



Certificate of Compliance

Certificate: 80128138 **Master Contract:** 602980

Project: 80128138 **Date Issued:** 2022-12-05

Issued to: **Lithion Battery, Inc.**

1350 Wigwam Parkway

Henderson, Nevada 89074

United States

Attention: Stewart Graham

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.



Yuanyuan (Yolanda) Zhou
Issued by: Yuanyuan (Yolanda) Zhou

PRODUCTS

CLASS 3701-88 - BATTERIES - Electrical Energy Storage System - Certified to US Standard.

CLASS 3701-08 - BATTERIES - Electrical Energy Storage System.

Table 1 The Input Ratings for ESS with hybrid inverters:

Energy Storage System Model	ESS PV Input Ratings		
	Max Current, A	Voltage Range, V	Input Power, W
HG-IN12-LFP05120-2A01	20A*2	150~500	6500W*2



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HG-IN12-LFP10240-2A01	20A*2	150~500	6500W*2
HG-IN12-LFP15360-2A01	20A*2	150~500	6500W*2
HG-IN12-LFP20480-2A01	20A*2	150~500	6500W*2
HG-IN12-LFP25600-2A01	20A*2	150~500	6500W*2
HG-IN12-LFP30720-2A01	20A*2	150~500	6500W*2
HG-IN12-LFP35840-2A01	20A*2	150~500	6500W*2
HG-IN12-LFP40960-2A01	20A*2	150~500	6500W*2
HG-IN12-LFP04800-2A01	20A*2	150~500	6500W*2
HG-IN12-LFP09600-2A01	20A*2	150~500	6500W*2
HG-IN12-LFP14400-2A01	20A*2	150~500	6500W*2
HG-IN12-LFP19200-2A01	20A*2	150~500	6500W*2
HG-IN12-LFP24000-2A01	20A*2	150~500	6500W*2
HG-IN12-LFP28800-2A01	20A*2	150~500	6500W*2
HG-IN12-LFP33600-2A01	20A*2	150~500	6500W*2
HG-IN12-LFP38400-2A01	20A*2	150~500	6500W*2
HG-IN15-LFP05120-2A01	26A*3	175~425	17000W
HG-IN15-LFP10240-2A01	26A*3	175~425	17000W
HG-IN15-LFP15360-2A01	26A*3	175~425	17000W
HG-IN15-LFP20480-2A01	26A*3	175~425	17000W
HG-IN15-LFP25600-2A01	26A*3	175~425	17000W
HG-IN15-LFP30720-2A01	26A*3	175~425	17000W
HG-IN15-LFP35840-2A01	26A*3	175~425	17000W



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HG-IN15-LFP40960-2A01	26A*3	175~425	17000W
HG-IN15-LFP04800-2A01	26A*3	175~425	17000W
HG-IN15-LFP09600-2A01	26A*3	175~425	17000W
HG-IN15-LFP14400-2A01	26A*3	175~425	17000W
HG-IN15-LFP19200-2A01	26A*3	175~425	17000W
HG-IN15-LFP24000-2A01	26A*3	175~425	17000W
HG-IN15-LFP28800-2A01	26A*3	175~425	17000W
HG-IN15-LFP33600-2A01	26A*3	175~425	17000W
HG-IN15-LFP38400-2A01	26A*3	175~425	17000W

Table 2 The Output Ratings for ESS with hybrid inverters:

Energy Storage System Model	ESS Output Ratings							
	Max Current, A	Voltage Range, Vac	Output Power, W	Input Phase	Frequency, Hz	Duty Cycle	Max Short Circuit, A	Energy, kWh
HG-IN12-LFP05120-2A01	37.5	211~264 @240V	9000(L-L)/4800(L-N)	Split phase	60	-	63	5.12
	40	183~229 @208V	9000(L-L)/4800(L-N)	Split phase	60	-	63	5.12
HG-IN12-LFP10240-2A01	37.5	211~264 @240V	9000(L-L)/4800(L-N)	Split phase	60	-	63	10.24
	40	183~229 @208V	9000(L-L)/4800(L-N)	Split phase	60	-	63	10.24
HG-IN12-LFP15360-2A01	37.5	211~264 @240V	9000(L-L)/4800(L-N)	Split phase	60	-	63	15.36
	40	183~229 @208V	9000(L-L)/4800(L-N)	Split phase	60	-	63	15.36
HG-IN12-LFP20480-2A01	37.5	211~264 @240V	9000(L-L)/4800(L-N)	Split phase	60	-	63	20.48
	40	183~229 @208V	9000(L-L)/4800(L-N)	Split phase	60	-	63	20.48
	37.5	211~264 @240V	9000(L-L)/4800(L-N)	Split phase	60	-	63	25.6



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HG-IN12-LFP25600-2A01	40	183~229 @208V	9000(L-L)/4800(L-N)	Split phase	60	-	63	25.6
HG-IN12-LFP30720-2A01	37.5	211~264 @240V	9000(L-L)/4800(L-N)	Split phase	60	-	63	30.72
	40	183~229 @208V	9000(L-L)/4800(L-N)	Split phase	60	-	63	30.72
HG-IN12-LFP35840-2A01	37.5	211~264 @240V	9000(L-L)/4800(L-N)	Split phase	60	-	63	35.84
	40	183~229 @208V	9000(L-L)/4800(L-N)	Split phase	60	-	63	35.84
HG-IN12-LFP40960-2A01	37.5	211~264 @240V	9000(L-L)/4800(L-N)	Split phase	60	-	63	40.96
	40	183~229 @208V	9000(L-L)/4800(L-N)	Split phase	60	-	63	40.96
HG-IN12-LFP04800-2A01	37.5	211~264 @240V	9000(L-L)/4800(L-N)	Split phase	60	-	63	4.8
	40	183~229 @208V	9000(L-L)/4800(L-N)	Split phase	60	-	63	4.8
HG-IN12-LFP09600-2A01	37.5	211~264 @240V	9000(L-L)/4800(L-N)	Split phase	60	-	63	9.6
	40	183~229 @208V	9000(L-L)/4800(L-N)	Split phase	60	-	63	9.6
HG-IN12-LFP14400-2A01	37.5	211~264 @240V	9000(L-L)/4800(L-N)	Split phase	60	-	63	14.4
	40	183~229 @208V	9000(L-L)/4800(L-N)	Split phase	60	-	63	14.4
HG-IN12-LFP19200-2A01	37.5	211~264 @240V	9000(L-L)/4800(L-N)	Split phase	60	-	63	19.2
	40	183~229 @208V	9000(L-L)/4800(L-N)	Split phase	60	-	63	19.2
HG-IN12-LFP24000-2A01	37.5	211~264 @240V	9000(L-L)/4800(L-N)	Split phase	60	-	63	24
	40	183~229 @208V	9000(L-L)/4800(L-N)	Split phase	60	-	63	24
HG-IN12-LFP28800-2A01	37.5	211~264 @240V	9000(L-L)/4800(L-N)	Split phase	60	-	63	28.8
	40	183~229 @208V	9000(L-L)/4800(L-N)	Split phase	60	-	63	28.8
HG-IN12-LFP33600-2A01	37.5	211~264 @240V	9000(L-L)/4800(L-N)	Split phase	60	-	63	33.6
	40	183~229 @208V	9000(L-L)/4800(L-N)	Split phase	60	-	63	33.6
	37.5	211~264 @240V	9000(L-L)/4800(L-N)	Split phase	60	-	63	38.4



