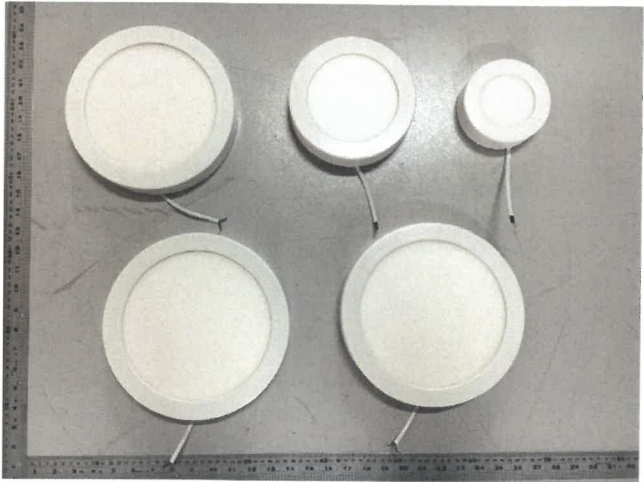


Prüfbericht-Nr.: Test Report No.:	50331759 001	Auftrags-Nr.: Order No.:	180118291	Seite 1 von 58 Page 1 of 58
Kunden-Referenz-Nr.: Client Reference No.:	N/A	Auftragsdatum: Order date:	19.12.2019	
Auftraggeber: Client:	TOPJET OPTOELECTRONIC CO., LTD. No.13,PingDong 4th Rd Nanping S&T Industrial Park,Zhuhai 519060 Guangdong P. R. China.			
Prüfgegenstand: Test item:	LED Ceiling Light			
Bezeichnung / Typ-Nr.: Identification / Type No.:	See "General product information"			
Auftrags-Inhalt: Order content:	Type test			
Prüfgrundlage: Test specification:	EN 60598-1:2015 + A1:2018 EN 60598-2-1:1989 EN 62493:2015 EN 62471:2008			
Wareneingangsdatum: Date of receipt:	19.12.2019			
Prüfmuster-Nr.: Test sample No.:	A001053552			
Prüfzeitraum: Testing period:	07.01.2020 – 20.03.2020			
Ort der Prüfung: Place of testing:	TÜV Rheinland / CCIC (Ningbo) Co., Ltd.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland / CCIC (Ningbo) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
01.04.2020 Zeen Xu/ PE Datum Name / Stellung Date Name / Position		02.04.2020 Brent Zhang/ Reviewer Datum Name / Stellung Date Name / Position		
 Unterschrift Signature		 Unterschrift Signature		
Sonstiges / Other: "List of Attachments" see page 4.				
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.				

TEST REPORT
IEC 60598-2-1
Luminaires
Part 2: Particular requirements
Section 1: Fixed general purpose luminaires

Report Number.: 50331759 001

Date of issue: See cover page

Total number of pages: See cover page

Name of Testing Laboratory preparing the Report.....: TÜV Rheinland / CCIC (Ningbo) Co., Ltd.
 3F, Building C13, R&D Park, No.32 Lane 299 Guanghua Road,
 National Hi-Tech Zone, Ningbo 315048, P.R. China.

Applicant's name.....: TOPJET OPTOELECTRONIC CO., LTD.
Address: No.13,PingDong 4th Rd Nanping S&T Industrial Park,Zhuhai
 519060 Guangdong P. R. China.

Test specification:

Standard: IEC 60598-2-1:1979, AMD1:1987 used in conjunction with
 IEC 60598-1:2014, AMD1:2017

Test procedure: CE-LVD

Non-standard test method.....: N/A

Test Report Form No.....: IEC60598_2_1F

Test Report Form(s) Originator....: Intertek Semko AB

Master TRF.....: Dated 2017-10

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General disclaimer:

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description.....:	LED Ceiling Light	
Trade Mark.....:		
Manufacturer.....:	Same to applicant	
Model/Type reference	See "General product information".	
Ratings.....:	AC 220-240V, 50/60Hz. Class II, IP20, ta: 25°C. Details see "General product information".	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	Testing Laboratory:	TÜV Rheinland / CCIC (Ningbo) Co., Ltd.
	Testing location/ address	3F, Building C13, R&D Park, No.32 Lane 299 Guanghai Road, National Hi-Tech Zone, Ningbo 315048, P.R. China
	Tested by (name, function, signature)	See cover page
	Approved by (name, function, signature)..:	See cover page
☐	Testing procedure: CTF Stage 1:	N/A
	Testing location/ address	N/A
	Tested by (name, function, signature)	N/A
	Approved by (name, function, signature)..:	N/A
☐	Testing procedure: CTF Stage 2:	N/A
	Testing location/ address	N/A
	Tested by (name + signature)	N/A
	Witnessed by (name, function, signature)..:	N/A
	Approved by (name, function, signature)..:	N/A
☐	Testing procedure: CTF Stage 3:	N/A
☐	Testing procedure: CTF Stage 4:	N/A
	Testing location/ address	N/A
	Tested by (name, function, signature)	N/A
	Witnessed by (name, function, signature)..:	N/A
	Approved by (name, function, signature)..:	N/A
	Supervised by (name, function, signature):	N/A

List of Attachments (including a total number of pages in each attachment): Attachment 1: Photobiological test report according to EN 62471:2008(Total 22 pages). Attachment 2: Acceptance testing of LED driver according to EN 61347-2-13:2014+A1:2017 used in conjunction with EN 61347-1:2015(Total 44 pages). Attachment 3: Acceptance testing of PIR sensor according to EN 61347-2-11:2001 used in conjunction with EN 61347-1:2015(Total 35 pages). Attachment 4: Measurement equipment list (Total 2 pages). According to the standard EN 62493:2015, the DUT belongs to unintentional radiating part of lighting equipment. Due to the reason that the DUT fulfils the inherent-compliance condition "It is a LED-light-source technology", the DUT is deemed to comply with requirements of this standard without testing.	
Summary of testing: Pass	
Tests performed (name of test and test clause): Models RCN-8-24W CCT, RCN-5-12W CCT+DIM, RCN-8-24W CCT+DIM and RCN-8-24W Sensor were selected to perform the thermal test. Other testing were performed on all models. Photobiological safety of lamps and lamp systems testing according to IEC TR 62778:2014 see page 56-58. EN 62031:2008 + A1:2013 + A2:2015 was considered see page 52.	Testing location: TÜV Rheinland / CCIC (Ningbo) Co., Ltd. 3F, Building C13, R&D Park, No.32 Lane 299 Guanghua Road, National Hi-Tech Zone, Ningbo 315048, P.R.China.
Testing result: Pass.	
Summary of compliance with National Differences: List of countries addressed EU Group Differences.	
☒ The product fulfils the requirements of <u>EN 60598-2-1:1989 used in conjunction with EN 60598-1:2015 + A1:2018.</u>	

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

English version:

Take model RC-3-6W as an example, and model name and rated wattage will be changed:



Model: RC-3-6W Series number: XXXXXXXX

AC 220-240V, 50/60Hz; 6W; LED. Ta: 25°C. IP20. CCT: 6000K.

Manufacturer:

TOPJET OPTOELECTRONIC CO., LTD.

No.13,PingDong 4th Rd Nanping S&T Industrial Park,Zhuhai 519060 Guangdong
P. R. China.

Importer:

Name: XXXXX

Address: XXXXX

All models see below:

No.	Model name	Rated wattage	CCT
1	RC-3-6W	6W	3000K or 4000K or 6000K
2	RC-5-12W	12W	3000K or 4000K or 6000K
3	RC-7-18W	18W	3000K or 4000K or 6000K
4	RC-8-20W	20W	3000K or 4000K or 6000K
5	RC-8-24W	24W	3000K or 4000K or 6000K
6	SC-3-6W	6W	3000K or 4000K or 6000K
7	SC-5-12W	12W	3000K or 4000K or 6000K
8	SC-7-18W	18W	3000K or 4000K or 6000K
9	SC-7-20W	20W	3000K or 4000K or 6000K
10	SC-7-24W	24W	3000K or 4000K or 6000K
11	RC-3-6W CCT	6W	3000K-4000K-6000K
12	RC-5-12W CCT	12W	3000K-4000K-6000K
13	RC-7-18W CCT	18W	3000K-4000K-6000K
14	RC-8-20W CCT	20W	3000K-4000K-6000K
15	RC-8-24W CCT	24W	3000K-4000K-6000K
16	SC-3-6W CCT	6W	3000K-4000K-6000K
17	SC-5-12W CCT	12W	3000K-4000K-6000K
18	SC-7-18W CCT	18W	3000K-4000K-6000K
19	SC-7-20W CCT	20W	3000K-4000K-6000K
20	SC-7-24W CCT	24W	3000K-4000K-6000K

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No.	Model name	Rated wattage	CCT
21	RC-3-6W CCT+DIM	6W	3000K-4000K-6000K
22	RC-3-7.5W CCT+DIM	7.5W	3000K-4000K-6000K
23	RC-5-12W CCT+DIM	12W	3000K-4000K-6000K
24	RC-7-18W CCT+DIM	18W	3000K-4000K-6000K
25	RC-8-20W CCT+DIM	20W	3000K-4000K-6000K
26	RC-8-24W CCT+DIM	24W	3000K-4000K-6000K
27	SC-3-6W CCT+DIM	6W	3000K-4000K-6000K
28	SC-5-12W CCT+DIM	12W	3000K-4000K-6000K
29	SC-7-18W CCT+DIM	18W	3000K-4000K-6000K
30	SC-7-20W CCT+DIM	20W	3000K-4000K-6000K
31	SC-7-24W CCT+DIM	24W	3000K-4000K-6000K
32	RC-5-12W Sensor	12W	3000K or 4000K or 6000K
33	RC-7-18W Sensor	18W	3000K or 4000K or 6000K
34	RC-8-24W Sensor	24W	3000K or 4000K or 6000K
35	RC-5-12W CCT+Sensor	12W	3000K-4000K-6000K
36	RC-7-18W CCT+Sensor	18W	3000K-4000K-6000K
37	RC-8-24W CCT+Sensor	24W	3000K-4000K-6000K
38	RCN-3-6W	6W	3000K or 4000K or 6000K
39	RCN-5-12W	12W	3000K or 4000K or 6000K
40	RCN-7-18W	18W	3000K or 4000K or 6000K
41	RCN-8-20W	20W	3000K or 4000K or 6000K
42	RCN-8-24W	24W	3000K or 4000K or 6000K
43	SCN-3-6W	6W	3000K or 4000K or 6000K
44	SCN-5-12W	12W	3000K or 4000K or 6000K
45	SCN-7-18W	18W	3000K or 4000K or 6000K
46	SCN-7-20W	20W	3000K or 4000K or 6000K
47	SCN-7-24W	24W	3000K or 4000K or 6000K
48	RCN-3-6W CCT	6W	3000K-4000K-6000K
49	RCN-5-12W CCT	12W	3000K-4000K-6000K
50	RCN-7-18W CCT	18W	3000K-4000K-6000K
51	RCN-8-20W CCT	20W	3000K-4000K-6000K
52	RCN-8-24W CCT	24W	3000K-4000K-6000K
53	SCN-3-6W CCT	6W	3000K-4000K-6000K
54	SCN-5-12W CCT	12W	3000K-4000K-6000K
55	SCN-7-18W CCT	18W	3000K-4000K-6000K
56	SCN-7-20W CCT	20W	3000K-4000K-6000K
57	SCN-7-24W CCT	24W	3000K-4000K-6000K
58	RCN-3-6W CCT+DIM	6W	3000K-4000K-6000K
59	RCN-3-7.5W CCT+DIM	7.5W	3000K-4000K-6000K
60	RCN-5-12W CCT+DIM	12W	3000K-4000K-6000K

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No.	Model name	Rated wattage	CCT
61	RCN-7-18W CCT+DIM	18W	3000K-4000K-6000K
62	RCN-8-20W CCT+DIM	20W	3000K-4000K-6000K
63	RCN-8-24W CCT+DIM	24W	3000K-4000K-6000K
64	SCN-3-6W CCT+DIM	6W	3000K-4000K-6000K
65	SCN-5-12W CCT+DIM	12W	3000K-4000K-6000K
66	SCN-7-18W CCT+DIM	18W	3000K-4000K-6000K
67	SCN-7-20W CCT+DIM	20W	3000K-4000K-6000K
68	SCN-7-24W CCT+DIM	24W	3000K-4000K-6000K
69	RCN-5-12W Sensor	12W	3000K or 4000K or 6000K
70	RCN-7-18W Sensor	18W	3000K or 4000K or 6000K
71	RCN-8-24W Sensor	24W	3000K or 4000K or 6000K
72	RCN-5-12W CCT+Sensor	12W	3000K-4000K-6000K
73	RCN-7-18W CCT+Sensor	18W	3000K-4000K-6000K
74	RCN-8-24W CCT+Sensor	24W	3000K-4000K-6000K

Test item particulars: LED Ceiling Light	
Classification of installation and use: Class II, IP20	
Supply Connection: Supply cord with tails:	
Possible test case verdicts: - test case does not apply to the test object..... : N/A - test object does meet the requirement : P (Pass) - test object does not meet the requirement..... : F (Fail)	
Testing : Date of receipt of test item : See cover page Date (s) of performance of tests : See cover page	
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☒ comma / ☐ point is used as the decimal separator. Clause numbers between brackets refer to clauses in IEC 60598-1	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60598-1:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☐ Yes ☒ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies): TOPJET OPTOELECTRONIC CO., LTD. No.13,PingDong 4th Rd Nanping S&T Industrial Park,Zhuhai 519060 Guangdong P. R. China.	

General product information:

The testing appliance are LED Ceiling Light with non-replaceable light source, AC 220-240V, 50/60Hz; IP20, Class II, ta: 25°C.

Letter 'CCT' in model name means one products contains three CCT(3000K-4000K-6000K) and can adjust CCT by switch, model name without 'CCT' means product have three CCT to choose: 3000K or 4000K or 6000K;

Letter 'DIM' in model name means products can adjust light flux by SCR dimmer;

Letter 'sensor' in model name means products contains PIR sensor;

Letter 'RC' in model name means round shape;

Letter 'SC' in model name means square shape.

Details as below table:

No.	Model name	Rated w attage	PCB No.	LED board No.	LED quantity
1	RC-3-6W	6W	TJ-DS0624B2	2B16C-6W V2	32PCS-60mA
2	RC-5-12W	12W	TJ-DS0624B2	2B30C-12W V2	60PCS-60mA
3	RC-7-18W	18W	TJ-DS0624B2	2B45C-18W V2	90PCS-60mA
4	RC-8-20W	20W	TJ-DS0624B2	3B40C-24W V2	120PCS-60mA
5	RC-8-24W	24W	TJ-DS0624B2	3B40C-24W V2	120PCS-60mA
6	SC-3-6W	6W	TJ-DS0624B2	2B16C-6W V2	32PCS-60mA
7	SC-5-12W	12W	TJ-DS0624B2	2B30C-12W V2	60PCS-60mA
8	SC-7-18W	18W	TJ-DS0624B2	2B45C-18W V2	90PCS-60mA
9	SC-7-20W	20W	TJ-DS0624B2	3B40C-24W V2	120PCS-60mA
10	SC-7-24W	24W	TJ-DS0624B2	3B40C-24W V2	120PCS-60mA
11	RC-3-6W CCT	6W	TJ-DS0624B2	S2B16C-6W V2	32PCS-150mA
12	RC-5-12W CCT	12W	TJ-DS0624B2	S2B30C-12W V2	60PCS-150mA
13	RC-7-18W CCT	18W	TJ-DS0624B2	S2B45C-18W V2	90PCS-150mA
14	RC-8-20W CCT	20W	TJ-DS0624B2	S2B50C-20-24W V2	100PCS-150mA
15	RC-8-24W CCT	24W	TJ-DS0624B2	S2B50C-20-24W V2	100PCS-150mA
16	SC-3-6W CCT	6W	TJ-DS0624B2	S2B16C-6W V2	32PCS-150mA
17	SC-5-12W CCT	12W	TJ-DS0624B2	S2B30C-12W V2	60PCS-150mA
18	SC-7-18W CCT	18W	TJ-DS0624B2	S2B50C-18-24W V2	100PCS-150mA
19	SC-7-20W CCT	20W	TJ-DS0624B2	S2B50C-18-24W V2	100PCS-150mA
20	SC-7-24W CCT	24W	TJ-DS0624B2	S2B50C-18-24W V2	100PCS-150mA
21	RC-3-6W CCT+DIM	6W	TD-6-12W-KKG-A1	S2B16C-6W V2	32PCS-150mA
22	RC-3-7.5W CCT+DIM	7.5W	TD-6-12W-KKG-A1	S2B16C-6W V2	32PCS-150mA
23	RC-5-12W CCT+DIM	12W	TD-6-12W-KKG-A1	S2B30C-12W V2	60PCS-150mA
24	RC-7-18W CCT+DIM	18W	TD-18-24W-KKG-A2	S2B45C-18W V2	90PCS-150mA

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No.	Model name	Rated w attage	PCB No.	LED board No.	LED quantity
25	RC-8-20W CCT+DIM	20W	TD-18-24W-KKG-A2	S2B50C-20-24W V2	100PCS-150mA
26	RC-8-24W CCT+DIM	24W	TD-18-24W-KKG-A2	S2B50C-20-24W v2	100PCS-150mA
27	SC-3-6W CCT+DIM	6W	TD-6-12W-KKG-A1	S2B16C-6W V2	32PCS-150mA
28	SC-5-12W CCT+DIM	12W	TD-6-12W-KKG-A1	S2B30C-12W V2	60PCS-150mA
29	SC-7-18W CCT+DIM	18W	TD-18-24W-KKG-A2	S2B50C-18-24W V2	100PCS-150mA
30	SC-7-20W CCT+DIM	20W	TD-18-24W-KKG-A2	S2B50C-18-24W V2	100PCS-150mA
31	SC-7-24W CCT+DIM	24W	TD-18-24W-KKG-A2	S2B50C-18-24W V2	100PCS-150mA
32	RC-5-12W Sensor	12W	TJ-SPL-PIR 12- 16W-Driver-V1	S2B30C-12W V2	60PCS-60mA
33	RC-7-18W Sensor	18W	TJ-TD-RT18-24W- A1	S2B45C-18W V2	90PCS-60mA
34	RC-8-24W Sensor	24W	TJ-TD-RT18-24W- A1	S2B50C-20-24W V2	100PCS-60mA
35	RC-5-12W CCT+Sensor	12W	TJ-SPL-PIR 12- 16W-Driver-V1	S2B30C-12W V2	60PCS-150mA
36	RC-7-18W CCT+Sensor	18W	TJ-TD-RT18-24W- A1	S2B45C-18W V2	90PCS-150mA
37	RC-8-24W CCT+Sensor	24W	TJ-TD-RT18-24W- A1	S2B50C-20-24W V2	100PCS-150mA
38	RCN-3-6W	6W	TJ-DS0624B2	2B16C-6W V2	32PCS-60mA
39	RCN-5-12W	12W	TJ-DS0624B2	2B30C-12W V2	60PCS-60mA
40	RCN-7-18W	18W	TJ-DS0624B2	2B45C-18W V2	90PCS-60mA
41	RCN-8-20W	20W	TJ-DS0624B2	3B40C-24W V2	120PCS-60mA
42	RCN-8-24W	24W	TJ-DS0624B2	3B40C-24W V2	120PCS-60mA
43	SCN-3-6W	6W	TJ-DS0624B2	2B16C-6W V2	32PCS-60mA
44	SCN-5-12W	12W	TJ-DS0624B2	2B30C-12W V2	60PCS-60mA
45	SCN-7-18W	18W	TJ-DS0624B2	2B45C-18W V2	90PCS-60mA
46	SCN-7-20W	20W	TJ-DS0624B2	3B40C-24W V2	120PCS-60mA
47	SCN-7-24W	24W	TJ-DS0624B2	3B40C-24W V2	120PCS-60mA
48	RCN-3-6W CCT	6W	TJ-DS0624B2	S2B16C-6W V2	32PCS-150mA
49	RCN-5-12W CCT	12W	TJ-DS0624B2	S2B30C-12W V2	60PCS-150mA
50	RCN-7-18W CCT	18W	TJ-DS0624B2	S2B45C-18W V2	90PCS-150mA
51	RCN-8-20W CCT	20W	TJ-DS0624B2	S2B50C-20-24W V2	100PCS-150mA
52	RCN-8-24W CCT	24W	TJ-DS0624B2	S2B50C-20-24W V2	100PCS-150mA
53	SCN-3-6W CCT	6W	TJ-DS0624B2	S2B16C-6W V2	32PCS-150mA

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No.	Model name	Rated w attage	PCB No.	LED board No.	LED quantity
54	SCN-5-12W CCT	12W	TJ-DS0624B2	S2B30C-12W V2	60PCS-150mA
55	SCN-7-18W CCT	18W	TJ-DS0624B2	S2B50C-18-24W V2	100PCS-150mA
56	SCN-7-20W CCT	20W	TJ-DS0624B2	S2B50C-18-24W V2	100PCS-150mA
57	SCN-7-24W CCT	24W	TJ-DS0624B2	S2B50C-18-24W V2	100PCS-150mA
58	RCN-3-6W CCT+DIM	6W	TD-6-12W-KKG-A1	S2B16C-6W V2	32PCS-150mA
59	RCN-3-7.5W CCT+DIM	7.5W	TD-6-12W-KKG-A1	S2B16C-6W V2	32PCS-150mA
60	RCN-5-12W CCT+DIM	12W	TD-6-12W-KKG-A1	S2B30C-12W V2	60PCS-150mA
61	RCN-7-18W CCT+DIM	18W	TD-18-24W-KKG-A2	S2B45C-18W V2	90PCS-150mA
62	RCN-8-20W CCT+DIM	20W	TD-18-24W-KKG-A2	S2B50C-20-24W V2	100PCS-150mA
63	RCN-8-24W CCT+DIM	24W	TD-18-24W-KKG-A2	S2B50C-20-24W v2	100PCS-150mA
64	SCN-3-6W CCT+DIM	6W	TD-6-12W-KKG-A1	S2B16C-6W V2	32PCS-150mA
65	SCN-5-12W CCT+DIM	12W	TD-6-12W-KKG-A1	S2B30C-12W V2	60PCS-150mA
66	SCN-7-18W CCT+DIM	18W	TD-18-24W-KKG-A2	S2B50C-18-24W V2	100PCS-150mA
67	SCN-7-20W CCT+DIM	20W	TD-18-24W-KKG-A2	S2B50C-18-24W V2	100PCS-150mA
68	SCN-7-24W CCT+DIM	24W	TD-18-24W-KKG-A2	S2B50C-18-24W V2	100PCS-150mA
69	RCN-5-12W Sensor	12W	TJ-SPL-PIR 12-16W-Driver-V1	S2B30C-12W V2	60PCS-60mA
70	RCN-7-18W Sensor	18W	TJ-TD-RT18-24W-A1	S2B45C-18W V2	90PCS-60mA
71	RCN-8-24W Sensor	24W	TJ-TD-RT18-24W-A1	S2B50C-20-24W V2	100PCS-60mA
72	RCN-5-12W CCT+Sensor	12W	TJ-SPL-PIR 12-16W-Driver-V1	S2B30C-12W V2	60PCS-150mA
73	RCN-7-18W CCT+Sensor	18W	TJ-TD-RT18-24W-A1	S2B45C-18W V2	90PCS-150mA
74	RCN-8-24W CCT+Sensor	24W	TJ-TD-RT18-24W-A1	S2B50C-20-24W V2	100PCS-150mA

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Clause	Requirement + Test	Result - Remark	Verdict
1.2 (0)	GENERAL TEST REQUIREMENTS		P
1.2 (0.3)	More sections applicable..... :	Yes ☐ No ☒ Section/s:	—
1.2 (0.5)	Components	(see Annex 1)	—
1.2 (0.7)	Information for luminaire design in light sources standards		—
1.2 (0.7.2)	Light source safety standard		—
	Luminaire design in the light source safety standard		N/A

1.4 (2)	CLASSIFICATION OF LUMINAIRES		P
1.4 (2.2)	Type of protection	Class II	P
1.4 (2.3)	Degree of protection	IP 20	—
1.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes ☒ No ☐	—
1.4 (2.5)	Luminaire for normal use	Yes ☒ No ☐	—
	Luminaire for rough service	Yes ☐ No ☒	—

1.5 (3)	MARKING		P
1.5 (3.2)	Mandatory markings		P
	Position of the marking	Rating label stuck on the enclosure	P
	Format of symbols/text		P
1.5 (3.3)	Additional information	Mention in instruction manual	P
	Language of instructions	English version	P
1.5 (3.3.1)	Combination luminaires		N/A
1.5 (3.3.2)	Nominal frequency in Hz		P
1.5 (3.3.3)	Operating temperature		P
1.5 (3.3.5)	Wiring diagram		P
1.5 (3.3.6)	Special conditions		N/A
1.5 (3.3.7)	Metal halide lamp luminaire – warning		N/A
1.5 (3.3.8)	Limitation for semi-luminaires		N/A
1.5 (3.3.9)	Power factor and supply current		P
1.5 (3.3.10)	Suitability for use indoors	IP20	N/A
1.5 (3.3.11)	Luminaires with remote control		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
1.5 (3.3.13)	Specifications of protective shields		N/A
1.5 (3.3.14)	Symbol for nature of supply		N/A
1.5 (3.3.15)	Rated current of socket outlet		N/A
1.5 (3.3.16)	Rough service luminaire		N/A
1.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	Type Z	N/A
1.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
1.5 (3.3.19)	Protective conductor current in instruction if applicable		N/A
1.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
1.5 (3.3.21)	Non replaceable and non-user replaceable light sources information provided	Non replaceable light sources	P
1.5 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
1.5 (3.3.23)	Luminaire without controlgear provided with necessary information for selection of appropriate component		N/A
1.5 (3.3.24)	If not supplied with terminal block, information on the packaging		P
1.5 (3.4)	Test with water	15s	P
	Test with hexane	15s	P
	Legible after test		P
	Label attached	Not be easily removable , show no curling	P

