TEST REPORT N°: MEK-ESH-P20120982B-A1

Supplement "A1" to test report No.: MEK-ESH-P20120982B dated on 2021-05-31.

EMC TEST REPORT

To :	Zhejiang MEKA Electric Co., Ltd.	Fax :	--
Attn :	--	Email :	--
Address :	No.8 Canghai Road, Linhai Town, Binhai New City, Shaoxing, Zhejiang Province, China		
Cc :		Fax/Email	
Attn :			
This document includes : 12 pages		Test date :	--

FACTORY NAME :	Zhejiang MEKA Electric Co., Ltd.
ADDRESS :	No.8 Canghai Road, Linhai Town, Binhai New City, Shaoxing, Zhejiang Province, China
TRADE MARK :	MKOPTO®
PRODUCT :	Double-capped LED lamps
TYPE REFERENCE :	Refer to model list for details
RATED VOLTAGE :	AC 220-240V, 50/60Hz
RATED INPUT POWER :	Refer to model list for details
PROTECTION CLASS :	--
TESTS REALISED :	--



STANDARDS USED(DATE) :	EN IEC 55015:2019+A11:2020 EN 61547:2009 EN IEC 61000-3-2:2019 EN 61000-3-3:2013+A1:2019
CLAUSES EXAMINED :	All Clauses Relevant

Test Location: Building C, No. 829, Xin Zhuan Road, Shanghai, CHINA

CONCLUSION :	**The samples do satisfy the clauses examined .**
Test done by, Name : Morgan YANG Date : Apr.20, 2023	**Approved by,** Name : Yi XU Date : Apr.20, 2023

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

1 TESTING PROGRAM

The tests have been carried out according to the requirements of the following standards :

Emission standard EN IEC 55015:2019+A11:2020

- Measurement of the continuous conducted emission levels.
- Measurement of the radiated emission levels.

Immunity standard EN 61547:2009

- Immunity to electrostatic discharges - publication IEC 61000-4-2.
- Immunity to fast transients/bursts - publication IEC 61000-4-4.
- Immunity to conducted disturbances induced by radio-frequency fields - publication IEC 61000-4-6.
- Immunity to radiated radio-frequency electromagnetic field with amplitude modulation - publication IEC 61000-4-3.
- Immunity to surges - publication IEC 61000-4-5.
- Immunity to voltage dips -publication IEC 61000-4-11.
- Immunity to voltage interruptions - publication IEC 61000-4-11.

Emission standard EN IEC 61000-3-2:2019

- Measurement of the harmonic currents.

Emission standard EN 61000-3-3:2013+A1:2019

- Measurement of the voltage fluctuations.

Special Comment : This report is updated report based on history report MEK-ESH-P20120982B for adding new models which have same electrical diagram with original models and adding alternative PCB layout, which have same electrical diagram with original PCB. All original test results can refer to history report MEK-ESH-P20120982B.

2 HISTORY OF FAILURE

None.

