

Safran Electronics & Defense Beacons SAS Z.I. des Cinq Chemins CS10028 56520 GUIDEL - FRANCE Telephone: +33 (0)2 97 02 49 49 PAGE: 1 / 13 REF.: DOC20038

INDEX : E

DATE: 14/01/2025

# **KANNAD ULTIMA ELTS**

# **MATERIAL SAFETY DATA SHEET**

Name	Sign.	Name	Sign.	Name	Sign.
G. LE CALVE	Date	I. LE ROMANCER	Date	I. MARQUER	Date
Position Production Engineering Director	<u>Gwénaël LE CALVE</u>	<b>Position</b> Customer Support Manager	ISABElle LE ROMANCER, Institution (17.00) 17.00 (1871-1)	<b>Position</b> Quality Manager	<u> </u>
Comp	iled by	Check	ked by	Appro	ved by



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#### **RECORD OF REVISIONS**

Rev.	Date	Description of modification
Α	04/01/2021	First Issue
В	30/05/2022	Add part 14.3 for ELTs Shipped with spare batteries (ECN 22-0031)
С	12/09/2023	Update: part 1.2. List of ELTs and part 17. APPENDIX
D	29/05/2024	Add ULTIMA-DT-07 reference
E	10/12/2024	Add ULTIMA-AF and BAT600 references

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# 1. LIST OF BATTERY PACKS

# 1.1. List of Battery Packs

Battery Pack Name	Battery Pack P/N	Qty of cells per Battery Pack	Cells Reference	Lithium content for each product	Net Quantity
BAT400 BATTERY PACK	S1863514-01	4	SAFT LM17500 Primary Li-MnO2 cell	4.0 g max	0.400 kg
BAT600 BATTERY PACK	S1861514-01	8	SAFT LM17500 Primary Li-MnO2 cell	8.0 g max	0.400 kg
BAT800 BATTERY PACK	S1865514-01	8	SAFT LM17500 Primary Li-MnO2 cell	8.0 g max	0.400 kg

# 1.2. List of ELTs

ELT Name	Part Number	Battery Pack Name	Battery P/N included	Lithium content for each product	Net Quantity
KANNAD ULTIMA-S-03(Cat A)	S1863501-03	BAT400	S1863514-01	4.0 g	0.400 kg
KANNAD ULTIMA-S-13 (Cat A)	S1863501-13	BAT400	S1863514-01	4.0 g	0.400 kg
KANNAD ULTIMA-S-04 (Cat A RLS)	S1863501-04	BAT400	S1863514-01	4.0 g	0.400 kg
KANNAD ULTIMA-S-14 (Cat A RLS)	S1863501-14	BAT400	S1863514-01	4.0 g	0.400 kg
KANNAD-ULTIMA-DT-05	S1865501-05	BAT800	S1865514-01	8 g	0.400 kg
KANNAD-ULTIMA-DT-06	S1865501-06	BAT800	S1865514-01	8 g	0.400 kg
KANNAD-ULTIMA-DT-07	S1865501-07	BAT800	S1865514-01	8 g	0.400 kg
KANNAD ULTIMA-AF	S1861521-01	BAT600	S1861514-01	8 g	0.400 kg

# 1.3. List of Battery Kits

Battery Kit Name	Battery Pack P/N	Qty of cells per Battery Pack	Cells Reference	Lithium content for each product	Net Quantity
BAT400 BATTERY KIT	S1863590-01	4	SAFT LM17500 Primary Li-MnO2 cell	4.0 g max	0.400 kg
BAT600 BATTERY PACK	S1861590-01	8	SAFT LM17500 Primary Li-MnO2 cell	8.0 g max	0.400 kg
BAT800 BATTERY PACK	S1865590-01	8	SAFT LM17500 Primary Li-MnO2 cell	8.0 g max	0.400 kg





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#### 2. COMPOSITION, INFORMATION OR INGREDIENTS

#### 2.1. Products

Products are ELT beacons powered by Lithium Batteries. Sealed inside the product, the battery pack contains either 4 Lithium Manganese dioxide primary cells (for BAT400) or 8 Lithium Manganese dioxide primary cells (for BAT800). Each pack has its own housing, and incorporates electrical short-circuit protection.

The batteries in this product have a limited service life: see label for expiry date

The product contains no user-serviceable parts.

The product should only be disassembled by qualified service personnel.

DO NOT ATTEMPT TO RECHARGE THE BATTERIES.

