



中国认可
国际互认
检测
TESTING
CNAS L6478



TEST REPORT

Report No...... : WTF24F04099022A1X1C

Applicant..... : Mid Ocean Brands B.V.

Address..... : 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong

Sample Name : 1200 mAh retractable desk lamp

Sample Model..... : MO2339

Test Requested : Refer to next page (s)

Test Method..... : Refer to next page (s)

Test Conclusion : Refer to next page (s)

Date of Receipt sample : 2024-04-29 & 2024-05-27

Testing period : 2024-04-29 to 2024-05-22 & 2024-05-27 to 2024-05-31

Date of Issue..... : 2024-06-06

Test Result..... : Refer to next page (s)

Note : This report is based on Waltek test report WTF24F04099022A1C for revising, and replaced report WTF24F04099022A1C.

Prepared By:

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Signed for and on behalf of
Waltek Testing Group (Foshan) Co., Ltd.

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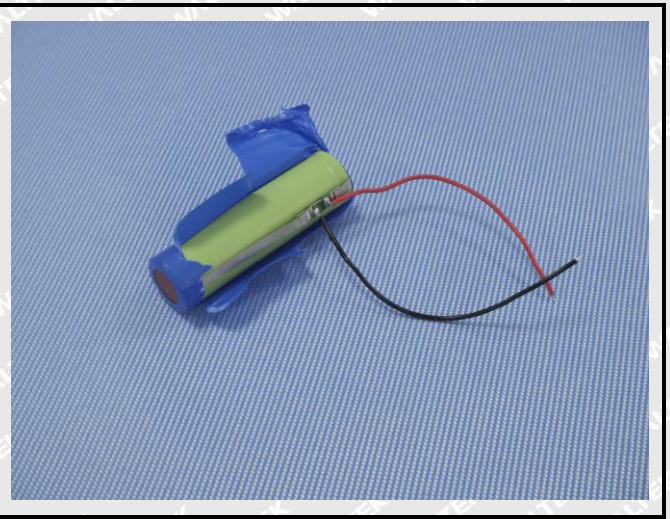
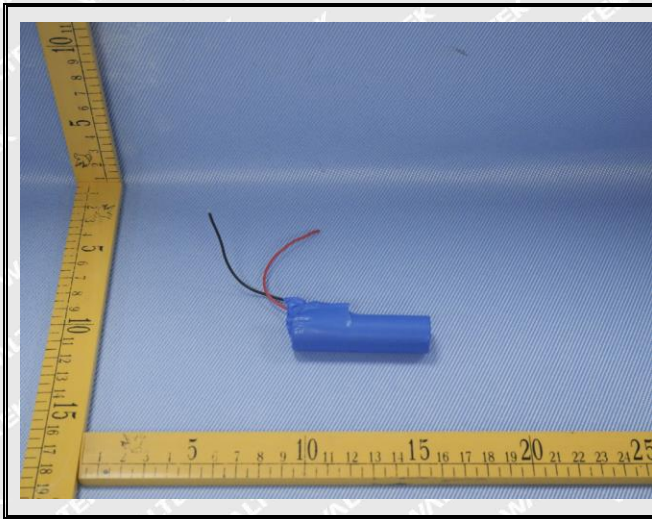


Summary:

Test Requested	Test Conclusion
In accordance with the RoHS Directive 2011/65/EU and its amendment (EU) No. 2015/863, to determine the 10 restricted substances content in the submitted sample.	Pass (Please refer to next pages for details)

Sample Photo(s):





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**Test Results:****1. Lead, Mercury, Cadmium, Hexavalent Chromium, PBBs and PBDEs**

Test method:

- 1) With reference to IEC 62321-2:2021, disassembly, disjunction and mechanical sample preparation
- 2) With reference to IEC 62321-3-1:2013, screening –Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry
- 3) With reference to IEC 62321-4:2013+AMD1:2017 CSV, determination of Mercury by ICP-OES
- 4) With reference to IEC 62321-5:2013, determination of Lead and Cadmium by ICP-OES
- 5) With reference to IEC 62321-7-2: 2017 and IEC 62321-7-1: 2015, determination of Hexavalent Chromium by UV-Vis
- 6) With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
1	Black plastic shell	BL	BL	BL	BL	BL	NA
2(R1)	Black plastic wire jacket	BL	BL	BL	BL	BL	NA
3	Black plastic jacket(USB plug)	BL	BL	BL	BL	BL	NA
4	Black plastic jacket(Type-C plug)	BL	BL	BL	BL	BL	NA
5	Solder(USB plug)	BL	BL	BL	BL	--	NA
6	Silvery metal shell(USB plug)	BL	BL	BL	BL	--	NA
7	Silvery metal pin(USB plug)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
8	White plastic core(USB plug)	BL	BL	BL	BL	BL	NA
9	Silvery metal shell(Type-C plug)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
10	Black plastic core (Type-C plug)	BL	BL	BL	BL	BL	NA
11	Solder(Type-C plug)	BL	BL	BL	BL	--	NA
12	Red plastic wire covering	BL	BL	BL	BL	BL	NA
13	Silvery metal pin(Type-C plug)	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
14	Golden metal pin(Type-C plug)	BL	BL	BL	BL	--	NA
15	Green PCB(Type-C plug)	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND



Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
16	Black plastic wire covering	BL	BL	BL	BL	BL	NA
17	Black soft plastic gasket with adhesive tape	BL	BL	BL	BL	BL	NA
18	Black coating	BL	BL	BL	BL	BL	NA
19	Silvery metal tube without black coating	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
20	Silvery metal gasket without white coating	BL	BL	BL	BL	--	NA
21	Silvery metal screw	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
22	Chip LED	BL	BL	BL	BL	BL	NA
23	White coating	BL	BL	BL	BL	BL	NA
24	Solder	BL	BL	BL	BL	--	NA
25	Green metal wire	BL	BL	BL	BL	--	NA
26	Black plastic wire jacket	BL	BL	BL	BL	BL	NA
27	Coppery metal wire	BL	BL	BL	BL	--	NA
28	White fabric wire	BL	BL	BL	BL	BL	NA
29	Red plastic wire covering	BL	BL	BL	BL	BL	NA
30	Coppery metal wire	BL	BL	BL	BL	--	NA
31	White dry glue	BL	BL	BL	BL	BL	NA
32	Blue plastic film	BL	BL	BL	BL	BL	NA
33	Pink plastic film	BL	BL	BL	BL	BL	NA
34	Red plastic wire covering	BL	BL	BL	BL	BL	NA
35	Red paper sheet	BL	BL	BL	BL	BL	NA



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Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
36	Silvery metal sheet	BL	BL	BL	BL	--	NA
37	Black plastic wire covering	BL	BL	BL	BL	BL	NA
38	Silvery metal wire	BL	BL	BL	BL	--	NA
39	Green PCB	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
40	Chip capacitor	BL	BL	BL	BL	BL	NA
41	Chip IC	BL	BL	BL	BL	BL	NA
42	Chip resistor	BL	BL	BL	BL	BL	NA
43	Solder	BL	IN	BL	BL	--	Pb :69
44	Coppery metal foil	BL	BL	BL	BL	--	NA
45	Chip LED	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
46	Black plastic core(socket)	BL	BL	BL	BL	BL	NA
47	Silvery metal shell(socket)	BL	BL	BL	BL	--	NA
48	Silvery metal pin(socket)	BL	BL	BL	BL	--	NA
49	Black plastic part(button)	BL	BL	BL	BL	BL	NA
50	Brown plastic sheet(button)	BL	BL	BL	BL	BL	NA
51	Silvery metal shell(button)	BL	BL	BL	BL	--	NA
52	Silvery metal sheet(button)	BL	BL	BL	BL	--	NA
53	Solder	BL	BL	BL	BL	--	NA
54	Chip IC	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
55	Green PCB	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND



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Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
56	Chip IC	BL	BL	BL	BL	BL	NA
57	Chip resistor	BL	OL	BL	BL	BL	*Pb : 1.12×10^3
58	Chip audio	BL	BL	BL	BL	BL	NA
59	Chip capacitor	BL	IN	BL	BL	BL	Pb :106
60	White plastic shell	BL	BL	BL	BL	BL	NA
61	White plastic wire jacket	BL	BL	BL	BL	BL	NA
62	White plastic jacket(USB plug)	BL	BL	BL	BL	BL	NA
63	White plastic jacket(Type-C plug)	BL	BL	BL	BL	BL	NA
64	Silvery coating	BL	BL	BL	BL	BL	NA

Remark:

- (1) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-VIS (for Cr⁶⁺) and GC-MS (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1: 2013 (unit: mg/kg)

