

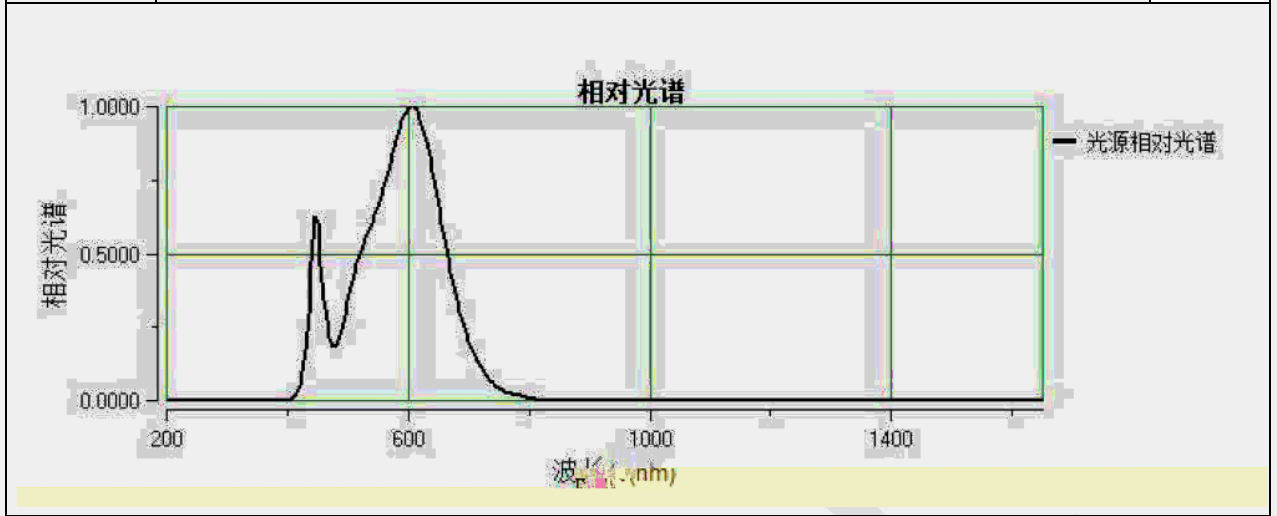
<b>TEST REPORT</b> <b>IEC TR 62778</b> <b>Application of IEC TR 62778 for the assessment of blue light hazard to light sources and luminaires</b>	
Report reference No .....	RSZ200312553-SF
Compiled by (+ signature) .....	Test Engineer: Zero Gao
Approved by (+ signature) .....	Project Engineer: Harrison Huang
Date of issue .....	2020-03-23
Testing laboratory .....	Bay Area Compliance Laboratories Corp.(Dongguan)
Address .....	No.69, Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China
Testing location .....	Same as above
Applicant .....	Hongli Zhihui Group Co.,Ltd. Guangzhou Branch
Address .....	Room 316, Building 2, No.1, Xianke Yi Road, Huadong Town, Huadu District, Guangzhou, China
Standard .....	IEC TR 62778:2014
Test sample(s) received.....	2020-03-19
Test in period.....	2020-03-20
Procedure deviation .....	N.A.
Non-standard test method .....	N.A.
Type of test object .....	LED package
Trademark .....	N.A.
Model/type reference .....	HL-A-4014H489W-S1-HR3-DM-HL
Manufacturer.....	Hongli Zhihui Group Co.,Ltd. Guangzhou Branch Room 316, Building 2, No.1, Xianke Yi Road, Huadong Town, Huadu District, Guangzhou, China
Rating .....	Input: 3Vdc, 60mA
Copy of marking plate:	None

<b>Test item particulars</b> .....	
<b>Product evaluated</b> .....	<input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire
<b>Rated voltage (V)</b> .....	See rating
<b>Rated current (mA)</b> .....	See rating
<b>Rated Luminance (Mcd/m<sup>2</sup>)</b> .....	Not specified
<b>Component report data used</b> .....	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp
<b>Possible test case verdicts:</b>	
-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)	
<b>General remarks:</b>	
<p>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.</p>	
<b>Remark:</b>	
Appendix A EUT photos	
<b>General product information:</b>	
"EUT" as referred in this report is a LED Package, and the input rating is 3Vdc, 60mA.	