1.6 (4)	CONSTRUCTION		P
1.6 (4.2)	Components replaceable without difficulty		N/A
1.6 (4.3)	Wireways smooth and free from sharp edges		P
1.6 (4.4)	Lampholders		N/A
1.6 (4.4.1)	Integral lampholder		N/A
1.6 (4.4.2)	Wiring connection		N/A
1.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
1.6 (4.4.4)	Positioning		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- pressure test (N)		—
	After test the lampholder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (N)		—
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
1.6 (4.4.5)	Peak pulse voltage		N/A
1.6 (4.4.6)	Centre contact		N/A
1.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
1.6 (4.4.8)	Lamp connectors		N/A
1.6 (4.4.9)	Caps and bases correctly used		N/A
1.6 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
1.6 (4.5)	Starter holders		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
1.6 (4.6)	Terminal blocks		N/A
	Tails		N/A
	Unsecured blocks		N/A
1.6 (4.7)	Terminals and supply connections		N/A
1.6 (4.7.1)	Contact to metal parts		N/A
1.6 (4.7.2)	Test 8 mm live conductor		N/A
	Test 8 mm earth conductor		N/A
1.6 (4.7.3)	Terminals for supply conductors		N/A
1.6 (4.7.3.1)	Welded method and material		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.6.2		N/A
	- electrical test according to 15.6.3		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- heat test according to 15.6.3.2.3 and 15.6.3.2.4		N/A
1.6 (4.7.4)	Terminals other than supply connection		N/A
1.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A
1.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
1.6 (4.8)	Switches		P
	- adequate rating		P
	- adequate fixing		P
	- polarized supply		P
	- compliance with IEC 61058-1 for electronic switches		N/A
1.6 (4.9)	Insulating lining and sleeves		P
1.6 (4.9.1)	Retainment		P
	Method of fixing : Heat-shrinkable tube		P
1.6 (4.9.2)	Insulated linings and sleeves:		P
	Resistant to a temperature > 20 °C to the wire temperature or		P
	a) & c) Insulation resistance and electric strength		P
	b) Ageing test. Temperature (°C)..... :		N/A
1.6 (4.10)	Double or reinforced insulation		N/A
1.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
1.6 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
1.6 (4.10.3)	Retainment of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- lining in lampholder		N/A
1.6 (4.10.4)	Protective impedance device		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A
1.6 (4.11)	Electrical connections and current-carrying parts		P
1.6 (4.11.1)	Contact pressure	Compliance check	P
1.6 (4.11.2)	Screws:		P
	- self-tapping screws		P
	- thread-cutting screws		P
1.6 (4.11.3)	Screw locking:		P
	- spring washer		N/A
	- rivets		N/A
1.6 (4.11.4)	Material of current-carrying parts		P
1.6 (4.11.5)	No contact to wood or mounting surface		P
1.6 (4.11.6)	Electro-mechanical contact systems		N/A
1.6 (4.12)	Screws and connections (mechanical) and glands		P
1.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part..... :	Fixed PCB: 0,4Nm	P
	Torque test: torque (Nm); part..... :	Fixed cord anchorage: 0,4Nm	P
	Torque test: torque (Nm); part..... :		N/A
1.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
1.6 (4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm)..... :		N/A
	- lampholder; torque (Nm)..... :		N/A
	- push-button switches; torque 0,8 Nm..... :		N/A
1.6 (4.12.5)	Screwed glands; force (Nm)..... :		N/A
1.6 (4.13)	Mechanical strength		P
1.6 (4.13.1)	Impact tests:		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- fragile parts; energy (Nm)..... :	No fragile parts	N/A
	- other parts; energy (Nm) :	0,35Nm for enclosure plastic, plastic lens, sensor	P
	1) live parts	Not have become accessible	P
	2) linings	Not have been impaired	P
	3) protection	Continue to afford the degree of the degree of protection	P
	4) covers	No breaking	P
1.6 (4.13.2)	Metal parts have adequate mechanical strength		P
1.6 (4.13.3)	Straight test finger	30N	P
1.6 (4.13.4)	Rough service luminaires		N/A
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
1.6 (4.13.6)	Tumbling barrel		N/A
1.6 (4.14)	Suspensions, fixings and means of adjusting		P
1.6 (4.14.1)	Mechanical load:		P
	A) four times the weight	Max.4x0,46Kg= 1,84Kg	P
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm)..... :		N/A
	D) load track-mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) :		N/A
	Metal rod. diameter (mm) :		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
1.6 (4.14.2)	Load to flexible cables		N/A
	Mass (kg) :		—
	Stress in conductors (N/mm ²) :		N/A
	Mass (kg) of semi-luminaire :		N/A
	Bending moment (Nm) of semi-luminaire :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles		N/A
	- strands broken.....		N/A
	- electric strength test afterwards		N/A
1.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
1.6 (4.14.5)	Guide pulleys		N/A
1.6 (4.14.6)	Strain on socket-outlets		N/A
1.6 (4.15)	Flammable materials		N/A
	- glow-wire test 650°C.....	See Test Table 1.15 (13.3.2)	N/A
	- spacing ≥ 30 mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		N/A
	- thermal protection		N/A
	- electronic circuits exempted		N/A
1.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N/A
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
1.6 (4.16)	Luminaires for mounting on normally flammable surfaces		P
	No lamp control gear	(compliance with Section 12)	N/A
	Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces		N/A
1.6 (4.16.1)	Lamp control gear spacing:		P
	- spacing 35 mm		N/A
	- spacing 10 mm		P
1.6 (4.16.2)	Thermal protection:		N/A
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
1.6 (4.17)	Drain holes		N/A
	Clearance at least 5 mm		N/A
1.6 (4.18)	Resistance to corrosion		N/A
1.6 (4.18.1)	- rust-resistance		N/A
1.6 (4.18.2)	- season cracking in copper		N/A
1.6 (4.18.3)	- corrosion of aluminium		N/A
1.6 (4.19)	Igniters compatible with ballast		N/A
1.6 (4.20)	Rough service vibration		N/A
1.6 (4.21)	Protective shield		N/A
1.6 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
1.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
1.6 (4.21.3)	No direct path		N/A
1.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment	See Test Table 1.15 (13.3.2)	N/A
1.6 (4.22)	Attachments to lamps not cause overheating or damage		N/A
1.6 (4.23)	Semi-luminaires comply Class II		N/A
1.6 (4.24)	Photobiological hazards		P
1.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
1.6 (4.24.2)	Retinal blue light hazard		P
	Class of risk group assessed according to IEC/TR 62778	RG0	—
	Luminaires with E_{thr} :		N/A
	a) Fixed luminaires		N/A
	- distance x m, borderline between RG1 and RG2..:		N/A
	- marking and instruction according 3.2.23		N/A
	b) Portable and handheld luminaires		N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N/A
1.6 (4.25)	Mechanical hazard		P
	No sharp point or edges		P
1.6 (4.26)	Short-circuit protection		N/A
1.6 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N/A
1.6 (4.26.2)	Short-circuit test with test chain according 4.26.3		N/A
	Test chain not melt through		N/A
	Test sample not exceed values of Table 12.1 and 12.2		N/A
1.6 (4.27)	Terminal blocks with integrated screwless earthing contacts		N/A
	Test according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Voltage drop test, resistance < 0,05 Ω		N/A
1.6 (4.28)	Fixing of thermal sensing control		N/A
	Not plug-in or easily replaceable type		N/A
	Reliably kept in position		N/A
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N/A
	Not outside the luminaire enclosure		N/A
	Test of adhesive fixing:		N/A
	Max. temperature on adhesive material (°C) :		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
1.6 (4.29)	Luminaires with non-replaceable light source		P
	Not possible to replace light source		P
	Live part not accessible after parts have been opened by hand or tools		P
1.6 (4.30)	Luminaires with non-user replaceable light source		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	If protective cover provide protection against electric shock and marked with "caution, electric shock risk" symbol:		N/A
	Minimum two fixing means		N/A
1.6 (4.31)	Insulation between circuits		P
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		P
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
1.6 (4.31.1)	SELV circuits		N/A
	Used SELV source		N/A
	Voltage $\leq$ ELV		N/A
	Insulating of SELV circuits from LV supply		N/A
	Insulating of SELV circuits from other non SELV circuits		N/A
	Insulating of SELV circuits from FELV		N/A
	Insulating of SELV circuits from other SELV circuits		N/A
	SELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Plugs and socket-outlets does not have protective conductor contact		N/A
1.6 (4.31.2)	FELV circuits		N/A
	Used FELV source		N/A
	Voltage $\leq$ ELV		N/A
	Insulating of FELV circuits from LV supply		N/A
	FELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Socket-outlets does not have protective conductor contact		N/A
1.6 (4.31.3)	Other circuits		P
	Other circuits insulated from accessible parts according Table X.1		P
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N/A
	- conductive parts are connected together		N/A
	- test according 7.2.3		N/A
	- conductive part not cause an electric shock in case of an insulation fault		N/A
	- equipotential bonding in master/slave applications		N/A
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N/A
	- slave luminaire constructed as class I		N/A
1.6 (4.32)	Overvoltage protective devices		N/A
	Comply with IEC 61643-11		N/A
	External to controlgear and connected to earth:		N/A
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A

1.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
1.7 (11.2.1)	Impulse withstand category (Normal category II)	Category II ☒ Category III ☐	—
	Category III according Annex U		N/A
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1		N/A
1.7 (11.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 1.7 (11.2) I	P
	Creepage distances for frequency over 30 kHz:		N/A
	- Controlgear marked with $\hat{U}_{OUT}$ and f_{UOUT} according IEC 61347-1, clause 7.1, item w	See Test Table 1.7 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 1.7 (11.2) II	N/A
1.7 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 1.7 (11.2) I	P
	Clearances distances for frequency over 30 kHz:		N/A
	- Controlgear marked with U_P	See Test Table 1.7 (11.2) II	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 1.7 (11.2) II	N/A

1.8 (7)	PROVISION FOR EARTHING		N/A
1.8 (7.2.1 + 7.2.3)	Accessible metal parts		N/A
	Metal parts in contact with supporting surface		N/A
	Resistance < 0,5 Ω..... :		N/A
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a groove		N/A
	Earth makes contact first		N/A
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
	Protective earthing of the luminaire not via built-in control gear		N/A
1.8 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		N/A
1.8 (7.2.4)	Locking of clamping means		N/A
	Compliance with 4.7.3		N/A
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
1.8 (7.2.5)	Earth terminal integral part of connector socket		N/A
1.8 (7.2.6)	Earth terminal adjacent to mains terminals		N/A
1.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A
1.8 (7.2.8)	Material of earth terminal		N/A
	Contact surface bare metal		N/A
1.8 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
1.8 (7.2.11)	Earthing core coloured green-yellow		N/A
	Length of earth conductor		N/A

1.9 (14)	SCREW TERMINALS		N/A
	Separately approved; component list	(see Annex 1)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Part of the luminaire	(see Annex 3)	N/A
1.9 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		N/A
	Separately approved; component list..... :	(see Annex 1)	N/A
	Part of the luminaire :	(see Annex 4)	N/A
1.10 (5)	EXTERNAL AND INTERNAL WIRING		P
1.10 (5.2)	Supply connection and external wiring		P
1.10 (5.2.1)	Means of connection..... :	Supply cord with tails	P
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 25 V a.c./60 V d.c. or protected from outdoor environment		P
1.10 (5.2.2)	Type of cable..... :	H03VVH2-F	P
	Nominal cross-sectional area (mm ²)..... :	2x0,75mm ²	P
	Cables equal to IEC 60227 or IEC 60245		P
1.10 (5.2.3)	Type of attachment, X, Y or Z	Type Z	P
1.10 (5.2.5)	Type Z not connected to screws		N/A
1.10 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
1.10 (5.2.7)	Cable entries through rigid material have rounded edges		P
1.10 (5.2.8)	Insulating bushings:		N/A
	- suitably fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
1.10 (5.2.9)	Locking of screwed bushings		N/A
1.10 (5.2.10)	Cord anchorage:		P
	- covering protected from abrasion		P
	- clear how to be effective		P
	- no mechanical or thermal stress		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- no tying of cables into knots etc.		P
	- insulating material or lining		P
1.10 (5.2.10.1)	Cord anchorage for type X attachment:		N/A
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
1.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment	Type Z	P
1.10 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N) :	60N	P
	- torque test: torque (Nm) :	0,25Nm	P
	- displacement ≤ 2 mm		P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		P
1.10 (5.2.11)	External wiring passing into luminaire		P
1.10 (5.2.12)	Looping-in terminals		N/A
1.10 (5.2.13)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		P
1.10 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	No unsafe compatibility		N/A
1.10 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	Other appliance inlet or connector according relevant IEC standard		N/A
1.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
1.10 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
1.10 (5.3)	Internal wiring		P
1.10 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		N/A
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A)..... :		N/A
	- temperatures :	(see Annex 2)	N/A
	Green-yellow for earth only		N/A
1.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		P
	Cross-sectional area (mm²)..... :	2x0.75mm²	P
	Insulation thickness (mm) :	Min. 0,6mm	P
	Extra insulation added where necessary		N/A
1.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Cross-sectional area (mm²)..... :	1x24AWG	P
1.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A
1.10 (5.3.1.4)	Conductors without insulation		N/A
1.10 (5.3.1.5)	SELV current-carrying parts		N/A
1.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		P
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		P
1.10 (5.3.3)	Insulating bushings:		N/A
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
1.10 (5.3.4)	Joints and junctions effectively insulated		N/A
1.10 (5.3.5)	Strain on internal wiring		N/A
1.10 (5.3.6)	Wire carriers		N/A
1.10 (5.3.7)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		P
1.10 (5.4)	Test to determine suitability of conductors having a reduced cross-sectional area		P
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2	(see Annex 2)	P
	No damage to luminaire wiring after test		P

1.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		P
1.11 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		P
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		P
	Double-ended high-pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
1.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
1.11 (8.2.3.a)	Class II luminaire:		P
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
1.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
1.11 (8.2.3.c)	SELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load (V)..... :		N/A
	- no-load voltage (V)..... :		N/A
	- touch current if applicable (mA) :		N/A
	One conductive part insulated if required		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage (V) :		N/A
	Class III luminaire only for connection to SELV		N/A
	Class III luminaire not provided with means for protective earthing		N/A
1.11 (8.2.4)	Portable luminaire has protection independent of supporting surface		N/A
1.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
1.11 (8.2.6)	Covers reliably secured		P

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Clause	Requirement + Test	Result - Remark	Verdict
1.11 (8.2.7)	Luminaire other than below with capacitor > 0,5 µF not exceed 50 V 1 min after disconnection		N/A
	Portable luminaire with capacitor > 0,1 µF (0.25) not exceed 34 V 1 s after disconnection		N/A
	Other luminaires with capacitor > 0,1 µF (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection		N/A

1.12 (12)	ENDURANCE TEST AND THERMAL TEST		P
1.12 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 1.13		—
1.12 (12.2)	Selection of lamps and ballasts		—
	Lamp used according Annex B	(Lamp used see Annex 2)	—
	Controlgear if separate and not supplied	(Controlgear used see Annex 2)	—
1.12 (12.3)	Endurance test		P
	a) mounting-position	As in normal used	—
	b) test temperature (°C).....	35±2°C	—
	c) total duration (h)	240h	—
	d) supply voltage (V).....	264V	—
	d) if not equipped with controlgear, constant voltage/current (V) or (A)	LED driver used	—
	e) luminaire ceases to operate	--	—
1.12 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
1.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
1.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	N/A
1.12 (12.6)	Thermal test (failed lamp control gear condition):		N/A
1.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- case of abnormal conditions..... :		—
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1,1 Un :		—
	- measured mounting surface temperature (°C) at 1,1 Un :		N/A
	- calculated mounting surface temperature (°C) :		N/A
	- track-mounted luminaires		N/A
1.12 (12.6.2)	Temperature sensing control		N/A
	- case of abnormal conditions..... :		—
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C) :		N/A
	- track-mounted luminaires		N/A
1.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N/A
1.12 (12.7.1)	Luminaire without temperature sensing control		N/A
1.12 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex W :		—
	Test according to 12.7.1.1:		N/A
	- case of abnormal conditions..... :		—
	- Ballast failure at supply voltage (V) :		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		N/A
	- case of abnormal conditions..... :		—
	- measured winding temperature (°C): at 1,1 Un..... :		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un :		—
	- calculated temperature of fixing point/exposed part (°C)..... :		—
	Ball-pressure test..... :	See Test Table 1.15 (13.2.1)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- case of abnormal conditions..... :		—
	- measured winding temperature (°C): at 1,1 Un..... :		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un..... :		—
	- calculated temperature of fixing point/exposed part (°C)..... :		—
	Ball-pressure test..... :	See Test Table 1.15 (13.2.1)	N/A
1.12 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions..... :		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
1.12 (12.7.2)	Luminaire with temperature sensing control		N/A
	- thermal link..... :	Yes ☐ No ☐	—
	- manual reset cut-out..... :	Yes ☐ No ☐	—
	- auto reset cut-out..... :	Yes ☐ No ☐	—
	- case of abnormal conditions..... :		—
	- highest measured temperature of fixing point/exposed part (°C):..... :		—
	Ball-pressure test:..... :	See Test Table 1.15 (13.2.1)	N/A

1.13 (9)	RESISTANCE TO DUST AND MOISTURE		P
1.13 (-)	If IP > IP 20 the order of tests as specified in clause 1.12		P
1.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP..... :	IP20	—
	- mounting position during test..... :	Normal use	—
	- fixing screws tightened; torque (Nm)..... :	--	—
	- tests according to clauses..... :	Cl.9.2.0	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		N/A
	c.1) For luminaires without drain holes – no water entry		N/A
	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight or pressure watertight luminaire		N/A
	e) no contact with live parts (IP 2X)		P
	e) no entry into enclosure (IP 3X and IP 4X)		N/A
	e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X)		N/A
	f) no trace of water on part of lamp requiring protection from splashing water		N/A
	g) no damage of protective shield or glass envelope		N/A
1.13 (9.3)	Humidity test 48 h	25°C, 93%	N/A

1.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
1.14 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø	--	—
	Insulation resistance (MΩ).....	2MΩ for basic insulation for voltage other than SELV, 4MΩ for double or reinforced insulation	—
	SELV		N/A
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface.....		N/A
	- between current-carrying parts and metal parts of the luminaire		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
	Other than SELV		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- between live parts of different polarity..... :	>500MΩ	P
	- between live parts and mounting surface :	>500MΩ	P
	- between live parts and metal parts :		P
	- between live parts of different polarity through action of a switch :		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts :	>500MΩ	P
	- Insulation bushings as described in Section 5 :		N/A
1.14 (10.2.2)	Electric strength test		P
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V) :	1480V, basic insulation for voltages other than SELV; 2960, double or reinforced insulation	P
	SELV		N/A
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface :		N/A
	- between current-carrying parts and metal parts of the luminaire :		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts :		N/A
	- Insulation bushings as described in Section 5 :		N/A
	Other than SELV		P
	- between live parts of different polarity..... :	1480V	P
	- between live parts and mounting surface :	2960V	P
	- between live parts and metal parts..... :		N/A
	- between live parts of different polarity through action of a switch :		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts :	2960V	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- Insulation bushings as described in Section 5 :		N/A
1.14 (10.3)	Touch current or protective conductor current (mA):	Max.0,006mA(Touch current)	P
1.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		P
1.15 (13.2.1)	Ball-pressure test..... :	See Test Table 1.15 (13.2.1)	P
1.15 (13.3.1)	Needle-flame test (10 s)..... :	See Test Table 1.15 (13.3.1)	P
1.15 (13.3.2)	Glow-wire test (650°C)..... :	See Test Table 1.15 (13.3.2)	P
1.15 (13.4)	Proof tracking test (IEC 60112) :	See Test Table 1.15 (13.4)	N/A

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Clause	Requirement + Test				Result - Remark		Verdict
1.7 (11.2)	TABLE I: Creepage distances and clearances						P
	Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages						P
	Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* and 11.2*						P
	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:	B	2,52	1,5	11.1.B*	2,52	2,5	11.1.A*
Working voltage (V).....:					AC 220-240V		—
PTI.....:					< 600 ☒ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV)					2,5kV		—
Supplementary information: Between L and N, and between fuse.							
Distance 2:	R	7,71	3,0	11.1.B*	7,71	5,0	11.1.A*
Working voltage (V).....:					AC 220-240V		—
PTI.....:					< 600 ☒ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV)					2,5kV		—
Supplementary information: Between live parts and accessible enclosure							
Distance 3:	--	--	--	--	--	--	--
Working voltage (V).....:					--		—
PTI.....:					< 600 ☐ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV)					--		—
Supplementary information: N/A							

** Insulation type: B – Basic; S – Supplementary; R – Reinforced. See also IEC 60598-1 Annex M.

IEC 60598-2-1							
Clause	Requirement + Test				Result - Remark		Verdict
1.7 (11.2)	TABLE II: Creepage distances and clearances						N/A
Minimum distances (mm) for a.c. higher than 30 kHz sinusoidal voltages							
Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2							
Distances	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:	--	--	--	--	--	--	--
Working voltage (V).....:					--		—
Frequency if applicable (kHz).....:					--		—
PTI.....:					< 600 ☐ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)					--		—
Supplementary information: --							
Distance 2:	--	--	--	--	--	--	--
Working voltage (V).....:					--		—
Frequency if applicable (kHz).....:					--		—
PTI.....:					< 600 ☐ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)					--		—
Supplementary information: --							
Distance 3:	--	--	--	--	--	--	--
Working voltage (V).....:					--		—
Frequency if applicable (kHz).....:					--		—
PTI.....:					< 600 ☐ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)					--		—
Supplementary information: --							

** Insulation type: B – Basic; S – Supplementary; R – Reinforced.

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Clause	Requirement + Test	Result - Remark	Verdict

1.15 (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics			P
Allowed impression diameter (mm):		2,0		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
PCB	See Annex 1	125	Max.0,6	
Bobbin	See Annex 1	125	Max.0,9	
Plastic lens	See Annex 1	95	Max.1,3	
Enclosure plastic	See Annex 1	91	Max.0,9	
Switch	See Annex 1	125	Max.0,6	
PCB of sensor	See Annex 1	125	Max.0,6	
Plastic cover of sensor	See Annex 1	75	Max.1,5	
Enclosure of sensor	See Annex 1	75	Max.0,9	
Cord anchorage	See Annex 1	89	Max.1,2	
Supplementary information: N/A				

1.15 (13.3.1)	TABLE: Needle-flame test (IEC 60695-11-5)				P
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
PCB	See Annex 1	10	No	--	P
Bobbin	See Annex 1	10	No	--	P
Switch	See Annex 1	10	No	--	P
PCB of sensor	See Annex 1	10	No	--	P
Supplementary information: N/A					

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.15 (13.3.2)	TABLE: Glow-wire test (IEC 60695-2-11)			P
Glow wire temperature		650°C		—
Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Plastic lens	See Annex 1	No	--	P
Enclosure plastic	See Annex 1	No	--	P
Plastic cover of sensor	See Annex 1	No	--	P
Enclosure of sensor	See Annex 1	No	--	P
Cord anchorage	See Annex 1	No	--	P
Supplementary information: N/A				

1.15 (13.4)	TABLE: Proof tracking test (IEC 60112)			N/A
Test voltage PTI		175 V		—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens		Verdict
--	--	--	--	--
--	--	--	--	--
--	--	--	--	--
Supplementary information: N/A				

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1		TABLE: Critical components information Below no. in Object / part No. same to no. in General product information					P
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Fuse Resistor (For 21, 22, 27, 58, 59, 64)	B	SHENZHEN DONGLING ELECTRONIC CO LTD	FKN1W	100Ω, 1W	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E482687)	
Fuse Resistor (For 23, 28, 60, 65)	B	SHENZHEN DONGLING ELECTRONIC CO LTD	FKN1W	68Ω, 1W	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E482687)	
Fuse Resistor (For 1, 6, 11, 16, 38, 43, 48, 53)	B	SHENZHEN DONGLING ELECTRONIC CO LTD	FKN1W	30Ω, 1W	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E482687)	
Fuse Resistor (For 2, 7, 12, 17, 24-26, 29-32, 35, 39, 44, 49, 54, 61-63, 66-69, 72)	B	SHENZHEN DONGLING ELECTRONIC CO LTD	FKN1W	10Ω, 1W	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E482687)	
Fuse Resistor (For 3-5, 8-10, 13-15, 18-20, 33, 34, 36, 37, 40-42, 45-47, 50-52, 55-57, 70, 71, 73, 74)	B	SHENZHEN DONGLING ELECTRONIC CO LTD	FKN1W	4.7Ω, 1W	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E482687)	
Power cord	B	Zhongshan Jurui Electrical Appliance Factory	H03VVH2-F	2x0.75mm ²	DIN EN 50525-2-11	VDE (40046054)	
Alternative	D	Jiangmen Xuzhao Metal Wire Co.,Ltd	H03VVH2-F	2x0.75mm ²	DIN EN 50525-2-11	VDE (40045881)	
Internal Wire	B	SHENZHEN XINLIAN WIRE&CABLE CO LTD	2468	24AWG, 200°C, 3KV	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E502584)	
Enclosure plastic	B	MITSUBISHI ENGINEERING-PLASTICS CORP	S-2000+(f1)	PC, V-2	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E41179)	
Cord anchorage	B	MITSUBISHI ENGINEERING-PLASTICS CORP	S-2000+(f1)	PC, V-2	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E41179)	
Plastic cover	B	CHI MEI CORPORTION	PC-110(+)	PC, V-2	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E56070)	

