1000 V ± 50 V Measure = 991,12 V								
% P _n	P _{aDC} (kW)	P _{aAC} (kW)	η _p (%)	P _{fDC} (kW)	P _{fAC} (kW)	η _c (%)	Ripple I (%I _n)	THD I (%I _n)
5	66,80	64,98	97,27	66,01	63,88	96,78	8,90	1,23
10	130,80	128,54	98,27	129,98	127,05	97,75	8,10	1,24
20	255,96	252,78	98,76	256,23	251,83	98,28	4,28	1,38
25	322,26	318,69	98,89	321,12	316,05	98,42	5,44	1,38
30	382,42	378,44	98,96	382,63	376,42	98,38	6,46	1,35
50	635,12	628,83	99,01	634,63	625,26	98,52	7,81	1,29
75	953,08	943,77	99,02	952,94	937,49	98,38	8,96	1,19
100	1270,69	1257,14	98,93	1272,34	1247,92	98,08	9,54	1,45
Euroefficiency		98,86%						
No-load losses		--						
Standby loss		-187,84 W						

V _{dcmin} = 900 V ± 50 V V _{measure} = 929,77 V								
% P _n	P _{aDC} (kW)	P _{aAC} (kW)	η _p (%)	P _{fDC} (kW)	P _{fAC} (kW)	η _c (%)	Ripple I (%I _n)	THD I (%I _n)
5	59,60	57,92	97,18	59,90	58,11	97,01	7,54	1,23
10	123,33	121,05	98,16	128,26	125,66	97,97	6,86	1,24
20	251,06	247,81	98,70	250,48	246,54	98,43	5,00	1,38
25	316,86	313,09	98,81	316,63	311,66	98,43	4,92	1,38
30	377,97	373,71	98,87	378,06	371,78	98,34	4,54	1,35
50	632,33	625,54	98,93	632,66	623,28	98,52	6,10	1,29
75	952,70	941,75	98,85	952,80	938,15	98,46	6,38	1,19
100	1271,71	1254,72	98,66	1271,20	1250,70	98,39	7,90	1,45
Euroefficiency		98,74%						
No-load losses		--						
Standby loss		-187,84 W						