TEST REPORT

IEC TR 62778

Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires

Report reference No ..... :	RSZ160901555-03
Compiled by (+ signature) ..... :	Youyou Huang
Approved by (+ signature) ..... :	Harrison Huang
Date of issue ..... :	2016-09-06
Testing laboratory ..... :	Bay Area Compliance Laboratories Corp. (Dongguan)
Address ..... :	No.69 Pulong Village Puxinhu Industry Zone Tangxia,Dongguan, China.
Testing location ..... :	Same as above
Applicant ..... :	Hongli Zhihui Group Co.,Ltd.
Address ..... :	No.1, Xianke Yi Road, Huadong Town, Huadu District, Guangzhou, China
Standard ..... :	IEC TR 62778:2014 (Second Edition)
Test sample(s) received..... :	2016-09-05
Test in period..... :	2016-09-05
Procedure deviation ..... :	N.A.
Non-standard test method ..... :	N.A.

Note: The test data was only valid for the test sample(s). This test report is prepared for the customer shown above and for the specific product described herein. It must not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Dongguan).

Type of test object ..... :	LED
Trademark ..... :	N.A.

Model/type reference .....:	A2835W6H4-D01-8D2AA1 Multiple Models : A2835W1H4-D01-8D2AA1, A2835W2H4-D01-8D2AA1, A2835W3H4-D01-8D2AA1, A2835W4H4-D01-8D2AA1, A2835W5H4-D01-8D2AA1, A2835W6H4-D01-8D2AA1, A2835W7H4-D01-8D2AA1, A2835W8H4-D01-8D2AA1, A2835W9H4-D01-8D2AA1, A2835W1H2-D01-8D2AA1, A2835W2H2-D01-8D2AA1, A2835W3H2-D01-8D2AA1, A2835W4H2-D01-8D2AA1, A2835W5H2-D01-8D2AA1, A2835W6H2-D01-8D2AA1, A2835W7H2-D01-8D2AA1, A2835W8H2-D01-8D2AA1, A2835W9H2-D01-8D2AA1, A2835W1H3-D01-8D2AA1, A2835W2H3-D01-8D2AA1, A2835W3H3-D01-8D2AA1, A2835W4H3-D01-8D2AA1, A2835W5H3-D01-8D2AA1, A2835W6H3-D01-8D2AA1, A2835W7H3-D01-8D2AA1, A2835W8H3-D01-8D2AA1, A2835W9H3-D01-8D2AA1, A2835W1H5-D01-8D2AA1, A2835W2H5-D01-8D2AA1, A2835W3H5-D01-8D2AA1, A2835W4H5-D01-8D2AA1, A2835W5H5-D01-8D2AA1, A2835W6H5-D01-8D2AA1, A2835W7H5-D01-8D2AA1, A2835W8H5-D01-8D2AA1, A2835W9H5-D01-8D2AA1, A2835W1H2-D01-7D2AA1, A2835W2H2-D01-7D2AA1, A2835W3H2-D01-7D2AA1, A2835W4H2-D01-7D2AA1, A2835W5H2-D01-7D2AA1, A2835W6H2-D01-7D2AA1, A2835W7H2-D01-7D2AA1, A2835W8H2-D01-7D2AA1, A2835W9H2-D01-7D2AA1, A2835W1H3-D01-7D2AA1, A2835W2H3-D01-7D2AA1, A2835W3H3-D01-7D2AA1, A2835W4H3-D01-7D2AA1, A2835W5H3-D01-7D2AA1, A2835W6H3-D01-7D2AA1, A2835W7H3-D01-7D2AA1, A2835W8H3-D01-7D2AA1, A2835W9H3-D01-7D2AA1 A2835W1H4-D01-7D2AA1, A2835W2H4-D01-7D2AA1, A2835W3H4-D01-7D2AA1, A2835W4H4-D01-7D2AA1, A2835W5H4-D01-7D2AA1, A2835W6H4-D01-7D2AA1, A2835W7H4-D01-7D2AA1, A2835W8H4-D01-7D2AA1, A2835W9H4-D01-7D2AA1, A2835W1H5-D01-7D2AA1, A2835W2H5-D01-7D2AA1, A2835W3H5-D01-7D2AA1, A2835W4H5-D01-7D2AA1, A2835W5H5-D01-7D2AA1, A2835W6H5-D01-7D2AA1, A2835W7H5-D01-7D2AA1, A2835W8H5-D01-7D2AA1, A2835W9H5-D01-7D2AA1