IEC 60598-2-1						
Clause	Requirement + Test			Result - Remark		Verdict
LED board	B	ZHUHAI HENGQIN BEGETE INDUSTRIAL INVESTMENT CO LTD	BGT-AL AD1/2/3/4/5	V-0	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E471854)
Alternative	D	GUANGDONG ZHANXUN ELECTRONICS TECHNOLOGY CO LTD	ZX-F	V-0	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E493212)
Bobbin	B	CHANG CHUN PLASTICS CO LTD	T-378J	PMC, V-0	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E59481)
Insulation Tape	B	SUZHOU MAILADUONA ELECTRIC MATERIAL CO LTD	JY312#	130°C	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E188295)
Magnet Wire	B	ROSHOW TECHNOLOGY CO LTD	xUEWA/155, QA-x/155L	155°C	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E215691)
PCB	B	KINGBOARD LAMINATES HOLDINGS LTD	KB-3150N	V-0	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E123995)
Alternative	D	SHANDONG JINBAO ELECTRONICS CO LTD	ZD-90F	V-0	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E141940)
Heat-shrinkable tube	B	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR-H	125°C	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E203950)
Alternative	D	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-HFT	125°C	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E180908)
Alternative	D	DONGGUAN SALIPT CO LTD	SALIPT S-901-600	600V, 125°C	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E209436)
VR1	B	Cerglass MFG Inc	07D471K	AC 300V, 1.0mA, 125°C	IEC 61051-2 IEC 61051-2-2	VDE (40028836)
X2 (For 21-31, 58-68)	B	Tenta Electric Industrial Co. Ltd.	MEX	0.022µF, AC 275V, 100°C, X2	DIN EN 60384-14	VDE (119119)
Alternative	D	Guangdong JURCC electronics Co. Ltd.	MPX/MKP	0.022µF, AC 275V, 110°C, X2	DIN EN 60384-14	VDE (40034920)
Alternative	D	Shenzhen Yimanfeng Science And Technology Co. Ltd.	X2-MPX/MKP	0.022µF, AC 275V, 100°C, X2	DIN EN 60384-14	VDE (40028516)

IEC 60598-2-1						
Clause	Requirement + Test			Result - Remark		Verdict
X2(For 1, 2, 6, 7, 11, 12, 16, 17, 32, 35, 38, 39, 43, 44, 48, 49, 53, 54, 69, 72)	B	Tenta Electric Industrial Co. Ltd.	MEX	0.1µF, AC 275V, 100°C, X2	DIN EN 60384-14	VDE (119119)
Alternative	D	Guangdong JURCC electronics Co. Ltd.	MPX/MKP	0.1µF, AC 275V, 110°C, X2	DIN EN 60384-14	VDE (40034920)
Alternative	D	Shenzhen Yimanfeng Science And Technology Co. Ltd.	X2-MPX/MKP	0.1µF, AC 275V, 100°C, X2	DIN EN 60384-14	VDE (40028516)
X2(For 3-5, 8-10, 13-15, 18-20, 33, 34, 36, 37, 40-42, 45-47, 50-52, 55-57, 70, 71, 73, 74)	B	Tenta Electric Industrial Co. Ltd.	MEX	0.22µF, AC 275V, 100°C, X2	DIN EN 60384-14	VDE (119119)
Alternative	D	Guangdong JURCC electronics Co. Ltd.	MPX/MKP	0.22µF, AC 275V, 110°C, X2	DIN EN 60384-14	VDE (40034920)
Alternative	D	Shenzhen Yimanfeng Science And Technology Co. Ltd.	X2-MPX/MKP	0.22µF, AC 275V, 100°C, X2	DIN EN 60384-14	VDE (40028516)
LED	B	Shenzhen MTC Lighting Co., Ltd	MTR-281BXM-BBD	VF= 3.0-3.3V, IF= 150mA; CCT: 2700K-6500K	EN 62471 IEC TR 62778	Tested with appliance
Alternative	D	MLS	E2835UX6 5-J	VF= 2.8-3.8V, IF= 150mA; CCT: 3000K, 6500K.	EN 62471 IEC TR 62778	Tested with appliance
LED	B	Shenzhen MTC Lighting Co., Ltd	MTR-284AXM-LAA	VF= 2.9-3.3V, IF= 60mA; CCT: 2700K-6500K	EN 62471 IEC TR 62778	Tested with appliance
Alternative	D	MLS	E2835UX2 8D	VF= 2.8-3.4V, IF= 60mA; CCT: 3000K, 4000K, 6500K.	EN 62471 IEC TR 62778	Tested with appliance
Sensor	B	TOPJET OPTOELECTRONIC CO., LTD	SPL-10-24W -PIR	DC 080-200V	EN 61347-1 EN 61347-2-11	Tested with appliance
Enclosure plastic of Sensor	B	MITSUBISHI ENGINEERING-PLASTICS CORP	S-2000+(f1)	PC, V-2	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E41179)
Input wire for sensor	B	DONGGUAN WENCHANG ELECTRONIC CO LTD	1061	24AWG, 80°C, 300V	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E214500)

IEC 60598-2-1						
Clause	Requirement + Test			Result - Remark		Verdict
Plastic cover of sensor	B	CHI MEI CORPORATION	PC-110(+)	PC, V-2	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E56070)
PCB of sensor	B	MEIZHOU HUADA CIRCUIT BOARD CO LTD	HD-D	V-0	EN 60598-1 EN 60598-2-1	Tested with appliance and UL(E486784)
Supplementary information: ¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039. The codes above have the following meaning: A - The component is replaceable with another one, also certified, with equivalent characteristics B - The component is replaceable if authorised by the test house C - Integrated component tested together with the appliance D - Alternative component						

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	TABLE: Thermal tests of Section 12			P			
	Type reference..... :	RCN-8-24W CCT		—			
	Lamp used..... :	LED light source		—			
	Lamp control gear used..... :	Built-in control driver		—			
	Mounting position of luminaire..... :	As normal installation		—			
	Supply wattage (W) :	24,50		—			
	Supply current (A) :	0,17		—			
	Temperatures in test 1 - 4 below are corrected for ta (°C) :	25°C		—			
	- abnormal operating mode..... :	N/A		—			
1.12 (12.4)	- test 1: rated voltage :	N/A		—			
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current :	1,06x240V=254,4V		—			
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	N/A		—			
	Through wiring or looping-in wiring loaded by a current of A during the test :	N/A		—			
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current :	N/A		—			
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Power cord(Inside)	25	--	65.0	--	90	--	--
Enclosure plastic	25	--	65.4	--	Cl.13.2.1	--	--
Plastic lens	25	--	65.3	--	Cl.13.2.1	--	--
Internal wire(Output)	25	--	62.6	--	200	--	--
LED board	25	--	73.1	--	Ref	--	--
Cord anchorage	25	--	52.8	--	Cl.13.2.1	--	--
Mounting surface	25	--	46.5	--	90	--	--
Switch	25	--	51.4	--	55	--	--
PCB	25	--	84.5	--	Cl.13.2.1	--	--
Bobbin	25	--	86.4	--	Cl.13.2.1	--	--

IEC 60598-2-1							
Clause	Requirement + Test			Result - Remark			Verdict
MOV(Varistor)	25	--	71.7	--	125	--	--
X1	25	--	71.0	--	100	--	--
CE1	25	--	71.9	--	105	--	--
CE2	25	--	76.6	--	105	--	--
CE3	25	--	73.9	--	105	--	--
Supplementary information: N/A							

IEC 60598-2-1							
Clause	Requirement + Test				Result - Remark		Verdict
	Type reference..... :				RCN-5-12W CCT+DIM		—
	Lamp used..... :				LED light source		—
	Lamp control gear used..... :				Built-in control driver		—
	Mounting position of luminaire..... :				As normal installation		—
	Supply wattage (W) :				13,02		—
	Supply current (A) :				0,05		—
	Temperatures in test 1 - 4 below are corrected for ta (°C) :				25°C		—
	- abnormal operating mode..... :				N/A		—
1.12 (12.4)	- test 1: rated voltage :				N/A		—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current :				1,06x240V=254,4V		—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :				N/A		—
	Through wiring or looping-in wiring loaded by a current of A during the test :				N/A		—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current :				N/A		—
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Power cord(Inside)	25	--	51.9	--	90	--	--
Enclosure plastic	25	--	64.6	--	Cl.13.2.1	--	--
Plastic lens	25	--	39.0	--	Cl.13.2.1	--	--
Internal wire(Output)	25	--	56.4	--	200	--	--
LED board	25	--	75.6	--	Ref.	--	--
Cord anchorage	25	--	47.9	--	Cl.13.2.1	--	--
Mounting surface	25	--	37.7	--	90	--	--
Switch	25	--	50.0	--	55	--	--
PCB	25	--	73.7	--	Cl.13.2.1	--	--
Bobbin	25	--	71.7	--	Cl.13.2.1	--	--
MOV(Varistor)	25	--	60.3	--	100	--	--
CX1	25	--	57.8	--	125	--	--

IEC 60598-2-1							
Clause	Requirement + Test			Result - Remark			Verdict
EC1	25	--	64.8	--	105	--	--
EC2	25	--	64.1	--	105	--	--
Supplementary information: N/A							

	Type reference..... :	RCN-8-24W CCT+DIM	—
	Lamp used..... :	LED light source	—
	Lamp control gear used..... :	Built-in control driver	—
	Mounting position of luminaire..... :	As normal installation	—
	Supply wattage (W)..... :	25,88	—
	Supply current (A)..... :	0,10	—
	Temperatures in test 1 - 4 below are corrected for ta (°C)..... :	25°C	—
	- abnormal operating mode..... :	N/A	—
1.12 (12.4)	- test 1: rated voltage..... :	N/A	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current..... :	1,06x240V=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current..... :	N/A	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Power cord(Inside)	25	--	47.0	--	90	--	--
Enclosure plastic	25	--	52.8	--	Cl.13.2.1	--	--
Plastic lens	25	--	64.9	--	Cl.13.2.1	--	--
Internal wire(Output)	25	--	55.2	--	200	--	--
LED board	25	--	67.8	--	Ref.	--	--
Cord anchorage	25	--	42.7	--	Cl.13.2.1	--	--
Mounting surface	25	--	37.2	--	90	--	--

IEC 60598-2-1							
Clause	Requirement + Test			Result - Remark			Verdict
Switch	25	--	52.9	--	55	--	--
PCB	25	--	73.0	--	Cl.13.2.1	--	--
Bobbin(T1)	25	--	97.4	--	Cl.13.2.1	--	--
Bobbin(T2)	25	--	66.7	--	Cl.13.2.1	--	--
MOV(Varistor)	25	--	67.6	--	100	--	--
CX1	25	--	60.7	--	125	--	--
EC1	25	--	64.1	--	105	--	--
EC2	25	--	61.7	--	105	--	--
Supplementary information: N/A							

	Type reference..... :	RCN-8-24W Sensor	—				
	Lamp used..... :	LED light source	—				
	Lamp control gear used..... :	Built-in control driver	—				
	Mounting position of luminaire..... :	As normal installation	—				
	Supply wattage (W) :	21,26	—				
	Supply current (A) :	0,16	—				
	Temperatures in test 1 - 4 below are corrected for ta (°C) :	25°C	—				
	- abnormal operating mode..... :	N/A	—				
1.12 (12.4)	- test 1: rated voltage :	N/A	—				
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current :	1,06x240V=254,4V	—				
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	N/A	—				
	Through wiring or looping-in wiring loaded by a current of A during the test :	N/A	—				
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current :	N/A	—				
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit

IEC 60598-2-1							
Clause	Requirement + Test			Result - Remark			Verdict
Power cord(Inside)	25	--	47.6	--	90	--	--
Enclosure plastic	25	--	50.2	--	Cl.13.2.1	--	--
Plastic lens	25	--	59.3	--	Cl.13.2.1	--	--
Internal wire(Output)	25	--	59.4	--	200	--	--
LED board	25	--	72.0	--	Ref.	--	--
Cord anchorage	25	--	52.4	--	Cl.13.2.1	--	--
Mounting surface	25	--	45.1	--	90	--	--
Switch	25	--	44.5	--	55	--	--
PCB	25	--	81.6	--	Cl.13.2.1	--	--
Bobbin	25	--	78.9	--	Cl.13.2.1	--	--
EC1	25	--	79.3	--	105	--	--
EC2	25	--	62.7	--	105	--	--
EC3	25	--	70.6	--	105	--	--
EC4	25	--	65.6	--	105	--	--
PCB of sensor	25	--	57.7	--	Cl.13.2.1	--	--
Enclosure plastic of sensor	25	--	59.0	--	Cl.13.2.1	--	--
Plastic cover of sensor	25	--	42.5	--	Cl.13.2.1	--	--
Supplementary information: N/A							

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 3	Screw terminals (part of the luminaire)		N/A
(14)	SCREW TERMINALS		N/A
(14.2)	Type of terminal.....:		—
	Rated current (A)		—
(14.3.2.1)	One or more conductors		N/A
(14.3.2.2)	Special preparation		N/A
(14.3.2.3)	Terminal size		N/A
	Cross-sectional area (mm²).....:		—
(14.3.3)	Conductor space (mm).....:		N/A
(14.4)	Mechanical tests		N/A
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread)	M	N/A
	External wiring		N/A
	No soft metal		N/A
(14.4.5)	Corrosion		N/A
(14.4.6)	Nominal diameter of thread (mm).....:		N/A
	Torque (Nm).....:		N/A
(14.4.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N)		N/A
(14.4.8)	Without undue damage		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 4	Screwless terminals (part of the luminaire)		N/A
(15)	SCREWLESS TERMINALS		N/A
(15.2)	Type of terminal.....:		—
	Rated current (A)		—
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5.1)	Terminals internal wiring		N/A
(15.5.1.1)	Pull test spring-type terminals (4 N, 4 samples).....:		N/A
(15.5.1.2)	Pull test pin or tab terminals (4 N, 4 samples).....:		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N/A
(15.5.2)	Electrical tests		N/A
	Voltage drop (mV) after 1 h (4 samples)		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles:		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples).....:		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples).....:		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples).....:		N/A
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples).....:		N/A
(15.6)	Terminals external wiring		N/A

IEC 60598-2-1										
Clause	Requirement + Test					Result - Remark				Verdict
	Terminal size and rating									N/A
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N):									N/A
	Pull test pin or tab terminals (4 samples); pull (N):									N/A
(15.6.3.1)	TABLE: Contact resistance test									N/A
	Voltage drop (mV) after 1 h									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--
	Voltage drop of two inseparable joints									N/A
	Voltage drop after 10th alt. 25th cycle									N/A
	Max. allowed voltage drop (mV).....:					--				—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--
	Voltage drop after 50th alt. 100th cycle									N/A
	Max. allowed voltage drop (mV).....:					--				—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--
	Continued ageing: voltage drop after 10th alt. 25th cycle									N/A
	Max. allowed voltage drop (mV).....:					--				—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--
	Continued ageing: voltage drop after 50th alt. 100th cycle									N/A
	Max. allowed voltage drop (mV).....:					--				—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--
Supplementary information: N/A										

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict
13 (14)	FAULT CONDITIONS		P
- (14)	When operated under fault conditions the controlgear:		N/A
	- does not emit flames or molten material		N/A
	- does not produce flammable gases		N/A
	- protection against accidental contact not impaired		N/A
	Thermally protected controlgear does not exceed the marked temperature value		N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	N/A
- (14.1)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (except between live parts and accessible metal parts)	(see appended table)	N/A
	Creepage distances on printed boards less than specified in clause 16 in Part 1 provided with coating according to IEC 60664-3		N/A
- (14.2)	Short-circuit or interruption of semiconductor devices	(see appended table)	N/A
- (14.3)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N/A
- (14.4)	Short-circuit across electrolytic capacitors	(see appended table)	N/A
- (14.5)	After the tests has been carried out on three samples:		N/A
	The insulation resistance $\geq 1 \text{ M}\Omega$		N/A
	No flammable gases		N/A
	No accessible parts have become live		N/A
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		N/A
- (14.6)	Relevant fault condition tests with high-power supply		—
13.2	Module withstands overpower condition >15 min.		P
	Module with automatic protective device or power limiter, test performed 15 min. at limit.		N/A
	During the tests, tissue paper, spread below module, does not ignite		P

IEC 60598			
Clause	Requirement + Test	Result - Remark	Verdict

List of test equipment used: N/A

A completed list of used test equipment shall be provided in the Test Reports when a Customer's Testing Facility according to CTF stage 1 or CTF stage 2 procedure has been used.

Other forms with a different layout but containing corresponding information are also acceptable.

Note: This page may be removed when CTF stage 1 CTF stage 2 are not used. See also clause 4.8 in OD 2020 for more details.

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date
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IEC60598_2_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60598-2-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES LUMINAIRES PART 2: PARTICULAR REQUIREMENTS SECTION 1: FIXED GENERAL PURPOSE LUMINAIRES			
Differences according to: EN 60598-2-1:1989 used in conjunction with EN 60598-1:2015 + A1:2018			
Annex Form No.: EU_GD_IEC60598_2_1F			
Annex Form Originator: IMQ S.p.A.			
Master Annex Form: 2018-07-10			
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	CENELEC COMMON MODIFICATIONS (EN)	P
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4.5 (3)	MARKING	P
4.5 (3.3.101)	For luminaires not supplied with terminal block: Adequate warning on the package	P

4.6 (4)	CONSTRUCTION	P
4.6 (4.11.6)	Electro-mechanical contact systems	N/A

4.10 (5)	EXTERNAL AND INTERNAL WIRING	P
4.10 (5.2.1)	Connecting leads	N/A
	- without a means for connection to the supply	N/A
	- terminal block specified	N/A
	- relevant information provided	N/A
	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1	N/A
4.10 (5.2.2)	Cables equal to EN 50525	N/A
	Replace table 5.1 – Supply cord	N/A

IEC60598_2_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.12 (12)	ENDURANCE TESTS AND THERMAL TESTS		P
4.12 (12.4.2c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring		P
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		N/A
(3.3)	DK: power supply cords of class I luminaires with label		N/A
(4.5.1)	DK: socket-outlets		N/A
(5.2.1)	CY, DK, FI, GB: type of plug		N/A
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A
(4 & 5)	FR: Shuttered socket-outlets 10/16A		N/A
	FR: Safety requirements for high buildings (Arrêté du 30 décembre 2011 portant règlement de sécurité pour la construction des immeubles de grande hauteur et leur protection contre les risques d'incendie et de panique; Section VIII; Article GH 48, Eclairage) Glow-wire test for outer parts of luminaires:		N/A
	- 850°C for luminaires in stairways and horizontal travel paths		N/A
	- 650°C for indoor luminaires		N/A
(13.3)	GB: Requirements according to United Kingdom Building Regulation		N/A

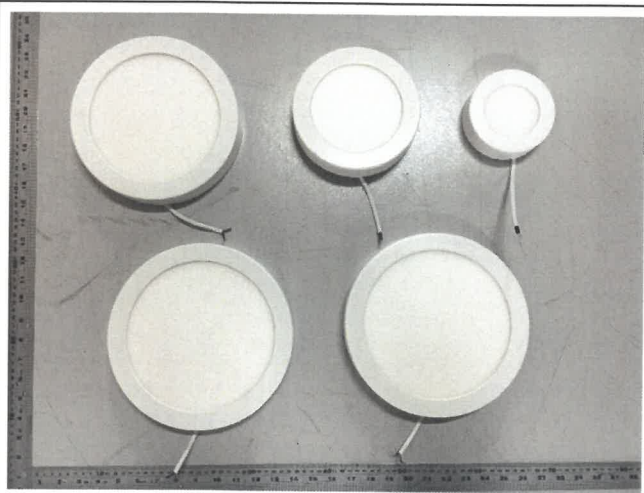
IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict
7	MEASUREMENT INFORMATION FLOW		P
7.1	Basic flow		P
	'Law of conservation of luminance' applied		P
	Use of only true luminance/radiance values		P
	In case of luminaire: The light source is operated in the luminaire under similar conditions as when tested as a component		N/A
	In case E_{thr} value for RG2 was established the peak value was derived from angular light distribution		N/A
7.2	Conditions for the radiance measurement		P
	Standard condition applied (200mm distance, 0,011rad field of view)	Tested at 200mm	N/A
	Non-standard condition applied		P
7.3	Special cases (I): Replacement by a lamp or LED module of another type		N/A
	Light source is a white light source		N/A
	Evaluation done based on highest luminance		N/A
	Evaluation done based on CCT value		N/A
7.4	Special cases (II): Arrays and clusters of primary light sources		P
	LED package is evaluated as	☒ RG0 unlimited ☐ RG1 unlimited	P
	E_{thr} of LED package applies to array		P
8	RISK GROUP CLASSIFICATION		P
	Risk group achieved:		P
	-.. Risk Group 0 unlimited		P
	-.. Risk Group 1 unlimited		N/A
	- E_{thr} (lx) : Distance to reach RG1 (m) :	RG0	N/A

IEC TR 62778						
Clause	Requirement + Test			Result - Remark		Verdict
	TABLE: Spectroradiometric measurement					P
	Measurement performed on:			☐ LED package ☐ LED module ☐ Lamp ☒ Luminaire		P
	Model number.....:			RCN-7-24W(6000K)		
	Test voltage (V).....:			AC 240		—
	Test current (mA).....:			105		—
	Test frequency (Hz).....:			50		—
	Ambient, t (°C).....:			24,7		—
	Measurement distance			☒ 20 cm ☐ ... cm		—
	Source size			☒ Non-small ☐ Small : mm		—
	Field of view			☒ 100 mrad ☐ 11 mrad ☐ 1,7 mrad (for small sources)		—
Item		Symbol	Units	Result	Remark	
Correlated colour temperature		CCT	K	N/A		
x/y colour coordinates				/		
Blue light hazard radiance		L _B	W/(m²•sr ¹)	16,48	--	
Blue light hazard irradiance		E _B	W/m²	N/A	--	
Luminance		L	cd/m²	19620	K _{B,V} = L _B /L= 0,00084	
Illuminance		E	lx	N/A	--	
Supplementary information: N/A						

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

	TABLE: Angular light distribution	N/A

--END--

Prüfbericht-Nr.: <i>Test Report No.:</i>	Attachment 1 of 50331759 001	Auftrags-Nr.: <i>Order No.:</i>	180118291	Seite 1 von 22 <i>Page 1 of 22</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	19.12.2019	
Auftraggeber: <i>Client:</i>	TOPJET OPTOELECTRONIC CO., LTD. No.13,PingDong 4th Rd Nanping S&T Industrial Park,Zhuhai 519060 Guangdong P. R. China.			
Prüfgegenstand: <i>Test item:</i>	LED Ceiling Light			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	See "General product information and other remarks"			
Auftrags-Inhalt: <i>Order content:</i>	Testing report			
Prüfgrundlage: <i>Test specification:</i>	EN 62471:2008 IEC 62471:2006			
Wareneingangsdatum: <i>Date of receipt:</i>	19.12.2019			
Prüfmuster-Nr.: <i>Test sample No.:</i>	A001053552			
Prüfzeitraum: <i>Testing period:</i>	07.01.2020 – 20.03.2020			
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland / CCIC (Ningbo) Co., Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland / CCIC (Ningbo) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
01.04.2020 Zeen Xu / PE Datum <i>Date</i>		01.04.2020 Brent Zhang / Reviewer Datum <i>Date</i>		
Name / Stellung <i>Name / Position</i>		Name / Stellung <i>Name / Position</i>		
Unterschrift <i>Signature</i>		Unterschrift <i>Signature</i>		
Sonstiges / Other:				
-Optical output testing based on Photobiological safety: Exempt Group.				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

TEST REPORT IEC 62471 Photobiological safety of lamps and lamp systems	
Report Reference No.....:	Attachment 1 of 50331759 001
Date of issue	See cover page
Total number of pages	See cover page
Name of Testing Laboratory preparing the Report.....:	TÜV Rheinland / CCIC (Ningbo) Co., Ltd. 3F, Building C13, R&D Park, No.32 Lane 299 Guanghua Road, Na-tional Hi-Tech Zone, Ningbo 315048, P.R. China.
Applicant's name.....:	TOPJET OPTOELECTRONIC CO., LTD
Address	No.13,PingDong 4th Rd Nanping S&T Industrial Park,Zhuhai 519060 Guangdong P. R. China.
Test specification:	
Standard.....:	IEC 62471:2006
Test procedure	Test report
Non-standard test method.....:	N/A
Test Report Form No.....:	IEC62471B
TRF Originator.....:	VDE Testing and Certification Institute
Master TRF.....:	Dated 2018-08-16
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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.	
General disclaimer: The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

Test item description..... :	LED Ceiling Light	
Trade Mark..... :		
Manufacturer..... :	Same to applicant	
Model/Type reference..... :	See "General product information".	
Ratings..... :	AC 220-240V, 50/60Hz. Class II, IP20, ta: 25°C. Details see "General product information".	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	Testing Laboratory:	TÜV Rheinland /CCIC(Ningbo) Co., Ltd.
	Testing location/ address..... :	3F, Building C13, R&D Park, No.32 Lane 299 Guanghua Road, National Hi-Tech Zone, Ningbo 315048, P.R.China.
	Tested by (name, function, signature)..... :	See cover page
	Approved by (name, function, signature) . :	See cover page
☐	Testing procedure: CTF Stage 1:	N/A
	Testing location/ address..... :	N/A
	Tested by (name, function, signature)..... :	N/A
	Approved by (name, function, signature) . :	N/A
☐	Testing procedure: CTF Stage 2:	N/A
	Testing location/ address..... :	N/A
	Tested by (name + signature)..... :	N/A
	Witnessed by (name, function, signature) :	N/A
	Approved by (name, function, signature) . :	N/A
☐	Testing procedure: CTF Stage 3:	N/A
☐	Testing procedure: CTF Stage 4:	N/A
	Testing location/ address..... :	N/A
	Tested by (name, function, signature)..... :	N/A
	Witnessed by (name, function, signature) :	N/A
	Approved by (name, function, signature) . :	N/A
	Supervised by (name, function, signature):	N/A

List of Attachments (including a total number of pages in each attachment):

N/A

Summary of testing: Pass**Tests performed (name of test and test clause):**

Model RCN-7-24W with 6000K was selected to perform testing.

