TEST REPORT
IEC TR 62778
Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires

Report Reference No...... :	EED31J002087
Compiled by (+ signature)…..……:	Sain Chen
Reviewed by (+ signature)…….. :	Torres He
Approved by (+ signature)……..:	Amo Liu
	Lab Supervisor
Date of issue.....:	July 26, 2017

Testing Laboratory.....:	Centre Testing International Group Co., Ltd.
Address..... :	Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China
Applicant's name.....:	SHENZHEN REFOND OPTOELECTRONICS CO., LTD.
Address..... :	8/F, Building 1, 10th Industrial Zone, Tianliao Community, Gongming, Guangming New District, Shenzhen, Guangdong, China
Manufacturer's name.....:	SHENZHEN REFOND OPTOELECTRONICS CO., LTD.
Address..... :	8/F, Building 1, 10th Industrial Zone, Tianliao Community, Gongming, Guangming New District, Shenzhen, Guangdong, China
Test specification:	
Standard.....:	IEC TR 62778:2014 (Second Edition)
Test procedure..... :	Test report
Non-standard test method……..:	N/A
Test Report Form No..... :	IEC62778A
TRF Originator.....:	CTI
Master TRF.....:	Dated 2016-02
Sample Name…….. :	LED
Model/Type reference……..:	RF-Q30RA57B-24-J2
Ratings……..:	5,8-6,0VDC, 150mA

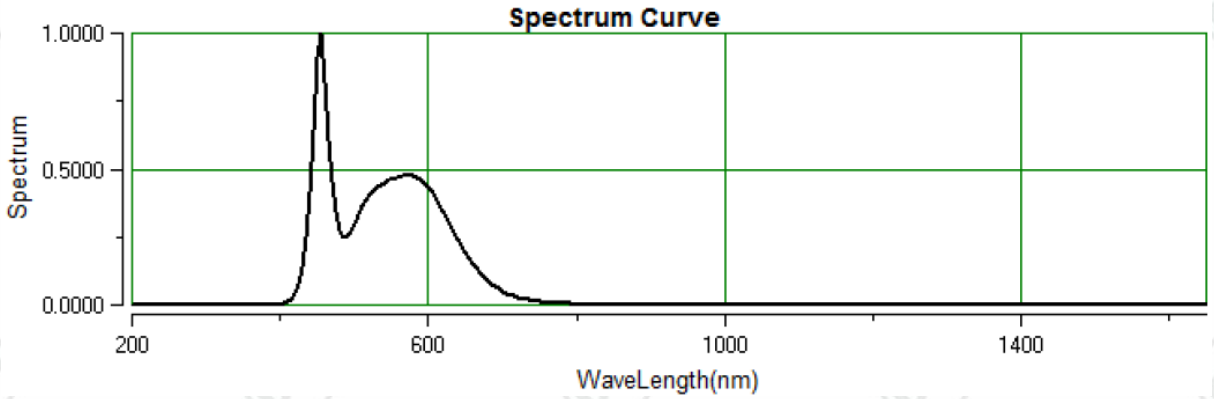
Check No.: 2457555870

Summary of testing:

Test conditions:

1. Ambient temperature: 25.3℃; Humidity: 50%;
2. Measurement distance: 200mm;
3. Aperture stop: 7mm

Spectral Distribution



Conclusion: Sample tested is considered as **Risk 1 Group.**

Tests performed (name of test and test clause):	**Testing location:**
All applicable tests# as described in Test Case and Measurement Sections were performed.	Electronic Testing Building, Shahe Road Xili, Nanshan Disrtict, Shenzhen, China

Summary of compliance with National Differences:

N/A

Copy of marking plate:

N/A

Test item particulars..... :	
Product evaluated..... :	☒ LED package ☐ LED module ☐ Lamp ☐ Luminaire
Rated voltage (V)..... :	5,8-6,0
Rated current (mA)..... :	150
Rated CCT (K)..... :	N/A
Rated Luminance (Mcd/m^2)..... :	N/A
Component report data used ..... :	☐ Not applicable ☒ LED package ☐ LED module ☐ Lamp
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..... :	July 17, 2017
Date (s) of performance of tests..... :	July 17, 2017
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. The tested sample(s) and the sample information are provided by the client. Throughout this report a ☒ comma / ☐ point is used as the decimal separator.	
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)..... :	N/A
General product information: Test voltage is 6,0V DC.	