Manufacturer..... .....:	Hongli Zhihui Group Co.,Ltd. No.1, Xianke Yi Road, Huadong Town, Huadu District, Guangzhou, China
Rating .....:	Input: 5Vdc, 150mA

Copy of marking plate:

None

Test item particulars .....:	
Product evaluated .....:	☒ **LED package** ☐ **LED module** ☐ **Lamp** ☐ **Luminaire**
Rated voltage (V) .....:	See rating
Rated current (mA).....:	See rating
Rated CCT (K) .....:	6500K
Rated Luminance (Mcd/m^2).....:	Not specified
Component report data used .....:	☒ **Not applicable** ☐ **LED package** ☐ **LED module** ☐ **Lamp** Report number:

Possible test case verdicts:

-test case does not apply to the test object.....:N(.A.)

-test object does meet the requirement.....:P(ass)

-test object does not meet the requirement.....:F(ail)

General remarks:

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 testing laboratory.
"(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 point is used as the decimal separator.
List of test equipment must be kept on file and available for review.

Remark:

This report consists of 12 pages and following appendixes:
Appendix A EUT photos
Appendix B Test equipment list

General product information:

This product is a LED, test model is A2835W6H4-D01-8D2AA1. Rated input is 5Vdc,150mA.

Multiple Models have the same or similar appearance, structure, PCB, Material and function to the testing products .

Products with CCT 2200-6500K,CRI 80Ra or 70Ra.

Unless otherwise specified, CCT 6500K were chosen as the representative models to perform all tests.

Hereby declare that there are some differences between our Multiple Models and testing products.

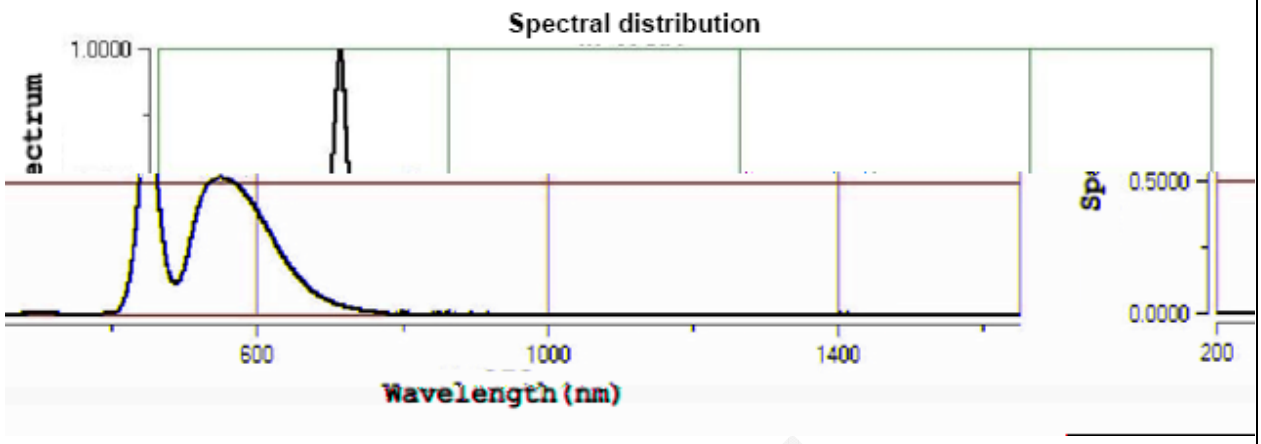
Details as below:

	8D2AA1		Chip name: H3
	A2835W7H3-D01-8D2AA1		CCT:2200K；Ra: 80；Chip name: H3
	A2835W8H3-D01-8D2AA1		CCT:3500K；Ra: 80；Chip name: H3
	A2835W9H3-D01-8D2AA1		CCT:5350K；Ra: 80；Chip name: H3
	A2835W1H5-D01-8D2AA1	Just in CCT and Chip name change	CCT:2700K；Ra:80；Chip name: H5
	A2835W2H5-D01-8D2AA1		CCT:3000K；Ra: 80；Chip name: H5
	A2835W3H5-D01-8D2AA1		CCT:4000K；Ra: 80；Chip name: H5
	A2835W4H5-D01-8D2AA1		CCT:5000K；Ra: 80；Chip name: H5
	A2835W5H5-D01-8D2AA1		CCT:6000K；Ra: 80；Chip name: H5
	A2835W6H5-D01-8D2AA1		CCT:6500K；Ra: 80；Chip name: H5
	A2835W7H5-D01-8D2AA1		CCT:2200K；Ra: 80；Chip name: H5
	A2835W8H5-D01-8D2AA1		CCT:3500K；Ra: 80；Chip name: H5
	A2835W9H5-D01-8D2AA1		CCT:5350K；Ra: 80；Chip name: H5
	A2835W1H2-D01-7D2AA1	Just in CCT、Ra and Chip name change	CCT:2700K；Ra:70；Chip name:H2
	A2835W2H2-D01-7D2AA1		CCT:3000K；Ra:70；Chip name:H2
	A2835W3H2-D01-7D2AA1		CCT:4000K；Ra:70；Chip name:H2
	A2835W4H2-D01-7D2AA1		CCT:5000K；Ra:70；Chip name: H2
	A2835W5H2-D01-7D2AA1		CCT:6000K；Ra: 70；Chip name: H2
	A2835W6H2-D01-7D2AA1		CCT:6500K；Ra: 70；Chip name: H2
	A2835W7H2-D01-7D2AA1		CCT:2200K；Ra: 70；Chip name: H2
	A2835W8H2-D01-7D2AA1		CCT:3500K；Ra: 70；Chip name: H2
	A2835W9H2-D01-7D2AA1		CCT:5350K；Ra: 70；Chip name: H2
	A2835W1H3-D01-7D2AA1	Just in CCT、Ra and Chip name change	CCT:2700K；Ra: 70；Chip name: H3
	A2835W2H3-D01-7D2AA1		CCT:3000K；Ra: 70；Chip name: H3
	A2835W3H3-D01-7D2AA1		CCT:4000K；Ra: 70；Chip name: H3
	A2835W4H3-D01-7D2AA1		CCT:5000K；Ra: 70；Chip name: H3
	A2835W5H3-D01-7D2AA1		CCT:6000K；Ra: 70；Chip name: H3

