

Lithium Ion Battery Test Summary

LITHIUM CELLS OR BATTERIES TEST SUMMARY IN ACCORDANCE WITH SUB-SECTION 38.3 OF UN MANUAL OF TESTS AND CRITERIA

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Lithium Ion cells and Metabo Lithium-Ion-batteries Li-Power, LiHD, and CAS Li-Ion have been successfully tested and comply with UN Model Regulation, Manual of Test and Criteria, Part III subsection 38.3

PERFORMED TESTS			RESULTS	
			Cells	Batteries
38.3.4.1	T1	Altitude Simulation	Pass	Pass
38.3.4.2	T2	Thermal Test	Pass	Pass
38.3.4.3	T3	Vibration	Pass	Pass
38.3.4.4	T4	Shock	Pass	Pass
38.3.4.5	T5	External Short Circuit	Pass	Pass
38.3.4.6	T6	Impact / Crush	Pass	Not applicable
38.3.4.7	T7	Overcharge	Not applicable	Pass
38.3.4.8	T8	Forced Discharge	Pass	Not applicable



The UN38.3 tests were performed at least by one of the following test houses and were tested to UN Manual Test and Criteria Revision 3 Amendment 1 or subsequent revisions or amendments.

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Product Test Information - Cells

Model	Physical Description	Weight	Rating	Test report	
		[kg]	[Wh]	number	date
INR-21700	Li-ion cylindrical cell	0,072	18,0	SDI-UN-190426-03	2019-04-19
INR-21700	Li-ion cylindrical cell	0,067	14,4	SDI-UN-170306-01	2017-03-06
INR-21700	Li-ion cylindrical cell	0,070	10,8	SDI-UN-170331-01	2017-03-31
INR-18650	Li-ion cylindrical cell	0,045	7,2	SDI-UN-150630-03	2015-06-30
INR-18650	Li-ion cylindrical cell	0,045	9,0	SDI-UN-170331-02	2017-03-31
INR-20700	Li-Ion cylindrical cell	0,056	11,3	E1415524	2014-05-28
INR-20700	Li-Ion cylindrical cell	0,063	13,0	E1622012	2016-05-19
INR-18650	Li-Ion cylindrical cell	0,042	5,55	NO.1118110180	2018-12-25
INR-18650	Li-Ion cylindrical cell	0,041	7,4	NO.1113120355	2014-01-21

Product Test Information – Batteries 10,8V

Batteries are exchangeable and can be used in all 10,8 V products.

Model	Physical	Weight	Rating	SoC	Test report		
number	Description	[kg]	[Wh]	[%]	number	date	regulation
Li-Power 625438000 316045190	Li-Ion 10,8 V - 2,0 Ah 3S1P	0,195	21,6	> 20 < 30	1-5031/17-01-02 S 87/2017/1 28249539 001	2017-12-08 2018-01-25 2019-04-07	UN 3480 UN 3481
Li-Power 625585000 321000270	Li-Ion 10,8V -4,0 Ah 3S2P	0,381	43,2	> 20 < 30	28246992 001	2018-09-21	UN 3480 UN 3481

Product Test Information – Batteries 12V (U_{max})

Batteries are exchangeable and can be used in all 12 V products.

Model	Physical	Weight	Rating	SoC	Test report		
number	Description	[kg]	[Wh]	[%]	number	date	regulation
LiHD 625349000 321001140	Li-Ion 12 V - 4,0 Ah 3S1P	0,324	43,2	> 20 < 30	28246989 002	2019-10-24	UN 3480 UN 3481
Li-Power 625406000 321001120	Li-Ion 12 V - 2,0 Ah 3S1P	0,224	21,6	> 20 < 30	28246384 002 4374118.50	2020-01-20 2021-04-15	UN 3480 UN 3481



Product Test Information – Batteries 14,4 V

Batteries are exchangeable and can be used in all 14,4 V products

Model	Physical	Weight	Rating	SoC	Test report		
number	Description	[kg]	[Wh]	[%]	number	date	regulation
Li-Power 625417000 321001060	Li-Ion 14,4 V – 1,5 Ah 4S1P	0,324	21,6	> 20 < 30	4359720.50	2019-12-19	UN 3480 UN 3481
Li-Power 625590000 321000390	Li-Ion 14,4 V – 4,0 Ah 4S2P	0,538	57,6	> 20 < 30	SDI-UN-131219-02	2013-12-19	UN 3480 UN 3481
Li-Power 625595000 321000540	Li-Ion 14,4 V – 2,0 Ah 4S1P	0,340	28,8	> 20 < 30	28248753 001	2018-12-21	UN 3480 UN 3481