Testing location:TÜV Rheinland / CCIC (Ningbo) Co., Ltd.
3F, Building C13, R&D Park, No.32 Lane 299
Guanghua Road, National Hi-Tech Zone, Ningbo
315048, P.R.China.**Summary of compliance with National Differences (List of countries addressed):**

EU Group Differences.

☒ **The product fulfils the requirements of EN 62471:2008.**

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

See 50331759 001.

Test item particulars: LED Ceiling Light	
Tested lamp	☒ continuous wave lamps ☐ pulsed lamps
Tested lamp system	N/A
Lamp classification group	☒ exempt ☐ risk 1 ☐ risk 2 ☐ risk 3
Lamp cap.....	N/A
Bulb	LED Lighting source
Rated of the lamp.....	N/A
Furthermore marking on the lamp	N/A
Seasoning of lamps according IEC standard	IEC 62471:2006
Used measurement instrument	SPR5000C
Temperature by measurement.....	24,7°C
Information for safety use	N/A
Possible test case verdicts:	
– test case does not apply to the test object..... : N/A	
– test object does meet the requirement..... : P (Pass)	
– test object does not meet the requirement : F (Fail)	
Testing:	
Date of receipt of test item	
Date (s) of performance of tests.....	
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☒ comma / ☐ point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 62471:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided :	☐ Yes ☒ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) : TOPJET OPTOELECTRONIC CO., LTD. No.13,PingDong 4th Rd Nanping S&T Industrial Park,Zhuhai 519060 Guangdong P. R. China.	

General product information and other remarks:

See 50331759 001.

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict
4	EXPOSURE LIMITS		P
4.1	General		P
	The exposure limits in this standard is not less than 0,01 ms and not more than any 8-hour period and should be used as guides in the control of exposure		P
	Detailed spectral data of a light source are generally required only if the luminance of the source exceeds $10^4 \text{ cd}\cdot\text{m}^{-2}$	see clause 4.3	P
4.3	Hazard exposure limits		P
4.3.1	Actinic UV hazard exposure limit for the skin and eye		N/A
	The exposure limit for effective radiant exposure is $30 \text{ J}\cdot\text{m}^{-2}$ within any 8-hour period		N/A
	To protect against injury of the eye or skin from ultraviolet radiation exposure produced by a broadband source, the effective integrated spectral irradiance, E_s , of the light source shall not exceed the levels defined by:		N/A
	$E_s \cdot t = \sum_{200}^{400} \sum_t E_\lambda(\lambda, t) \cdot S_{UV}(\lambda) \cdot \Delta t \cdot \Delta \lambda \leq 30 \quad \text{J}\cdot\text{m}^{-2}$		N/A
	The permissible time for exposure to ultraviolet radiation incident upon the unprotected eye or skin shall be computed by:		N/A
	$t_{\max} = \frac{30}{E_s} \quad \text{s}$		N/A
4.3.2	Near-UV hazard exposure limit for eye		N/A
	For the spectral region 315 nm to 400 nm (UV-A) the total radiant exposure to the eye shall not exceed $10000 \text{ J}\cdot\text{m}^{-2}$ for exposure times less than 1000 s. For exposure times greater than 1000 s (approximately 16 minutes) the UV-A irradiance for the unprotected eye, E_{UVA} , shall not exceed $10 \text{ W}\cdot\text{m}^{-2}$.		N/A
	The permissible time for exposure to ultraviolet radiation incident upon the unprotected eye for time less than 1000 s, shall be computed by:		N/A
	$t_{\max} \leq \frac{10\,000}{E_{UVA}} \quad \text{s}$		N/A
4.3.3	Retinal blue light hazard exposure limit		P
	To protect against retinal photochemical injury from chronic blue-light exposure, the integrated spectral radiance of the light source weighted against the blue-light hazard function, $B(\lambda)$, i.e., the blue-light weighted radiance, L_B , shall not exceed the levels defined by:		P

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Clause	Requirement + Test	Result – Remark	Verdict
	$L_B \cdot t = \sum_{300}^{700} \sum_t L_\lambda(\lambda, t) \cdot B(\lambda) \cdot \Delta\lambda \cdot \Delta t \leq 10^6 \quad \text{J} \cdot \text{m}^{-2} \cdot \text{sr}^{-1}$	for $t \leq 10^4 \text{ s}$ $t_{\max} = \frac{10^6}{L_B}$	N/A
	$L_B = \sum_{300}^{700} L_\lambda \cdot B(\lambda) \cdot \Delta\lambda \leq 100 \quad \text{W} \cdot \text{m}^{-2} \cdot \text{sr}^{-1}$	for $t > 10^4 \text{ s}$	P
4.3.4	Retinal blue light hazard exposure limit - small source		N/A
	Thus the spectral irradiance at the eye E_λ , weighted against the blue-light hazard function $B(\lambda)$ shall not exceed the levels defined by:	see table 4.2	N/A
	$E_B \cdot t = \sum_{300}^{700} \sum_t E_\lambda(\lambda, t) \cdot B(\lambda) \cdot \Delta\lambda \cdot \Delta t \leq 100 \quad \text{J} \cdot \text{m}^{-2}$	for $t \leq 100 \text{ s}$	N/A
	$E_B = \sum_{300}^{700} E_\lambda \cdot B(\lambda) \cdot \Delta\lambda \leq 1 \quad \text{W} \cdot \text{m}^{-2}$	for $t > 100 \text{ s}$	N/A
4.3.5	Retinal thermal hazard exposure limit		P
	To protect against retinal thermal injury, the integrated spectral radiance of the light source, L_λ , weighted by the burn hazard weighting function $R(\lambda)$ (from Figure 4.2 and Table 4.2), i.e., the burn hazard weighted radiance, shall not exceed the levels defined by:		P
	$L_R = \sum_{380}^{1400} L_\lambda \cdot R(\lambda) \cdot \Delta\lambda \leq \frac{50\,000}{\alpha \cdot t^{0,25}} \quad \text{W} \cdot \text{m}^{-2} \cdot \text{sr}^{-1}$	($10 \mu\text{s} \leq t \leq 10 \text{ s}$)	P
4.3.6	Retinal thermal hazard exposure limit – weak visual stimulus		N/A
	For an infrared heat lamp or any near-infrared source where a weak visual stimulus is inadequate to activate the aversion response, the near infrared (780 nm to 1400 nm) radiance, L_{IR} , as viewed by the eye for exposure times greater than 10 s shall be limited to:		N/A
	$L_{IR} = \sum_{780}^{1400} L_\lambda \cdot R(\lambda) \cdot \Delta\lambda \leq \frac{6\,000}{\alpha} \quad \text{W} \cdot \text{m}^{-2} \cdot \text{sr}^{-1}$	$t > 10 \text{ s}$	N/A
4.3.7	Infrared radiation hazard exposure limits for the eye		N/A
	The avoid thermal injury of the cornea and possible delayed effects upon the lens of the eye (cataractogenesis), ocular exposure to infrared radiation, E_{IR} , over the wavelength range 780 nm to 3000 nm, for times less than 1000 s, shall not exceed:		N/A
	$E_{IR} = \sum_{780}^{3000} E_\lambda \cdot \Delta\lambda \leq 18\,000 \cdot t^{-0,75} \quad \text{W} \cdot \text{m}^{-2}$	$t \leq 1000 \text{ s}$	N/A
	For times greater than 1000 s the limit becomes:		N/A

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Clause	Requirement + Test	Result – Remark	Verdict
	$E_{IR} = \sum_{780}^{3000} E_{\lambda} \cdot \Delta\lambda \leq 100 \quad W \cdot m^{-2}$	$t > 1000 \text{ s}$	N/A
4.3.8	Thermal hazard exposure limit for the skin		P
	Visible and infrared radiant exposure (380 nm to 3000 nm) of the skin shall be limited to:		P
	$E_H \cdot t = \sum_{380}^{3000} \sum_t E_{\lambda}(\lambda, t) \cdot \Delta t \cdot \Delta\lambda \leq 20\,000 \cdot t^{0,25} \quad J \cdot m^{-2}$		P
5	MEASUREMENT OF LAMPS AND LAMP SYSTEMS		P
5.1	Measurement conditions		P
	Measurement conditions shall be reported as part of the evaluation against the exposure limits and the assignment of risk classification.		P
5.1.1	Lamp ageing (seasoning)		N/A
	Seasoning of lamps shall be done as stated in the appropriate IEC lamp standard.		N/A
5.1.2	Test environment		P
	For specific test conditions, see the appropriate IEC lamp standard or in absence of such standards, the appropriate national standards or manufacturer's recommendations.		P
5.1.3	Extraneous radiation		P
	Careful checks should be made to ensure that extraneous sources of radiation and reflections do not add significantly to the measurement results.		P
5.1.4	Lamp operation		P
	Operation of the test lamp shall be provided in accordance with:		P
	– the appropriate IEC lamp standard, or		N/A
	– the manufacturer's recommendation		P
5.1.5	Lamp system operation		N/A
	The power source for operation of the test lamp shall be provided in accordance with:		N/A
	– the appropriate IEC standard, or		N/A
	– the manufacturer's recommendation		N/A
5.2	Measurement procedure		P
5.2.1	Irradiance measurements		P
	Minimum aperture diameter 7mm.	7mm	P
	Maximum aperture diameter 50 mm.		N/A

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Clause	Requirement + Test	Result – Remark	Verdict
	The measurement shall be made in that position of the beam giving the maximum reading.		P
	The measurement instrument is adequate calibrated.		P
5.2.2	Radiance measurements		P
5.2.2.1	Standard method		P
	The measurements made with an optical system.		P
	The instrument shall be calibrated to read in absolute radiant power per unit receiving area and per unit solid angle to acceptance averaged over the field of view of the instrument.		P
5.2.2.2	Alternative method		N/A
	Alternatively to an imaging radiance set-up, an irradiance measurement set-up with a circular field stop placed at the source can be used to perform radiance measurements.		N/A
5.2.3	Measurement of source size		P
	The determination of α , the angle subtended by a source, requires the determination of the 50% emission points of the source.		P
5.2.4	Pulse width measurement for pulsed sources		N/A
	The determination of Δt , the nominal pulse duration of a source, requires the determination of the time during which the emission is > 50% of its peak value.		N/A
5.3	Analysis methods		P
5.3.1	Weighting curve interpolations		P
	To standardize interpolated values, use linear interpolation on the log of given values to obtain intermediate points at the wavelength intervals desired.	see table 4.1	P
5.3.2	Calculations		P
	The calculation of source hazard values shall be performed by weighting the spectral scan by the appropriate function and calculating the total weighted energy.		P
5.3.3	Measurement uncertainty		P
	The quality of all measurement results must be quantified by an analysis of the uncertainty.	see Annex C in the norm	P
6	LAMP CLASSIFICATION		P
	For the purposes of this standard it was decided that the values shall be reported as follows:	see table 6.1	P
	– for lamps intended for general lighting service, the hazard values shall be reported as either ir-		N/A

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Clause	Requirement + Test	Result – Remark	Verdict
	radiance or radiance values at a distance which produces an illuminance of 500 lux, but not at a distance less than 200 mm		
	– for all other light sources, including pulsed lamp sources, the hazard values shall be reported at a distance of 200 mm		P
6.1	Continuous wave lamps		P
6.1.1	Except Group		P
	In the except group are lamps, which does not pose any photobiological hazard. The requirement is met by any lamp that does not pose:		P
	– an actinic ultraviolet hazard (E_S) within 8-hours exposure (30000 s), nor		N/A
	– a near-UV hazard (E_{UVA}) within 1000 s, (about 16 min), nor		N/A
	– a retinal blue-light hazard (L_B) within 10000 s (about 2,8 h), nor		P
	– a retinal thermal hazard (L_R) within 10 s, nor		P
	– an infrared radiation hazard for the eye (E_{IR}) within 1000 s		N/A
6.1.2	Risk Group 1 (Low-Risk)		N/A
	In this group are lamps, which exceeds the limits for the except group but that does not pose:		N/A
	– an actinic ultraviolet hazard (E_S) within 10000 s, nor		N/A
	– a near ultraviolet hazard (E_{UVA}) within 300 s, nor		N/A
	– a retinal blue-light hazard (L_B) within 100 s, nor		N/A
	– a retinal thermal hazard (L_R) within 10 s, nor		N/A
	– an infrared radiation hazard for the eye (E_{IR}) within 100 s		N/A
	Lamps that emit infrared radiation without a strong visual stimulus and do not pose a near-infrared retinal hazard (L_{IR}), within 100 s are in Risk Group 1.		N/A
6.1.3	Risk Group 2 (Moderate-Risk)		N/A
	This requirement is met by any lamp that exceeds the limits for Risk Group 1, but that does not pose:		N/A
	– an actinic ultraviolet hazard (E_S) within 1000 s exposure, nor		N/A
	– a near ultraviolet hazard (E_{UVA}) within 100 s, nor		N/A
	– a retinal blue-light hazard (L_B) within 0,25 s (aversion response), nor		N/A

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Clause	Requirement + Test	Result – Remark	Verdict
	– a retinal thermal hazard (L_R) within 0,25 s (aver- sion response), nor		N/A
	– an infrared radiation hazard for the eye (E_{IR}) within 10 s		N/A
	Lamps that emit infrared radiation without a strong visual stimulus and do not pose a near-infrared ret- inal hazard (L_{IR}), within 10 s are in Risk Group 2.		N/A
6.1.4	Risk Group 3 (High-Risk)		N/A
	Lamps which exceed the limits for Risk Group 2 are in Group 3.		N/A
6.2	Pulsed lamps		N/A
	Pulse lamp criteria shall apply to a single pulse and to any group of pulses within 0,25 s.		N/A
	A pulsed lamp shall be evaluated at the highest nominal energy loading as specified by the manu- facturer.		N/A
	The risk group determination of the lamp being tested shall be made as follows:		N/A
	– a lamp that exceeds the exposure limit shall be classified as belonging to Risk Group 3 (High-Risk)		N/A
	– for single pulsed lamps, a lamp whose weighted radiant exposure or weighted radiance does is below the EL shall be classified as belonging to the Exempt Group		N/A
	– for repetitively pulsed lamps, a lamp whose weighted radiant exposure or weighted radiance dose is below the EL, shall be evaluated using the continuous wave risk criteria discussed in clause 6.1, using time averaged values of the pulsed emission		N/A
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IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 4.1		Spectral weighting function for assessing ultraviolet hazards for skin and eye	
Wavelength ¹ λ , nm	UV hazard function $S_{uv}(\lambda)$	Wavelength λ , nm	UV hazard function $S_{uv}(\lambda)$
200	0,030	313*	0,006
205	0,051	315	0,003
210	0,075	316	0,0024
215	0,095	317	0,0020
220	0,120	318	0,0016
225	0,150	319	0,0012
230	0,190	320	0,0010
235	0,240	322	0,00067
240	0,300	323	0,00054
245	0,360	325	0,00050
250	0,430	328	0,00044
254*	0,500	330	0,00041
255	0,520	333*	0,00037
260	0,650	335	0,00034
265	0,810	340	0,00028
270	1,000	345	0,00024
275	0,960	350	0,00020
280*	0,880	355	0,00016
285	0,770	360	0,00013
290	0,640	365*	0,00011
295	0,540	370	0,000093
297*	0,460	375	0,000077
300	0,300	380	0,000064
303*	0,120	385	0,000053
305	0,060	390	0,000044
308	0,026	395	0,000036
310	0,015	400	0,000030
¹ Wavelengths chosen are representative: other values should be obtained by logarithmic interpolation at intermediate wavelengths. * Emission lines of a mercury discharge spectrum.			

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Clause	Requirement + Test	Result – Remark	Verdict

Table 4.2		Spectral weighting functions for assessing retinal hazards from broadband optical sources	
Wavelength nm	Blue-light hazard function B (λ)	Burn hazard function R (λ)	
300	0,01		
305	0,01		
310	0,01		
315	0,01		
320	0,01		
325	0,01		
330	0,01		
335	0,01		
340	0,01		
345	0,01		
350	0,01		
355	0,01		
360	0,01		
365	0,01		
370	0,01		
375	0,01		
380	0,01	0,1	
385	0,013	0,13	
390	0,025	0,25	
395	0,05	0,5	
400	0,10	1,0	
405	0,20	2,0	
410	0,40	4,0	
415	0,80	8,0	
420	0,90	9,0	
425	0,95	9,5	
430	0,98	9,8	
435	1,00	10,0	
440	1,00	10,0	
445	0,97	9,7	
450	0,94	9,4	
455	0,90	9,0	
460	0,80	8,0	
465	0,70	7,0	
470	0,62	6,2	
475	0,55	5,5	
480	0,45	4,5	
485	0,40	4,0	
490	0,22	2,2	
495	0,16	1,6	
500-600	$10^{[(450-\lambda)/50]}$	1,0	
600-700	0,001	1,0	
700-1050		$10^{[(700-\lambda)/500]}$	
1050-1150		0,2	
1150-1200		$0,2 \cdot 10^{0,02(1150-\lambda)}$	

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 4.2	Spectral weighting functions for assessing retinal hazards from broadband optical sources		
	1200-1400		0,02

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 5.4 Summary of the ELs for the surface of the skin or cornea (irradiance based values)					
Hazard Name	Relevant equation	Wavelength range nm	Exposure duration sec	Limiting aperture rad (deg)	EL in terms of constant irradiance $W \cdot m^{-2}$
Actinic UV skin & eye	$E_S = \sum E_\lambda \cdot S(\lambda) \cdot \Delta\lambda$	200 – 400	< 30000	1,4 (80)	30/t
Eye UV-A	$E_{UVA} = \sum E_\lambda \cdot \Delta\lambda$	315 – 400	≤ 1000 >1000	1,4 (80)	10000/t 10
Blue-light small source	$E_B = \sum E_\lambda \cdot B(\lambda) \cdot \Delta\lambda$	300 – 700	≤ 100 >100	< 0,011	100/t 1,0
Eye IR	$E_{IR} = \sum E_\lambda \cdot \Delta\lambda$	780 – 3000	≤ 1000 >1000	1,4 (80)	18000/t ^{0,75} 100
Skin thermal	$E_H = \sum E_\lambda \cdot \Delta\lambda$	380 – 3000	< 10	2π sr	20000/t ^{0,75}

Table 5.5 Summary of the ELs for the retina (radiance based values)					
Hazard Name	Relevant equation	Wavelength range nm	Exposure duration sec	Field of view radians	EL in terms of constant radiance $W \cdot m^{-2} \cdot sr^{-1}$
Blue light	$L_B = \sum L_\lambda \cdot B(\lambda) \cdot \Delta\lambda$	300 – 700	0,25 – 10 10-100 100-10000 ≥ 10000	$0,011 \cdot \sqrt{(t/10)}$ 0,011 $0,0011 \cdot \sqrt{t}$ 0,1	$10^6/t$ $10^6/t$ $10^6/t$ 100
Retinal thermal	$L_R = \sum L_\lambda \cdot R(\lambda) \cdot \Delta\lambda$	380 – 1400	< 0,25 0,25 – 10	0,0017 $0,011 \cdot \sqrt{(t/10)}$	$50000/(\alpha \cdot t^{0,25})$ $50000/(\alpha \cdot t^{0,25})$
Retinal thermal (weak visual stimulus)	$L_{IR} = \sum L_\lambda \cdot R(\lambda) \cdot \Delta\lambda$	780 – 1400	> 10	0,011	6000/α

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 6.1 Emission limits for risk groups of continuous wave lamps: RCN-7-24W(6000K)									P
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	E_s	$W \cdot m^{-2}$	0,001	--	0,003	--	0,03	--
Near UV		E_{UVA}	$W \cdot m^{-2}$	10	--	33	--	100	--
Blue light	$B(\lambda)$	L_B	$W \cdot m^{-2} \cdot sr^{-1}$	100	16,54	10000	--	4000000	--
Blue light, small source	$B(\lambda)$	E_B	$W \cdot m^{-2}$	1,0*	--	1,0	--	400	--
Retinal thermal	$R(\lambda)$	L_R	$W \cdot m^{-2} \cdot sr^{-1}$	$28000/\alpha$	$200,3$ ($\alpha=0,1rad$)	$28000/\alpha$	--	$71000/\alpha$	--
Retinal thermal, weak visual stimulus**	$R(\lambda)$	L_{IR}	$W \cdot m^{-2} \cdot sr^{-1}$	$6000/\alpha$	--	$6000/\alpha$	--	$6000/\alpha$	--
IR radiation, eye		E_{IR}	$W \cdot m^{-2}$	100	--	570	--	3200	--
* Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian. ** Involves evaluation of non-GLS source									

List of test equipment used: N/A

A completed list of used test equipment shall be provided in the Test Reports when a Customer's Testing Facility according to CTF stage 1 or CTF stage 2 procedure has been used.

Note: This page may be removed when CTF stage 1 or CTF stage 2 are not used. See also clause 4.8 in OD 2020 for more details.

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date
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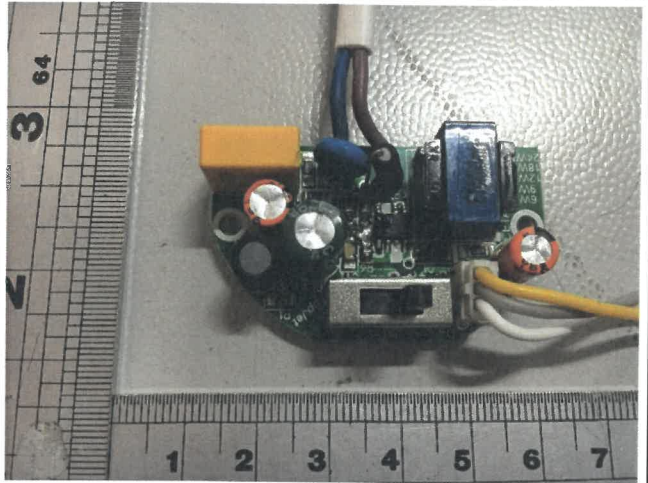
IEC62471A - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62471 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Photobiological safety of lamps and lamps systems			
Differences according to..... : EN 62471:2008			
Attachment Form No. : EU_GD_IEC62471A			
Attachment Originator..... : IMQ S.p.A.			
Master Attachment..... : 2009-07			
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	CENELEC COMMON MODIFICATIONS (EN)		P
4	EXPOSURE LIMITS		P
	Contents of the whole Clause 4 of IEC 62471:2006 moved into a new informative Annex ZB		—
	Clause 4 replaced by the following:		P
	Limits of the Artificial Optical Radiation Directive (2006/25/EC) have been applied instead of those fixed in IEC 62471:2006	See appended Table 6.1	P
4.1	General		P
	First paragraph deleted		—

EN 62471									
Clause	Requirement + Test			Result – Remark					Verdict
Table 6.1	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)								P
RCN-7-24W(6000K)									
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	S _{UV} (λ)	E _s	W•m ⁻²	0,001	-	-	-	-	-
Near UV		E _{UVA}	W•m ⁻²	0,33	-	-	-	-	-
Blue light	B(λ)	L _B	W•m ⁻² •sr ⁻¹	100	16,48	10000	-	4000000	-
Blue light, small source	B(λ)	E _B	W•m ⁻²	0,01*	-	1,0	-	400	-
Retinal thermal	R(λ)	L _R	W•m ⁻² •sr ⁻¹	28000/α	200,3 (α=0,1rad)	28000/α	-	71000/α	-
Retinal thermal, weak visual stimulus**	R(λ)	L _{IR}	W•m ⁻² •sr ⁻¹	545000 0,0017≤ α ≤ 0,011	-				
				6000/α 0,011≤ α ≤ 0,1	-				
IR radiation, eye		E _{IR}	W•m ⁻²	100	-	570	-	3200	-

EN 62471			
Clause	Requirement + Test	Result – Remark	Verdict
Table 6.1	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)		P
RCN-7-24W(6000K)			
*	Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian.		
**	Involves evaluation of non-GLS source		
NOTE	The action functions: see Table 4.1 and Table 4.2 The applicable aperture diameters: see 4.2.1 The limitations for the angular subtenses: see 4.2.2 The related measurement condition 5.2.3 and the range of acceptance angles: see Table 5.5.		

