中国认可
国际互认
检测
TESTING
CNAS L6478

TEST REPORT

Report No.	:	WTF25F05115220C
Job No.	:	FSW2505210879CJ
Applicant	:	Mid Ocean Brands B.V.
Address	:	Unit 711-716, 7/F., Tower A, 83 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.
Manufacturer	:	114901
Sample Name	:	Indoor garden 4 LED grow light
Sample Model	:	MO2702
Test Requested	:	With reference to EU RoHS Directive 2011/65/EU and its amendment Directive EU 2015/863, to determine the Pb, Cd, Hg, Cr^{6+}, PBBs, PBDEs, DBP, BBP, DEHP, DIBP content in the submitted sample.
Test Method	:	Refer to next page (s)
Test Conclusion	:	**Pass**
Date of Receipt Sample	:	2025-05-21
Testing Period	:	2025-05-21 to 2025-05-30
Date of Issue	:	2025-06-09
Test Result	:	Refer to next page (s)

Prepared By:
Waltek Testing Group (Foshan) Co., Ltd.
Address: No.13-19, 2/F., 2nd Building, Sunlink Machinery City, Xingye 4 Road, Guanglong Industrial Park, Chihua Neighborhood Committee, Chencun, Shunde District, Foshan, Guangdong, China
Tel:+86-757-23811398 Fax:+86-757-23811381 E-mail:info@waltek.com.cn

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

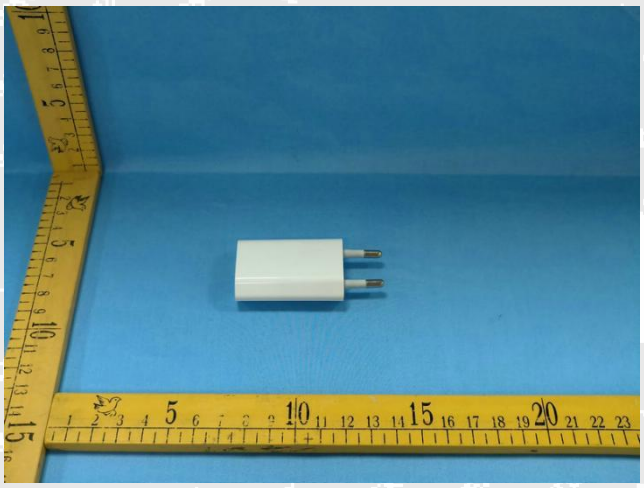
WTF25F05115220C

Swing Liang
Waltek Testing Group (Foshan) Co., Ltd.

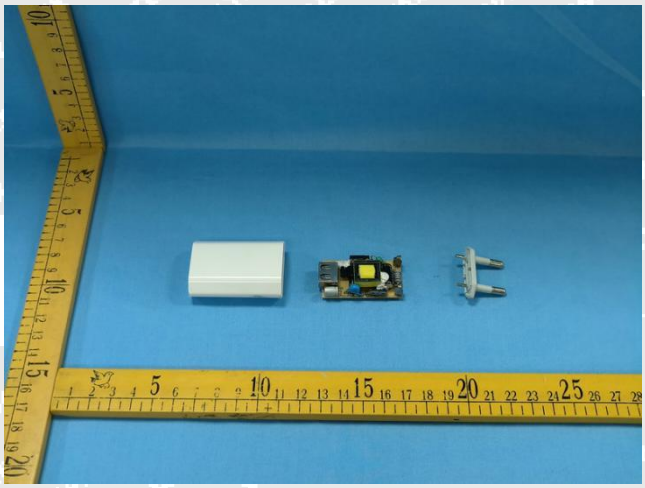
Sample photo:

MO2702

MO2702



MO2702



MO2702

Test Results:

1. Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs and PBDEs

Test Method/Equipment:

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	Grey plastic shell	BL	BL	BL	BL	BL	NA
2	White plastic shell	BL	BL	BL	BL	BL	NA
3	White fibrous tube	BL	BL	BL	BL	BL	NA
4	Red plastic wire covering	BL	BL	BL	BL	BL	NA
5	Silvery metal wire	BL	BL	BL	BL	--	NA
6	White plastic jacket(socket)	BL	BL	BL	BL	BL	NA
7	Black plastic core(socket)	BL	BL	BL	BL	IN	PBBs: ND PBDEs: ND
8	Silvery metal shell(socket)	BL	BL	BL	BL	--	NA
9	Silvery metal pin(socket)	BL	BL	BL	BL	--	NA
10	Black heat-shrink tube	BL	BL	BL	BL	BL	NA
11	Black plastic wire covering	BL	BL	BL	BL	BL	NA
12	Yellow capacitor	BL	BL	BL	BL	BL	NA
13	Grey resistor with multicolour ring	BL	BL	BL	BL	BL	NA
14	Golden metal cord anchorage	BL	BL	BL	BL	--	NA
15	Silvery metal pin	BL	BL	BL	BL	--	NA
16	Solder	BL	BL	BL	BL	--	NA
17	Chip LED	BL	BL	BL	BL	BL	NA
18	Silvery metal plate with white surface	BL	BL	BL	BL	--	NA
19	White plastic wire jacket	BL	BL	BL	BL	BL	NA
20	White plastic jacket(plug)	BL	BL	BL	BL	BL	NA

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
21	Silvery metal shell(plug)	BL	BL	BL	BL	--	NA
22	Solder(plug)	BL	BL	BL	BL	--	NA
23	White plastic core(plug)	BL	BL	BL	BL	BL	NA
24	Silvery metal pin(plug)	BL	BL	BL	BL	--	NA
25	White plastic jacket(plug)	BL	BL	BL	BL	BL	NA
26	Silvery metal shell(plug)	BL	BL	BL	BL	--	NA
27	Solder(plug)	BL	BL	BL	BL	--	NA
28	Black plastic core(plug)	BL	BL	BL	BL	BL	NA
29	Silvery metal pin(plug)	BL	BL	BL	IN	--	Cr^{6+}: Negative
30	white plastic wire covering	BL	BL	BL	BL	BL	NA
31	Red plastic wire covering	BL	BL	BL	BL	BL	NA
32	Coppery metal wire	BL	IN	BL	BL	--	Pb: 17
33	Silvery metal pin(plug)	BL	BL	BL	BL	--	NA
34	Grey plastic core(plug)	BL	BL	BL	BL	BL	NA
35	White plastic shell(plug)	BL	BL	BL	BL	BL	NA
36	Silvery metal pin	BL	BL	BL	BL	--	NA
37	Blue capacitor	BL	BL	BL	BL	BL	NA
38	Black plastic core(socket)	BL	BL	BL	BL	BL	NA
39	Silvery metal shell(socket)	BL	BL	BL	BL	--	NA
40	Silvery metal pin(socket)	BL	BL	BL	BL	--	NA
41	Green resistor with multicolour ring	BL	BL	BL	BL	BL	NA
42	Silvery metal pin	BL	BL	BL	BL	--	NA
43	Black-grey plastic film(electrolytic capacitor)	BL	BL	BL	BL	BL	NA
44	Black rubber stopper(electrolytic capacitor)	BL	BL	BL	BL	BL	NA
45	Brown paper(electrolytic capacitor)	BL	BL	BL	BL	BL	NA
46	Silvery metal shell(electrolytic capacitor)	BL	BL	BL	BL	--	NA
47	Grey metal foil(electrolytic capacitor)	BL	BL	BL	BL	--	NA

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
48	Silvery-grey metal foil(electrolytic capacitor)	BL	BL	BL	BL	--	NA
49	Silvery metal pin(electrolytic capacitor)	BL	BL	BL	BL	--	NA
50	Yellow plastic adhesive tape(transformer)	BL	BL	BL	BL	BL	NA
51	Black plastic bobbin(transformer)	BL	BL	BL	BL	BL	NA
52	Coppery varnished wire(transformer)	BL	BL	BL	BL	BL	NA
53	Yellow triple insulation winding(transformer)	BL	BL	BL	BL	BL	NA
54	Dark grey magnetic core(transformer)	BL	BL	BL	BL	--	NA
55	Silvery metal shell with red printing(electrolytic capacitor)	BL	BL	BL	BL	--	NA
56	Grey resistor with multicolour ring	BL	BL	BL	BL	BL	NA
57	White dry glue	BL	BL	BL	BL	BL	NA
58	Green PCB	BL	BL	BL	BL	IN	PBBs: ND PBDEs: ND
59	Chip IC	BL	BL	BL	BL	BL	NA
60	Chip diode	BL	BL	BL	BL	BL	NA
61	Chip resistor	BL	IN	BL	BL	BL	Pb: 834
62	Chip capacitor	BL	BL	BL	BL	BL	NA
63	Solder	BL	BL	BL	BL	--	NA
64	Chip LED	BL	IN	BL	BL	BL	Pb: 457
65	Chip inductor	BL	BL	BL	BL	BL	NA
66	Chip rectifier	BL	BL	BL	BL	IN	PBBs: ND PBDEs: ND