Element	Polymer	Metal	Composite Materials
Cd	$BL \leq (70-3\sigma) < IN < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < IN < (130+3\sigma) \leq OL$	$LOD < IN < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < IN < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < IN < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < IN < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < IN < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < IN < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < IN < (1500+3\sigma) \leq OL$
Cr	$BL \leq (700-3\sigma) < IN$	$BL \leq (700-3\sigma) < IN$	$BL \leq (500-3\sigma) < IN$
Br	$BL \leq (300-3\sigma) < IN$	--	$BL \leq (250-3\sigma) < IN$

BL= Below Limit OL= Over Limit LOD = Limit of Detection -- = Not Regulated

- (2) "IN" expresses the inconclusive region, and further chemical testing to confirm whether it complies with the requirement of RoHS Directive.
- (3) The XRF screening test for RoHS elements – the reading may be different to the actual content in the sample be of non-uniformity composition.
- (4) mg / kg =milligram per kilogram=ppm, $\mu\text{g}/\text{cm}^2$ = Micrograms per square centimetre.
- (5) ND = Not Detected or lower than limit of quantitation.
- (6) NA = Not Applicable, as the XRF screening test result was below the limit or as the XRF screening directly determine that test result was over the limit, it was not need to conduct the wet chemical testing.



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(7) LOQ = Limit of quantitation.

Test Items	Pb	Cd	Hg	Cr ⁶⁺		PBB	PBDE
Units	mg/kg	mg/kg	mg/kg	mg/kg	µg/cm ²	mg/kg	mg/kg
LOQ	2	2	2	8	0.1	5	5

The LOQ for single compound of PBBs and PBDEs is 5 mg/kg, LOQ of Cr⁶⁺ for polymer and composite sample is 8 mg/kg and LOQ of Cr⁶⁺ for metal sample is 0.1 µg/cm².

(8) RoHS Requirement

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr ⁶⁺)	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)

(9) According to IEC 62321-7-1:2015, determined of Cr⁶⁺ on metal sample by boiling water extraction test method, and result is shown as Positive/Negative.

Boiling water extraction:

Negative = Absence of Cr⁶⁺ coating, the detected concentration in boiling water extraction solution is less than 0.10 µg/cm².

Positive = Presence of Cr⁶⁺ coating, the detected concentration in boiling water extraction solution is greater than 0.13 µg/cm².

Information on storage conditions and production date of the tested sample is unavailable and thus Cr⁶⁺ results represent status of the sample at the time of testing.

(10) Abbreviation:

"Pb" denotes Lead, "Cd" denotes Cadmium, "Hg" denotes Mercury, "Cr" denotes Chromium, "Cr (VI)" denotes Hexavalent Chromium, "Br" denotes Bromine, "PBBs" denotes Total Polybrominated Biphenyls, "PBDEs" denotes Total Polybrominated Diphenyl Ethers.

(11) The test results of No.64 were based on the wet weight of the raw material.

(12)* = According to the declaration from client, the source of lead in test sample is from the glass or ceramic material of that electronic component which is exempted by Directive 2011/65/EU ANNEX III-7(c).

2. Phthalates:

Test method:

With reference to IEC 62321-8:2017, determination of Phthalates content by GC-MS.

Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T01	1+8+10+31+46 [△]	ND	ND	ND	ND
T02	2(R1)	646	ND	ND	ND
T03	3	ND	ND	ND	ND
T04	4	ND	ND	ND	ND
T05	5	--	--	--	--
T06	6	--	--	--	--
T07	7	--	--	--	--



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Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T08	9	--	--	--	--
T09	11	--	--	--	--
T10	12	576	ND	ND	ND
T11	13	--	--	--	--
T12	14	--	--	--	--
T13	15+39+55 [△]	ND	ND	ND	ND
T14	16	392	ND	ND	ND
T15	17	ND	ND	ND	ND
T16	18+23+64 [△]	ND	ND	ND	ND
T17	19	--	--	--	--
T18	20	--	--	--	--
T19	21	--	--	--	--
T20	22+40+41+42+45 [△]	ND	ND	ND	ND
T21	24	--	--	--	--
T22	25	--	--	--	--
T23	26	103	ND	ND	ND
T24	27	--	--	--	--
T25	28	ND	ND	ND	ND
T26	29+34+37 [△]	ND	ND	219	ND
T27	30	--	--	--	--
T28	32+33 [△]	ND	ND	ND	ND
T29	35	ND	ND	ND	ND
T30	36	--	--	--	--
T31	38	--	--	--	--
T32	43	--	--	--	--
T33	44	--	--	--	--
T34	47	--	--	--	--
T35	48	--	--	--	--
T36	49+50+60 [△]	ND	ND	ND	ND
T37	51	--	--	--	--
T38	52	--	--	--	--
T39	53	--	--	--	--
T40	54+56+57+58+59 [△]	ND	ND	ND	ND
T41	61+62+63 [△]	ND	ND	ND	ND