#### 2.2. At Cell Level

Component	CAS Number	EINECS/ELINCS	Content (wt. %)*
Lithium	7439-93-2	231-102-5	3-4
Manganese dioxide	1313-13-9	215-202-6	40-50
Organic electrolyte**	N/A	N/A	15-25
Carbon	1338-86-4		1-5
Copper	7440-50-8	231-159-6	1-15
Aluminium	7429-90-5	231-072-3	1-20
Stainless steel, Nickel, inert material	N/A	N/A	remainder

<sup>\*</sup> Quantities vary with cell type

For More details, refer to SAFT Battery information sheet

# 2.3. At Battery Pack Level

Depending on the type of battery pack the content may vary but will not exceed the given content ranges.

Refer to annex:

- NQ-205202D UN38.3 TEST SUMMARY REPORT (\$1863514-01) (BAT400)
- NQ-205201D UN38.3 TEST SUMMARY REPORT (\$1865514-01) (BAT800)

#### 3. HAZARD IDENTIFICATION

Not chemically dangerous with normal use in accordance with Saft recommendations as stated in the user manuals or other similar documentation. Under normal conditions of use, the

<sup>\*\*</sup> Contains 1,2-Dimethoxyethane (CAS 110-71-4, EINECS 603-031-00-3), content < 3 % listed on REACH candidate list since June 2012



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electrode materials and electrolyte they contain are not released to the outside, provided that the battery integrity is maintained and seals remain intact. Exposure to the ingredients contained within or their combustion products could be harmful.

Risk of exposure only in case of abuse (mechanical, thermal, electrical) which leads to the activation of safety valves and/or the rupture of the battery containers. In particular, the battery should not be opened, burned or stored/used above the specified temperature range (for more details see Section 4). Electrolyte leakage or battery venting/explosion/fire may follow, depending upon the circumstances.



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# 3.1. Protection from charging:

Whenever lithium batteries are not the single power source in a circuit, the following measures recommended by Underwriters Laboratories are relevant. The cells should not be connected with an electrical power source that would increase the load through the cells. The electronic circuit shall include one of the following:

- Two suitable diodes or the equivalent in series with the cells to prevent any reverse (charging) current. The second diode is used to provide protection in the event that one would fail. Quality control, or equivalent procedures, shall be established by the device manufacturer to check that the diode polarity is correct for each unit. Or:
- A blocking diode or the equivalent to prevent any reverse (charging) current and a resistor to limit current in case of diode failure. The resistor should be sized to limit the reverse (charging) current to the maximum value according to the data sheet of the cell.

# 3.2. Hazards in case of opened cells by released material:

**EYE CONTACT**: Can cause eye irritation. Dust may cause inflammation of eyelids.

**SKIN CONTACT**: Can cause skin irritation.

**INHALATION**: Can cause respiratory tract and mucus membrane irritation. If gas is generated during battery disassembly, throat irritation may occur.

**INGESTION**: Can be poisoning if swallowed.

#### 4. FIRST AID MEASURES

#### **EYE CONTACT:**

Exposure to materials from a ruptured or otherwise damaged cell or battery may cause eye irritation.

Flush immediately with copious amounts of water for at least 15 minutes; consult a physician immediately.

#### **SKIN CONTACT:**

Exposure to materials from a ruptured or otherwise damaged cell or battery may cause skin irritation.

Flush immediately with water and wash affected area with soap and water.

#### **INHALATION:**

Avoid inhaling any vented gases.

Remove to fresh air immediately.

If breathing is difficult, seek emergency medical attention.

#### **INGESTION:**

Consult a physician or local poison control center immediately.



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#### 5. FIRE FIGHTING MEASURES

#### **Extinguishing Media:**

Copious amounts of cold water or water-based foam may be used to cool burning cells or batteries. Do not use warm or hot water.

A carbon dioxide (CO2) extinguisher is also effective.

For fires involving exposed, raw lithium metal (characterized by deep red flames), use only metal (Class D) fire extinguishers.

Do not use Halon type extinguishing material.

#### **Special Fire Fighting Procedures:**

Use a positive pressure self-contained breathing apparatus (SCBA) if cells or batteries are involved in a fire.

Full fire fighting protective clothing is necessary.

During water application, caution is advised as burning pieces of flammable particles may be ejected from the fire.