3 EQUIPMENT CHARACTERISTICS

3.1 Model list

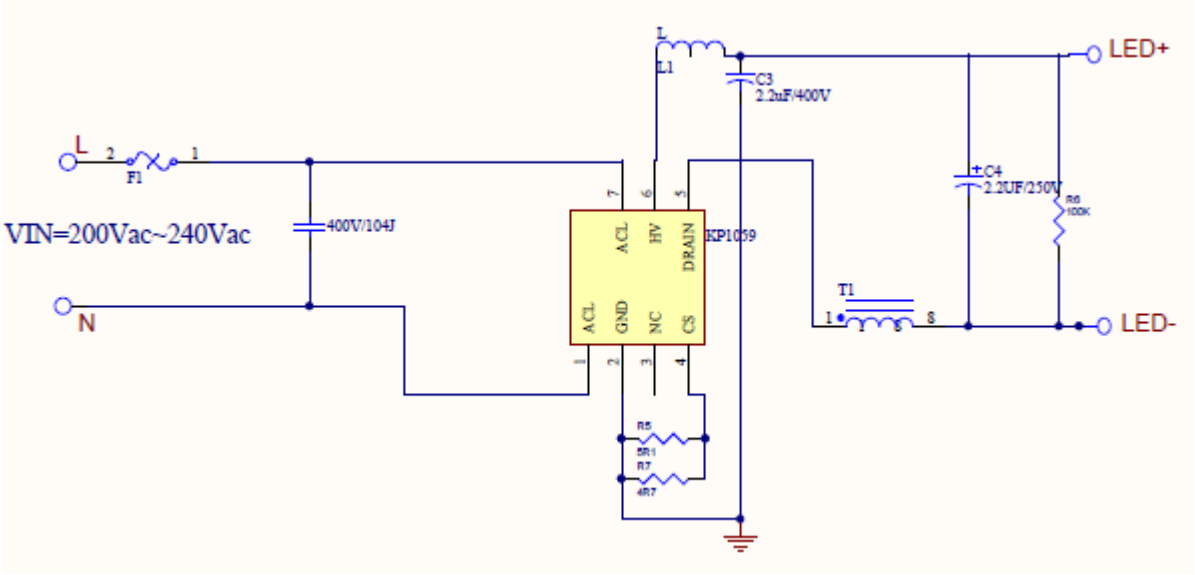
220-240V~, 50/60Hz, G13 cap, IP20, ta:-20~40°C, "A(B/C/D/E/F)"means different temperature color, "A" stands for 2700K, "B" stands for 3000K, "C" stands for 3500K, "D" stands for 4000K, "E" stands for 5000K, "F" stands for 6500K.

Lamp cover and length	Rated Watt (w)	Model no.	Rated current (mA)	Quantity of LEDs
Glass cover, 0.6m	9	MK-020011003398—A(B/C/D/E/F)	66	42
Glass cover, 0.9m	14	MK-020011003399—A(B/C/D/E/F)	117	60
Glass cover, 1.2m	18	MK-020011003400—A(B/C/D/E/F)	131	84
Glass cover, 1.5m	22	MK-020011003401—A(B/C/D/E/F)	159	104
Plastic cover, 0.6m	9	MK-020011003402—A(B/C/D/E/F)	75	38
Plastic cover, 0.9m	14	MK-020011003403—A(B/C/D/E/F)	117	60
Plastic cover, 1.2m	18	MK-020011003404—A(B/C/D/E/F)	151	76
Plastic cover, 1.5m	20	MK-020011003405—A(B/C/D/E/F)	154	96
Glass cover, 0.6m	7.5	MK-020011003406—A(B/C/D/E/F)	63	38
Glass cover, 0.9m	12.5	MK-020011003407—A(B/C/D/E/F)	105	60
Glass cover, 1.2m	16.5	MK-020011003408—A(B/C/D/E/F)	138	76
Glass cover, 1.5m	19	MK-020011003409—A(B/C/D/E/F)	159	96
Plastic cover, 0.6m	7.5	MK-020011003410—A(B/C/D/E/F)	63	38
Plastic cover, 0.9m	12.5	MK-020011003411—A(B/C/D/E/F)	105	60
Plastic cover, 1.2m	16.5	MK-020011003412—A(B/C/D/E/F)	138	76
Plastic cover, 1.5m	19	MK-020011003413—A(B/C/D/E/F)	159	96
Plastic cover, 1.5m	22	MK-020011003414—A(B/C/D/E/F)	168	132