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HG-IN12-LFP38400-2A01	40	183~229 @208V	9000(L-L)/4800(L-N)	Split phase	60	-	63	38.4
HG-IN15-LFP05120-2A01	62.5	211~264 @240V	15000(L-L)/7500(L-N)	Split phase	60	-	146	5.12
	62.5	183~229 @208V	13000(L-L)/6500(L-N)	Split phase	60	-	146	5.12
HG-IN15-LFP10240-2A01	62.5	211~264 @240V	15000(L-L)/7500(L-N)	Split phase	60	-	146	10.24
	62.5	183~229 @208V	13000(L-L)/6500(L-N)	Split phase	60	-	146	10.24
HG-IN15-LFP15360-2A01	62.5	211~264 @240V	15000(L-L)/7500(L-N)	Split phase	60	-	146	15.36
	62.5	183~229 @208V	13000(L-L)/6500(L-N)	Split phase	60	-	146	15.36
HG-IN15-LFP20480-2A01	62.5	211~264 @240V	15000(L-L)/7500(L-N)	Split phase	60	-	146	20.48
	62.5	183~229 @208V	13000(L-L)/6500(L-N)	Split phase	60	-	146	20.48
HG-IN15-LFP25600-2A01	62.5	211~264 @240V	15000(L-L)/7500(L-N)	Split phase	60	-	146	25.6
	62.5	183~229 @208V	13000(L-L)/6500(L-N)	Split phase	60	-	146	25.6
HG-IN15-LFP30720-2A01	62.5	211~264 @240V	15000(L-L)/7500(L-N)	Split phase	60	-	146	30.72
	62.5	183~229 @208V	13000(L-L)/6500(L-N)	Split phase	60	-	146	30.72
HG-IN15-LFP35840-2A01	62.5	211~264 @240V	15000(L-L)/7500(L-N)	Split phase	60	-	146	35.84
	62.5	183~229 @208V	13000(L-L)/6500(L-N)	Split phase	60	-	146	35.84
HG-IN15-LFP40960-2A01	62.5	211~264 @240V	15000(L-L)/7500(L-N)	Split phase	60	-	146	40.96
	62.5	183~229 @208V	13000(L-L)/6500(L-N)	Split phase	60	-	146	40.96
HG-IN15-LFP04800-2A01	62.5	211~264 @240V	15000(L-L)/7500(L-N)	Split phase	60	-	146	4.8
	62.5	183~229 @208V	13000(L-L)/6500(L-N)	Split phase	60	-	146	4.8
HG-IN15-LFP09600-2A01	62.5	211~264 @240V	15000(L-L)/7500(L-N)	Split phase	60	-	146	9.6
	62.5	183~229 @208V	15000(L-L)/7500(L-N)	Split phase	60	-	146	9.6
	62.5	211~264 @240V	15000(L-L)/7500(L-N)	Split phase	60	-	146	14.4



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HG-IN15-LFP14400-2A01	62.5	183~229 @208V	15000(L-L)/7500(L-N)	Split phase	60	-	146	14.4
HG-IN15-LFP19200-2A01	62.5	211~264 @240V	15000(L-L)/7500(L-N)	Split phase	60	-	146	19.2
	62.5	183~229 @208V	15000(L-L)/7500(L-N)	Split phase	60	-	146	19.2
HG-IN15-LFP24000-2A01	62.5	211~264 @240V	15000(L-L)/7500(L-N)	Split phase	60	-	146	24
	62.5	183~229 @208V	15000(L-L)/7500(L-N)	Split phase	60	-	146	24
HG-IN15-LFP28800-2A01	62.5	211~264 @240V	15000(L-L)/7500(L-N)	Split phase	60	-	146	28.8
	62.5	183~229 @208V	15000(L-L)/7500(L-N)	Split phase	60	-	146	28.8
HG-IN15-LFP33600-2A01	62.5	211~264 @240V	15000(L-L)/7500(L-N)	Split phase	60	-	146	33.6
	62.5	183~229 @208V	15000(L-L)/7500(L-N)	Split phase	60	-	146	33.6
HG-IN15-LFP38400-2A01	62.5	211~264 @240V	15000(L-L)/7500(L-N)	Split phase	60	-	146	38.4
	62.5	183~229 @208V	15000(L-L)/7500(L-N)	Split phase	60	-	146	38.4