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Clause	Requirement + Test	Result - Remark	Verdict

7	**MEASUREMENT INFORMATION FLOW**		P
7.1	**Basic flow**		N/A
	'Law of conservation of luminance' applied		N/A
	Use of only true luminance/radiance values		N/A
	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)		P
	Non-standard condition applied		N/A
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		N/A
8	**RISK GROUP CLASSIFICATION**		P
	Risk group achieved:		N/A
	-... Risk Group 0 unlimited		N/A
	-... Risk Group 1 unlimited		P
	- E_{thr} ..... (lx) : Distance to reach RG2..... (m) :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	TABLE: Spectroradiometric measurement		**P**
	Measurement performed on:	☒ LED package ☐ LED module ☐ Lamp ☐ Luminaire	
	Model number.....	LED	
	Test voltage (V).....	6,0	—
	Test current (mA).....	196	—
	Test frequency (Hz).....	N/A	—
	Ambient, t (°C).....	25,3	—
	Measurement distance.....	☒ 20 cm ☐ ... cm	—
	Source size	☒ Non-small ☐ Small : 17 mm	—
	Field of view	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	—

Item	Symbol	Units	Result
Correlated colour temperature	CCT	K	/
x/y colour coordinates	/	/	/
Blue light hazard radiance	L_B	$W/(m^2 \cdot sr^1)$	5,601E+03
Luminance	L	cd/m^2	6,415E+06

Photo Document

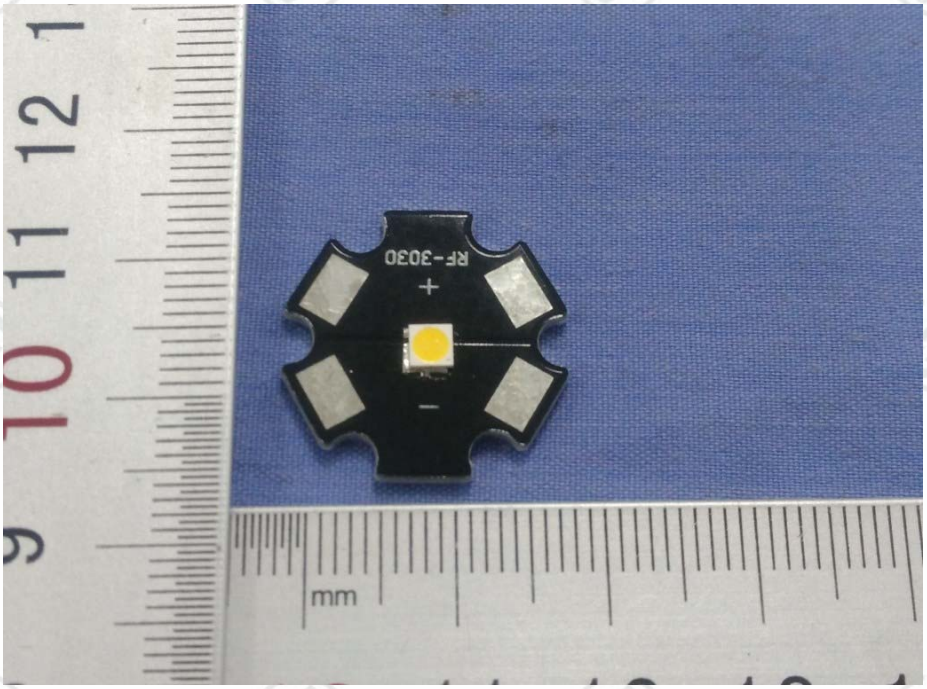

Fig. 1 - Overall view of the sample

Remark:"#" indicates the testing item(s) was (were) fulfilled by subcontracted lab

*** End of Report ***