Plastic cover, 1.5m	24	MK-020011003415—A(B/C/D/E/F)	201	132
Glass cover, 1.5m	22	MK-020011003416—A(B/C/D/E/F)	168	132
Glass cover, 0.6m	5.5	MK-020011003417—A(B/C/D/E/F)	46	34
Glass cover, 0.9m	9	MK-020011003418—A(B/C/D/E/F)	75	50
Glass cover, 1.2m	11.5	MK-020011003419—A(B/C/D/E/F)	96	66
Glass cover, 1.5m	13	MK-020011003420—A(B/C/D/E/F)	109	84
Glass cover, 0.6m	6.5	MK-020011003421—A(B/C/D/E/F)	54	38
Glass cover, 1.2m	15.5	MK-020011003422—A(B/C/D/E/F)	130	90
Glass cover, 1.5m	23	MK-020011003423—A(B/C/D/E/F)	176	132
Plastic cover, 0.6m	5.5	MK-020011003424—A(B/C/D/E/F)	46	34
Plastic cover, 0.9m	9	MK-020011003425—A(B/C/D/E/F)	75	50
Plastic cover, 1.2m	11.5	MK-020011003426—A(B/C/D/E/F)	96	66
Plastic cover, 1.5m	13	MK-020011003427—A(B/C/D/E/F)	109	84
Plastic cover, 0.6m	7	MK-020011003428—A(B/C/D/E/F)	59	42
Plastic cover, 1.2m	12	MK-020011003429—A(B/C/D/E/F)	100	84
Plastic cover, 1.5m	15	MK-020011003430—A(B/C/D/E/F)	125	104
Glass cover, 0.6m	9.5	MK-020011003431—A(B/C/D/E/F)	79	38
Glass cover, 1.2m	19	MK-020011003432—A(B/C/D/E/F)	159	76
Glass cover,1.5m	21.5	MK-020011003433—A(B/C/D/E/F)	160	96
Glass cover, 0.6m	7.5	MK-020011003434—A(B/C/D/E/F)	63	54
Glass cover, 1.2m	16.5	MK-020011003435—A(B/C/D/E/F)	138	114
Glass cover, 1.5m	19	MK-020011003436—A(B/C/D/E/F)	159	132
Plastic cover, 0.6m	9.5	MK-020011003437—A(B/C/D/E/F)	79	38