#### 6. ACCIDENTAL RELEASE MEASURES

In the event a cell, battery or beacon is crushed; releasing its contents, rubber gloves must be used to handle all battery components.

Avoid inhalation of any vapors that may be emitted.

Damaged batteries or beacons that are not hot or burning should be placed in a sealed plastic bag or container.

#### 7. HANDLING AND STORAGE

#### **Precautions for Safe Handling:**

Batteries are not designed to be recharged.

Battery pack could not be disassembled without breaking. Never disassemble a battery pack More than a momentary short circuit will cause temporary battery voltage loss until the battery is subjected to a charge. Batteries with fuses will no longer be functional after being shorted.

Extended short-circuiting creates high temperatures in the cell.

High temperatures can cause burns in skin or cause the cell to flame.

#### **Conditions for Safe Storage and Incompatibility:**

Batteries should be separated from other materials and stored in a non-combustible, well ventilated structure with sufficient clearance between walls and battery stacks. Do not place batteries near heating equipment, nor expose to direct sunlight for long periods.

Do not store batteries above 60°C (140°F) or below -40°C (-40°F). Store batteries in a cool (below 25°C (77°F)), dry area that is subject to little temperature change. Elevated temperatures can result in reduced battery service life. Battery exposure to temperatures in excess of 130°C (266°F) will result in the battery venting flammable liquid and gases.

Do not store batteries in a manner that allows terminals to short circuit.



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#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### **Engineering Controls and Work Practices:**

Under conditions of normal use, batterie packs or beacons do not emit hazardous or regulated substances.

No engineering controls are required for handling battery packs that have not been damaged.

#### **Personal Protective Equipment:**

Personal protective equipment for damaged battery pack should include chemical resistant gloves and safety glasses.

In the event of a fire, SCBA should be worn along with thermally protective outer garments.

#### 9. PHYSICAL AND CHEMICAL PROPORTIES

The lithium-MnO2 cells or batteries described by this Battery Information Sheet are sealed units when offered for sale. They are manufactured "articles" and do not expose the user to hazardous chemicals when used in accordance with manufacturer specifications.

#### 10. STATIBILITY AND REACTIVITY

Product is stable under conditions described in Section 4.

The following hazards may occur under abuse conditions in case of cell opening:

**HAZARDOUS REACTIONS**: Lithium released from the cell may react with water in the atmosphere and produce hydrogen, which is a highly flammable gas.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Thermal decomposition of the cell may release electrolyte liquid and vapour, harmful materials, and dusts.

MATERIALS TO AVOID: Oxidizing agents, bases, water.

#### 11. TOXICOLOGICAL INFORMATION

Risk of irritation occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, irritation to the skin, eyes and respiratory tract may occur.

1,2-Dimethoxyethane (EGDME) may impair fertility and may cause harm to unborn child. EGDME is listed on the REACH candidate list as SVHC since June 2012.

#### 12. ECOLOGICAL INFORMATION

No ecological impacts expected under normal use conditions.

Information on the ecological impact of internal battery pack components has not been included in this document.

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#### 13. DISPOSAL CONSIDERATION

Do not dispose in fire. Battery pack disposal regulations vary on national, state/provincial and local bases.

Disposal must be conducted in accordance with the applicable regulations.

These battery packs contain recyclable materials and recycling is encouraged over disposal.

#### 14. TRANSPORTATION INFORMATION

# 14.1. For ELTS only

Class: 9

UN Number: UN3091

IATA packing instruction for air: 970 Section I

Packing instruction for road and sea: P903

Proper shipping Name: Lithium metal batteries contained in equipment

Packin Group:

#### 14.2. For Battery Kits (Kits not yet available)

Class:

UN Number: UN3090

IATA packing instruction for air: 968 Section IA

Packing instruction for road and sea: P903

Proper shipping Name: Lithium metal batteries

Packin Group:

#### 14.3. For ELTs shipped with spare batteries

Class: 9

UN Number: UN3091

IATA packing instruction for air: 969 Section I

Packing instruction for road and sea: P903

Proper shipping Name: Lithium metal batteries packed with equipment

Packin Group:

#### 15. DISPOSAL INFORMATION

DO NOT INCINERATE

DO NOT DISCARD IN DOMESTIC WASTE



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At the end of the product's useful life, it is vital that the battery packs be disconnected from the main unit to prevent false alarms. False alarms cause expensive disruption to Search and Rescue services and may endanger lives as a consequence.