Prüfbericht-Nr.: Test Report No.:	Attachment 2 of 50331759 001	Auftrags-Nr.: Order No.:	180118291	Seite 1 von 44 Page 1 of 44
Kunden-Referenz-Nr.: Client Reference No.:	N/A	Auftragsdatum: Order date:	19.12.2019	
Auftraggeber: Client:	TOPJET OPTOELECTRONIC CO., LTD. No.13,PingDong 4th Rd Nanping S&T Industrial Park,Zhuhai 519060 Guangdong P. R. China.			
Prüfgegenstand: Test item:	LED Driver for LED Ceiling Light			
Bezeichnung / Typ-Nr.: Identification / Type No.:	See "General product information"			
Auftrags-Inhalt: Order content:	Acceptance test			
Prüfgrundlage: Test specification:	EN 61347-1:2015 EN 61347-2-13:2014+A1:2017			
Wareneingangsdatum: Date of receipt:	19.12.2019			
Prüfmuster-Nr.: Test sample No.:	A001053552			
Prüfzeitraum: Testing period:	07.01.2020 – 20.03.2020			
Ort der Prüfung: Place of testing:	TÜV Rheinland / CCIC (Ningbo) Co., Ltd.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland / CCIC (Ningbo) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
01.04.2020 Zeen Xu/ PE Datum Name / Stellung Date Name / Position		02.04.2020 Bent Zhang/ Reviewer Datum Name / Stellung Date Name / Position		
Unterschrift Signature		Unterschrift Signature		
Sonstiges / Other: Acceptance test for LED Driver				
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.				



TEST REPORT IEC 61347-2-13 Part 2: Particular requirements: Section 13 – d.c. or a.c. supplied electronic controlgear for LED modules	
Report Number.....	Attachment 2 of 50331759 001
Date of issue.....	See cover page
Total number of pages.....	See cover page
Name of Testing Laboratory preparing the Report	TÜV Rheinland / CCIC (Ningbo) Co., Ltd. 3F, Building C13, R&D Park, No.32 Lane 299 Guanghua Road, National Hi-Tech Zone, Ningbo 315048, P.R. China
Applicant's name	TOPJET OPTOELECTRONIC CO., LTD
Address.....	No.13,PingDong 4th Rd Nanping S&T Industrial Park,Zhuhai 519060 Guangdong P. R. China.
Test specification:	
Standard.....	IEC 61347-2-13:2014, AMD1:2016 used in conjunction with IEC 61347-1:2015, AMD1:2017
Test procedure.....	Acceptance test
Non-standard test method	N/A
Test Report Form No.....	IEC61347_2_13G
Test Report Form(s) Originator ...	Intertek Semko AB
Master TRF.....	2017-12-01
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General disclaimer:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

Test item description..... :	LED Driver for LED Ceiling Light	
Trade Mark..... :		
Manufacturer..... :	Same to applicant	
Model/Type reference..... :	See "General product information".	
Ratings..... :	AC 220-240V, 50/60Hz. Class II. Details see "General product information".	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒ Testing Laboratory:	TÜV Rheinland / CCIC (Ningbo) Co., Ltd.	
Testing location/ address..... :	3F, Building C13, R&D Park, No.32 Lane 299 Guanghua Road, National Hi-Tech Zone, Ningbo 315048, P.R. China.	
Tested by (name, function, signature)..... :	See cover page	
Approved by (name, function, signature) . :	See cover page	
Testing procedure: CTF Stage 1:		
☐ Testing procedure: CTF Stage 1:	N/A	
Testing location/ address..... :	N/A	
Tested by (name, function, signature)..... :	N/A	
Approved by (name, function, signature) . :	N/A	
Testing procedure: CTF Stage 2:		
☐ Testing procedure: CTF Stage 2:	N/A	
Testing location/ address..... :	N/A	
Tested by (name + signature)..... :	N/A	
Witnessed by (name, function, signature) :	N/A	
Approved by (name, function, signature) . :	N/A	
Testing procedure: CTF Stage 3:		
☐ Testing procedure: CTF Stage 3:	N/A	
Testing procedure: CTF Stage 4:		
☐ Testing procedure: CTF Stage 4:	N/A	
Testing location/ address..... :	N/A	
Tested by (name, function, signature)..... :	N/A	
Witnessed by (name, function, signature) :	N/A	
Approved by (name, function, signature) . :	N/A	
Supervised by (name, function, signature):	N/A	

List of Attachments (including a total number of pages in each attachment):

See 50331759 001.

Summary of testing:**Tests performed (name of test and test clause):**

All relevant tests were performed on the driver.

- Endurance test for switch according to Cl.17 of EN 61058-1:2002/A2:2008 is also performed.

Result: Pass.

Testing location:

TÜV Rheinland / CCIC (Ningbo) Co., Ltd.

3F, Building C13, R&D Park, No.32 Lane 299
Guanghua Road, National Hi-Tech Zone, Ningbo
315048, P.R.China**Summary of compliance with National Differences:****List of countries addressed:**

N/A

Copy of marking plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

See 50331759 001.

Test item particulars..... : LED Driver	
Classification of installation and use..... : Built-in, Non-SELV control gear	
Supply Connection..... : Flexible wire	
..... :	
Possible test case verdicts:	
- test case does not apply to the test object..... : N/A	
- test object does meet the requirement..... : P (Pass)	
- test object does not meet the requirement..... : F (Fail)	
Testing..... :	
Date of receipt of test item..... : See cover page	
Date (s) of performance of tests : See cover page	
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☒ comma / ☐ point is used as the decimal separator. Clause numbers between brackets refer to clauses in IEC 61347-1	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 61347-1:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :	☐ Yes ☒ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) : TOPJET OPTOELECTRONIC CO., LTD. No.13,PingDong 4th Rd Nanping S&T Industrial Park,Zhuhai 519060 Guangdong P. R. China.	

General product information:

The tested LED power supplies are intended to be used together with LED lighting source, Non-SELV control gear, details see below table:

No.	Model name	PCB No.	Output	Wattage
1	RC-3-6W	TJ-DS0624B2	Uout= 40-60Vdc, 110mA	Max.6W
2	RC-5-12W	TJ-DS0624B2	Uout= 80-100Vdc, 120mA	Max.12W
3	RC-7-18W	TJ-DS0624B2	Uout= 100-150Vdc, 120mA	Max.18W
4	RC-8-20W	TJ-DS0624B2	Uout= 100-150Vdc, 150mA	Max.20W
5	RC-8-24W	TJ-DS0624B2	Uout= 100-150Vdc, 180mA	Max.24W
6	SC-3-6W	TJ-DS0624B2	Uout= 40-60Vdc, 110mA	Max.6W
7	SC-5-12W	TJ-DS0624B2	Uout= 80-100Vdc, 120mA	Max.12W
8	SC-7-18W	TJ-DS0624B2	Uout= 100-150Vdc, 120mA	Max.18W
9	SC-7-20W	TJ-DS0624B2	Uout= 100-150Vdc, 150mA	Max.20W
10	SC-7-24W	TJ-DS0624B2	Uout= 100-150Vdc, 180mA	Max.24W
11	RC-3-6W CCT	TJ-DS0624B2	Uout= 40-60Vdc, 110mA	Max.6W
12	RC-5-12W CCT	TJ-DS0624B2	Uout= 80-100Vdc, 120mA	Max.12W
13	RC-7-18W CCT	TJ-DS0624B2	Uout= 100-150Vdc, 120mA	Max.18W
14	RC-8-20W CCT	TJ-DS0624B2	Uout= 100-200Vdc, 120mA	Max.20W
15	RC-8-24W CCT	TJ-DS0624B2	Uout= 100-200Vdc, 150mA	Max.24W
16	SC-3-6W CCT	TJ-DS0624B2	Uout= 40-60Vdc, 110mA	Max.6W
17	SC-5-12W CCT	TJ-DS0624B2	Uout= 80-100Vdc, 120mA	Max.12W
18	SC-7-18W CCT	TJ-DS0624B2	Uout= 100-150Vdc, 120mA	Max.18W
19	SC-7-20W CCT	TJ-DS0624B2	Uout= 100-200Vdc, 120mA	Max.20W
20	SC-7-24W CCT	TJ-DS0624B2	Uout= 100-200Vdc, 150mA	Max.24W
21	RC-3-6W CCT+DIM	TD-6-12W-KKG-A1	Uout= 40-60Vdc, 110mA	Max.6W
22	RC-3-7.5W CCT+DIM	TD-6-12W-KKG-A1	Uout= 40-60Vdc, 140mA	Max.7.5W
23	RC-5-12W CCT+DIM	TD-6-12W-KKG-A1	Uout= 80-100Vdc, 120mA	Max.12W
24	RC-7-18W CCT+DIM	TD-18-24W-KKG-A2	Uout= 100-150Vdc, 120mA	Max.18W
25	RC-8-20W CCT+DIM	TD-18-24W-KKG-A2	Uout= 100-200Vdc, 120mA	Max.20W
26	RC-8-24W CCT+DIM	TD-18-24W-KKG-A2	Uout= 100-200Vdc, 150mA	Max.24W
27	SC-3-6W CCT+DIM	TD-6-12W-KKG-A1	Uout= 40-60Vdc, 110mA	Max.6W
28	SC-5-12W CCT+DIM	TD-6-12W-KKG-A1	Uout= 80-100Vdc, 120mA	Max.12W
29	SC-7-18W CCT+DIM	TD-18-24W-KKG-A2	Uout= 100-150Vdc, 120mA	Max.18W
30	SC-7-20W CCT+DIM	TD-18-24W-KKG-A2	Uout= 100-200Vdc, 120mA	Max.20W

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No.	Model name	PCB No.	Output	Wattage
31	SC-7-24W CCT+DIM	TD-18-24W-KKG-A2	Uout= 100-200Vdc, 150mA	Max.24W
32	RC-5-12W Sensor	TJ-SPL-PIR 12-16W-Driver-V1	Uout= 80-100Vdc, 120mA	Max.12W
33	RC-7-18W Sensor	TJ-TD-RT18-24W-A1	Uout= 100-150Vdc, 120mA	Max.18W
34	RC-8-24W Sensor	TJ-TD-RT18-24W-A1	Uout= 100-150Vdc, 180mA	Max.24W
35	RC-5-12W CCT+Sensor	TJ-SPL-PIR 12-16W-Driver-V1	Uout= 80-100Vdc, 120mA	Max.12W
36	RC-7-18W CCT+Sensor	TJ-TD-RT18-24W-A1	Uout= 100-150Vdc, 120mA	Max.18W
37	RC-8-24W CCT+Sensor	TJ-TD-RT18-24W-A1	Uout= 100-200Vdc, 120mA	Max.24W
38	RCN-3-6W	TJ-DS0624B2	Uout= 40-60Vdc, 110mA	Max.6W
39	RCN-5-12W	TJ-DS0624B2	Uout= 80-100Vdc, 120mA	Max.12W
40	RCN-7-18W	TJ-DS0624B2	Uout= 100-150Vdc, 120mA	Max.18W
41	RCN-8-20W	TJ-DS0624B2	Uout= 100-150Vdc, 150mA	Max.20W
42	RCN-8-24W	TJ-DS0624B2	Uout= 100-150Vdc, 180mA	Max.24W
43	SCN-3-6W	TJ-DS0624B2	Uout= 40-60Vdc, 110mA	Max.6W
44	SCN-5-12W	TJ-DS0624B2	Uout= 80-100Vdc, 120mA	Max.12W
45	SCN-7-18W	TJ-DS0624B2	Uout= 100-150Vdc, 120mA	Max.18W
46	SCN-7-20W	TJ-DS0624B2	Uout= 100-150Vdc, 150mA	Max.20W
47	SCN-7-24W	TJ-DS0624B2	Uout= 100-150Vdc, 180mA	Max.24W
48	RCN-3-6W CCT	TJ-DS0624B2	Uout= 40-60Vdc, 110mA	Max.6W
49	RCN-5-12W CCT	TJ-DS0624B2	Uout= 80-100Vdc, 120mA	Max.12W
50	RCN-7-18W CCT	TJ-DS0624B2	Uout= 100-150Vdc, 120mA	Max.18W
51	RCN-8-20W CCT	TJ-DS0624B2	Uout= 100-200Vdc, 120mA	Max.20W
52	RCN-8-24W CCT	TJ-DS0624B2	Uout= 100-200Vdc, 150mA	Max.24W
53	SCN-3-6W CCT	TJ-DS0624B2	Uout= 40-60Vdc, 110mA	Max.6W
54	SCN-5-12W CCT	TJ-DS0624B2	Uout= 80-100Vdc, 120mA	Max.12W
55	SCN-7-18W CCT	TJ-DS0624B2	Uout= 100-150Vdc, 120mA	Max.18W
56	SCN-7-20W CCT	TJ-DS0624B2	Uout= 100-200Vdc, 120mA	Max.20W
57	SCN-7-24W CCT	TJ-DS0624B2	Uout= 100-200Vdc, 150mA	Max.24W
58	RCN-3-6W CCT+DIM	TD-6-12W-KKG-A1	Uout= 40-60Vdc, 110mA	Max.6W
59	RCN-3-7.5W CCT+DIM	TD-6-12W-KKG-A1	Uout= 40-60Vdc, 140mA	Max.7.5W
60	RCN-5-12W CCT+DIM	TD-6-12W-KKG-A1	Uout= 80-100Vdc, 120mA	Max.12W

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No.	Model name	PCB No.	Output	Wattage
61	RCN-7-18W CCT+DIM	TD-18-24W-KKG-A2	Uout= 100-150Vdc, 120mA	Max.18W
62	RCN-8-20W CCT+DIM	TD-18-24W-KKG-A2	Uout= 100-200Vdc, 120mA	Max.20W
63	RCN-8-24W CCT+DIM	TD-18-24W-KKG-A2	Uout= 100-200Vdc, 150mA	Max.24W
64	SCN-3-6W CCT+DIM	TD-6-12W-KKG-A1	Uout= 40-60Vdc, 110mA	Max.6W
65	SCN-5-12W CCT+DIM	TD-6-12W-KKG-A1	Uout= 80-100Vdc, 120mA	Max.12W
66	SCN-7-18W CCT+DIM	TD-18-24W-KKG-A2	Uout= 100-150Vdc, 120mA	Max.18W
67	SCN-7-20W CCT+DIM	TD-18-24W-KKG-A2	Uout= 100-200Vdc, 120mA	Max.20W
68	SCN-7-24W CCT+DIM	TD-18-24W-KKG-A2	Uout= 100-200Vdc, 150mA	Max.24W
69	RCN-5-12W Sensor	TJ-SPL-PIR 12-16W-Driver-V1	Uout= 80-100Vdc, 120mA	Max.12W
70	RCN-7-18W Sensor	TJ-TD-RT18-24W-A1	Uout= 100-150Vdc, 120mA	Max.18W
71	RCN-8-24W Sensor	TJ-TD-RT18-24W-A1	Uout= 100-150Vdc, 180mA	Max.24W
72	RCN-5-12W CCT+Sensor	TJ-SPL-PIR 12-16W-Driver-V1	Uout= 80-100Vdc, 120mA	Max.12W
73	RCN-7-18W CCT+Sensor	TJ-TD-RT18-24W-A1	Uout= 100-150Vdc, 120mA	Max.18W
74	RCN-8-24W CCT+Sensor	TJ-TD-RT18-24W-A1	Uout= 100-200Vdc, 120mA	Max.24W

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
4 (4)	GENERAL REQUIREMENTS		P
- (4)	<u>Insulation materials</u> for double or reinforced insulation according requirements in Annex N of IEC 61347-1	(see Annex N)	N/A
- (4)	Compliance of <u>independent controlgear enclosure</u> with IEC 60 598-1		N/A
- (4)	<u>Built-in electronic controlgear</u> with double or reinforced insulation comply with Annex O of IEC 61347-1	(see Annex O)	P
4 (4)	<u>SELV controlgear</u> comply with Annex I of this part 2 and Annex L of IEC 61347-1	(see Annex L)	N/A
4 (-)	Transformer comply with IEC 61558		N/A
	Dielectric strength test of insulated winding wires is limited to 3 kV if input voltage $\leq$ 300 V		N/A

6 (6)	CLASSIFICATION			P
	Built-in controlgear	Yes ☒	No ☐	—
	Independent controlgear.....	Yes ☐	No ☒	—
	Integral controlgear	Yes ☐	No ☒	—
6 (-)	Auto-wound controlgear	Yes ☐	No ☒	—
	Separating controlgear	Yes ☐	No ☒	—
	Isolating controlgear	Yes ☐	No ☒	—
	SELV controlgear	Yes ☐	No ☒	—

7 (7)	MARKING		N/A
7.1 (7.1)	Mandatory markings		N/A
	a) mark of origin		N/A
	b) model number or type reference		N/A
	c) symbol for independent controlgear, if applicable		N/A
	d) correlation between interchangeable parts and controlgear marked		N/A
	e) rated supply voltage (V)		N/A
	supply frequency (Hz)		N/A
	supply current (A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	f) earthing symbol		N/A
	k) wiring diagram		N/A
	l) value of t_c		N/A
	m) symbol for declared temperature		N/A
	t) LUM earthing symbol		N/A
	u) if not SELV maximum working voltage U_{out} between:		N/A
	- output terminals (V)		N/A
	- output terminals and earth (V)		N/A
7.1 (-)	Constant voltage type:	Yes ☐ No ☐	—
	- rated output power P_{rated} (W)		N/A
	- rated output voltage U_{rated} (V)		N/A
	Constant current type:	Yes ☐ No ☐	—
	- rated output power P_{rated} (W)		N/A
	- rated output current I_{rated} (A)		N/A
	Indication if for LED modules only		N/A
7.1 (7.2)	Marking durable and legible		N/A
	Rubbing 15 s water, 15 s petroleum; marking legible		N/A
7.2 (7.1)	Information to be provided, if applicable		N/A
	h) declaration of protection against accidental contact		N/A
	i) cross-section of conductors (mm ²)		N/A
	j) number, type and wattage of lamp(s)		N/A
	s) SELV symbol		N/A
7.2 (-)	- declaration of mains connected windings		N/A

8 (10)	PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS		P
- (10.1)	Controlgear protected against accidental contact with live parts		P
- (A2)	Voltage measured with 50 k Ω	(see Annex A)	N/A
- (A3)	Voltage > 35 V peak or > 60 V d.c. or protective impedance device	(see Annex A)	N/A
- (10.1)	Lacquer or enamel not used for protection or insulation		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Adequate mechanical strength on parts providing protection		P
- (10.2)	Capacitors > 0,5 μ F: voltage after 1 min (V): < 50 V	<0,5 μ F	P
- (10.3)	Controlgear providing SELV		N/A
	Accessible conductive parts are insulated from live parts by double or reinforced insulation in SELV controlgear		N/A
	No connection between output circuit and the body or protective earthing circuit		N/A
	No possibility of connection between output circuit and the body or protective earthing circuit through other conductive parts		N/A
	SELV outputs separated by at least basic insulation		N/A
	ELV conductive parts insulated as live parts		N/A
	Tests according Annex L of IEC 61347-1	(see Annex L)	N/A
- (10.4)	Accessible conductive parts in SELV circuits		N/A
	Output voltage under load ≤ 25 V r.m.s. or ≤ 60 V d.c.		N/A
	If output voltage > 25 V r.m.s. or > 60 V d.c.; No load output ≤ 35 V peak or ≤ 60 V d.c and touch current does not exceed 0,7 mA (peak) or 2 mA d.c.		N/A
	One conductive part is insulated if output voltage or current exceeding the values above and withstand test voltage 500 V		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A

9 (8)	TERMINALS		N/A
- (8.1)	Integral terminals		N/A
	Screw terminals according section 14 of IEC 60598-1:		N/A
	Separately approved; component list	(see Annex 1)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Part of the controlgear	(see Annex 2)	N/A
	Screwless terminals according section 15 of IEC 60598-1:		N/A
	Separately approved; component list	(see Annex 1)	N/A
	Part of the controlgear	(see Annex 3)	N/A
- (8.2)	Terminals other than integral terminals		N/A
	Comply with relevant IEC standard	(see Annex 1)	N/A
	Suit the conditions		N/A
	Satisfy additional relevant requirements of this standard		N/A

10 (9)	PROVISION FOR PROTECTIVE EARTHING		N/A
- (9.1)	Provisions for protective earthing		N/A
	Terminal complying with clause 8		N/A
	Locked against loosening and not possible to loosen by hand		N/A
	Not possible to loosen clamping means unintentionally on screwless terminals		N/A
	All parts of material minimizing the danger of electrolytic corrosion		N/A
	Made of brass or equivalent material		N/A
	Contact surface bare metal		N/A
	Test according 7.2.3 of IEC 60598-1		N/A
- (9.2)	Provision for functional earthing		N/A
	Comply with clause 8 and 9.1		N/A
	Functional earth insulated from live parts by double or reinforced insulation		N/A
- (9.3)	Lamp controlgear with conductors for protective earthing by tracks on printed circuit board		N/A
	Test with a current of 25 A between earthing terminal or earthing contact and each of the accessible metal parts; measured resistance (Ω) at ≥ 10 A according 7.2.3 of IEC 60598-1: $< 0,5 \Omega$		N/A
- (9.4)	Earthing of built-in lamp controlgear		N/A
	Earth by means of fixing to earthed metal of luminaire in compliance of 7.2 of IEC 60598-1		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Earthing terminal only for earthing the built-in controlgear		N/A
- (9.5)	Earthing via independent controlgear		N/A
- (9.5.1)	Earth connection to other equipment		N/A
	Looping or through connection, conductor min. 1,5 mm ² and of copper or equivalent		N/A
	Protective earthing wires in line with 5.3.1.1 and clause 7 of IEC 60598-1		N/A
- (9.5.2)	Earthing of the lamp compartments powered via the independent lamp controlgear		N/A
	Test with a current of 25 A between input and output earth terminals; measured resistance (Ω) between earthing terminal or earthing contact and each of the accessible metal parts at ≥ 10 A according 7.2.3 of IEC 60598-1: $< 0,5 \Omega$		N/A
	Output earthing terminal marked as in 7.1 t) of IEC 61347-1		N/A

11 (11)	MOISTURE RESISTANCE AND INSULATION		P
- (11)	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance:		P
	For basic insulation $\geq 2 \text{ M}\Omega$	$> 500 \text{ M}\Omega$ between L-N after fuse open	P
	For double or reinforced insulation $\geq 4 \text{ M}\Omega$	$> 500 \text{ M}\Omega$ Input and output Live parts and enclosure	P
	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1		N/A

12 (12)	ELECTRIC STRENGTH		P
- (12)	Immediately after clause 11 electric strength test for 1 min		P
	Basic insulation for SELV, test voltage 500 V		N/A
	Working voltage $\leq 50 \text{ V}$, test voltage 500 V		N/A
	Working voltage $> 50 \text{ V} \leq 1000 \text{ V}$, test voltage (V):		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Basic insulation, 2U + 1000 V	Between L-N after fuse open. Utest: 240V → 1480V	P
	Supplementary insulation, 2U + 1000 V		N/A
	Double or reinforced insulation, 4U + 2000 V	Input and output Live parts and enclosure	P
	No flashover or breakdown		P
	Solid or thin sheet insulation for double or reinforced insulation fulfil the requirements in Annex N in IEC 61347-1		N/A

14 (14)	FAULT CONDITIONS		P
- (14.1)	When operated under fault conditions the controlgear:		P
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		P
	Thermally protected controlgear does not exceed the marked temperature value		P
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	P
- (14.2)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (after any reduction in 14.2 - 14.5)	(see appended table)	N/A
- (14.3)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.4)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	P
- (14.5)	Short-circuit across electrolytic capacitors	(see appended table)	P
	Short-circuit or interruption of SPDs	(see appended table)	P
14 (-)	Reversed voltage polarity if d.c. supplied control gear	(see appended table)	P
- (14.6)	After the tests has been carried out on three samples:		P
	The insulation resistance $\geq 1 \text{ M}\Omega$	>500M Ω	P
	No flammable gases		P
	No accessible parts have become live		P

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Clause	Requirement + Test	Result - Remark	Verdict
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
- (14.7)	Relevant fault condition tests with high-power a.c. supply and in turn to a d.c. supply		—
14 (-)	Temperature declared thermally protected lamp controlgear fulfil requirements in Annex C		P

15 (-)	TRANSFORMER HEATING		P
15.1	General		P
	Transformer comply with clause L.6 and L.7 of IEC 61347-1		N/A
	Output voltage of SELV controlgear not exceed limits in 10.4 of IEC 61347-1 during the test of 15.1 and 15.2		N/A
15.2 (-)	Normal operation		P
	Comply with clause L.6 of IEC 61347-1		P
15.3 (-)	Abnormal operation		P
	Comply with clause L.7 of IEC 61347-1		P
	Double LED modules or equivalent load connected in parallel to the output terminals of constant voltage type		N/A
	Double LED modules or equivalent load connected in serial to the output terminals of constant current type		N/A
15 (-)	During and at the end of the tests no defect impairing safety, nor any smoke or flammable gases produced		P