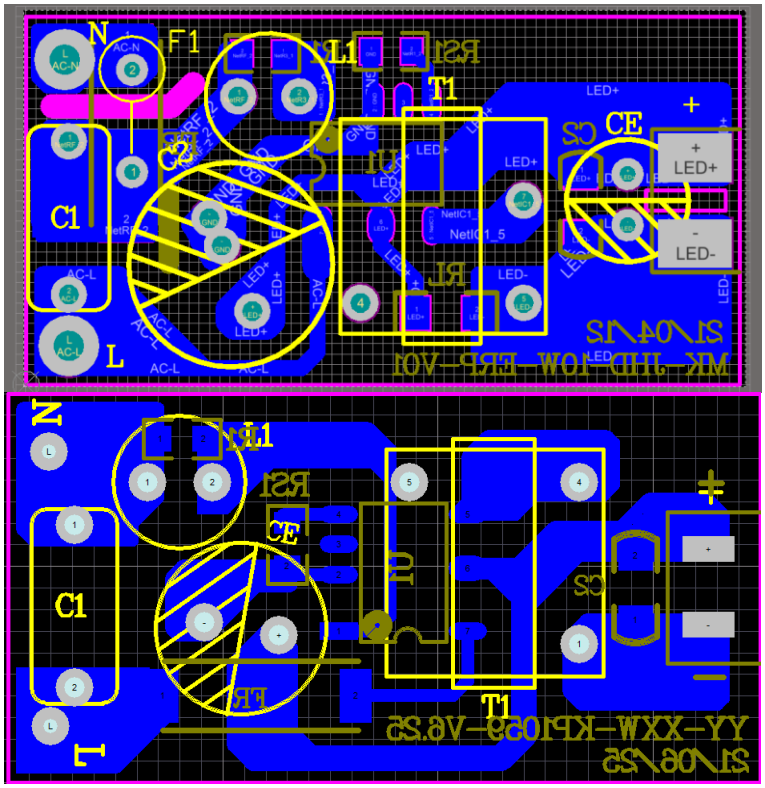
Plastic cover, 1.2m	19	MK-020011003438—A(B/C/D/E/F)	159	76
Plastic cover, 1.5m	21.5	MK-020011003439—A(B/C/D/E/F)	160	96
Plastic cover, 0.6m	5.5	MK-020011016000—A(B/C/D/E/F)	46	38
Plastic cover, 0.9m	9	MK-020011016001—A(B/C/D/E/F)	75	56
Plastic cover, 1.2m	11.5	MK-020011016002—A(B/C/D/E/F)	96	72
Plastic cover, 1.5m	13	MK-020011016003—A(B/C/D/E/F)	109	96
Plastic cover, 0.6m	7	MK-020011016004—A(B/C/D/E/F)	59	48
Plastic cover, 1.2m	12	MK-020011016005—A(B/C/D/E/F)	100	96
Plastic cover, 1.5m	15	MK-020011016006—A(B/C/D/E/F)	125	114
Glass cover, 0.6m	7.5	MK-020011016007—A(B/C/D/E/F)	63	38
Glass cover, 0.6m	7.5	MK-020011016008—A(B/C/D/E/F)	63	48
Glass cover, 1.2m	16.5	MK-020011016009—A(B/C/D/E/F)	138	84
Glass cover, 1.2m	16.5	MK-020011015980—A(B/C/D/E/F)	138	88
Glass cover, 1.2m	16.5	MK-020011016010—A(B/C/D/E/F)	138	96
Glass cover, 1.5m	19	MK-020011016011—A(B/C/D/E/F)	159	84
Glass cover, 1.5m	19	MK-020011016012—A(B/C/D/E/F)	159	96
Glass cover, 1.5m	19	MK-020011015979—A(B/C/D/E/F)	159	114
Glass cover, 0.6m	9.5	MK-020011016013—A(B/C/D/E/F)	79	42
Glass cover, 0.9m	14.3	MK-020011016014—A(B/C/D/E/F)	119	72
Glass cover, 1.2m	16.5	MK-020011016015—A(B/C/D/E/F)	138	84
Glass cover, 1.2m	18.2	MK-020011016016—A(B/C/D/E/F)	150	84
Glass cover, 1.2m	18.2	MK-020011016017—A(B/C/D/E/F)	137	84
Glass cover, 1.2m	18.2	MK-020011016018—A(B/C/D/E/F)	150	96
Glass cover, 1.5m	24	MK-020011016019—A(B/C/D/E/F)	201	132
Glass cover, 1.5m	24	MK-020011016020—A(B/C/D/E/F)	185	132
Plastic cover, 0.6m	7.5	MK-020011016021—A(B/C/D/E/F)	56	48
Plastic cover, 0.6m	7.5	MK-020011016022—A(B/C/D/E/F)	56	56
Plastic cover, 0.6m	10	MK-020011016023—A(B/C/D/E/F)	83	60
Plastic cover, 0.6m	10	MK-020011016024—A(B/C/D/E/F)	77	60
Plastic cover, 0.6m	10	MK-020011016025—A(B/C/D/E/F)	83	64
Plastic cover, 0.9m	15	MK-020011016026—A(B/C/D/E/F)	125	90
Plastic cover, 0.9m	15	MK-020011016027—A(B/C/D/E/F)	125	96
Plastic cover, 1.2m	16.5	MK-020011016028—A(B/C/D/E/F)	129	84
Plastic cover, 1.2m	16.5	MK-020011016029—A(B/C/D/E/F)	129	96
Plastic cover, 1.5m	19	MK-020011016030—A(B/C/D/E/F)	149	96
Plastic cover, 1.2m	22	MK-020011016031—A(B/C/D/E/F)	184	132
Plastic cover, 1.2m	22	MK-020011016032—A(B/C/D/E/F)	169	132
Plastic cover, 1.5m	24	MK-020011016033—A(B/C/D/E/F)	201	132
Plastic cover, 1.5m	24	MK-020011016034—A(B/C/D/E/F)	191	132