Instructions on battery removal can be found in the End of Life Statement in the product User manual. This Operation should only be performed by qualified service personnel.

This product should be disposed of in a sensible and considerate manner, and in accordance with local regulations. Take it to a civil recycling facility, or contact SafranED Beacons for advice.

#### **Marking Consideration**

European Union: According to directive 2006/66/EC, the batteries have to be marked with the crossed wheel bin symbol.

#### 16. OTHER INFORMATION

#### 16.1. GREEN PASSPORT: SHIP RECYCLING INFORMATION

SafranED Beacons hereby declares potentially hazardous content in some of its electronic products.

Small amounts of the following substances may be present: Berylium oxide, lithium, lead, brominated flame retardants.

In keeping with European directive 2002/96/EC (Waste Electronic and Electrical Equipement), SafranED Beacons strongly recommends that its products, including any battery packs, be disposed of in a consideral and legal manner. Additional information, concerning the disposal of equipment can also be found in the relevant equipment User Manual.



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# 17. APPENDIX – UN 38.3 Test Summary Report from Williamson Electronique



LECTRONIQUE			
UN 38.3 TEST	SUMMARY REPORT		
☐ Cell ☑ Battery ☐ Product	Unique report ID : NQ2	205201D	
Tested type part: WILPA2851D	Report date : 2022.01.0	7	
Customer type part: S1865514-01 & S1865590-01 Same type part: WILPA2851E, WILPA2851F,	11cport date : 2022.01.0	,	
WILPA2851G, WILPA2851H, WILKI0217A			
Manufacturer :	Test laboratory:		
Williamson Electronique		s IndustriesElectriques (LCIE)	
Pôle industriel d'innovation Jules Verne	33 Avenue du Général Leclerc		
8 rue du Moulin Cassé, BP 61211	92 260 Fontenay Aux R	oses	
44340 Bouguenais Cedex - France	France		
T. +33 (0) 2.40.18.80.00	T. +33 (0) 1.40.95.60.60	)	
https://www.williamson-electronique.fr	www.lcie.fr		
☐ Li-ion battery (rechargeable) ☐ Li-metal batter  Description: assembled from 2 blocks of four LM17500			
Bescription : assembled from 2 blocks of four EN17300	o cens in series		
Battery weight : 400 g			
☐ Nominal Energy : Watt-hour <b>or</b> ☑ Lithi	um content : 8 g		
☐ Cell ☑ Battery ☐ Product. Model number/p	art number : 4s1p-2 LM17500		
List of tests conducted	Results (Pass / Fail / N.A.)	Test record reference	
T1 : Altitude simulation	PASS	168660-755034 v01	
T2 : Thermal test	PASS	168660-755034 v01	
T3 : Vibration	PASS	168660-755034 v01	
T4 : Shock	PASS	168660-755034 v01	
T5 : External short circuit	PASS	168660-755034 v01	
T6: Impacted/crush (cell only test)	PASS	10154	
T7 : Overcharge (N.A for Li-metal only)	PASS	N.A	
T8 : Forced discharge (cell only test)	PASS	10154	
	(f) UN38.3.3 (g)		
Test reference: UN manual of tests and criteria, pa	rt III sub-section 38.3. 7th rev	ised edition	
	D TD 4445D ODT /4	p.cp)	
PRODUCT CLASSIFICATION FO		IN-DGP)	
UN Classification / Proper shipping name : UN3090	) / Lithium metal batteries		
Signatory A. Date: 2023.07.28	Signatory B. Date: 2023	R 07 28	
Name : Cécile Burlot	Name : Thierry Bouessa		
	Title : Technical Directo		
Title : Quality Manager		וע	
Signature :	sure: Signature:		
<b>S</b>			

Important! The above signatory / signatories affirm that this document is a true and correct summary of the original individual tests and test data. The original test data is confidential information available to competent state authorities with valid identification and only upon their formal request. Disclosure of the original test data to any other entity upon its request will be considered by Williamson Electronique and, should Williamson Electronique consider this request is with merit, may subject to prior execution of a nondisclosure agreement.



