

# Certificate G83/1-1

## Engineering Recommendation

**Manufacturer:** Ginlong(Ningbo) Technologies Co.,Ltd  
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**Post Code:** 315712  
**Country:** China  
**Test house at:** Ginlong Technologies  
**Type reference:**

Model	Max. AC Power	Rated AC Power	Max. Output Current
Solis-mini-700-4G	800W	700W	4.4A
Solis-mini-1000-4G	1100W	1000W	5.2A
Solis-mini-1500-4G	1700W	1500W	8.1A
Solis-mini-2000-4G	2200W	2000W	10.5A
Solis-mini-2500-4G	2800W	2500W	13.1A
Solis-mini-3000-4G	3300W	3000W	15.7A
Solis-mini-3600-4G	3600W	3600W	16A

The results of the G83/1-1 tests are summarized in this certificate. Ginlong declares hereby that all units shipped to the UK comply with the specifications and parameters defined in G83/1-1 engineering recommendation. These settings cannot be changed by installer, user or by anyone other than Ginlong.

### Test details

- Harmonic current emissions according to BS EN 61000-3-2A
- Voltage fluctuations and flicker according to BS EN 61000-3-3A
- DC injection / Power factor
- Under / Over frequency tests
- Under / Over voltage tests
- Loss of mains test
- Reconnection time

**Manufacturer Stamp**

宁波锦浪新能源科技有限公司  
NINGBO GINLONG TECHNOLOGIES CO., LTD.

**Ginlong Technologies**

**Ningbo, 7.Jun.2017**

*Zhangkun*

(Safety Engineer)

# Test Report

## Power quality

Harmonic current emissions as per BS EN 61000-3-2A								
Harmonic	2nd	3rd	5th	7th	9th	11th	13th	15th ≤ n ≤ 39th
Limit(A)	1.08	2.3	1.14	0.77	0.4	0.33	0.21	0.15 x (15/n)
Test value(A)	0.01	0.07	0.05	0.04	0.03	0.03	0.02	<limits BS EN 61000-3-2A

Voltage Fluctuations and Flicker as per BS EN 61000-3-3A				
	Starting	Stopping	Running	
Limit	4%	4%	Pst = 1.0	Plt = 0.65
Test value	< 1.0%	< 1.0%	0.05	0.07

	DC injection			Power factor		
G83/1-1 Limit	20mA, tested at three levels			0.95 lagging...0.95 leading		
Test level	10%	55%	100%	212 V	230 V	248 V
Test value	15.2mA	13.3mA	16.4mA	0.9969	0.9973	0.9982

## Under / Over frequency test

	Under frequency		Over frequency	
Parameter	Frequency(Hz)	Time(s)	Frequency(Hz)	Time(s)
G83/1-1 Limit	47	0.5	50.5	0.5
Actual setting	47	0.4	50.5	0.4
Trip value	46.95	0.41	50.52	0.39

## Under / Over voltage test

	Under voltage		Over voltage	
Parameter	Voltage(V)	Time(s)	Voltage(V)	Time(s)
G83/1-1 Limit	207	1.5	264	1.5
Actual setting	207	1.4	264	1.4
Trip value	206.5	1.37	263.7	1.36

## Loss of mains test

Method used	Rate of change of frequency		
Output power level	10%	55%	100%
G83/1-1 Limit	500ms	500ms	500ms
Trip value	280ms	370ms	160ms

## Reconnection time

	Under/ Over voltage	Under/Over frequency	Loss of mains
Minimum value	180s	180s	180s
Actual setting	180s	180s	180s
Recorded value	182s	182s	182s

### **Fault level contribution**

As SSEGs (small-scale embedded generators) for PV systems are inverter-connected, they are deemed to automatically comply with regulations and no further tests are required.

### **Self monitoring – solid state switching**

Not applicable as electro-mechanical relays are used.

### **Comments**

Test result is based on Solis-mini-3600-4G. All electrical characters of the other models are the same with Solis-mini-3600-4G. The test result can refer to 3.6kW model.