3.2 Circuit diagram and PCB layout

Circuit diagram:



PCB layout:

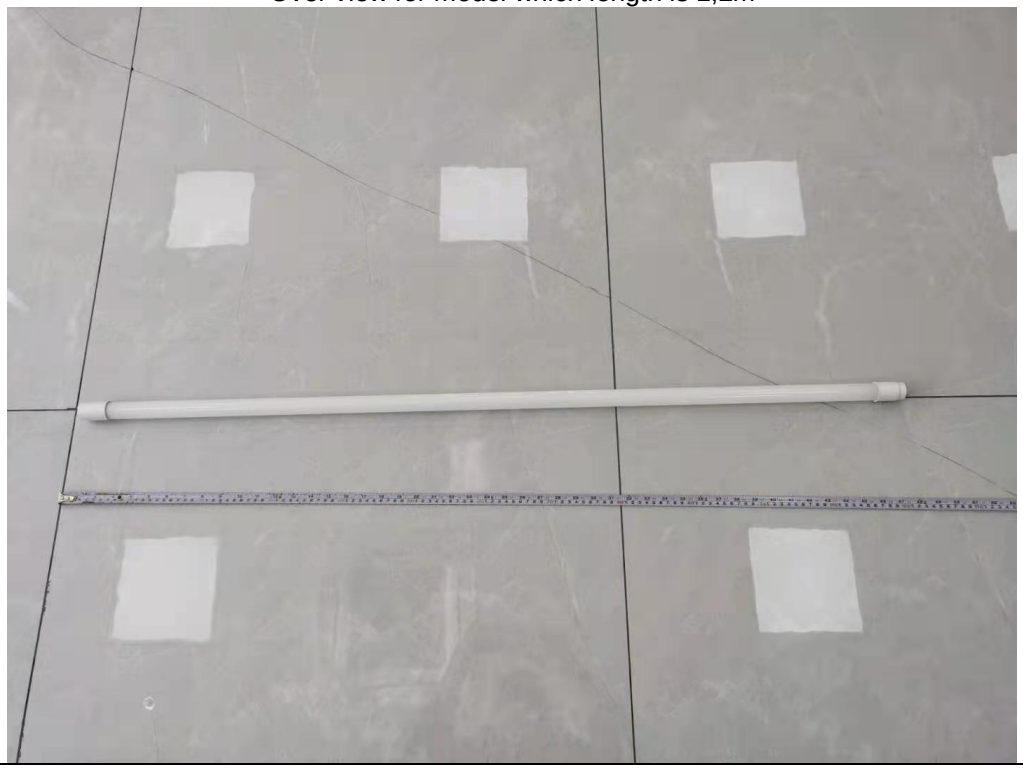


3.3 Pictures of the samples

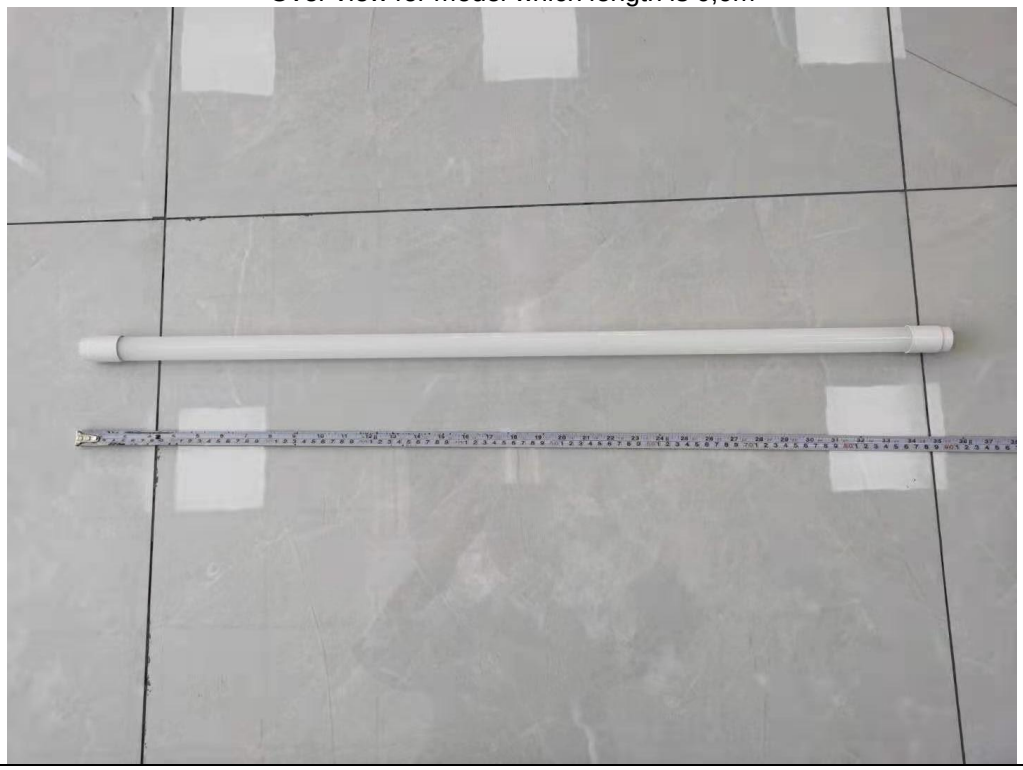
Over view for model which length is 1,5m