LEC IRONIQUE		
UN 38.3 TEST 9	SUMMARY REPORT	
☐ Cell ☑ Battery ☐ Product	Unique report ID : NQ2	05202D
Tested type part : WILPA2918C		
Customer type part : S1863514-01 & S1863590-01	Report date : 2020.12.22	<u> </u>
Same type part : WILPA2918F, WILPA2918G, WILKI0216A		
Manufacturer :	Test laboratory:	
Williamson Electronique		IndustriesElectriques (LCIE)
Pôle industriel d'innovation Jules Verne	33 Avenue du Général Leclerc	
8 rue du Moulin Cassé, BP 61211	92 260 Fontenay Aux R	oses
44340 Bouguenais Cedex - France	France	
T. +33 (0) 2.40.18.80.00	T. +33 (0) 1.40.95.60.60	)
https://www.williamson-electronique.fr	www.lcie.fr	
☐ Li-ion battery (rechargeable) ☐ Li-metal batter  Description: assembled from four LM17500 cells in ser		
Battery weight : 400 g		
☐ Nominal Energy : Watt-hour <b>or</b> ☑ Lithi	um content : 4 g	
☐ Cell ☑ Battery ☐ Product. Model number/pa	art number : 4s1p LM17500	
List of trade and district	DIt- (D / F-:1 / N A )	T+
List of tests conducted	Results (Pass / Fail / N.A.)	Test record reference 168660-755033 v02
T1 : Altitude simulation	PASS	
T2 : Thermal test	PASS	168660-755033 v02
T3 : Vibration	PASS	168660-755033 v02
T4 : Shock	PASS	168660-755033 v02
T5 : External short circuit	PASS	
T6 : Impacted/crush (cell only test)	DACC	168660-755033 v02
TZ - O (N. A. f 1) t - 1 t - 1	PASS	10154
T7 : Overcharge (N.A for Li-metal only)	PASS	10154 N.A
T8 : Forced discharge (cell only test)	PASS PASS	10154
T8 : Forced discharge (cell only test)  Battery assembly :   Not applicable.   UN38.3.3	PASS PASS (f) UN38.3.3 (g)	10154 N.A 10154
T8 : Forced discharge (cell only test)	PASS PASS (f) UN38.3.3 (g)	10154 N.A 10154
T8 : Forced discharge (cell only test)  Battery assembly : ☑ Not applicable. ☐ UN38.3.3  Test reference : UN manual of tests and criteria, pa	PASS PASS  (f) UN38.3.3 (g)  rt III sub-section 38.3. 7th rev	10154 N.A 10154 ised edition
T8 : Forced discharge (cell only test)  Battery assembly : ☑ Not applicable. ☐ UN38.3.3 ( Test reference : UN manual of tests and criteria, par  PRODUCT CLASSIFICATION FOR	PASS PASS  (f) UN38.3.3 (g)  rt III sub-section 38.3. 7th rev	10154 N.A 10154 ised edition
T8 : Forced discharge (cell only test)  Battery assembly : ☑ Not applicable. ☐ UN38.3.3  Test reference : UN manual of tests and criteria, pa	PASS PASS  (f) UN38.3.3 (g)  rt III sub-section 38.3. 7th rev	10154 N.A 10154 ised edition
T8 : Forced discharge (cell only test)  Battery assembly : ☑ Not applicable. ☐ UN38.3.3 ( Test reference : UN manual of tests and criteria, par  PRODUCT CLASSIFICATION FOR	PASS PASS  (f) UN38.3.3 (g)  rt III sub-section 38.3. 7th rev	10154 N.A 10154 ised edition N-DGP)
T8: Forced discharge (cell only test)  Battery assembly: Not applicable. UN38.3.3  Test reference: UN manual of tests and criteria, par  PRODUCT CLASSIFICATION FOR  UN Classification / Proper shipping name: UN3090  Signatory A. Date: 2023.07.28	PASS PASS (f) UN38.3.3 (g) rt III sub-section 38.3. 7th rev R TRANSPORT (According to U / Lithium metal batteries  Signatory B. Date: 2023	10154 N.A 10154 ised edition N-DGP)
T8 : Forced discharge (cell only test)  Battery assembly : Not applicable. UN38.3.3  Test reference : UN manual of tests and criteria, par  PRODUCT CLASSIFICATION FOR UN Classification / Proper shipping name : UN3090  Signatory A. Date : 2023.07.28  Name : Cécile Burlot	PASS PASS  (f) UN38.3.3 (g)  rt III sub-section 38.3. 7th rev  R TRANSPORT (According to U  / Lithium metal batteries	10154 N.A 10154 ised edition N-DGP)
T8: Forced discharge (cell only test)  Battery assembly: Not applicable. UN38.3.3  Test reference: UN manual of tests and criteria, parameterial par	PASS PASS  (f) UN38.3.3 (g)  rt III sub-section 38.3. 7th rev  R TRANSPORT (According to U  / Lithium metal batteries  Signatory B. Date : 2023  Name : Thierry Bouessa  Title : Technical Director	10154 N.A 10154 ised edition N-DGP)
T8 : Forced discharge (cell only test)  Battery assembly : Not applicable. UN38.3.3  Test reference : UN manual of tests and criteria, par  PRODUCT CLASSIFICATION FOR UN Classification / Proper shipping name : UN3090  Signatory A. Date : 2023.07.28  Name : Cécile Burlot	PASS PASS  (f) UN38.3.3 (g)  rt III sub-section 38.3. 7th rev  R TRANSPORT (According to U  / Lithium metal batteries  Signatory B. Date: 2023  Name: Thierry Bouessa	10154 N.A 10154 ised edition N-DGP)
T8 : Forced discharge (cell only test)  Battery assembly : Not applicable. UN38.3.3 ( Test reference : UN manual of tests and criteria, par  PRODUCT CLASSIFICATION FOR UN Classification / Proper shipping name : UN3090  Signatory A. Date : 2023.07.28  Name : Cécile Burlot  Title : Quality Manager	PASS PASS  (f) UN38.3.3 (g)  rt III sub-section 38.3. 7th rev  R TRANSPORT (According to U  / Lithium metal batteries  Signatory B. Date : 2023  Name : Thierry Bouessa  Title : Technical Director	10154 N.A 10154 ised edition N-DGP)