16 (15)	CONSTRUCTION		P
- (15.1)	Wood, cotton, silk, paper and similar fibrous material		P
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
- (15.2)	Printed circuits		P
	Printed circuits used as internal connections complies with clause 14		P
- (15.3)	Plugs and socket-outlets used in SELV or ELV circuits		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	No dangerous compatibility between output socket-outlet and a plug for socket-outlets for input circuit in relation to installation rules, voltages and frequencies		N/A
	Plugs and socket-outlets for SELV comply with IEC 60906-3 and IEC 60884-2-4		N/A
	Plugs and socket-outlets for SELV ≤ 3 A, ≤ 25 V r.m.s. or ≤ 60 V d.c. and ≤ 72 W comply with IEC 60906-3 and IEC 60884-2-4 or:		N/A
	- plugs not able to enter socket-outlets of other standardised system		N/A
	- socket-outlets not admit plugs of other standardised system		N/A
	- socket-outlets without protective earth		N/A
- (15.4)	Insulation between circuits and accessible parts		N/A
- (15.4.2)	SELV circuits		N/A
	Source used to supply SELV circuits:		N/A
	- safety isolating transformer in accordance with relevant part 2 of IEC 61558		N/A
	- controlgear providing SELV in accordance with relevant part 2 of IEC 61347		N/A
	- another source		N/A
	Voltage in the circuit not higher than ELV		N/A
	SELV circuits insulated from LV by double or reinforced insulation		N/A
	SELV circuits insulated from non SELV circuits by double or reinforced insulation		N/A
	SELV circuits insulated from FELV circuits by supplementary insulation		N/A
	SELV circuits insulated from other SELV circuits by basic insulation		N/A
	SELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		N/A
- (15.4.3)	FELV circuits		N/A
	Source used to supply FELV circuits:		N/A
	- separating transformer in accordance with relevant part 2 of IEC 61558		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- separating controlgear providing basic insulation between input and output circuits in accordance with relevant part 2 of IEC 61347		N/A
	- another source		N/A
	- source in circuits separated by the LV supply by basic insulation		N/A
	Voltage in the circuit not higher than ELV		N/A
	FELV circuits insulated from LV supply by at least basic insulation		N/A
	FELV circuits insulated from other FELV circuits if functional purpose		N/A
	FELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		N/A
	Plugs and socket-outlets for FELV system comply with:		N/A
	- plugs not able to enter socket-outlets of other voltage systems		N/A
	- socket-outlets not admit plugs of other voltage systems		N/A
	- socket-outlets have a protective conductor contact		N/A
- (15.4.4)	Other circuits		N/A
	Insulation between circuits other than SELV or FELV and accessible conductive parts in according Table 6 in 15.4.5.		N/A
- (15.4.5)	Insulation between circuits and accessible conductive parts		N/A
	Accessible conductive parts insulated from active parts of electric circuits by insulating according Table 6		N/A
	Requirements for Class II construction with equipotential bonding for protection against indirect contact with live parts:		N/A
	- all conductive parts are connected together		N/A
	- conductive parts are reliably connected together according test of IEC 60598-1 cl. 7.2.3		N/A
	- conductive parts comply with requirements of Annex A in case of insulation fault		N/A
17 (16)	CREEPAGE DISTANCES AND CLEARANCES		P
- (16.1)	General		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Creepage distances and clearances according to 16.2 and 16.3		P
	Controlgears providing SELV comply with additional requirements in Annex L		N/A
	Insulating lining of metallic enclosures		N/A
	Controlgear protected against pollution comply with Annex P	(see Annex P)	N/A
- (16.2)	Creepage distances		P
- (16.2.2)	Minimum creepage distances for working voltages		P
	Creepage distances according to Table 7	(see appended table)	P
- (16.2.3)	Creepage distances for working voltages with frequencies above 30 kHz		N/A
	Creepage distances according to Table 8	(see appended table)	N/A
- (16.3)	Clearances		P
- (16.3.2)	Clearances for working voltages		P
	Clearances distances according to Table 9	(see appended table)	P
- (16.3.3)	Clearances for ignition voltages and working voltages with higher frequencies		N/A
	Clearances distances for basic or supplementary insulation according to Table 10	(see appended table)	N/A
	Clearances distances for reinforced insulation according to Table 11	(see appended table)	N/A

18 (17)	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS	N/A
	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)	N/A
(4.11)	Electrical connections	N/A
(4.11.1)	Contact pressure	N/A
(4.11.2)	Screws:	N/A
	- self-tapping screws	N/A
	- thread-cutting screws	N/A
(4.11.3)	Screw locking:	N/A
	- spring washer	N/A
	- rivets	N/A
(4.11.4)	Material of current-carrying parts	N/A
(4.11.5)	No contact to wood or mounting surface	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
(4.11.6)	Electro-mechanical contact systems		N/A
(4.12)	Mechanical connections and glands		N/A
(4.12.1)	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: torque (Nm); part..... :		N/A
	Torque test: torque (Nm); part..... :		N/A
	Torque test: torque (Nm); part..... :		N/A
(4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
(4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm)..... :		N/A
	- lampholder; torque (Nm)..... :		N/A
	- push-button switches; torque 0,8 Nm..... :		N/A
(4.12.5)	Screwed glands; force (Nm)..... :		N/A

19 (18)	RESISTANCE TO HEAT, FIRE AND TRACKING	See 50331759 001	N/A
- (18.1)	Ball-pressure test	See Test Table 19 (18.1)	N/A
- (18.2)	Test of printed boards	See Test Table 19 (18.2)	N/A
- (18.3)	Glow-wire test	See Test Table 19 (18.3)	N/A
- (18.4)	Needle flame test	See Test Table 19 (18.4)	N/A
- (18.5)	Tracking test	See Test Table 19 (18.5)	N/A

20 (19)	RESISTANCE TO CORROSION		N/A
	- test according 4.18.1 of IEC 60598-1		N/A
	- adequate varnish on the outer surface		N/A

21 (-)	MAXIMUM WORKING VOLTAGE (U_{out}) IN ANY LOAD CONDITION		N/A
	Not exceed declared maximum working voltage U_{out} in any load condition		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
14	TABLE: tests of fault conditions		P
Part	Simulated fault		Hazard
RCN-8-24W CCT			
CE1	SC, 10min, Input: 0.02A, 0.47W. Lamp no operation, recoverable		YES /NO
CE3	SC, 10min, Input: 0A, 0W. Lamp no operation, unrecoverable		YES /NO
DB1	SC, Fuse open and ten times repeat test performed.		YES /NO
Output +/-	OC, 10min, Input: 0.02A, 0.56 W. Lamp no operation, recoverable		YES /NO
RCN-5-12W CCT+DIM			
CE1	SC, 10min, Input: 0.01A, 0.45W. Lamp no operation, recoverable		YES /NO
CE2	SC, 10min, Input: 0.01A, 0.51W. Lamp no operation, recoverable		YES /NO
DB1	SC, Fuse open and ten times repeat test performed.		YES /NO
Output +/-	OC, 10min, Input: 0.02A, 1.45W. Lamp no operation, recoverable		YES /NO
RCN-8-24W CCT+DIM			
CE1	10min, Input: 0.02A, 0.54W. Lamp no operation, recoverable		YES /NO
CE2	SC, Fuse open and ten times repeat test performed.		YES /NO
DB1	SC, Fuse open and ten times repeat test performed.		YES /NO
Output +/-	OC, 10min, Input: 0.02A, 2.15W. Lamp no operation, recoverable		YES /NO
RCN-8-24W Sensor			
CE1	SC, 10min, Input: 0.10A, 1.01W. Lamp no operation, recoverable		YES /NO
CE2	SC, 10min, Input: 0A, 0W. Lamp no operation, unrecoverable		YES /NO
CE3	SC, 10min, Input: 0A, 0W. Lamp no operation, unrecoverable		YES /NO
CE4	SC, 10min, Input: 0A, 0W. Lamp no operation, unrecoverable		YES /NO
DB1	SC, Fuse open and ten times repeat test performed.		YES /NO
Output +/-	OC, 10min, Input: 0.12A, 2.45W. Lamp no operation, recoverable		YES /NO

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Clause		Requirement + Test			Result - Remark		Verdict
17 (16)		TABLE: clearance and creepage distance measurements (mm)					P
Applicable part of IEC 61347-1 Table 7 – 11*							
Distances	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:	B	2,52	1,5	9	2,52	2,5	7
Working voltage (V).....:					AC 220-240V		—
Frequency if applicable (kHz).....:					--		—
PTI.....:					< 600 ☒ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)					--		—
Pulse voltage if applicable (kV)					2,5kV		—
Supplementary information: Between L and N, and between fuse.							
Distance 2:	--	--	--	--	--	--	--
Working voltage (V).....:					--		—
Frequency if applicable (kHz).....:					--		—
PTI.....:					< 600 ☐ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)					--		—
Pulse voltage if applicable (kV)					--		—
Supplementary information: N/A							
Distance 3:	--	--	--	--	--	--	--
Working voltage (V).....:					--		—
Frequency if applicable (kHz).....:					--		—
PTI.....:					< 600 ☐ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)					--		—
Pulse voltage if applicable (kV)					--		—
Supplementary information: N/A							

** Insulation type: B – Basic; S – Supplementary; R – Reinforced

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Clause	Requirement + Test		Result - Remark	Verdict
19 (18.1)	TABLE: Ball Pressure Test			N/A
Allowed impression diameter (mm)..... :		2		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
--	--	--	--	
--	--	--	--	
--	--	--	--	
Supplementary information: N/A				

19 (18.2)	TABLE: Test of printed boards				N/A
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (s)	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
Supplementary information: N/A					

19 (18.3)	TABLE: Glow-wire test				N/A
Glow wire temperature :			650°C		—
Object/ Part No./ Material	Manufacturer/ trademark		Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
--	--		--	--	--
--	--		--	--	--
--	--		--	--	--
Supplementary information: N/A					

IEC 61347-2-13					
Clause	Requirement + Test			Result - Remark	Verdict
19 (18.4)	TABLE: Needle-flame test				N/A
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (s)	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
Supplementary information: N/A					

19 (18.5)	TABLE: Proof tracking test					N/A
Test voltage PTI :				175 V		—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict	
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Supplementary information: N/A						

IEC 61347-2-13						
Clause	Requirement + Test			Result - Remark		Verdict
15.1	TABLE: test of transformer heating (☐ Constant voltage ☒ Constant current)					P
	Type reference:			RCN-8-24W CCT		
15.2	Test 1: Normal Operation					—
	1.06 times rated voltage:			1,06Un: 254,4V; 0,17A; 24,50W		—
						—
	Under ta =			25°C		—
15.3	Test 2: Abnormal Operation: Short-circuit the output according to L.7					—
	1.1 or 0.9times rated voltage:			1,1Un: 264V, 0,05A, 0,56W		—
	ta =			25°C		—
	Test 3: Abnormal Operation: overload according to L.7					—
	1.1 or 0.9times rated voltage:			--		—
	ta =			--		—
	Test 4: Abnormal Operation: Double the number of LED modules or equivalent load.					—
	1.1 or 0.9times rated voltage:			--		—
	ta =			--		—
Temperature (°C) of Part		Cl. 15.1		Cl. 15.2		
	Test 1 (°C)	Limit ³⁾	Test 2 (°C)	Test 3 (°C)	Test 4 (°C)	Limit ³⁾
Switch	51.4	55	50.2	--	--	55
PCB	84.5	Ref	74.0	--	--	Ref
Bobbin Big	86.4	Ref	76.3	--	--	Ref
X2	71.0	100	60.2	--	--	100
MOV1	71.7	125	68.6	--	--	125
CE1	71.9	105	61.6	--	--	105
CE2	76.6	105	65.4	--	--	105
CE3	73.9	105	62.7	--	--	105
Internal wire (Output)	62.6	90	51.8	--	--	200
Ambient	25.0	--	25.0	--	--	--

**According to clause 12.4.3 of EN 60598-1

IEC 61347-2-13						
Clause	Requirement + Test			Result - Remark		Verdict
15.1	TABLE: test of transformer heating (☐ Constant voltage ☒ Constant current)					P
	Type reference:			RCN-5-12W CCT+DIM		
15.2	Test 1: Normal Operation					—
	1.06 times rated voltage:			1,06Un: 254,4V; 0,05A; 13.02W		—
						—
	Under ta =			25°C		—
15.3	Test 2: Abnormal Operation: Short-circuit the output according to L.7					—
	1.1 or 0.9times rated voltage:			1,1Un: 264V, 0,05A, 1,10W		—
	ta =			25°C		—
	Test 3: Abnormal Operation: overload according to L.7					—
	1.1 or 0.9times rated voltage:			--		—
	ta =			--		—
	Test 4: Abnormal Operation: Double the number of LED modules or equivalent load.					—
	1.1 or 0.9times rated voltage:			--		—
	ta =			--		—
Temperature (°C) of Part		Cl. 15.1		Cl. 15.2		
	Test 1 (°C)	Limit ³⁾	Test 2 (°C)	Test 3 (°C)	Test 4 (°C)	Limit ³⁾
Switch	50.0	55	46.3	--	--	55
PCB	73.7	Ref.	72.2	--	--	Ref.
Bobbin	71.7	Ref.	70.4	--	--	Ref.
MOV1	60.3	125	57.4	--	--	125
X2	57.8	100	57.2	--	--	100
EC1	64.8	105	57.9	--	--	105
EC2	64.1	105	61.5	--	--	105
Internal wire(Output)	56.4	200	53.2	--	--	200
Ambient	25.0	--	25.0	--	--	--

**According to clause 12.4.3 of EN 60598-1

IEC 61347-2-13						
Clause	Requirement + Test			Result - Remark		Verdict
15.1	TABLE: test of transformer heating (☐ Constant voltage ☒ Constant current)					P
	Type reference:			RCN-8-24W CCT+DIM		
15.2	Test 1: Normal Operation					—
	1.06 times rated voltage:			1,06Un: 254,4V; 0,10A; 25.88W		—
						—
	Under ta =			25°C		—
15.3	Test 2: Abnormal Operation: Short-circuit the output according to L.7					—
	1.1 or 0.9times rated voltage:			1,1Un: 264V, 0,01A, 0,45W		—
	ta =			25°C		—
	Test 3: Abnormal Operation: overload according to L.7					—
	1.1 or 0.9times rated voltage:			--		—
	ta =			--		—
	Test 4: Abnormal Operation: Double the number of LED modules or equivalent load.					—
	1.1 or 0.9times rated voltage:			--		—
	ta =			--		—
Temperature (°C) of Part		Cl. 15.1		Cl. 15.2		
	Test 1 (°C)	Limit ³⁾	Test 2 (°C)	Test 3 (°C)	Test 4 (°C)	Limit ³⁾
Switch	52.9	80	50.7	--	--	80
PCB	73.0	Ref.	70.5	--	--	Ref.
Bobbin Big	97.4	Ref.	95.0	--	--	Ref.
Bobbin Small	66.7	Ref.	64.3	--	--	Ref.
MOV1	67.6	125	65.1	--	--	125
CX1	60.7	100	58.2	--	--	100
EC1	64.1	105	61.8	--	--	105
EC2	61.7	125	59.2	--	--	125
Internal wire(Output)	55.2	200	52.5	--	--	200
Ambient	25.0	--	25.0	--	--	--

**According to clause 12.4.3 of EN 60598-1

IEC 61347-2-13						
Clause	Requirement + Test			Result - Remark		Verdict
15.1	TABLE: test of transformer heating (☐ Constant voltage ☒ Constant current)					P
	Type reference:			RCN-8-24W Sensor		
15.2	Test 1: Normal Operation					—
	1.06 times rated voltage:			1,06Un: 254,4V; 0,16A; 21.26W		—
						—
	Under ta =			25°C		—
15.3	Test 2: Abnormal Operation: Short-circuit the output according to L.7					—
	1.1 or 0.9times rated voltage:			1,1Un: 264V, 0,03A, 0,78W		—
	ta =			25°C		—
	Test 3: Abnormal Operation: overload according to L.7					—
	1.1 or 0.9times rated voltage:			--		—
	ta =			--		—
	Test 4: Abnormal Operation: Double the number of LED modules or equivalent load.					—
	1.1 or 0.9times rated voltage:			--		—
	ta =			--		—
Temperature (°C) of Part		Cl. 15.1		Cl. 15.2		
	Test 1 (°C)	Limit ³⁾	Test 2 (°C)	Test 3 (°C)	Test 4 (°C)	Limit ³⁾
Switch	44.5	80	45.2	--	--	80
PCB	81.6	Ref.	83.2	--	--	Ref.
Bobbin Big	78.9	Ref.	79.7	--	--	Ref.
EC1	79.3	Ref.	80.9	--	--	Ref.
EC2	62.7	105	61.8	--	--	105
EC3	70.6	105	71.2	--	--	105
EC4	65.6	105	66.3	--	--	105
Internal wire(Output)	59.4	105	59.1	--	--	105
Ambient	25.0	--	25.0	--	--	--

**According to clause 12.4.3 of EN 60598-1

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

(A)	ANNEX A - TEST TO ESTABLISH WHETHER A CONDUCTIVE PART IS A LIVE PART WHICH MAY CAUSE AN ELECTRIC SHOCK		N/A
(A.1)	Comply with A.2 or A.3		N/A
(A.2)	Voltage ≤ 35 V peak or ≤ 60 V d.c.:		N/A
(A.3)	If voltage measured according Clause A.2 exceeds the limit value; touch current does not exceed 0,7 mA (peak) or 2 mA d.c.:		N/A
	Comply with Annex G.2 of IEC 60598-1		N/A

(C)	ANNEX C – PARTICULAR REQUIREMENTS FOR ELECTRONIC LAMP CONTROLGEAR WITH MEANS OF PROTECTION AGAINST OVERHEATING		N/A
(C3)	GENERAL REQUIREMENTS		N/A
(C3.1)	Thermal protection means integral with the convertor, protected against mechanical damage		N/A
	Renewable only by means of a tool		N/A
	If function depending on polarity, for cord-connected equipment protection means in both leads		N/A
	Thermal links comply with IEC 60691		N/A
	Electrical controls comply with IEC 60730-2-3		N/A
(C3.2)	No risk of fire by breaking (clause C7)		N/A
(C5)	CLASSIFICATION		N/A
	a) automatic resetting type		—
	b) manual resetting type		—
	c) non-renewable, non-resetting type		—
	d) renewable, non-resetting type		—
	e) other type of thermal protection; description ...:		—
(C6)	MARKING		N/A
(C6.1)	Symbol for temperature declared thermally protected ballasts		N/A
(C6.2)	Declaration of the type of protection provided		N/A
(C7)	LIMITATION OF HEATING		N/A
(C7.1)	Preselection test:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test sample placed for at least 12 h in an oven having temperature ($t_c - 5$) K		N/A
	No operation of the protection device		N/A
(C7.2)	Functioning of protection means:		N/A
	Normal operation of the sample in a test enclosure according to Annex D at an ambient temperature such that ($t_c + 0; -5$) °C is obtained		N/A
	No operation of the protection device		N/A
	Introducing of the most onerous test condition determined during test of clause 14.2 to 14.5		N/A
	Output of windings connected to the mains supply short-circuited, and other part of the controlgear operated under normal conditions		N/A
	Increasing of the current through the windings continuously until operation of the protection means		N/A
	Continuous measuring of the highest surface temperature		N/A
	Ballasts according to C5 a) or C5 e) operated until stable conditions are achieved		N/A
	Automatic-resetting thermal protectors working 3 times		N/A
	Ballasts according to C5 b) working 6 times		N/A
	Ballasts according to C5 c) and C5 d) working once		N/A
	Highest temperature does not exceed the marked value		N/A
	Any overshoot of 10% over the marked value within 15 min		N/A
	After 15 min value not exceed marked value		N/A
(D)	ANNEX D – REQUIREMENTS FOR CARRY OUT THE HEATING TESTS OF THERMALLY PROTECTED LAMP CONTROLGEAR		N/A
	Tests in C7 performed in accordance with Annex D, if applicable		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
(F)	ANNEX F – DRAUGHT-PROOF ENCLOSURE		N/A
	Draught-proof enclosure in accordance with the description		N/A
	Dimensions of the enclosure		N/A
	Other design; description		N/A
(H)	ANNEX H - TESTS		N/A
	All tests performed in accordance with the advice given in Annex H, if applicable		N/A
I (L)	ANNEX I IN THIS PART 2 – PARTICULAR ADDITIONAL REQUIREMENTS FOR SELV D.C. OR A.C. SUPPLIED ELECTRONIC CONTROLGEARS FOR LED MODULES		N/A
(L.3)	Classification		N/A
	Class I	Yes ☐ No ☐	—
	Class II	Yes ☐ No ☐	—
	Class III	Yes ☐ No ☐	—
	non-inherently short circuit proof controlgear	Yes ☐ No ☐	—
	inherently short circuit proof controlgear	Yes ☐ No ☐	—
	fail safe controlgear	Yes ☐ No ☐	—
	non-short-circuit proof controlgear	Yes ☐ No ☐	—
(L.4)	Marking		N/A
	Adequate symbols are used		N/A
(L.5)	Protection against electric shock		N/A
	Comply with clause 9.2 of IEC 61558-1		N/A
(L.6)	Heating		N/A
	No excessive temperatures in normal use		N/A
	Value if capacitor t_c marked		—
	Winding insulation classified as Class		—
	Comply with tests of clause 14 of IEC 61558-1 with adjustments		N/A
(L.7)	Short-circuit and overload protection		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Comply with tests of clause 15 of IEC 61558-1 with adjustments		N/A
(L.8)	Insulation resistance and electric strength		N/A
(L.8.1)	Conditioned 48 h between 91 % and 95 %		N/A
(L.8.2)	Insulation resistance		N/A
	Between input- and output circuits not less than 5 MΩ		N/A
	Between metal parts of class II convertors which are separated from live parts by basic insulation only and the body not less than 5 MΩ		N/A
	Between metal foil in contact with the inner and outer surfaces of enclosures of insulating material not less than 2 MΩ		N/A
(L.8.3)	Electric strength		P
	1) Between live parts of input circuits and live parts of output circuits		N/A
	2) Over basic or supplementary insulation between:		N/A
	a) live parts having different polarity		N/A
	b) live parts and body if intended to be connected to protective earth		N/A
	c) accessible metal parts and a metal rod of the same diameter as the flexible cable or cord		N/A
	d) live parts and an intermediate metal part		N/A
	e) intermediate metal parts and the body		N/A
	f) each input circuit and all other input circuits ...		N/A
	3) Over reinforced insulation between the body and live parts		N/A
(L.9)	Construction		N/A
(L.9.1)	Transformer comply with 19.12 of IEC 61558-1 and 19 of IEC 61558-2-6		N/A
	HF transformer comply with 19 of IEC 61558-2-16		N/A
(L.10)	Components		N/A
	Protective devices comply with 20.6 – 20.11 of IEC 61558-1		N/A
(L.11)	Creepage distances, clearances and distances through insulation		N/A
	Creepage distances and clearances not less than in Clause 16		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Distance through insulation according Table L.5 in IEC 61347-1		N/A
	1) Basic distance through insulation		N/A
	Required distance (mm)		—
	Measured (mm)		N/A
	Supplementary information		—
	2) Supplementary distance through insulation		N/A
	Required distance (mm)		—
	Measured (mm)		N/A
	Supplementary information		—
	3) Reinforced distance through insulation		N/A
	Required distance (mm)		—
	Measured (mm)		N/A
	Supplementary information		—

J (-)	ANNEX J IN THIS PART 2 – PARTICULAR ADDITIONAL SAFETY REQUIREMENTS FOR A.C., A.C./D.C. OR D.C. SUPPLIED ELECTRONIC CONTROLGEAR FOR EMERGENCY LIGHTING		N/A
J.1	General		N/A
	Intended for centralized emergency power supply	Yes ☐ No ☐	—
J.2	Marking		N/A
J.2.1	Mandatory markings		N/A
	a) symbol EL		N/A
	b) rated emergency supply voltage (V)		N/A
J.2.2	Information to be provided if applicable		N/A
	a) Limits of ambient temperature		N/A
	b) Emergency output factor (EOF _x)		N/A
	c) Information if intended for use in luminaires for high-risk task area lighting		N/A
J.3	General notes on tests		N/A
	Length of output cable in tests		N/A
	Load instead of LED lamps/modules		N/A
J.4	Starting conditions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Start rated load in emergency mode without adversely affecting the performance		N/A
J.5	Operating condition		N/A
	Comply with the requirements of 7.2 of IEC 62384 at 90% and 110% of rated emergency supply voltage		N/A
J.6	Emergency supply current		N/A
	Emergency supply current not differ more than $\pm 15\%$		N/A
	Supply of low impedance and low inductance		N/A
J.7	EMC immunity		N/A
	Comply with the requirements of IEC 61547		N/A
J.8	Pulse voltage from central battery systems		N/A
	Withstand pulses according Table J.1		N/A
J.9	Tests for abnormal conditions		N/A
	Comply with the requirements of 12 of IEC 62384		N/A
J.10	Comply with the requirements of 13 of IEC 62384		N/A
J.11	Functional safety (EOF _x)		N/A
	Declared emergency output factor (EOF _x) achieved during emergency operation		N/A

(N)	ANNEX N: REQUIREMENTS FOR INSULATION MATERIALS USED FOR DOUBLE OR REINFORCED INSULATION		N/A
(N.4)	General requirements		N/A
(N.4.1)	Material comply with IEC 60085 and IEC 60216 series		N/A
(N.4.2)	Solid insulation		N/A
	Electric strength test at least 5 kV or 1,35 x test voltage in Table N.1		N/A
	If not classified according IEC 60085 and IEC 60216 series: Electric strength test increased 10 % to 5,5 kV or 1,5 x test voltage in Table N.1		N/A
(N.4.3)	Thin sheet insulation		N/A
(N.4.3.1)	Thickness and composition of thin sheet insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Inside the ballast and not subjected to handling or abrasion during the production and during maintenance		N/A
	- Non-separated layers: Min. 3 layers and fulfil mandrel test of 150N		N/A
	- Separated layers: Min. 2 layers and each layer fulfil mandrel test of 50N		N/A
	- Separated layers (alternative): Min. 3 layers and 2/3 of the layers fulfil mandrel test of 100N		N/A
(N.4.3.2)	Mandrel test (electric strength test during mechanical stress)		N/A
	Electric strength test after mandrel test:		N/A
	- Non-separated layers: min. 5 kV or 1,35 x test voltage in Table N.1		N/A
	- 2/3 of min. 3 separated layers: min. 5 kV or 1,25 x test voltage in Table N.1		N/A
	- one of 2 separated layers: min. 5 kV or 1,25 x test voltage in Table N.1		N/A
	No flashover or breakdown occurred		N/A