Over view for model which length is 1,2m



Over view for model which length is 0,9m



Over view for model which length is 0,6m



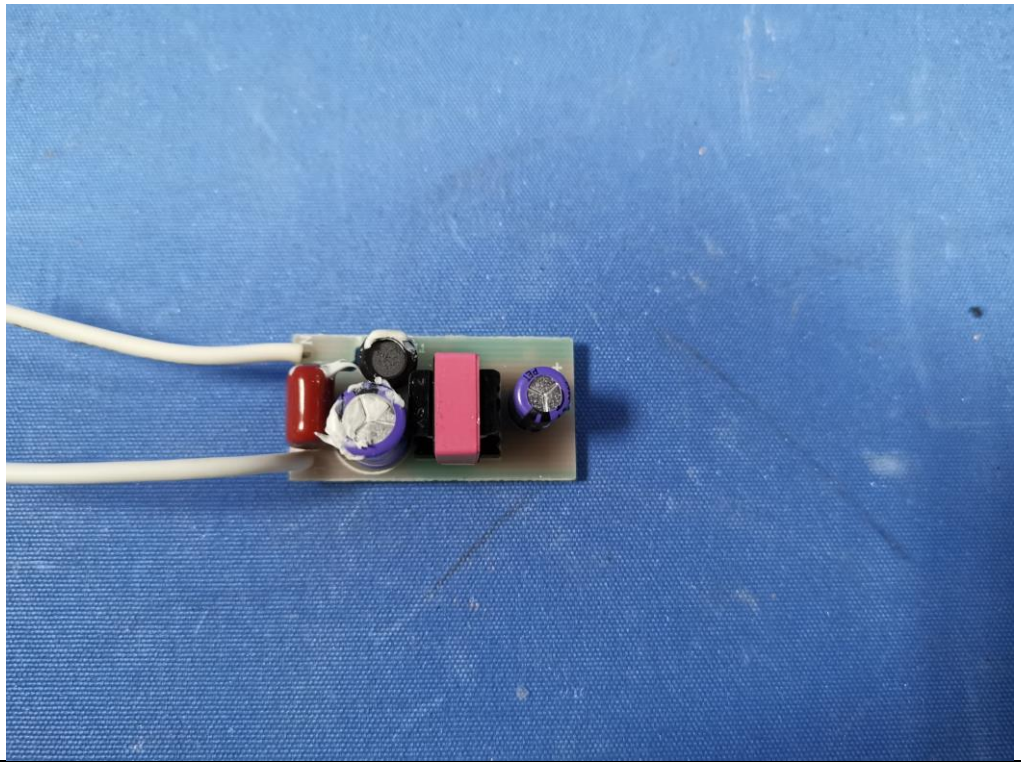
Overview for model with plastic cover



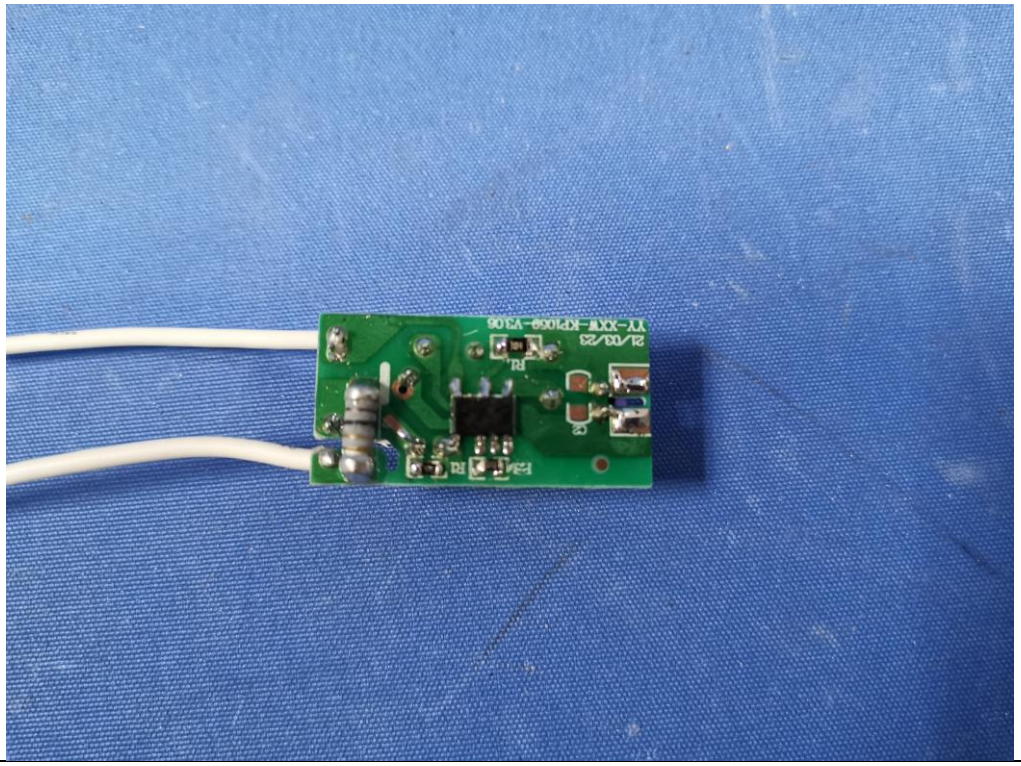