Table 3: General Ratings for ESS Series:

Energy Storage System		
Operating Temperature, °C	Inverter: -25°C ~55°C, >45°C /113F derating (Sol-Ark-12K-P) -40°C ~60°C, >45°C /113F derating (Limitless 15K-LV) Battery System: 0°C-55°C / (-20°C-55°C) (Charge); -20°C ~55°C (Discharge)	
Auxiliary Rating,	-	
Seismic Rating	-	
Enclosure Rating	Inverter: NEMA 3R (Indoor and Outdoor Use) Battery System: IP55 (Indoor and Outdoor Use)	
Weight, Kg	Inverter: 35Kg (Sol-Ark-12K-P) ,38.6Kg(Limitless 15K-LV)	
	Battery System:	
	HG-IN12-LFP05120-2A01	HG-IN15-LFP05120-2A01
	HG-IN12-LFP10240-2A01	HG-IN15-LFP10240-2A01
	HG-IN12-LFP15360-2A01	HG-IN15-LFP15360-2A01
	HG-IN12-LFP20480-2A01	HG-IN15-LFP20480-2A01
HG-IN12-LFP25600-2A01	HG-IN15-LFP25600-2A01	



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	HG-IN12-LFP30720-2A01	HG-IN15-LFP30720-2A01
	HG-IN12-LFP35840-2A01	HG-IN15-LFP35840-2A01
	HG-IN12-LFP40960-2A01	HG-IN15-LFP40960-2A01
	(36+51*N (where N can be 1, 2, 3, 4, 5, 6, 7 or 8)) Kg	
	Battery System:	
	HG-IN12-LFP04800-2A01	HG-IN15-LFP04800-2A01
	HG-IN12-LFP09600-2A01	HG-IN15-LFP09600-2A01
	HG-IN12-LFP14400-2A01	HG-IN15-LFP14400-2A01
	HG-IN12-LFP19200-2A01	HG-IN15-LFP19200-2A01
	HG-IN12-LFP24000-2A01	HG-IN15-LFP24000-2A01
HG-IN12-LFP28800-2A01	HG-IN15-LFP28800-2A01	
HG-IN12-LFP33600-2A01	HG-IN15-LFP33600-2A01	
HG-IN12-LFP38400-2A01	HG-IN15-LFP38400-2A01	
(36+49.5*N (where N can be 1, 2, 3, 4, 5, 6, 7 or 8)) Kg		
Suppression System	-	
Technology	Li-ion	

Note:

1. The ESS will be installed on site using inverter, battery system and the components specified in this report. Battery system ratings details refer to CSA report 80082107. And inverter rating details refer to SGS report GZES200902856961 for inverter Sol-Ark-12K-P and GZES220100105461 for inverter Limitless 15K-LV.
2. The operating parameter such as voltage, current, temperature, environmental conditions etc of ESS are not determined during this investigation. Battery System and PCS integrate into a ESS need to use within the operating parameter of individual component rating. Installation of ESS shall evaluate all component used within the operating parameter used during certification of PCS and Battery system.
3. The ESS installation was not evaluated. Installation shall be implemented following the subassembly manufacturers' installation manual, national and local codes.
4. Arc flash risk was not considered on the ESS system noted in the report.
5. Ratings for seismic and salt-fog were not declared, additional evaluation may be needed for system to be installed in these areas.
6. The AC circuit breaker connected in the grid port will be considered by the end product user when installation.
7. Utility grid interaction is intended that the acceptability of grid support utility interactive inverters shall be determined by the local electric utility.



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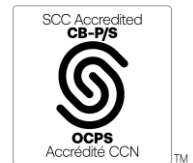
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APPLICABLE REQUIREMENTS

ANSI/CAN/UL 9540:2020 - Energy Storage Systems and Equipment, 2nd Edition.

Notes:

Products certified under Class C370102, C370184 have been certified under CSA's ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca



MARKINGS

Each unit shall bear all the required markings identified in the applicable certification report(s).