2. Phthalates

Test Method/Equipment:

1) With reference to IEC 62321-8:2017, determination of DBP, BBP, DEHP, DIBP by GC-MS

Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T01	1+2+7+23+28△	ND	ND	ND	ND
T02	3	ND	ND	ND	ND
T03	4	553	ND	ND	ND
T04	6	ND	ND	115	ND
T05	10	ND	ND	ND	ND
T06	11	563	ND	ND	ND
T07	12+13+17+37+41△	ND	ND	ND	ND
T08	19+20+25△	ND	ND	ND	ND
T09	30+31+44△	ND	ND	ND	ND
T10	34+35+38+51△	ND	ND	ND	ND
T11	43	ND	ND	ND	ND
T12	45	ND	ND	ND	ND
T13	50	ND	ND	ND	ND
T14	52+53△	ND	ND	ND	ND
T15	56+57+59+60+61△	ND	ND	ND	ND
T16	58	ND	ND	ND	ND
T17	62+64+65+66△	ND	ND	ND	ND
T18	5	--	--	--	--
T19	8	--	--	--	--
T20	9	--	--	--	--
T21	14	--	--	--	--
T22	15	--	--	--	--
T23	16	--	--	--	--
T24	18	--	--	--	--
T25	21	--	--	--	--
T26	22	--	--	--	--
T27	24	--	--	--	--
T28	26	--	--	--	--
T29	27	--	--	--	--
T30	29	--	--	--	--
T31	32	--	--	--	--
T32	33	--	--	--	--
T33	36	--	--	--	--
T34	39	--	--	--	--

Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T35	40	--	--	--	--
T36	42	--	--	--	--
T37	46	--	--	--	--
T38	47	--	--	--	--
T39	48	--	--	--	--
T40	49	--	--	--	--
T41	54	--	--	--	--
T42	55	--	--	--	--
T43	63	--	--	--	--

Remark:

(1) Results are obtained by XRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-VIS (for Cr^{6+}) 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 ≤ (70-3σ) < IN < (130+3σ) ≤ OL	BL ≤ (70-3σ) < IN < (130+3σ) ≤ OL	LOD < IN < (150+3σ) ≤ OL
Pb	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (500-3σ) < IN < (1500+3σ) ≤ OL
Hg	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (500-3σ) < IN < (1500+3σ) ≤ OL
Cr	BL ≤ (700-3σ) < IN	BL ≤ (700-3σ) <IN	BL ≤ (500-3σ) < IN
Br	BL ≤ (300-3σ) < IN	--	BL ≤ (250-3σ) < IN

BL= Below Limit OL= Over Limit LOD = Limit of Detection

(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, $\mu g/cm^2$= 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.

(7) -- = Not Regulated

(8) LOQ = Limit of quantitation.

Test Items	Pb	Cd	Hg	Cr^{6+}		PBB	PBDE	DBP	BBP	DEHP	DIBP
Units	mg/kg	mg/kg	mg/kg	mg/kg	$\mu g/cm^2$	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOQ	2	2	2	8	0.1	5	5	50	50	50	50

The LOQ for single compound of PBBs and PBDEs is 5mg/kg, LOQ of Cr^{6+} for polymer and composite sample is 8mg/kg and LOQ of Cr^{6+} for metal sample is 0.1μg/cm^2.

(9) According to IEC 62321-7-1:2015, determined of Cr^{6+} on metal sample by boiling water extraction test method, and result is shown as Positive/Negative.

Boiling water extraction:

Negative = Absence of Cr^{6+} coating, the detected concentration in boiling water extraction solution is less than 0.10μg/cm^2.

Positive = Presence of Cr^{6+} coating, the detected concentration in boiling water extraction solution is greater than 0.13μg/cm^2.