Important! The above signatory / signatories affirm that this document is a true and correct summary of the original individual tests and test data. The original test data is confidential information available to competent state authorities with valid identification and only upon their formal request. Disclosure of the original test data to any other entity upon its request will be considered by Williamson Electronique and, should Williamson Electronique consider this request is with merit, may subject to prior execution of a nondisclosure agreement.



UN 38.3 TEST	SUMMARY REPORT	
☐ Cell ☐ Battery ☐ Product	Unique report ID : NQ2	205201H
Tested type part: WILPA2851D		
Customer type part: S1865514-01 & S1865590-01, S1861514-01 & S1861590-01	Report date : 2025.01.1	3
Same type part: WILPA2851E, WILPA2851F,		
WILPA2851G, WILPA2851H, WILPA2851J, WILPA3082A,		
WILKI0217A, WILKI0217B, WILKI0217C, WILKI0219A	Task laborators	
Manufacturer : Williamson Electronique	Test laboratory:	s IndustriesElectriques (LCIE)
Pôle industriel d'innovation Jules Verne	33 Avenue du Général	
8 rue du Moulin Cassé, BP 61211	92 260 Fontenay Aux R	
44340 Bouguenais Cedex - France	France	.0303
T. +33 (0) 2.40.18.80.00	T. +33 (0) 1.40.95.60.60	า
https://www.williamson-electronique.fr	www.lcie.fr	
neeps.// www.winiamson electronique.ii	www.icic.ii	
☐ Li-ion battery (rechargeable) ☐ Li-metal batte	ery (primary)	
Description: assembled from 2 blocks of four LM17500	Coells in series	
Battery weight : 400 g		
☐ Nominal Energy : Watt-hour <b>or</b> ☐ Lithi	um content : 8 g	
	_	
☐ Cell ☐ Battery ☐ Product. Model number/p.		
Cell Battery Froduct. Woder number/p	art number : 4s1p-2 LM17500	
Cell Battery Froduct. Wodernamber/p.	art number : 4s1p-2 LM17500	
		T+
List of tests conducted	Results (Pass / Fail / N.A.)	Test record reference
List of tests conducted T1 : Altitude simulation	Results (Pass / Fail / N.A.) PASS	168660-755034 v01
List of tests conducted T1 : Altitude simulation T2 : Thermal test	Results (Pass / Fail / N.A.) PASS PASS	168660-755034 v01 168660-755034 v01
List of tests conducted T1 : Altitude simulation T2 : Thermal test T3 : Vibration	Results (Pass / Fail / N.A.) PASS PASS PASS	168660-755034 v01 168660-755034 v01 168660-755034 v01
List of tests conducted T1 : Altitude simulation T2 : Thermal test T3 : Vibration T4 : Shock	Results (Pass / Fail / N.A.) PASS PASS PASS PASS PASS	168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01
List of tests conducted T1 : Altitude simulation T2 : Thermal test T3 : Vibration T4 : Shock T5 : External short circuit	Results (Pass / Fail / N.A.) PASS PASS PASS PASS PASS PASS	168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01
List of tests conducted T1 : Altitude simulation T2 : Thermal test T3 : Vibration T4 : Shock T5 : External short circuit T6 : Impacted/crush (cell only test)	PASS PASS PASS PASS PASS PASS PASS PASS	168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 10154
List of tests conducted T1 : Altitude simulation T2 : Thermal test T3 : Vibration T4 : Shock T5 : External short circuit T6 : Impacted/crush (cell only test) T7 : Overcharge (N.A for Li-metal only)	Results (Pass / Fail / N.A.) PASS PASS PASS PASS PASS PASS PASS PAS	168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 10154 N.A
List of tests conducted T1 : Altitude simulation T2 : Thermal test T3 : Vibration T4 : Shock T5 : External short circuit T6 : Impacted/crush (cell only test) T7 : Overcharge (N.A for Li-metal only) T8 : Forced discharge (cell only test)	Results (Pass / Fail / N.A.)  PASS PASS PASS PASS PASS PASS PASS PA	168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 10154