(O)	ANNEX O: ADDITIONAL REQUIREMENTS FOR BUILT-IN ELECTRONIC CONTROL GEAR WITH DOUBLE OR REINFORCED INSULATION		P
(O.6)	Marking		N/A
	Marking according clause 7 (7)	See clause 7	N/A
	Special symbol		N/A
	Meaning of the special symbol explained in catalogue		N/A
(O.7)	Protection against accidental contact with live parts		P
	Requirements of clause 8 (10)	See clause 8	P
	Test finger not possible to make contact with basic insulated metal parts		P
(O.8)	Terminals		P
	Clause 9 (8)	See clause 9	P
(O.9)	Provision for earthing		N/A
	Functional earthing terminals comply with clause 9 of part 1		N/A
	No protective earthing terminal		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
(O.10)	Moisture resistance and insulation		P
	Clause 11 (11)	See clause 11	P
(O.11)	Electric strength		P
	Clause 12 (12)	See clause 12	P
(O.13)	Fault conditions		P
	Clause 14 (14)	See clause 14	P
	End of test, between live part and accessible metal parts or external parts of insulating material in contact with the supporting surface comply with dielectric strength test according clause 12 reduced to 35 % of values according Table 3 in part 1		P
	Insulation resistance according to O.10 between live part and accessible metal parts or external parts of insulating material in contact with the supporting surface not less than 4 MΩ		P
(O.14)	Construction		P
	Clause 17 (15)	See clause 17	P
	Accessible metal parts insulated from live parts by double or reinforced insulation		P
	Live part insulated from supporting surface in contact with external faces by double or reinforced insulation		P
(O.15)	Creepage distances and clearances		P
	Clause 18 (16)	See clause 18	P
	Comply with corresponding values for luminaries in IEC 60598-1		P
(O.16)	Screws, current-carrying parts and connections		P
	Clause 19 (17)	See clause 19	P
(O.17)	Resistance to heat and fire		P
	Clause 20 (18)	See clause 20	P
(O.18)	Resistance to corrosion		N/A
	Clause 21 (19)	See clause 21	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
(P)	Creepage distances and clearances and distance through isolation (DTI) for lamp controlgear which are protected against pollution by the use of coating or potting		N/A
(P.1)	General		N/A
	P.2 applies if creepage distances less than the minimum in Table 7 and 8		N/A
	P.3 applies if clearance less than the minimum in Table 9, 10 and 11		N/A
(P.2)	Creepage distances		N/A
(P.2.2)	Minimum creepage distances for working voltages and rated voltages with frequencies up to 30 kHz (Table P.1)		N/A
	Basic or supplementary insulation:		N/A
	Required creepage		—
	Measured.....		N/A
	Supplementary information		—
	Reinforced insulation:		N/A
	Required creepage		—
	Measured.....		N/A
	Supplementary information		—
(P.2.3)	Creepage distances for working voltages with frequencies above 30 kHz (Table P.2)		N/A
	Voltage $\hat{U}_{out}$ kV		—
	Frequency.....		—
	Required distance		—
	Measured.....		N/A
	Supplementary information		—
(P.2.4)	Compliance with the required creepage distances		N/A
(P.2.4.1)	Compliance in accordance with 16.3.3 and test according P.2.4.2		N/A
(P.2.4.3)	Electrical tests after conditioning		N/A
(P.2.4.3.1)	Insulation resistance and electric strength according Clause 11 and 12		N/A
(P.3)	Distance through isolation		N/A
(P.3.4)	Electrical tests after conditioning		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
(P.3.4.1)	Insulation resistance and electric strength according Clause 11 and 12		N/A
(P.3.4.2)	Impulse voltage dielectrical test		N/A
	Basic or supplementary insulation:		N/A
	Working/rated voltage		—
	Impulse voltage.....		N/A
	Supplementary information		—
	Reinforced insulation:		N/A
	Working/rated voltage		—
	Impulse voltage.....		N/A
	Supplementary information		—

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1	TABLE: Critical components information					See 50331759 001	N/A
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
--	--	--	--	--	--	--	
Description:	--						
--	--	--	--	--	--	--	
--	--	--	--	--	--	--	
--	--	--	--	--	--	--	
Description:	--						
--	--	--	--	--	--	--	
--	--	--	--	--	--	--	
--	--	--	--	--	--	--	
Description:	--						
--	--	--	--	--	--	--	
--	--	--	--	--	--	--	
--	--	--	--	--	--	--	
Supplementary information: N/A							
¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.							
The codes above have the following meaning:							
A - The component is replaceable with another one, also certified, with equivalent characteristics							
B - The component is replaceable if authorised by the test house							
C - Integrated component tested together with the appliance							
D - Alternative component							

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	Screw terminals (part of the luminaire)		N/A
(14)	SCREW TERMINALS		N/A
(14.2)	Type of terminal..... :		—
	Rated current (A)..... :		—
(14.3.2.1)	One or more conductors		N/A
(14.3.2.2)	Special preparation		N/A
(14.3.2.3)	Terminal size		N/A
	Cross-sectional area (mm ²) :		—
(14.3.3)	Conductor space (mm) :		N/A
(14.4)	Mechanical tests		N/A
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread) :	M	N/A
	External wiring		N/A
	No soft metal		N/A
(14.4.5)	Corrosion		N/A
(14.4.6)	Nominal diameter of thread (mm) :		N/A
	Torque (Nm) :		N/A
(14.4.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N) :		N/A
(14.4.8)	Without undue damage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 3	Screwless terminals (part of the luminaire)		N/A
(15)	SCREWLESS TERMINALS		N/A
(15.2)	Type of terminal..... :		—
	Rated current (A)..... :		—
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5)	Terminals and connections for internal wiring		N/A
(15.5.1)	Mechanical tests		N/A
(15.5.1.1.1)	Pull test spring-type terminals (4 N, 4 samples) :		N/A
(15.5.1.1.2)	Pull test pin or tab terminals (4 N, 4 samples)..... :		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N/A
(15.5.2)	Electrical tests		N/A
	Voltage drop (mV) after 1 h (4 samples) :		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles:		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples)..... :		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples)..... :		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples)..... :		N/A
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples)..... :		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
(15.6)	Terminals and connections for external wiring		N/A
(15.6.1)	Conductors		N/A
	Terminal size and rating		N/A
15.6.2	Mechanical tests		N/A
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)		N/A
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N)		N/A
(15.6.3)	Electrical tests		N/A
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1		N/A

(15.6.3.1) (15.6.3.2)	TABLE: Contact resistance test / Heating tests										N/A
	Voltage drop (mV) after 1 h										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
	Voltage drop of two inseparable joints										N/A
	Voltage drop after 10th alt. 25th cycle										N/A
	Max. allowed voltage drop (mV)					N/A					—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
	Voltage drop after 50th alt. 100th cycle										N/A
	Max. allowed voltage drop (mV)					N/A					—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
	Voltage drop after 10th alt. 25th cycle										N/A
	Max. allowed voltage drop (mV)					N/A					—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
	Continued ageing: voltage drop after 10th alt. 25th cycle										N/A
	Max. allowed voltage drop (mV)					N/A					—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
	Continued ageing: voltage drop after 50th alt. 100th cycle										N/A
	Max. allowed voltage drop (mV)					N/A					—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	

IEC 61347-2-13										
Clause	Requirement + Test					Result - Remark				Verdict
--	--	--	--	--	--	--	--	--	--	--
Supplementary information: N/A										

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

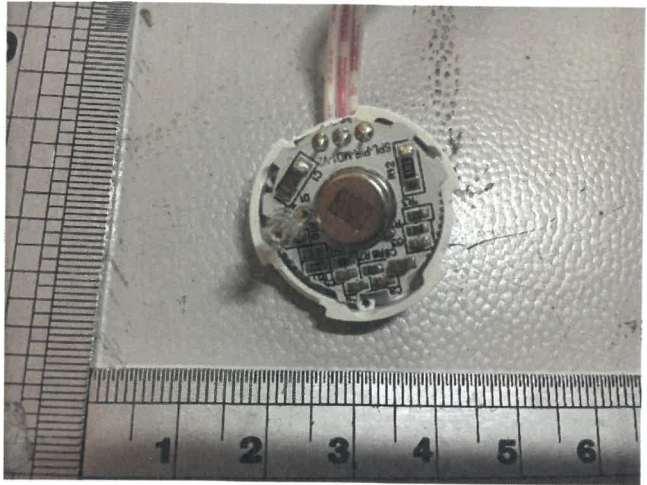
List of test equipment used: N/A

A completed list of used test equipment shall be provided in the Test Reports when a Manufacturer Testing Laboratory according to CTF stage 1 or CTF stage 2 procedure has been used.

Other forms with a different layout but containing corresponding information are also acceptable.

Note: This page may be removed when CTF stage 1 CTF stage 2 are not used. See also clause 4.8 in OD 2020 for more details.

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date
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Prüfbericht-Nr.: <i>Test Report No.:</i>	Attachment 3 of 50331759 001	Auftrags-Nr.: <i>Order No.:</i>	180118291	Seite 1 von 35 <i>Page 1 of 35</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	19.12.2019	
Auftraggeber: <i>Client:</i>	TOPJET OPTOELECTRONIC CO., LTD. No.13,PingDong 4th Rd Nanping S&T Industrial Park,Zhuhai 519060 Guangdong P. R. China.			
Prüfgegenstand: <i>Test item:</i>	PIR sensor			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	SPL-10-24W -PIR			
Auftrags-Inhalt: <i>Order content:</i>	Acceptance test			
Prüfgrundlage: <i>Test specification:</i>	EN 61347-1:2015 EN 61347-2-11:2001			
Wareneingangsdatum: <i>Date of receipt:</i>	19.12.2019			
Prüfmuster-Nr.: <i>Test sample No.:</i>	A001053552			
Prüfzeitraum: <i>Testing period:</i>	07.01.2020 – 20.03.2020			
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland / CCIC (Ningbo) Co., Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland / CCIC (Ningbo) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
01.04.2020 <i>Date</i>	Zeen Xu/ PE <i>Name / Stellung</i>		02.04.2020 <i>Date</i>	Brent Zhang/ Reviewer <i>Name / Stellung</i>
		<i>Unterschrift</i> <i>Signature</i>		 <i>Unterschrift</i> <i>Signature</i>
Sonstiges / Other: Acceptance test for PIR sensor.				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				



TEST REPORT IEC 61347-2-11 Part 2: Particular requirements Section 11: Miscellaneous electronic circuits used with luminaires	
Report Number.....	Attachment 3 of 50331759 001
Date of issue.....	See cover page
Total number of pages.....	See cover page
Name of Testing Laboratory preparing the Report.....	TÜV Rheinland / CCIC (Ningbo) Co., Ltd. 3F, Building C13, R&D Park, No.32 Lane 299 Guanghua Road, National Hi-Tech Zone, Ningbo 315048, P.R. China
Applicant's name	TOPJET OPTOELECTRONIC CO., LTD
Address.....	No.13,PingDong 4th Rd Nanping S&T Industrial Park,Zhuhai 519060 P. R. China.
Test specification:	
Standard.....	IEC 61347-2-11:2001, AMD1:2017 used in conjunction with IEC 61347-1:2015, AMD1:2017
Test procedure.....	Acceptance test
Non-standard test method	N/A
Test Report Form No.....	IEC61347_2_11F
Test Report Form(s) Originator ...	Intertek Semko AB
Master TRF.....	Dated 2018-11-09
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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.	
General disclaimer: The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

Test item description..... :	PIR sensor	
Trade Mark..... :		
Manufacturer..... :	Same as applicant	
Model/Type reference..... :	SPL-10-24W -PIR	
Ratings..... :	Input: DC 80-200V.	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	Testing Laboratory:	TÜV Rheinland / CCIC (Ningbo) Co., Ltd.
	Testing location/ address..... :	3F, Building C13, R&D Park, No.32 Lane 299 Guanghua Road, National Hi-Tech Zone, Ningbo 315048, P.R. China.
	Tested by (name, function, signature)..... :	See cover page
	Approved by (name, function, signature) . :	See cover page
☐	Testing procedure: CTF Stage 1:	N/A
	Testing location/ address..... :	N/A
	Tested by (name, function, signature)..... :	N/A
	Approved by (name, function, signature) . :	N/A
☐	Testing procedure: CTF Stage 2:	N/A
	Testing location/ address..... :	N/A
	Tested by (name + signature)..... :	N/A
	Witnessed by (name, function, signature) :	N/A
	Approved by (name, function, signature) . :	N/A
☐	Testing procedure: CTF Stage 3:	N/A
☐	Testing procedure: CTF Stage 4:	N/A
	Testing location/ address..... :	N/A
	Tested by (name, function, signature)..... :	N/A
	Witnessed by (name, function, signature) :	N/A
	Approved by (name, function, signature) . :	N/A
	Supervised by (name, function, signature):	N/A

List of Attachments (including a total number of pages in each attachment):

N/A

Summary of testing:**Tests performed (name of test and test clause):**

- Complete tests according to EN 61347-2-11:2001 are performed.
- Endurance test according to Cl.17 of EN 61058-1:2002/A2:2008 is also performed.

Testing location:

TÜV Rheinland / CCIC (Ningbo) Co., Ltd.
3F, Building C13, R&D Park, No.32 Lane 299
Guanghua Road, National Hi-Tech Zone, Ningbo
315048, P.R. China

Summary of compliance with National Differences:**List of countries addressed:**

N/A

Copy of marking plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

N/A

Test item particulars..... :	PIR sensor
Classification of installation and use..... :	Built-in
Supply Connection..... :	Flexible wire
..... :	
Possible test case verdicts:	
- test case does not apply to the test object..... :	N/A
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)
Testing..... :	
Date of receipt of test item..... :	See cover page
Date (s) of performance of tests..... :	See cover page
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.	
Throughout this report a ☒ comma / ☐ point is used as the decimal separator.	
Clause numbers between brackets refer to clauses in IEC 61347-1	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :	☐ Yes ☒ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies)..... :	TOPJET OPTOELECTRONIC CO., LTD. No.13,PingDong 4th Rd Nanping S&T Industrial Park,Zhuhai 519060 P. R. China.

General product information:

PIR sensor, via PIR control, input: DC 80-200V.

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict

4 (4)	GENERAL REQUIREMENTS		N/A
- (4)	Insulation materials for double or reinforced insulation according requirements in Annex N of IEC 61347-1	(see Annex N)	N/A
- (4)	Compliance of <u>independent controlgear enclosure</u> with IEC 60598-1		N/A
- (4)	<u>Built-in magnetic ballast</u> with double or reinforced insulation comply with Annex I of IEC 61347-1		N/A
- (4)	<u>Built-in electronic controlgear</u> with double or reinforced insulation comply with Annex O of IEC 61347-1	(see Annex O)	N/A
- (4)	<u>SELV controlgear</u> comply with Annex L of IEC 61347-1	(see Annex L)	N/A

6 (6)	CLASSIFICATION			P
	Built-in controlgear	Yes ☒	No ☐	—
	Independent controlgear.....	Yes ☐	No ☐	—
	Integral controlgear	Yes ☐	No ☒	—

7 (7)	MARKING		N/A
7.1 (7.1)	Mandatory markings		N/A
	a) mark of origin		N/A
	b) model number or type reference		N/A
	d) correlation between interchangeable parts and controlgear marked		N/A
	e) rated supply voltage (V)		N/A
	supply frequency (Hz)		N/A
	supply current (A)		N/A
	f) earthing symbol, if applicable		N/A
	k) wiring diagram		N/A
	l) value of t_c		N/A
	s) SELV symbol		N/A
7.1 (-)	- control terminals identified, if applicable		N/A
	- t_a alternative to t_c if independent		N/A
7.1 (7.2)	Marking durable and legible		N/A

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
	Rubbing 15 s water, 15 s petroleum; marking legible		N/A
7.2 (7.1)	Information to be provided, if applicable		N/A
	h) declaration of protection against accidental contact		N/A
	i) cross-section of conductors (mm ²)		N/A
	j) number, type and wattage of lamp(s)		N/A
7.1 (7.2)	Marking durable and legible		N/A
	Rubbing 15 s water, 15 s petroleum; marking legible		N/A

8 (10)	PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS		P
- (10.1)	Controlgear protected against accidental contact with live parts	Rely upon sensor enclosure	P
- (A2)	Voltage measured with 50 k Ω	(see Annex A)	N/A
- (A3)	Voltage > 35 V peak or > 60 V d.c.	(see Annex A)	P
- (10.1)	Lacquer or enamel not used for protection or insulation		N/A
	Adequate mechanical strength on parts providing protection		N/A
- (10.2)	Capacitors > 0,5 μ F: voltage after 1 min (V): < 50 V	<0,5 μ F	P
- (10.3)	Controlgear providing SELV		N/A
	Accessible conductive parts are insulated from live parts by double or reinforced insulation in SELV controlgear		N/A
	No connection between output circuit and the body or protective earthing circuit		N/A
	No possibility of connection between output circuit and the body or protective earthing circuit through other conductive parts		N/A
	SELV outputs separated by at least basic insulation		N/A
	ELV conductive parts insulated as live parts		N/A
	Tests according Annex L of IEC 61347-1	(see Annex L)	N/A
- (10.4)	Accessible conductive parts in SELV circuits		N/A

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
	Output voltage under load ≤ 25 V r.m.s. or ≤ 60 V d.c.		N/A
	If output voltage > 25 V r.m.s. or > 60 V d.c.; No load output ≤ 35 V peak or ≤ 60 V d.c and touch current does not exceed 0,7 mA (peak) or 2 mA d.c.:		N/A
	One conductive part is insulated if output voltage or current exceeding the values above and withstand test voltage 500 V		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A

9 (8)	TERMINALS		N/A
- (8.1)	Integral terminals		N/A
	Screw terminals according section 14 of IEC 60598-1	(see Annex 2)	N/A
	Screwless terminals according section 15 of IEC 60598-1	(see Annex 3)	N/A
- (8.2)	Terminals other than integral terminals		N/A
	Comply with relevant IEC standard	(see Annex 1)	N/A
	Suit the conditions		N/A
	Satisfy additional relevant requirements of this standard		N/A

10 (9)	PROVISION FOR EARTHING		N/A
- (9.1)	Provisions for protective earthing		N/A
	Terminal complying with clause 8		N/A
	Locked against loosening and not possible to loosen by hand		N/A
	Not possible to loosen clamping means unintentionally on screwless terminals		N/A
	All parts of material minimizing the danger of electrolytic corrosion		N/A

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
	Made of brass or equivalent material		N/A
	Contact surface bare metal		N/A
	Test according 7.2.3 of IEC 60598-1		N/A
- (9.2)	Provision for functional earthing		N/A
	Comply with clause 8 and 9.1		N/A
	Functional earth insulated from live parts by double or reinforced insulation		N/A
- (9.3)	Lamp controlgear with conductors for protective earthing by tracks on printed circuit board		N/A
	Test with a current of 25 A between earthing terminal or earthing contact and each of the accessible metal parts; measured resistance (Ω) at ≥ 10 A according 7.2.3 of IEC 60598-1: $< 0,5 \Omega$		N/A
- (9.4)	Earthing of built-in lamp controlgear		N/A
	Earth by means of fixing to earthed metal of luminaire in compliance of 7.2 of IEC 60598-1		N/A
	Earthing terminal only for earthing the built-in controlgear		N/A
- (9.5)	Earthing via independent controlgear		N/A
- (9.5.1)	Earth connection to other equipment		N/A
	Looping or through connection, conductor min. 1,5 mm ² and of copper or equivalent		N/A
	Protective earthing wires in line with 5.3.1.1 and clause 7 of IEC 60598-1		N/A
- (9.5.2)	Earthing of the lamp compartments powered via the independent lamp controlgear		N/A
	Test with a current of 25 A between input and output earth terminals; measured resistance (Ω) between earthing terminal or earthing contact and each of the accessible metal parts at ≥ 10 A according 7.2.3 of IEC 60598-1: $< 0,5 \Omega$		N/A
	Output earthing terminal marked as in 7.1 t) of IEC 61347-1		N/A
11 (11)	MOISTURE RESISTANCE AND INSULATION		P
- (11)	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance:		P

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
	For basic insulation $\geq 2 \text{ M}\Omega$	>500 M Ω	P
	For double or reinforced insulation $\geq 4 \text{ M}\Omega$	>500 M Ω	P
- (11)	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1		N/A

12 (12)	ELECTRIC STRENGTH		P
- (12)	Immediately after clause 11 electric strength test f or 1 min		P
	Basic insulation for SELV, test voltage 500 V		N/A
	Working voltage $\leq 50 \text{ V}$, test voltage 500 V		N/A
	Working voltage $> 50 \text{ V} \leq 1000 \text{ V}$, test voltage (V):		P
	Basic insulation, $2U + 1000 \text{ V}$		P
	Supplementary insulation, $2U + 1000 \text{ V}$		N/A
	Double or reinforced insulation, $4U + 2000 \text{ V}$		P
	No flashover or breakdown		P
	Solid or thin sheet insulation for double or reinforced insulation fulfil the requirements in Annex N in IEC 61347-1		P

14 (14)	FAULT CONDITIONS		P
- (14.1)	When operated under fault conditions the controlgear:		P
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		P
	Thermally protected controlgear does not exceed the marked temperature value		N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	P
- (14.2)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (after any reduction in 14.2 - 14.5)	(see appended table)	N/A

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
- (14.3)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.4)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N/A
- (14.5)	Short-circuit across electrolytic capacitors	(see appended table)	P
- (14.6)	After the tests has been carried out on three samples:		P
	The insulation resistance $\geq 1 \text{ M}\Omega$:	> 500 M Ω	P
	No flammable gases		P
	No accessible parts have become live		P
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
- (14.7)	Relevant fault condition tests with high-power a.c. supply		—

15 (15)	CONSTRUCTION		P
- (15.1)	Wood, cotton, silk, paper and similar fibrous material		P
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
- (15.2)	Printed circuits		P
	Printed circuits used as internal connections complies with clause 14		P
- (15.3)	Plugs and socket-outlets used in SELV or ELV circuits		N/A
	No dangerous compatibility between output socket-outlet and a plug for socket-outlets for input circuit in relation to installation rules, voltages and frequencies		N/A
	Plugs and socket-outlets for SELV comply with IEC 60906-3 and IEC 60884-2-4		N/A
	Plugs and socket-outlets for SELV $\leq 3 \text{ A}$, $\leq 25 \text{ V r.m.s.}$ or $\leq 60 \text{ V d.c.}$ and $\leq 72 \text{ W}$ comply with IEC 60906-3 and IEC 60884-2-4 or:		N/A
	- plugs not able to enter socket-outlets of other standardised system		N/A
	- socket-outlets not admit plugs of other standardised system		N/A
	- socket-outlets without protective earth		N/A
- (15.4)	Insulation between circuits and accessible parts		N/A

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
- (15.4.2)	SELV circuits		N/A
	Source used to supply SELV circuits:		N/A
	- safety isolating transformer in accordance with relevant part 2 of IEC 61558		N/A
	- controlgear providing SELV in accordance with relevant part 2 of IEC 61347		N/A
	- another source		N/A
	Voltage in the circuit not higher than ELV		N/A
	SELV circuits insulated from LV by double or reinforced insulation		N/A
	SELV circuits insulated from non SELV circuits by double or reinforced insulation		N/A
	SELV circuits insulated from FELV circuits by supplementary insulation		N/A
	SELV circuits insulated from other SELV circuits by basic insulation		N/A
	SELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		N/A
- (15.4.3)	FELV circuits		N/A
	Source used to supply FELV circuits:		N/A
	- separating transformer in accordance with relevant part 2 of IEC 61558		N/A
	- separating controlgear providing basic insulation between input and output circuits in accordance with relevant part 2 of IEC 61347		N/A
	- another source		N/A
	- source in circuits separated by the LV supply by basic insulation		N/A
	Voltage in the circuit not higher than ELV		N/A
	FELV circuits insulated from LV supply by at least basic insulation		N/A
	FELV circuits insulated from other FELV circuits if functional purpose		N/A
	FELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		N/A
	Plugs and socket-outlets for FELV system comply with:		N/A

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
	- plugs not able to enter socket-outlets of other voltage systems		N/A
	- socket-outlets not admit plugs of other voltage systems		N/A
	- socket-outlets have a protective conductor contact		N/A
- (15.4.4)	Other circuits		N/A
	Insulation between circuits other than SELV or FELV and accessible conductive parts in according Table 6 in 15.4.5.		N/A
- (15.4.5)	Insulation between circuits and accessible conductive parts		N/A
	Accessible conductive parts insulated from active parts of electric circuits by insulating according Table 6		N/A
	Requirements for Class II construction with equipotential bonding for protection against indirect contact with live parts:		N/A
	- all conductive parts are connected together		N/A
	- conductive parts are reliably connected together according test of IEC 60598-1 cl. 7.2.3		N/A
	- conductive parts comply with requirements of Annex A in case of insulation fault		N/A