Information on storage conditions and production date of the tested sample is unavailable and thus Cr^{6+} results represent status of the sample at the time of testing.

(10) 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)
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)

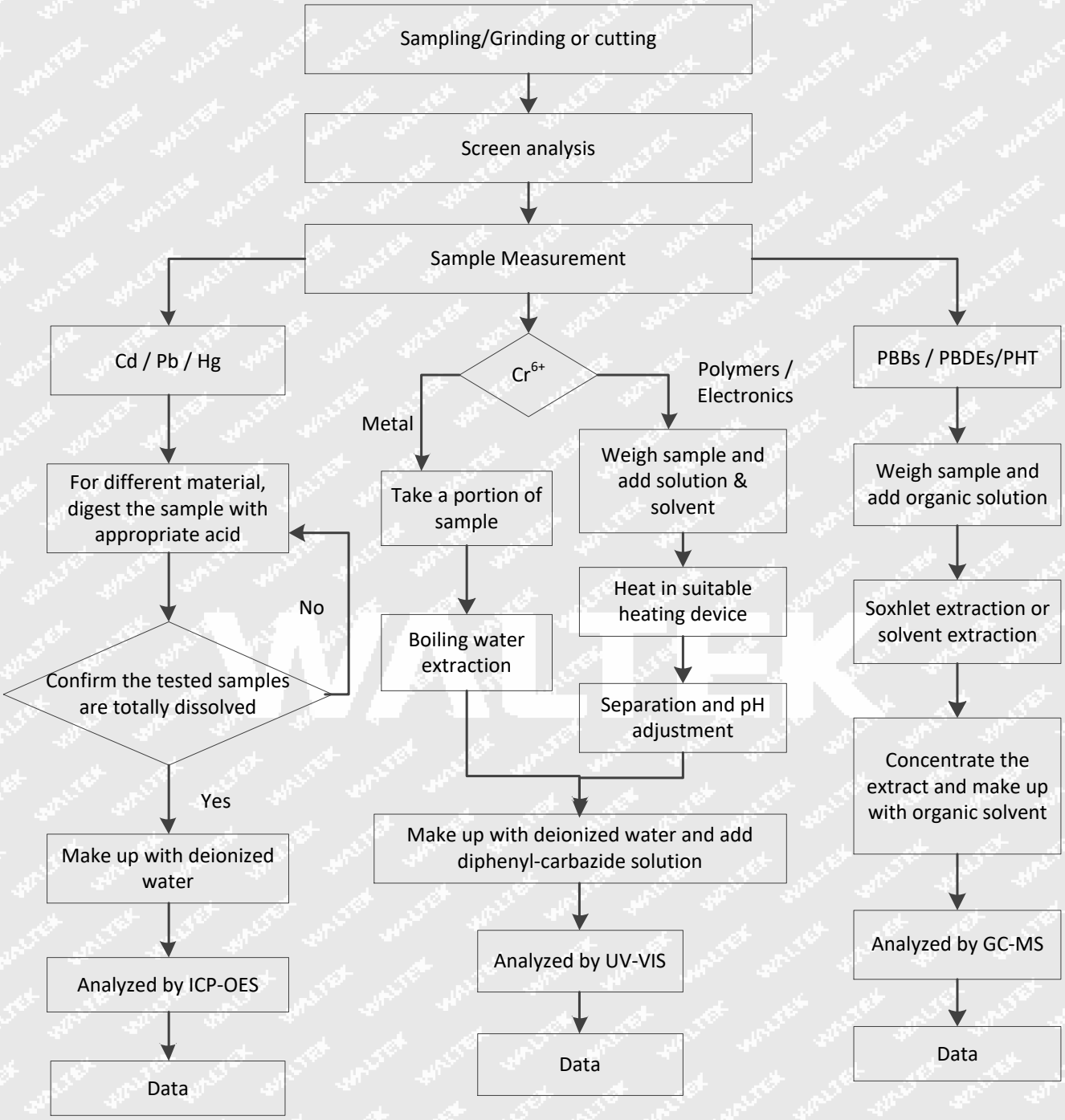
(11) Abbreviation:

"Pb" denotes Lead, "Cd" denotes Cadmium, "Hg" denotes Mercury, "Cr" denotes Chromium, "Cr^{6+}" denotes Hexavalent Chromium, "Br" denotes Bromine, "PBBs" denotes Total Polybrominated Biphenyls, "PBDEs" denotes Total Polybrominated Diphenyl Ethers.