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict
<b>7</b>	<b>MEASUREMENT INFORMATION FLOW</b>		<b>P</b>
<b>7.1</b>	<b>Basic flow</b>		<b>P</b>
	'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
<b>7.2</b>	<b>Conditions for the radiance measurement</b>		<b>P</b>
	Standard condition applied (200mm distance, 0,011rad field of view)		P
	Non-standard condition applied		N
<b>7.3</b>	<b>Special cases (I): Replacement by a lamp or LED module of another type</b>		<b>N</b>
	Light source is a white light source		N
	Evaluation done based on highest luminance		N
	Evaluation done based on CCT value		N
<b>7.4</b>	<b>Special cases (II): Arrays and clusters of primary light sources</b>		<b>N</b>
	LED package is evaluated as ..... : <input type="checkbox"/> RG0 unlimited <input type="checkbox"/> RG1 unlimited <input type="checkbox"/> RG2 unlimited		N
	$E_{thr}$ of LED package applies to array		N
<b>8</b>	<b>RISK GROUP CLASSIFICATION</b>		<b>P</b>
	Risk group achieved:		P
	- .. Risk Group 0 unlimited		N
	- .. Risk Group 1 unlimited		P
	- Risk Group 2 unlimited		N
	- $E_{thr}$ ..... (lx) : Distance to reach RG1 .....(mm) :		N

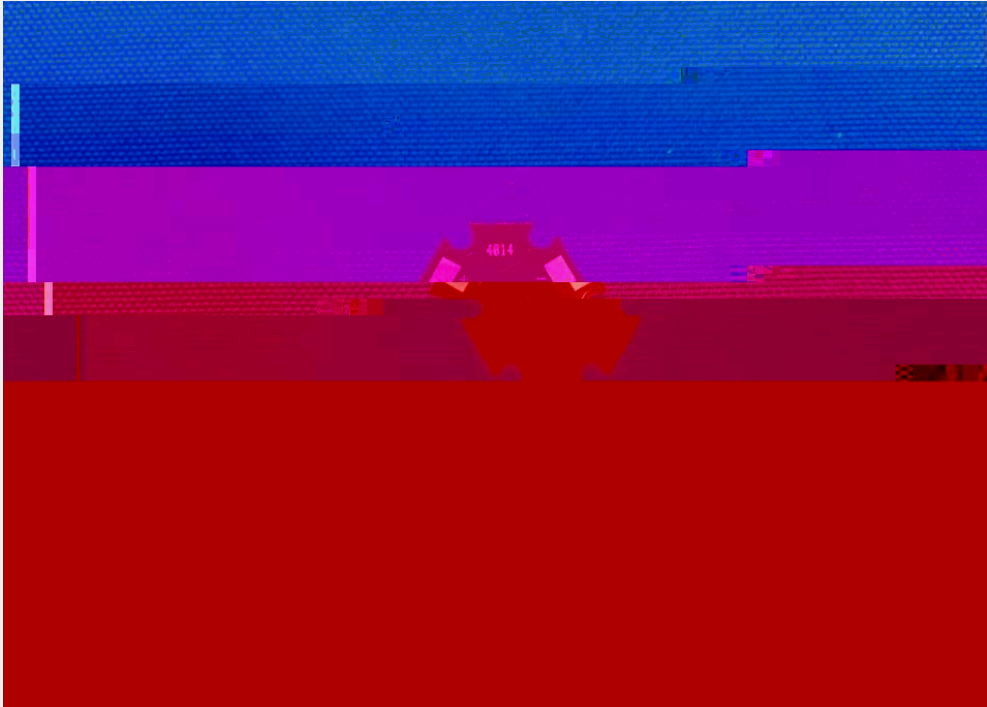
TABLE: Spectroradiometric measurement			P	
Measurement performed on:	<input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire		—	
Model number .....	HL-A-4014H489W-S1-HR3-DM-HL		—	
Test voltage (V) .....	3Vdc		—	
Test current (mA) .....	60mA		—	
Test frequency (Hz) .....	--		—	
Ambient, t (°C) .....	24.0		—	
Measurement distance .....	<input checked="" type="checkbox"/> 20 cm <input type="checkbox"/> ... cm		—	
Source size .....	<input type="checkbox"/> Non-small: mm <input checked="" type="checkbox"/> Small: 0.41mm		—	
Field of view .....	<input type="checkbox"/> 100 mrad <input type="checkbox"/> 11 mrad <input checked="" type="checkbox"/> 2.1 mrad		—	
Item	Symb ol	Units	Result	Remark
Correlated colour temperature	CCT	K	3112	--
x/y colour coordinates	x/y		0.4245/0.3910	--
Blue light hazard radiance	L <sub>B</sub>	W/(m <sup>2</sup> •sr <sup>1</sup> )	2.153 x10 <sup>3</sup>	--
Blue light hazard irradiance	E <sub>B</sub>	W/m <sup>2</sup>	6.235 x10 <sup>-2</sup>	--
Luminance	L <sub>V</sub>	cd/m <sup>2</sup>	5.671 x10 <sup>6</sup>	--
Illuminance	E	lx	164	--
Supplementary information: NA				

TABLE: Angular light distribution



## Appendix A - EUT Photos

EUT- The overall view





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## DIRECTIONS

1. The information marked # is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report.
2. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
3. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.
4. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.
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**\*\*\*End of report\*\*\***