16 (16)	CREEPAGE DISTANCES AND CLEARANCES		P
- (16)	Creepage distances and clearances according to 16.2 and 16.3		P
	Controlgears providing SELV comply with additional requirements in Annex L	(see Annex L)	N/A
	Insulating lining of metallic enclosures		N/A
	Controlgear protected against pollution comply with Annex P	(see Annex P)	N/A
- (16.2)	Creepage distances		P
- (16.2.2)	Minimum creepage distances for working voltages		P
	Creepage distances according to Table 7	(see appended table)	P
- (16.2.3)	Creepage distances for working voltages with frequencies above 30 kHz		N/A
	Creepage distances according to Table 8	(see appended table)	N/A
- (16.3)	Clearances		P
- (16.3.2)	Clearances for working voltages		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Clearances distances according to Table 9	(see appended table)	P
- (16.3.3)	Clearances for ignition voltages and working voltages with higher frequencies		N/A
	Clearances distances for basic or supplementary insulation according to Table 10	(see appended table)	N/A
	Clearances distances for reinforced insulation according to Table 11	(see appended table)	N/A

17 (17)	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		N/A
- (17)	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)		N/A
(4.11)	Electrical connections		N/A
(4.11.1)	Contact pressure		N/A
(4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
(4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
(4.11.4)	Material of current-carrying parts		N/A
(4.11.5)	No contact to wood or mounting surface		N/A
(4.11.6)	Electro-mechanical contact systems		N/A
(4.12)	Mechanical connections and glands		N/A
(4.12.1)	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: torque (Nm); part..... :		N/A
	Torque test: torque (Nm); part..... :		N/A
	Torque test: torque (Nm); part..... :		N/A
(4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
(4.12.4)	Locked connections:		P
	- fixed arms; torque (Nm)..... :		N/A
	- lampholder; torque (Nm)..... :		N/A
	- push-button switches; torque 0,8 Nm..... :		N/A
(4.12.5)	Screwed glands; force (Nm)..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

18 (18)	RESISTANCE TO HEAT, FIRE AND TRACKING See 50331759 001		N/A
- (18.1)	Ball-pressure test	See Test Table 18 (18.1)	N/A
- (18.2)	Test of printed boards	See Test Table 18 (18.2)	N/A
- (18.3)	Glow-wire test	See Test Table 18 (18.3)	N/A
- (18.4)	Needle flame test	See Test Table 18 (18.4)	N/A
- (18.5)	Tracking test	See Test Table 18 (18.5)	N/A

19 (19)	RESISTANCE TO CORROSION		N/A
	- test according 4.18.1 of IEC 60598-1		N/A
	- adequate varnish on the outer surface		N/A

20 (-)	ANNEXES		N/A
	Comply with appropriate annexes of IEC 61347-1	(see Annexes)	N/A

14	TABLE: tests of fault conditions		P
Part	Simulated fault		Hazard
Output	SC, No operation		YES /NO
--	--		YES /NO

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Clause		Requirement + Test			Result - Remark		Verdict
16 (16)		TABLE: creepage distance and clearance (mm)					P
Applicable part of IEC 61347-1 Table 7 – 11*							
Distances	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:	R	7,71	3	9	7,71	5	7
Working voltage (V)					DC 80-200V		—
Frequency if applicable (kHz)					--		—
PTI.....					< 600 ☒ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)					--		—
Pulse voltage if applicable (kV)					--		—
Supplementary information: Live part to enclosure							
Distance 2:	--	--	--	--	--	--	--
Working voltage (V)					--		—
Frequency if applicable (kHz)					--		—
PTI.....					< 600 ☐ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)					--		—
Pulse voltage if applicable (kV)					--		—
Supplementary information: N/A							
Distance 3:	--	--	--	--	--	--	--
Working voltage (V)					--		—
Frequency if applicable (kHz)					--		—
PTI.....					< 600 ☐ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)					--		—
Pulse voltage if applicable (kV)					--		—
Supplementary information: N/A							

** Insulation type: B – Basic; S – Supplementary; R – Reinforced

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Clause	Requirement + Test	Result - Remark	Verdict

18 (18.1)	TABLE: Ball Pressure Test			N/A
Allowed impression diameter (mm)		--		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
--	--	--	--	
--	--	--	--	
--	--	--	--	
Supplementary information: N/A				

18 (18.2)	TABLE: Test of printed boards				N/A
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (s)	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
Supplementary information: N/A					

18 (18.3)	TABLE: Glow-wire test			N/A
Glow wire temperature		650°C		—
Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
--	--	--	--	--
--	--	--	--	--
--	--	--	--	--
Supplementary information: N/A				

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Clause	Requirement + Test			Result - Remark	Verdict
18 (18.4)	TABLE: Needle-flame test				N/A
Object/ Part No./ Material	Manuf acturer/ trademark	Duration of application of test flame (s)	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
Supplementary information: N/A					

18 (18.5)	TABLE: Proof tracking test				N/A
Test voltage PTI		175 V			—
Object/ Part No./ Material	Manuf acturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
Supplementary information: N/A					

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Clause	Requirement + Test	Result - Remark	Verdict

(A)	ANNEX A - TEST TO ESTABLISH WHETHER A CONDUCTIVE PART IS A LIVE PART WHICH MAY CAUSE AN ELECTRIC SHOCK		N/A
(A.1)	Comply with A.2 or A.3		N/A
(A.2)	Voltage ≤ 35 V peak or ≤ 60 V d.c.:		N/A
(A.3)	If voltage measured according Clause A.2 exceeds the limit value; touch current does not exceed 0,7 mA (peak) or 2 mA d.c.:		N/A

(C)	ANNEX C – PARTICULAR REQUIREMENTS FOR ELECTRONIC LAMP CONTROL GEAR WITH MEANS OF PROTECTION AGAINST OVERHEATING		N/A
(C3)	GENERAL REQUIREMENTS		N/A
(C3.1)	Thermal protection means integral with the convertor, protected against mechanical damage		N/A
	Renewable only by means of a tool		N/A
	If function depending on polarity, for cord-connected equipment protection means in both leads		N/A
	Thermal links comply with IEC 60691		N/A
	Electrical controls comply with IEC 60730-2-3		N/A
(C3.2)	No risk of fire by breaking (clause C7)		N/A
(C5)	CLASSIFICATION		N/A
	a) automatic resetting type		—
	b) manual resetting type		—
	c) non-renewable, non-resetting type		—
	d) renewable, non-resetting type		—
	e) other type of thermal protection; description ...:		—
(C6)	MARKING		N/A
(C6.1)	Symbol for temperature declared thermally protected ballasts		N/A
(C6.2)	Declaration of the type of protection provided		N/A
(C7)	LIMITATION OF HEATING		N/A
(C7.1)	Preselection test:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test sample placed for at least 12 h in an oven having temperature ($t_c - 5$) K		N/A
	No operation of the protection device		N/A
(C7.2)	Functioning of protection means:		N/A
	Normal operation of the sample in a test enclosure according to Annex D at an ambient temperature such that ($t_c + 0; -5$) °C is obtained		N/A
	No operation of the protection device		N/A
	Introducing of the most onerous test condition determined during test of clause 14.2 to 14.5		N/A
	Output of windings connected to the mains supply short-circuited, and other part of the controlgear operated under normal conditions		N/A
	Increasing of the current through the windings continuously until operation of the protection means		N/A
	Continuous measuring of the highest surface temperature		N/A
	Ballasts according to C5 a) or C5 e) operated until stable conditions are achieved		N/A
	Automatic-resetting thermal protectors working 3 times		N/A
	Ballasts according to C5 b) working 6 times		N/A
	Ballasts according to C5 c) and C5 d) working once		N/A
	Highest temperature does not exceed the marked value		N/A
	Any overshoot of 10% over the marked value within 15 min		N/A
	After 15 min value not exceed marked value		N/A
(D)	ANNEX D – REQUIREMENTS FOR CARRY OUT THE HEATING TESTS OF THERMALLY PROTECTED LAMP CONTROLGEAR		N/A
	Tests in C7 performed in accordance with Annex D, if applicable		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

(F)	ANNEX F - DRAUGHT-PROOF ENCLOSURE		N/A
	Draught-proof enclosure in accordance with the description		N/A
	Dimensions of the enclosure		N/A
	Other design; description		N/A

(H)	ANNEX H - TESTS		N/A
	All tests performed in accordance with the advice given in Annex H, if applicable		N/A

(I)	ANNEX I – ADDITIONAL REQUIREMENTS FOR BUILT-IN MAGNETIC BALLASTS WITH DOUBLE OR REINFORCED INSULATION		N/A
(I.6)	Symbol on ballasts with double or reinforced insulation		N/A
	Symbol explained in manufacturers catalogue		N/A
(I.9)	No protective earthing terminal		N/A
(I.12)	Devices for limiting the temperature bridged		—
	After the test according clause 13		N/A
	At least six of seven ballast start the lamp and the current not exceed 115%		N/A
	Insulation resistance not less than 4 MΩ between winding and case for all ballasts		N/A
	All ballasts withstand electric strength test reduced to 35% of values in Table 1 of IEC 61347-1		N/A
(I.15)	Built-in ballasts with double or reinforced insulation comply with corresponding values of creepage and clearances in IEC 60598-1		N/A

(L)	ANNEX L - PARTICULAR ADDITIONAL REQUIREMENTS FOR CONTROLGEARS PROVIDING SELV		N/A
(L.3)	Classification		N/A
	Class I	Yes ☐ No ☐	—
	Class II	Yes ☐ No ☐	—
	Class III	Yes ☐ No ☐	—

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Clause	Requirement + Test	Result - Remark	Verdict
	non-inherently short circuit proof controlgear	Yes ☐ No ☐	—
	inherently short circuit proof controlgear	Yes ☐ No ☐	—
	fail safe controlgear	Yes ☐ No ☐	—
	non-short-circuit proof controlgear	Yes ☐ No ☐	—
(L.4)	Marking		N/A
	Adequate symbols are used		N/A
(L.5)	Protection against electric shock		N/A
	Comply with clause 9.2 of IEC 61558-1		N/A
(L.6)	Heating		N/A
	No excessive temperatures in normal use		N/A
	Value if capacitor t_c marked		—
	Winding insulation classified as Class		—
	Comply with tests of clause 14 of IEC 61558-1 with adjustments		N/A
(L.7)	Short-circuit and overload protection		N/A
	Comply with tests of clause 15 of IEC 61558-1 with adjustments		N/A
(L.8)	Insulation resistance and electric strength		N/A
(L.8.1)	Conditioned 48 h between 91 % and 95 %		N/A
(L.8.2)	Insulation resistance		N/A
	Between input- and output circuits not less than 5 MΩ		N/A
	Between metal parts of class II convertors which are separated from live parts by basic insulation only and the body not less than 5 MΩ		N/A
	Between metal foil in contact with the inner and outer surfaces of enclosures of insulating material not less than 2 MΩ		N/A
(L.8.3)	Electric strength		N/A
	1) Between live parts of input circuits and live parts of output circuits		N/A
	2) Over basic or supplementary insulation between:		N/A
	a) live parts having different polarity		N/A
	b) live parts and body if intended to be connected to protective earth		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	c) accessible metal parts and a metal rod of the same diameter as the flexible cable or cord		N/A
	d) live parts and an intermediate metal part		N/A
	e) intermediate metal parts and the body		N/A
	f) each input circuit and all other input circuits ...		N/A
	3) Over reinforced insulation between the body and live parts		N/A
(L.9)	Construction		
(L.9.1)	Transformer comply with 19.12 of IEC 61558-1 and 19 of IEC 61558-2-6		N/A
	HF transformer comply with 19 of IEC 61558-2-16		N/A
(L.10)	Components		N/A
	Protective devices comply with 20.6 – 20.11 of IEC 61558-1		N/A
(L.11)	Creepage distances, clearances and distances through insulation		N/A
	Creepage distances and clearances not less than in Clause 16		N/A
	Distance through insulation according Table L.5 in IEC 61347-1		N/A
	1) Basic distance through insulation		N/A
	Required distance (mm)		—
	Measured (mm)		N/A
	Supplementary information		—
	2) Supplementary distance through insulation		N/A
	Required distance (mm)		—
	Measured (mm)		N/A
	Supplementary information		—
	3) Reinforced distance through insulation		N/A
	Required distance (mm)		—
	Measured (mm)		N/A
	Supplementary information		—
(N)	ANNEX N - REQUIREMENTS FOR INSULATION MATERIALS USED FOR DOUBLE OR REINFORCED INSULATION		N/A
(N.4)	General requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
(N.4.1)	Material comply with IEC 60085 and IEC 60216 series		N/A
(N.4.2)	Solid insulation		N/A
	Electric strength test at least 5 kV or 1,35 x test voltage in Table N.1		N/A
	If not classified according IEC 60085 and IEC 60216 series: Electric strength test increased 10 % to 5,5 kV or 1,5 x test voltage in Table N.1		N/A
(N.4.3)	Thin sheet insulation		N/A
(N.4.3.1)	Thickness and composition of thin sheet insulation		N/A
	- Inside the ballast and not subjected to handling or abrasion during the production and during maintenance		N/A
	- Non-separated layers: Min. 3 layers and fulfil mandrel test of 150N		N/A
	- Separated layers: Min. 2 layers and each layer fulfil mandrel test of 50N		N/A
	- Separated layers (alternative): Min. 3 layers and 2/3 of the layers fulfil mandrel test of 100N		N/A
(N.4.3.2)	Mandrel test (electric strength test during mechanical stress)		N/A
	Electric strength test after mandrel test:		N/A
	- Non-separated layers: min. 5 kV or 1,35 x test voltage in Table N.1		N/A
	- 2/3 of min. 3 separated layers: min. 5 kV or 1,25 x test voltage in Table N.1		N/A
	- one of 2 separated layers: min. 5 kV or 1,25 x test voltage in Table N.1		N/A
	No flashover or breakdown occurred		N/A
(O)	ANNEX O - ADDITIONAL REQUIREMENTS FOR BUILT-IN ELECTRONIC CONTROLGEAR WITH DOUBLE OR REINFORCED INSULATION		N/A
(O.6)	Marking		N/A
	Marking according clause 7 (7)	See clause 7	N/A
	Special symbol		N/A
	Meaning of the special symbol explained in catalogue		N/A
(O.7)	Protection against accidental contact with live parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Requirements of clause 8 (10)	See clause 8	N/A
	Test finger not possible to make contact with basic insulated metal parts		N/A
(O.8)	Terminals		N/A
	Clause 9 (8)	See clause 9	N/A
(O.9)	Provision for earthing		N/A
	Functional earthing terminals comply with clause 9 of part 1		N/A
	No protective earthing terminal		N/A
(O.10)	Moisture resistance and insulation		N/A
	Clause 11 (11)	See clause 11	N/A
(O.11)	Electric strength		N/A
	Clause 12 (12)	See clause 12	N/A
(O.13)	Fault conditions		N/A
	Clause - (14)	See clause 14	N/A
	End of test, between live part and accessible metal parts or external parts of insulating material in contact with the supporting surface comply with dielectric strength test reduced to 35 % of values according Table 3 in part 1		N/A
	Insulation resistance according to Cl.10 between live part and accessible metal parts or external parts of insulating material in contact with the supporting surface not less than 4 MΩ		N/A
(O.14)	Construction		N/A
	Clause 17 (15)	See clause 17	N/A
	Accessible metal parts insulated from live parts by double or reinforced insulation		N/A
	Live part insulated from supporting surface in contact with external faces by double or reinforced insulation		N/A
(O.15)	Creepage distances and clearances		N/A
	Clause 18 (16)	See clause 18	N/A
	Comply with corresponding values for luminaries in IEC 60598-1		N/A
(O.16)	Screws, current-carrying parts and connections		N/A
	Clause 19 (17)	See clause 19	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
(O.17)	Resistance to heat and fire		N/A
	Clause 20 (18)	See clause 20	N/A
(O.18)	Resistance to corrosion		N/A
	Clause 21 (19)	See clause 21	N/A

(P)	ANNEX P - Creepage distances and clearances and distance through isolation (DTI) for lamp controlgear which are protected against pollution by the use of coating or potting		N/A
(P.1)	General		N/A
	P.2 applies if creepage distances less than the minimum in Table 7 and 8		N/A
	P.3 applies if clearance less than the minimum in Table 9, 10 and 11		N/A
(P.2)	Creepage distances		N/A
(P.2.2)	Minimum creepage distances for working voltages and rated voltages with frequencies up to 30 kHz (Table P.1)		N/A
	Basic or supplementary insulation:		N/A
	Required creepage		—
	Measured.....		N/A
	Supplementary information		—
	Reinforced insulation:		N/A
	Required creepage		—
	Measured.....		N/A
	Supplementary information		—
(P.2.3)	Creepage distances for working voltages with frequencies above 30 kHz (Table P.2)		N/A
	Voltage $\hat{U}_{out}$ kV		—
	Frequency.....		—
	Required distance		—
	Measured.....		N/A
	Supplementary information		—
(P.2.4)	Compliance with the required creepage distances		N/A
(P.2.4.1)	Compliance in accordance with 16.3.3 and test according P.2.4.2		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
(P.2.4.3)	Electrical tests after conditioning		N/A
(P.2.4.3.1)	Insulation resistance and electric strength according Clause 11 and 12		N/A
(P.3)	Distance through isolation		N/A
(P.3.4)	Electrical tests after conditioning		N/A
(P.3.4.1)	Insulation resistance and electric strength according Clause 11 and 12		N/A
(P.3.4.2)	Impulse voltage dielectrical test		N/A
	Basic or supplementary insulation:		N/A
	Working/rated voltage		—
	Impulse voltage.....		N/A
	Supplementary information		—
	Reinforced insulation:		N/A
	Working/rated voltage		—
	Impulse voltage.....		N/A
	Supplementary information		—

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1	TABLE: Critical components information				See report 50331759 001		N/A
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
--	--	--	--	--	--	--	
Description:		--					
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Description:		--					
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Description:		--					
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Description:		--					
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Supplementary information: N/A							
¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.							
The codes above have the following meaning:							
A - The component is replaceable with another one, also certified, with equivalent characteristics							
B - The component is replaceable if authorised by the test house							
C - Integrated component tested together with the appliance							
D - Alternative component							

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	Screw terminals (part of the controlgear)		N/A
(14)	SCREW TERMINALS (IEC 60598-1)		N/A
(14.2)	Type of terminal..... :		—
	Rated current (A)..... :		—
(14.3.2.1)	One or more conductors		N/A
(14.3.2.2)	Special preparation		N/A
(14.3.2.3)	Terminal size		N/A
	Cross-sectional area (mm ²) :		—
(14.3.3)	Conductor space (mm) :		N/A
(14.4)	Mechanical tests		N/A
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread) :	M	N/A
	External wiring		N/A
	No soft metal		N/A
(14.4.5)	Corrosion		N/A
(14.4.6)	Nominal diameter of thread (mm) :		N/A
	Torque (Nm) :		N/A
(14.4.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N) :		N/A
(14.4.8)	Without undue damage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 3	Screwless terminals (part of the controlgear)		N/A
(15)	SCREWLESS TERMINALS (IEC 60598-1)		N/A
(15.2)	Type of terminal..... :		—
	Rated current (A)..... :		—
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5)	Terminals and connections for internal wiring		N/A
(15.5.1)	Mechanical tests		N/A
(15.5.1.1.1)	Pull test spring-type terminals (4 N, 4 samples) :		N/A
(15.5.1.1.2)	Pull test pin or tab terminals (4 N, 4 samples)..... :		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N/A
(15.5.2)	Electrical tests		N/A
	Voltage drop (mV) after 1 h (4 samples) :		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles:		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples)..... :		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples)..... :		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples)..... :		N/A
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples)..... :		N/A

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
(15.6)	Terminals and connections for external wiring		N/A
(15.6.1)	Conductors		N/A
	Terminal size and rating		N/A
15.6.2	Mechanical tests		N/A
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)		N/A
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N)		N/A
(15.6.3)	Electrical tests		N/A
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1		N/A

(15.6.3.1) (15.6.3.2)	TABLE: Contact resistance test / Heating tests										N/A
	Voltage drop (mV) af ter 1 h										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
	Voltage drop of two inseparable joints										N/A
	Voltage drop af ter 10th alt. 25th cycle										--
	Max. allowed voltage drop (mV)					N/A					—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
	Voltage drop af ter 50th alt. 100th cycle										N/A
	Max. allowed voltage drop (mV)					N/A					—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
	Voltage drop af ter 50th alt. 100th cycle										N/A
	Max. allowed voltage drop (mV)					N/A					—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
	Continued ageing: voltage drop af ter 10th alt. 25th cycle										N/A
	Max. allowed voltage drop (mV)					N/A					—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
	Continued ageing: voltage drop af ter 50th alt. 100th cycle										N/A
	Max. allowed voltage drop (mV)					N/A					—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	

IEC 61347-2-11										
Clause	Requirement + Test						Result - Remark			Verdict
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Supplementary information: N/A										

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict

List of test equipment used: N/A

A completed list of used test equipment shall be provided in the Test Reports when a Manufacturer Testing Laboratory according to CTF stage 1 or CTF stage 2 procedure has been used.

Other forms with a different layout but containing corresponding information are also acceptable.

Note: This page may be removed when CTF stage 1 CTF stage 2 are not used. See also clause 4.8 in OD 2020 for more details.

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date
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Measurement Equipment List

Testing Start Date 07.01.2020
 Testing end date 19.03.2020

Project Manager Zeen Xu

Test Report Number 50331759 001
 Order Item Number 0180118291B00060

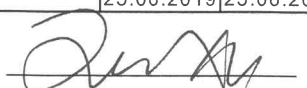
Customer TOPJET OPTOELECTRONIC CO., LTD
 Product Name LED Ceiling Light
 Comment

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Equip.	Description	Model	Manufacturer	Last Date DD.MM.YYYY	Due Date DD.MM.YYYY
G1809685	Temp. & Humidity recorder	175H1	Testo	08.04.2019	08.04.2020
G1809772	Spectroradiometer for safety evaluation	SPR-5000C\MPR-16	Sensing	30.05.2019	30.05.2020
G1809773	Illuminance meter	Z-10	Everfine	20.01.2020	20.01.2021
G1809775	Digital power meter	WT210	YOKOGAWA	25.06.2019	25.06.2020
G1809776	Standard light source	36V/400W	Sensing	31.10.2019	31.10.2021
G1822756	Usb flash disk	DTSE9 G2 USB 3.0	KINGSTON	NA*	NA*
G1809691	Temp. & Humidity recorder	175H1	Testo	06.01.2020	06.01.2021
G1809438	Withstanding voltage tester	TOS5051A	KIKUSUI	23.12.2019	23.12.2020
G1809692	Temp. & Humidity recorder	175H1	Testo	14.04.2019	14.04.2020
G1809771	Lumi. Endurance testing system	AOB194Z-9K4-UIP	Edeson	16.07.2019	16.07.2020
G1809617	AC Power Source	TPS500B	Everfine	NA*	NA*
G1810397	Midi Logger	GL840M	Graphtec Corporation	16.07.2019	16.07.2020
G1809486	Torque screw driver	RTD260CN	TOHNICHI	02.07.2019	02.07.2020
G1809974	Tape Measure	91316A	SATA	08.01.2020	08.01.2021
G1809442	Insulation resistance meter	3453	HIOKI	25.06.2019	25.06.2020
G1809527	Digital display caliper	91511	Sata	02.07.2019	02.07.2020
G1809488	Torque screw driver	RTD60CN	TOHNICHI	04.07.2019	04.07.2020
G1809996	Electronic Scales	BWS-30-SNR	XMBLS	24.06.2019	24.06.2020
G1810417	Stopwatch	HW30	EXTECH	11.11.2019	11.11.2020
G1809497	Tubular measuring force apparatus	LTZ-10	JIANGSHU	02.07.2019	02.07.2020
G1809522	Digital display caliper	91511	Sata	10.10.2019	10.10.2020
G1809482	Impact hammer	F22.50	PTL	07.01.2020	07.01.2021
G1809744	LCR tester	HF2817G	CZHY	04.12.2019	04.12.2020
G1809945	Oven	ST120B1	ESPEC	25.06.2019	25.06.2020
G1809451	Glow-wire tester	F3-3020	Safeequipment	02.04.2019	02.04.2020
G1809768	Climate chamber	SETH-Z-042L	ESPEC	02.04.2019	02.04.2020
G1809512	High voltage probe	P-5210	TEKTRONIX	01.07.2019	01.07.2020
G1809448	True RMS multimeter	FLUKE17B+	FLUKE	02.04.2019	02.04.2020
G1809541	Dial slant ruler	LS160II	Laisai	02.07.2019	02.07.2020
G1809942	Digital power meter	WT210	YOKOGAWA	25.06.2019	25.06.2020

* No entry for devices that are not subject to regular calibration
 or require initial verification/calibration only.

where required, Signature:



Measurement Equipment List

Testing Start Date 07.01.2020
 Testing end date 19.03.2020

Project Manager Zeen Xu

Test Report Number 50331759 001
 Order Item Number 0180118291B00060

Customer TOPJET OPTOELECTRONIC CO., LTD
 Product Name LED Ceiling Light
 Comment

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Equip.	Description	Model	Manufacturer	Last Date DD.MM.YYYY	Due Date DD.MM.YYYY
G1809452	Tracking tester	DML600	SHDM	23.12.2019	23.12.2020
G1809467	D.C power supply	PAT160-25T	KIKUSUI	NA*	NA*
G1809673	Temp. & Humidity recorder	175H1	Testo	08.04.2019	08.04.2020
G1809479	Ball pressure tester	QK1	SHQK	29.12.2018	29.12.2021
G1809480	Ball pressure tester	QK1	SHQK	29.12.2018	29.12.2021
G1809741	Power cord pulling and torsion tester	DMS703	DAMS	02.04.2019	02.04.2020
G1809450	Leakage current tester	3156	HIOKI	09.01.2020	09.01.2021

* No entry for devices that are not subject to regular calibration
 or require initial verification/calibration only.

where required, Signature: 