Test Report issued under the responsibility of:

TEST REPORT
IEC 62560
Self-Ballasted LED-Lamp
for general lighting services by voltage > 50V Safety specifications

Report Number. .....:	**GZES190702129302**
Date of issue .....:	2019-09-10, **Amendment No. 1: 2020-09-15**
Total number of pages	**12**
Name of Testing Laboratory preparing the Report.....:	SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch
Applicant's name.....:	Foshan Electrical and Lighting Co., Ltd.
Address .....:	64 North Fenjiang Road, Foshan, Guangdong, China.
Test specification:	
Standard.....:	IEC 62560:2011, AMD1:2015
Test procedure .....:	SGS-CSTC / CE_LVD
Non-standard test method.....:	N/A
Test Report Form No.....:	IEC62560C
Test Report Form(s) Originator.....:	DEKRA Certification B.V.
Master TRF.....:	Dated 2018-12-21

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Test item description .....:		Self-ballasted LED Lamp (LED Lamp)	
Trade Mark .....:		**FSL**	
Manufacturer.....:		Same as applicant	
Model/Type reference.....:		See model list in page 6	
Ratings .....:		220 V – 240 V; 50 Hz; other details see model list in page 6	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch	
Testing location/ address.....:		198 Kezhu Road, Science City, Economic & Technology Development Area, Guangzhou, Guangdong, China	
Tested by (name, function, signature) .....:		Ivan Zhang / Project Engineer	Ivan Zhang
Approved by (name, function, signature)...:		Ivory Lu / Reviewer	Ivory Lu
☐	**Testing procedure: CTF Stage 1:**	N/A	
Testing location/ address.....:			
Tested by (name, function, signature) .....:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 2:**	N/A	
Testing location/ address.....:			
Tested by (name + signature) .....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 3:**	N/A	
☐	**Testing procedure: CTF Stage 4:**	N/A	
Testing location/ address.....:			
Tested by (name, function, signature) .....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)...:			
Supervised by (name, function, signature) :			

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

This amendment Report Ref. No. GZES190702129302 to the original Report Ref. No. GZES190702129301, it contains 12 Report Pages.

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
Clause 13 Fault conditions	198 Kezhu Road, Science City, Economic & Technology Development Area, Guangzhou, Guangdong, China

Summary of compliance with National Differences (List of countries addressed):

EU Group differences was considered.

☒ The product fulfils the requirements of EN 62493: 2015 and EN 62560: 2012 + A1: 2015.

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.

Representative

FSL®

A60-5-65/A12J/14/5
5W I:40 mA 6500K
220-240V 50Hz



Printed on enclosure

Remark:

1. The height of "" symbol is not less than 7 mm;
2. The height of CE symbol is not less than 5 mm;
3. According to the standard, warning and text required by the standard should be written in the official language(s) of the country in which the appliance is to be sold. The applicant should ensure that the samples in future production fulfill the requirement;
4. As declared by the applicant, the importer **(and manufacturer, if it is different)**'s name, registered trade name or registered trade mark and the postal address will be marked on the products before being place on the market. The contact details shall be in a language easily understood by end-users and market surveillance authorities;
5. Marking on the packaging or in a document accompanying the electrical equipment is only acceptable if it is not possible to place such markings on the product.
6. Other models have similar label as above, just model no., rated wattage, rated current and correlated color temperature are different.

Test item particulars.....:	
Classification of installation and use .....:	—
Supply Connection .....:	E27, B22d Lamp cap
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 .....:	**2020-08-21**
Date (s) of performance of tests .....:	**2020-08-21 to 2020-09-08**

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.

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Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 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) .....: Same as applicant

General product information and other remarks:

1. Self-ballasted LED lamp.
2. The LED lamps have non-SELV drivers, integrated with E27, B22d lamp cap and they cannot be used in the dimmable circuit. For dry location use only.
3. All models have similar construction, only different in the lamp cap, circuit diagram and size of appearance.

Model list

Model	Power	Input current	Lamp cap
A60-5-XX/A12J/14/5	5 W	40 mA	E27
A60-7-XX/A12J/14/5	7 W	60 mA	
A60-8-XX/A12J/14/5	8 W	66 mA	
A60-9-XX/A12J/14/5	9 W	72 mA	
A60-12-XX/A12J/14/5	12 W	100 mA	
A60-15-XX/A12J/14/5	15 W	119 mA	
A60-5-XX/A13J/14/5	5 W	40 mA	B22d
A60-7-XX/A13J/14/5	7 W	60 mA	
A60-8-XX/A13J/14/5	8 W	66 mA	
A60-9-XX/A13J/14/5	9 W	72 mA	
A60-12-XX/A13J/14/5	12 W	100 mA	
A60-15-XX/A13J/14/5	15 W	119 mA	
XX = “27-65”, means color temperature, 27 means 2700 K, 65 means 6500 K.			