Note:

- (1) mg/kg = milligram per kilogram= ppm
- (2) ND = Not Detected or lower than limit of quantitation.
- (3) -- = Not Regulated.
- (4) LOQ = Limit of quantitation.

Test Items	DBP	BBP	DEHP	DIBP
Units	mg/kg	mg/kg	mg/kg	mg/kg
LOQ	50	50	50	50



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(5) Abbreviation:

“DBP” denotes Dibutyl phthalate, “BBP” denotes Benzyl butyl phthalate (BBP), “DEHP” denotes Bis(2-ethylhexyl)-phthalate, “DIBP” denotes Diisobutyl phthalate, “PHT” denotes Phthalates.

(6) RoHS requirement

Restricted Substances	Limits
Dibutyl phthalate (DBP)	0.1% (1000 mg/kg)
Benzyl butyl phthalate (BBP)	0.1% (1000 mg/kg)
Di(2-ethylhexyl) phthalate (DEHP)	0.1% (1000 mg/kg)
Di-iso-butyl phthalate (DIBP)	0.1% (1000 mg/kg)

(7) “△”= As client’s requirement, the testing was conducted based on mixed components. Results are calculated by the minimum weight of mixed components.

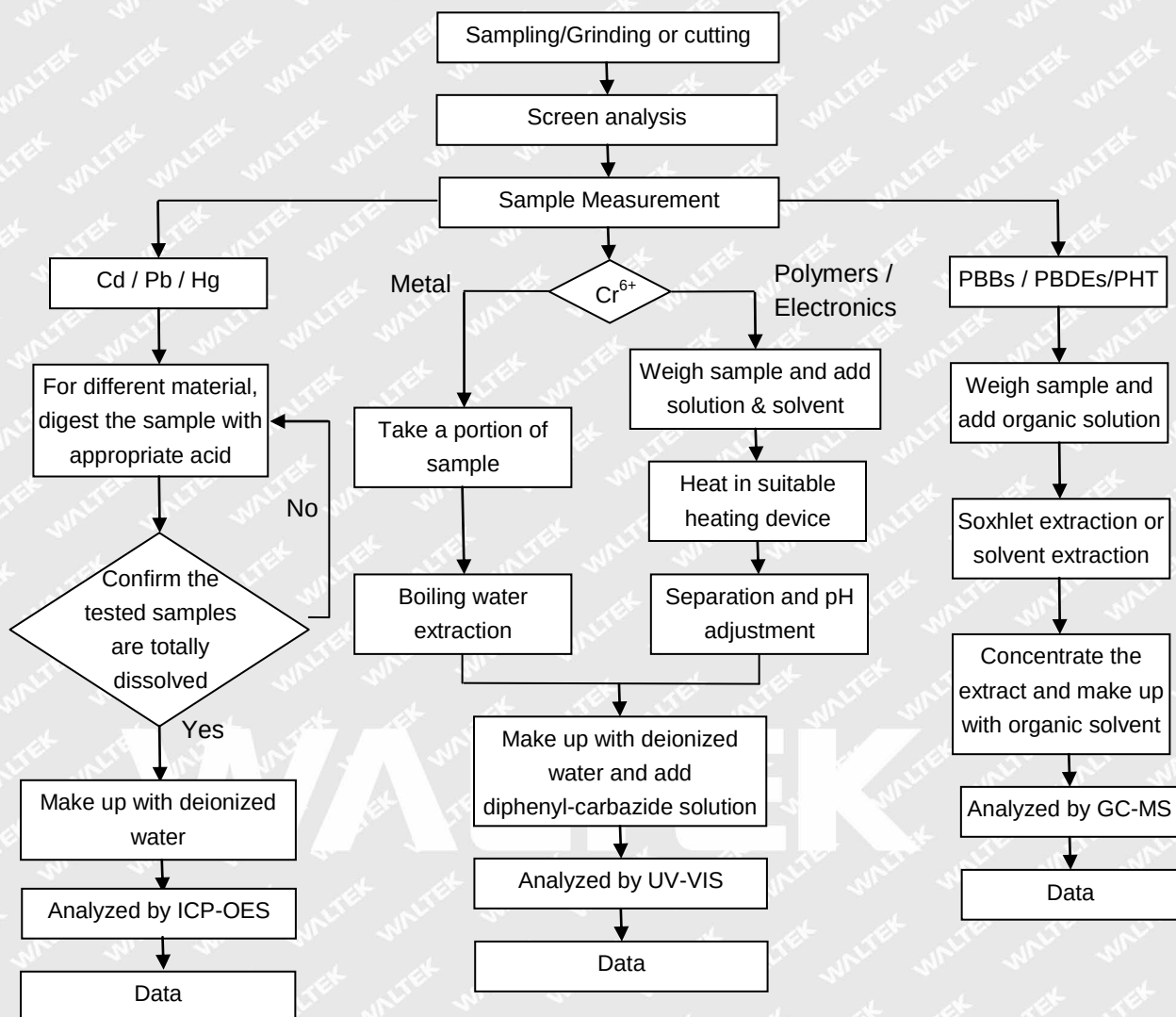
(8) The test results of No.64 were based on the wet weight of the raw material.

