

UN 38.3 DECLARATION OF CONFORMITY



COMPANY: KS Energy Holdings (UK) Limited

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The Li-ion batteries submitted are tested according to section 38.3 of 6th rev ed. of the recommendations on the transport of dangerous goods, manual of test criteria (ST/SG/AC.10/11/Rev.6/Section 38.3). The test results comply with the relevant standards.

KS Energy Holdings (UK) Ltd declares that the following products:

PRODUCT DESCRIPTION: 12V Lithium-ion Phosphate Batteries

BRAND: KS ENERGY

MODELS:

KS-60	Lithium /Industrial equipment/leisure battery
KS-100	Lithium Deep Cycle Leisure Battery
KS-120	Lithium Deep Cycle Leisure Battery
KS-200	Lithium Deep Cycle Leisure Battery
KS-300	Lithium Deep Cycle Leisure Battery

Physical description, Battery comprising of ABS case housing with individual lithium-ion phosphate cells type I26650 with integral electronic battery management circuit board.

Testing Laboratory: CVC (Vkan Certification & Testing Co. Ltd). 3 Tiantaiyi Rd, Kaitai Avenue, Science City, Guangzhou 510663 P.R.C. Tel 020 32293888 email office@cvc.org.cn www.cvc.org.cn

Test report number: RZUN2017-1306

Date: 29th June 2017

Test summary: T1 Altitude simulation; T2 Thermal test; T3 Vibration; T4 Shock; T5 Extrenal short circuit; T6 Impact/Crush; T7 Overcharge; T8 Forced discharge

RESULTS PASS

Batteries from IFR26650NM 3.2V 3200mAh, 10.24Wh cells (Dongguan Wiltson New Energy Tech Co. Ltd. 1 Nengda Rd Shipai Dongguan (J. Deng GSL Energy).

Conducted tests:

KS Energy Holdings (UK) Limited, registered in England. Company registration No. 12022840

38.3.4.1 Batteries stored at 11.6kPa for >6 hours at 20 degrees C. Mass loss <0.1%. Open circuit voltage >90%. No fire, leakage, venting, rupture or disassembly. RESULTS PASS

38.3.4.2 Batteries stored 1 cycle 72 degrees C >6 hours, then 40 cycled once. Repeated 10 times. Stored 24 hours at 20 degrees C. Mass loss <0.1%. Open circuit voltage >90%. No fire, leakage, venting, rupture or disassembly. RESULTS PASS

38.3.4.3 Batteries secured to vibration platform. Subjected to sinewave from 7Hz at 1gn to maximum 18Hz, maintained 1.6mm amplitude to peak acceleration of 8gn. (50Hz). Peak 6gn to 200Hz. Cycle repeated 12 times for 3 hours total of three perpendicular mounting positions. Mass loss <0.1%. Open circuit voltage >90%. No fire, leakage, venting, rupture or disassembly. RESULTS PASS

38.3.4.4 Batteries secured to vibration platform. Subjected to half sinewave shock at 50gn peak pulsed at 11 milliseconds. Total three shocks in positive direction, three negatives of which three mutually perpendicular mounting positions tested. Repeated 18 times. Mass loss <0.1%. Open circuit voltage >90%. No fire, leakage, venting, rupture or disassembly. RESULTS PASS

38.3.4.5 Batteries stabilised to 57 degrees C. Batteries short circuited with short <0.1 Ohm and continued for 1 hour. Batteries further observed for 6 hours at temperature of 57 degrees C. External case temperature not to exceed 170 degrees C. No rupture, no fire, no disassembly. RESULTS PASS (NB. Notes – no leakage observed).

38.3.4.6 Crushed between flat surfaces at 1.5cm/s until applied force reaches 13kN. Then battery deforms by 50%. Force applied to widest side. Batteries to have case temperature <170 degrees C. No Fire, No disassembly within 6 hours. RESULTS PASS

38.3.7 Charge current of 2C at 29Volts. Conducted at 25 degrees C for 24-hour duration. No Fire, No disassembly within 7 days. RESULTS PASS

38.3.8 Each battery force discharged at 20 degrees C by means of series power supply at 100A at 12V for 1 hour. No Fire, No disassembly within 7 days. RESULTS PASS

Additional Notes: Manufacturer confirms agreed 30% minimum state of charge (SoC) for UN 3480 batteries where express air transport has been requested.

Signed: Mr N D Morris



Authority: Managing Director

10th June 2019