List of tests conducted  T1 : Altitude simulation  T2 : Thermal test  T3 : Vibration  T4 : Shock  T5 : External short circuit  T6 : Impacted/crush (cell only test)  T7 : Overcharge (N.A for Li-metal only)  T8 : Forced discharge (cell only test)  Battery assembly : Not applicable. UN38.3.3	Results (Pass / Fail / N.A.) PASS PASS PASS PASS PASS PASS PASS PAS	168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 10154 N.A 10154
List of tests conducted T1 : Altitude simulation T2 : Thermal test T3 : Vibration T4 : Shock T5 : External short circuit T6 : Impacted/crush (cell only test) T7 : Overcharge (N.A for Li-metal only) T8 : Forced discharge (cell only test)	Results (Pass / Fail / N.A.) PASS PASS PASS PASS PASS PASS PASS PAS	168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 10154 N.A 10154
List of tests conducted  T1 : Altitude simulation  T2 : Thermal test  T3 : Vibration  T4 : Shock  T5 : External short circuit  T6 : Impacted/crush (cell only test)  T7 : Overcharge (N.A for Li-metal only)  T8 : Forced discharge (cell only test)  Battery assembly : Not applicable. UN38.3.3  Test reference : UN manual of tests and criteria, pa	Results (Pass / Fail / N.A.)  PASS PASS PASS PASS PASS PASS PASS PA	168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 10154 N.A 10154 ised edition
List of tests conducted  T1 : Altitude simulation  T2 : Thermal test  T3 : Vibration  T4 : Shock  T5 : External short circuit  T6 : Impacted/crush (cell only test)  T7 : Overcharge (N.A for Li-metal only)  T8 : Forced discharge (cell only test)  Battery assembly : ☑ Not applicable. ☐ UN38.3.3  Test reference : UN manual of tests and criteria, pa	Results (Pass / Fail / N.A.)  PASS PASS PASS PASS PASS PASS PASS PA	168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 10154 N.A 10154 ised edition
List of tests conducted  T1 : Altitude simulation  T2 : Thermal test  T3 : Vibration  T4 : Shock  T5 : External short circuit  T6 : Impacted/crush (cell only test)  T7 : Overcharge (N.A for Li-metal only)  T8 : Forced discharge (cell only test)  Battery assembly : Not applicable. UN38.3.3  Test reference : UN manual of tests and criteria, pa	Results (Pass / Fail / N.A.)  PASS PASS PASS PASS PASS PASS PASS PA	168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 10154 N.A 10154 ised edition
List of tests conducted  T1 : Altitude simulation  T2 : Thermal test  T3 : Vibration  T4 : Shock  T5 : External short circuit  T6 : Impacted/crush (cell only test)  T7 : Overcharge (N.A for Li-metal only)  T8 : Forced discharge (cell only test)  Battery assembly : ☑ Not applicable. ☐ UN38.3.3  Test reference : UN manual of tests and criteria, pa	Results (Pass / Fail / N.A.)  PASS PASS PASS PASS PASS PASS PASS PA	168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 10154 N.A 10154 Sised edition
List of tests conducted  T1 : Altitude simulation  T2 : Thermal test  T3 : Vibration  T4 : Shock  T5 : External short circuit  T6 : Impacted/crush (cell only test)  T7 : Overcharge (N.A for Li-metal only)  T8 : Forced discharge (cell only test)  Battery assembly : ☑ Not applicable. ☐ UN38.3.3  Test reference : UN manual of tests and criteria, pa	Results (Pass / Fail / N.A.)  PASS  (f) UN38.3.3 (g)  rt III sub-section 38.3. 7th rev  R TRANSPORT (According to U)  // Lithium metal batteries	168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 10154 N.A 10154 ised edition