The Original Test Report dated 2019-09-10, Amendment No.1: 2020-09-15

Amendment 1 Report:

The original Test Report Ref. No. GZES190702129301, dated 2019-09-10 was modified on 2020-09-15 to include the following changes and/or additions:

- **Added alternative fuse resistor for A60-9-XX/A12J/14/5, A60-9-XX/A13J/14/5, A60-12-XX/A12J/14/5, A60-12-XX/A13J/14/5 in components list for details.**

After review, the fault condition was tested according to the clause 13 of EN 62560: 2012 + A1: 2015.

IEC 62560			
Clause	Requirement + Test	Result - Remark	Verdict

13	**FAULT CONDITIONS**		**P**
13.2	Fault conditions: where diagram indicates fault condition impairs safety, electronic components have been short-circuited or disconnected	(see appended table)	P
13.3	When operated under fault conditions the lamp		P
	- does not emit flames or molten material		P
	- does not produce flammable gases or smoke		P
	- live parts not accessible		P
	After the tests the insulation resistance with d.c. 1000 V complies with requirements of Cl. 8.1.....:	20 MΩ	P

13	**TABLE: tests of fault conditions (A60-9-65/A12J/14/5)**	**P**
Part	Simulated fault	Hazard
LED1	Shorted circuit; LED1 cut off; recoverable when removed the fault condition	NO
LED1	Open circuit; all LED cut off, recoverable when removed the fault condition	NO
CE1	Shorted circuit; fuse broken; non- recoverable when removed the fault condition	NO
U1	Shorted circuit; fuse broken; non- recoverable when removed the fault condition	NO
DB1	Shorted circuit; fuse broken; non- recoverable when removed the fault condition	NO
DB1	Open circuit; no working; recoverable when removed the fault condition	NO

13	**TABLE: tests of fault conditions (A60-12-65/A12J/14/5)**	**P**
Part	Simulated fault	Hazard
LED1	Shorted circuit; LED1 cut off; recoverable when removed the fault condition	NO
LED1d	Open circuit; all LED cut off, recoverable when removed the fault condition	NO
CE1	Shorted circuit; fuse broken; non- recoverable when removed the fault condition	NO
U1	Shorted circuit; fuse broken; non- recoverable when removed the fault condition	NO
DB1	Shorted circuit; fuse broken; non- recoverable when removed the fault condition	NO
DB1	Open circuit; no working; recoverable when removed the fault condition	NO

IEC 62560			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1	**TABLE: Critical components information**					
Object / part No.	**Code**	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
LED module (A60-5-XX/A12J/14/5, A60-7-XX/A12J/14/5, A60-8-XX/A12J/14/5, A60-5-XX/A13J/14/5, A60-7-XX/A13J/14/5, A60-8-XX/A13J/14/5)	B	SHINEON (Beijing) Technology Co., Ltd.	2835	Vf: 18,0 ~ 21,0 V, If: 30 mA; CCT: 2700 K-6500 K	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017	Tested with appliance
	D	Foshan NationStar Optoelectronics Co., Ltd.	2835	Vf: 18,0 ~ 21,0 V, If: 30 mA; CCT: 2700 K-6500 K	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017	Tested with appliance
LED module (A60-9-XX/A12J/14/5, A60-9-XX/A13J/14/5)	B	SHINEON (Beijing) Technology Co., Ltd.	2835	Vf: 18,0 ~ 21,0 V, If: 30 mA; CCT: 2700 K-6500 K	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017	Tested with appliance
	D	Foshan NationStar Optoelectronics Co., Ltd.	2835	Vf: 18,0 ~ 21,0 V, If: 30 mA; CCT: 2700 K-6500 K	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017	Tested with appliance
	B	Bridgelux. Inc. LED Lighting	2835	Vf: 18,0 ~ 21,0 V, If: 30 mA; CCT: 2700 K-6500 K	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017	Tested with appliance
LED module (A60-12-XX/A12J/14/5, A60-12-XX/A13J/14/5)	B	Foshan NationStar Optoelectronics Co., Ltd.	2835	Vf: 17,0 ~ 20,0 V, If: 60 mA; CCT: 2700 K-6500 K	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017	Tested with appliance