Cap view



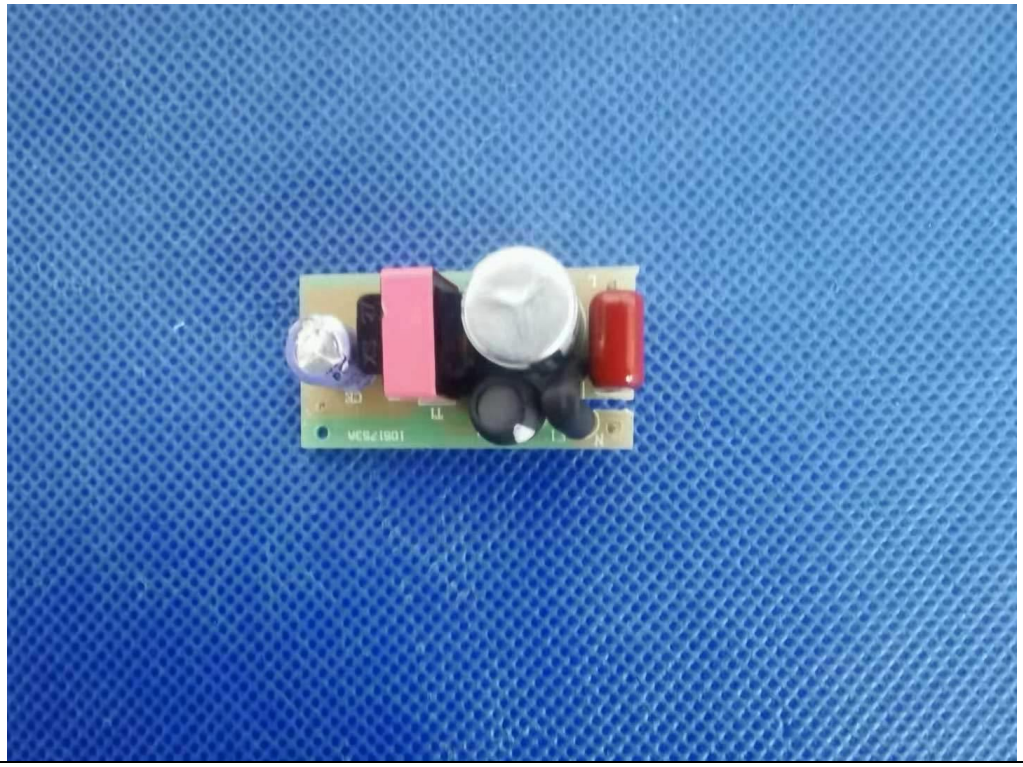
Front view of PCB



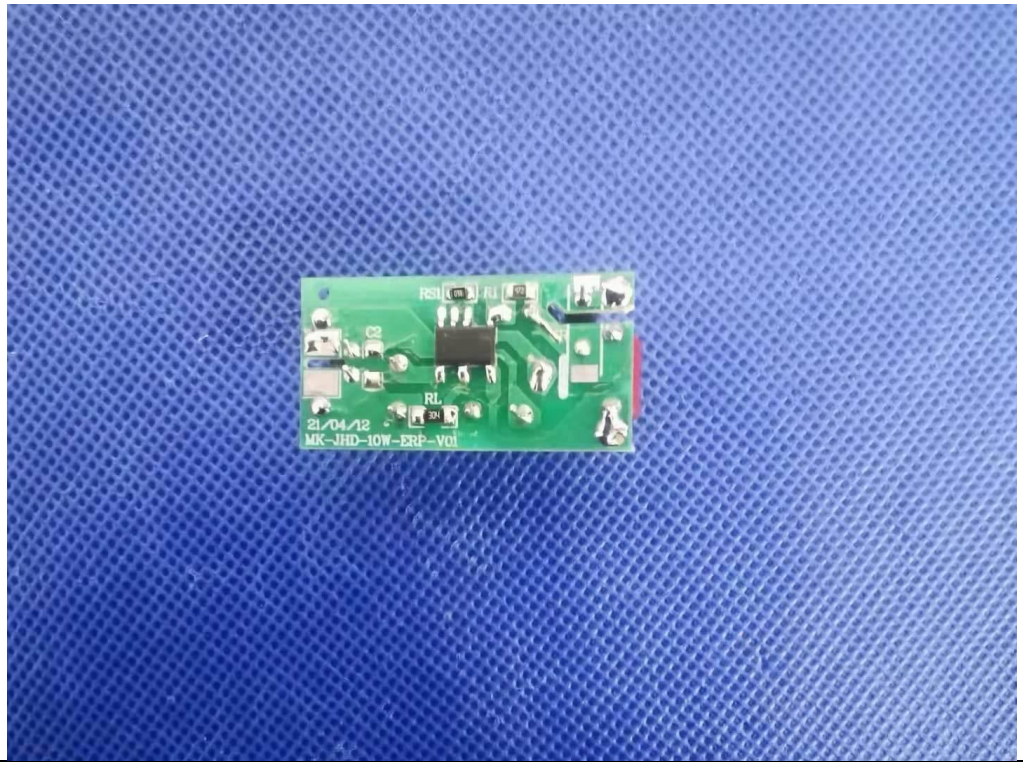
Back view of PCB



Alternative PCB



Continue



LED module



Fuse of lamp cap



4 CONCLUSION

The apparatuses Double-capped LED lamps and models Refer to model list for details are in compliance with the requirements of the standards EN IEC 55015:2019+A11:2020, EN 61547:2009, EN IEC 61000-3-2:2019 and EN 61000-3-3:2013+A1:2019.