List of tests conducted T1 : Altitude simulation T2 : Thermal test T3 : Vibration T4 : Shock T5 : External short circuit T6 : Impacted/crush (cell only test) T7 : Overcharge (N.A for Li-metal only) T8 : Forced discharge (cell only test) Battery assembly : Not applicable. UN38.3.3 Test reference : UN manual of tests and criteria, pa  PRODUCT CLASSIFICATION FOR UN Classification / Proper shipping name : UN3090 Signatory A. Date : 2025.01.13	Results (Pass / Fail / N.A.)  PASS  (f) UN38.3.3 (g)  rt Ill sub-section 38.3. 7th rev  R TRANSPORT (According to U.)  C / Lithium metal batteries  Signatory B. Date: 2025	168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 10154 N.A 10154 ised edition
List of tests conducted  T1 : Altitude simulation  T2 : Thermal test  T3 : Vibration  T4 : Shock  T5 : External short circuit  T6 : Impacted/crush (cell only test)  T7 : Overcharge (N.A for Li-metal only)  T8 : Forced discharge (cell only test)  Battery assembly : Not applicable. UN38.3.3  Test reference : UN manual of tests and criteria, pa  PRODUCT CLASSIFICATION FOR UN Classification / Proper shipping name : UN3090  Signatory A. Date : 2025.01.13  Name : Cécile Burlot	Results (Pass / Fail / N.A.)  PASS  (f) UN38.3.3 (g)  rt III sub-section 38.3. 7th rev  R TRANSPORT (According to U)  / Lithium metal batteries  Signatory B. Date: 2025  Name: Thierry Bouess  Title: Technical Director	168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 10154 N.A 10154 ised edition
List of tests conducted  T1 : Altitude simulation  T2 : Thermal test  T3 : Vibration  T4 : Shock  T5 : External short circuit  T6 : Impacted/crush (cell only test)  T7 : Overcharge (N.A for Li-metal only)  T8 : Forced discharge (cell only test)  Battery assembly : ☑ Not applicable. ☐ UN38.3.3  Test reference : UN manual of tests and criteria, pa  PRODUCT CLASSIFICATION FOR UN Classification / Proper shipping name : UN3090  Signatory A. Date : 2025.01.13  Name : Cécile Burlot  Title : Quality Director	Results (Pass / Fail / N.A.)  PASS PASS PASS PASS PASS PASS PASS PA	168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 10154 N.A 10154 ised edition
List of tests conducted  T1 : Altitude simulation  T2 : Thermal test  T3 : Vibration  T4 : Shock  T5 : External short circuit  T6 : Impacted/crush (cell only test)  T7 : Overcharge (N.A for Li-metal only)  T8 : Forced discharge (cell only test)  Battery assembly : ☑ Not applicable. ☐ UN38.3.3  Test reference : UN manual of tests and criteria, pa  PRODUCT CLASSIFICATION FOR UN Classification / Proper shipping name : UN3090  Signatory A. Date : 2025.01.13  Name : Cécile Burlot  Title : Quality Director	Results (Pass / Fail / N.A.)  PASS  (f) UN38.3.3 (g)  rt III sub-section 38.3. 7th rev  R TRANSPORT (According to U)  / Lithium metal batteries  Signatory B. Date: 2025  Name: Thierry Bouess  Title: Technical Director	168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 168660-755034 v01 10154 N.A 10154 ised edition

Important! The above signatory / signatories affirm that this document is a true and correct summary of the original individual tests and test data. The original test data is confidential information available to competent state authorities with valid identification and only upon their formal request. Disclosure of the original test data to any other entity upon its request will be considered by Williamson Electronique and, should Williamson Electronique consider this request is with merit, may subject to prior execution of a nondisclosure agreement.

# DOC20038E\_KANNAD\_ULTIMA\_ELTs\_Material \_Safety\_Data\_Sheet

Final Audit Report 2025-01-15

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