Product Test Information – Batteries 18V

Batteries are exchangeable and can be used in all 18 V products

Model number	Physical Description	Weight [kg]	Rating [Wh]	SoC [%]	Test report		
					number	date	regulation
LiHD 625367000 321001000	Li-Ion 18 V - 4,0 Ah 5S1P	0,584	72,0	> 20 < 30	28242835 003	2020-12-18	UN 3480 UN 3481
LiHD 625368000 321001040	Li-Ion 18 V - 5,5 Ah 5S2P	0,983	99,0	> 20 < 30	28242837 003	2020-12-18	UN 3480 UN 3481
LiHD 625369000 321000980	Li-Ion 18 V - 8,0 Ah 5S2P	0,977	144,0	> 20 < 30	28246520 001	2018-09-17	UN 3480 UN 3481
LiHD 625549000 321001600	Li-Ion 18 V - 10,0 Ah 5S2P	0,996	180,0	> 20 < 30	28253888 002 T211-0815/20	2020-09-23 2020-11-04	UN 3480 UN 3481
Li-Power 625418000 321001050	Li-Ion 18 V – 1,5 Ah 5S1P	0,392	27,0	> 20 < 30	4359675.50	2019-12-19	UN 3480 UN 3481
Li-Power 625591000 321000480	Li-Ion 18 V – 4,0 Ah 5S2P	0,648	72,0	> 20 < 30	28248081 001	2018-11-09	UN 3480 UN 3481
Li-Power 625592000 321000350	Li-Ion 18 V – 5,2 Ah 5S2P	0,670	93,6	> 20 < 30	28247087 001	2019-02-20	UN 3480 UN 3481
Li-Power 625596000 321000550	Li-Ion 18 V – 2,0 Ah 5S1P	0,383	36,0	> 20 < 30	28251003 001	2019-09-27	UN 3480 UN 3481
Li-Power 625026000 321001450	Li-Ion 18 V – 2,0 Ah 5S1P	0,383	36,0	> 20 < 30	HU213J99 004	2021-12-03	UN 3480 UN 3481
Li-Power 625027000 321001470	Li-Ion 18 V – 4,0 Ah 5S2P	0,685	72,0	> 20 < 30	HU2177MB 001 HU219AFS 001 HU210YG9 001 HU21A74Q 001	2021-05-25 2021-05-21 2021-08-06 2021-09-09	UN 3480 UN 3481
Li-Power 625028000 321001490	Li-Ion 18 V – 5,2 Ah 5S2P	0,695	93,6	> 20 < 30	HU216BYZ 001	2021-07-22	UN 3480 UN 3481



Product Test Information – Batteries 18V with Drop-Safe

Batteries are exchangeable and can be used in all 18 V products

Model	Physical	Weight	Rating	SoC	Test report		
number	Description	[kg]	[Wh]	[%]	number	date	regulation
LiHD (DS) 624989000 321001640	Li-Ion 18 V - 4,0 Ah 5S1P	0,660	72,0	> 20 < 30	28242835 003	2020-12-18	UN 3480 UN 3481
LiHD (DS) 624990000 321001650	Li-Ion 18 V - 5,5 Ah 5S2P	1,065	99,0	> 20 < 30	28242837 003	2020-12-18	UN 3480 UN 3481
LiHD (DS) 624991000 321001660	Li-Ion 18 V - 10,0 Ah 5S2P	1,156	180,0	> 20 < 30	28253888 002 T211-0815/20	2020-10-01 2020-11-04	UN 3480 UN 3481

Product Test Information – Batteries 36 V

Batteries are exchangeable and can be use in all 36 V products

Model	Physical	Weight	Rating	SoC	Test report		
number	Description	[kg]	[Wh]	[%]	number	date	regulation
Li-Power 625453000 316046040	Li-Ion 36 V – 1,5 Ah 10S1P	0,680	54,0	> 20 < 30	MT0028369	2010-08-27	UN 3480 UN 3481
Li-Power 625529000 321000130	Li-Ion 36 V – 5,2 Ah 10S2P	1,289	187,2	> 20 < 30	28249699 001	2019-05-28	UN 3480 UN 3481
LiHD 625344000 321000810	Li-Ion 36V – 6,2 Ah 10S2P	1,655	223,2	> 20 < 30	BJ-AMA0001CA	2015-12-28	UN 3480 UN 3481

Signature of responsible person of the Company

ppa. Bernd Fleischmann (digitally signed)

Vice President Product Engineering & Quality)