

TEST REPORT

Applicant: Ablerex Electronics Co., Ltd.
1F, No. 3, Lane 7, Paokao Rd., Hsintien 23144, Taipei Hsien, Taiwan.

Product: Power inverter for PV

Model: ES 12000

Rating: Input: Max. 1000Vdc, voltage range 300-1000Vdc,
MPPT range 370-850Vdc, max. 2 x 14.3A
Output: 3/N/PE, 230/400Vac, 50/60Hz, max. 3 x 17.39A, 12kW

Sample Description: The product covered by this report is PV inverter.

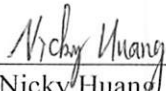
Testing Standard: According to IEEE std 519-1992

Date of Receipt of Test: September 18, 2013

Date of Performance of Test: July 15, 2013 ~ July 16, 2013

Conclusion: From the results of our testing on the submitted sample(s), we are of the opinion that the submitted sample(s) **COMPLY WITH** the above testing specification.

Prepared by:


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Reviewed by:


Tin Lin
Supervisor

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Harmonics test for Inverters

Results: (U Phase)

Load current (A)		17.3A×3	EUT rated current (A)		17.3A×3		DC input		740 Vdc	
							AC output		230 Vac	
Harm. order		2	3	4	5	6	7	8	9	10
Current (%)		0.848	0.251	0.203	0.975	0.220	1.764	0.146	0.117	0.118
Limit (%)		1.000	4.000	1.000	4.000	1.000	4.000	1.000	4.000	1.000
Harm. order	11	12	13	14	15	16	17	18	19	20
Current (%)	0.993	0.134	0.692	0.096	0.088	0.067	0.430	0.074	0.275	0.063
Limit (%)	2.000	0.500	2.000	0.500	2.000	0.500	1.500	0.375	1.500	0.375
Harm. order	21	22	23	24	25	26	27	28	29	30
Current (%)	0.063	0.036	0.192	0.035	0.129	0.041	0.037	0.019	0.092	0.022
Limit (%)	1.500	0.375	0.600	0.150	0.600	0.150	0.600	0.150	0.600	0.150
Harm. order	31	32	33	34	35	36	37	38	39	40
Current (%)	0.057	0.024	0.026	0.013	0.039	0.014	0.028	0.013	0.012	0.011
Limit (%)	0.600	0.150	0.600	0.150	0.300	0.075	0.300	0.075	0.300	0.075
TRD (%)	2.492									
Limit (%)	5									

Harmonics test for Inverters

Results: (V Phase)

Load current (A)		17.3A×3	EUT rated current (A)			17.3A×3		DC input		740 Vdc	
								AC output		230 Vac	
Harm. order h		2	3	4	5	6	7	8	9	10	
Current (%)		0.512	0.102	0.183	0.904	0.173	1.763	0.143	0.111	0.133	
Limit (%)		1.000	4.000	1.000	4.000	1.000	4.000	1.000	4.000	1.000	
Harm. order h	11	12	13	14	15	16	17	18	19	20	
Current (%)	0.894	0.116	0.707	0.099	0.080	0.082	0.358	0.074	0.285	0.055	
Limit (%)	2.000	0.500	2.000	0.500	2.000	0.500	1.500	0.375	1.500	0.375	
Harm. order h	21	22	23	24	25	26	27	28	29	30	
Current (%)	0.050	0.049	0.147	0.045	0.128	0.038	0.028	0.025	0.070	0.022	
Limit (%)	1.500	0.375	0.600	0.150	0.600	0.150	0.600	0.150	0.600	0.150	
Harm. order h	31	32	33	34	35	36	37	38	39	40	
Current (%)	0.058	0.022	0.018	0.013	0.031	0.016	0.027	0.013	0.014	0.009	
Limit (%)	0.600	0.150	0.600	0.150	0.300	0.075	0.300	0.075	0.300	0.075	
TRD (%)	2.436										
Limit (%)	5										

Harmonics test for Inverters

Results: (W Phase)

Load current (A)		17.3A×3	EUT rated current (A)		17.3A×3		DC input		740 Vdc	
							AC output		230 Vac	
Harm. order h		2	3	4	5	6	7	8	9	10
Current (%)		0.680	0.177	0.193	0.939	0.196	1.763	0.145	0.114	0.126
Limit (%)		1.000	4.000	1.000	4.000	1.000	4.000	1.000	4.000	1.000
Harm. order h	11	12	13	14	15	16	17	18	19	20
Current (%)	0.943	0.125	0.700	0.097	0.084	0.074	0.394	0.074	0.280	0.059
Limit (%)	2.000	0.500	2.000	0.500	2.000	0.500	1.500	0.375	1.500	0.375
Harm. order h	21	22	23	24	25	26	27	28	29	30
Current (%)	0.056	0.042	0.170	0.040	0.128	0.039	0.033	0.022	0.081	0.022
Limit (%)	1.500	0.375	0.600	0.150	0.600	0.150	0.600	0.150	0.600	0.150
Harm. order h	31	32	33	34	35	36	37	38	39	40
Current (%)	0.058	0.023	0.022	0.013	0.035	0.015	0.027	0.013	0.013	0.010
Limit (%)	0.600	0.150	0.600	0.150	0.300	0.075	0.300	0.075	0.300	0.075
TRD (%)	2.464									
Limit (%)	5									