(9) The weight of test sample No.50 is insufficient, the test result is for reference only.

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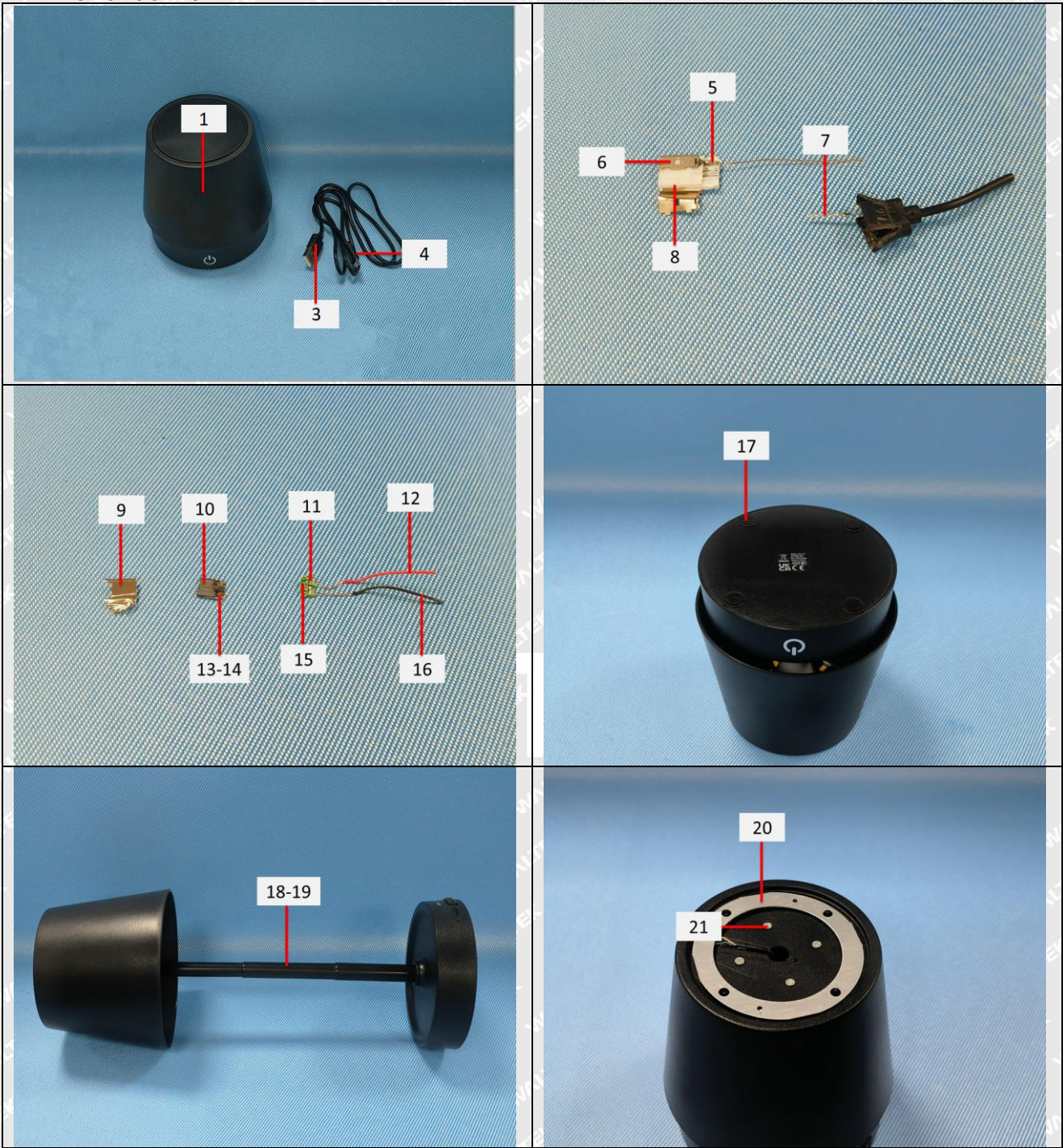