	A2835W6H3-D01-7D2AA1		CCT:6500K；Ra: 70；Chip name: H3
	A2835W7H3-D01-7D2AA1		CCT:2200K；Ra: 70；Chip name: H3
	A2835W8H3-D01-7D2AA1		CCT:3500K；Ra: 70；Chip name: H3
	A2835W9H3-D01-7D2AA1		CCT:5350K；Ra: 70；Chip name: H3
	A2835W1H4-D01-7D2AA1	Just in CCT、Ra and Chip name change	CCT:2700K；Ra: 70；Chip name: H4
	A2835W2H4-D01-7D2AA1		CCT:3000K；Ra: 70；Chip name: H4
	A2835W3H4-D01-7D2AA1		CCT:4000K；Ra: 70；Chip name: H4
	A2835W4H4-D01-7D2AA1		CCT:5000K；Ra: 70；Chip name: H4
	A2835W5H4-D01-7D2AA1		CCT:6000K；Ra: 70；Chip name: H4
	A2835W6H4-D01-7D2AA1		CCT:6500K；Ra: 70；Chip name: H4
	A2835W7H4-D01-7D2AA1		CCT:2200K；Ra: 70；Chip name: H4
	A2835W8H4-D01-7D2AA1		CCT:3500K；Ra: 70；Chip name: H4
	A2835W9H4-D01-7D2AA1		CCT:5350K；Ra: 70；Chip name: H4
	A2835W1H5-D01-7D2AA1	Just in CCT、Ra and Chip name change	CCT:2700K；Ra: 70；Chip name: H5
	A2835W2H5-D01-7D2AA1		CCT:3000K；Ra: 70；Chip name: H5
	A2835W3H5-D01-7D2AA1		CCT:4000K；Ra: 70；Chip name: H5
	A2835W4H5-D01-7D2AA1		CCT:5000K；Ra: 70；Chip name: H5
	A2835W5H5-D01-7D2AA1		CCT:6000K；Ra: 70；Chip name: H5
	A2835W6H5-D01-7D2AA1		CCT:6500K；Ra: 70；Chip name: H5
	A2835W7H5-D01-7D2AA1		CCT:2200K；Ra: 70；Chip name: H5
	A2835W8H5-D01-7D2AA1		CCT:3500K；Ra: 70；Chip name: H5
	A2835W9H5-D01-7D2AA1		CCT:5350K；Ra: 70；Chip name: H5

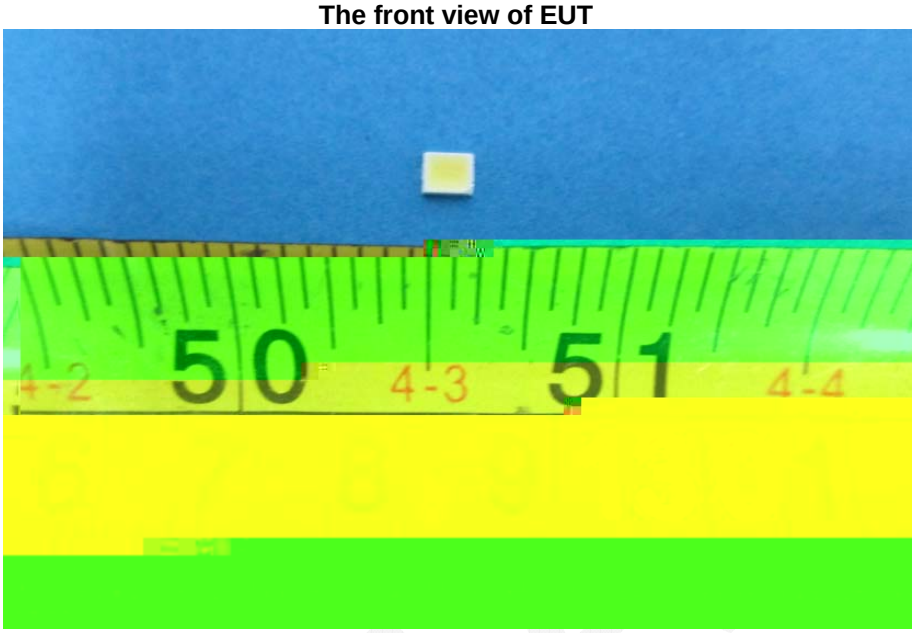
IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict
7	**MEASUREMENT INFORMATION FLOW**		**P**
7.1	**Basic flow**		**P**
	'Law of conservation of luminance' applied		P
	Use of only true luminance/radiance values		P
	In case of luminaire: The light source is operated in the luminaire under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

	TABLE: Angular light distribution	



Appendix A - EUT Photos

The front view of EUT



The back view of EUT