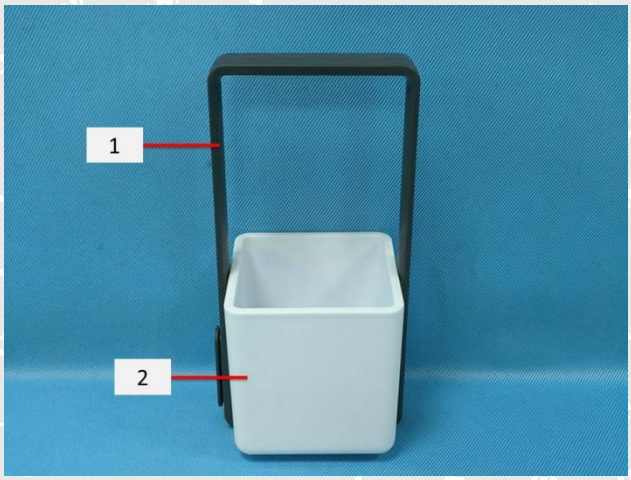
"DBP" denotes Dibutyl phthalate, "BBP" denotes Benzyl butyl phthalate (BBP), "DEHP" denotes Bis(2-ethylhexyl)-phthalate, "DIBP" denotes Diisobutyl phthalate, "PHT" denotes Phthalates.

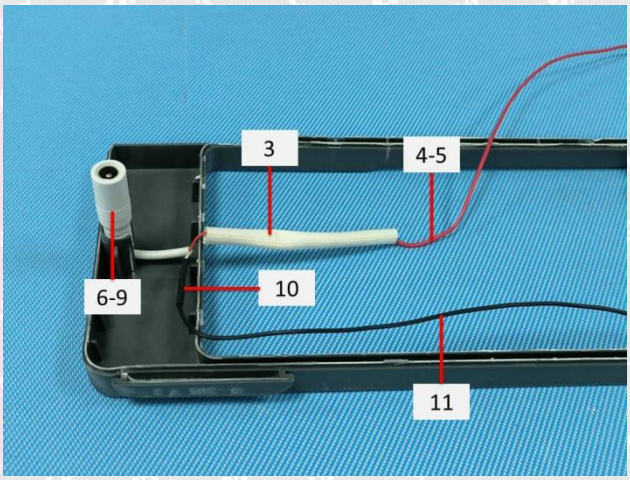
(12) "△"=As per applicant's requirement, the testing was conducted based on mixed components by weight in equal ratio, results are calculated by the minimum weight of mixed components.

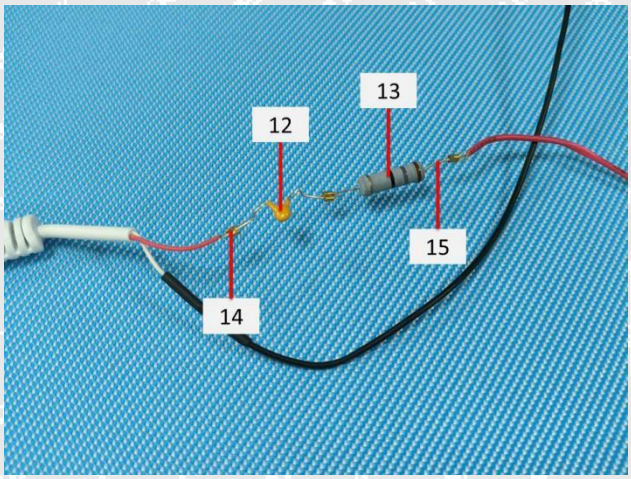
Testing Flow chart:

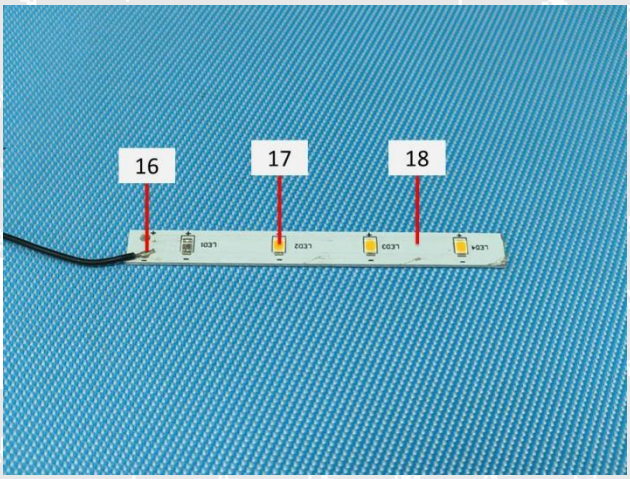


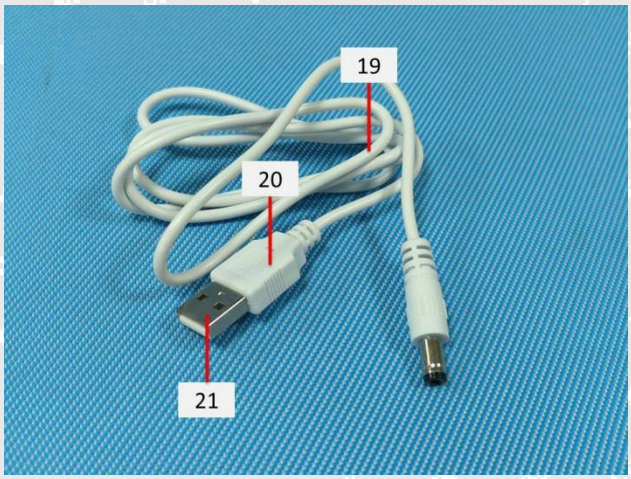
Photograph of parts tested:

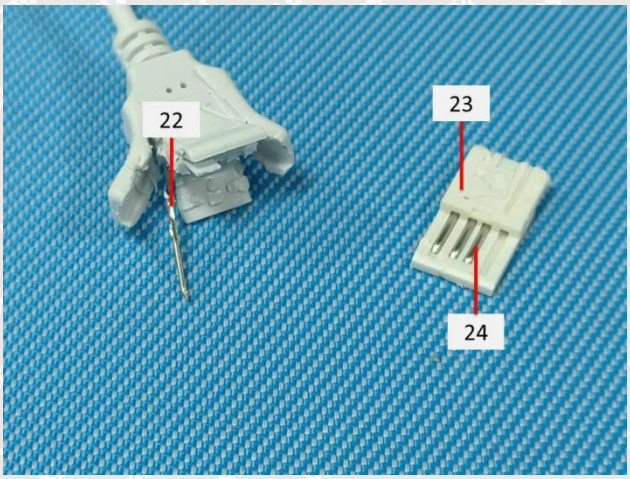


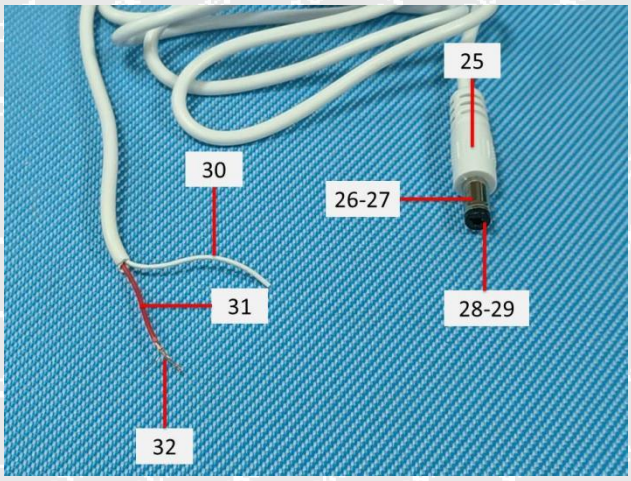


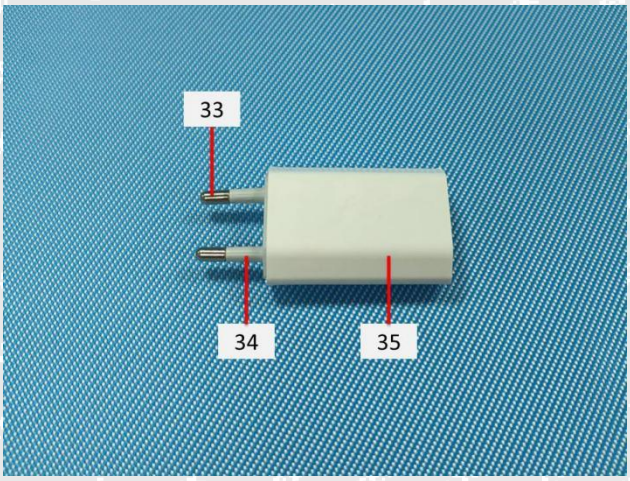


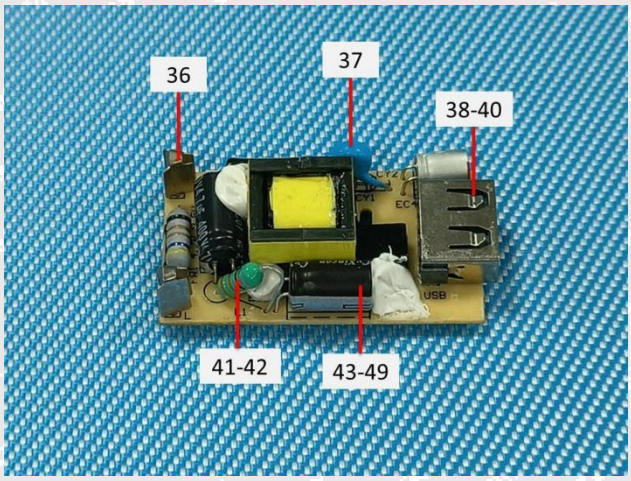


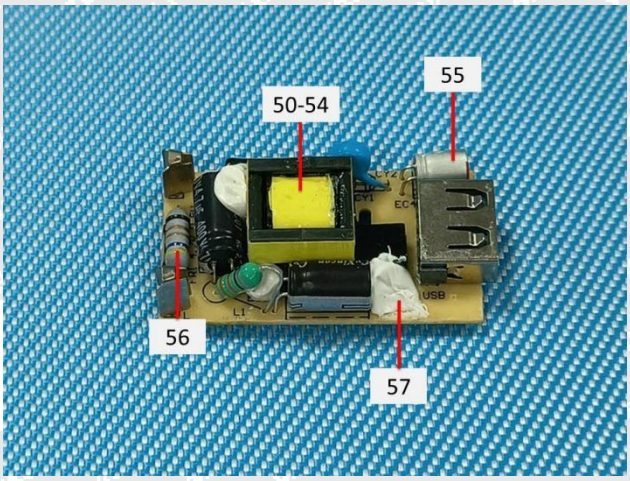


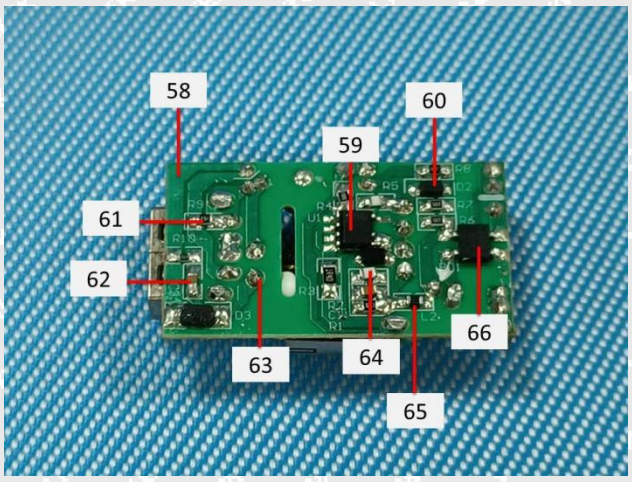



25
30
26-27
31
28-29
32


33
34
35


36
37
38-40
41-42
43-49


50-54
55
56
57


58
60
59
61
62
63
64
66
65

/

Remarks:

1. The results shown in this test report refer only to the sample(s) tested;
2. This test report cannot be reproduced, except in full, without prior written permission of the company;
3. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver;
4. The Applicant name and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which Waltek hasn't verified;
5. If the report is not stamped with the accreditation recognized seal, it will only be used for scientific research, education, and internal quality control activities, and is not used for the purpose of issuing supporting data to the society.
6. The sample material information (Model No. information) is provided by client, not verified by test laboratory. The samples of reference Model No. are not tested. Test laboratory not responsible for the accuracy, appropriateness, completeness and authenticity of the information provided by client.

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