IEC 62560						
Clause	Requirement + Test			Result - Remark		Verdict
	D	Huizhou Foryou Optoelectronics Technology Co., Ltd.	2835	Vf: 17,0 ~ 20,0 V, If: 60 mA; CCT: 2700 K-6500 K	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017	Tested with appliance
LED module (A60-15-XX/A12J/14/5, A60-15-XX/A13J/14/5)	B	Bridgelux. Inc. LED Lighting	2835	Vf: 8,6 ~ 9,6 V, If: 3 mA; CCT: 2700 K-6500 K	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017	Tested with appliance
	D	Foshan NationStar Optoelectronics Co., Ltd.	2835	Vf: 8,6 ~ 9,6 V, If: 3 mA; CCT: 2700 K-6500 K	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017	Tested with appliance
PCB	B	Quanzhou Jintian Electronic circuit board Co., Ltd.	JAL-5, JAL-6	V-0; 130 °C	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017 UL 94: 6 ED, 2013	UL E239807 & Tested with appliance
	D	Jiang xi Leadfly circuit Co., Ltd.	LD-8	V-0; 130 °C	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017 UL 94: 6 ED, 2013	UL E333645 & Tested with appliance
	D	Guang Zhou Hong Yu Electronic Co., Ltd.	HY-5, HY-6, HY-8	V-0; 130 °C	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017 UL 94: 6 ED, 2013	UL E309772 & Tested with appliance

IEC 62560						
Clause	Requirement + Test			Result - Remark		Verdict
Input wire	B	Foshan JianQiang Electronic & Electrical Co., Ltd.	3135	200 °C; 600 Vac, 24 AWG	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017 UL 758: 3ED, 2014	UL E256415 & Tested with appliance
Lampshade	B	Xiamen Tianyu Plastic Industry Co., Ltd.	PBT-TGA(f1)	V-0	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017 UL 746C: 7ED, 2018	UL E309739 & Tested with appliance
	D	Xiamen Hongshengxing Industry and Trade Co., Ltd	HSX-1X	V-0	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017 UL 746C: 7ED, 2018	UL E464975 & Tested with appliance
Fusing resistor (A60-5-XX/A12J/14/5, A60-7-XX/A12J/14/5, A60-8-XX/A12J/14/5, A60-5-XX/A13J/14/5, A60-7-XX/A13J/14/5, A60-8-XX/A13J/14/5)	B	Shenzhen Great Electronics Co., Ltd.	SRF-1W	30 Ω/1 W	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017 UL 1412: 5ED, 1999	UL E301541 & Tested with appliance
Fusing resistor (A60-9-XX/A12J/14/5, A60-12-XX/A12J/14/5, A60-9-XX/A13J/14/5, A60-12-XX/A13J/14/5)	B	Shenzhen Great Electronics Co., Ltd.	SRF-1W	20 Ω/1 W	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017 UL 1412: 5ED, 1999	UL E301541 & Tested with appliance

IEC 62560			
Clause	Requirement + Test	Result - Remark	Verdict

	D	**Shenzhen Great Electronics Co., Ltd.**	**SRF-1W**	**30 Ω/1 W**	**IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017 UL 1412: 5ED, 1999**	**UL E301541 & Tested with appliance**
Fusing resistor (A60-15-XX/A12J/14/5, A60-15-XX/A13J/14/5)	B	Shenzhen Great Electronics Co., Ltd.	SRF-2W	20 Ω/2 W	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017 UL 1412: 5ED, 1999	UL E301541 & Tested with appliance
Heat-shrinkable tube	B	Guangzhou Kaiheng Enterprise Group	K-2 (+)	125 °C,600 Vac	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017 UL 224: 6ED, 2006	UL E214175 Test with appliance
	D	ShenZhenWoer Heat-Shrinkable Material Co., Ltd.	RSFR-HT	150 °C; 600 V AC	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017 UL 224: 6ED, 2006	UL E316016 Test with appliance
Plastic enclosure	B	Dongguan Powide Opto-Electronic&Heat Dissipation Technology.Co., Ltd.	PA-AF0915	V-0; 130 °C	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017 UL 746C: 7ED, 2018	UL E487857 Tested with appliance

IEC 62560						
Clause	Requirement + Test			Result - Remark		Verdict
	D	Guangdong Great Materials Co., Ltd .	TCP.PA-PS28A	V-0; 130 °C	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017 UL 746C: 7ED, 2018	UL E464888 Tested with appliance
Connector in PCB	B	Kingfa Sci & Tech Co., Ltd.	Vicryst R8(gg) (ccc)(r5)	V-0; 130 °C	IEC 62560: 2011 + A1: 2015, EN 62560: 2012 + A1: 2015 AS/NZS 62560: 2017 UL 746C: 7ED, 2018	UL E171666 Tested with appliance
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						

---End of Amendment No.1 ---