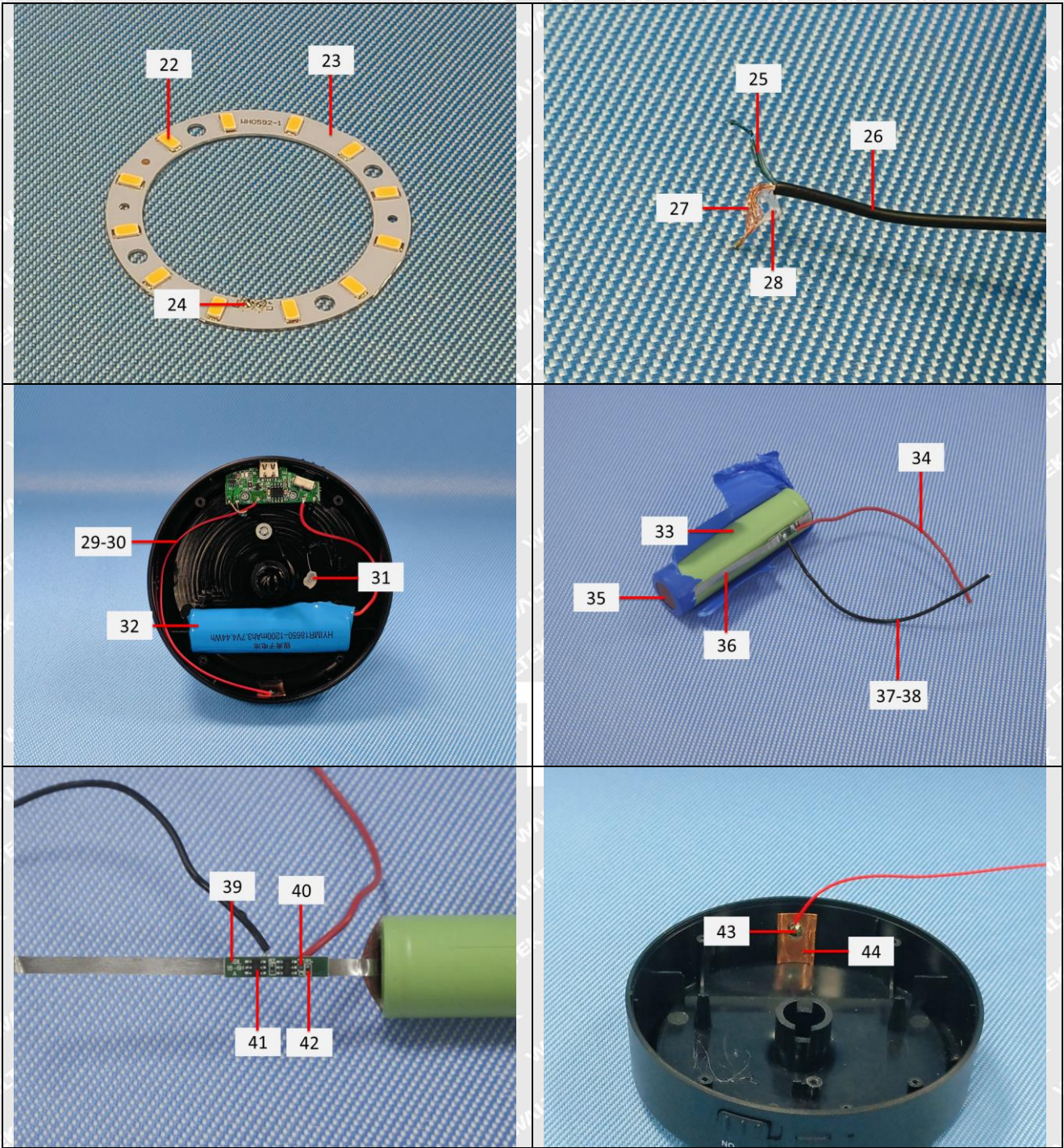
Measurement Flowchart:

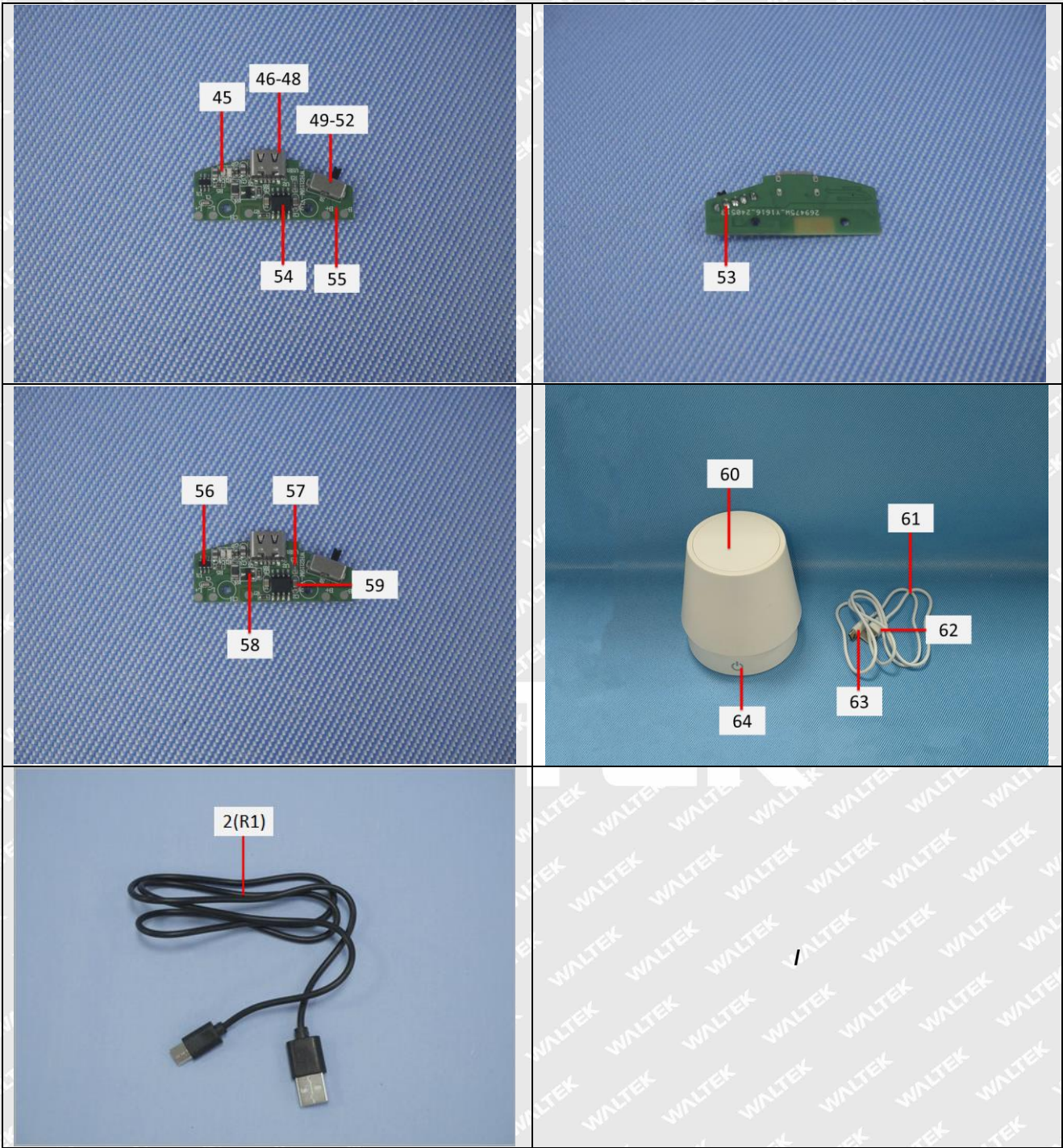




Photograph(s) of parts tested:









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Remarks:

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===== End of Report =====

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